APPENDIX G – Aquatic Resources Delineation Report: Lookout Slough Restoration Project. This page intentionally left blank.



DEPARTMENT OF THE ARMY U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT 1325 J STREET SACRAMENTO CA 95814-2922

December 20, 2018

Regulatory Division (SPK-2017-00805)

Ecosystem Investment Partners Attn: Mr. David Urban 1505 Bridgeway, Suite 107 Sausalito, California 94965 <u>David@ecosystempartners.com</u>

Dear Mr. Urban:

We are responding to your November 13, 2018, request for a preliminary jurisdictional determination (JD) for the Lookout Slough Tidal Habitat Restoration site. The approximately 3,637-acre project site is located within the Yolo Bypass, at the confluence of Cache Slough and Shag Slough, bounded by Shag Slough to the east, Cache Slough to the southwest, Duck Slough to the northwest, and Latitude 38.302416°, Longitude -121.712691°, Solano County, California.

Based on available information, we concur with your aquatic resources delineation for the site as depicted on the enclosed December 11, 2018, *Appendix B. Potential Waters of the U.S., Lookout Slough Restoration Project* drawing(s) prepared by WRA Inc. (enclosure 1). The approximately 1,669.06 acres of wetlands and 344.75 acres of other waters present within the survey area are potential jurisdictional aquatic resources "waters of the United States" regulated under Section 404 of the Clean Water Act and Section 9 and 10 of the Rivers and Harbors Act.

At your request, we have completed a preliminary JD for the site. Enclosed find a copy of the *Preliminary Jurisdictional Determination Form* (enclosure 2). Please sign and return the completed form to this office, at the address listed below, within 30 days of the date of this letter. If you do not return the signed form within 30 days, we will presume concurrence and finalize the preliminary jurisdictional determination.

You may request an approved JD for this site at any time prior to starting work within waters, including after a permit decision is made.

We recommend you provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property. This preliminary jurisdictional determination has been conducted to identify the potential limits of wetlands and other aquatic resources at the project site which may be subject to U.S. Army Corps of Engineers jurisdiction under Section 404 of the Clean Water Act and/or Section 9 and 10 of the Rivers and Harbors Act. A *Notification of Appeal Process and Request for Appeal Form* is enclosed to notify you of your options with this determination (enclosure 3).

We appreciate feedback, especially about interactions with our staff and processes.

Please refer to identification number SPK-2017-00805 in any correspondence concerning this project. If you have any questions, please contact Mr. Zachary Simmons at our Sacramento Regulatory Division, 1325 J Street, Room 1350, Sacramento, California 95814-2922, by email at <u>Zachary.M.Simmons@usace.army.mil</u>, or telephone at (916) 557-6746. For program information or to complete our Customer Survey, visit our website at <u>www.spk.usace.army.mil/Missions/Regulatory.aspx</u>.

Sincerely,

Paul Maniccia Chief, Enforcement/Special Projects Branch Regulatory Division

Enclosures

cc: (w/encls)

Ms. Bonnie Irving, CA Department of Water Resources, <u>Bonnie.Irving@water.ca.gov</u> Ms. Stephanie Freed, WRA Inc., <u>Freed@wra-ca.com</u>

Ms. Heather Swinney, U.S. Fish and Wildlife Service, Heather_Swinney@fws.gov

Mr. Doug Hampton, National Marine Fisheries Service, *Douglas.Hampton@noaa.gov*

Ms. Tina Bartlett, Ca Department of Fish and Wildlife, *Tina.Bartlett@wildlife.ca.gov*



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Appendix B. Potential Waters of the United States Overview Sheet 1





Prepared by:

0.5 1 Map Prepared Date: 12/11/2018 Map Prepared Date: 12/11/2018 Map Prepared By: pkobylarz Base Date: 10/24/17 Data Source(s): WRA

Lookout Slough Restoration Project

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		Section	Section	lineer					Section	Section	Linear				Section 404	Section	Cowardin
Туре	ID	404	404/10	Feet	Cow ardin Code		Туре	ID	404	404/10	Feet	Cow ardin Code	Туре	ID	Acres	404/10	
		Acres	Acres	Feel					Acres	Acres	reel				Acres	Acres	Code
Drainage Ditch	001	2.05		2/03	R5LIBEY	Drainage	Ditch	073	0.37	_	1328	R51 IREv	Irrigated Wetland	M/-01	11.04		DEMOKE
Drainage Ditch	DD-001	2.00	-	1227		Drainage L	Ditch	DD-073	0.37	-	2550		Ingated Wetland	M/ 02	11.04	-	
Drainage Ditch	DD-002	1.24	-	2/03		Drainage	Ditch	DD-074	0.02	-	2550	RSUBEY	Irrigated Wetland	M/-02	2.41	-	
Drainage Ditch	DD-004	1.52	_	2703	R5UBEx	Drainage D	Ditch	DD-076	0.14	_	1949	R5UBEx	Irrigated Wetland	IW-04	5.48	-	PEM2Kf
Drainage Ditch	DD-005	1.58	-	3427	R5UBFx	Drainage D	Ditch	DD-077	0.08	-	832	R5UBFx	Irrigated Wetland	W-05	13.95	-	PEM2Kf
Drainage Ditch	DD-006	0.02	-	45	R5UBFx	Drainage D	Ditch	DD-078	0.10	-	1043	R5UBFx	Irrigated Wetland	W-06	14.50	-	PEM2Kf
Drainage Ditch	DD-007	1.78	-	1913	R5UBFx	Drainage D	Ditch	DD-079	0.68	-	1475	R5UBFx	Irrigated Wetland	IW-07	0.69	-	PEM2Kf
Drainage Ditch	DD-008	0.90	-	1934	R5UBFx	Drainage D	Ditch	DD-080	0.16	-	1148	R5UBFx	Irrigated Wetland	IW-08	19.67	-	PEM2Kf
Drainage Ditch	DD-009	0.02	-	36	R5UBFx	Drainage D	Ditch	DD-081	0.19	-	823	R5UBFx	Irrigated Wetland	IW-09	0.41	-	PEM2Kf
Drainage Ditch	DD-010	1.25	-	4225	R5UBFx	Drainage D	Ditch	DD-082	0.48	-	1312	R5UBFx	Irrigated Wetland	IW-10	0.35	-	PEM2Kf
Drainage Ditch	DD-011	0.84	-	2587	R5UBFx	Drainage D	Ditch	DD-083	0.01	-	32	R5UBFx	Irrigated Wetland	IW-11	16.83	-	PEM2Kf
Drainage Ditch	DD-012	0.13	-	170	R5UBFx	Drainage D	Ditch	DD-084	0.16	-	1142	R5UBFx	Irrigated Wetland	IW-12	3.07	-	PEM2Kf
Drainage Ditch	DD-013	0.65	-	1748	R5UBFx	Drainage D	Ditch	DD-085	0.48	-	4217	R5UBFx	Irrigated Wetland	IW-13	9.97	-	PEM2Kf
Drainage Ditch	DD-014	0.41	-	1092	R5UBFx	Drainage D	Ditch	DD-086	0.29	-	1196	R5UBFx	Irrigated Wetland	IW-14	38.83	-	PEM2Kf
Drainage Ditch	DD-015	0.10	-	/3/	R5UBFX	Drainage L	Ditch	DD-087	0.69	-	4150	R5UBFX	Irrigated Wetland	IVV-15	3.38	-	PEM2Kf
Drainage Ditch	DD-016	0.04	-	198		Drainage L	Ditch	DD-088	0.21	-	2400	ROUBEX	Irrigated Wetland	IVV-16	34.19	-	PEW2KT
Drainage Ditch	DD-017	0.20	-	310	R5UBEy	Drainage	Ditch	DD-009	0.92	-	1326	R5UBEY	Irrigated Wetland	IVV-17	20.91	-	PEM2Kf
Drainage Ditch	DD-019	1 17		2800	R5UBEx	Drainage	Ditch	DD-091	0.52		1439	R5LIBEx	Irrigated Wetland	IW-10	31.76	-	PEM2Kf
Drainage Ditch	DD-020	0.30	-	1653	R5UBFx	Drainage D	Ditch	DD-092	0.51	-	1234	R5UBFx	Irrigated Wetland	IW-20	31.36	-	PEM2Kf
Drainage Ditch	DD-021	0.03	-	122	R5UBFx	Drainage D	Ditch	DD-093	1.25	-	2480	R5UBFx	Irrigated Wetland	IW-21	0.27	-	PEM2Kf
Drainage Ditch	DD-022	1.75	-	2528	R5UBFx	Drainage D	Ditch	DD-094	0.52	-	1260	R5UBFx	Irrigated Wetland	IW-22	0.44	-	PEM2Kf
Drainage Ditch	DD-023	0.31	-	9290	R5UBFx	Drainage D	Ditch	DD-095	1.17	-	2548	R5UBFx	Irrigated Wetland	IW-23	0.23	-	PEM2Kf
Drainage Ditch	DD-024	0.73	-	2516	R5UBFx	Drainage D	Ditch	DD-096	0.05	-	136	R5UBFx	Managed Wetlands	MW-01	21.25	-	PEM1/2Kf
Drainage Ditch	DD-025	0.44	-	1605	R5UBFx	Drainage D	Ditch	DD-097	0.24	-	582	R5UBFx	Managed Wetlands	MW-02	14.68	-	PEM1/2Kf
Drainage Ditch	DD-026	0.25	-	1800	R5UBFx	Drainage D	Ditch	DD-098	0.91	-	2479	R5UBFx	Managed Wetlands	MW-03	17.24	-	PEM1/2Kf
Drainage Ditch	DD-027	0.20	-	869	R5UBFx	Drainage D	Ditch	DD-099	0.35	-	1255	R5UBFx	Managed Wetlands	MW-04	6.98	-	PEM1/2Kf
Drainage Ditch	DD-028	0.02	-	44	R5UBFx	Drainage D	Ditch	DD-100	0.83	-	2595	R5UBFx	Managed Wetlands	MW-05	0.46	-	PEM1/2Kf
Drainage Ditch	DD-029	0.60	-	1317	R5UBFx	Drainage D	Ditch	DD-101	0.03	-	115	R5UBFx	Managed Wetlands	MW-06	6.24	-	PEM1/2Kf
Drainage Ditch	DD-030	0.35	-	869	R5UBFx	Drainage D	Ditch	DD-102	0.11	-	410	R5UBFx	Managed Wetlands	MW-07	124.72	-	PEM1/2Kf
Drainage Ditch	DD-031	0.79	-	1151	K5UBFX	Drainage D	Jitch	DD-103	0.15	-	560	KOUBHX	Managed Wetlands	MW-08	112.85	-	PEM1/2Kf
Drainage Ditch	DD-032	0.51	-	1123		Drainage D	JICN Ditob	DD-104	0.70		2533		Ivanaged vvetlands	IVIVV-09	121.59	-	PEIVI1/2Kt
Drainage Ditch	00-033	0.28	-	1223	R5UBEV	Drainage L	Jitch	DD-105	0.83	-	2579		Ivanaged Wetlands	IVIVV-1U	45.31	-	
Drainage Ditch	DD-034	0.40	-	51	R5UBEv	Drainage D	Ditch	DD-107	0.09	-	712		Managed Wetlands	MA/_12	0.53	-	DEM1/2Kf
Drainage Ditch	DD-036	0.04	-	1232	R5UBEx	Drainage	Ditch	DD-107	0.20		2511	R5LIBEx	Managed Wetlands	MW-12	28.49		PEM1/2Kf
Drainage Ditch	DD-037	0.75	-	1358	R5UBFx	Drainage D	Ditch	DD-109	0.72	-	2614	R5UBFx	Managed Wetlands	MW-14	27.55	-	PEM1/2Kf
Drainage Ditch	DD-038	0.79	-	1417	R5UBFx	Drainage D	Ditch	DD-110	0.72	-	2621	R5UBFx	Managed Wetlands	MW-15	67.88	-	PEM1/2Kf
Drainage Ditch	DD-039	0.02	-	54	R5UBFx	Drainage D	Ditch	DD-111	1.04	-	2826	R5UBFx	Managed Wetlands	MW-16	79.00	-	PEM1/2Kf
Drainage Ditch	DD-040	0.76	-	2770	R5UBFx	Drainage D	Ditch	DD-112	0.91	-	1953	R5UBFx	Managed Wetlands	MW-17	66.92	-	PEM1/2Kf
Drainage Ditch	DD-041	0.02	-	73	R5UBFx	Drainage D	Ditch	DD-113	0.07	-	156	R5UBFx	Managed Wetlands	MW-18	72.60	-	PEM1/2Kf
Drainage Ditch	DD-042	0.34	-	1228	R5UBFx	Drainage D	Ditch	DD-114	0.64	-	2333	R5UBFx	Managed Wetlands	MW-19	33.74	-	PEM1/2Kf
Drainage Ditch	DD-043	0.06	-	222	R5UBFx	Drainage D	Ditch	DD-115	0.72	-	2613	R5UBFx	Managed Wetlands	MW-20	37.07	-	PEM1/2Kf
Drainage Ditch	DD-044	0.50	-	1802	R5UBFx	Drainage D	Ditch	DD-116	0.89	-	2351	R5UBFx	Managed Wetlands	MW-21	67.50	-	PEM1/2Kf
Drainage Ditch	DD-045	0.63	-	1964	R5UBFx	Drainage L	Ditch	DD-117	0.71	-	2596	R5UBFx	Managed Wetlands	MW-22	78.12	-	PEM1/2Kf
Drainage Ditch	DD-046	0.06	-	93		Drainage L	Ditch	DD-118	0.91	-	1976	ROUBEX	Managed Wetlands	IVIVV-23	30.75	-	PEW1/2KT
Drainage Ditch	DD-047	0.07	-	2504	ROUDEX R5LIBEV	Drainage L	litch	DD-119	20.03	-	3100		Managed Wetlands	IVIVV-24	<u> </u>	-	PEIVII/2KI DEM1/2kf
Drainage Ditch	DD-040	0.30	_	2504	B5UBEx	Irrigation D	litch	ID-02	0.00		605	R5UBAx	Managed Wetlands	MW-26	2.40	-	PEM1/2Kf
Drainage Ditch	DD-050	0.59	-	2571	R5UBFx	Irrigation D	litch	ID-03	0.14	-	1720	R5UBAx	Managed Wetlands	MW-27	0.00	-	PEM1/2Kf
Drainage Ditch	DD-051	0.94	-	2579	R5UBFx	Irrigation D	litch	ID-04	0.65	-	4204	R5UBAx	Managed Wetlands	MW-28	0.96	-	PEM1/2Kf
Drainage Ditch	DD-052	0.40	-	1092	R5UBFx	Irrigation D	litch	ID-05	0.62	-	4123	R5UBAx	Managed Wetlands	MW-29	8.88	-	PEM1/2Kf
Drainage Ditch	DD-053	0.59	-	1270	R5UBFx	Irrigation D	litch	ID-06	0.04	-	342	R5UBAx	Managed Wetlands	MW-30	9.40	-	PEM1/2Kf
Drainage Ditch	DD-054	0.79	-	1135	R5UBFx	Irrigation D	itch	ID-07	0.69	-	4629	R5UBAx	Managed Wetlands	MW-31	7.48	-	PEM1/2Kf
Drainage Ditch	DD-055	0.14	-	260	R5UBFx	Irrigation D	itch	ID-08	0.04	-	389	R5UBAx	Managed Wetlands	MW-32	0.07	-	PEM1/2Kf
Drainage Ditch	DD-056	0.49	-	1769	R5UBFx	Irrigation D	litch	ID-09	0.49	-	4278	R5UBAx	Managed Wetlands	MW-33	0.55	-	PEM1/2Kf
Drainage Ditch	DD-057	0.84	-	2607	R5UBFx	Irrigation D	litch	ID-10	0.73	-	6398	R5UBAx	Managed Wetlands	MW-34	1.65	-	PEM1/2Kf
Drainage Ditch	DD-058	0.25	-	469	R5UBFx	Irrigation D	litch	ID-11	0.23	-	1007	R5UBAx	Managed Wetlands	MW-35	4.87	-	PEM1/2Kf
Drainage Ditch	DD-059	0.18	-	550	R5UBFX	Irrigation D	htch	ID-12	0.07	-	614	R5UBAX	Managed Wetlands	MW-36	43.37	-	PEM1/2Kf
Drainage Ditch	DD-060	0.72	-	2609		Irrigation L	litch	ID-13	0.86	-	6458		Managed Wetlands	IVIVV-37	48.36	-	PEWI/2KT
Drainage Ditch	DD-001	0.30	-	226		Irrigation D	iiteb	ID-14	0.01	-	2221		Managed Wetlands	NAV 20	0.14	-	PEI/1/2Ki
Drainage Ditch	DD-063	0.12	-	612	R5UBFx	Irrigation D	litch	ID-16	0.74	-	5761	R5UBAx	Managed Wetlands	MW-40	0.20	-	PEM1/2Kf
Drainage Ditch	DD-064	0.16	-	711	R5UBFx	Irrigation P	bnd	IP-1	0.84	-		PUBKh	Managed Wetlands	MW-41	0.75	-	PEM1/2Kf
Drainage Ditch	DD-065	0.97	-	1427	R5UBFx	Irrigation P	bnd	IP-2	1.07	-	-	PUBKh	Managed Wetlands	MW-42	0.52	-	PEM1/2Kf
Drainage Ditch	DD-066	0.04	-	464	R5UBFx	Pond		P-1	0.95	-	-	PUBHx	Managed Wetlands	MW-43	0.12	-	PEM1/2Kf
Drainage Ditch	DD-067	0.12	-	1271	R5UBFx	Pond		P-2	9.14	-	1552	PUBHx	Perennial Marsh (Non-Tidal)	PMNT-1	2.72	-	PEM1Fx
Drainage Ditch	DD-068	0.11	-	1161	R5UBFx	Slough (No	on-Tidal)	SNT-1	31.54	-	14220	R2UBHx	Perennial Marsh (Non-Tidal)	PMNT-2	2.77	-	PEM1Fx
Drainage Ditch	DD-069	0.19	-	691	R5UBFx	Slough (No	on-Tidal)	SNT-2	9.01	-	7958	R2UBHx	Perennial Marsh (Non-Tidal)	PMNT-3	2.53	-	PEM1Fx
Drainage Ditch	DD-070	0.11	-	1152	R5UBFx	Slough (Ti	dal)	ST-1	2.14	124.82	15040	R1UBV/R1UBVx	Perennial Marsh (Tidal)	PMT-01	0.04	-	PEM1T
Drainage Ditch	UD-071	0.83	-	2574	R5UBFx	Slough (Ti	dal)	ST-2	1.22	73.27	18985	K1UBV/R1UBVx	Perennial Marsh (Tidal)	HMT-02	0.06	-	PEM1T
Drainage Ditch	UU-072	0.30	-	1312	K5UBFX			1		l			Perennial Marsh (Tidal)	HMI-03	0.09	-	
													Perennial Marsh (Tidal)		0.07	-	
1													Perennial Marsh (Tidal)		0.75	-	
i												ï	Perennial Marsh (Tidal)	PMT_07	0.23	-	PEM1T
Overvie	ew of a	quatic r	esource	es ma	pped within th	e Studv A	Area for th	he Lool	kout Slo	ugh De	lta Sm	elt Habitat	Perennjal Marsh (Tidal)	PMT-08	1 4/	-	PEM1T
	u	1				ration D	inot		515	0.1 20			Perennial Marsh (Tidal)	PMT-09	0.10	-	PEM1T
					Resto	auon Pro	jeci						Perennial Marsh (Tidal)	PMT-10	0.14	-	PEM1T
	т	20		I	Soction 404	A or oc	Section	101/4	0 4 0		1.54	oar East	Perennial Marsh (Tidal)	PMT-11	0.10	-	PEM1T
	IY	Je			Section 404	HUTES	Section	i 404/1	U ACLES	<u> </u>	LIN	eal reel	Perennial Marsh (Tidal)	PMT-12	0.11	-	PEM1T
	Wetla	ands										1	Perennial Marsh (Tidal)	PMT-13	0.21	-	PEM1T
Irrigated Wa	Irrigated Wotland										Perennial Marsh (Tidal)	PMT-14	0.05	-	PEM1T		
	ingaled vvetiand 309.56				009.00						-	Perennial Marsh (Tidal)	PMT-15	0.65	-	PEM1T	
Managed Wetlands 1339.15					-				-	Scrub-Shrub Wetland	SSW-1	-	4.29	PSSR			
Perennial Marsh (Non-Tidal)				8 02				_		_	Scrub-Shrub Wetland	SSW-2	3.58	-	PSSR		
Perennian warsh (Non-110al) 8.				0.02					Seasonal Wetland	SVV-1	0.11	-	PEIVIZA/C				
Perennial Marsh (Tidal)					4.24				-			Seasonal Wetland	SW-2	0.03	-	PEIVIZA/C	
Scrub-Shru	b Wetla	nd				3.58			4	.29				011-0	0.07	-	
Soco == 114	lotler-	•				0.00			•	-							
Seasonal Wetland					0.22				-		-						
Subtotal						1664.77			4	.29							
Non Wetland Waters																	
INO	-vvetial	iu vvale	513														
Drainage Ditch						84.36				-		203938					

Drainage Ditch	84.36	-	203938
Irrigation Ditch	6.39	-	46917
Irrigation Pond	1.91	-	-
Pond	10.10	-	-
Slough (Non-Tidal)	40.55	-	22178
Slough (Tidal)	3.36	198.09	34025
Subtotal	146.67	198.09	307058
Totals	1811.43	202.38	307058



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Appendix B. Potential Waters of the U.S. Map Sheet 20

Lookout Slough Restoration Project

- High Tide Line (7.26' NAVD88)
- Mean High Water (5.9' NAVD88)
- Study Area (3,637 ac.)
- Section 10 Jurisdiction (202.43 ac.)
- Sample Point

Wetlands

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-121.717227, 38.281742

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- Irrigated Wetland (309.56 ac.)
 Managed Wetland (1,339.14 ac.)
 Perennial Marsh (Non-Tidal) (8.02 ac.)
 Perennial Marsh (Tidal) (4.24 ac.)
 Scrub-Shrub Wetland (7.87 ac.)
 Seasonal Wetland (0.22 ac.)
 Non-Wetland Waters
- Drainage Ditch (84.36 ac.)
 Irrigation Ditch (6.39 ac.)
 Irrigation Pond (1.91 ac.)
 Pond (10.10 ac.)
 Slough (Non-Tidal) (40.55 ac.)
 Slough (Tidal) (201.45 ac.)
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Map Prepared Date: 12/11/2018 Map Prepared By: pkobylarz Base Source: Wood Rogers Base Date: 10/24/17 Data Source(s): WRA

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Appendix B. Potential Waters of the U.S. Map Sheet 23

Lookout Slough Restoration Project



Drainage Ditch (84.36 ac.)
Irrigation Ditch (6.39 ac.)
Irrigation Pond (1.91 ac.)
Pond (10.10 ac.)
Slough (Non-Tidal) (40.55 ac.)
Slough (Tidal) (201.45 ac.)





Feet

400

Map Prepared Date: 12/11/2018 Map Prepared By: pkobylarz Base Source: Wood Rogers Base Date: 10/24/17 Data Source(s): WRA

MW-01

-121.705274, 38.275716

Sheet 24



- Perennial Marsh (Non-Tidal) (8.02 ac.)

PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

- A. REPORT COMPLETION DATE FOR PJD: November 14, 2018
- **B. NAME AND ADDRESS OF PERSON REQUESTING PJD:** Ecosystem Investment Partners, Attn: Mr. David Urban
- C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Lookout Slough Tidal Habitat Restoration, SPK-2017-00805

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: (USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: CA County/parish/borough: Solano County City: N/A

Center coordinates of site (lat/long in degree decimal format):

Lat.: 38.302416 Long.: -121.712691

Universal Transverse Mercator: 612558.80, 4240153.38

Name of nearest waterbody: Cache Slough and Shag Slough

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- Office (Desk) Determination. Date:
- Field Determination. Date(s): November 28, 2018

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TOREGULATORY JURISDICTION.

See the attached ORM Aquatic Resources Upload Sheet.

- The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "may be" waters of the U.S. and/or that there "may be" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

Maps, plans, plots or plat submitted by or on behalf of the PJD requestor: Map: Appendix B. Potential Waters of the U.S.
Data sheets prepared/submitted by or on behalf of the PJD requestor.
Office concurs with data sheets/delineation report.
Office does not concur with data sheets/delineation report. Rationale:
Data sheets prepared by the Corps:
Corps navigable waters' study:
U.S. Geological Survey Hydrologic Atlas:
USGS NHD data.
USGS 8 and 12 digit HUC maps.
🛛 U.S. Geological Survey map(s). Cite scale & quad name: Liberty Island.
Natural Resources Conservation Service Soil Survey. Citation:
National wetlands inventory map(s). Cite name:
State/local wetland inventory map(s):
FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: . (National Geodetic Vertical Datum of 1929)
Photographs: Aerial (Name & Date):
Or Other (Name & Date):
Previous determination(s). File no. and date of response letter:
Other information (please specify):
IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.
July Surron 12/14/2018

Signature and date of Regulatory staff member completing PJD Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)¹

¹ Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

Waters_Name	State	Cowardin_Code HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
DD-001	California	R5UB	Area	2.047954	ACRE	DELINPJD	38.278814	-121.701496	
DD-002	California	R5UB	Area	1.241793	ACRE	DELINPJD	38.28361	-121.703577	
DD-003	California	R5UB	Area	1.515329	ACRE	DELINPJD	38.282234	-121.694496	
DD-004	California	R5UB	Area	1.248335	ACRE	DELINPJD	38.285873	-121./0/834	
DD-005	California	R5UB	Area	1.580495	ACRE		38.285869	-121.696125	
DD-006	California	ROUB	Area	0.023474	ACRE		30.2004/9	-121.094099	
00-007	California	RSUB	Area	0.805102	ACRE		38 288645	-121.70200	
000-000	California	R5UB	Area	0.033132	ACRE		38 291349	-121 702854	
DD-010	California	R5UB	Area	1.25334	ACRE	DELINPJD	38.285879	-121.714686	
DD-011	California	R5UB	Area	0.835022	ACRE	DELINPJD	38.291366	-121.707541	
DD-012	California	R5UB	Area	0.126841	ACRE	DELINPJD	38.291539	-121.712245	
DD-013	California	R5UB	Area	0.646778	ACRE	DELINPJD	38.293317	-121.716252	
DD-014	California	R5UB	Area	0.405757	ACRE	DELINPJD	38.293509	-121.721283	
DD-015	California	R5UB	Area	0.102132	ACRE	DELINPJD	38.292496	-121.707152	
DD-016	California	R5UB	Area	0.044881	ACRE	DELINPJD	38.293513	-121.723734	
DD-017	California	R5UB	Area	0.204067	ACRE	DELINPJD	38.292617	-121.698584	
DD-018	California	R5UB	Area	0.230619	ACRE	DELINPJD	38.29489	-121.72475	
DD-019	California	RSUB	Area	1.165512	ACRE		38.293037	-121.694037	
DD-020	California	ROUB	Area	0.302962	ACRE		38.296077	-121.098573	
DD-021	California	RSUB	Area	1 750554	ACRE		38 20/056	-121.721703	
DD-022	California	R5UB	Area	0 305816	ACRE		38 291729	-121.702042	
DD-024	California	R5UB	Area	0 734886	ACRE	DELINE JD	38 296986	-121.7 12002	
DD-025	California	R5UB	Area	0.44208	ACRE	DELINPJD	38.298603	-121.71896	
DD-026	California	R5UB	Area	0.247263	ACRE	DELINPJD	38.295831	-121.707155	
DD-027	California	R5UB	Area	0.199092	ACRE	DELINPJD	38.298612	-121.714528	
DD-028	California	R5UB	Area	0.024956	ACRE	DELINPJD	38.298545	-121.698546	
DD-029	California	R5UB	Area	0.603457	ACRE	DELINPJD	38.298631	-121.709646	
DD-030	California	R5UB	Area	0.352111	ACRE	DELINPJD	38.298604	-121.694323	
DD-031	California	R5UB	Area	0.788653	ACRE	DELINPJD	38.29862	-121.70506	
DD-032	California	R5UB	Area	0.513586	ACRE	DELINPJD	38.29863	-121.700706	
DD-033	California	R5UB	Area	0.280414	ACRE	DELINPJD	38.298743	-121.725736	
DD-034	California	R5UB	Area	0.482126	ACRE	DELINPJD	38.298732	-121.72044	
DD-035	California		Area	0.037 195	ACRE		30.290039	-121.702829	
DD-030	California	RSUB	Area	0.339241	ACRE		38 300565	121.715157	
DD-038	California	RSUB	Area	0.785655	ACRE		38 300161	-121.094570	
DD-039	California	R5UB	Area	0.016509	ACRE	DELINPJD	38.30253	-121.69448	
DD-040	California	R5UB	Area	0.763044	ACRE	DELINPJD	38.302602	-121.722258	
DD-041	California	R5UB	Area	0.022526	ACRE	DELINPJD	38.302539	-121.694152	
DD-042	California	R5UB	Area	0.338162	ACRE	DELINPJD	38.302594	-121.715151	
DD-043	California	R5UB	Area	0.060467	ACRE	DELINPJD	38.302758	-121.726819	
DD-044	California	R5UB	Area	0.496498	ACRE	DELINPJD	38.302751	-121.723051	
DD-045	California	R5UB	Area	0.631547	ACRE	DELINPJD	38.302748	-121.716356	
DD-046	California	R5UB	Area	0.059296	ACRE	DELINPJD	38.302728	-121.694258	
DD-047	California	R5UB	Area	0.6717	ACRE	DELINPJD	38.304923	-121.727635	
DD-048	California	R5UB	Area	1.73367	ACRE	DELINPJD	38.302273	-121.702846	
DD-049	California	ROUB	Area	0.29512	ACRE		38.30227	-121.711894	
DD-050	California	RSUB	Area	0.009097	ACRE		38 302200	-121.707134	
DD-052	California	R5UB	Area	0.300020	ACRE	DELINE.ID	38 304316	-121.050345	
DD-053	California	R5UB	Area	0 58592	ACRE	DELINPJD	38 30589	-121 709526	
DD-054	California	R5UB	Area	0.791024	ACRE	DELINPJD	38.3059	-121.705	
DD-055	California	R5UB	Area	0.140899	ACRE	DELINPJD	38.305907	-121.729137	
DD-056	California	R5UB	Area	0.487145	ACRE	DELINPJD	38.306595	-121.725254	
DD-057	California	R5UB	Area	0.838066	ACRE	DELINPJD	38.30661	-121.717543	
DD-058	California	R5UB	Area	0.251667	ACRE	DELINPJD	38.306394	-121.73033	
DD-059	California	R5UB	Area	0.175958	ACRE	DELINPJD	38.306744	-121.723129	
DD-060	California	R5UB	Area	0.718466	ACRE	DELINPJD	38.306751	-121.717503	
DD-061	California	R5UB	Area	0.502335	ACRE	DELINPJD	38.306748	-121.727477	
DD-062	California	R5UB	Area	0.120943	ACRE	DELINPJD	38.307022	-121./31025	
DD-064	California		Area	0.04232			38 207060	-121.098438	
DD-004	California	R5LIB		0.104190	ACRE		38 30781	-121.08/102	
DD-066	California	R5UB	Area	0.042017	ACRE		38 309908	-121 697508	
DD-067	California	R5UB	Area	0.116124	ACRE	DELINPJD	38.309941	-121.70957	
DD-068	California	R5UB	Area	0.105948	ACRE	DELINPJD	38.309928	-121.704967	
DD-069	California	R5UB	Area	0.190275	ACRE	DELINPJD	38.309904	-121.695284	
DD-070	California	R5UB	Area	0.105128	ACRE	DELINPJD	38.309922	-121.700704	
DD-071	California	R5UB	Area	0.827594	ACRE	DELINPJD	38.310632	-121.722069	

Waters_Name	State	Cowardin_Code HGM_Cod	le Meas	Туре	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
DD-072	California	R5UB	Area		0.300647	ACRE	DELINPJD	38.310651	-121.715212	
DD-073	California	R5UB	Area		0.365737	ACRE	DELINPJD	38.310762	-121.715183	
DD-074	California	R5UB	Area		0.819945	ACRE	DELINPJD	38.310769	-121.722022	
DD-075	California	R5UB	Area		0.138792	ACRE	DELINPJD	38.30893	-121.693874	
DD-076	California	R5UB	Area		0.397385	ACRE	DELINPJD	38.306786	-121.694023	
DD-077	California	R5UB	Area		0.075795	ACRE	DELINPJD	38.311865	-121.695109	
DD-078	California	R5UB	Area		0.104985	ACRE	DELINPJD	38.31347	-121.696363	
DD-079	California	R5UB	Area		0.679778	ACRE	DELINPJD	38.311918	-121.702818	
DD-080	California	R5UB	Area		0.157402	ACRE	DELINPJD	38.313943	-121.700646	
DD-081	California	R5UB	Area		0.188328	ACRE	DELINPJD	38.313934	-121.696935	
DD-082	California	R5UB	Area		0.481678	ACRE	DELINPJD	38.313905	-121.694138	
DD-083	California	R5UB	Area		0.012119	ACRE	DELINPJD	38.313917	-121.695153	
DD-084	California	R5UB	Area		0.156506	ACRE	DELINPJD	38.313967	-121.705027	
DD-085	California	R5UB	Area		0.483422	ACRE	DELINPJD	38.31399	-121.710746	
DD-086	California	R5UB	Area		0.286172	ACRE	DELINPJD	38.314043	-121.700544	
DD-087	California	R5UB	Area		0.691426	ACRE	DELINPJD	38.314081	-121.706104	
DD-088	California	R5UB	Area		0.213711	ACRE	DELINPJD	38.313717	-121.723423	
DD-089	California	R5UB	Area		1.58175	ACRE	DELINPJD	38.311034	-121.727015	
DD-090	California	ROUB	Area		0.924894	ACRE	DELINPJD	38.314704	-121.720072	
DD-091	California	ROUB	Area		0.946183	ACRE	DELINPJD	38.314714	-121.715437	
DD-092	California	ROUB	Area		0.51194	ACRE		38.314901	-121.719118	
DD-093	California	ROUB	Area		1.252171	ACRE	DELINPJD	38.314881	-121.712494	
DD-094	California	ROUB	Area		0.522329	ACRE		38.315055	-121.705941	
DD-095	California	ROUB	Area		1.172485	ACRE		38.31502	-121.699234	
DD-096	California		Area		0.004038	ACRE		30.31001	101 7104	
DD-097	California		Area		0.242344	ACRE		30.310013	-121.7104	
DD-098	California		Area		0.9115/1	ACRE		30.310024	-121.712000	
DD-099	California		Area		0.343445	ACRE		30.310021	-121.700000	
DD-100	California	ROUB	Area		0.034100	ACRE		20 210049	121.099020	
102	California	RSUB	Area		0.030931	ACRE		38 318058	121.710313	
DD-102	California	RSUB	Area		0.112733	ACRE		38 318054	121.71357	
DD-103	California	RSUB	Δισα		0.134113	ACRE		38 318957	-121.713042	
DD-105	California	RSUB	Διοα		0.037003	ACRE		38 318073	-121.700003	
DD-106	California	RSUB	Area		0.889053	ACRE		38 316957	-121.033073	
DD-107	California	R5UB	Area		0 195851	ACRE	DELINP.ID	38 322845	-121 713805	
108	California	R5UB	Area		0.691634	ACRE		38 322841	-121 708086	
DD-109	California	R5UB	Area		0 719843	ACRE	DELINP.ID	38 322843	-121 699066	
DD-110	California	R5UB	Area		0 721896	ACRE	DELINPJD	38 322976	-121 699073	
DD-111	California	R5UB	Area		1.038992	ACRE	DELINPJD	38.322981	-121.708641	
DD-112	California	R5UB	Area		0.913228	ACRE	DELINPJD	38.321308	-121.716912	
DD-113	California	R5UB	Area		0.069668	ACRE	DELINPJD	38.323707	-121.714601	
DD-114	California	R5UB	Area		0.63763	ACRE	DELINPJD	38.326821	-121.707784	
DD-115	California	R5UB	Area		0.719709	ACRE	DELINPJD	38.326833	-121.69908	
DD-116	California	R5UB	Area		0.889236	ACRE	DELINPJD	38.327021	-121.707595	
DD-117	California	R5UB	Area		0.714903	ACRE	DELINPJD	38.327015	-121.699028	
DD-118	California	R5UB	Area		0.906955	ACRE	DELINPJD	38.325683	-121.712701	
DD-119	California	R5UB	Area		20.046476	ACRE	DELINPJD	38.29325	-121.718672	
ID-01	California	R5UB	Area		0.355118	ACRE	DELINPJD	38.296019	-121.718384	
ID-02	California	R5UB	Area		0.05538	ACRE	DELINPJD	38.296732	-121.723409	
ID-03	California	R5UB	Area		0.13811	ACRE	DELINPJD	38.29858	-121.725504	
ID-04	California	R5UB	Area		0.645995	ACRE	DELINPJD	38.300676	-121.720515	
ID-05	California	R5UB	Area		0.617025	ACRE	DELINPJD	38.304656	-121.720745	
ID-06	California	R5UB	Area		0.039172	ACRE	DELINPJD	38.306483	-121.730264	
ID-07	California	R5UB	Area		0.693071	ACRE	DELINPJD	38.308682	-121.721867	
ID-08	California	R5UB	Area		0.044544	ACRE	DELINPJD	38.310244	-121.727156	
ID-09	California	R5UB	Area		0.490906	ACRE	DELINPJD	38.312693	-121.719757	
ID-10	California	R5UB	Area		0.734251	ACRE	DELINPJD	38.316884	-121.705666	
ID-11	California	R5UB	Area		0.231107	ACRE	DELINPJD	38.316877	-121.718761	
ID-12	California	R5UB	Area		0.070405	ACRE	DELINPJD	38.319796	-121.718093	
ID-13	California	R5UB	Area		0.862844	ACRE	DELINPJD	38.320896	-121.705938	
ID-14	California	R5UB	Area		0.007697	ACRE	DELINPJD	38.323074	-121.714933	
ID-15	California	R5UB	Area		0.738501	ACRE	DELINPJD	38.324906	-121.704125	
ID-16	California	KOUB	Area		0.661102	ACRE	DELINPJD	38.328975	-121.703324	
IP-1	California	PUB	Area		0.839223	ACRE	DELINPJD	38.306249	-121.729056	
IP-2	California	PUB	Area		1.067776	ACRE	DELINPJD	38.323534	-121./14101	
100-01	California	PEM	Area		11.03///7	ACRE	DELINPJD	38.293776	-121./15374	
100-02	California	PEM	Area		14.224856	ACRE		38.2981	-121./15156	
100-03	California		Area		2.410626			30.298992	-121.726996	
177-04	California		Area		0.479435			30.299044	-121./14/18	
100-00	Callornia		Alea		13.94002	AUKE	DELINEJD	JU.JUZ4UD	-121.720021	

Waters_Name	State	Cowardin_Code HGM_Code Meas	_Type Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway						
IW-06	California	PEM Area	14.498977	ACRE	DELINPJD	38.303002	-121.718434							
IW-07	California	PEM Area	0.688116	ACRE	DELINPJD	38.303535	-121.726053							
IW-08	California	PEM Area	19.673192	ACRE	DELINPJD	38.306284	-121.719804							
IW-09	California	PEM Area	0.414982	ACRE	DELINPJD	38.306885	-121.729861							
IW-10	California	PEM Area	0.350562	ACRE	DELINPJD	38.306884	-121.72726							
IW-11	California	PEM Area	16.834433	ACRE	DELINPJD	38.310331	-121.718974							
IW-12	California	PEM Area	3.069046	ACRE	DELINPJD	38.31099	-121.714967							
IW-13	California	PEM Area	9.974648	ACRE	DELINPJD	38.314334	-121.717788							
IW-14	California	PEM Area	38.826175	ACRE	DELINPJD	38.315288	-121.708625							
IW-15	California	PEM Area	3.381206	ACRE	DELINPJD	38.318407	-121.718015							
IW-16	California	PEM Area	34.190806	ACRE	DELINPJD	38.318401	-121.705662							
IW-17	California	PEM Area	28.911969	ACRE	DELINPJD	38.319252	-121.699855							
IW-18	California	PEM Area	27.586632	ACRE	DELINPJD	38.322531	-121.704466							
IW-19	California	PEM Area	31.762372	ACRE	DELINPJD	38.323368	-121.704739							
IW-20	California	PEM Area	31.36225	ACRE	DELINPJD	38.326322	-121.703365							
IW-21	California	PEM Area	0.267456	ACRE	DELINPJD	38.327144	-121.706792							
IW-22	California	PEM Area	0.443747	ACRE	DELINPJD	38.327061	-121.710708							
IW-23	California	PEM Area	0.228338	ACRE	DELINPJD	38.314928	-121.722195							
MW-01	California	PEM Area	21.251005	ACRE	DELINPJD	38.277219	-121.703813							
MW-02	California	PEM Area	14.67953	ACRE	DELINPJD	38.277621	-121.699345							
MW-03	California	PEM Area	17.23969	ACRE	DELINPJD	38.279202	-121.699479							
MW-04	California	PEM Area	6.975611	ACRE	DELINPJD	38.283001	-121.710516							
MW-05	California	PFM Area	0 461477	ACRE	DELINP.ID	38 284942	-121 712672							
MW-06	California	PEM Area	6.23677	ACRE	DELINPJD	38,285363	-121.714139							
MW-07	California	PEM Area	124 724264	ACRE	DELINPJD	38 282428	-121 706878							
MW-08	California	PEM Area	112 854488	ACRE	DELINPJD	38 282932	-121 698693							
MW-09	California	PEM Area	121 585053	ACRE	DELINP.ID	38 288639	-121 707789							
MW-10	California	PEM Area	45 31454	ACRE	DELINPJD	38 28877	-121 714443							
MW-11	California	PEM Area	111 004381	ACRE	DELINPJD	38 288707	-121 698407							
MW-12	California	PEM Area	0 530353	ACRE		38 291573	-121 714054							
MW-13	California	PEM Area	28 494862	ACRE	DELINP.ID	38 290056	-121 721525							
MW-14	California	PEM Area	27 554038	ACRE	DELINP.ID	38 291838	-121 719484							
MW-15	California	PEM Area	67 878902	ACRE	DELINP.ID	38 294962	-121 705048							
MW-16	California	PEM Area	70 00/20/	ACRE		38 20/080	-121 70058							
MW-17	California	PEM Area	66 916439	ACRE		38 295066	-121 700691							
MW-18	California	PEM Area	72 600266	ACRE		38 295028	-121 696331							
M\/_19	California	PEM Area	33 73686	ACRE		38 300596	-121.000001							
MW-13	California	PEM Area	37 070005	ACRE		38 300634	-121 700600							
MW-20	California	PEM Area	67 495923	ACRE		38 302276	-121.705038							
M\N/_22	California	PEM Area	78 121/75	ACRE		38 302267	-121.703030							
MM/ 23	California	PEM Area	30 745014	ACRE		38 30/180	121 700664							
MM/ 24	California		30 60000	ACRE		38 30/156	121 60647							
MM/ 25	California		6 267536	ACRE		38 306343	121 606/78							
MM/ 26	California		0.207550	ACRE		20 207/60	121 700621							
MN/ 27	California	PEM Area	2.390377	ACRE		20 207022	121.00021							
MN/ 29	California	PEM Area	0.002432	ACRE		30.307932	121.0907.04							
MM/ 20	California	PEM Area	0.90249	ACRE		29 200125	121.001/07							
MN/ 20	California	PEM Area	0.07990	ACRE		20.309133	121.090002							
NIV - 30	California	PEIM Alea	9.39/1/3	ACRE		30.300421	-121.701703							
MIN/ 22	California	PEM Area	0.069071	ACRE		30.309039	121.094921							
NIN 22	California	PEM Area	0.000071	ACRE		30.309093	121.097572							
NIN 24	California	PEM Area	1 645726	ACRE		30.309939	121.097.043							
NIN/ 25	California	PEIM Alea	1.0407.00	ACRE		30.310300	-121.094009							
MM/ 26	California	PEM Area	4.070132	ACRE		29 209506	121.700091							
MN/ 27	California	PEM Area	43.303223	ACRE		30.300390	121.705000							
NIN/ 20	California	PEIM Alea	40.000990	ACRE		30.300002	101 60679							
MM/ 20	California	PEM Area	0.141403	ACRE		20 200106	121 700625							
MN/ 40	California	PEM Area	0.277109	ACRE		29 207955	121.00023							
	California	PEM Area	0.021990	ACRE		20.307033	121.095094							
	California	PEM Area	0.740020	ACRE		38.311499	-121.090819							
	California	PEM Area	0.01/010	ACRE		38.311503	-121.099037							
NIVV-40	California		0.110093	ACRE		30.290139	121.7 10001							
г-I D 2	California	Area	0.954864	ACRE		30.300041	-121.095021							
	California	PUB Area	9.142273	ACRE	DELINPJD	38.296857	-121./243/9							
	California	PEIVI Area	2./15942	ACRE	DELINPJD	38.325861	-121./129/7							
	California	FEIVI Area	2.769671	ACRE		30.319/89	-121./1891/							
PIVIN I-3	California	PEIVI Area	2.532833	ACRE	DELINPJD	38.310232	-121.728316							
	California	PEIVI Area	0.03536	ACRE	DELINPJD	38.293394	-121.693425							
PMT-02	California	PEIVI Area	0.057646	ACRE	DELINPJD	38.28/986	-121.693425							
PMT-03	California	PEIVI Area	0.088649	ACRE	DELINPJD	38.285912	-121.693447							
PIVI I -04	California	PEIVI Area	0.06659	ACRE	DELINPJD	38.284196	-121.693461							
PM1-05	California	PEM Area	0.747502	ACRE	DELINPJD	38.279411	-121.695433							
Waters_Nar	me State	Cowardin	Code	HGM_	Code Meas	_Type Ar	nount	Units	Waters_	Туре	Latitude	Longitude	Local_	Waterway
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PMT-06	California	PEM			Area		0.231423	ACRE	DELINP	JD	38.277587	-121.707577		
PMT-07	California	PEM			Area		0.222997	ACRE	DELINP	JD	38.280371	-121.709698		
PMT-08	California	PEM			Area		1.444278	ACRE	DELINP	JD	38.283468	-121.71364		
PMT-09	California	PEM			Area		0.095798	ACRE	DELINP	JD	38.2911	-121.716207		
PMT-10	California	PEM			Area		0.138515	ACRE	DELINP	JD	38.292336	-121.716249		
PMT-11	California	PEM			Area		0.100668	ACRE	DELINP	JD	38.28766	-121.719909		
PMT-12	California	PEM			Area		0.113711	ACRE	DELINP	JD	38.29263	-121.723014		
PMT-13	California	PEM			Area		0.207216	ACRE	DELINP	JD	38.295791	-121.726425		
PMT-14	California	PEM			Area		0.04653	ACRE	DELINP	JD	38.298489	-121.728794		
PMT-15	California	PEM			Area		0.646435	ACRE	DELINP	JD	38.305206	-121.728648		
SNT-1	California	R2UB			Area		31.540938	ACRE	DELINP	JD	38.314394	-121.710314		
SNT-2	California	R2UB			Area		9.010746	ACRE	DELINP	JD	38.315006	-121.723612		
SSW-1	California	PSS			Area		4.290698	ACRE	DELINP	JD	38.289156	-121.718002		
SSW-2	California	PSS			Area		3.579142	ACRE	DELINP	JD	38.292543	-121.713362		
ST-1	California	R1UB			Area		126.96205	ACRE	DELINP	JD	38.281929	-121.712557		
ST-2	California	R1UB			Area		74.48832	ACRE	DELINP	JD	38.280925	-121.694193		
SW-1	California	PEM			Area		0.112386	ACRE	DELINP	JD	38.312319	-121.695028		
SW-2	California	PEM			Area		0.031216	ACRE	DELINP	JD	38.313046	-121.695188		
SW-3	California	PEM			Area		0.07364	ACRE	DELINP	JD	38.313599	-121.695156		

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

• ··	· Easterna laure star and Danta and Attai		D. (December 11				
Applicar Mr. Da	it: Ecosystem Investment Partners, Attn: Ivid Urban	File No.: SPK-2017-00805	2018				
Attach	ed is:		See Section below				
	INITIAL PROFFERED PERMIT (Standard Pern	nit or Letter of permission)	Α				
	PROFFERED PERMIT (Standard Permit or	B					
	PFRMIT DENIAL		 C				
	APPROVED JURISDICTIONAL DETERMIN	NATION	 				
\rightarrow	PREI IMINARY JURISDICTIONAL DETER	F					
Addition CFR Pa	In the following identifies your rights and options in information may be found at <i>http://www.usace.arr</i> int 331.	regarding an administrative appear ny.mil/cecw/pages/reg_materials.as	of the above decision. <i>px</i> or Corps regulations at 33				
A: INIT	IAL PROFFERED PERMIT: You may accept or obje	ect to the permit.					
 ACC final You waiv asso 	ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.						
 OB. that eng forfe obje obje eval Sec 	OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.						
B: PRO	FFERED PERMIT: You may accept or appeal the pe	ermit					
 ACC final You waiv asso 	ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.						
 APF ther Sec the 	APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.						
C: PER by comp received	MIT DENIAL: You may appeal the denial of a permoleting Section II of this form and sending the form to d by the division engineer within 60 days of the date	it under the Corps of Engineers Adr the division engineer (address on r of this notice.	ninistrative Appeal Process everse). This form must be				
D: APP informat	ROVED JURISDICTIONAL DETERMINATION: You tion.	a may accept or appeal the approve	d JD or provide new				
 ACC the JD. 	CEPT: You do not need to notify the Corps to accept date of this notice, means that you accept the approximate of this notice.	t an approved JD. Failure to notify t oved JD in its entirety, and waive all	he Corps within 60 days of rights to appeal the approved				
 APF Adm (add) 	PEAL: If you disagree with the approved JD, you maninistrative Appeal Process by completing Section II dress on reverse). This form must be received by the	y appeal the approved JD under the of this form and sending the form to e division engineer within 60 days of	Corps of Engineers the division engineer f the date of this notice.				
E: PRE	LIMINARY JURISDICTIONAL DETERMINATION: Y	You do not need to respond to the C	orps regarding the preliminary				

JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the
record of the appeal conference or meeting, and any supplemental information that the review officer has determined is
needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the
record. However, you may provide additional information to clarify the location of information that is already in the
administrative record.
POINT OF CONTACT FOR QUESTIONS OR INFORMATION

	L 10 11 11	
If you have questions regarding this decision and/or the appeal	If you only have questions regard	ling the appeal process you may
process you may contact:	also contact:	
Zachary Simmons	Thomas J. Cavanaugh	
Senior Project Manager	Administrative Appeal Review	/ Officer
Enforcement/Special Projects Branch	U.S. Army Corps of Engineer	S
U.S. Army Corps of Engineers	South Pacific Division	
1325 J Street, Room 1350	1455 Market Street, 2052B	
Sacramento, California 95814-2922	San Francisco, California 94	103-1399
Phone: (916) 557-6746, FAX 916-557-7803	Phone: 415-503-6574, FAX 4	15-503-6646)
Email: Zachary.M.Simmons@usace.army.mil	Email: Thomas.J.Cavanau	gh@usace.army.mil
RIGHT OF ENTRY: Your signature below grants the right of entr	ry to Corps of Engineers persor	nnel, and any government
consultants, to conduct investigations of the project site during th	e course of the appeal process	. You will be provided a 15
day notice of any site investigation, and will have the opportunity	to participate in all site investig	ations.
	Date:	Telephone number:
Signature of appellant or agent.		

Aquatic Resources Delineation Report

Lookout Slough Tidal Habitat Restoration and Flood Improvement Project

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Date: December 11, 2018 WRA Project: 26293 Updated: October 2019









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LIST OF ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
CSRL	California Soil Resource Lab
CWA	Clean Water Act
DEM	Digital Elevation Model
DWR	Department of Water Resources
EPA	Federal Environmental Protection Agency
FAC	Facultative Plant
FACU	Facultative Upland Plant
FACW	Facultative Wetland Plant
HTL	High Tide Line
MHW	Mean High Water
NAVD88	North American Vertical Datum of 1988
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
OBL	Obligate Wetland Plant
OHWM	Ordinary High Water Mark
RHA	Rivers and Harbors Act
UPL	Upland Plant
USGS	U.S. Geological Survey
WRA	WRA, Inc.

1.0 INTRODUCTION

This report describes the methods and results of a delineation of aquatic resources within the boundaries of the proposed Lookout Slough Delta Smelt Habitat Restoration Project located in unincorporated Solano County, California (Study Area; Figure 1). The Study Area consists of approximately 3,637 acres of land within the Sacramento River delta and is primarily composed of three properties: Bowlsbey Ranch, Liberty Farms, and Vogel Island (Figure 2). The Project proposes to create, restore, and maintain habitat conditions for Delta smelt (*Hypomesus transpacificus*), as well as other imperiled species, by reconfiguring the levee system and returning the site to tidal marsh habitat.

On multiple dates in 2018, WRA conducted a routine delineation within the Study Area to identify wetlands and non-wetland waters (also referred to as "other waters") potentially subject to jurisdiction by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act (CWA) and/or Section 10 of the Rivers and Harbors Act (RHA). The following sections describe the regulatory background and methods used to guide the delineation and provide a summary of potentially jurisdictional wetlands and non-wetland waters within the Study Area.

This report was updated in October 2019. The report was updated to change the project title and contact information, correct typographical errors and correct spelling and identification of certain plant species. The aforementioned edits did not result in any changes in wetland determination for any sample points, or the extent of potential Waters of the United States and therefore have no effect on the Preliminary Jurisdictional Determination which was issued by the Corps on December 20, 2018.

2.0 REGULATORY BACKGROUND

2.1 Section 404 of the Clean Water Act

Section 404 of the Clean Water Act gives the Environmental Protection Agency (EPA) and the Corps regulatory and permitting authority regarding discharge of dredged or fill material into "navigable waters of the United States." Section 502(7) of the CWA defines "navigable waters" as "waters of the United States, including territorial seas." Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term "waters of the United States" as it applies to the jurisdictional limits of the authority of the Corps under the CWA. A summary of the definition of "waters of the United States" in 33 CFR 328.3 (a) includes (1) waters used for commerce; (2) interstate waters and wetlands; (3) territorial seas; (4) impoundments of waters listed here; (5) tributaries to the above waters; (6) waters and wetlands adjacent to the above waters; and (7) prairie potholes, Carolina and Delmarva bays, Pocosins, western vernal pools, and Texas coastal prairie wetlands, provided these features have a significant nexus to the above listed waters¹; (8) all waters located within the 100-year floodplain of waters listed above in items 1-3 or within 4,000 feet of the high tide line (HTL) or ordinary high water mark (OHWM) of a water listed above in items 1-5, provided those waters are determined to have a significant nexus to waters identified in items 1-3 above. For purposes of the determining Corps jurisdiction under the CWA, "navigable waters" as defined in the CWA are the same as "waters of the U.S." defined in 33 CFR 328.3.

¹ Wetlands and non-wetland waters in this category are similarly situated and are combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of 33 CFR 328.3.

Areas not considered to be "waters of the United States" as defined in 33 CFR 328.3 (b), are summarized as follows: (1) waste treatment systems; (2) prior converted cropland; (3) specific classes of ditches, including (i) ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary, (ii) ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands, and (iii) ditches that do not flow, either directly or through another water, into a water identified in 33 CFR 328.3 paragraphs (a) (1) through (3);



Path: L:\Acad 2000 Files\26000\26293\GIS\ArcMap\2018 Permitting\Delin\20181210\Figure 1 Location Map.mxd



Path: L:\Acad 2000 Files\26000\26293\GIS\ArcMap\2018 Permitting\Delin\20181210\Figure 2 Site Map.mxd

(4) artificially irrigated areas that would otherwise revert to dry land and manmade aquatic features in otherwise dry land such as stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, cooling ponds, reflecting pools, swimming pools, small ornamental waters, depressions incidental to mining and construction activity, erosional features, and puddles; (5) groundwater; (6) stormwater control features; (7) wastewater recycling structures, groundwater recharge basins, percolation ponds for wastewater recycling, and distribution networks for wastewater recycling.

2.1.1 Wetlands

Wetlands are defined in 33 CFR 328.3 (c) as:

...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

The basis for determining whether a given area is a wetland for the purposes of Section 404 of the CWA is outlined in the Corps *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers* Delineation Manual for the respective region. As defined in 33 CFR 328.4 (c), the extent of federal jurisdiction within wetlands is defined as extending to the limit of the wetland as determined using the methods outlined in the manuals.

2.1.2 Non-Wetland Waters

The limit of federal jurisdiction in tidal non-wetland waters extends to the HTL which is defined in 33 CFR 328.4 (a) as:

...the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

The limit of federal jurisdiction in non-tidal non-wetland waters extends to the OHWM which is defined in 33 CFR 328.3 (e) as:

...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

2.2 Section 10 of the Rivers and Harbors Act

The Corps also has jurisdiction over "navigable waters" under Section 10 of the Rivers and Harbors Act of 1899. Section 10 of this Act applies to tidal areas below mean high water (MHW) and includes tidal areas currently subject to tidal influence, as well as historic tidal areas behind levees that both historically and presently reside at or below MHW. "Navigable waters of the U.S.", as defined in 33 CFR 329.4, are "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce."

The act prohibits any unauthorized action that obstructs navigable capacity. These actions can include building of structures; excavation, fill; and alterations and modifications to navigable waters (33 USC 403). A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity. The upper limit of navigable water is at the point along its length where the character of the river changes from navigable to non-navigable, such as at a major fall or rapids. Since the upper limit of navigability of waterways under Section 10 is sometimes difficult to discern, determinations of navigability under Section 10 are often made by the Corps and kept on file, independent of submitted permit applications or delineations.

3.0 STUDY AREA DESCRIPTION

3.1 Land Use

The approximately 3,637-acre Study Area (Figure 2) represents a portion of the San Joaquin-Sacramento River delta that was historically diked and drained for agricultural production. The Study Area is located in the Cache Slough complex at the southern end of the Yolo Bypass between a series of sloughs including Shag Slough to the east, Cache and Haas sloughs to the south west, and Duck Slough to the west. The Study Area is bisected by Lookout Slough, a non-tidal slough. The Study Area is primarily composed of three properties: Bowlsbey Ranch, Liberty Farms, and Vogel Island, and also includes lands immediately adjacent to and between the three properties.

The Study Area is surrounded by Corps flood control levees along the eastern and southwestern boundaries, excluding Vogel Island. The levees along the eastern and southwestern boundaries of the Study Area crest at elevation +21 feet NAVD88, which excludes all tidal and flood waters. The levee surrounding Vogel Island is maintained by the Department of Water Resources (DWR) and crests at crest at approximately +8 feet NAVD88, which keeps out regular tidal waters, but overtops during elevated water flows. Along its western boundary, the Study Area abuts Duck Slough. To the north, the Study Area is bordered by Liberty Island Road, which also runs along a portion of the levee bordering the eastern edge of the site. Both Duck Slough and Lookout Slough are separated from full tidal activity by the Corps levees surrounding the site; however, water levels can be regulated through screw gates installed in the levees along Haas and Cache sloughs. When the screw gates are open, these sloughs may receive muted tidal activity.

Currently the properties within the Study Area are managed for agricultural commodity production and winter waterfowl, activities that may be connected to interstate commerce. These activities have resulted in significant manipulation of the land, including the development of a large water delivery and distribution system (Figure 3), the use of which has resulted in the development of wetland conditions in portions these historically diked and drained properties. In some cases, such as on Bowlsbey Ranch, wetlands have developed incidental to agricultural irrigation. In other cases, such as on Liberty Farms, wetlands have been intentionally created to support winter waterfowl. In the case of Vogel Island, wetland conditions have developed primarily in response to a levee breech in 2017.

Bowlsbey Ranch

The approximately 1,489-acre Bowlsbey Ranch is managed as irrigated pasture for agricultural commodity production, including beef, sheep, and hay. Water is pumped from Duck Slough into two elevated, earthen-berm irrigation ponds located on the western edge of the property. From these ponds, water is pumped into a network of concrete-lined canals that cross the property, dividing pastures. The canals are regulated by a series of flap gates such that water can be regulated and directed to specific portions of the site. Pastures are gently sloped away from each canal, allowing them to be irrigated on a rotating basis throughout the year by siphoning water from the concrete-lined canals onto each pasture and allowing the water to drain toward earthen drainage ditches lining the opposite side of each pasture. The earthen ditches are connected by a series of larger ditches lining the eastern, southwestern, and western sides of the property which allow the irrigation water to be collected and pumped from two locations along the southwestern boundary of the property into Haas Slough. The concrete-lined channels and earthen drainage ditches are shallow and regularly maintained to remove sediment and vegetation. Water levels, velocity, and duration within these features are manipulated based on the irrigation needs of the producer.

Liberty Farms

The approximately 1,630-acre Liberty Farms portion of the Study Area is a private duck club that is managed to support winter waterfowl for recreational hunting. The property is managed as part of the National Resources Conservation Service (NRCS) Wetlands Reserve Program. The property is broken into a checkerboard of fields bisected by a network of earthen ditches used to flood and drain fields at various times of year. During fall, water is pumped from Lookout Slough into the earthen ditches where it is directed across the property and used to flood fields to support waterfowl. Fields are flooded throughout the winter and are drained in spring by pumping water from the site into Shag Slough at one of three drain pumps located along the eastern boundary of the property. Due to site elevations (Figure 4), flooding occurs unevenly throughout the site, with the lower, southern portion of the site being flooded deeper and for longer periods of time. The recurring flooding in the southern portion of the site supports the development of freshwater marsh dominated by tules (Schoenoplectus acutus; OBL) and cattails (Typha spp.; OBL). After the fields are drained in the spring, a selection of fields are disced and planted in crops such as corn or millet which provide forage for winter waterfowl. In other fields, tules and cattails are selectively disced to create a network of open water habitat for waterfowl to utilize when the fields are re-flooded the following winter. Fields in the northern portion of the property do not receive as much flood water and consequently have not developed strong wetland conditions. In these areas, a network of earthen ditches created to bring water into the fields has resulted in patchy wetland conditions, with wetlands developing within and along the ditches and within low-lying areas within each field where water can collect.



Path: L:\Acad 2000 Files\26000\26293\GIS\ArcMap\2018 Permitting\Delin\20181210\Figure 3 Water Infrastructure System.mxd



Path: L:\Acad 2000 Files\26000\26293\GIS\ArcMap\2018 Permitting\Delin\20181210\Figure 4 Existing Elevation.mxd

Vogel Island

The approximately 61-acre Vogel Island portion of the Study Area is used for livestock grazing. Vogel Island is composed of two flood-irrigated fields divided by a raised access road which divides the property from northwest to southeast. The property is flood irrigated from a small pond connected to Cache Slough via a flood gate at the southeastern edge of the site. The levee surrounding this portion of the Study Area keeps out regular tidal waters, but occasionally overtops during elevated water flows. The levee breached in 2017, flooding the fields and resulting in the development of lingering wetland conditions observed in 2018.

3.2 Vegetation

Past and present land use practices within the Study Area have substantially altered the vegetation from its natural state and have resulted in a highly managed landscape dominated by non-native and invasive species, with limited areas of native, but nonetheless managed, vegetation. The structure and composition of vegetation varies substantially across the Study Area based on land use practices.

Vegetation in upland areas along levees and interior roads throughout the Study Area was relatively homogenous, dominated by non-native annual grasses such as wild oats (*Avena* spp.; UPL), ripgut brome (*Bromus diandrus*; UPL), soft chess (*Bromus hordeaceus;* UPL), foxtail barley (*Hordeum murinum*; FACU) and Harding grass (*Phalaris aquatica*; FACU), as well as non-native and invasive herbs such as black mustard (*Brassica nigra*; UPL), yellow star thistle (*Centaurea solstitialis*; UPL), fennel (*Foeniculum vulgare*; UPL), and California bur clover (*Medicago polymorpha*; FACU).

Vegetation within earthen drainage ditches was also relatively homogenous across the Study Area, dominated by emergent wetland species such tule (OBL), California bulrush (*Schoenoplectus californicus*; OBL) and cattails (OBL) along the margins and floating wetland species such as water primrose (*Ludwigia* spp.; OBL) and water hyacinth (*Eichhornia crassipes*; OBL) in the deeper portions of larger ditches. Vegetation within other wetland areas and adjacent upland areas that were not roads or levees varies by property based on the respective land management regimes as described below.

Bowlsbey Ranch

Pastures within the Bowlsbey Ranch are managed for livestock grazing and hay production and are managed as a perennial, no-till system. The pastures are dominated by a mix of seeded and introduced grasses and herbs that have separated into distinctive bands associated with the depth and duration of soil saturation along the elevational gradient in each pasture. Within each pasture, an upland zone occurs along the higher end, nearest to the concrete-lined canals where water remains for the shortest time during flood irrigation. These areas are dominated by facultative upland species such as reed fescue (*Festuca arundinacea*; FACU), smut grass (*Sporobolus indicus*; FACU), and white clover (*Trifolium repens*; FACU). A broad upland-wetland transition zone spans the upper and lower portions of each pasture, dominated by a matrix of facultative upland, facultative, and facultative wetland species such as Pacific bentgrass (*Agrostis avenacea*; FACW), salt grass (*Distichlis spicata*; FAC), reed fescue (FACU), Italian rye grass (*Festuca perennis*; FAC), ribwort (*Plantago lanceolata*; FAC), smut grass (FACU), and white clover (FACU). A strong wetland zone occurs along the lowest portion of each pasture, abutting and draining into the earthen ditches that line each pasture; these areas were dominated by facultative

wetland and obligate wetland species adapted to prolonged inundation such as brass buttons (*Cotula coronopifolia*; OBL), swamp grass (*Crypsis schoenoides*; FACW), iris leaved rush (*Juncus xiphioides*; OBL), and knot grass (*Paspalum distichum*; FACW).

Liberty Farms

Vegetation within the Liberty Farms portion of the Study Area varies greatly from north to south. Due to the greater depth and duration of flooding achieved in the southern half of the site, wetlands within those areas are dominated by a mix of California bulrush (OBL) and cattails (OBL), with other emergent wetland species along the upper margins of each wetland cell. In a limited number of areas, wetland edges have been planted with windrows of Gooding's willow (*Salix gooddingii*; FACW) and cottonwood (*Populus fremontii*; FAC) or have been invaded by Himalayan blackberry (*Rubus armeniacus*; FAC) or tamarisk (*Tamarix* spp.; FAC). In the northern portion of the site where flooding is minimal, vegetation is dominated by a mix of non-native annual grasses and herbs common to ruderal farm fields with clay soils such as black mustard (UPL), soft chess (FACU), Italian rye grass (FAC), bristly ox-tongue (*Helminthotheca echioides*; FAC), foxtail barley (FACU), perennial pepperweed (*Lepidium latifolium*; FAC), and spring vetch (*Vicia sativa*; FACU), with a higher concentration of facultative and facultative wetland species such as Italian rye grass (FAC), found in areas identified to be wetlands.

Vogel Island

Vegetation within Vogel Island is not actively managed as it is on the Bowlsbey or Liberty Farms portions of the Study Area. Vegetation within Vogel Island is passively managed through regular grazing by livestock. Typically, the vegetation within Vogel Island is dominated by a mix of facultative upland, facultative, and facultative wetland plants typical of ruderal farm fields with clay soils such as soft chess (FACU), Italian rye grass (FAC), barley (FAC), and other species. When the levee is overtopped by large storm events and the island is flooded, the vegetation can respond rapidly, converting California bulrush (OBL)-dominated habitat in relatively short time, as occurred following a levee breech in 2017. During the site assessment in 2018, vegetation within the inner portions of Vogel Island was dominated a mix of non-native annual grasses and California bulrush (OBL).

3.3 Soils

The Soil Survey of Solano County (USDA 1977) indicates that the Study Area contains five soil types: Clear Lake clay, 0 to 2 percent slopes, Sacramento clay 0 to 2 percent slopes, Capay clay, Egbert silty clay loam, and San Ysidro sandy loam, 0 to 2 percent slopes, with Sacramento clay and Clear Lake clay dominating the Study Area. Descriptions of each soil series are provided below. The distribution of these soil types within the Study Area are depicted in Figure 5.

Clear Lake Series: Soils in the Clear Lake series consist of very deep, poorly drained clay formed in alluvium derived from sandstone and shale on basins and swales of drainage ways. These soils occur under grasslands, crop fields and rangeland, have negligible to high runoff with slow to very slow permeability with an intermittent perched water table very near the surface during the wet winter months. Clear Lake series is considered a hydric soil where it occurs in Solano County.



Path: L:\Acad 2000 Files\26000\26293\GIS\ArcMap\2018 Permitting\Delin\20181210\Figure 5 Soils.mxd

Clear Lake soils have a very dark gray (N 3/0) clay surface horizon with few fine faint redoximorphic concentrations from 0 to 13 inches below the soil surface, underlain by a very dark gray (10YR 3/0) clay subsurface horizon with no redoximorphic features from 13 to 19 inches below the soil surface.

Sacramento Series: Soils in the Sacramento series consists of clay soils. These soils are highly cultivated under a variety of row crops. In locations not cultivated, vegetation consists of tules, marsh grass, and other hydrophytic vegetation. These soils have very slow to slow runoff with slow permeability with poor to very poor drainage. Sacramento series is considered a hydric soil where is occurs in Sacramento County.

Sacramento soils have a very dark gray (5Y 3/1) clay surface horizon with common fine prominent strong brown (7.5YR 5.6) non-redoximorphic mottles to a depth well below 24 inches.

Capay Series: Soils in the Capay series consist of very deep, moderately well drained clay formed in alluvium derived from sandstone and shale in alluvial fans, alluvial flats, interfan basins, and basin rims. These soils occur under irrigated crops, pasture, and annual grasses. Soils of the Capay series have negligible to high runoff with slow to very slow permeability. Capay soils are considered a hydric soil where it occurs in Solano County.

Capay soils have a very dark grayish brown (10YR 3/2) silty clay surface horizon from 0 to 5 inches below the soil surface, underlain by a very dark grayish brown (10YR 3.2) silty clay subsurface layer with few fine prominent strong brown (7YR 5.6) masses of oxidized iron from 5 to 21 inches below the soil surface, with additional layers below.

Egbert Series: Soils in the Egbert Series consists of very deep poorly drained soils formed in mixed alluvium that forms in basins of river deltas. Vegetation consists of emergent marsh species and irrigated crops. Egbert series is considered a hydric soil where it occurs in Sacramento County.

Egbert soils have a very dark gray (10YR 3/1) silty clay loam plow layer on the soil surface from 0 to 6 inches, with few fine distinct yellowish brown (10YR 3/4) redoximorphic concentrations turning very dark grey (10YR 3/1) when moist. The surface horizon is underlain by a very dark gray (10YR 3/1) silty clay layer with no reported redoximorphic features.

San Ysidro Series: Soils in the San Ysidro series consist of deep, moderately well drained sandy loam that formed in alluvium from sedimentary rocks on old, low terraces. These soils occur under dryland grain and pasture and annual grasslands in a natural setting. San Ysidro soils have slow to medium runoff with very slow permeability and are considered hydric soils where they occur in Solano County.

San Ysidro soils have a light brownish gray (10YR 6/2) fine sandy loam surface horizon with few fine distinct non-redoximorphic mottles of brownish yellow (10YR 6/6) from 0 to 14 inches below the soil surface. The surface horizon is underlain

by a brown (7.5YR 4/4) clay layer with a thin $\frac{1}{4}$ -inch light brownish gray (10YR 6/2) bleached layer on the ped surfaces from 14 to 28 inches below the soil surface.

3.4 Hydrology

The natural hydrology of the Study Area has been highly modified and is actively manipulated as part of the management of the three properties as described in Section 3.1. The Study Area is located in Cache Slough Complex in the San Joaquin-Sacramento River Delta. Located at the base of the Yolo Bypass, the sloughs surrounding the site receive artificially high flows during the winter and spring months as a result of the floodwaters draining through the bypass. With the exception of Vogel Island, the Study Area is protected from these high flows by a Corps levee with a crest at +21 feet NAVD88. Vogel Island is surrounded by a DWR levee with a crest at +8 feet NAVD88 which allows high flows to breech the levee and flood the inner portions of the site.

Hydrologic sources within the Study Area include direct precipitation, high groundwater tables, and water that is actively pumped onto the Study Area from the adjacent sloughs. Vogel Island also receives occasional flooding from extreme high flows. Water from the Study Area drains to the Sacramento River, a traditional navigable water of the U.S., via Cache Slough.

4.0 METHODS

WRA biologists performed a delineation of aquatic resources within the Study Area on April 4 and 5, May 9, and July 20, 2018. Prior to conducting the evaluation, WRA reviewed a range of background materials including the *Soil Survey of Solano County* (USDA 1977), the California Soil Resource Lab's (CSRL) online soil viewer (CSRL 2018), the National Wetland Inventory (NWI; USFWS 2018), and the U.S. Geological Survey (USGS) Liberty Island 7.5-minute quadrangle map (USGS 1916, 2015). WRA also reviewed historic aerial imagery from Google Earth (1993-2018).

During the on-site evaluation, WRA followed the methods outlined in *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement; Corps 2008), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* ("OHWM Guide"; Lichvar and McColley 2008). The jurisdictional wetlands were identified and their boundaries mapped using the Routine Method described in the Corps Manual. The jurisdictional limits of non-wetland waters under Section 404 of the CWA were mapped based on a combination of field indicators described in the OHWM Guide and Regulatory Guidance Letter 05-05 (Corps 2005) and the use of tidal elevation data from nearby tide stations. The jurisdictional limits of non-wetland waters under Section 10 of the Rivers and Harbors Act were based on maps hosted on the Sacramento District's website², with modifications based on current site conditions.

² http://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Navigable-Waters-of-the-US/

4.1 Section 404 of the Clean Water Act

4.1.1 Wetlands

Routine Method

WRA followed the Routine Method to evaluate the Study Area for the presence or absence of indicators of the three wetland parameters described in the Corps Manual (Environmental Laboratory 1987) and Arid West Supplement (Corps 2008). Data on vegetation, hydrology, and soils were collected at sample points within potential wetland communities and adjacent upland areas. Sample points that contained positive indicators for hydrophytic vegetation, hydric soils, and wetland hydrology were considered to be wetland. Except in cases of atypical or problematic wetland situations (i.e., difficult wetland situations, as described below), sample points that lacked one or more indicators were considered to be upland. Sample point data were reported on Arid West Supplement data forms. Sample point locations were recorded using a handheld GPS unit with sub-meter accuracy.

Wetland boundaries were identified using a combination of indicators observed on the ground, most often minor shifts in topography and changes in dominant vegetation, in addition to other indicators. Where wetland boundaries were broad and difficult to determine in the field (e.g. the irrigated pastures on Bowlsbey Ranch, wetland signatures visible in recent and historical aerial imagery from Google Earth (March 2011, June 2013, April 2014, July 2016) was used to determine boundaries. Based on a WETS hydrological analysis (see summary below and full analysis in Appendix A), WRA determined that the photos represent periods with normal to slightly below normal precipitation levels. Using imagery from normal periods allowed WRA to identify the normal extent of wetland conditions across the site. Using imagery from drier than normal periods allowed WRA to more easily visualize trends in vegetation and soil conditions due to the stronger juxtaposition of wet and dry areas. This was particularly important on Bowlsbey Ranch where regular irrigation maintains green vegetation throughout the year, making it difficult to distinguish between wetland and upland vegetation on aerial imagery from periods of normal rainfall.

WRA also utilized high resolution aerial image of the Study Area acquired by Wood Rogers on October 24, 2017 and topographic survey data also from Wood Rogers acquired on December 12, 2017. The survey data was processed into an elevation Digital Elevation Model (DEM) raster with a horizontal resolution of 1 ft. x 1 ft. using ArcGIS software. The high resolution aerial imagery and elevation data were utilized during heads-up digitizing to refine wetland boundaries.

Difficult Wetland Situations

The Arid West Supplement (Corps 2008) includes recommended procedures for completing wetland delineations in areas of "difficult wetland situations" in which wetlands may lack one or more indicators due to natural or anthropogenic factors. Although the Corps Manual and Arid West Supplement were utilized in the wetland determination, they do not provide exhaustive lists of the difficult situations and problem areas that can arise during delineations in the Arid West. In these situations, the Corps Manual and Regional Supplements stress the importance of using best professional judgment and knowledge of the ecology of the wetlands in the region during the collection and interpretation of data in difficult sites.

The Study Area is located in a diked and drained portion of the former Yolo Basin, a floodplain of the Sacramento River that formerly experienced both seasonal and storm-related flooding and

daily flooding from tidal activity. Historically, these areas were tidally influenced wetlands bisected by a network of tidal sloughs (USGS 1916), but were isolated from tidal influence by levees built to reclaim these areas for use in agriculture and other purposes. The majority of the soils found on the site are on the County's list of hydric soils, and where areas of diked former baylands have retained native soils, they can retain many wetland indicators that formed when these areas were tidal marsh. Soils in diked former baylands are often indistinguishable from soils in extant tidal marsh, regardless of the current hydrological regime of the area. In areas where redoximorphic features were observed in both suspected wetlands and suspected uplands, the wetland determination and mapping of wetland boundaries were based on the presence and extent of positive indicators for hydrophytic vegetation and wetland hydrology. When soils did not contain redoximorphic features or meet other indicators of hydric soils, they were treated as upland soils, regardless of their status on the County list.

WETS Analysis

A hydrologic analysis (i.e., WETS analysis; USDA 1997; Sprecher and Warne 2000) was conducted to determine whether precipitation levels during the three months prior to each aerial image used by WRA and prior to each site visit were above, below, or within the 30-year average for the region. Long-term precipitation data (i.e., the WETS table) were obtained from the weather station in nearby Fairfield, located approximately 18 miles west of the Study Area, part of the National Weather Service Cooperative Network. Daily precipitation data for the three months preceding the date of each aerial image used by WRA, as well as for the date of each site visit by WRA, were obtained from the DWR Hastings Tract East weather station located approximately 2 miles southwest of the Study Area. A summary of the results of the WETS analysis is provided below in Table 1; the full analyses are provided as Appendix A.

Date	Description	Relative Precipitation Levels
March 2011	Google Earth Aerial Image	Normal
June 2013	Google Earth Aerial Image	Normal
April 2014	Google Earth Aerial Image	Normal
July 2016	Google Earth Aerial Image	Drier than Normal
October 24, 2017	Wood Rogers Aerial Image	Drier than Normal
April 4-5, 2018	Delineation Site Visit	Normal
May 9, 2018	Delineation Site Visit	Normal
July 20, 2018	Delineation Site Visit	Drier than Normal

Table 1. Summary of WETS Precipitation Analysis

4.1.2 Non-Wetland Waters

This study also evaluated the presence of non-wetland waters potentially subject to Corps jurisdiction under Section 404 of the CWA. Non-wetland waters subject to Corps jurisdiction include lakes, rivers, and streams (including intermittent streams) in addition to all areas below the HTL in areas subject to tidal influence or to all areas below the OHW in non-tidal areas.

High Tide Line

A small portion of the Study Area occurs on the outboard side of the levees surrounding the site and is subject to the ebb and flow of the tides. In these areas, the HTL was used to identify the extent of Corps jurisdiction under Section 404 of the CWA. Because the Study Area is located at the bottom of the Yolo Bypass, it receives artificially high water levels during flood months when water is directed from the Sacramento River into the Bypass. These artificially high water levels were filtered out when determining the HTL by excluding data from flood months (i.e., by using data only from non-flood months). The Fremont Weir is considered the start of the Yolo Bypass (DWR 2010) and is opened when the Sacramento River is in flood stage. Non-flood months correspond to months when the Fremont Weir was opened in less than 15% of the years to release flood waters into the Yolo Bypass. For example, the Fremont Weir was only opened in April seven times between 1971 and 2010 (14% of the possible years), so is considered a nonflood month. The elevation of the HTL in tidally influenced portions of the Study Area (i.e., outboard of the perimeter levees) was determined by averaging the highest observed water level for every non-flood month between 2010 and 2017 at the DWR Yolo Bypass Liberty Island (LIY) tide gauge (Table 2), which resulted in an elevation of 7.26 feet NAVD88.

Manth		Average							
WOITH	2010	2011	2012	2013	2014	2015	2016	2017	Average
Jan*	7.89	7.58	7.33	7.12	6.82	6.98	7.73	15.37	8.35
Feb*	7.48	7.36	6.72	6.7	7.07	7.11	7.41	17.2	8.38
Mar*	7.18	11	6.91	7.01	6.74	6.44	7.79	12.76	8.23
Apr	7.11	8.13	7.12	6.82	6.67	6.97	6.99	8.15	7.25
May	6.97	7.85	7.01	6.93	6.82	6.85	6.8	7.94	7.15
Jun	7.1	7.7	9.33	7.68	7.53	6.9	7.43	7.73	7.68
Jul	7.48	7.56	9.21	7.51	7.58	7.39	7.48	7.44	7.71
Aug	7.22	7.1	9.08	7.16	7.14	7.3	7.33	7.46	7.47
Sep	6.72	7.2	6.58	7.15	7.25	7	6.89	7.38	7.02
Oct	6.94	6.91	6.79	6.71	6.96	7.14	6.81	6.71	6.87
Nov	6.98	7.01	7.46	6.46	6.83	7.16	6.82	6.66	6.92
Dec*	8.29	6.71	7.87	6.96	7.8	7.56	7.98	6.73	7.49
	Average of all non-flood observations:								7.26

Table 2. Highest Observed Water Levels (feet NAVD88) at DWR Yolo Bypass Liberty Island (LIY) Tide Gauge (2008-2017)

* Typical flood months when the Fremont Weir is opened.

Ordinary High Water Mark

The inboard portions of the Study Area are not subject to the ebb and flow of the tides, and in these areas, the OHWM was used to identify the extent of Corps jurisdiction under Section 404 of the CWA. The location of the OHWM was determined based on a combination of indicators observed on the ground (e.g., water stains or scour marks). The width between the OHWM on either side of each feature was visually estimated in the field and, when possible, the segments of the centerline or edges were mapped using handheld GPS units with sub-meter accuracy. However, due to dense Himalayan blackberry (FAC) along the upland edge of some channels and dense, head-high emergent vegetation along the wetted edge of some channels, it was not possible to accurately estimate channel widths or obtain GPS data. In those areas, channels were hand-digitizing in ArcGIS using high-resolution aerial imagery and corresponding elevations in the high-resolution Lidar data.

4.2 Section 10 of the Rivers and Harbors Act

The inland jurisdictional limits of non-wetland waters under Section 10 of the Rivers and Harbors Act were determined based on an online mapping tool hosted on the Corps Sacramento District's website³. Within these areas, the horizontal limit of Corps jurisdiction under Section 10 was located at MHW, or 5.9 feet NAVD88 as determined from the Yolo Bypass Liberty Island (LIY) tide gauge operated by the DWR.

5.0 RESULTS

As described in Section 3.0, the Study Area is primarily composed of three distinct properties each with different land uses that have resulted in marked differences in vegetation and the development of wetland conditions. All three properties have systems for passively or actively bringing water from the adjacent sloughs inboard of the levee system. Although the three systems vary in operation, they each serve to flood irrigate areas that were historically diked and drained. In the case of the Bowlsbey Ranch, regular flood irrigation combined with heavy clay soils and poor drainage has resulted in the development of wetland conditions within the lower portions of most pastures (see Irrigated Wetlands). In the case of Liberty Farms, the property is managed as an NRCS Wetland Reserve and is intentionally flooded to promote the development of marsh habitat to support waterfowl. In the case of Vogel Island, regular flood irrigation combined with periodic overtopping of the levee have resulted in a fluctuating mix of non-native annual grassland and marsh habitat, with marsh habitat limited to the deepest portions of the site during non-flood years and expanding the majority of the site during and immediately following flood years.

Both the Bowlsbey Ranch and Liberty Farms have an extensive network of ponds and ditches used to store and distribute water used to flood irrigate pastures and for flood management of wetland habitat. Some of these features are earthen-lined, relatively permanent waters and may be considered jurisdictional. Other features are concrete-lined and contain water only during active irrigation and may not be considered jurisdictional.

Water from all three portions of the Study Area drains to the Sacramento River, a traditional navigable water of the United States, via Cache Slough. In addition, aquatic resources on all

³ http://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Navigable-Waters-of-the-US/

three properties may be connected to interstate commerce through sales of agricultural products and/or waterfowl hunts.

Descriptions of the aquatic resources identified within the Study Area that are potentially subject to federal jurisdiction under Section 404 of the CWA and/or Section 10 of the RHA are provided in the following sections. An overview of aquatic resources mapped within the Study Area is provided in Figure 6, and a summary of aquatic resource acreages is provided in Table 3. Maps showing the location and extent of aquatic resources mapped within the Study Area are provided as Appendix B. Wetland Determination Data Forms are provided as Appendix C. Photographs of the Study Area are provided as Appendix D. A list of all plant species observed during the delineation site visits is included as Appendix E.

			Linoar	Potential Waters of the U.S.		
Habitat Type	Classification*	Acres	Feet	Section 10/404	Section 404	
Wetlands						
Irrigated Wetland	PEM2Kf	309.56	-	-	309.56	
Managed Wetland	PEM1/2Kf	1,339.15	-	-	1,339.15	
Perennial Marsh (Non-Tidal)	PEM1Fx	8.02	-	-	8.02	
Perennial Marsh (Tidal)	PEM1T	4.24	-	-	4.24	
Scrub-Shrub Wetland	PSSR	7.87	-	4.29	3.58	
Seasonal Wetland	PEM2A/C	0.22	-	-	0.22	
	Total:	1,669.06	-	4.29	1,664.77	
Non-Wetland Waters						
Drainage Ditch	R5UBFx	84.36	203,938	-	84.36	
Irrigation Ditch	R5UBAx	6.39	46,917	-	6.39	
Irrigation Pond	PUBKh	1.91	-	-	1.91	
Pond	PUBHx	10.10	-	-	10.10	
Slough (Non-Tidal)	R2UBHx	40.55	22,178	-	40.55	
Slough (Tidal)	R1UBV/x	201.45	34,025	198.09	3.36	
	Total:	344.76	307,058	198.09	146.67	

Table 3. Sum	mary of Potentiall	y Jurisdictional Features	Mapped within the Stud	ly Area
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*See Federal Geographic Data Committee 2013



Path: L:\Acad 2000 Files\26000\26293\GIS\ArcMap\2018 Permitting\Delin\20181210\Figure 6 Wetland Overview.mxd

5.1 Section 404 of the Clean Water Act

5.1.1 Wetlands

Irrigated Wetlands

Features in the Irrigated Wetland category were mapped primarily in the pastures on the Bowlsbey Ranch. These wetlands occur in the lowest portion of most fields, on the opposite of the field from the concrete-lined irrigation ditches from which the fields are flood irrigated. The fields are actively flood irrigated on a rotating basis by siphoning water from the concrete-lined irrigation ditches onto each field where it drains into earthen-lined drainage ditches on the opposite side of the field. In some fields, water drains quickly and no wetland conditions have formed. However, in many fields drainage is slow and water backs-up in the lower portions of the fields, resulting in wetland conditions. At the lowest portion of the fields, wetland conditions are strong, with the vegetation dominated by obligate and facultative wetland plants, soils containing clear redoximorphic features, and areas of inundated or saturated soils. Moving higher in elevation toward the center of the fields, wetland conditions are less strong, with vegetation dominated by a mix of facultative and facultative upland species, soils containing marginal or no redoximorphic features, and indicators of wetland hydrology primarily limited to indirect observations such as biotic crusts. Moving to the upper end of the fields, nearest to the concretelined irrigation ditches, upland conditions prevail, with vegetation dominated by a mix of facultative, facultative upland, and upland plants, soils containing no redoximorphic features, and no evidence of wetland hydrology.

Vegetation within areas designated as irrigated wetlands was dominated by species such as brass buttons (OBL), swamp grass (FACW), iris leaved rush (OBL), knot grass (FACW), salt grass (FAC), reed fescue (FACU), Italian rye grass (FAC), meadow barley (FACW), bird's foot trefoil (FAC), ribwort (FAC), smutgrass (FACU), and white clover (FACU) in the transition zones. Soils were generally clays or loamy clays with a matrix color of very dark grey (2.5Y 3/1) to black (7.5YR 2.5/1) and redoximorphic features consisting of strong brown (7.5YR 4/6) to yellowish red (5YR 4/6) concentrations at 5 to 20 percent cover along root channels and pore linings and as soft masses in the matrix. Soils most often met the Redox Dark Surface (F6) indicator. Indicators of wetland hydrology consisted of primary indicators including Surface Water (A1; in recently irrigated fields), Biotic Crust (B12), and Oxidized Rhizospheres along Living Roots (C3); most wetland areas also met the FAC-Neutral Test (D5).

Due to the very gradual nature of the slope in the pastures on the Bowlsbey Ranch, wetlands that have developed in these fields have broad transition zones marked by a mosaic of areas dominated by a mix of facultative and facultative upland plants, with and without clear redoximorphic features, and only patchy, indirect indicators of wetland hydrology. Given the complexity of these areas and their fluctuation from field to field, it was not possible to rely on indicators visible in the field such as a clear shift in vegetation, sharp changes in topography, or the outer extent of redoximorphic features or indicators of wetland hydrology. This was further complicated by the presence of soils such as Clear Lake clay and Sacramento clay, which are on the County's hydric soils list and may be considered hydric regardless of the presence of clear redoximorphic features, potentially rendering soils across the entire site as hydric, despite their current hydrologic regime. Further, irrigation occurs on a rotating basis, which left some fields with standing water during the assessment and other fields dry, making it difficult to rely on hydrology to determine wetland boundaries.

Because it was not possible to rely on features on the ground, aerial imagery from multiple years was used to identify portions of the fields with regular, long-term saturation. During the site assessments, ground truthing was conducted to correlate aerial signatures with conditions on the ground and it was determined that the aerial signatures were largely correlated with a shift in vegetation associated with a transition from bird's foot trefoil (FAC), Italian rye grass (FAC), and squirreltail barley (FAC) to reed fescue (FACU) or smutgrass (FACU), with the lighter colors associated with areas of squirreltail barley (FAC) (among other species) and darker colors associated with reed fescue (FACU) (among other species) and these transitions were determined to be demonstrative of the wetland boundary. To be conservative, the wetland boundary was placed on the outer edge of the lighter signatures (i.e., on the outer edge of the transition zone), associated with the outer edge of areas of squirreltail barley (FAC).

These wetlands were classified as PEM2Kf: Palustrine (P), emergent (EM), non-persistent (2), artificially flooded (K), and farmed (f).

Managed Wetlands

Features in the managed wetland category correspond to the wetlands on Liberty Farms that are managed for winter waterfowl and the wetlands on Vogel Island that are managed for grazing. These features are passively flooded using screw gates in the levees that allow tidal water to passively enter the site.

On Liberty Farms, water passively enters the site from a flashboard gate installed in Lookout Slough at the western side of the site and is also pumped from Lookout Slough at a single location at the northern portion of the site (Figure 3). Water is passively moved around the site and into wetland checks by a series of earthen-lined ditches connected with flood gates and other mechanisms for controlling where water is delivered across the site. Although there is some control over where the water moves, water is not pumped once it is inboard of the levee system and relies on gravity to move across the site. As such, the lower, southern and middle portions of the site receive more water than the higher, northern portions of the site. This is reflected in a sharp change in dominant vegetation from cattails (OBL) and tules (OBL) in the southern and middle portions of the site. A corresponding trend is seen in wetlands on Liberty Farms, with the southern portions of the site dominated by dense cattail (OBL) and tule (OBL) vegetation and with standing water for a substantial portion of the year and the northern portions of the site containing a mosaic of wetland and upland areas and a substantially shorter hydroperiod.

On Liberty Farms, vegetation within areas designated as managed wetlands was dominated by a mix of perennial marsh species such as tule (OBL), California bulrush (OBL), and cattails (OBL) in the southern wetland cells which receive greater inundation and seasonal wetland species such as Italian rye grass (FAC) and barley (FAC) in the northern wetland cells which receive lesser levels of irrigation water. Soils were generally clays or loamy clays with a matrix color of very dark greyish brown (10YR3/2) to black (10YR 2/1) and redoximorphic features consisting of dark reddish brown (5YR 3/4), yellowish red (5YR 4/6), and brown (7.5YR 4/4) concentrations along pore linings and root channels and as soft masses in the matrix at 2 to 15 percent. Soils most often met the Redox Dark Surface (F6) indicator. In the lower, southern portions of Liberty Farms, many sample points were inundated under deep water during the time of sampling and soils were not directly assessed, but were rather assumed to be hydric based on regular, long-term inundation, vegetation dominated by obligate, perennial wetland plants, and standing water during the time of the assessment. Based on these conditions and an understanding of the management regime, it was assumed that soils are frequently ponded and/or flooded for long (7 to 30 days) to

very long (>30 days) duration during the growing season, thereby meeting Hydric Soil Criteria 3 and/or 4 described in Hydric Soils Technical Note 13 from the National Technical Committee for Hydric Soils. In the drier northern portions of Liberty Farms, wetland hydrology indicators generally included biotic crusts (B12) and oxidized rhizospheres along living roots (C3). In the wetter, southern portions of Liberty Farms, wetland hydrology indicators generally included surface water (A1), high water tables (A2), saturation (A3), and biotic crusts (B12).

On Vogel Island, water passively enters the site from a screw gate on the eastern side of the island where it is directed onto either side of the site which is bisected by a low berm. During most years, water is controlled such that wetland conditions are limited to the lowest portions of the site. However, the levee surrounding Vogel Island crests at an elevation of +8 feet NAVD88 and breached in 2017, flooding the island and resulting in a shift in vegetation from largely non-native annual grasses and other herbs to dense tules (OBL). When the site was assessed on April 5, 2018, the vegetation contained a mix of tules and non-native grasses and other herbs and appeared to be reverting to non-native grassland.

On Vogel Island, vegetation within areas designated as managed wetlands was dominated by a mix of species including obligate wetland species such as tules and facultative species such as Italian rye grass. Analysis of historic aerial imagery shows this area dominated by non-native grasses in most years, and the current mix of vegetation is due to a levee breach in 2017 due to failure of the screw gate that allows water to enter or drain from the site. The levee breach flooded the site and resulted in a rapid transition from non-native grassland to tules (OBL) and cattails (OBL) which are transitioning back to non-native grassland as the site equilibrates to its historic water regime. Soils were clay with a matrix color of very dark grey (10YR 3/1) in the upper layer and black (5Y 2.5/1) in layers below, with redoximorphic features consisting of yellowish brown (10YR 5/8) concentrations along pore linings and root channels at 10 to 15 percent. Soils met the Redox Dark Surface (F6) indicator. Indicators of wetland hydrology included the primary indicator of Oxidized Rhizospheres Along Living Roots (C3) and secondary indicators of Saturation Visible on Aerial Imagery (C9) and the FAC-Neutral Test (D5).

Wetland boundaries were located at the base of the perimeter levee on in its inboard side and at the base of a berm that runs down the middle of the island. Boundaries were determined based on a combination of a shift in vegetation from Italian rye grass (FAC) and tules (OBL) to upland-rated non-native annual grasses and herbs and a change in topography.

Managed wetlands were classified as PEM1Kf/2Kf: Palustrine (P), emergent (EM), persistent (1)/non-persistent (2), artificially flooded (K), and farmed (f).

Perennial Marsh (Non-Tidal)

Features in the non-tidal perennial marsh category correspond to areas of cattail (OBL) and bulrush (OBL) marsh in Duck Slough. Duck Slough is an excavated, non-tidal slough that passively fills via a screw gate in the levee at its southern end, at Haas Slough. In contrast to cattail (OBL) and bulrush (OBL) vegetation in drainage ditches across the Study Area which are regularly removed during normal maintenance of agricultural drainage ditches, areas mapped as non-tidal perennial marsh appear in the same locations over numerous years of aerial imagery suggesting they are a relatively permanent part of Duck Slough.

Vegetation within areas mapped as non-tidal perennial marsh was dominated by cattails and California bulrush, both obligate wetland species, and satisfied the dominance test. Due to deep standing waters, soils in these features were not directly assessed, but rather were assumed to

be hydric based on the permanent inundation of Duck Slough, thereby meeting Hydric Soil Criteria 3 and/or 4 described in Hydric Soils Technical Note 13 from the National Technical Committee for Hydric Soils. These areas met the primary wetland hydrology indicators for surface water (A1), water marks (B1), drift deposits (B3), and aquatic invertebrates (B13). These features, which are dominated by obligate wetland plants, also satisfy the FAC-neutral test, a secondary wetland hydrology indicator. Boundaries of non-tidal perennial marsh within Duck Slough were delineated based on the extent of emergent vegetation visible in multiple years of aerial imagery.

Non-tidal perennial marsh was classified as PEM1Fx: Palustrine (P), emergent (EM), persistent (1), semi-permanently flooded (F), and excavated (x).

Perennial Marsh (Tidal)

Features in the tidal perennial marsh category correspond to areas of cattail (OBL), tule (OBL), and California bulrush (OBL) above the HTL (7.26 feet NAVD88) within tidal sloughs outboard of the Corps and DWR levees along Haas, Cache, and Shag sloughs (areas below the HTL were classified as tidal slough, see description below). These wetlands have the same vegetation as non-tidal perennial marsh, were similarly assumed to have hydric soils based on regular tidal inundation, and share many of the same primary and secondary wetland hydrology indicators. Boundaries of tidal perennial marsh were delineated based on the extent of emergent vegetation above 7.26 feet NAVD88 visible in aerial imagery.

Tidal perennial marsh was classified as PEM1T: Palustrine (P), emergent (EM), persistent (1), and semi-permanently flooded-tidal (T).

Scrub-Shrub Wetlands

Features in the scrub-shrub category correspond to a stand of arroyo willow (*Salix lasiolepis*; FACW) at the southern end of Lookout Slough and a small stand that occupies an island in Cache Slough to the east of Vogel Island. Unlike other stands of willows (*Salix* spp.; FACW) that occur along the upper margins of Lookout Slough, removed from wetland hydrology, these stands occur at lower elevations and are assumed to experience periodic to regular flooding and/or high water tables based on their elevations. Due to the deep water surrounding these stands, it was not possible to investigate these areas directly. Instead, vegetation was observed remotely using binoculars, hydrology was assumed based on elevations derived from the Lidar data, and the presence of hydric soils was assumed based on dominance by FACW species and geomorphic position within the landscape. Boundaries of scrub shrub wetlands were delineated based on a combination of the extent of willows (FACW) visible in aerial imagery and topographic data.

Scrub-shrub wetlands were classified as PSSR: Palustrine (P), scrub-shrub (SS), seasonally flooded (R).

Seasonal Wetlands

Features in the seasonal wetland category correspond to several depressional features in the northern portion of the Liberty Farms that collect precipitation and runoff from surrounding areas, but are not supported by artificial hydrology. These features resembled classic seasonal wetlands, with non-native herbaceous vegetation and a relatively short hydroperiod compared to managed wetlands elsewhere on the site.

Vegetation within seasonal wetlands on Liberty Farms was dominated by Italian rye grass (FAC) and bird's foot trefoil (FAC). Soils were very dark grey to a depth of eight inches, with dark yellowish brown (10YR 4/4) redoximorphic concentrations along pore linings and root channels at five percent cover. Below eight inches, soils contained a mottled matrix of very dark grey and light olive brown (2.5Y 5/4). Soils met the Redox Dark Surface (F6) indicator. Indicators of wetland hydrology were limited to Oxidized Rhizospheres Along Living Roots (C3). Wetland boundaries were determined based on a combination of shifts in vegetation from facultative to facultative upland and upland plants and the topography of the depressions in question.

Seasonal wetlands were classified as PEM2A/C: palustrine (P), emergent (EM), non-persistent (2), temporarily flooded (A) to seasonally flooded (C).

5.1.2 Non-Wetland Waters

Drainage Ditches

Features in the drainage ditch category correspond to earthen-lined ditches used to drain agricultural fields on Bowlsbey Ranch and managed wetlands on Liberty Farms. These ditches vary in size from approximately 5 feet in width to over 20 feet in width and have varying water regimes, with some ditches being permanently inundated and others carrying water for only a portion of the year. All ditches are manmade, excavated features connected through a complex network of culverts and slide gates. On Bowlsbey Ranch, drainage ditches serve only to drain fields. The ditches on Bowlsbey drain to the southwestern portion of the property where the water is pumped into Haas Slough at two locations (Figure 3). On Liberty Farms, the ditches serve a dual role of draining fields and also delivering irrigation water for flood management. The ditches on Liberty Farms drain to the southern portion of the site and water can be actively pumped into Shag Slough at three locations along the eastern side of the site (Figure 3).

Although many of the ditches are lined with cattails (OBL) and tules (OBL), they were mapped as open waters due to the small amount of vegetation relative to the overall size of the features and because vegetation within the ditches is regularly removed through a combination of burning and dredging during normal site maintenance. The jurisdictional limits of drainage ditches were based on the location of the OHWM which was determined based indicators such as scour, drift deposits, and water marks. The approximate width between the OHWM on either side of the ditches was visually estimated in the field and refined in the office using high-resolution topographic data.

Drainage ditches were classified as R5UBFx: riverine (R), unknown perennial (5), unconsolidated bottom (UB), semi-permanently flooded (F), excavated (x).

Irrigation Ditches

Features in the irrigation ditch category correspond to concrete-lined ditches on Bowlsbey Ranch that are used to transport water from two earthen-lined irrigation ponds on the western side of the site to the pastures. The approximately 4-foot-wide ditches are connected through a network of culverts and slide gates that allow water to be diverted to different parts of the site. The ditches carry water only when actively being used for irrigation and are dry the majority of the time. Water is siphoned from the concrete-lined ditches onto individual pastures using siphon tubes and allowed to passively flow to the opposite side of the pasture where it is intercepted by earthenlined drainage ditches. No vegetation or sediment accumulation is present in the ditches. The location and extent of these features across Study Area was digitized from aerial imagery. Because these features are concrete-lined ditches associated with delivery irrigation water, they may not be considered jurisdictional by the Corps.

Irrigation ditches were classified as R5UBAx: riverine (R), unknown perennial (5), unconsolidated bottom (UB), temporarily flooded (A), excavated (x).

Irrigation Ponds

Features in the irrigation pond category correspond to two raised, earthen-lined irrigation ponds located on the western side of Bowlsbey Ranch. The ponds are supported by earthen berms with a crest elevation of 14 feet NAVD88. Water is pumped into these ponds via two pumps, one located in Duck Slough and one located in Haas Slough (Figure 3). From the ponds, water is gravity fed into a network of concrete-lined irrigation ditches where it is diverted to individual pastures for flood irrigation. The ponds are regularly maintained and do not contain vegetation. The extent of these features was digitized from high water levels observed in aerial imagery. Because these features are manmade, elevated agricultural ponds, they may not be considered jurisdictional by the Corps.

Irrigation ponds were classified as PUBKh: palustrine (P), unconsolidated bottom (UB), artificially flooded (K), diked/impounded (h).

<u>Ponds</u>

Features in the pond category correspond to Sycamore Slough on Bowlsbey Ranch and an unnamed pond excavated on the eastern side of Liberty Farms. Sycamore Slough does not appear on the 1906 USGS 7.5-minute quadrangle map for Liberty Island and is listed as an excavated feature by the National Wetland Inventory. Sycamore Slough is connected to Cache Slough via a screw gate and is also likely supported by groundwater and irrigation runoff. Sycamore Slough contains patches of emergent vegetation growing below the OHWM, which was indicated by scour and shelving along the pond edge. The extent of Sycamore Slough was digitized based on the extent of the OHWM visible in aerial imagery.

The pond located on Liberty Farms was created in the summer of 2007, as can be seen in historic aerial imagery available from Google Earth. The pond appears to have been excavated as part of the wetland management system and is connected to the rest of the system by several excavated channels. Water levels in the pond appear to be maintained by a combination of groundwater and water from an adjacent ditch. The pond contains dense emergent vegetation around most of its length and a small dock located at its eastern edge.

Both ponds were classified as PUBHx: palustrine (P), unconsolidated bottom (UB), permanently flooded (H), excavated (x).

Slough (Non-Tidal)

Features in the non-tidal slough category correspond to Duck Slough and Lookout Slough, both of which are manmade, excavated sloughs that are disconnected from tidal activity by the Corps levee surrounding the site. Both sloughs are connected to the adjacent, tidal sloughs via screw gates in the levee, with Duck Slough connected to Haas Slough and Lookout Slough connected to Cache Slough (Figure 3). These sloughs may have muted tidal activity when the screw gates are open, but are otherwise non-tidal. Both sloughs contain emergent vegetation [cattails (OBL)] and tules (OBL)] along their margins, with Duck Slough also containing substantial stands of

emergent vegetation within portions of the slough channel that were mapped separately as nontidal perennial marsh. Due to their small area, the narrow bands of emergent vegetation along the margins of the sloughs were lumped into the extent of the sloughs as opposed to being mapped as separate wetland features. The extent of non-tidal sloughs within the Study Area was based on the OHWM which was identified based on indicators such as sour and shelving along the edges of the sloughs and was digitized using a combination of aerial signatures and elevation data from the lidar.

Non-tidal sloughs were classified as R2UBHx: riverine (R), lower perennial (2), unconsolidated bottom (UB), permanently flooded (H), excavated (x).

Slough (Tidal)

Features in the tidal slough category correspond to the portions of Haas, Cache, and Shag sloughs that occur within the Study Area. These sloughs are a combination of natural and manmade features that are directly connected to the Sacramento River and receive the full range of tidal activity experienced in this area of the delta. As described in Section 4.0, the extent of Corps jurisdiction in tidal sloughs was based on the HTL. Because the Study Area is located at the southern end of the Yolo Bypass, it receives artificially high water levels during flood events when flood waters from the Sacramento River are released into the bypass. To filter out these artificial high water events, the HTL was estimated by averaging the highest observed water level for every non-flood month between 2010 and 2017 at the DWR Yolo Bypass Liberty Island (LIY) tide gauge (Table 2). Based on this assessment, the HTL was approximated to be 7.26 feet NAVD88, and all areas below this elevation on the outboard side of the levees were mapped as tidal slough. Tidal sloughs were lined with concrete riprap and contained only limited patches of emergent vegetation consisting of cattails or tules and other herbaceous species. Some areas contain trees along the bank, consisting primarily of arroyo willow or valley oak.

Tidal sloughs were classified as R1UBV/R1UBVx: riverine (R), tidal (1), unconsolidated bottom (UB), permanently flooded-tidal (V), and excavated (x; Shag Slough only).

5.2 Section 10 of the Rivers and Harbors Act

The lateral limit of Corps jurisdiction under Section 10 of the RHA is set at MHW which was determined to be 5.9 feet NAVD88 based on data from the Yolo Bypass Liberty Island (LIY) tide gauge operated by the DWR. The inland extent of Section 10 jurisdiction was determined from an online mapping tool hosted on the Corps Sacramento District's website⁴. However, the Corps website shows Section 10 jurisdiction extending beyond the levee at the southern end of the Study Area and partway into Lookout Slough. Because Lookout Slough is separated from the rest of the navigable waterway by the Corps levee, it was determined to be non-navigable and was not included in the limits of Section 10 jurisdiction shown in Appendix B.

⁴ http://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Navigable-Waters-of-the-US/
6.0 CONCLUSION

The results of this delineation of aquatic resources was based on conditions observed during the time of the assessment and information provided to WRA by the property owner and project proponent. It should be noted that the Corps makes all final decisions regarding regulatory jurisdiction, and WRA recommends securing a Jurisdictional Determination from the Corps before embarking on any project activities that could result in the loss of Waters of the United States.

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APPENDIX A

WETS ANALYSES

WETS historic data from climate station:FairfieldObserved rainfall data from climate station:Hastings Tract EastDate of site visit:Google Earth March 2011

		Rainfa	III Data from V	VETS					
	Month	3 yrs in 10 less than	Average	3 yrs in 10 more than	Observed rainfall (inches)	Condition (dry, wet, normal)	Condition Value	Weighting factor	product of previous two columns
1st month prior	Feburary	2.28	5.06	6.17	3.03	normal	2	3	6
2nd month prior	January	2.28	4.83	5.9	1.63	dry	1	2	2
3rd month prior	December	2.52	4.98	6	4.47	normal	2	1	2
						-	-	SUM=	10

Note: If sum is

- 6-9 prior period has been drier than normal
- 10-14 prior period has been normal
- 15-18 prior period has been wetter than normal

Condition Values:

WETS historic data from climate station: Fairfield Observed rainfall data from climate station: Hastings Tract East Date of site visit: Google Earth June 2013

		Rainfa	II Data from V	VETS	•				
	Month	3 yrs in 10 less than	Average	3 yrs in 10 more than	Observed rainfall (inches)	Condition (dry, wet, normal)	Condition Value	Weighting factor	product of previous two columns
1st month prior	May	0.19	0.74	0.71	0.45	normal	2	3	6
2nd month prior	April	0.47	1.42	1.7	0.72	normal	2	2	4
3rd month prior	March	1.43	3.56	4.32	0.13	dry	1	1	1
						-		SUM=	11

Note: If sum is

6-9 prior period has been drier than normal

10-14 prior period has been normal

15-18 prior period has been wetter than normal

Condition Values:

WETS historic data from climate station: Fairfie Observed rainfall data from climate station: Hastin Date of site visit: Google Earth April 2014

Fairfield Hastings Tract East

		Rainfa	III Data from V	VETS					
	Month	3 yrs in 10 less than	Average	3 yrs in 10 more than	Observed rainfall (inches)	Condition (dry, wet, normal)	Condition Value	Weighting factor	product of previous two columns
1st month prior	March	1.35	3.39	4.12	2.12	normal	2	3	6
2nd month prior	Feburary	1.91	4.74	5.75	5.76	wet	3	2	6
3rd month prior	Janurary	1.72	4.24	5.15	0	dry	1	1	1
								SUM=	13

Note: If sum is

- 6-9 prior period has been drier than normal
- 10-14 prior period has been normal
- 15-18 prior period has been wetter than normal

Condition Values:

WETS historic data from climate station: Fairfield Observed rainfall data from climate station: Hastings Date of site visit: Google Earth July 2016

Fairfield Hastings Tract East

		Rainfa	II Data from V	VETS					
	Month	3 yrs in 10 less than	Average	3 yrs in 10 more than	Observed rainfall (inches)	Condition (dry, wet, normal)	Condition Value	Weighting factor	product of previous two columns
1st month prior	June	0	0.18	0.11	0	dry	1	3	3
2nd month prior	May	0.18	0.72	0.69	0.32	normal	2	2	4
3rd month prior	April	0.46	1.29	1.55	0.51	normal	2	1	2
						-		SUM=	9

Note: If sum is

- 6-9 prior period has been drier than normal
- 10-14 prior period has been normal
- 15-18 prior period has been wetter than normal

Condition Values:

WETS historic data from climate station:FairfieldObserved rainfall data from climate station:Hastings Tract EastDate of site visit:Wood Rogers Aerial October 2017

		Rainfa	Ill Data from V	VETS					
	Month	3 yrs in 10 less than	Average	3 yrs in 10 more than	Observed rainfall (inches)	Condition (dry, wet, normal)	Condition Value	Weighting factor	product of previous two columns
1st month prior	September	0	0.16	0.08	0	dry	1	3	3
2nd month prior	August	0	0.03	0	0	normal	2	2	4
3rd month prior	July	0	0	0	0	normal	2	1	2
								SUM=	9

- Note: If sum is
 - 6-9 prior period has been drier than normal
 - 10-14 prior period has been normal
 - 15-18 prior period has been wetter than normal

Condition Values:

WETS historic data from climate station: Fairfield Observed rainfall data from climate station: Hastings Tract East Date of site visit: 4/4/2018

_		Rainfa	III Data from V	/ETS					
	Month	3 yrs in 10 less than	Average	3 yrs in 10 more than	Observed rainfall (inches)	Condition (dry, wet, normal)	Condition Value	Weighting factor	product of previous two columns
1st month prior	March	1.2	3.12	3.77	3.92	wet	3	3	9
2nd month prior	Feburary	1.85	4.74	5.75	0.32	dry	1	2	2
3rd month prior	Janurary	1.49	4.63	5.52	4.81	normal	2	1	2
•								SUM=	13

Note: If sum is:

- 6-9 prior period has been drier than normal
- 10-14 prior period has been normal
- 15-18 prior period has been wetter than normal

Condition Values:

WETS historic data from climate station:FairfieldObserved rainfall data from climate station:Hastings Tract EastDate of site visit:5/9/2018

		Rainfa	all Data from V	VETS					
	Month	3 yrs in 10 less than	3 yrs in 10 less than Average 3 y		Observed rainfall (inches)	Condition (dry, wet, normal)	Condition Value	Weighting factor	product of previous two columns
1st month prior	April	0.52	1.39	1.68	1.63	normal	2	3	6
2nd month prior	March	1.2	3.12	3.77	3.92	wet	3	2	6
3rd month prior	Feburary	1.85	4.74	5.75	0.32	dry	1	1	1
-								SUM=	13

Note: If sum is

- 6-9 prior period has been drier than normal
- 10-14 prior period has been normal
- 15-18 prior period has been wetter than normal

Condition Values:

WETS historic data from climate station: Fairfield Observed rainfall data from climate station: Hastings Tract East Date of site visit: 7/20/2018

_		Rainfa	all Data from V	VETS					
	Month	3 yrs in 10 less than	Average	3 yrs in 10 more than	Observed rainfall (inches)	Condition (dry, wet, normal)	Condition Value	Weighting factor	product of previous two columns
1st month prior	June	0	0.19	0.14	0	dry	1	3	3
2nd month prior	May	0.2	0.73	0.69	0	dry	1	2	2
3rd month prior	April	0.52	1.39	1.68	1.63	normal	2	1	2
•						•		SUM=	7

Note: If sum is

- 6-9 prior period has been drier than normal
- 10-14 prior period has been normal
- 15-18 prior period has been wetter than normal

Condition Values:

APPENDIX B

POTENTIAL WATERS OF THE UNITED STATES



0.25

0

0.5

Miles

Appendix B. Potential Waters of the United States **Overview Sheet 1**



1



Prepared by:

Map Prepared Date: 12/11/2018 Map Prepared By: pkobylarz Base Source: Wood Rogers Base Date: 10/24/17 Data Source(s): WRA ENVIRONMENTAL CONSULTANTS



Lookout Slough Restoration Project

Path: L:\Acad 2000 Files\26000\26293\GIS\ArcMap\2018 Permitting\Delin\20181210\Appendix X Overview Sheet 1.mxd

L		NON-W etta	and water's	парреа	w mini the Study Area		ut Slough Della	I SITIEIL FIAD	ILAL INUSIOPAL	lion Project			weuanus mapped within the Stud	y Area for the		ign Deila Si	nen ⊓aunal
		Section	Section	linear					Section	Section	Linear				Section 404	Section	Cow ardin
Туре	ID	404	404/10	Feet	Cow ardin Code		Туре	ID	404	404/10	Feet	Cow ardin Code	Туре	ID	Acres	404/10	Code
		Acres	Acres						Acres	Acres						Acres	
Drainage Ditch	DD-001	2.05	-	2403	3 R5UBFx	Drainage	Ditch	DD-073	0.37	-	1328	R5UBFx	Irrigated Wetland	IW-01	11.04	-	PEM2Kf
Drainage Ditch	DD-002	1.24	-	1327	7 R5UBFx	Drainage	Ditch	DD-074	0.82	-	2550	R5UBFx	Irrigated Wetland	W-02	14.22	-	PEM2Kf
Drainage Ditch	DD-003	1.52	-	2493	ROUBEX	Drainage	Ditch	DD-075	0.14	-	1949	ROUBEX	Irrigated Wetland	IVV-03	2.41	-	PEIVIZKI PEM2Kf
Drainage Ditch	DD-005	1.58	-	3427	7 R5UBFx	Drainage	Ditch	DD-077	0.08	-	832	R5UBFx	Irrigated Wetland	IW-05	13.95	-	PEM2Kf
Drainage Ditch	DD-006	0.02	-	45	5 R5UBFx	Drainage	Ditch	DD-078	0.10	-	1043	R5UBFx	Irrigated Wetland	IW-06	14.50	-	PEM2Kf
Drainage Ditch	DD-007	1.78	-	1913	R5UBFx	Drainage	Ditch	DD-079	0.68	-	1475	R5UBFx	Irrigated Wetland	IW-07	0.69	-	PEM2Kf
Drainage Ditch	DD-008	0.90	-	1934	I R5UBFX	Drainage	Ditch	DD-080	0.16	-	1148	R5UBFX	Irrigated Wetland	IW-08	19.67	-	PEM2Kt
Drainage Ditch	DD-009	1.25	-	4225	5 R5UBEx	Drainage	Ditch	DD-081	0.19	-	1312	R5UBFx	Irrigated Wetland	W-10	0.41	-	PEIVIZKI PEM2Kf
Drainage Ditch	DD-011	0.84	-	2587	7 R5UBFx	Drainage	Ditch	DD-083	0.01	-	32	R5UBFx	Irrigated Wetland	W-11	16.83	-	PEM2Kf
Drainage Ditch	DD-012	0.13	-	170) R5UBFx	Drainage	Ditch	DD-084	0.16	-	1142	R5UBFx	Irrigated Wetland	IW-12	3.07	-	PEM2Kf
Drainage Ditch	DD-013	0.65	-	1748	3 R5UBFx	Drainage	Ditch	DD-085	0.48	-	4217	R5UBFx	Irrigated Wetland	W-13	9.97	-	PEM2Kf
Drainage Ditch	DD-014	0.41	-	1092		Drainage	Ditch	DD-086	0.29	-	1196	R5UBFx	Irrigated Wetland	W-14	38.83	-	PEM2Kf
Drainage Ditch	DD-015	0.10	-	198	R5UBEx	Drainage	Ditch	DD-087	0.09	-	4150	R5UBFx	Irrigated Wetland	W-15	34 19	-	PEIVIZKI PEM2Kf
Drainage Ditch	DD-017	0.20	-	735	5 R5UBFx	Drainage	Ditch	DD-089	1.58	-	3422	R5UBFx	Irrigated Wetland	W-17	28.91	-	PEM2Kf
Drainage Ditch	DD-018	0.23	-	310) R5UBFx	Drainage	Ditch	DD-090	0.92	-	1326	R5UBFx	Irrigated Wetland	IW-18	27.59	-	PEM2Kf
Drainage Ditch	DD-019	1.17	-	2800	R5UBFx	Drainage	Ditch	DD-091	0.95	-	1439	R5UBFx	Irrigated Wetland	IW-19	31.76	-	PEM2Kf
Drainage Ditch	DD-020	0.30	-	1653		Drainage	Ditch	DD-092	0.51	-	1234		Irrigated Wetland	IVV-20	31.36	-	PEM2Kt
Drainage Ditch	DD-021	1.75	-	2528	B R5UBFx	Drainage	Ditch	DD-093	0.52	-	1260	R5UBFX	Irrigated Wetland	W-21	0.27	-	PEM2KI PEM2Kf
Drainage Ditch	DD-023	0.31	-	9290) R5UBFx	Drainage	Ditch	DD-095	1.17	-	2548	R5UBFx	Irrigated Wetland	W-23	0.23	-	PEM2Kf
Drainage Ditch	DD-024	0.73	-	2516	8 R5UBFx	Drainage	Ditch	DD-096	0.05	-	136	R5UBFx	Managed Wetlands	MW-01	21.25	-	PEM1/2Kf
Drainage Ditch	DD-025	0.44	-	1605	5 R5UBFx	Drainage	Ditch	DD-097	0.24	-	582	R5UBFx	Managed Wetlands	MW-02	14.68	-	PEM1/2Kf
Drainage Ditch	DD-026	0.25	-	1800		Drainage	Ditch	DD-098	0.91	-	2479		Managed Wetlands	MW-03	17.24	-	PEM1/2Kt
Drainage Ditch	DD-027	0.20	-	44	1 R5UBFx	Drainage	Ditch	DD-099	0.83	-	2595	R5UBFx	Managed Wetlands	MW-05	0.90	-	PEM1/2Kf
Drainage Ditch	DD-029	0.60	-	1317	7 R5UBFx	Drainage	Ditch	DD-101	0.03	-	115	R5UBFx	Managed Wetlands	MW-06	6.24	-	PEM1/2Kf
Drainage Ditch	DD-030	0.35	-	869	R5UBFx	Drainage	Ditch	DD-102	0.11	-	410	R5UBFx	Managed Wetlands	MW-07	124.72	-	PEM1/2Kf
Drainage Ditch	DD-031	0.79	-	1151	R5UBFx	Drainage	Ditch	DD-103	0.15	-	560	R5UBFx	Managed Wetlands	MW-08	112.85	-	PEM1/2Kf
Drainage Ditch	DD-032	0.51	-	1123		Drainage	Uitch Ditch	DD-105	0.70	-	2533	K5UBFX R5UBFy	Managed Wetlands	MW-09	121.59	-	PEM1/2Kf
Drainage Ditch	DD-033	0.28	-	1751	I R5UBFx	Drainage	Ditch	DD-105	0.83	-	2579	R5UBFx	Managed Wetlands	MW-11	45.31	-	PEM1/2Kf
Drainage Ditch	DD-035	0.04	-	51	1 R5UBFx	Drainage	Ditch	DD-107	0.20	-	712	R5UBFx	Managed Wetlands	MW-12	0.53	-	PEM1/2Kf
Drainage Ditch	DD-036	0.34	-	1232	2 R5UBFx	Drainage	Ditch	DD-108	0.69	-	2511	R5UBFx	Managed Wetlands	MW-13	28.49	-	PEM1/2Kf
Drainage Ditch	DD-037	0.75	-	1358	R5UBFx	Drainage	Ditch	DD-109	0.72	-	2614	R5UBFx	Managed Wetlands	MW-14	27.55	-	PEM1/2Kf
Drainage Ditch	DD-038	0.79	-	1417		Drainage	Ditch	DD-110	0.72	-	2621	R5UBFX R5LIBEy	Managed Wetlands	MW-15	67.88	-	PEM1/2Kf
Drainage Ditch	DD-039	0.02	-	2770) R5UBFx	Drainage	Ditch	DD-1112	0.91	-	1953	R5UBFx	Managed Wetlands	MW-17	66.92	-	PEM1/2Kf
Drainage Ditch	DD-041	0.02	-	73	B R5UBFx	Drainage	Ditch	DD-113	0.07	-	156	R5UBFx	Managed Wetlands	MW-18	72.60	-	PEM1/2Kf
Drainage Ditch	DD-042	0.34	-	1228	3 R5UBFx	Drainage	Ditch	DD-114	0.64	-	2333	R5UBFx	Managed Wetlands	MW-19	33.74	-	PEM1/2Kf
Drainage Ditch	DD-043	0.06	-	222	2 R5UBFx	Drainage	Ditch	DD-115	0.72	-	2613	R5UBFx	Managed Wetlands	MW-20	37.07	-	PEM1/2Kf
Drainage Ditch	DD-044	0.50	-	1802		Drainage	Ditch	DD-116	0.89	-	2351	R5UBFX	Managed Wetlands	MW-21	67.50	-	PEM1/2Kt
Drainage Ditch	DD-045	0.05	-	93	B R5UBFx	Drainage	Ditch	DD-117	0.91		1976	R5UBFx	Managed Wetlands	MW-22	30.75	-	PEM1/2Kf
Drainage Ditch	DD-047	0.67	-	1210) R5UBFx	Drainage	Ditch	DD-119	20.05	-	16656	R5UBFx	Managed Wetlands	MW-24	30.60	-	PEM1/2Kf
Drainage Ditch	DD-048	1.73	-	2504	1 R5UBFx	Irrigation I	Ditch	ID-01	0.36	-	3100	R5UBAx	Managed Wetlands	MW-25	6.27	-	PEM1/2Kf
Drainage Ditch	DD-049	0.30	-	2577	7 R5UBFx	Irrigation I	Ditch	ID-02	0.06	-	605	R5UBAx	Managed Wetlands	MW-26	2.40	-	PEM1/2Kf
Drainage Ditch	DD-050	0.59	-	2571		Irrigation I	Ditch	ID-03	0.14	-	1/20	R5UBAX	Managed Wetlands	MW-27	0.00	-	PEM1/2Kt
Drainage Ditch	DD-051	0.94	-	1092	R5UBFx	Irrigation I	Ditch	ID-04	0.62	-	4204	R5UBAx	Managed Wetlands	MW-29	8.88	-	PEM1/2Kf
Drainage Ditch	DD-053	0.59	-	1270) R5UBFx	Irrigation I	Ditch	ID-06	0.04	-	342	R5UBAx	Managed Wetlands	MW-30	9.40	-	PEM1/2Kf
Drainage Ditch	DD-054	0.79	-	1135	5 R5UBFx	Irrigation I	Ditch	ID-07	0.69	-	4629	R5UBAx	Managed Wetlands	MW-31	7.48	-	PEM1/2Kf
Drainage Ditch	DD-055	0.14	-	260	R5UBFx	Irrigation I	Ditch	ID-08	0.04	-	389	R5UBAx	Managed Wetlands	MW-32	0.07	-	PEM1/2Kf
Drainage Ditch	DD-056	0.49	-	1765		Irrigation I	Ditch	ID-09	0.49	-	4278	RSUBAX	Managed Wetlands	IVIVV-33	0.55	-	PEM1/2KT
Drainage Ditch	DD-058	0.84	-	469	R5UBFx	Irrigation I	Ditch	ID-10	0.73	-	1007	R5UBAx	Managed Wetlands	MW-35	4.87	-	PEM1/2Kf
Drainage Ditch	DD-059	0.18	-	550) R5UBFx	Irrigation I	Ditch	ID-12	0.07	-	614	R5UBAx	Managed Wetlands	MW-36	43.37	-	PEM1/2Kf
Drainage Ditch	DD-060	0.72	-	2609	9 R5UBFx	Irrigation I	Ditch	ID-13	0.86	-	6458	R5UBAx	Managed Wetlands	MW-37	48.36	-	PEM1/2Kf
Drainage Ditch	DD-061	0.50	-	1824	R5UBFx	Irrigation I	Ditch	ID-14	0.01	-	68	R5UBAx	Managed Wetlands	MW-38	0.14	-	PEM1/2Kf
Drainage Ditch	DD-062	0.12	-	236		Irrigation I	Ditch	ID-15	0.74	-	5761		Managed Wetlands	MW-39	0.28	-	PEM1/2KT
Drainage Ditch	DD-064	0.04	-	711	I R5UBFx	Irrigation I	Pond	IP-1	0.84	-		PUBKh	Managed Wetlands	MW-41	0.02	-	PEM1/2Kf
Drainage Ditch	DD-065	0.97	-	1427	7 R5UBFx	Irrigation I	Pond	IP-2	1.07	-	- 1	PUBKh	Managed Wetlands	MW-42	0.52		PEM1/2Kf
Drainage Ditch	DD-066	0.04	-	464	R5UBFx	Pond		P-1	0.95	-	-	PUBHx	Managed Wetlands	MW-43	0.12	-	PEM1/2Kf
Drainage Ditch	DD-067	0.12	-	1271	I R5UBFx	Pond	on-Tidal\	P-2	9.14	-	1552	PUBHX R2LIBHY	Perennial Marsh (Non-Tidal)	PMINT-1	2.72	-	
Drainage Ditch	DD-060	0.11	-	1101 601		Slough (N	on-Tidal)	SNT-2	31.54 0.01	-	14220		Perennial Marsh (Non-Tidal)	PMNT-3	2.11	-	
Drainage Ditch	DD-070	0.19	-	1152	2 R5UBFx	Slough (T	idal)	ST-1	2.14	- 124.82	15040	R1UBV/R1UBVx	Perennial Marsh (Tidal)	PMT-01	0.04	-	PEM1T
Drainage Ditch	DD-071	0.83	-	2574	1 R5UBFx	Slough (T	idal)	ST-2	1.22	73.27	18985	R1UBV/R1UBVx	Perennial Marsh (Tidal)	PMT-02	0.06	-	PEM1T
Drainage Ditch	DD-072	0.30	-	1312	2 R5UBFx								Perennial Marsh (Tidal)	PMT-03	0.09	-	PEM1T
													Perennial Marsh (Tidal)	PMT-04	0.07	-	PEM1T
													Perennial Marsh (Ildal)	PMI-05	0.75	-	
													Perennjal Marsh (Tidal)	PMT-07	0.23	-	PEM1T
Overvi	iew of a	quatic r	esourc	es ma	pped within th	e Study	Area for t	he Lool	kout Slo	ugh De	lta Sm	elt Habitat	Perennial Marsh (Tidal)	PMT-08	1.44	-	PEM1T
					Resto	ration Pro	piect						Perennial Marsh (Tidal)	PMT-09	0.10	-	PEM1T
							· · ·						Perennial Marsh (Tidal)	PMT-10	0.14	-	PEM1T
	Ty	pe		T	Section 404	Acres	Section	n 404/1	0 Acres	s	Lin	ear Feet	Perennial Marsh (Tidal)	PMI-11	0.10	-	
	Wetl	ands											Perennial Marsh (Tidal)	PMT-12	0.11	-	PEM1T
Innia at 1 14/						200 50							Perennial Marsh (Tidal)	PMT-14	0.05	-	PEM1T
ingated We	elland					309.56				-		-	Perennial Marsh (Tidal)	PMT-15	0.65	-	PEM1T
Managed W	Vetlands					1339.15				-		-	Scrub-Shrub Wetland	SSW-1	-	4.29	PSSR
Perennial M	/arsh (N	on-Tida	I)			8.02				-		_	Scrub-Shrub Wetland	SSW-2	3.58	-	PSSR
Poronniel M	Anab /T		-/			1 01							Seasonal Wetland	SW-2	0.11	-	PEM2A/C
rerennial M	naisn (1	udi)				4.24				-		-	Seasonal Wetland	SW-3	0.03	-	PEM2A/C
Scrub-Shru	ub Wetla	nd				3.58			4	.29		ŀ					
Seasonal V	Vetland					0.22				-		-					
Subtatal						166/ 77				20							
Subiolai						1004.77			4	.23							
No	n-Wetla	nd Wate	ers														
Drainage D	litch					84.36				-		203938					
5																	

Drainage Ditch	84.36	-	203938
Irrigation Ditch	6.39	-	46917
Irrigation Pond	1.91	-	-
Pond	10.10	-	-
Slough (Non-Tidal)	40.55	-	22178
Slough (Tidal)	3.36	198.09	34025
Subtotal	146.67	198.09	307058
Totals	1811.43	202.38	307058



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Appendix B. Potential Waters of the U.S. Map Sheet 20

Lookout Slough Restoration Project

- High Tide Line (7.26' NAVD88)
- Mean High Water (5.9' NAVD88)
- Study Area (3,637 ac.)
- Section 10 Jurisdiction (202.43 ac.)
- Sample Point

Wetlands

et 21

Sh

-121.717227, 38.281742

23

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- Irrigated Wetland (309.56 ac.)
 Managed Wetland (1,339.14 ac.)
 Perennial Marsh (Non-Tidal) (8.02 ac.)
 Perennial Marsh (Tidal) (4.24 ac.)
 Scrub-Shrub Wetland (7.87 ac.)
 Seasonal Wetland (0.22 ac.)
 Non-Wetland Waters
- Drainage Ditch (84.36 ac.)
 Irrigation Ditch (6.39 ac.)
 Irrigation Pond (1.91 ac.)
 Pond (10.10 ac.)
 Slough (Non-Tidal) (40.55 ac.)
- Slough (Tidal) (201.45 ac.)





200 400



Map Prepared Date: 12/11/2018 Map Prepared By: pkobylarz Base Source: Wood Rogers Base Date: 10/24/17 Data Source(s): WRA

0








Sheet 24

MW-01

-121.705274, 38.275716



Appendix B. Potential Waters of the U.S. Map Sheet 23

Lookout Slough Restoration Project



Drainage Ditch (84.36 ac.)
Irrigation Ditch (6.39 ac.)
Irrigation Pond (1.91 ac.)
Pond (10.10 ac.)
Slough (Non-Tidal) (40.55 ac.)
Slough (Tidal) (201.45 ac.)





200 400 Feet

Map Prepared Date: 12/11/2018 Map Prepared By: pkobylarz Base Source: Wood Rogers Base Date: 10/24/17 Data Source(s): WRA



Potential Waters of the U.S.

Perennial Marsh (Non-Tidal) (8.02 ac.)

APPENDIX C

WETLAND DETERMINATION DATA FORMS

Project/Site Liberty Farms	City	County Solano	Sampling Date 4/5/2018
Applicant/Owner Ecosystem Investment Partn	ers	State CA	Sampling Point SP001
Investigator(s) S.Batiuk, T. Harris WRA INC.		Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked floodpla	ains Local Re	lief (concave, convex, none) <u>none</u>	Slope(%) <u>0</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.305463</u>	25 Long: <u>-121.6979853</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0 to 2	percent slopes	NWI classificat	ion <u>PF</u>
Are climatic/hydrologic conditions on-site typic	al for this time of year?	🛛 Yes 🔲 No 🦳 (If no, explain in rema	arks)
Are any of the following significantly disturbed?	P □ Vegetation □ S	Soil 🔲 Hydrology 🛛 Are "Normal Circum:	stances" present? 🛛 Yes 🔲 No
Are any of the following naturally problematic?	□ Vegetation □ S	Soil 🔲 Hydrology 👘 (If needed, explai	n any answers in remarks)
SUMMARY OF FINDINGS - Attach site	nap showing sample	point locations, transects, importa	nt features, etc.
Hydrophytic Vegetation Present?X YesHydric Soil Present?X YesWetland Hydrology Present?X Yes	□ No □ No □ No	Is the Sampled Area within a Wetland?	∕es □No
Remarks: Wetland sample point paired with s vegetation and meets criteria for hy	SP002. Sample point tak /dric soils and wetland hy	en adjacent to access road adjacent to field drology. Boundary based on shift in vegeta	l. Sample point contains hydrophytic ation and topography.

	Absolute % cover	Dominant	Indicator	Dominance Test Worksheet
	- /0 COVEI			Number of Dominant Species <u>3</u> (A) that are OBL, FACW, or FAC?
= 3 =		· ·		Total number of dominant3(B)
Tree Stratum Total Cover:				% of dominant species that 100 (A/B) are OBL, FACW, or FAC?
- <u>APLING/SHRUB STRATUM</u> Plot Size:	N/A			Prevalence Index Worksheet Total % cover of: Multiply by:
·		· ·		OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4 UPL species x5
<u>HERB STRATUM</u> Plot Size: 10' radius		Vee		Column Totals (A) (B
Rumex crispus	10	Yes .		Prevalence Index = B/A =
Atriplex prostrata	5			
	 25			Dominance Test is >50% Prevalence Index is = 3.0<sup 1 Morphological adaptations (provide supporting data in remarks) Problematic hydrophytic vegetation ¹ (explain) ¹ Indicators of hydric soil and wetland hydrology
I				must be present, unless disturbed or problematic.
Woody Vines Total Cover: _	0/			Hydrophytic
% Bare ground in nerb stratum 25	- % cover or i	DIOTIC Crust U		

SOIL								Sampling Po	oint SP00)1
Profile desc	ription: (Describe	to the de	pth needed to docu	nent the	indicator	or confir	m the absence of in	ndicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc1	Texture	Rema	arks	
0-2	10YR 2/1	100					Muck			
2-7	5Y 3/1	100					Clay			
7-14	5Y 3/1	95	N 4/0	3	D	M	Clay			
7-14	<u>5Y 3/1</u>	95	10YR 4/4	2	C	<u>M</u>	Clay			
		·		·						
¹ Type: C=Co	ncentration, D=De	pletion, R	M=Reduced Matrix.	² Loca	ition: PL=F	ore Linin	g, RC=Root Channe	l, M=Matrix		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) I tcm Muck (A9) (LRR C) Histic Epipedon (A2) Stripped Matrix (S6) 2 ccm Muck (A10)(LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) 1 cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydric vegetation and wetland hydrology must be present.										
Restrictive	Layer (if present)									
Depth (incl	nes):						Hydric S	oil Present ?	🛛 Yes	🗆 No
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).				ł			

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suff	cient)	
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:		
Surface water present? Yes X No	Depth (inches):	
Water table present? Xes INO	Depth (inches): 4	
Saturation Present? Xes No (includes capillary fringe)	Depth (inches): 0	Wetland Hydrology Present ? 🛛 Yes 🗖 No
Describe recorded data (stream guage, mor	itoring well, aerial photos, etc.) if available).
Remarks: Sample point meets high water tal	le (A2), saturation (A3), saturation visible	on aerial imagery (C9), and FAC-neutral test (D5).

Project/Site Liberty Farms	City	County Solano	Sampling Date 4/5/2018
Applicant/Owner Ecosystem Investment Partner	rs	State CA	Sampling Point SP002
Investigator(s) S.Batiuk, T. Harris WRA INC.		Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked floodplai	n Local Re	elief (concave, convex, none) Slightly conv	exSlope(%) _1
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.305785</u>	26 Long: <u>-121.6983749</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0 to 2 pe	ercent slopes	NWI classificat	ion PF
Are climatic/hydrologic conditions on-site typical	for this time of year?	🛛 Yes 🔲 No 🦳 (If no, explain in rema	arks)
Are any of the following significantly disturbed?	□ Vegetation □ S	Soil 🔲 Hydrology 🛛 Are "Normal Circum:	stances" present? 🛛 Yes 🔲 No
Are any of the following naturally problematic?	□ Vegetation □ S	Soil 🔲 Hydrology 🛛 (If needed, explai	n any answers in remarks)
SUMMARY OF FINDINGS - Attach site m	ap showing sample	point locations, transects, importa	nt features, etc.
Hydrophytic Vegetation Present?Image: YesHydric Soil Present?Image: YesWetland Hydrology Present?Image: Yes	□ No ⊠ No ⊠ No	Is the Sampled Area	∕res ⊠No
Remarks: Upland sample point paired with SP	001. Sample point take	n in central eastern portion of study area ac	liacent to the NW corner of a flooded

Remarks: Upland sample point paired with SP001. Sample point taken in central eastern portion of study area adjacent to the NW corner of a flooded field. Sample point contains hydrophytic vegetation, but does not meet indicators for hydric soils or wetland hydrology. Boundary based on extent of indicators of wetland hydrology and hydric soils.

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
l	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant(B)(B)
I				% of dominant species that
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
1 2 3 4				OBL species x1 FACW species x2 FAC species x3 FACU species x4
Sapling/Shrub Stratum Total Cover:				UPL species x5
I. Geranium dissectum	15	No	UPL	Column Totals (A) (B)
2. Lepidium latifolium	10	No	FAC	Prevalence Index = B/A =
3. Festuca perennis	50	Yes	FAC	Hydrophytic Vegetation Indicators
Bromus diandrus	5	No	UPL	Dominance Test is >50%
Helminthotheca echioides	5	No	FAC	\square Providence Index is $$
 <u>Elymus triticoides</u> <u></u> <u></u> <u>B.</u> 	1	<u>No</u>	FAC	 Morphological adaptations (provide supporting data in remarks) Droblematic hydrophytic ycgatation¹ (cynlain)
Herb Stratum Total Cover: <u>WOODY VINE STRATUM</u> Plot Size: 1.	86 N/A	-		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Woody Vines Total Cover:	% cover of	biotic crust 0		Hydrophytic

SOI	L
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Depth	Matrix	e to the de	pth needed to docun Redo	x Features	cator or co	nfirr	rm the absence of indicators.)	
(inches)	Color (moist)	%	Color (moist)	<u>%</u> T	ype ¹ Lo	oc ¹	Texture Remarks	
0-12+	5Y 3/1	100					Loamy Clay	
		·						
¹ Type: C=Co	ncentration, D=De	epletion, RN	/Reduced Matrix.	² Location:	PL=Pore L	ining	ng, RC=Root Channel, M=Matrix	
	(A1)	icable to a	Sandy Redox (S5	wise noted.)			Indicators for Problematic Hydric Soils":	
	(AT) bipedon (A2)		Stripped Matrix (S) 6)			$\square 1 \text{Cm Muck (A9) (LRR C)}$	
Black His	stic (A3)		Loamy Mucky Mir	ieral (F1)			$\square \text{ Reduced Vertic (E18)}$	
Hydroge	n Sulfide (A4)		Loamy Gleyed Ma	atrix (F2)			Red Parent Material (TF2)	
Stratified	Layers (A5)(LRR	C)	Depleted Matrix (F	-3)			Other (explain in remarks)	
1cm Muc	ck (A9)(LRR D)		Redox Dark Surfa	ce (F6)				
	Below Dark Surfa	ace (A11)	Depleted Dark Su	rface (F7)				
	ark Surface (A12)		Redox Depression	ns (F8)				
	lucky Milleral (ST)						Indicators of hydric vegetation and	
							i welland hydrology must be present.	
Restrictive	Layer (if present)	:						
Туре:			_					
Depth (inch	nes):						Hydric Soil Present ? 🗌 Yes 🛛 No	
Remarks: _{Sa}	mple point does n	ot meet ind	licators for hvdric soils	i.				
	,							

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres along Living Rod Drift Deposits (B3)(Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in PLowed Soils Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)			 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
	Depth (inches):		
Water table present? Yes X No	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland H	lydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available		
Remarks: No indicators of wetland hydrology o	observed.		

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner Ecosystem Investment Par	tners	State CA	Sampling Point SP003
Investigator(s) S.Batiuk, T. Harris WRA INC	v.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked flood	plains Loca	al Relief (concave, convex, none) <u>None</u>	Slope(%) 0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.304</u>	Long: -121.6988944	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0 to	2 percent slopes	NWI classifica	tion <u>PF</u>
Are climatic/hydrologic conditions on-site typ	ical for this time of year	r? 🛛 Yes 🔲 No 🛛 (If no, explain in rem	narks)
Are any of the following significantly disturbe	d? 🗌 Vegetation	Soil Hydrology Are "Normal Circun	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problemation	?? DVegetation	Soil Hydrology (If needed, expla	in any answers in remarks)
SUMMARY OF FINDINGS - Attach site	e map showing sam	ple point locations, transects, importa	ant features, etc.
Hydrophytic Vegetation Present?XHydric Soil Present?XWetland Hydrology Present?X	es 🗌 No es 🔲 No es 🔲 No	Is the Sampled Area 🛛 🕅 within a Wetland?	Yes 🛛 No
Remarks: Wetland sample point paired with and contains indicators of hydric	n SP004. Sample point soils and wetland hydr	t taken at edge of wetland field. Sample point ology. Boundary based on shift in vegetation a	dominated by hydrophytic vegetation and topography.

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2. 3.				Total number of dominant species across all strata?
4 Tree Stratum Total Cover:				% of dominant species that 100 (A/B) are OBL, FACW, or FAC?
	N/A	-		Prevalence Index Worksheet
SAPLING/SHROB STRATOM PIOLOZE.		-		Total % cover of: Multiply by:
1		- <u> </u>		OBL species0 x10
2				FACW species13 x226
3		·		FAC species 40 x3120
		·		FACU species x4 80
Sapling/Shrub Stratum Total Cover:		-		UPL species 0 x5 0
HERB STRATUM Plot Size: 5' radius				Column Totals 73 (A) 226 (B)
1. Festuca arundinacea*	20	Yes	FAC	
2. Atriplex prostrata	10	No	FACW	Prevalence Index = B/A = 3.09
3. Crypsis schoenoides	3	No	FACW	Hydrophytic Vegetation Indicators
4. Rumex crispus	10	No	FAC	Dominance Test is >50%
5. <u>Helminthotheca echioides</u>	30	Yes	FAC	\square Prevalence Index is $$
6 7 8.				 Morphological adaptations (provide supporting data in remarks) Droblematic hydrophytic vegetation¹ (cycloin)
Herb Stratum Total Cover:	73			
WOODY VINE STRATUM Plot Size	N/A	-		¹ Indicators of hydric soil and wetland hydrology
1.				must be present, unless disturbed or problematic.
2				-
Woody Vines Total Cover:				Hydrophytic
% Bare ground in herb stratum <u>15</u>	% cover of	biotic crust 0		
Remarks: Thatch 12% (old Crypsis schoenoides, meets dominance test when treating Fo	OBL). *Festuc estuca arundina	a is hummocky a icea as FAC.	and behaving a	is a hydrophyte, and treated as FAC. Sample point

Depin	Matrix	0/	Celer (maint)	ox Featur	es Turne ¹	Lee ¹	Touturo	Pom	arke
(inches)	Color (moist)		Color (moist)	%	Туре	LOC		Reilla	
0-7	5Y 3/1	100					Loamy Clay		
7-14+	<u>2.5Y 3/1</u>	85	<u>N 4/0</u>	15	<u>D</u>	<u>M</u>	Clay		
¹ Type ⁻ C=Co	oncentration D=D	- <u> </u>	/=Reduced Matrix	² l oca	tion [.] PI =F	 Pore Linin	g RC=Root Channel M	=Matrix	
Hvdric Soil	Indicators: (Appl	icable to al	I LRRs. unless othe	erwise no	ted.)	010 2000	Indicators for Proble	amatic Hydr	ic Soils ^{3.}
 ☐ Histosol ☐ Histic Ep ☐ Black Hi ☐ Hydroge ☐ Stratified ☐ 1cm Mu ☐ Depleted ☐ Thick Da 	(A1) pipedon (A2) stic (A3) n Sulfide (A4) d Layers (A5)(LRR ck (A9)(LRR D) d Below Dark Surf ark Surface (A12)	: C) ace (A11)	Sandy Redox (S Stripped Matrix (Loamy Mucky M Depleted Matrix Redox Dark Surf Depleted Dark S Redox Depressio	5) S6) latrix (F1) latrix (F2) (F3) ace (F6) urface (F7 ons (F8)) ()		1cm Muck (A9) (L 2cm Muck (A10)(L Reduced Vertic (F Red Parent Mater Other (explain in r	RR C) .RR B) :18) ial (TF2) emarks)	
Sandy N	Bleyed Matrix (S4))			Indicators of hydric wetland hydrology m	vegetation a ust be prese	and ent.
Restrictive	Layer (if present	:							
Туре:			_						
Depth (inc	hes):		_				Hydric Soil	Present ?	🛛 Yes 🗌 No
temarks: _{Sa}	ample point meets	depleted da	ark surface (F7).						

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)	Water Marks (B1)(Riverine)
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres along Livir Drift Deposits (B3)(Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in PLowed Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Water-Stained Leaves (B9) Stater Stained Leaves (B9)	Gradiment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drift Deposits (B1)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) g Roots (C3) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:	
Surface water present? Yes X No Depth (inches):	
Water table present? Xes I No Depth (inches): <u>12</u>	
Saturation Present? X Yes No Depth (inches): 4 (includes capillary fringe)	Wetland Hydrology Present ? 🛛 Yes 🗖 No
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if availabl	ð.
Remarks:Sample point meets criteria for high water table (A2), saturation (A3), satura (D5).	tion visible on aerial imagery (C9), and the FAC-neutral test

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner <u>Ecosystem Investment</u>	Partners	State CA	Sampling Point SP004
Investigator(s) S.Batiuk, T. Harris WRA	INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked fl	oodplain Loo	cal Relief (concave, convex, none) <u>None</u>	Slope(%) <u>2-3</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.30</u>	0410433 Long: <u>-121.6986561</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, () to 2 percent slopes	NWI classific	ation <u>PF</u>
Are climatic/hydrologic conditions on-site	typical for this time of yea	ar? 🛛 Yes 🔲 No 🛛 (If no, explain in rer	narks)
Are any of the following significantly distu	urbed? Vegetation	Soil Hydrology Are "Normal Circur	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problen	natic?	Soil Hydrology (If needed, expl	ain any answers in remarks)
SUMMARY OF FINDINGS - Attach	site map showing sa	mple point locations, transects, import	ant features, etc.
Hydrophytic Vegetation Present? Image: Comparison of the sent? Hydric Soil Present? Image: Comparison of the sent? Wetland Hydrology Present? Image: Comparison of the sent?	IYes □No Yes ⊠No Yes ⊠No	Is the Sampled Area uithin a Wetland?	Yes 🖾 No
Remarks: Upland sample point paired v	with SP003. Sample take	n on slight slope between road and periodically	flooded field in central eastern portion

of study area. Sample point contains hydrophytic vegetation, but does not meet criteria for hydric soils or wetland hydrology. Bounday based on extent of hydric soil indictors and wetland hydrology and change in slope.

VEGETATION (use scientific names)				-
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?	Status	Number of Dominant Species <u>2</u> (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:				% of dominant species that(A/B) are OBL, FACW, or FAC?(A/B)
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
2 3 4				OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:		-		FACU species X4 UPL species x5
HERB STRATUM Plot Size: 5' radius	10	Vee		Column Totals (A) (B)
1. Conium maculatum	40			Prevalence Index = B/A =
2. Elymos unicoides				
Festuca perennis	5	<u>res</u>		Hydrophytic Vegetation Indicators
4. <u>Testuca perennis</u>	1	No		Dominance Test is >50%
6. Maiva pseudolavalera	I			Prevalence Index is $$
8.				Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover:	81			
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:		_		Hydrophytic Vegetation Present ?
% Bare ground in herb stratum <u>19</u>	% cover of	f biotic crust 0		
Remarks: Sample point dominated by FAC and F	ACW plants, m	neets dominance t	est.	

SOIL	
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Depth	Matrix			lox Feature	es	or confir	m the absence of indicator -	'S.)	
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ¹	Texture	Remarks	
0-8	5Y 3/1	100					Clay Loam		
8-12+	<u>5Y 3/1</u>	95	<u>N4/0</u>	5	<u>D</u>	<u>M</u>	Clay		
¹ Type: C=C	oncentration, D=D	epletion, RM	/=Reduced Matrix.	² Loca	tion: PL=F	Pore Linin	g, RC=Root Channel, M=Ma	ıtrix	
Hydric Soil	Indicators: (Appl	icable to al	I LRRs, unless oth	erwise no	ted.)		Indicators for Problema	tic Hydric Soils ³ :	
Histoso Histic E Black H Hydroge Stratifie 1cm Mu Deplete Thick D	I (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5)(LRF ıck (A9)(LRR D) id Below Dark Surf ark Surface (A12)	t C) ace (A11)	Sandy Redox (S Stripped Matrix (Loamy Mucky M Loamy Gleyed M Depleted Matrix Redox Dark Surf Depleted Dark S Redox Depression	5) S6) Ineral (F1) Matrix (F2) (F3) face (F6) Surface (F7 ons (F8))		 1cm Muck (A9) (LRR 2cm Muck (A10)(LRR Reduced Vertic (F18) Red Parent Material (Other (explain in remained) 	C) B) TF2) arks)	
Sandy N	Mucky Mineral (S1 Gleved Matrix (S4))	Vernal Pools (F9	9)			³ Indicators of hydric vegetation and wetland hydrology must be present		
Restrictive	Laver (if present):						be present.	
Type:									
Depth (inc	:hes):						Hydric Soil Pres	sent? 🛛 Yes 🛛 No	
Remarks: _{Si}	ample point does r	ot meet ind	icators for hydric soi	ls.					

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)		
Primary Indicators (any one indicator is suffici	ent)				
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 			
Field Observations:					
	Depth (inches):				
Water table present?	Depth (inches):				
Saturation Present?	Depth (inches):	Wetland I	Hydrology Present ? 🛛 Yes 🛛 No		
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.					
Remarks: No indicators of wetland hydrology of	bserved.				

Project/Site Bowlsbey Ranch	Site Bowlsbey Ranch City		Sampling Date <u>4/5/2018</u>
Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP005
Investigator(s) S.Batiuk, R. Korhumm	el, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	<u>d floodplain</u> Loc	cal Relief (concave, convex, none) <u>none</u>	Slope(%) _0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.32</u>	2240101 Long: <u>-121.7130098</u>	Datum: WGS 84
Soil Map Unit Name Clear Lake clay,	0 to 2 percent slopes	NWI classifica	ation <u>PF</u>
Are climatic/hydrologic conditions on-s	site typical for this time of yea	ar? 🛛 Yes 🔲 No 🛛 (If no, explain in rer	narks)
Are any of the following significantly di	sturbed? Degetation	Soil Hydrology Are "Normal Circur	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	ematic? Degetation	Soil Hydrology (If needed, expla	ain any answers in remarks)
SUMMARY OF FINDINGS - Attac	:h site map showing sa	mple point locations, transects, import	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes ☐ No X Yes ☐ No X Yes ☐ No	Is the Sampled Area 🛛 🕅 within a Wetland?	Yes 🛛 No
Remarks: Wetland sample point pair vegetation, hydric soils, ar	ed with SP006. Sample poir nd wetland hydrology. Bound	nt taken at lower edge of irrigated pasture. Sar dary based on signatures in aerial imagery corr	nple point meets criteria for hydrophytic esponding to shifts in vegetation.

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1				Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant species across all strata?
4 Tree Stratum Total Cover:				% of dominant species that 100 (A/B) are OBL, FACW, or FAC?
	Ν/Δ	-		Prevalence Index Worksheet
SAFEING/SHROB STRATOM FIOUSIZE.	11/7	-		Total % cover of: Multiply by:
				OBL species x1
2				FACW species x2
3				FAC species x3
				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Hordeum jubatum	15	Yes	FAC	
2. <u>Festuca perennis</u>	25	Yes	FAC	Prevalence Index = B/A =
3. <u>Agrostis avenacea</u>	3	No	FACW	Hydrophytic Vegetation Indicators
4. Juncus bufonius	2	No	FACW	Dominance Test is >50%
5. Cotula coronopifolia	1	No	OBL	\square Prevalence Index is = 3.0<sup 1
6. Lotus corniculatus	2	No	FAC	Morphological adaptations (provide
7. Atriplex prostrata	2	No	FACW	supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	50	_		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		_		Hydrophytic M Yee D No
% Bare ground in herb stratum 50	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Grasses tussocky				

SOIL									Sampling Po	oint SP005
Profile desci	ription: (Desc	ribe to the	depth	needed to docum	ent the in	ndicator	or confirn	n the absence of i	ndicators.)	
_(inches)	Color (mois	st) %		Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Rema	arks
0-1	10YR 3/2	98		7.5YR 3/4	2	С	M,PL	Clay		
1-5	10YR 4/1	95		7.5YR 3/4	5	С	M,PL,RC	Clay	Depleted matri	x with redox
<u>5+</u>	10YR 4/1	70		2.5Y 4/3	30	D	<u>M</u>	Clay		
¹ Type: C=Co	ncentration, D	=Depletion	RM=F	Reduced Matrix.	² Locat	ion: PL=	Pore Lining	, RC=Root Chann	el, M=Matrix	2
Hydric Soil I Histosol Histic Ep Black His Hydroge Stratified 1cm Muc Depleted Thick Da Sandy M Sandy G	ndicators: (A (A1) ipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)(I k (A9)(LRR D I Below Dark S rk Surface (A ucky Mineral leyed Matrix (Pplicable t PRR C) Surface (A1 12) S4) S4)		RRs, unless other Sandy Redox (S5) Stripped Matrix (S Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Sur Redox Depressior Vernal Pools (F9)	wise not 6) eral (F1) trix (F2) -3) ce (F6) rface (F7) hs (F8)	ed.)		Indicators for P 1cm Muck (A 2cm Muck (A Reduced Ver Red Parent N Other (explai 3 Indicators of h wetland hydrolo	roblematic Hydr 9) (LRR C) 10)(LRR B) tic (F18) Aaterial (TF2) n in remarks) ydric vegetation a gy must be prese	ic Soils ³ : and ent.
Restrictive I	Layer (if pres	ent):								
Туре:										
Depth (inch	nes):							Hydric	Soil Present ?	🛛 Yes 🛛 No
Remarks:										
HYDROLOG	9Y									
Wetland Hyd	Irology Indica	ators:						Secor	dary Indicators (2	2 or more required)
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres along Living Roots (in Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Recent Iron Reduction in PLowed Soils (C6) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)					(C3) UV (C3) UV (C3) UV C7 C7 C7 C7 C7 C7 C7 C7 C7 C7	ater Marks (B1)(F diment Deposits ift Deposits (B3)(l ainage Patterns (y-Season Water in Muck Surface ayfish Burrows (C turation Visible o allow Aquitard (D C-Neutral Test (I	Riverine) (B2)(Riverine) Riverine) B10) Table (C2) (C7) (C7) (28) n Aerial Imagery (C9) (3) D5)			
Field Observ	ations:	_								
Surface wate	r present?	Yes 🛛	No	Depth (inches):			.			
Water table p	resent?		No	Depth (inches):			.			
Saturation Pr (includes cap	esent? illary fringe)	∐ Yes 🖄	No	Depth (inches):				Wetland Hydrol	ogy Present ?	⊠ Yes □ No
Describe reco	orded data (str	eam guage	monit	oring well, aerial pl	notos, etc	.) if availa	ıble.			

Remarks: Sample point contains surface soil cracks (B6), oxidized rhizospheres (C3), and meets the FAC-Neutral test (D5). Sample point also contains abundant, deep hoof prints (other).

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP006
Investigator(s) S.Batiuk, R. Korhumm	el, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Dike	d floodplains Loc	al Relief (concave, convex, none) <u>None</u>	Slope(%) <u>0</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.32</u>	2192844 Long: <u>-121.7130085</u>	Datum: WGS 84
Soil Map Unit Name Clear Lake clay	, 0 to 2 percent slopes	NWI classifie	cation <u>PF</u>
Are climatic/hydrologic conditions on-s	site typical for this time of yea	ar? 🛛 Yes 🗌 No 🛛 (If no, explain in re	emarks)
Are any of the following significantly d	isturbed? Degetation	Soil Hydrology Are "Normal Circu	ımstances" present? 🛛 Yes 🔲 No
Are any of the following naturally prob	lematic? Degetation	Soil Hydrology (If needed, exp	lain any answers in remarks)
SUMMARY OF FINDINGS - Attac	ch site map showing sar	mple point locations, transects, impor	tant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	☐ Yes ⊠ No ☐ Yes ⊠ No ☐ Yes ⊠ No	Is the Sampled Area]Yes 🖾 No
Remarks: Upland sample point paire hydrophytic vegetation, hy	ed with SP006. Sample point rdric soils, or wetland hydrolo	taken in middle of irrigated pasture. Sample gy.	point does not meet criteria for

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	- % COver	Species?	Slaius	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3		·		Total number of dominant3(B)
4 Tree Stratum Total Cover: _				% of dominant species that33(A/B) are OBL, FACW, or FAC?
	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
1 2 3		· ·		OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:		-		FACU species x4 UPL species x5
<u>TERB STRATUM</u> Plot Size: 5 radius 1. Festuca arundinacea		Yes	FACU	Column Totals (A) (B)
2. Sporobolus indicus	20	Yes	FACU	Prevalence Index = B/A =
3. Trifolium repens	10	No	FACU	Hvdrophytic Vegetation Indicators
Lotus corniculatus	20	Yes	FAC	Dominance Test is >50%
5. Festuca sp.	10	No		$\square \text{Prevalence Index is } $
6. <i>Plantago lanceolota</i> 7	t	<u>No</u>	FAC	Morphological adaptations (provide supporting data in remarks)
- Herb Stratum Total Cover:	90	·		Problematic hydrophytic vegetation (explain)
<u>NOODY VINE STRATUM</u> Plot Size:N	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.		·		
Woody Vines Total Cover:	0/ - over of	-		Hydrophytic Ures IN No Vegetation Present ?
% Bare ground in nerb stratum 10	- % cover or	blotic crust U		

SOIL							Sampling Point SP006		
Profile desc	ription: (Describ	e to the de	pth needed to docu	nent the	indicator	or confir	rm the absence of indicators.)		
Depth (inches)	<u>Matrix</u>	0/	Color (moist)	<u>ox ⊢eature</u> ₀⁄	es Type ¹		– Texture Remarks		
0-1	101R 3/2	99	1.51K 3/4	· <u> </u>	<u> </u>				
1-9	2.5Y 4/1	99+	7.5YR 3.4	+	С	PL	Clay		
9-12	10YR 4/3	60	7.5YR 3/4	+			Clay		
9-12	10YR 4/1	40					_ Clay		
				. <u> </u>					
¹ Type: C=Co	oncentration, D=D	epletion, Rl	M=Reduced Matrix.	² Loca	ation: PL=I	Pore Linin	ng, RC=Root Channel, M=Matrix		
Hydric Soil	Indicators: (Appl	licable to a	II LRRs, unless othe	rwise no	ted.)		Indicators for Problematic Hydric Soils ³ :		
Histosol	(A1)		Sandy Redox (St	5)			1cm Muck (A9) (LRR C)		
	olpedon (A2)		Stripped Matrix (56) norol (E1)			2cm Muck (A10)(LRR B)		
	slic (A3) on Sulfide (A1)			nerai (E1) atrix (E2)			Reduced Vertic (F18)		
	d Lavers (A5)(LRF	S (1)		E3)			Red Parent Material (TF2)		
	ck (A9)(LRR D)	(0)	Redox Dark Surfa	ace (F6)			U Other (explain in remarks)		
Deplete	d Below Dark Surf	face (A11)	Depleted Dark St	urface (F7	')				
Thick Da	ark Surface (A12)	· · · ·	Redox Depressio	ns (F8)	,				
🔲 Sandy N	/lucky Mineral (S1)	Vernal Pools (F9)			³ Indicators of hydric vegetation and		
Sandy G	Bleyed Matrix (S4)						wetland hydrology must be present.		
Restrictive	Layer (if present):							
Туре:									
Depth (inc	hes):						Hydric Soil Present ? 🗌 Yes 🛛 No)	
Remarks: _{Sa}	ample point contai	ns redoxim	orphic features at low	concentra	ations, bu	t does not	t meet hydric soil indicators.		
			I		,		,		
HYDROLO	GY								
Wetland Hy	drology Indicator	rs:					Secondary Indicators (2 or more require	ed)	
Drimony India	atora (any ana in	diaatar ia au	(fficient)				· _ · ~ _ ~	<u> </u>	

Primary Indicators (any one indicator is sufficient)							
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres along Livin Drift Deposits (B3)(Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in PLowed S Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Water-Stained Leaves (B9) Heaves (B9)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Shallow Aquitard (D3) FAC-Neutral Test (D5)						
Field Observations: Surface water present? Yes No Depth (inches): Water table present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Yes No Depth (inches):	Wetland Hydrology Present ?						
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.							
Remarks: No indicators of wetland hydrology observed.							

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner Ecosystem Investme	nt Partners	State CA	Sampling Point SP007
Investigator(s) S.Batiuk, R. Korhumm	el, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	<u>l floodplains</u> Loc	al Relief (concave, convex, none) <u>None</u>	Slope(%) _0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.31</u>	869838 Long: <u>-121.708764</u>	Datum: WGS 84
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classifie	cation <u>PF</u>
Are climatic/hydrologic conditions on-s	site typical for this time of yea	ar? 🛛 Yes 🔲 No 🛛 (If no, explain in re	emarks)
Are any of the following significantly di	sturbed? Degetation	Soil Hydrology Are "Normal Circu	ımstances" present? 🛛 Yes 🔲 No
Are any of the following naturally prob	ematic? Degetation	Soil Hydrology (If needed, exp	lain any answers in remarks)
SUMMARY OF FINDINGS - Attac	<u>h site map showing sar:</u>	<u>mple point locations, transects, impor</u>	tant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes □ No ⊠ Yes □ No ⊠ Yes □ No	Is the Sampled Area Xithin a Wetland?	IYes □No
Remarks: Wetland sample point pair vegetation, hydric soils, ar	ed with SP008. Sample poir d wetland hydrology. Bounc	nt taken at lower end of irrigated pasture. San dary based on signatures in aerial imagery co	nple point meets criteria for hydrophytic responding to shifts in vegetation.

TREE STRATUM Plot Size: N/A	Absolute % covor	Dominant	Indicator	Dominance Test Worksheet
1				Number of Dominant Species <u>2</u> (A) that are OBL, FACW, or FAC?
2		·		Total number of dominant2 (B)
4 Tree Stratum Total Cover:				% of dominant species that(A/B) are OBL, FACW, or FAC?
SADUNG/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet
	11// 1	-		Total % cover of: Multiply by:
· 2				OBL species x1
2				FACW species x2
۶ ۸				FAC species x3
				FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5 radius		Mara	540	Column Totals (A) (B)
1. Disticniis spicata	50	Yes		Provalence Index = B/A =
2. <u>Agrostis avenacea</u>	50	Yes		
3. Lotus corniculatus	t	<u>No</u>	FAC	Hydrophytic Vegetation Indicators
4				Dominance Test is >50%
5				• Prevalence Index is $$
6 7		·		Morphological adaptations (provide supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	_		
WOODY VINE STRATUM Plot Size:1 1.	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
 2.				-
Woody Vines Total Cover:		-		Hydrophytic Ves INo
% Bare ground in herb stratum 0	- Vegetation Present ?			
		acta dominanas (

SOIL	
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Depth	ription: (Describe Matrix	e to the de	oth needed to docu Red	ment the ox Feature	indicator	or confir	m the absence of Ind -	licators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rema	arks	
0-3	N 4/0	100					Clay			
3-10	<u>N 4/0</u>	93	7.5YR 3/4	7	<u>C</u>	PL	<u>Clay</u>			
¹ Type: C=Co	oncentration. D=De	epletion. RN	/=Reduced Matrix.	² Loca	ation: PL=F	ore Linin	g. RC=Root Channel.	M=Matrix		
Hydric Soil	Indicators: (Appl	icable to al	I LRRs, unless othe	erwise no	ted.)	0.0 2	Indicators for Prol	blematic Hvdr	ic Soils ³ :	
Histosol Histic Ep Black Hi Hydroge Stratified Tcm Mu Depleted Thick Da	(A1) bipedon (A2) istic (A3) d Layers (A5)(LRR ck (A9)(LRR D) d Below Dark Surfa ark Surface (A12)	C) ace (A11)	 Sandy Redox (Si Stripped Matrix (Loamy Mucky Mi Loamy Gleyed M Depleted Matrix (Redox Dark Surf Depleted Dark S Redox Depression 	5) S6) latrix (F1) latrix (F2) (F3) ace (F6) urface (F7 ons (F8)) 7)		1cm Muck (A9) 2cm Muck (A10 Reduced Vertic Red Parent Mat Other (explain in	(LRR C))(LRR B) (F18) terial (TF2) n remarks)		
Sandy M	/lucky Mineral (S1) Gleyed Matrix (S4)		Vernal Pools (F9)			³ Indicators of hydr wetland hydrology	ric vegetation a v must be prese	and ent.	
Restrictive	Layer (if present)	:								
Type:			_							
Depth (inc	hes):		—				Hydric So	il Present ?	🛛 Yes 🗌] No
Remarks: _{Sá}	ample point meets	depleted m	atrix (F3).				•			

Wetland Hydrology Indic Primary Indicators (any on	ators: e indicato	or is suffici	ent)			Secondary Indicators (2 or more required)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 			 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed Soils (C6) Other (Explain in Remarks) 			 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 		
Field Observations:								
Surface water present?	🗌 Yes	🛛 No	Depth (inches):					
Water table present?	🛛 Yes	🛛 No	Depth (inches):					
Saturation Present? (includes capillary fringe)	☐ Yes	🛛 No	Depth (inches): Wetland			Hydrology Present ? 🛛 Yes 🗌 No		
Describe recorded data (st	ream gua	ige, monito	oring well, aerial ph	otos, etc.) if available				
Remarks: Sample point cor	ntains wa	ter-stained	leaves (grass blac	des; B9) and algal cru	st (biotic crust; B12	?).		

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>					
Applicant/Owner <u>Ecosystem Investme</u>	nt Partners	State <u>CA</u>	Sampling Point SP008					
Investigator(s) S.Batiuk, R. Korhummel, WRA INC. Section, Township, Range								
Landform (hillslope, terrace, etc.)Dikec	l floodplain Loo	cal Relief (concave, convex, none) <u>None</u>	Slope(%) 0					
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3</u>	1796941 Long: <u>-121.7086832</u>	Datum: WGS 84					
Soil Map Unit Name Sacramento clay	Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-s	ite typical for this time of yea	ar? 🛛 Yes 🔲 No 🛛 (If no, explain in r	emarks)					
Are any of the following significantly di	sturbed? Degetation	Soil Hydrology Are "Normal Circ	umstances" present? 🛛 Yes 🔲 No					
Are any of the following naturally problem	ematic?	Soil Hydrology (If needed, ex	plain any answers in remarks)					
SUMMARY OF FINDINGS - Attac	h site map showing sa	<u>mple point locations, transects, impo</u>	rtant features, etc.					
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	□ Yes ⊠ No ⊠ Yes □ No □ Yes ⊠ No	Is the Sampled Area	☐Yes ⊠No					
Remarks: Upland sample point paired does not meet criteria for h	d with SP007. Sample point ydrophytic vegetation and v	t taken in middle of irrigated pasture. Sample vetland hydrology. Boundary based on signa	e point meets criteria for hydric soils, but tures in aerial imagery corresponding to					

shifts in vegetation.

REE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
·	% cover	Species ?		Number of Dominant Species (A) that are OBL, FACW, or FAC?
				Total number of dominant (B)
 Tree Stratum Total Cover:	:			% of dominant species that0 (A/B'
APLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
·				OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:		-		FACU species x4 UPL species x5
IERB STRATUM Plot Size: 5' radius				Column Totals (A) (B
Festuca arundinacea	70	Yes	FACU	
Lotus corniculatus	5	No	FAC	Prevalence Index = B/A =
. Sporobolus indicus	10	No	FACU	Hydrophytic Vegetation Indicators
Trifolium sp.	5	No	?	Dominance Test is >50%
				\square Prevalence Index is = 3.0<sup 1
·				Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover:	90			Problematic hydrophytic vegetation ' (explain)
VOODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		·		
Woody Vines Total Cover:		-		Hydrophytic Hydrophytic
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		Vegetation Present ? — · · · · · · · · ·

SOIL								Sampling Po	int SP00	8
Profile desc	ription: (Describe	e to the de	oth needed to docur	nent the	indicator	or confir	m the absence of in	dicators.)		
_(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Rema	irks	
0-2	2.5Y 3/2	99	7.5YR 4/4	1	С	PL,M	Clay			
<u>2-12</u>	<u>2.5Y 3/1</u>	90	7.5YR 3/4	<u> 10 </u>	<u>c</u>	PL,M	CLay			
¹ Type: C=Co	ncentration, D=De	epletion, RN	/=Reduced Matrix.	² Loca	ition: PL=I	Pore Linin	g, RC=Root Channel	, M=Matrix		
Hydric Soil Histosol Histic Ep Black His Hydroge Stratified 1cm Muc Depleted Thick Da Sandy M	Indicators: (Appli (A1) pipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)(LRR ck (A9)(LRR D) I Below Dark Surfa ark Surface (A12) lucky Mineral (S1)	C) C)	ILRRs, unless other Sandy Redox (Standard Stripped Matrix (Standard Loamy Mucky Mii Loamy Gleyed M Depleted Matrix (Standard Redox Dark Surfation Depleted Dark Surfation Redox Depression Vernal Pools (F9)	rwise no 5) S6) atrix (F2) F3) ace (F6) urface (F7 ns (F8)	ted.)		Indicators for Pro	bblematic Hydri (LRR C) 0)(LRR B) c (F18) aterial (TF2) in remarks) dric vegetation a	nd	
Restrictive	Laver (if present)	:						jy must be prese		
Type:										
Depth (inches): Hydric Soil Present ? 🛛 Yes 🗌 No										
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).							

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)						
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres along Livin Drift Deposits (B3)(Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in PLowed Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Water-Stained Leaves (B9) High Prisence of Reduced Iron (Rate)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Shallow Aquitard (D3) FAC-Neutral Test (D5)						
Field Observations: Surface water present? Yes No Depth (inches): Water table present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Yes No Depth (inches):	Wetland Hydrology Present ?						
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.							
Remarks:No indicators of wetland hydrology observed.							

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner <u>Ecosystem Investment</u> F	artners	State CA	Sampling Point SP009
Investigator(s) S.Batiuk, R. Korhummel, V	VRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked flo	odplain L	ocal Relief (concave, convex, none) <u>None</u>	Slope(%) 0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.</u>	31910318 Long: <u>-121.70311</u>	1 Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0	to 2 percent slopes	NWI cla	ssification PF
Are climatic/hydrologic conditions on-site	typical for this time of y	ear? 🛛 Yes 🔲 No 🛛 (If no, explain	in remarks)
Are any of the following significantly distur	bed? 🔲 Vegetatio	n 🔲 Soil 🔲 Hydrology 🛛 Are "Normal	Circumstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem:	atic? 🗌 Vegetatio	n 🔲 Soil 🔲 Hydrology (If needed	, explain any answers in remarks)
SUMMARY OF FINDINGS - Attach s	ite map showing s	<u>ample point locations, transects, in</u>	nportant features, etc.
Hydrophytic Vegetation Present?Image: Constraint of the sent?Hydric Soil Present?Image: Constraint of the sent?Wetland Hydrology Present?Image: Constraint of the sent?	Yes INO Yes NO Yes NO	Is the Sampled Area within a Wetland?	⊠ Yes □ No
Remarks: Wetland sample point paired wegetation, hydric soils, and w	vith SP010. Sample ta vetland hydrology. Bou	ken at lower elevation of irrigated pasture. ndary based on signatures in aerial imager	Sample point meets criteria for hydrophytic y corresponding to shifts in vegetation.

	Absolute	Dominant	Indicator	Dominance Test Worksheet
	- % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
/ k		·		Total number of dominant 1 (B)
Tree Stratum Total Cover:				% of dominant species that(A/B(A/B))(A/B)
-	 N/A	•		Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
·				OBL species x1
·				FACW species x2
·				FAC species x3
				FACU species x4
		-		UPL species x5
IERB STRATUM Plot Size: 5' radius				Column Totals (A) (B
Juncus mexicanus	30	Yes	FACW	
- Hordeum jubatum	5	<u>No</u>	FAC	
Rumex crispus	1	<u>No</u>	FAC	Hydrophytic Vegetation Indicators
Lotus corniculatus	4	<u>No</u>	FAC	Dominance Test is >50%
·				Prevalence Index is $$
·				Morphological adaptations (provide
·				supporting data in remarks)
				Problematic hydrophytic vegetation ¹ (explain
Herb Stratum Total Cover:	40	-		1 militar da ma efficiencia da constitución de la constitución de la constitución de la constitución de la const
VOODY VINE STRATUM Plot Size:I	N/A			must be present unless disturbed or problematic
· ·				
				-
Woody Vines Total Cover:		-		Hydrophytic Ves INO
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		Vegetation Present ?

SOIL	
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(inches)	Color (moist)	%	Color (moist)	%	Type ¹	L oc ¹	- Texture	Remarks	
<u>(inches)</u>)-3	10YR 2/1	100		/0			Loamy Clay		
<u>5-0</u>	1011(2/1								
3-12	N 4/0	93	7.5YR 4/4	_ 7	C	M,PL	<u>Clay</u>		
Type: C=Co	ncentration. D=D	epletion. RN	M=Reduced Matrix.	 ² Loca	tion: PL=	- Pore Linin	g. RC=Root Channel. M=	Matrix	
Hydric Soil I	ndicators: (App	icable to a	II LRRs, unless oth	erwise no	ted.)		Indicators for Proble	matic Hydric Soils ³ :	
Histosol	(A1)		Sandy Redox (S	5)			1cm Muck (A9) (LF	RR C)	
Histic Ep	pipedon (A2)		Stripped Matrix ((S6)			2cm Muck (A10)(LRR B)		
Black Histic (A3) Loamy Mucky Mineral (F1)					Reduced Vertic (F18)				
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)						Red Parent Material (TF2)			
		(C)		(F3) face (F6)			Other (explain in re	marks)	
	K (A9)(LKK D) Rolow Dork Sur	aaa (A11)		lace (FO)	'\				
	a Delow Dark Sur	ace (ATT)		ona (E9))				
	link Sufface (ATZ)	۱		UIIS (FO)			³ luadia atawa a f kuuduia u	e e e testione e e el	
Sandy Mucky Mineral (ST) Urernal Pools (F9)					Indicators of hydric v	egetation and			
Sandy Gleyed Matrix (S4)					wetland hydrology mi	ist be present.			
Restrictive I	Layer (if present):							
Туре:									
Depth (inch	nes):		_				Hydric Soil P	resent ? 🛛 Yes 🗌 No	
Remarks: Sa	mple point meets	depleted m	atrix (E3)						
Ja		depieted ii	iatrix (1 5).						

Wetland Hydrology Indicators:		Secondary Indicators	(2 or more required)
Primary Indicators (any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marke (P1)(Nenrivering)	ient) ☐ Salt Crust (B11) ☐ Biotic Crust (B12) ☐ Aquatic Invertebrates (B13) ☐ Hydrogon Sulfide Oder (C1)	☐ Water Marks (B1) ☐ Sediment Deposit ☐ Drift Deposits (B3 ☐ Drainage Patterns	(Riverine) s (B2)(Riverine))(Riverine) s (B10) s (B10)
 Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Anyologien Schlie Gool (CT) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	Boils (C6) Dry-Season Water Crayfish Burrows Soils (C6) Saturation Visible Shallow Aquitard FAC-Neutral Test	(C2) e (C7) (C8) on Aerial Imagery (C9) (D3) (D5)
Field Observations:	Dopth (inchos):		
Water table present?	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland Hydrology Present ?	🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available	3.	
Remarks: Sample point contains water-stained	d leaves (B9) and meets FAC-Neutral tes	st (D5).	
			A : 13A/ /

Project/Site Bowlsbey Ranch	City	County <u>Sola</u>	ano	Sampling Date <u>4/5/2018</u>		
Applicant/Owner Ecosystem Investment Pa	rtners		State <u>CA</u>	Sampling Point SP010		
Investigator(s) S.Batiuk, R. Korhummel, WRA INC. Section, Township, Range						
Landform (hillslope, terrace, etc.) Irrigated pa	asture	Local Relief (concave, conve	ex, none) <u>None</u>	Slope(%) 0		
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38</u>	.31968067 Loi	ng: <u>-121.702718</u>	Datum: WGS 84		
Soil Map Unit Name <u>Sacramento clay, 0 to</u>	2 percent slopes		NWI classifica	tion <u>PF</u>		
Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🗌 No 🛛 (If no, explain in remarks)						
Are any of the following significantly disturbed? 🛛 Vegetation 🖓 Soil 🖓 Hydrology 🛛 Are "Normal Circumstances" present? 🛛 Yes 🗋 No						
Are any of the following naturally problematic?			(If needed, expla	in any answers in remarks)		
SUMMARY OF FINDINGS - Attach sit	int features, etc.					
Hydrophytic Vegetation Present? Y Hydric Soil Present? Y Wetland Hydrology Present? Y	es 🛛 No es 🖾 No es 🖾 No	Is the Samp within a Wet	led Area 🛛 🗌 tland?	Yes 🖾 No		
Remarks: Upland sample point paired with vegetation, hydric soils, or wetla	Remarks: Upland sample point paired with SP009. Sample point taken in irrigated pasture. Sample point does not meet criteria for hydrophytic vegetation, hydric soils, or wetland hydrology.					

VEGETATION (use scientific names)				
TRFF STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1 · · · · · · · · · · · · · · · ·		Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2. 3				Total number of dominant3(B)3
4 Tree Stratum Total Cover:				% of dominant species that33(A/B) are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
1.		·		OBL species x1 FACW species x2 FAC species x3 FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. <u>Festuca arundinacea</u>	30	Yes	FACU	
2. Trifolium repens	30	Yes	FACU	
3. Sporobolus indicus	10	<u>No</u>	FACU	Hydrophytic Vegetation Indicators
4. Lotus corniculatus	5	<u>No</u>	FACU	Dominance Test is >50%
5. Agrostis avenacea	5	<u>No</u>	FACW	Prevalence Index is $$
6. Festuca perennis 7. 8.	20	Yes	FAC	 Morphological adaptations (provide supporting data in remarks) Destruction to be described as the time prototion 1 (complete)
Herb Stratum Total Cover:	100			
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:	% cover of	- biotic crust 0		Hydrophytic
	-			
Remarks: Sample point dominated by FAC and F.	ACU species, c	loes not meet dor	ninance test.	

SOIL	
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(inches) Color (moist) % Color (moist) % i ype Loc i exture Remarks 0-3 10YR 3/1 100	Depth					<u> </u>	1.5.51	- 	Pomorko	
0-3 10YR 3/1 100 Clay 3-12 5Y 3/1 99 7.5YR 4/4 1 C PL Clay 3-12 5Y 3/1 99 7.5YR 4/4 1 C PL Clay 3-12 5Y 3/1 99 7.5YR 4/4 1 C PL Clay 3-12 5Y 3/1 99 7.5YR 4/4 1 C PL Clay 3-12 5Y 3/1 99 7.5YR 4/4 1 C PL Clay 3-12 5Y 3/1 99 7.5YR 4/4 1 C PL Clay 3-12 5Y 3/1 99 7.5YR 4/4 1 C PL Clay	(inches)	Color (moist)	%	Color (moist)	%	Туре	LOC		Reliaiks	
3-12 5Y 3/1 99 7.5YR 4/4 1 C PL Clay	0-3	10YR 3/1	100					Clay		
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ² Location: PL=Pore Lining, RC=Root Channel, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : □ Histosol (A1) □ Sandy Redox (S5) □ 1cm Muck (A9) (LRR C) □ Histic Epipedon (A2) □ Stripped Matrix (S6) □ 2cm Muck (A10) (LRR B) □ Black Histic (A3) □ Loamy Mucky Mineral (F1) □ Red Parent Material (TF2) □ Stratified Layers (A5)(LRR C) □ Depleted Matrix (F3) □ Other (explain in remarks) □ tom Muck (A9)(LRR D) □ Redox Dark Surface (F6) □ Other (explain in remarks) □ Thick Dark Surface (A11) □ Depleted Dark Surface (F7) □ 3 ¹ Indicators of hydric vegetation and wetland hydrology must be present. Restrictive Layer (if present): Type:	3-12	<u>5Y 3/1</u>	99	7.5YR 4/4	_ 1	C	PL	Clay		
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ² Location: PL=Pore Lining, RC=Root Channel, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) Indicators for Problematic Hydric Soils ³ : Histic Epipedon (A2) Stripped Matrix (S6) 2cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) 1cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) 3Indicators of hydric vegetation and wetland hydrology must be present. Restrictive Layer (if present): Type: Type: 1										
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) Icm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Other (explain in remarks) Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydric vegetation and wetland hydrology must be present. Restrictive Layer (if present): Type: Type: If present):	¹ Tumo: C=C									
Histo contracted in Autority of the Links, functor of the Market Note and Problematic Hydric Solis : Histo contracted in Autority of the Solis is and y Redox (S5) Histo Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Chem Muck (A9)(LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Gleyed Matrix (S4) Vernal Pools (F9) Allocators of hydric vegetation and wetland hydrology must be present.	Type: C=C	Indicators: (Appl	icable to a	M=Reduced Matrix.	Loca erwise not	ted)	Pore Linin	g, RC=Root Channel, M	=Matrix	
Image: Sandy Mucky Mineral (S1) Image: Vernal Pools (F9) 3 Indicators of hydric vegetation and wetland hydrology must be present. Restrictive Layer (if present): Image: Matrix (S4) Image: Matrix (S4)	Histoso Histic E Black H Hydroge Stratifie C to Mu Deplete Thick D	l (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5)(LRF ick (A9)(LRR D) d Below Dark Surf ark Surface (A12)	RC) Tace (A11)	 Sandy Redox (S Stripped Matrix (Loamy Mucky M Loamy Gleyed M Depleted Matrix Redox Dark Surf Depleted Dark S Redox Depression 	5) S6) Iatrix (F1) Iatrix (F2) (F3) Face (F6) urface (F7 ons (F8))		1cm Muck (A9) (L 2cm Muck (A10)(l Reduced Vertic (F Red Parent Mater Other (explain in r	.RR C) LRR B) ⁻ 18) ial (TF2) remarks)	
Restrictive Layer (if present): Type:	Sandy N	Mucky Mineral (S1 Gleyed Matrix (S4))	U Vernal Pools (F9	9)			³ Indicators of hydric wetland hydrology n	vegetation and nust be present.	
Type:	Restrictive	Layer (if present):							
	Type:			_						
Depth (inches): Hydric Soil Present ?	Depth (inc	hes):		_				Hydric Soil	Present ? 🗌 Yes 🛛	No
Remarks: Sample point contains redoximorphic concentrations at low levels, but does not meet criteria for hydric soils.	Remarks: _{Si}	ample point contai	ns redoximo	orphic concentrations	s at low lev	els, but de	oes not m	eet criteria for hydric soi	ls.	

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monite	oring well, aerial photos, etc.) if available	9.	
Remarks: No indicators of wetland hydrology o	bserved.		

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner <u>Ecosystem Investme</u>	nt Partners	State CA	Sampling Point SP011
Investigator(s) S.Batiuk, R. Korhumme	el, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.) Irriga	ted pasture Local	Relief (concave, convex, none) <u>None</u>	Slope(%) _0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3151</u>	5683 Long: -121.6953379	Datum: WGS 84
Soil Map Unit Name Sacramento clay	γ, 0 to 2 percent slopes	NWI classifica	ation <u>PF</u>
Are climatic/hydrologic conditions on-s	ite typical for this time of year?	Yes INo (If no, explain in remarks)	
Are any of the following significantly di	sturbed?] Soil 🔲 Hydrology 🛛 Are "Normal Circur	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally probl	ematic?	Soil 🛛 Hydrology (If needed, expl	ain any answers in remarks)
SUMMARY OF FINDINGS - Attac	h site map showing samp	<u>point locations, transects, import</u>	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes □ No ⊠ Yes □ No ⊠ Yes □ No	Is the Sampled Area 🛛 🖂 within a Wetland?	Yes 🗆 No
Remarks: Wetland sample point pair	ed with SP104. Sample point t	aken at lower elevation of irrigated pasture.	Sample point meets criteria for

Advises Wetland sample point paired with SP104. Sample point taken at lower elevation of irrigated pasture. Sample point meets criteria for hydrophytic vegetation, hydric soils, and wetland hydrology. Boundary based on signatures in aerial imagery corresponding to shifts in vegetation.

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1				Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant3(B)
4 Tree Stratum Total Cover:				% of dominant species that67(A/B) are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet
		-		Total % cover of:Multiply by:
2				OBL species x1
3				FACW species x2
۵. 				FAC species x3
Sapling/Shrub Stratum Total Cover				FACU species x4
		-		UPL species x5
HERBSTRATUM Plot Size: 5' radius		Vee	FAC	Column Totals (A) (B)
1. Hordeum jubatum	20	Yes		$\frac{1}{2} = \frac{1}{2} = \frac{1}$
2. Agrostis avenacea	20			
	20			Hydrophytic Vegetation Indicators
		<u> </u>		Dominance Test is >50%
5. Poo sp		<u> </u>	2 PACO	Prevalence Index is $$
6. <u>Foasp.</u> 7.	Z		!	Morphological adaptations (provide
8.				Supporting data in remarks) \square Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:		_		
WOODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic
1		- <u> </u>		
2				
Woody Vines Total Cover:		-		Hydrophytic Ves INO
% Bare ground in herb stratum 25	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Sample point dominated by FAC, FAC	W, and FACU, r	meets dominance	e test.	

SOIL								Sampling Po	oint SP01	1
Profile desc	ription: (Describe	to the de	oth needed to docur	nent the	indicator	or confirm	n the absence of in	dicators.)		
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Rema	arks	
0-3	10YR 3/1	100	7.5YR 4/4	+	С		Clay			
<u>3-10</u>	N 4/0	80	7.5YR 4/4	20	С	<u>M</u>	Clay			
10-12	N 4/0	75	7.5YR 4/4	20	С	M, PL, RC	Clay			
10-12	N 2.5/0	5						non-redox mot	tles	
							·			
¹ Type: C=Co	ncentration, D=De	pletion, RN	/I=Reduced Matrix.	² Loca	ition: PL=F	Pore Lining	g, RC=Root Channel	l, M=Matrix		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Indicators for Problematic Hydric Soils ³ Histosol (A1) Sandy Redox (S5) Icm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) 1cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Vernal Pools (F9) Sandy Gleyed Matrix (S4) Vernal Pools (F9) Indicators of hydric vegetation and wetland hydrology must be present.										
Restrictive	Layer (if present)	:								
Depth (incl	nes):		_				Hydric S	oil Present ?	🛛 Yes	□ No
Remarks: _{Sa}	mple point meets	loamy gley	ed matrix (F2) and de	pleted m	atrix (F3).					

Wetland Hydrology Indicators:		Secondary In	dicators (2 or more required)			
Primary Indicators (any one indicator is sufficient	ient)					
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7 Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	□ Water Ma □ Sediment □ Drift Depo □ Drainage □ Dry-Seas □ Dry-Seas □ Thin Mucl ⊠ Crayfish E oils (C6) □ Saturatior □ Shallow A □ FAC-Neur	rks (B1)(Riverine) Deposits (B2)(Riverine) osits (B3)(Riverine) Patterns (B10) on Water Table (C2) & Surface (C7) Burrows (C8) n Visible on Aerial Imagery (C9) oquitard (D3) tral Test (D5)			
Field Observations:						
Surface water present?	Depth (inches):					
Water table present? Yes X No	Depth (inches):					
Saturation Present?	Depth (inches):	Wetland Hydrology Pro	esent ? 🛛 Yes 🗌 No			
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks: Sample point contains oxidized rhi:	cospheres along living roots (C3) and cra	fish burrows (C8).				

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/5/2018</u>				
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners	State CA	Sampling Point SP012				
nvestigator(s) R. Korhummel, R. Akiba-Hajim, WRA INC. Section, Township, Range							
Landform (hillslope, terrace, etc.)Diked	d floodplain Loca	al Relief (concave, convex, none) <u>Convex</u>	Slope(%) 5				
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.30</u>	563169 Long: <u>-121.7120483</u>	Datum: WGS 84				
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 🛛 (If no, explain in remarks)							
Are any of the following significantly disturbed? 🛛 Vegetation 🗋 Soil 🗋 Hydrology 🛛 Are "Normal Circumstances" present? 🖾 Yes 🗋 No							
Are any of the following naturally prob	ematic? Degetation	Soil Hydrology (If needed, expla	in any answers in remarks)				
SUMMARY OF FINDINGS - Attac	ch site map showing san	nple_point locations, transects, importa	ant features, etc.				
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	 ☐ Yes ☐ Yes ☑ No ☐ Yes ☑ No 	Is the Sampled Area within a Wetland?	Yes 🖾 No				
Remarks: Upland sample point paired with SP013. Sample point taken on side slope of berm. Sample point does not meet criteria for hydrophytic vegetation, hydric soils, or wetland hydrology.							

			<u> </u>	Dominance rest worksheet
	% cover	Species?	Status	Number of Dominant Species(A) that are OBL, FACW, or FAC?
				Total number of dominant(B)(B)
Tree Stratum Total Cover				. % of dominant species that (A/B) are OBL, FACW, or FAC?
APLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
				OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:	:	_		FACU species x4
ERB STRATUM Plot Size: 5' radius	3			Orliner Totals (A)
Bromus diandrus	70	Yes	UPL	
Geranium dissectum	10	No	UPL	Prevalence Index = B/A =
Elymus glaucus	t	No	FACU	Hydrophytic Vegetation Indicators
Vicia sativa	5	No	FACU	Dominance Test is >50%
Conium maculatum	33	No	FACW	\square Prevalence Index is $$
Medicago polymorpha	2	No	FACU	
·				supporting data in remarks)
·				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	:90	_		
(OODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vines Total Cover:	:			Hvdrophytic Ray
% Bare ground in herb stratum <u>0</u>	% cover of	- biotic crust		Vegetation Present ?
emarks: Thatch 10%				<u>.</u>

SOI	L
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Profile descu	ription: (Describe	to the dep	th needed to docur	nent the indic	ator or co	onfirm	the absence of inc	licators.)	
Ueptn (inches)	Color (moist)	%	Color (moist)	% T\	vpe ¹ L	oc1	Texture	Remar	ks
0-12	10YR 2/1	100					Clav		
				·	·				
				·					
¹ Type: C=Co	ncentration, D=De	pletion, RM	=Reduced Matrix.	² Location:	PL=Pore	Lining,	RC=Root Channel,	M=Matrix	
Hydric Soil I	ndicators: (Applie	cable to all	LRRs, unless othe	rwise noted.)		0,	Indicators for Pro	blematic Hydric	: Soils ³ :
Histosol	(A1)	[Sandy Redox (S5	i)			1cm Muck (A9)	(LRR C)	
Histic Ep	ipedon (A2)	L	Stripped Matrix (S	S6)			2cm Muck (A10))(LRR B)	
	slic (A3) η Sulfide (Δ4)	Ľ		heral (F1) atrix (F2)				: (F18) tarial (TE2)	
Stratified	Lavers (A5)(LRR	C) [Depleted Matrix (F3)			Red Parent Ma Other (evolution i	n remarks)	
🔲 1cm Mud	k (Á9)(LRR D)	΄ Γ	Redox Dark Surfa	ace (F6)				in formatiko)	
	Below Dark Surfa	ce (A11)	Depleted Dark Su	Irface (F7)					
☐ Thick Da	rk Surface (A12)	L	Redox Depressio Verbal Boola (E0)	ns (F8)			31		
Sandy M	leved Matrix (S4)	L					wetland hydrology	ric vegetation an	ICI at
Restrictive I	aver (if present):								n.
Type									
Denth (in ak	· · · · ·		_						
Depth (Incr	les):		_				Hydric So	oil Present ?	□ Yes ⊠ No
HYDROLOG	SY								
Wetland Hyd	rology Indicators	:					Second	ary Indicators (2	or more required)
Primary Indic	ators (any one indi	cator is suff	ficient)						i i i
Surface V High Wat Saturation Water Ma Sediment Drift Depo Surface S Inundatio Water-St	Vater (A1) er Table (A2) n (A3) arks (B1)(Nonriveria : Deposits (B2)(Non posits (B3)(Nonriver Goil Cracks (B6) n Visible on Aerial ained Leaves (B9)	ne) nriverine) ine) Imagery (B	□ Salt Crust (B □ Biotic Crust (□ Aquatic Inver □ Hydrogen Su □ Oxidized Rhi □ Presence of □ Recent Iron F 7)	11) B12) tebrates (B13) Ifide Odor (C1) zospheres aloi Reduced Iron i Reduction in P in in Remarks)) ng Living I (C4) Lowed So	Roots (ils (C6	(C3) Cray Sedi Drift Dry-5 (C3) Thin Cray Satu Shal FAC	er Marks (B1)(River ment Deposits (B Deposits (B3)(R nage Patterns (B Season Water Ta Muck Surface (C fish Burrows (C8 ration Visible on low Aquitard (D3 -Neutral Test (D3	verine) 32)(Riverine) iverine) 10) able (C2) C7) 3) Aerial Imagery (C9) 5)
Field Observ	vations:								
		es 🖾 No	Deptn (inches):		—				
Water table p	resent?	'es 🖾 No	Depth (inches):						
Saturation Pr (includes cap	esent? ∐ Ƴ illary fringe)	'es 🖾 No	Depth (inches):		—		Wetland Hydrolog	y Present ?	🗆 Yes 🖾 No
Describe reco	orded data (stream	guage, moi	nitoring well, aerial p	hotos, etc.) if a	available.				
Dava 1									
Remarks: No	hydrological indica	tors presen	t						

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/5/2018</u>				
Applicant/Owner Ecosystem Investme	nt Partners	State CA	Sampling Point SP013				
nvestigator(s) R. Korhummel, R. Akiba-Hajim, WRA INC. Section, Township, Range							
Landform (hillslope, terrace, etc.)Diked	floodplain Local	Relief (concave, convex, none) None	Slope(%) 0				
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3056</u>	64556 Long: <u>-121.7118719</u>	Datum: WGS 84				
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 🛛 (If no, explain in remarks)							
Are any of the following significantly disturbed? 🛛 Vegetation 🗋 Soil 🔲 Hydrology 🛛 Are "Normal Circumstances" present? 🛛 Yes 🗋 No							
Are any of the following naturally proble	ematic?] Soil ☐ Hydrology (If needed, ex	plain any answers in remarks)				
SUMMARY OF FINDINGS - Attac	h site map showing sam	ole point locations, transects, impo	rtant features, etc.				
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes □ No ⊠ Yes □ No ⊠ Yes □ No	Is the Sampled Area within a Wetland?	☑Yes □No				
Remarks: Wetland sample point paired with SP012. Sample point taken in swale/ditch at edge of field. Sample point meets criteria for hydrphytic vegetation, hydric soils, and wetland hydrology. Boundary based on shift in vegetation.							

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant(B)(B)
4 Tree Stratum Total Cover:				% of dominant species that are OBL, FACW, or FAC?
SAPI ING/SHRUB STRATUM Plot Size:	 N/A			Prevalence Index Worksheet
A	11/74			Total % cover of: Multiply by:
2 3.				OBL species x1 FACW species x2
4.				FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
HERB STRATUM Plot Size : 5' radius				UPL species x5
1 Schoenoplectus acutus		Yes	OBL	Column Totals (A) (B)
2.				Prevalence Index = B/A =
3				Hydrophytic Vegetation Indicators
4				Dominance Test is >50%
5				Prevalence Index is $$
6				Morphological adaptations (provide
7				supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	10			¹ Indiactors of hydric coil and watland hydrology
WOODY VINE STRATUM Plot Size:	N/A			must be present. unless disturbed or problematic.
1				· · · · · · · · · · · · · · · · · · ·
2				
Woody Vines Total Cover:				Hydrophytic Vegatation Present 2 Yes I No
% Bare ground in herb stratum <u>0</u>	_ % cover of l	biotic crust 0		Vegetation Fresent ?
Remarks: Thatch 90%, comprised of flattned Sch	oenoplectus act	utus. Sample po	int meets dom	inace test.

|--|

Profile desc	ription: (Describe f Matrix	to the dep	th needed to docum Redo	ent the in x Feature	n dicator c s	or confirn	n the absence of indicato	rs.)
_(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Remarks
¹ Type: C=Co	ncentration, D=Dep	letion, RM	=Reduced Matrix.	² Locat	ion: PL=P	ore Lining	, RC=Root Channel, M=M	atrix
Hydric Soil	ndicators: (Applic	able to all	LRRs, unless other	wise not	ed.)		Indicators for Problema	atic Hvdric Soils ³ :
Histosol	(A1)	[☐ Sandy Redox (S5)	1	,		1cm Muck (A9) (LRR	(C)
Histic Ep	ipedon (A2)	[Stripped Matrix (S	6)			2cm Muck (A10)(LRF	RB)
🔲 Black Hi	stic (A3)	[Loamy Mucky Min	eral (F1)			Reduced Vertic (F18))
🛛 🛛 Hydroge	n Sulfide (A4)	[Loamy Gleyed Ma	trix (F2)			Red Parent Material	(TF2)
Stratified	I Layers (A5)(LRR (C) [Depleted Matrix (F	3)			🛛 Other (explain in rem	arks)
🛛 🗌 1cm Muo	ck (A9)(LRR D)		Redox Dark Surfa	ce (F6)				-
	Below Dark Surfac	ce (A11)	Depleted Dark Sui	face (F7)				
Thick Da	rk Surface (A12)	l	Redox Depression	ıs (F8)			2	
Sandy M	lucky Mineral (S1)	l	Vernal Pools (F9)				Indicators of hydric ve	getation and
☐ Sandy G	leyed Matrix (S4)						wetland hydrology mus	t be present.
Restrictive	Layer (if present):							
Туре:			_					
Depth (incl	nes):		_				Hydric Soil Pre	sent ? 🛛 Yes 🗌 No
Remarks: ப	dric soils assumed	due to obs	ervation of surface w	ater and c	Iominance	of obliga	te nerennial wetland vege	tation: area assumed to be
inu	indated for long to v	erv long p	eriod during the grow	ing seaso	n	, or obliga	ic, perenniar wettand vege	
			units and grow					

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)				
Primary Indicators (any one indicator is suffici	ent)						
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed Soils (C6) Other (Explain in Remarks) 		 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 				
Field Observations:							
	Depth (inches): 2						
Water table present? Xes I No	Depth (inches): 0						
Saturation Present? Xes I No (includes capillary fringe)	Depth (inches): 0	Wetland H	lydrology Present ? 🛛 Yes 🗌 No				
Describe recorded data (stream guage, monit	Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks: Sample point contains surface water (A1), high water table (A2), and saturation (A3).							

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/5/2018</u>			
Applicant/Owner <u>Ecosystem Investme</u>	nt Partners	State CA	Sampling Point SP014			
Investigator(s) R. Korhummel, R. Akiba	a-Hajim, WRA INC.	Section,Township,Range				
Landform (hillslope, terrace, etc.)Diked	floodplain Loca	al Relief (concave, convex, none) <u>None</u>	Slope(%) _0			
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.306</u>	20367 Long: <u>-121.706566</u>	Datum: WGS 84			
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF						
Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 🛛 (If no, explain in remarks)						
Are any of the following significantly disturbed? 🛛 Vegetation 🗋 Soil 🗍 Hydrology 🛛 Are "Normal Circumstances" present? 🛛 Yes 🗋 No						
Are any of the following naturally proble	ematic? Degetation	Soil Hydrology (If needed, exp	lain any answers in remarks)			
SUMMARY OF FINDINGS - Attac	h site map showing sam	<u>pple point locations, transects, impor</u>	tant features, etc.			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes ☐ No X Yes ☐ No X Yes ☐ No	Is the Sampled Area kithin a Wetland?	Yes 🗆 No			
Remarks: Wetland sample point paired with SP015. Sample point taken in depressional area at edge of field. Sample point meets criteria for hydrophytic vegetation and wetland hydrology; hydric soils were assumed. Boundary based on signatures in aerial imagery corresponding						

to shifts in vegetation.

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
 1		Species?		Number of Dominant Species (A) that are OBL, FACW, or FAC?
2		- <u> </u>		Total number of dominant2 (B)
I Tree Stratum Total Cover:		.		% of dominant species that(A/B)(A/B)(A/B)
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
2 3 4 Sapling/Shrub Stratum Total Cover:				OBL species x1 FACW species x2 FAC species x3 FACU species x4
HERB STRATUM Plot Size: 5' radius				UPL species x5
1. Atriplex prostrata	60	Yes	FACW	Column Totals (A) (B)
2. Festuca perennis	15	No	FAC	Prevalence Index = B/A =
3. Rumex crispus	5	No	FAC	Hydrophytic Vegetation Indicators
 Elymus triticoides 	20	Yes	FAC	 Dominance Test is >50% Prevalence Index is <!--= 3.0<sup-->1
7		·		Morphological adaptations (provide supporting data in remarks)
B Herb Stratum Total Cover:	100			Problematic hydrophytic vegetation ¹ (explain)
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				-
Woody Vines Total Cover: % Bare ground in herb stratum	% cover of	- biotic crust		Hydrophytic Vegetation Present ?

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Profile desc Depth	ription: (Describe Matrix	to the de	oth needed to docum Redox	ent the in Feature	n dicator c s	or confirm	m the absence of indicators.) -	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks	
0-12	10YR 2/1	100					Loam	
		·						-
		·						_
		·						—
¹ Type: C=Co	ncentration, D=De	pletion, RM	I=Reduced Matrix.	² Locat	ion: PL=P	ore Lining	ig, RC=Root Channel, M=Matrix	
Hydric Soil I	ndicators: (Appli	cable to a	I LRRs, unless other	wise not	ed.)		Indicators for Problematic Hydric Soils ³ :	
Histosol	(A1)		Sandy Redox (S5)				1cm Muck (A9) (LRR C)	
Histic Ep	ipedon (A2)		Stripped Matrix (Se	5) 1 (54)			2cm Muck (A10)(LRR B)	
	stic (A3)		Loamy Mucky Mine	eral (F1)			Reduced Vertic (F18)	
Loamy Gleyed Matrix (F2)				Red Parent Material (TF2)				
□ Stratified Layers (A5)(LRR C) □ Depleted Matrix (F3)					🛛 Other (explain in remarks)			
	r (A9)(LRR D) Bolow Dork Surf	000 (111)		е (го) faco (Е7)				
	rk Surface (A12)	ace (ATT)		ace (F7)				
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	ucky Mineral (S1)		Vernal Pools (F9)	5 (10)			³ Indicators of budric vegetation and	
Sandy G	leved Matrix (S4)						wetland hydrology must be present	
Bestrictive I								_
Tumo	Layer (il present)	•						
туре:			—					
Depth (inch	nes):						Hydric Soil Present ? 🛛 Yes 🗌 No	
Remarks: So	ils assumed to be	hydric bas	ed on dominance of pe	erennial w	etland so	ecies and	d wetland hydrology	
		nyuno buo		i onnar n	odana op			

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)			
Primary Indicators (any one indicator is sufficient)						
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 			
Field Observations:						
Surface water present? 🔲 Yes 🛛 No	Depth (inches):					
Water table present?	Depth (inches):					
Saturation Present? Xes No (includes capillary fringe)	Depth (inches): 0	Wetland H	lydrology Present ? 🛛 Yes 🗌 No			
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks: Saturation observed throughout, but neutral test (D5).	no water table observed below. Sample	e point meets satura	ation visible on aerial imagery (C9) and FAC-			

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/5/2018</u>			
Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP015			
Investigator(s) R. Korhummel, R. Akib	a-Hajim, WRA INC.	Section,Township,Range				
Landform (hillslope, terrace, etc.)Diked	d floodplain Loca	I Relief (concave, convex, none) <u>None</u>	Slope(%) <u>5</u>			
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.306</u>	04645 Long: <u>-121.707037</u>	76 Datum: <u>WGS 84</u>			
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI clas	ssification <u>PF</u>			
Are climatic/hydrologic conditions on-s	site typical for this time of year	? 🛛 Yes 🔲 No 🛛 (If no, explain i	in remarks)			
Are any of the following significantly di	Are any of the following significantly disturbed? 🛛 Vegetation 🗋 Soil 🔲 Hydrology 🛛 Are "Normal Circumstances" present? 🛛 Yes 🗋 No					
Are any of the following naturally probl	ematic? Degetation	Soil Hydrology (If needed,	explain any answers in remarks)			
SUMMARY OF FINDINGS - Attac	<u>:h site map showing sam</u>	<u>ple point locations, transects, im</u>	portant features, etc.			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	 Yes ⋈ No Yes ⋈ No Yes ⋈ No 	Is the Sampled Area within a Wetland?	□Yes ⊠No			
Remarks: Upland sample point paire vegetation, hydric soils, or	d with SP014. Sample point t wetland hydrology.	aken on berm adjacent to field. Sample	point does not contain hydrophytic			

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1				Number of Dominant Species0 (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant 1 (B)
4 Tree Stratum Total Cover:				% of dominant species that (A/B) are OBL, FACW, or FAC?
	N/A	-		Prevalence Index Worksheet
SAFEING/SHROB STRATOM FIOUSIZE.	11/7	-		Total % cover of: Multiply by:
1 2 3 4 Sapling/Shrub Stratum Total Cover:				OBL species x1 FACW species x2 FAC species x3 FACU species x4
HERB STRATI IN Plot Size: 5' radius		-		UPL species x5
Medicago polymorpha	65	Vec	FACU	Column Totals (A) (B)
2 Geranium dissectum	15	<u>No</u>		Prevalence Index = B/A =
3 Brassica nigra	3	<u> </u>		
Bromus diandrus	10	<u> </u>		
Festuca perennis	5	No	FAC	Dominance Test is >50%
6				Prevalence Index is = 3.0</td
7.				Morphological adaptations (provide supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	_		
<u>WOODY VINE STRATUM</u> Plot Size: 1	N/A			Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2	-			
Woody Vines Total Cover:		_		Hydrophytic Tyes X No
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Sample point dominated by FACU plan	ts, does not me	eet criteria for hyd	rophytic veget	ation.

SOI	L
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Profile descr Depth	iption: (Describe Matrix	to the de	oth needed to docume Redox	ent the ir	ndicator o	r confirr	m the absence of indicators.)
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ¹	Texture Remarks
0-12	10YR 3/1	100					Clay
	ncentration, D=De		/		 on: PL=P0	ore Lining	g, RC=Root Channel, M=Matrix
Hydric Soil I	ndicators: (Appli	cable to a	I LRRs, unless other	vise note	əd.)	`	Indicators for Problematic Hydric Soils ³ :
Histosol Histic Ep Black His Hydroger Stratified 1cm Muc Depleted Thick Da Sandy M Sandy G	(A1) ipedon (A2) stic (A3) n Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa rk Surface (A12) ucky Mineral (S1) leyed Matrix (S4)	C) ace (A11)	 Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mine Loamy Gleyed Matrix Depleted Matrix (F3) Redox Dark Surface Depleted Dark Surface Redox Depressions Vernal Pools (F9) 	5) eral (F1) rix (F2) 3) e (F6) face (F7) s (F8)			 1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks) ³ Indicators of hydric vegetation and wetland hydrology must be present.
Restrictive L	_ayer (if present):	:					
Туре:							
Depth (inch	ies):		_				Hydric Soil Present ? 🛛 Yes 🛛 No
Remarks: _{Sa}	mple point does no	ot contain i	ndicators of hydric soils	5.			

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffic			
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	toring well, aerial photos, etc.) if available).	
Remarks: No hydrological indicators observed	l.		
Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/5/2018</u>
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Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP016
Investigator(s) R. Korhummel, R. Akib	a-Hajim, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	d floodplain Local	Relief (concave, convex, none) <u>convex</u>	Slope(%) 0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3078</u>	B6002 Long: <u>-121.7087513</u>	Datum: WGS 84
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classifica	tion <u>PF</u>
Are climatic/hydrologic conditions on-s	ite typical for this time of year?	? 🛛 Yes 🔲 No 🛛 (If no, explain in rem	arks)
Are any of the following significantly di	sturbed?] Soil Hydrology Are "Normal Circum	istances" present? 🛛 Yes 🔲 No
Are any of the following naturally probl	ematic?] Soil Hydrology (If needed, expla	in any answers in remarks)
SUMMARY OF FINDINGS - Attac	h site map showing sam	ole point locations, transects, importa	int features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	□ Yes ⊠ No □ Yes ⊠ No ⊠ Yes □ No	Is the Sampled Area a within a Wetland?	Yes 🖾 No
Remarks: Upland sample point paire hydrophytic vegetation or h	d with SP017. Sample point tany dric soils, but does meet crite	ken on slight berm in middle of field. Sample eria for wetland hydrology.	point does not meet criteria for

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3		·		Total number of dominant (B) (B)
4 Tree Stratum Total Cover:				% of dominant species that
	Ν/Δ	-		Prevalence Index Worksheet
A POLING/STIKOB STRATOM PIOLSIZE.	11/7	-		Total % cover of: Multiply by:
2		·		OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
		-		UPL species x5
Vicia sativa	60	Vec	FACU	Column Totals (A) (B)
Festuca perennis	40	Yes	FAC	Prevalence Index = B/A =
3.	10		17.0	Hydrophytic Vogetation Indicators
4				
5				
6.				Prevalence Index is = 3.0</td
7.				Morphological adaptations (provide
8				$\square Problematic hydrophytic vegetation1 (explain)$
Herb Stratum Total Cover:	100	_		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		_		Hydrophytic Types M No
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Dead Lactuca serroila (FACU) is preve species, does not meet criteria for hydr	lant throughout ophytic vegeta	and defines the f tion.	eature. Samp	le point dominated by a mix of FAC and FACU

SOIL								Sampling Po	oint SP016
Profile desc	ription: (Describe	to the de	pth needed to docum	nent the i	ndicator	or confiri	n the absence of in	dicators.)	
_(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Rema	arks
0-3	10YR 3/1	95	5YR 4/6	5	С	PL	Clay	Redox goes to	3 inches no deeper
3-12	10YR 3/1	100					Clay		
¹ Type: C=Co	ncentration, D=De	pletion, RM	M=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	g, RC=Root Channe	l, M=Matrix	
Hydric Soil I	ndicators: (Appli	cable to a	II LRRs, unless other	wise not	ted.)		Indicators for Pro	oblematic Hydr	ric Soils ³ :
	(AT) bipedon (A2)		Stripped Matrix (S) 6)				9) (LRR C) 10)(LRR B)	
Black His	stic (A3)		Loamy Mucky Min	eral (F1)			Reduced Verti	ic (F18)	
🛛 🛛 Hydroge	n Sulfide (A4)		Loamy Gleyed Ma	atrix (F2)			Red Parent M	aterial (TF2)	
	Layers (A5)(LRR	C)	Depleted Matrix (F	-3)			Other (explain	in remarks)	
	CK (A9)(LRR D) L Bolow Dark Surfr	$(\Lambda 11)$	Redox Dark Surfa Doploted Dark Surfa	CE (F6) rfaco (E7	`				
	rk Surface (A12)	ace (ATT)		nace (F7))				
Sandy M	lucky Mineral (S1)		Vernal Pools (F9)	10 (1 0)			³ Indicators of hy	dric vegetation a	and
🛛 Sandy G	leyed Matrix (S4)		, , , , , , , , , , , , , , , , , , ,				wetland hydrolog	gy must be pres	ent.
Restrictive	Layer (if present)	:							
Type:			_						
Depth (incl	nes):						Hydric S	oil Present ?	🗌 Yes 🖾 No
Remarks: _{Do}	es not meet F6 du	ie to insuffi	cient redox depth.				-		

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)	
Primary Indicators (any one indicator is suffici	ent)			
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 		
Field Observations:				
	Depth (inches):			
Water table present? Yes No	Depth (inches):			
Saturation Present?	Depth (inches):	Wetland H	lydrology Present ? 🛛 Yes 🗌 No	
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available).		
Remarks: Sample point contains biotic crust (E	312) and oxidized rhizospheres along liv	ing roots (C3).		

Project/Site Liberty Farms	City	County <u>Solano</u>	Sampling Date <u>4/5/2018</u>
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners	State CA	Sampling Point SP017
Investigator(s) R. Korhummel, R. Akib	a-Hajim, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	d floodplain Loca	Relief (concave, convex, none) <u>None</u>	Slope(%) _0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.307</u>	61051 Long: <u>-121.7086982</u>	Datum: WGS 84
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classifi	cation <u>PF</u>
Are climatic/hydrologic conditions on-s	site typical for this time of year	? 🛛 Yes 🔲 No 🛛 (If no, explain in re	emarks)
Are any of the following significantly di	sturbed?	🗆 Soil 🔲 Hydrology 🛛 Are "Normal Circu	ımstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	ematic?	Soil Hydrology (If needed, exp	lain any answers in remarks)
SUMMARY OF FINDINGS - Attac	ch site map showing sam	ple point locations, transects, impor	tant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes □ No X Yes □ No X Yes □ No	Is the Sampled Area within a Wetland?	IYes □No
Remarks: Wetland sample point pair hydrophytic vegetation, hy	ed with SP016. Sample point dric soils, and wetland hydrolc	taken in middle of field, adjacent to slight be gy. Boundary based on shift in vegetation	erm. Sample point meets critiera for and topography.

REE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet			
·	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?			
 		·		Total number of dominant(B)(B)			
 Tree Stratum Total Cover:				% of dominant species that(A/B(A/B))(A/B)			
	Ν/Δ	•		Prevalence Index Worksheet			
APLING/SHRUB STRATUM FILL SIZE.		-		Total % cover of: Multiply by:			
		·		OBL species x1 FACW species x2 FAC species x3			
Sapling/Shrub Stratum Total Cover:		_		FACU species x4			
IFRR STRATUM Plot Size: 5' radius				UPL species x5			
Festuca perennis	60	Yes	FAC	Column Totals (A) (B			
2. Vicia sativa	10	No	FACU	Prevalence Index = B/A =			
. Helminthotheca echioides	10	 No	FAC	Hydrophytic Vegetation Indicators			
Rumex crispus	5	No	FAC	N Dominance Test is >50%			
Lotus corniculatus	3	No	FAC				
Medicago polymorpha	2	No	FACU				
Lactuca serriola	t	No	FACU	Morphological adaptations (provide supporting data in remarks)			
Herb Stratum Total Cover:	90			Problematic hydrophytic vegetation ¹ (explain)			
VOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
		·					
Woody Vines Total Cover:		-		Hydrophytic X Yes I No			
% Bare ground in herb stratum % cover of biotic crust				- Vegetation Present ?			

SOIL								Sampling P	oint <u>SP017</u>
Profile desc	ription: (Describe	e to the de	epth needed to docur	nent the	indicator	or confir	m the absence of ir	ndicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rem	narks
0-5	10YR 3/2	83	5YR 4/6	17	С	PL	Clay		
5-12	10YR 3/2	100					Clay		
¹ Type: C=Co	oncentration, D=De	epletion, R	M=Reduced Matrix.	² Loca	ation: PL=F	Pore Linin	g, RC=Root Channe	I, M=Matrix	3
Hydric Soil	Indicators: (Appli	icable to a	Sandy Redox (S5	rwise no	ted.)		Indicators for Pr	oblematic Hyd	ric Soils°:
	pipedon (A2)		Stripped Matrix (S	56)				10)(I RR B)	
Black H	istic (A3)		Loamy Mucky Mir	neral (F1)			Reduced Vert	ic (F18)	
Hydroge	en Sulfide (A4)		Loamy Gleyed Ma	atrix (F2)			Red Parent M	aterial (TF2)	
Stratifie	d Layers (A5)(LRR	C)	Depleted Matrix (F3)			Other (explain	in remarks)	
	ick (A9)(LRR D)		Redox Dark Surfa	ace (F6)					
	d Below Dark Surfa	ace (A11)	Depleted Dark Su	urface (F7	()				
	ark Surface (A12) Jucky Mineral (S1)			ns (F8)			³ Indiactors of hu	dria vagatation	and
	Reved Matrix (S4)						wotland bydrolog	and vegetation	anu
Restrictive	Laver (if present)	:						gy must be pres	Sent.
Type:	,								
Depth (inc	hes):						Hydric S	Soil Present ?	🛛 Yes 🗌 No
emarks: _S ،	ample point meets	redox dark	(surface (F6)				ł		
		rouox uun							

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)	
Primary Indicators (any one indicator is sufficient	ient)			
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 		
Field Observations:				
Water table present? Yes X No	Depth (inches):			
Saturation Present? Xes I No (includes capillary fringe)	Depth (inches): <u>10</u>	Wetland H	lydrology Present ? 🛛 Yes 🗌 No	
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available			
Remarks: Saturation present but not underlair	by water table. Biotic crust observed (B	112).		

Project/Site Vogel Island	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP018
Investigator(s) T. Harris, R. Akiba-Haj	im, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	d floodplains Loc	al Relief (concave, convex, none) <u>None</u>	Slope(%) 2
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.29</u>	037725 Long: <u>-121.7191472</u>	Datum: WGS 84
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classifica	ation PEMFh
Are climatic/hydrologic conditions on-s	site typical for this time of yea	ar? 🛛 Yes 🔲 No 🛛 (If no, explain in ren	narks)
Are any of the following significantly di	sturbed?	Soil Hydrology Are "Normal Circur	nstances" present? 🔲 Yes 🛛 No
Are any of the following naturally problem	ematic? Degetation	Soil Hydrology (If needed, expla	ain any answers in remarks)
SUMMARY OF FINDINGS - Attac	ch site map showing sar	<u>mple point locations, transects, importa</u>	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes ☐ No X Yes ☐ No X Yes ☐ No	Is the Sampled Area 🛛 🕅 within a Wetland?	Yes 🗌 No
Remarks: Wetland sample point pair hydrophytic vegetation, hy	ed with SP019. Sample poir dric soils, and wetland hydro	nt taken in field adjacent to berm crossing the is logy. Boundary based on shift in vegetation ar	sland. Sample point meets criteria for nd topography.

REF STRATUM Plot Size N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet			
·	% cover	Species?		Number of Dominant Species (A) that are OBL, FACW, or FAC?			
 				Total number of dominant species across all strata?			
 Tree Stratum Total Cover:				% of dominant species that			
SAPLING/SHRUB STRATUM Plot Size	N/A	-		Prevalence Index Worksheet			
		-		Total % cover of: Multiply by:			
·				OBL species x1			
		- <u> </u>		FACW species x2			
·		<u> </u>		FAC species x3			
Sanling/Shrub Stratum Total Cover:				FACU species x4			
		-		UPL species x5			
<u>IERB STRATUM</u> Plot Size: 10' radius			540	Column Totals (A) (B			
Festuca perennis	60	Yes	FAC	$\frac{1}{1} = \frac{1}{1} = \frac{1}$			
Medicago polymorpha		<u>No</u>	FACU				
Erodium cicutarium	t	<u>No</u>		Hydrophytic Vegetation Indicators			
Schoenoplectus acutus	5	<u>No</u>	OBL	Dominance Test is >50%			
jypna sp.	5	<u>No</u>	OBL	Prevalence Index is $$			
Cyperus eragrostis	5	No		Morphological adaptations (provide supporting data in remarks)			
Herb Stratum Total Cover:	90			Problematic hydrophytic vegetation ' (explain)			
VOODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology			
		<u> </u>		must be present, unless disturbed of problematic.			
Woody Vines Total Cover:		·		Hydrophytic ⊠Yes □No			
% Bare ground in herb stratum 10 % cover of biotic crust 0				Vegetation Present ?			

SOIL								Sampling Po	oint SP01	8
Profile desc	ription: (Describe	e to the de	oth needed to docu	ment the	indicator	or confirm	n the absence of in	dicators.)		
Depth (inches)	<u>Matrix</u> Color (moist)	%	Color (moist)	<u>ox reatur</u> %	es Tvpe ¹	Loc ¹	Texture	Rem	arks	
0-5	10YR 3/1	85	10YR 5/8	15	C	PL,RC	Clay Loam			
<u>5-13+</u>	<u>5Y 2.5/1</u>	90	10YR 5/8	10	<u>C</u>	PL,RC	Clay Loam			
				- <u> </u>						
¹ Type: C=Co	oncentration, D=De	epletion, RN	/=Reduced Matrix.	² Loca	ation: PL=I	Pore Lining	g, RC=Root Channe	I, M=Matrix		
Hydric Son Histosol Histic E Black Hi Hydroge Stratifie Complete Thick Da Sandy N Sandy O	(A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5)(LRR ok (A9)(LRR D) d Below Dark Surfa ark Surface (A12) <i>J</i> ucky Mineral (S1) Gleyed Matrix (S4)	C) ace (A11)	□ Sandy Redox (Sf □ Stripped Matrix (f □ Loamy Mucky Mi □ Loamy Gleyed M □ Depleted Matrix (f □ Depleted Matrix (f □ Depleted Dark Suffa □ Redox Depressic □ Vernal Pools (F9	5) S6) neral (F1) atrix (F2) (F3) ace (F6) urface (F6) ons (F8))	/)		Icm Muck (AS 1cm Muck (AS 2cm Muck (A1 Reduced Verti Red Parent M Other (explain ³ Indicators of hy wetland hydrolog	d) (LRR C) (I)(LRR B) (I)(LRR B) (I)(LRR B) (I)(1)(LRR B) (I)(1)(LRR B) (I)(LRR B) (I)(LRR B) (I)(LRR B) (I)(LRR C) (I)(LRR C) (I)(LRR C) (I)(LRR C) (I)(LRR C) (I)(LRR C) (I)(LRR C) (I)(LRR C) (I)(LRR C) (I)(LRR B) (I)(LRR B) (I)(I	and ent.	
Restrictive	Layer (if present)	:								
Depth (inc	hes):						Hydric S	oil Present ?	🛛 Yes	□ No
Remarks: _{Sa}	ample point meets	criteria for	redox dark surface (F	6) and re	dox depre	ssions (F8).			

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)	
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Recent Iron Reduction in PLower Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Living Roots (C3) Thin Muck Surface (C7) 4) Crayfish Burrows (C8) wed Soils (C6) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:	
Surface water present? Yes X No Depth (inches):	_
Water table present? Yes X No Depth (inches):	_
Saturation Present? Yes No Depth (inches):	── Wetland Hydrology Present ? ⊠ Yes □ No
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if availa	ailable.
Remarks: Sample point meets criteria for inundation visible on aerial imagery (B7)	7) and oxidized rhizospheres along living roots (C3).

Project/Site Vogel Island	City	County Solano	Sampling Date <u>4/5/2018</u>				
Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP019				
Investigator(s) T. Harris, R. Akiba-Hajim, WRA INC. Section, Township, Range							
Landform (hillslope, terrace, etc.)Dike	d floodplain Loc	al Relief (concave, convex, none) <u>None</u>	Slope(%) _0				
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.29</u>	043983 Long: <u>-121.718966</u>	Datum: WGS 84				
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PEMFh							
Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 🛛 (If no, explain in remarks)							
Are any of the following significantly d	isturbed? Degetation	Soil Hydrology Are "Normal Circur	mstances" present? 🛛 Yes 🔲 No				
Are any of the following naturally prob	lematic? Degetation	Soil Hydrology (If needed, expla	ain any answers in remarks)				
SUMMARY OF FINDINGS - Attac	ch site map showing san	nple point locations, transects, import	ant features, etc.				
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	□ Yes ⊠ No ⊠ Yes □ No □ Yes ⊠ No	Is the Sampled Area within a Wetland?	Yes 🖾 No				
Remarks: Upland sample point paired with SP018. Sample point taken on berm crossing middle of island. Sample point meets criteria for hydric soils, but does not contain hydrophytic vegetation or wetland hydrology.							

Image: Species? Status Number of Dominant Species 0 Image: Species? Status Image: Species? Status Image: Species? Status Image: Species? Status Image: Species Species? Status Image: Species Number of Dominant Species Interpretation Interpretation Species Interpretation Species Interpretation Interpretation S	TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
Total number of dominant species across all strata? 2 Tree Stratum Total Cover: % of dominant species that are OBL, FACW, or FAC? 0 SAPLING/SHRUB STRATUM Plot Size: N/A Sapling/Shrub Stratum Total Cover: Sapling/Shrub Stratum Total Cover: HERB STRATUM Plot Size: 10' radius Medicago polymorpha 30 Yes FACU Prevalence Index = B/A = Medicago polymorpha 30 Yes Herb Stratum 15 No FAC Hordeum murinum 15 No FAC Lotus corniculatus 15 No FAC Methorphytic Vegetation Indicators Herb Stratum Total Cover: 95 Morphological adaptations (provide supporting data in remarks) Problematic hydrophytic vegetation ¹ (ex) Morphological adaptations (provide supporting data in remarks) Problematic hydrophytic vegetation ¹ (ex) Methorphytic Stratum Total Cover: 95 Mor		_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
Medicago polymorpha 30 Yes FACU Prevalence Index Worksheet Medicago polymorpha 30 Yes FACU Prevalence Index Worksheet Medicago polymorpha 30 Yes FACU Prevalence Index Worksheet Medicago polymorpha 30 Yes FACU Septilor (A) Medicago polymorpha 5 No FACU Prevalence Index = B/A = Heilotropium curassavicum 15 No FACU Prevalence Index is <	L				Total number of dominant (B) (B)
SAPLING/SHRUB STRATUM Plot Size: N/A Sapling/Shrub Stratum Total Cover:	Tree Stratum Total Cover:				% of dominant species that (A/ are OBL, FACW, or FAC? (A/
Control STRATUM First Size: INA Image: Server Linko/SHRKOB STRATUM First Size: Image: Size: Image: Size: Image: Size: Multiply by Image: Server Size: Image: Size: Image: Size: Image: Size: Image: Size: Image: Size: Multiply by Image: Size: Image:		N/A	-		Prevalence Index Worksheet
OBL species x1 FAC species x2 FAC species x3 FAC species x3 FAC species x4 UPL species x4 UPL species x4 UPL species x5 FAC species x4 UPL species x5 Column Totals (A) Image: Trifolium repens 30 Yes Heliotropium curassavicum 15 No Festuca perennis 5 No Heliotropium murinum 15 No Image: Lotus corniculatus 15 No Herb Stratum Total Cover: 95 Morphological adaptations (provide supporting data in remarks) Image: Problematic hydrophytic vegetation 1 (exporting data in remarks) 1 Indicators of hydric soil and wetland hydrold must be present, unless disturbed or problematic hydrophytic vegetation 1 (exporting data in remarks)	SAPLING/SHRUB STRATOM FILL SIZE.	11/7	-		Total % cover of: Multiply by:
Sapling/Shrub Stratum Total Cover:	 2 3				OBL species x1 FACW species x2
Sapling/Shrub Stratum Total Cover:	1.				FAC species x3
HERB STRATUM Plot Size: 10' radius 1. Medicago polymorpha 30 Yes FACU 2. Trifolium repens 30 Yes FACU 3. Heliotropium curassavicum 15 No FACU 4. Festuca perennis 5 No FACU 5. Hordeum murinum t No FACU 6. Lotus corniculatus 15 No FACU 7.	Sapling/Shrub Stratum Total Cover:		_		FACU species x4
Image: Sector of the data in the order of the orde	HERB STRATUM Plot Size: 10' radius				UPL species x5
Implementation Imple	Medicado polymorpha		Yes	FACU	Column Totals (A) (
3. Heliotropium curassavicum 15 No FACU Hydrophytic Vegetation Indicators 4. Festuca perennis 5 No FAC Dominance Test is >50% 5. Hordeum murinum t No FACU Prevalence Index is >10° 6. Lotus corniculatus 15 No FAC Morphological adaptations (provide supporting data in remarks) 8.	2. Trifolium repens	30	Yes	FACU	Prevalence Index = B/A =
A. Festuca perennis 5 No FAC Dominance Test is >50% 5. Hordeum murinum t No FACU Prevalence Index is = 3.01</td 6. Lotus corniculatus 15 No FAC Morphological adaptations (provide supporting data in remarks) 7.	3. Heliotropium curassavicum	15	No	FACU	Hydrophytic Vegetation Indicators
Hordeum murinum t No FACU Prevalence Index is Solution of the set is > 30 % 15 No FAC Prevalence Index is > 3. Image: Set is > 30 %	Festuca perennis	5	No	FAC	
3. Lotus corniculatus 15 No FAC Prevalence index is >= 3.0° 7.	Hordeum murinum	t	No	FACU	
7.	Lotus corniculatus	15	No	FAC	Prevalence Index is $$
Herb Stratum Total Cover: 95 <u>NOODY VINE STRATUM</u> Plot Size: N/A N/A MODDY VINE STRATUM Plot Size: N/A N/A N/A MODDY VINE STRATUM Plot Size: N/A	7				Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover: 95 MOODY VINE STRATUM Plot Size: N/A I.	3				Problematic hydrophytic vegetation ¹ (explain
must be present, unless disturbed or probler	Herb Stratum Total Cover: _ WOODY VINE STRATUM Plot Size:	95 N/A	-		¹ Indicators of hydric soil and wetland hydrology
	1.				must be present, unless disturbed or problematic
2.	2.				
Woody Vines Total Cover: Hydrophytic Yes 🛛 N	Woody Vines Total Cover:		-		Hydrophytic Ves 🛛 No
% Bare ground in herb stratum 5 % cover of biotic crust 0 Vegetation Present ?	% Bare ground in herb stratum 5 % cover of biotic crust 0				Vegetation Present ?

SOIL								Sampling Po	oint SP01	9
Profile desc	ription: (Describe	e to the de	oth needed to docur	nent the	indicator	or confir	m the absence of in	dicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	- Texture	Rema	arks	
0-5	10YR 3/1	96	10YR 4/6	4	С	PL	Clay			
5-12	2.5Y 2.5/1	96	10YR 4/6	4	С	PL	Clay			
				·						
		·								
¹ Type: C=Co	ncentration, D=De	pletion, RN	/=Reduced Matrix.	² Loca	ation: PL=F	Pore Linin	g, RC=Root Channel	I, M=Matrix		
Hydric Soil I Histosol Histic Ep Black His Hydroge Stratified C 1cm Muc Depleted Thick Da Sandy M Sandy G	ndicators: (Appli (A1) ipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)(LRR k (A9)(LRR D) I Below Dark Surfa rk Surface (A12) ucky Mineral (S1) leyed Matrix (S4)	cable to al C) ace (A11)	I LRRs, unless othe Sandy Redox (S5 Stripped Matrix (S Loamy Mucky Mii Loamy Gleyed Mi Depleted Matrix (Redox Dark Surfa Depleted Dark Surfa Redox Depressio Vernal Pools (F9)	rwise no 56) heral (F1) hatrix (F2) F3) ace (F6) irface (F7 ns (F8)	(ted.)		Indicators for Pro	oblematic Hydr (LRR C) (URR B) ic (F18) aterial (TF2) in remarks) dric vegetation a gy must be prese	ic Soils³: and ent.	
Restrictive	Layer (if present)	:								
Depth (inches): Hydric Soil Present ? 🛛 Yes 🗌 No						🗆 No				
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).				-			

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffic	ient)	
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:	Double (in share):	
Water table present? \Box Yes \boxtimes No	Depth (inches):	
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches):	Wetland Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available	le.
Remarks: No indicators of wetland hydrology	observed.	

Project/Site Bowlsbey Ranch	City	County <u>Solar</u>	10	Sampling Date 4/5/2018		
Applicant/Owner Ecosystem Investme		State <u>CA</u>	Sampling Point SP020			
Investigator(s) T. Harris, R. Akiba-Hajim, WRA INC. Section, Township, Range						
Landform (hillslope, terrace, etc.)Dike	d floodplain L	ocal Relief (concave, convex	(, none) <u>None</u>	Slope(%) 2		
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38</u>	.3271437 Long	g: <u>-121.6946625</u>	Datum: WGS 84		
Soil Map Unit Name Clear Lake clay, 0 to 2 percent slopes NWI classification PF						
Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 🛛 (If no, explain in remarks)						
Are any of the following significantly d	sturbed? Degetation	on 🔲 Soil 🔲 Hydrology	Are "Normal Circums	tances" present? 🛛 Yes 🔲 No		
Are any of the following naturally prob	ematic?	on 🛛 Soil 🔲 Hydrology	(If needed, explain	any answers in remarks)		
SUMMARY OF FINDINGS - Attac	h site map showing s	ample point locations, t	ransects, importan	t features, etc.		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	☐ Yes ⊠ No ☐ Yes ⊠ No ☐ Yes ⊠ No	Is the Sample within a Wetl	ed Area ☐ Y and?	es 🖾 No		
Remarks: Unpaired upland sample p wetland hydrology.	oint located at edge of irri	gated pasture. Sample point	does not contain hydro	pphytic vegetation, hydric soils, or		

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant(B)(B)
4 Tree Stratum Total Cover:		·		% of dominant species that (A/B) (A/B)
SAPLING/SHRUB STRATUM Plot Size:	N/A			Prevalence Index Worksheet
	14/7 (Total % cover of: Multiply by:
2 ·		·		OBL species x1
2 ·		·		FACW species x2
		·		FAC species x3
T		·		FACU species x4
Sapling/Shrub Stratum Total Cover:				UPL species x5
HERB STRATUM Plot Size: 10' radius				Column Totals (A) (B)
1. Sporobolus indicus	55	Yes	FACU	
2. Plantago lanceolata	10	No	FAC	Prevalence Index = B/A =
3. Lotus corniculatus	10	No	FAC	Hydrophytic Vegetation Indicators
4. Carex sp.	2	No	?	Dominance Test is >50%
5. <u>Festuca perennis</u>	10	No	FAC	\square Prevalence Index is $$
6. Paspalum dilatatum 7	3	<u>No</u>	FAC	Morphological adaptations (provide supporting data in remarks)
8				\square Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	90			
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:				Hydrophytic Vogstation Brosont 2 Yes 🛛 No
% Bare ground in herb stratum <u>10</u>	% cover of	biotic crust 0		
Remarks: Sample point dominated by FACU spec	cies, does not m	neet criteria for hy	/drophytic veg	etation.

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Sampling Point	SP020
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Profile desc	ription: (Describe Matrix	e to the de	oth needed to docum Redo	ent the in K Feature	ndicator o	or confir	m the absence of i	indicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Remarks
0-12+	10YR 3/2	65					Loamy Clay	_
0-12+	<u>2.5Y 4/4</u>	35					Loamy Clay	non-redox mottling
¹ Type: C=Co	ncentration, D=De	epletion, RM	/I=Reduced Matrix.	² Locat	ion: PL=P	ore Linin	g, RC=Root Chann	el, M=Matrix
Hydric Soil I Histosol Histic Ep Black His Hydroge Stratified Depleted Thick Da Sandy M Sandy G	ndicators: (Appli (A1) ipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)(LRR b) (LRR D) I Below Dark Surfa rk Surface (A12) ucky Mineral (S1) leyed Matrix (S4)	C) ace (A11)	I LRRs, unless other Sandy Redox (S5) Stripped Matrix (Sd Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfac Depleted Dark Sur Redox Depression Vernal Pools (F9)	wise not 6) eral (F1) trix (F2) 3) ce (F6) face (F7) s (F8)	ed.)		Indicators for P 1 cm Muck (A 2 cm Muck (A Reduced Ver Red Parent N Other (explai ³ Indicators of h wetland hydrology	roblematic Hydric Soils ³ : (9) (LRR C) (10)(LRR B) rtic (F18) Material (TF2) in in remarks) ydric vegetation and pgy must be present.
Restrictive	Layer (if present)	:						
Depth (incl	nes):		_				Hydric	Soil Present ? 🛛 Yes 🛛 No
Remarks: _{Sa}	mple point does n	ot meet crit	eria for hydric soil indi	cators.			•	

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)		
Primary Indicators (any one indicator is suffici	Primary Indicators (any one indicator is sufficient)				
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 		
Field Observations:					
	Depth (Inches):				
Water table present? Yes X No	Depth (inches):				
Saturation Present?	Depth (inches):	Wetland I	Hydrology Present ? 🛛 Yes 🛛 No		
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.					
Remarks: No hydrological indicators observed.					

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>			
Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP021			
Investigator(s) T. Harris, R. Akiba-Hajim, WRA INC. Section, Township, Range						
Landform (hillslope, terrace, etc.)Dike	d floodplain Loca	Relief (concave, convex, none) <u>None</u>	Slope(%) 2			
Subregion(LRR) LRR C (Medit. CA) Lat: <u>38.32671519</u> Long: <u>-121.6947416</u> Datum: <u>WGS 84</u>						
Soil Map Unit Name Clear Lake clay, 0 to 2 percent slopes NWI classification PF						
Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 👘 (If no, explain in remarks)						
Are any of the following significantly d	sturbed? 🔲 Vegetation 🛽	Soil 🔲 Hydrology 🛛 Are "Normal Circu	mstances" present? 🛛 Yes 🔲 No			
Are any of the following naturally prob	ematic?	Soil 🔲 Hydrology (If needed, expl	ain any answers in remarks)			
SUMMARY OF FINDINGS - Attac	h site map showing sam	ple point locations, transects, import	ant features, etc.			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes ☐ No X Yes ☐ No X Yes ☐ No	Is the Sampled Area within a Wetland?	Yes 🗆 No			
Remarks: Wetland sample point pair hydrophytic vegetation, hy	ed with SP022. Sample point dric soils, and wetland hydrolo	taken in lower elevation of irrigated pasture. bgy. Boundary based on signatures in aerial	Sample point meets criteria for imagery corresponding to shifts in			

vegetation.

VEGETATION (use scientific names)							
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet			
1	% cover	Species?	Status	Number of Dominant Species3 (A) that are OBL, FACW, or FAC?			
2 3				Total number of dominant species across all strata?			
4 Tree Stratum Total Cover:				% of dominant species that are OBL, FACW, or FAC?			
	Ν/Δ	-		Prevalence Index Worksheet			
SAFEING/SHROB STRATOM FIGURE.	N/73	-		Total % cover of: Multiply by:			
1. 2. 3.				OBL species x1 FACW species x2 FAC species x3			
4				FACU species x4			
Sapling/Shrub Stratum Total Cover:		-		UPL species x5			
HERB STRATUM Plot Size: 10' radius							
1. Elymus triticoides	20	Yes	FAC				
2. Ranunculus muricatus	5	No	FACW	Prevalence Index = B/A =			
3. Distichlis spicata	20	Yes	FAC	Hydrophytic Vegetation Indicators			
4. Carex c.f. barbarae	20	Yes	FAC	Dominance Test is >50%			
5. Lotus corniculatus	5	No	FAC	\square Prevalence Index is $$			
6. <u>Rumex crispus</u>	t	No	FAC				
7				supporting data in remarks)			
8				\square Problematic hydrophytic vegetation ¹ (explain)			
Herb Stratum Total Cover:	70	_					
<u>WOODY VINE STRATUM</u> Plot Size: 1	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
2							
Woody Vines Total Cover:		_		Hydrophytic M Voc T No			
% Bare ground in herb stratum <u>10</u>	% cover of	biotic crust 0		Vegetation Present ?			
Remarks: Thatch 20%. Sample point dominated	by FAC specie	s, meets dominar	nce test.				

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Sampling	Point	SP021
oampning	i onit	01 02 1

Profile desc Depth	ription: (Describe Matrix	e to the dep	oth needed to docu Red	ment the ir lox Features		or confirm	n the absence of	indicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Remarks
0-5	5Y 3/1	100					Clay	
5-12+	<u>5Y 3/2</u>	70	<u>10YR 5/6</u>	30	<u>C</u>	M,PL,RC	Clay	Redox along root channels
¹ Type: C=Co	oncentration, D=De	epletion, RN	I=Reduced Matrix.	² Locati	on: PL=F	ore Lining	g, RC=Root Chann	nel, M=Matrix
Hydric Soil	Indicators: (Appl	icable to al	I LRRs, unless othe	erwise note	ed.)		Indicators for P	Problematic Hydric Soils ³ :
Histosol Histic El Black Hi Hydroge Stratified Completed Thick Da	(A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5)(LRR ck (A9)(LRR D) d Below Dark Surf ark Surface (A12)	: C) ace (A11)	Sandy Redox (Si Stripped Matrix (Loamy Mucky Mi Loamy Gleyed M Depleted Matrix (Redox Dark Surf Depleted Dark S Redox Depressio	5) S6) ineral (F1) latrix (F2) (F3) iace (F6) urface (F7) ons (F8)			1 cm Muck (A 2 cm Muck (A Reduced Ve Red Parent I Other (explain)	A9) (LRR C) A10)(LRR B) rtic (F18) Material (TF2) in in remarks)
Sandy Mucky Mineral (S1) Vernal Pools (F9)						Indicators of h wetland hydrol	nydric vegetation and ogy must be present.	
Restrictive Type: Depth (inc	Layer (if present) hes):	:	_				Hydric	Soil Present ? 🛛 Yes 🗌 No
Remarks: _{Sa}	ample point meets	redox dark	surface (F6).				•	

HYDROLOGY

Wetland Hydrology Indicators:		S	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches):	Wetland Hy	rdrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available		
Remarks: Sample point contains biotic crust (312) and oxidized rhizospheres along liv	ng roots (C3). Samp	le point also meets FAC-neutral test (D5).

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner <u>Ecosystem Investme</u>	nt Partners	State CA	Sampling Point SP022
Investigator(s) <u>T. Harris, R. Akiba-Haji</u>	m, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Dikec	<u>l floodplain</u> Local	Relief (concave, convex, none) none	Slope(%) 2
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3258</u>	4861 Long: <u>-121.6953752</u>	Datum: WGS 84
Soil Map Unit Name Clear Lake clay,	0 to 2 percent slopes	NWI classificat	ion <u>PF</u>
Are climatic/hydrologic conditions on-s	ite typical for this time of year?	' 🛛 Yes 🗋 No 🛛 (If no, explain in rema	arks)
Are any of the following significantly di	sturbed?] Soil ☐ Hydrology Are "Normal Circum:	stances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	ematic?] Soil Hydrology (If needed, explai	n any answers in remarks)
SUMMARY OF FINDINGS - Attac	h site map showing samp	ole point locations, transects, importa	nt features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	□ Yes ⊠ No □ Yes ⊠ No □ Yes ⊠ No	Is the Sampled Area	res ⊠No
Remarks: Upland sample point paired vegetation, hydric soils, or	d SP021. Sample point taken i wetland hydrology.	in middle of irrigated pasture. Sample point do	oes not meet criteria for hydrophytic

IREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
I	_ % cover			Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant (B)
I Tree Stratum Total Cover:				% of dominant species that
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
3		 		OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:		-		FACU species x4
HERB STRATUM Plot Size: 10' radius				
. Sporobolus indicus	40	Yes	FACU	
2. Lotus corniculatus	30	Yes	FAC	Prevalence Index = B/A =
3. Festuca perennis	10	No	FAC	Hydrophytic Vegetation Indicators
L. Poa annua	5	No	FAC	Dominance Test is >50%
<u>5</u> Carex sp.	5	No	?	\square Prevalence Index is $\leq = 3.0^1$
3 7 3.				 Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover:	90			
<u>NOODY VINE STRATUM</u> Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				- Hydronhytic
% Bare ground in herb stratum 5	% cover of	biotic crust <u>0</u>		Vegetation Present ?

SOIL								Sampling Po	int SP022
Profile desc	cription: (Describe	e to the de	epth needed to docum	ent the i	ndicator o	or confir	m the absence of i	ndicators.)	
(inches)	Color (moist)	%	Color (moist)	<u>x i eature</u> %	Type ¹	Loc ¹	- Texture	Rema	arks
2-0	10YR 2/2	100					Organic		
0-12+	2.5Y 3/2	70					Clay	non-redox mott	les
0-12+	2.5Y 4/2	30					Clay	non-redox mott	les
1				21			- DO-Deet Cherry		
Type: C=C	Indicators: (Appl	epietion, R	M=Reduced Matrix.		$\frac{100}{00}$	ore Linin	g, RC=Root Channe	el, M=Matrix	
Histoso Histic E Black H Hydroge Stratifie C tom Mu Deplete Thick D Sandy N Sandy 0	I (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5)(LRR Jick (A9)(LRR D) d Below Dark Surfa ark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4)	: C) ace (A11)	Sandy Redox (S5) Stripped Matrix (S Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Surfa Depleted Dark Surfa Redox Depression Vernal Pools (F9)	6) eral (F1) trix (F2) 53) ce (F6) fface (F7) ns (F8))			9) (LRR C) 10)(LRR B) ic (F18) laterial (TF2) n in remarks) dric vegetation a gy must be prese	nd ent.
Restrictive Type:	Layer (if present)	:							
Depth (inc	:hes):						Hydric S	Soil Present ?	🗌 Yes 🛛 No
Remarks: _{Si} hy	ample point contair ydric soils.	ns non-red	oximorphic mottling as	describe	d for Sacra	imento s	eries soils. Sample	point does not m	eet indicators of

Wetland Hydrology Indicators	:			Secondary Indicators (2 or more required)
Primary Indicators (any one ind	cator is suffic	ient)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriver Sediment Deposits (B2)(No Drift Deposits (B3)(Nonrive Surface Soil Cracks (B6) Inundation Visible on Aerial Water-Stained Leaves (B9) 	ne) nriverine) ine) Imagery (B7)	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (51) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:				
	es 🖾 No	Depth (inches):		
Water table present?	′es 🛛 No	Depth (inches):		
Saturation Present?	′es 🛛 No	Depth (inches):	Wetland	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream	guage, moni	toring well, aerial photos, etc.) if available) .	
Remarks: No hydrological indica	tors observed	l		

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner <u>Ecosystem Investme</u>	nt Partners	State CA	Sampling Point SP023
Investigator(s) <u>T. Harris, R. Akiba-Haji</u>	m, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Dikec	l floodplain Loca	al Relief (concave, convex, none) <u>concave</u>	Slope(%) 2
Subregion(LRR) <u>LRR C (Medit. CA)</u>	Lat: <u>38.32</u>	723716 Long: <u>-121.7115931</u>	Datum: WGS 84
Soil Map Unit Name Clear Lake clay,	0 to 2 percent slopes	NWI classifica	tion <u>PF</u>
Are climatic/hydrologic conditions on-s	ite typical for this time of yea	r? 🛛 Yes 🔲 No 🛛 (If no, explain in rem	narks)
Are any of the following significantly di	sturbed? Degetation	Soil Hydrology Are "Normal Circum	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	ematic?	Soil Hydrology (If needed, expla	ain any answers in remarks)
SUMMARY OF FINDINGS - Attac	h site map showing san	nple point locations, transects, importa	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	I Yes □ No I Yes □ No I Yes □ No	Is the Sampled Area 🛛 🕅 within a Wetland?	Yes 🗌 No
Remarks: Wetland sample point pair criteria for hydrophytic veg	ed with SP024. Sample poin etation, hydric soils, and wetl	t taken in depressional area at lower end of irri land hydrology. Boundary based on signatures	gated pasture. Sample point meets s in aerial imagery corresponding to

shifts in vegetation.

REF STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
		·		Total number of dominant3 (B)
Tree Stratum Total Cover	:			% of dominant species that67(A/B67(A/B
	Ν/Δ	-		Prevalence Index Worksheet
APLING/SFIRUD STRATUM FIGUSIZE.	11/7	-		Total % cover of: Multiply by:
				OBL species x1
				FACW species x2
				FAC species x3
				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
ERB STRATUM Plot Size: 10' radius	3			Column Totals (A) (B
Juncus mexicanus	20	Yes	FACW	
Juncus bufonius	5	No	FACW	Prevalence Index = B/A =
Trifolium repens	15	Yes	FACU	Hydrophytic Vegetation Indicators
Lotus corniculatus	18	Yes	FAC	Dominance Test is >50%
Cotula cornopifolia	2	No	OBL	\square =
Ranunculus muricatus	5	No	FACW	
Poa annua	5	No	FAC	Morphological adaptations (provide
				\square
Herb Stratum Total Cover:	70			
OODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				·
Woody Vines Total Cover:		-		Hydrophytic X Yes INO
% Bare ground in herb stratum 30	% cover of	biotic crust 0		Vegetation Present ?

SOIL	
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(in ala a a)		<u>1A</u>	Color (moist)			Loc ¹	Toxturo	Remarks
		<u>) %</u>			ype			
0-2	2.51 3/2	100					Clay	
2-12+	10Y 4/1	96						gleyed matrix
2-12+	N 2.5/0	4						organic streaks along roots
'Type: C=C	oncentration, D=	Depletion, R	M=Reduced Matrix.	² Location	: PL=P	ore Lining	g, RC=Root Channe	el, M=Matrix
Hydric Soil	Indicators: (Ap	plicable to a	ILLRRs, unless othe	erwise noted.)		Indicators for Pr	oblematic Hydric Soils ³ :
Histore Histore Black H Hydrog Stratifie 1cm Mi Deplete Thick D	Epipedon (A2) Epipedon (A2) Histic (A3) en Sulfide (A4) ed Layers (A5)(Ll uck (A9)(LRR D) ed Below Dark Su Dark Surface (A1: Mucky Mineral (C	RR C) urface (A11) 2) 51)	 Stripped Matrix (S Loamy Mucky Min Loamy Gleyed Matrix (Depleted Matrix (Redox Dark Surfa Depleted Dark Su Redox Depressio Vernal Pools (F9) 	57 S6) neral (F1) atrix (F2) (F3) ace (F2) urface (F7) ons (F8)			a 2cm Muck (A) a 2cm Muck (A) a 2cm Muck (A) a Reduced Vert b Red Parent M b Other (explain b Other (explain b A)	9) (LRR C) 10)(LRR B) ic (F18) laterial (TF2) n in remarks)
□ Sandy	Gleved Matrix (S	54))			wetland hydrolo	av must be present
Restrictive	Layer (if prese							J
11000100100								
Type:								
Type: Depth (inc	ches):		_				Hydric S	Soil Present ? 🛛 Yes 🗌 No
Type: Depth (ind	ches):						Hydric S	Soil Present ? 🛛 Yes 🗌 No
Type: Depth (inc	ches):	ets loamy gley	/ed matrix (F2).				Hydric S	Soil Present ? 🛛 Yes 🗌 No
Type: Depth (ind	ches):	ets loamy gley	/ed matrix (F2).				Hydric S	Soil Present ? 🛛 Yes 🗌 No

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6) Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:		
Surface water present? Yes X No	Depth (inches):	
Water table present?	Depth (inches):	
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches):	Wetland Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available	e.
Remarks: Soils moist throught, not saturated. FAC-neutral test (D5).	Sample point contains surface soil crack	ks (B6), biotic crust (B12), and crayfish burrows (C8), and meets

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP024
Investigator(s) T. Harris, R. Akiba-Haj	im, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Dike	d floodplain Local	Relief (concave, convex, none) <u>none</u>	Slope(%) 2
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3273</u>	35994 Long: <u>-121.7113507</u>	Datum: WGS 84
Soil Map Unit Name Clear Lake clay	, 0 to 2 percent slopes	NWI classifica	ation <u>PF</u>
Are climatic/hydrologic conditions on-	site typical for this time of year?	? 🛛 Yes 🔲 No 🛛 (If no, explain in ren	narks)
Are any of the following significantly d	isturbed?	☐ Soil ☐ Hydrology Are "Normal Circun	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally prob	lematic?	☐ Soil ☐ Hydrology	ain any answers in remarks)
SUMMARY OF FINDINGS - Attac	ch site map showing sam	ple point locations, transects, importa	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes □ No □ Yes X No □ Yes X No	Is the Sampled Area uithin a Wetland?	Yes 🛛 No
Remarks: Upland sample point paire vegetation (dominated by	ed with SP023. Sample point ta FAC and FACU species), but c	aken near edge of depressional area. Sample loes not meet criteria for hydric soils or wetla	e point meets criteria for hydrophytic nd hydrology.

TREE STRATUM Plot Size N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	- % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3		·		Total number of dominant3_(B)3
I Tree Stratum Total Cover:				% of dominant species that67(A/B67(A/B
- SAPI ING/SHRUB STRATUM Plot Size '	N/A	-		Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
·				OBL species x1
				FACW species x2
				FAC species x3
				FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 10' radius				Column Totals (A) (B
1. Sporobolus indicus	30	Yes	FACU	
2. Festuca perennis	20	Yes	FAC	
3. Hordeum brachyantherum	5	No	FACW	Hydrophytic Vegetation Indicators
Lotus corniculatus	10	No	FAC	Dominance Test is >50%
5. Trifolium repens	5	No	FACU	Prevalence Index is $$
6. Poa annua	2	No	FAC	Morphological adaptations (provide
Distichlis spicata	20	Yes	FAC	supporting data in remarks)
B. Plantago lanceolata	3	No	FAC	Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	95	_		
WOODY VINE STRATUM Plot Size:!	N/A			¹ Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed or problematic.
2		<u> </u>		_
Woody Vines Total Cover:		_		Hydrophytic Myos Di No
% Bare ground in herb stratum	Vegetation Present ?			

SOIL	
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Profile desc	ription: (Describe Matrix	e to the de	pth needed to docum Redo	ent the ind	licator o	or confir	rm the absence of indicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks		
1-0	2.5Y 2.5/1	100					Organic		
0-12	2.5Y 3/1	100					_ Clay		
¹ Type: C=Co	ncentration, D=D	epletion, R	M=Reduced Matrix.	² Locatio	n: PL=P	ore Linin	ng, RC=Root Channel, M=Matrix		
Hydric Soll	(A1)	icable to a	Sandy Redox (S5)	wise noted	1.)		Indicators for Problematic Hydric Soils*:		
Histic Ep	oipedon (A2)		Stripped Matrix (S	6) orol (E1)			2cm Muck (A10)(LRR B)		
	n Sulfide (A4)			trix (F2)			Reduced Vertic (F18) Red Parent Material (TE2)		
☐ Stratified	Lavers (A5)(LRR	(C)	Depleted Matrix (F	3)			$\square \text{ Other (explain in remarks)}$		
🔲 1cm Mu	ck (A9)(LRR D)	- /	Redox Dark Surfac	ce (F6)					
Depleted	Below Dark Surf ark Surface (A12)	ace (A11)	Depleted Dark Sur	face (F7) s (F8)					
Sandy M	lucky Mineral (S1))	Vernal Pools (F9)	0 (1 0)			³ Indicators of hydric vegetation and		
Sandy G	leyed Matrix (S4)						wetland hydrology must be present.		
Restrictive	Layer (if present)):							
Туре:									
Depth (incl	nes):						Hydric Soil Present ? 🛛 Yes 🛛 N	lo	
Remarks: _{Sa}	mple point does r	ot meet ind	dicators for hydric soils						
			•						

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)		
Primary Indicators (any one indicator is sufficient)			
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres along Drift Deposits (B3)(Nonriverine) Presence of Reduced Iron (C4 Surface Soil Cracks (B6) Recent Iron Reduction in PLow Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Water-Stained Leaves (B9) Water-Stained Leaves (B9)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Dry-Season Water Table (C2) Thin Muck Surface (C7) (4) Crayfish Burrows (C8) wed Soils (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)		
Field Observations:			
	-		
Water table present? LI Yes X No Depth (inches):	_		
Saturation Present?	─────────────────────────────────────		
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if ava	ailable.		
Remarks: No hydrological indicators observed.			

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners	State CA	Sampling Point SP025
Investigator(s) <u>T. Harris, R. Akiba-Haj</u> i	im, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	d floodplain Loca	I Relief (concave, convex, none) <u>none</u>	Slope(%) 0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.315</u>	57561 Long: <u>-121.716402</u>	Datum: WGS 84
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classifica	ation <u>PF</u>
Are climatic/hydrologic conditions on-s	site typical for this time of year	? 🛛 Yes 🔲 No 🛛 (If no, explain in rer	marks)
Are any of the following significantly di	sturbed?	Soil 🔲 Hydrology Are "Normal Circur	mstances" present? 🛛 Yes 🔲 No
Are any of the following naturally probl	ematic?	Soil Hydrology (If needed, expl	ain any answers in remarks)
SUMMARY OF FINDINGS - Attac	<u>:h site map showing sam</u>	ple point locations, transects, import	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes □ No □ Yes X No □ Yes X No	Is the Sampled Area uithin a Wetland?	Yes 🖾 No
Remarks: Upland sample point paire hydrophytic vegetation (dc	d with SP026. Sample point ta minated by FAC species), but	aken near lower end of irrigated pasture. San t does not contain indicators of hydric soils or	mple point meets criteria for wetland hydrology.

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet			
I	_ % cover	Species?		Number of Dominant Species(A) that are OBL, FACW, or FAC?			
<u>.</u>				Total number of dominant(B)(B)			
Tree Stratum Total Cover:				% of dominant species that 100 (A/B) are OBL, FACW, or FAC?			
	 Ν/Δ	-		Prevalence Index Worksheet			
APLING/SHRUD STRATUM FIGURE.	<u>IN/A</u>	-		Total % cover of: Multiply by:			
		·		OBL species x1 FACW species x2 FAC species x3 FACU species x4			
Sapling/Shrub Stratum Total Cover:		-		LIPI species x5			
IERB STRATUM Plot Size: 10' radius							
Lotus corniculatus	50	Yes	FAC				
. Sporobolus indicus	15	No	FACU	Prevalence Index = B/A =			
. Festuca arundinacea	15	No	FACU	Hydrophytic Vegetation Indicators			
Hordeum brachyantherum	15	No	FACW	Dominance Test is >50%			
				Prevalence Index is = 3.0<sup 1			
		- <u> </u>		 Morphological adaptations (provide supporting data in remarks) 			
Herb Stratum Total Cover:	95			Problematic hydrophytic vegetation ¹ (explain)			
<u>NOODY VINE STRATUM</u> Plot Size:	<u> </u>			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
2.				-			
Woody Vines Total Cover:		-		Hydrophytic Ves INO			
% Bare ground in herb stratum <u>5</u> % cover of biotic crust <u>0</u>				Vegetation Present ?			

SOIL	
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Profile desc	ription: (Describe Matrix	e to the de	pth needed to docum Redo	ent the indi	cator o	r confiri	n the absence of indicat	ors.)
(inches)	Color (moist)	%	Color (moist)	<u>%</u> T	ype1	Loc ¹	Texture	Remarks
1-0	10YR 3/2	100					Organic	
0-12+	<u>N 3/0</u>	100					<u>Clay</u>	
¹ Type: C=Co	ncentration, D=De	epletion, R	M=Reduced Matrix.	² Location	: PL=Pc	ore Linin	g, RC=Root Channel, M=N	Matrix
Histosol Histic Ep Black His Hydroge Stratified 1cm Muc Depleted Thick Da	(A1) sipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)(LRR bk (A9)(LRR D) I Below Dark Surface Irk Surface (A12) lucky Mineral (S1)	. C) ace (A11)	□ Sandy Redox (S5) □ Stripped Matrix (S □ Loamy Mucky Min □ Loamy Gleyed Ma □ Depleted Matrix (F □ Redox Dark Surfa □ Depleted Dark Surfa □ Depleted Dark Surfa □ Redox Depression □ Vernal Pools (F9)	6) eral (F1) trix (F2) (3) ce (F6) face (F7) is (F8))			R C) R B) 8) I (TF2) narks) egetation and
Sandy G	leyed Matrix (S4)						wetland hydrology mu	st be present.
Type:	∟ayer (ii present)	•						
Depth (incl	nes):		_				Hydric Soil Pr	esent ? 🛛 Yes 🛛 No
Remarks: _{Sa}	mple point does n	ot meet ind	dicators of hydric soils.				•	

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)					
Primary Indicators (any one indicator is suffici								
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 						
Field Observations:								
	Depth (inches):							
Water table present? Yes X No	Depth (inches):							
Saturation Present?	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🛛 No					
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available).						
Remarks: No hydrological indicators observed.								

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>
Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP026
Investigator(s) T. Harris, R. Akiba-Haj	im, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)field	Local	Relief (concave, convex, none) <u>none</u>	Slope(%) 2
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3153</u>	B0252 Long: -121.7166047	Datum: WGS 84
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classifica	tion <u>PF</u>
Are climatic/hydrologic conditions on-	site typical for this time of year?	Yes 🛛 No 🛛 (If no, explain in rem	narks)
Are any of the following significantly d	isturbed?] Soil 🔲 Hydrology 🛛 Are "Normal Circum	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally prob	lematic?	☐ Soil ☐ Hydrology (If needed, expla	in any answers in remarks)
SUMMARY OF FINDINGS - Attac	ch site map showing sam	ole point locations, transects, importa	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes ☐ No X Yes ☐ No X Yes ☐ No	Is the Sampled Area 🛛 🕅 within a Wetland?	Yes 🛛 No
Remarks: Wetland sample point pair	red with SP025. Sample point t	taken in lower end of irrigated pasture. Samp	le point meets criteria for hydrophytic

vegetation, hydric soils, and wetland hydrology. Boundary based on loss of hydric soil and wetland hydrology indicators, as well as relative differences in hoof punch, with deeper hoof prints in wetland vs. upland areas.

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant1(B)
4 Tree Stratum Total Cover:				% of dominant species that(A/B) are OBL, FACW, or FAC?
	Ν/Δ	-		Prevalence Index Worksheet
SAFLING/SHRUBSTRATUM FILLSIZE.	IN/A	-		Total % cover of: Multiply by:
1				OBL species x1
2				FACW species x2
]. 				FAC species x3
4				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 10' radius				
1. Poa pratensis	35	Yes	FAC	
2. Spergularia sp.	1	No	?	Prevalence Index = B/A =
3. Hordeum brachyantherum	1	No	FACW	Hydrophytic Vegetation Indicators
4. Cotula cornopifolia	1	No	OBL	Dominance Test is >50%
5. Lepidium latifolium	1	No	FAC	\square Browsloppo Index is $$
6. Atriplex prostrata	1	No	FACW	
7.				Morphological adaptations (provide
8.				\square Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	40			
WOODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		-		Hydrophytic XYes No
% Bare ground in herb stratum <u>60</u>	% cover of	biotic crust 0		vegetation Present ?
Remarks: Sample point dominated by FAC speci	es, meets domi	nance test.		

SOIL	
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Profile description: (Describe to the depth needed to document the indicator or confirm the ab					n the absence of indica	ators.)				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rema	arks	
0-12	<u>N 3/0</u>	90	7.5YR 4/6	10	С	PL, RC	Clay			
		·								
¹ Type: C=Co	ncentration, D=De	pletion, RM	I=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	, RC=Root Channel, M=	=Matrix		
Hydric Soil I	ndicators: (Appli	cable to al	I LRRs, unless othe	rwise not	ted.)		Indicators for Proble	ematic Hydr	ic Soils ³ :	
	ipedon (A2)		Stripped Matrix (S) 66)			☐ 1cm Muck (A9) (L			
Black His	stic (A3)		Loamy Mucky Mir	neral (F1)				-rr d <i>)</i> :18)		
Hydroge	n Sulfide (A4)		Loamy Gleyed Ma	atrix (F2)			Red Parent Materi	ial (TF2)		
Stratified	Layers (A5)(LRR	C)	Depleted Matrix (I	=3)			Other (explain in respective)	emarks)		
1cm Muc	k (A9)(LRR D)	<i></i>	Redox Dark Surfa	ice (F6)						
	Below Dark Surfa	ice (A11)	Depleted Dark Su	rface (F7)					
	rk Sufface (A12)		Redox Depression Vornal Bools (E0)	ns (F8)			³ luadia atawa a f huuduia			
\Box Sandy M	leved Matrix (S4)						wetland hydrology must be present			
								lust be prese	ли. -	
Terrer	-ayer (ii present)	i								
туре:			_							
Depth (inch	ies):						Hydric Soil F	Present ?	🛛 Yes	□ No
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).							

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)	
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drift Deposits (B3)(Riverine) Drinage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Ved Soils (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:	
Surface water present? Yes X No Depth (inches):	_
Water table present?	_
Saturation Present?	─ Wetland Hydrology Present ?
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if ava	lable.
Remarks: Sample point contains surface soil cracks (B6), biotic crust (B12), and c meets FAC-neutral test (D5).	xidized rhizospheres along living roots (C3). Sample point also

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/4/2018</u>		
Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP027		
Investigator(s) T. Harris, R. Akiba-Haji	m, WRA INC.	Section,Township,Range			
Landform (hillslope, terrace, etc.)Diked	floodplain Local	Relief (concave, convex, none) <u>none</u>	Slope(%) 2		
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3145</u>	8121 Long: <u>-121.7197325</u>	Datum: WGS 84		
Soil Map Unit Name Clear Lake clay,	0 to 2 percent slopes	NWI classif	ication <u>PF</u>		
Are climatic/hydrologic conditions on-s	Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 🛛 (If no, explain in remarks)				
Are any of the following significantly di	sturbed?] Soil 🔲 Hydrology 🛛 Are "Normal Circ	umstances" present? 🛛 Yes 🔲 No		
Are any of the following naturally probl	ematic?	Soil ☐ Hydrology (If needed, ex	plain any answers in remarks)		
SUMMARY OF FINDINGS - Attac	h site map showing samp	<u>ple point locations, transects, impo</u>	rtant features, etc.		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes ☐ No X Yes ☐ No X Yes ☐ No	Is the Sampled Area	⊠Yes □No		
Remarks: Wetland sample point pair	ed with SP028. Sample point t	aken at lower end of field, near drainage d	itch. Sample point meets criteria for		

hydrophytic vegetation, hydric soils, and wetland hydrology. Boundary based on signatures in aerial imagery corresponding to shifts in vegetation.

VEGETATION (use scientific names)						
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Workshee	t	
1	% cover	Species?	Status	Number of Dominant Species	2	(A)
2				- that are OBL, FACW, or FAC'	2	
3.				species across all strata?	3	_ (B)
4				% of dominant species that	67	_(A/B)
Tree Stratum Total Cover:		-		Prevalence Index Workshe	ot	
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Total % cover of:	Multiply by	
1					1	<u> </u>
2					2	—
3					~	_
4				FAC species X	3	—
Sapling/Shrub Stratum Total Cover:		-			4	—
HERB STRATUM Plot Size: 10' radius	\$				5	_
1. Festuca perennis	20	Yes	FAC	Column Totals (/	A)	_ (B)
2. Crypsis schoenoides	15	Yes	FACW	Prevalence Index = B/A =		_
3. Paspalum dilatatum	5	No	FAC	Hydrophytic Vegetation Ind	licators	
4. Ranunculus muricatus	2	No	FACW	■ Dominance Test is >50%		
5. Trifolium repens	15	Yes	FACU		0.01	
6. Poa annua	5	No	FACW		5.0	
7. Cyperus eragrostis	5	No	FAC	Morphological adaptation	s (provide	
8. unknown grass	3	No	unknown		(S)	(nloin)
Herb Stratum Total Cover:	70				vegetation (ex	.piairi)
WOODY VINE STRATUM Plot Size	N/A	-		¹ Indicators of hydric soil and w	etland hydrolo	gу
1.				must be present, unless distur	bed or problem	natic.
2.				-		
Woody Vines Total Cover:				Hydronhytic		
% Bare ground in herb stratum <u>30</u>	% cover of	- biotic crust <u>0</u>		Vegetation Present ?	🛛 Yes 📙 No	C
Remarks: Trifolium repens growing on hummock dominated by FAC, FACW, and FACL	s elevated abov species, meets	e soil surface, co dominance test.	ould be conside	ered morphological adaptation. S	ample point	

Deptn (inchoo)	<u>Matrix</u>	0/	Color (moist)		<u>es</u> Type ¹	L oc ¹	- Texture	Rema	ks	
(Incres) 0-12+		<u> </u>	2 5V 5/6	10	<u> </u>			Rena		
0-12+	N 3/0	90	2.31 3/0		<u> </u>					
		_				_				
1 T		- <u> </u>	- Deduced Metrix	21				Matuis		
Hydric Soil I	ncentration, D=De	icable to all	I Reduced Matrix.	LOCa	ted)	ore Linin	g, RC=Root Channel, M=	iviatrix notio Hudrid	Soilo ³	
	(A1)		Sandy Redox (S	5) 5)					. 50115 .	
Histic Ep	ipedon (A2)		Stripped Matrix (S6)			\square 2cm Muck (A3) (L1	R B)		
Black His	stic (A3)		Loamy Mucky M	, ineral (F1))		Reduced Vertic (F1	8)		
Hydroge	n Sulfide (A4)		Loamy Gleyed N	latrix (F2)			Red Parent Materia	ul (TF2)		
Stratified	Layers (A5)(LRR	C)	Depleted Matrix	(F3)			Other (explain in re	marks)		
🔲 1cm Muo	k (A9)(LRR D)		🛛 Redox Dark Surf	ace (F6)						
Depleted	Below Dark Surf	ace (A11)	Depleted Dark S	urface (F7	')					
Thick Da	rk Surface (A12)		Redox Depression	ons (F8)						
Sandy M	ucky Mineral (S1)		Vernal Pools (F9)			³ Indicators of hydric vegetation and			
☐ Sandy G	leyed Matrix (S4)						wetland hydrology must be present.			
Restrictive	Layer (if present)	:								
Туре:			_							
Depth (incl	nes):		_				Hydric Soil P	resent ?	🛛 Yes 🛛 No	
Remarks: or		المعامير ماميار					Į			
Sa	mple point meets	redox dark	surface (F6).							

Wetland Hydrology Indicators:		:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1) (Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches):	Wetland H	ydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available).	
Remarks: Soil moist throughout, not saturated FAC-neutral test (D5).	. Sample point contains sediment depos	its (B2) and surface	soil cracks (B6). Sample point also meets

Project/Site Bowlesbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>		
Applicant/Owner <u>Ecosystem Investmer</u>	nt Partners	State <u>CA</u>	Sampling Point SP028		
Investigator(s) T. Harris, R. Akiba-Hajim, WRA INC. Section, Township, Range					
Landform (hillslope, terrace, etc.)Diked floodplain Local Relief (concave, convex, none) none Slope(%) 2					
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.31</u> 4	434962 Long: <u>-121.7200551</u>	Datum: WGS 84		
Soil Map Unit Name <u>Clear Lake clay,</u>	0 to 2 percent slopes	NWI classifica	tion <u>PF</u>		
Are climatic/hydrologic conditions on-si	te typical for this time of yea	r? 🛛 Yes 🔲 No 🛛 (If no, explain in rem	arks)		
Are any of the following significantly dis	turbed?	Soil Hydrology Are "Normal Circum	istances" present? 🛛 Yes 🔲 No		
Are any of the following naturally proble	ematic? Degetation	Soil Hydrology (If needed, expla	in any answers in remarks)		
SUMMARY OF FINDINGS - Attac	n site map showing san	nple point locations, transects, importa	nt features, etc.		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	□ Yes ⊠ No □ Yes ⊠ No □ Yes ⊠ No	Is the Sampled Area uithin a Wetland?	Yes 🖾 No		
Remarks: Upland sample point paired hydrophytic plants, hydric s	with SP027. Sample point oils, or wetland hydrology.	taken near lower end of irrigated pasture. Sam	ple point does not meet criteria for		

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant	Indicator Status	Dominance Test Worksheet
1			Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2		·		Total number of dominant3(B)3
4 Tree Stratum Total Cover:				% of dominant species that33(A/B) are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
2 3 4 Sapling/Shrub Stratum Total Cover:				OBL species x1 FACW species x2 FAC species x3 FACU species x4
HERB STRATUM Plot Size: 10' radius				UPL species x5
1. Trifolium repens	50	Yes	FACU	Column Totals (A) (B)
2. Sporobolus indicus	20	Yes	FACU	Prevalence Index = B/A =
3. Plantago lanceolata	5	No	FAC	Hydrophytic Vegetation Indicators
4. Rumex sp.	t	No	?	□ □ Dominance Test is >50%
5. Festuca perennis	20	Yes	FAC	$\square \text{Prevalence Index is } $
6 7 8		·		 Morphological adaptations (provide supporting data in remarks) Problematic hydrophytic vegetation¹ (explain)
Herb Stratum Total Cover:	95	_		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:	0/o	-		Hydrophytic
% Bare ground in herb stratum 5				
Remarks: Sample point dominated by FAC and F	ACU species, o	does not meet dor	ninance test.	

SOIL	
------	--

Linches) Color (moist) % Type ¹ Loc ¹ Texture Remarks 1-0 10YR 2/2 100	Profile descr	iption: (Describe Matrix	e to the de	pth needed to docum Redo	ent the ind x Features	icator o	r confiri	m the absence of indicators.)	
1-0 10YR 2/2 100 Organic 0-12 N 3/0 100 Clay	(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks	
0-12 N 3/0 100	1-0	10YR 2/2	100					Organic	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ² Location: PL=Pore Lining, RC=Root Channel, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histics Epipedon (A2) Stripped Matrix (S6) □ cm Muck (A9) (LRR C) Black Histic (A3) □ Loamy Mucky Mineral (F1) □ Reduced Vertic (F18) Hydrogen Sulfide (A4) □ Loamy Mucky Mineral (F2) □ Red Parent Material (TF2) □ Stratified Layers (A5)(LRR C) □ Depleted Matrix (F3) □ Other (explain in remarks) □ Depleted Below Dark Surface (A11) □ Depleted Dark Surface (F7) □ Thick Dark Surface (A12) □ Redox Depressions (F8) □ Sandy Mucky Mineral (S1) □ Vernal Pools (F9) ³ Indicators of hydric vegetation and wetland hydrology must be present. Restrictive Layer (if present):	0-12	<u>N 3/0</u>	100					_ <u>Clay</u>	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ² Location: PL=Pore Lining, RC=Root Channel, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) I cm Muck (A9) (LRR C) Histosol (A2) Stripped Matrix (S6) 2cm Muck (A10)(LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) I cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydric vegetation and wetland hydrology must be present. Restrictive Layer (if present): Type:									
Hydric Soli mulciators: (Applicable to all CKRS, unless otherwise fided.) indicators for Problematic Hydric Solis': Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Gleyed Matrix (S4) Vernal Pools (F9) ³ Indicators of hydric vegetation and wetland hydrology must be present. Remarks: Sample point does not meet hydric soil indicators.	¹ Type: C=Co	ncentration, D=De	epletion, R	M=Reduced Matrix.	² Location	n: PL=Po	ore Linin	ng, RC=Root Channel, M=Matrix	
□ Inition (II) □ Outry (Note (A)) □ Outry (Note (A)) □ Histic Epipedon (A2) □ Stripped Matrix (S6) □ Zom Muck (A10)(LRR B) □ Black Histic (A3) □ Loamy Mucky Mineral (F1) □ Reduced Vertic (F18) □ Hydrogen Sulfide (A4) □ Loamy Gleyed Matrix (F2) □ Red Parent Material (TF2) □ Stratified Layers (A5)(LRR C) □ Depleted Matrix (F3) □ Other (explain in remarks) □ 1 cm Muck (A9)(LRR D) □ Redox Dark Surface (F6) □ Other (explain in remarks) □ Depleted Below Dark Surface (A11) □ Depleted Dark Surface (F7) □ Thick Dark Surface (A12) □ Redox Depressions (F8) □ Sandy Mucky Mineral (S1) □ Vernal Pools (F9) ³ Indicators of hydric vegetation and wetland hydrology must be present. Restrictive Layer (if present): Type:	Hyaric Soli I	ndicators: (Appl)	icable to a	Sandy Redox (S5)	wise noted.	.)		Indicators for Problematic Hydric Soils":	
□ Black Histic (A3) □ Loamy Mucky Mineral (F1) □ Reduced Vertic (F18) □ Hydrogen Sulfide (A4) □ Loamy Gleyed Matrix (F2) □ Red Parent Material (TF2) □ Stratified Layers (A5)(LRR C) □ Depleted Matrix (F3) □ Other (explain in remarks) □ 1cm Muck (A9)(LRR D) □ Redox Dark Surface (F6) □ Depleted Below Dark Surface (A11) □ Depleted Dark Surface (F7) □ Thick Dark Surface (A12) □ Redox Depressions (F8) □ 3 Indicators of hydric vegetation and wetland hydrology must be present. □ Sandy Gleyed Matrix (S4) □ Vernal Pools (F9) □ Indicators of Present? □ Yes ☑ ■ Depth (inches): □ □ Present? □ Yes ☑ No Remarks: Sample point does not meet hydric soil indicators. □ Hydric Soil Present ? □ Yes ☑ No		ipedon (A2)		Stripped Matrix (S	6)			\square 1 Cm Muck (A9) (LRR C) \square 2 cm Muck (A10)(LRR B)	
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) 1 cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) ³Indicators of hydric vegetation and wetland hydrology must be present. Restrictive Layer (if present): Type:	Black His	tic (A3)		Loamy Mucky Min	eral (F1)			\square Reduced Vertic (F18)	
□ Stratified Layers (A5)(LRR C) □ Depleted Matrix (F3) □ Other (explain in remarks) □ 1cm Muck (A9)(LRR D) □ Redox Dark Surface (F6) □ Depleted Below Dark Surface (A11) □ Depleted Dark Surface (F7) □ Thick Dark Surface (A12) □ Redox Depressions (F8) □ Sandy Mucky Mineral (S1) □ Vernal Pools (F9) □ Sandy Gleyed Matrix (S4) □ Restrictive Layer (if present): Type:	Hydroger	n Sulfide (A4)		Loamy Gleyed Ma	trix (F2)			Red Parent Material (TF2)	
□ 1cm Muck (A9)(LRR D) □ Redox Dark Surface (F6) □ Depleted Below Dark Surface (A11) □ Depleted Dark Surface (F7) □ Thick Dark Surface (A12) □ Redox Depressions (F8) □ Sandy Mucky Mineral (S1) □ Vernal Pools (F9) □ Sandy Gleyed Matrix (S4) □ Vernal Pools (F9) Restrictive Layer (if present): Type:	Stratified	Layers (A5)(LRR	C)	Depleted Matrix (F	3)			Other (explain in remarks)	
□ Depleted Below Dark Surface (A11) □ Depleted Dark Surface (F7) □ Thick Dark Surface (A12) □ Redox Depressions (F8) □ Sandy Mucky Mineral (S1) □ Vernal Pools (F9) □ Sandy Gleyed Matrix (S4) □ Vernal Pools (F9) Restrictive Layer (if present): Type:	Com Muc	k (A9)(LRR D)		Redox Dark Surfa	ce (F6)				
□ Thick Dark Surface (A12) □ Redox Depressions (F8) □ Sandy Mucky Mineral (S1) □ Vernal Pools (F9) □ Sandy Gleyed Matrix (S4) □ Vernal Pools (F9) Restrictive Layer (if present): Type:		Below Dark Surfa	ace (A11)	Depleted Dark Su	rface (F7)				
Sandy Gleyed Matrix (S4) Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present ? Yes No Remarks: Sample point does not meet hydric soil indicators.	I LI Thick Da	rk Surface (A12)			ıs (F8)			3	
Restrictive Layer (if present): Type:		loved Matrix (S4)						Indicators of hydric vegetation and	
Restrictive Layer (if present): Type: Depth (inches): Bepth (inches): Hydric Soil Present ? Yes Remarks: Sample point does not meet hydric soil indicators.								i weiland hydrology must be present.	
Type:	Restrictive L	ayer (if present)	:						
Depth (inches): Hydric Soil Present ? Yes No Remarks: Sample point does not meet hydric soil indicators.	Type:								
Remarks: Sample point does not meet hydric soil indicators.	Depth (inch	ies):						Hydric Soil Present ? 🛛 Yes	🛛 No
	Remarks: _{Sa}	mple point does n	ot meet hv	dric soil indicators.					
			,						

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficien	nt)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	Roots (C3) oils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
	Depth (inches):		
Water table present? 🛛 Yes 🛛 No 🛛	Depth (inches):		
Saturation Present? Yes X No [(includes capillary fringe)	Depth (inches):	Wetland H	ydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monitori	ing well, aerial photos, etc.) if available		
Remarks: No hydrological indicators observed.			

Project/Site Liberty Farms	City		County Solano		Sampling Date 4/4/2018
Applicant/Owner Ecosystem Investment Pa	irtners		State <u>CA</u>	Sam	pling Point SP029
Investigator(s) R. Korhummel, R. Akiba-Ha	im, WRA INC.		Section,Township,Range		
Landform (hillslope, terrace, etc.)Diked floo	dplain	Local Relief (concave, convex, none) <u>no</u>	ne	Slope(%) <u>0</u>
Subregion(LRR) LRR C (Medit. CA)	Lat:	38.27722942	Long: <u>-121.701</u>	2483	Datum: WGS 84
Soil Map Unit Name Egbert silty clay loam			NWI	classification PF	
Are climatic/hydrologic conditions on-site ty	pical for this time o	of year? 🛛 Y	res 🔲 No 🛛 (If no, expl	ain in remarks)	
Are any of the following significantly disturb	ed? 🛛 Vegeta	ation 🔲 Soil	Hydrology Are "Norm	al Circumstance	s" present? 🛛 Yes 🔲 No
Are any of the following naturally problemat	ic? 🗌 Vegeta	ation 🔲 Soil	Hydrology (If need	led, explain any a	answers in remarks)
SUMMARY OF FINDINGS - Attach sit	te map showing	<u>g sample poi</u>	nt locations, transects,	important fea	tures, etc.
Hydrophytic Vegetation Present? Image: Comparison of the sector of t	Yes □ No Yes □ No Yes □ No		Is the Sampled Area within a Wetland?	🛛 Yes	□ No
Remarks: Wetland sample point paired wi for hydrophytic vegetation, hydr adjacent bermed roadway).	th SP030. Sample ic soils, and wetla	e point taken in nd hydrology.	flooded wetland check at so Boundary based on shift in v	outhern end of sit regetation and to	e. Sample point meets criteria pography (i.e., at edge of

1.	REE STRATUM Plot Size N/A	0/	Dominant	Ctatura	Dominance lest worksneet
2.	·	_ % cover	Species?	Status	Number of Dominant Species (A that are OBL, FACW, or FAC?
4.	•		·		Total number of dominant1 (E
SAPLING/SHRUB STRATUM Plot Size: N/A 1	Tree Stratum Total Cover:				% of dominant species that(A
1.	APLING/SHRUB STRATUM Plot Size	N/A			Prevalence Index Worksheet
2. OBL species x1 3. FACW species x2 4. FAC species x3 Sapling/Shrub Stratum Total Cover: FACU species x4 HERB STRATUM Plot Size: 5' radius 1. Typha latifolia 40 Yes OBL 2. Column Totals (A) Prevalence Index = B/A = (A) 2. Sapling/Shrub Stratum Total Cover: Morphological adaptations (provide supporting data in remarks) Prevalence Index is >3.01 4. Morphological adaptations (provide supporting data in remarks) Problematic hydrophytic vegetation 1 (e 8. Herb Stratum Total Cover: Morphological adaptations (provide supporting data in remarks) WOODY VINE STRATUM Plot Size: N/A 1 Indicators of hydric soil and wetland hydrological adaptations			•		Total % cover of: Multiply by:
2. FACW species x2 3.	• •		·		OBL species x1
A.	· · ·		·		FACW species x2
Sapling/Shrub Stratum Total Cover:	· · ·				FAC species x3
HERB STRATUM Plot Size: 5' radius 1. Typha latifolia 40 Yes OBL 2.	Sapling/Shrub Stratum Total Cover:		·		FACU species x4
HERB STRATUM Plot Size: 5' radius 1. Typha latifolia 40 Yes OBL 2.			•		UPL species x5
1. Typha latifolia 40 Yes OBL Prevalence Index = B/A = 2.	IERB STRATUM Plot Size: 5' radius			0.51	Column Totals (A)
3.	_ I ypha latifolia	40	Yes	OBL	Prevalence Index = B/A =
4.					Hydrophytic Vegetation Indicators
5.					Dominance Test is >50%
6.			·		Prevalence Index is $$
7.			·		
8 Herb Stratum Total Cover: Problematic hydrophytic vegetation ¹ (e			·		supporting data in remarks)
Herb Stratum Total Cover: WOODY VINE STRATUM Plot Size: N/A ¹ Indicators of hydric soil and wetland hydrole					Problematic hydrophytic vegetation ¹ (expla
WOODY VINE STRATUM Plot Size: N/A ¹ Indicators of hydric soil and wetland hydrology	Herb Stratum Total Cover:				
	VOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
					must be present, unless disturbed or problemation
2					_
Woody Vines Total Cover: Hydrophytic	Woody Vines Total Cover:				Hydrophytic No.
% Bare ground in herb stratum 0 % cover of biotic crust 0 Vegetation Present ?	% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		Vegetation Present ?

|--|

Profile description: (Des Depth M	s cribe to the de latrix	pth needed to docun Redo	nent the indicat ox Features	or or confirm	n the absence of indicators.)	
(inches) Color (mo	oist) %	Color (moist)	Тур	e ¹ Loc ¹	Texture Re	marks
Type: C=Concentration,	D=Depletion, R	M=Reduced Matrix.	² Location: Pl	L=Pore Lining	g, RC=Root Channel, M=Matrix	
ydric Soil Indicators: (Applicable to a	II LRRs, unless other	wise noted.)		Indicators for Problematic Hy	dric Soils ³ :
Histosol (A1)		Sandy Redox (S5)		1cm Muck (A9) (LRR C)	
Histic Epipedon (A2)		Stripped Matrix (S	6)		2cm Muck (A10)(LRR B)	
Black Histic (A3)	1)		ieral (F1)		Reduced Vertic (F18)	
Stratified Lavors (A5)			(ΓZ)		Red Parent Material (TF2)	
\square Stratilieu Layers (AS) \square 1cm Muck (A9)(I RR		Redox Dark Surfa	-3) ce (F6)		Other (explain in remarks)	
Depleted Below Dark	Surface (A11)	Depleted Dark Su	rface (F7)			
Thick Dark Surface (A12)	Redox Depression	ns (F8)			
Sandy Mucky Minera	ıl (S1)	Vernal Pools (F9)	()		³ Indicators of hydric vegetation	n and
Sandy Gleyed Matrix	(S4)				wetland hydrology must be pre	esent.
Restrictive Layer (if pre	esent):					
Туре:		_				
Depth (inches):					Hydric Soil Present ?	🛛 Yes 🗌 No
emarks: Soils not asses	sed due to deep	standing water Soils	assumed bydri	c based on lo	to very long inundation and do	minance of perennial
obligate wetlan	d vegetation.	Standing water. Solis	assumed nyun			minance of perennial,
5	5					
TUROLOGY						

Wetland Hydrology Indie	cators:			Secondary Indicators (2 or more required)
Primary Indicators (any or	ne indicator is sufficie	ent)		
 Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1)(Noi Sediment Deposits (B Drift Deposits (B3)(Noi Surface Soil Cracks (I Inundation Visible on Water-Stained Leaves) nriverine) (2)(Nonriverine) onriverine) 36) Aerial Imagery (B7) s (B9)	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:		Denth (inches) 00		
Surface water present?	X Yes L No	Depth (inches): 36		
Water table present?	🛛 Yes 🛛 No	Depth (inches): 0		
Saturation Present? (includes capillary fringe)	🛛 Yes 🔲 No	Depth (inches): 0	Wetland	Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (s	tream guage, monito	oring well, aerial photos, etc.) if available).	
Remarks:Sample point int imagery.Samp inundation.	undated at time of sa le point meets multip	ampling and has long to very long inunda ole primary and secondary indicators. H	ation based on ma igh water table ass	nagement regime and evidence in aerial sumed based on deep, long-duration
LIS Army Corps of Engine	ora			Arid \M/oot

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>
Applicant/Owner <u>Ecosystem Investme</u>	nt Partners	State CA	Sampling Point SP030
Investigator(s) R. Korhummel, R. Akib	a-Hajim, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Dikec	l floodplain	ocal Relief (concave, convex, none) <u>no</u>	one Slope(%) 2
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38</u>	.27884658 Long: <u>-121.70</u>	25166 Datum: WGS 84
Soil Map Unit Name Egbert silty clay	loam	NW	classification PF
Are climatic/hydrologic conditions on-s	ite typical for this time of	year? 🛛 Yes 🔲 No 🛛 (If no, exp	lain in remarks)
Are any of the following significantly di	sturbed? Degetation	on 🔲 Soil 🔲 Hydrology 🛛 Are "Norr	nal Circumstances" present? 🛛 Yes 🔲 No
Are any of the following naturally probl	ematic? 🛛 Vegetatio	on 🛛 Soil 🗋 Hydrology (If nee	ded, explain any answers in remarks)
SUMMARY OF FINDINGS - Attac	<u>h site map showing ؛</u>	sample point locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	☐ Yes ⊠ No ☐ Yes ⊠ No ☐ Yes ⊠ No	Is the Sampled Area within a Wetland?	□ Yes ⊠ No
Remarks: Upland sample point paired hydrophytic vegetation, hy	d with SP029. Sample po dric soils, or wetland hydr	oint taken on shoulder of bermed access ology.	road. Sample point does not meet criteria for

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover			Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant species across all strata?
4 Tree Stratum Total Cover:				% of dominant species that
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
2. 3. 4. Sapling/Shrub Stratum Total Cover:		· · _		OBL species x1 FACW species x2 FAC species x3 FACU species x4
		-		UPL species x5
Romus diandrus	5	No	UPL	Column Totals (A) (B)
2. Bromus hordeaceus	40	Yes	FACU	Prevalence Index = B/A =
3. Helminthotheca echioides	25	Yes	FAC	Hvdrophytic Vegetation Indicators
4. Conium maculatum	t	No	FACW	\square Dominance Test is >50%
5. Brassica nigra	t	No	UPL	\square Prevalence Index is $$
6 7 8				 Morphological adaptations (provide supporting data in remarks) Problematic hydrophytic vegetation¹ (explain)
Herb Stratum Total Cover:	70	_		
<u>WOODY VINE STRATUM</u> Plot Size: 1	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover: % Bare ground in herb stratum <u>10</u>	% cover of	- biotic crust <u>0</u>		Hydrophytic Vegetation Present ?
Remarks: Thatch 20%. Sample point dominated	by FAC and FA	CU species, does	s not meet dor	ninance test.

SOI	L
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Profile descu Depth	iption: (Describe Matrix	to the de	oth needed to docume Redox	ent the in Features	dicator o	r confirr	m the absence of indicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks
0-12	10YR 3/2	100					<u>Clay</u>
¹ Type: C=Co	ncentration, D=De	pletion, RM	/I=Reduced Matrix.	² Locati	on: PL=P	ore Lining	g, RC=Root Channel, M=Matrix
Hydric Soil I	ndicators: (Appli	cable to al	LRRs, unless other	vise note	ed.)		Indicators for Problematic Hydric Soils ³ :
Histosol Histic Ep Black His Stratified Communication Depleted Thick Da Sandy M Sandy G	(A1) ipedon (A2) stic (A3) 1 Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa rk Surface (A12) ucky Mineral (S1) leyed Matrix (S4)	C) ace (A11)	 Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mine Loamy Gleyed Matrix Depleted Matrix (F3) Redox Dark Surface Depleted Dark Surface Redox Depressions Vernal Pools (F9)) ral (F1) rix (F2) 3) e (F6) ace (F7) s (F8)			 1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks) ³ Indicators of hydric vegetation and wetland hydrology must be present.
Restrictive I	ayer (if present)	:					
Туре:			_				
Depth (inch	ies):						Hydric Soil Present ? 🛛 Yes 🛛 No
Remarks: _{Sa}	mple point does n	ot meet ind	icators of hydric soils.				

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffic			
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 	
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	toring well, aerial photos, etc.) if available).	
Remarks: No hydrological indicators observed	l.		

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners	State CA	Sampling Point SP031
Investigator(s) R. Korhummel, R. Akib	a-Hajim, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	d floodplain Loca	I Relief (concave, convex, none) <u>convex</u>	Slope(%) _0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.280</u>	081845 Long: <u>-121.7034812</u>	Datum: WGS 84
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classifica	ation <u>PF</u>
Are climatic/hydrologic conditions on-s	site typical for this time of year	? 🛛 Yes 🔲 No 🛛 (If no, explain in rer	marks)
Are any of the following significantly di	sturbed? Degetation	🗆 Soil 🔲 Hydrology 🛛 Are "Normal Circur	mstances" present? 🛛 Yes 🔲 No
Are any of the following naturally probl	ematic?	Soil Hydrology (If needed, expl	ain any answers in remarks)
SUMMARY OF FINDINGS - Attac	<u>h site map showing sam</u> :	ple point locations, transects, import	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes □ No X Yes □ No X Yes □ No	Is the Sampled Area 🛛 🕅 within a Wetland?	Yes 🛛 No
Remarks: Unpaired wetland sample meets criteria for hydrophy	point taken in area of emerger /tic vegetation, hydric soils, ar	nt vegetation surrounded by open water in so nd wetland hydrology. Boundary based on sh	uthern portion of site. Sample point iff in vegetation and topography (i.e., at

edge of adjacent bermed roadway).

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1		Species?		Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant1(B)
4 Tree Stratum Total Cover:				% of dominant species that 100 (A/B)
SAPI ING/SHRUB STRATUM Plot Size:	N/A			Prevalence Index Worksheet
				Total % cover of: Multiply by:
1. 2. 3. 4.				OBL species x1 FACW species x2 FAC species x3 FACU species x4
Sapling/Shrub Stratum Total Cover:				UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. <u>Typha latifolia</u> 2.	60	Yes	OBL	Prevalence Index = B/A = (B)
3.				Hydrophytic Vegetation Indicators
4.				Dominance Test is >50%
5				$\square Provelence Index is $
6 7				 Morphological adaptations (provide supporting data in remarks)
0	60	·		Problematic hydrophytic vegetation ¹ (explain)
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:				Hydrophytic Verent 2 No
% Bare ground in herb stratum <u>30</u>	% cover of	biotic crust 0		vegetation riesent :
Remarks: Thatch 10% of old Typha stems. Samp	ble point domina	ated by OBL spec	cies, meets do	minance test.

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Profile description: (Describe) Depth Matrix	to the dep	oth needed to docum Redox	ent the in Features	dicator o	r confirm	n the absence of indicators.)
(inches) Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks
			·			
¹ Type: C=Concentration, D=Dep	letion, RM	I=Reduced Matrix.	² Locatio	on: PL=P	ore Lining	g, RC=Root Channel, M=Matrix
Hydric Soil Indicators: (Applic	able to all	LRRs, unless other	wise note	d.)		Indicators for Problematic Hydric Soils ³ :
$\square \text{ Histosol} (A1)$		Sandy Redox (S5)	3)			□ 1cm Muck (A9) (LRR C)
\square Black Histic (A3)		Loamv Muckv Mine	eral (F1)			2cm Muck (A10)(LRR B) Reduced Vertic (E18)
Hydrogen Sulfide (A4)		Loamy Gleyed Mat	trix (F2)			\square Red Parent Material (TF2)
Stratified Layers (A5)(LRR (C)	Depleted Matrix (F	3) ໌			Other (explain in remarks)
1cm Muck (A9)(LRR D)		Redox Dark Surface	ce (F6)			
Depleted Below Dark Surfac	ce (A11)	Depleted Dark Sur	face (F7)			
Thick Dark Surface (A12)		Redox Depression	s (F8)			3
Sandy Mucky Mineral (S1)		U Vernai Pools (F9)				Indicators of hydric vegetation and
						i
Restrictive Layer (if present):						
Туре:		_				
Depth (inches):		_				Hydric Soil Present ? 🛛 Yes 🗌 No
Remarks: Soils not assessed du	e to deep	standing water. Soils	assumed	hvdric ba	sed on ini	undation over long to very long periods and dominance of
perennial, obligate we	land plant	ts.		,		5 7 51

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)				
Primary Indicators (any one indicator is sufficient)						
X Surface Water (A1) Saturation (A2) High Water Table (A2) Bi Saturation (A3) Addition Water Marks (B1)(Nonriverine) Hy Sediment Deposits (B2)(Nonriverine) Ox Drift Deposits (B3)(Nonriverine) Pr Surface Soil Cracks (B6) Re Mater-Stained Leaves (B9) Saturation (B7)	Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed Soils (C6) Dther (Explain in Remarks)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 				
Field Observations:						
Surface water present? 🛛 Yes 🗌 No Depth	th (inches): <u>36</u>					
Water table present? Xes INO Depth	th (inches): 0					
Saturation Present? X Yes No Depth (includes capillary fringe)	th (inches): 0 Wetland	Hydrology Present ? 🛛 Yes 🗌 No				
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks: Sample point inundated at time of sampling and has long to very long inundation based on management regime and evidence in aerial imagery. Sample point meets multiple primary and secondary indicators. High water table assumed based on deep, long-duration inundation.						

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>				
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners	State CA	Sampling Point SP032				
Investigator(s) R. Korhummel, R. Akiba-Hajim, WRA INC. Section, Township, Range							
Landform (hillslope, terrace, etc.)Diked	d floodplain Local	Relief (concave, convex, none) <u>none</u>	Slope(%) 2				
Subregion(LRR) LRR C (Medit. CA) Lat: <u>38.28576455</u> Long: <u>-121.7031309</u> Datum: <u>WGS 84</u>							
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-s	site typical for this time of year?	? 🛛 Yes 🔲 No 🛛 (If no, explain in rem	narks)				
Are any of the following significantly di	sturbed?	🗆 Soil 🔲 Hydrology 🛛 Are "Normal Circum	nstances" present? 🛛 Yes 🔲 No				
Are any of the following naturally probl	ematic?	Soil 🔲 Hydrology (If needed, expla	in any answers in remarks)				
SUMMARY OF FINDINGS - Attac	ch site map showing sam	ple point locations, transects, importa	ant features, etc.				
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	 Yes ⋈ No Yes ⋈ No Yes ⋈ No 	Is the Sampled Area Urich within a Wetland?	Yes 🖾 No				
Remarks: Upland sample point paired with SP033. Sample point taken on edge of bermed roadway adjacent to flooded field. Sample point does not meet criteria for hydrophytic vegetation, hydric soils, or wetland hydrology.							

[REE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
I	% cover	Species?		Number of Dominant Species (A) that are OBL, FACW, or FAC?
2		·		Total number of dominant <u>2</u> (B)
I Tree Stratum Total Cover:		·		. % of dominant species that
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet
<u>,, « Ento, en (eb en (trem</u> en en en <u>—</u>		-		Total % cover of:Multiply by:
2.				OBL species x1
3.				FACW species x2
1.				FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
HERB STRATI IM Plot Size: 5' radius		-		UPL species x5
Rumex crisous	20	Yes	FAC	Column Totals (A) (B)
2. Medicago polymorpha	70	Yes	FACU	Prevalence Index = B/A =
3. Helminthotheca echioides	5	No	FAC	Hydrophytic Vegetation Indicators
Malva nicaeensis	5	No	UPL	
5				
3				
7				Morphological adaptations (provide
3.				- Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	_		
<u>NOODY VINE STRATUM</u> Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:		_		Hydrophytic Types MINO
% Bare ground in herb stratum 0	% cover of	biotic crust 0		Vegetation Present ?

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Profile descu Depth	iption: (Describe Matrix	to the de	oth needed to docum Redox	ent the in Features	dicator o	r confirn	n the absence of indi	cators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rema	arks	
<u>0-12</u>	10YR 3/2	100								
¹ Type: C=Co Hydric Soil I	ncentration, D=De	pletion, RN	/	² Locatio	 on: PL=Pe	ore Lining	, RC=Root Channel, N Indicators for Prob	Л=Matrix Iematic Hydr	ic Soils ³ :	
Histosol Histic Ep Black His Stratified Completed Thick Da	(A1) ipedon (A2) stic (A3) n Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa rk Surface (A12) ucky Mineral (S1)	C) ice (A11)	Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mine Loamy Gleyed Mat Depleted Matrix (F3) Redox Dark Surfac Depleted Dark Surfac Redox Depressions Redox Depressions Vernal Pools (F9)	e) eral (F1) rix (F2) 3) e (F6) face (F7) s (F8)			1cm Muck (A9) (2cm Muck (A10) Reduced Vertic (Red Parent Mate Other (explain in	LRR C) (LRR B) (F18) prial (TF2) remarks)	and	
Sandy G	leyed Matrix (S4)						wetland hvdrology	must be prese	ent.	
Restrictive I Type: Depth (inch	ayer (if present):		_				Hydric Soi	Present ?	□ Yes	🛛 No
Remarks: _{Sa}	mple point does no	ot meet hyr	dic soil indicators.							

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imager Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S ery (B7) Other (Explain in Remarks) 	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:		
	VN Depth (inches):	
Water table present?	No Depth (inches):	
Saturation Present? Yes X (includes capillary fringe)	No Depth (inches):	Wetland Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage,	, monitoring well, aerial photos, etc.) if available	-
Remarks: No hydrological indicators pre	resent.	

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>				
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners	State CA	Sampling Point SP033				
Investigator(s) R. Korhummel, R. Akib	₀a-Hajim, WRA INC.	Section, Township, Range					
Landform (hillslope, terrace, etc.)Diked	d floodplain Loc	al Relief (concave, convex, none) <u>none</u>	Slope(%) 0				
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.28</u>	3579014 Long: <u>-121.70349</u>	15 Datum: WGS 84				
Soil Map Unit Name Sacramento cla	Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF						
Are climatic/hydrologic conditions on-s	site typical for this time of yea	ar? 🗌 Yes 🗌 No 🦳 (If no, explain	in remarks)				
Are any of the following significantly di	sturbed? Degetation	Soil Hydrology Are "Normal C	Circumstances" present? 🛛 Yes 🔲 No				
Are any of the following naturally probl	ematic? Degetation	Soil Hydrology (If needed,	, explain any answers in remarks)				
SUMMARY OF FINDINGS - Attac	<u>:h site map showing sar</u>	<u>mple point locations, transects, im</u>	portant features, etc.				
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes ☐ No X Yes ☐ No X Yes ☐ No	Is the Sampled Area within a Wetland?	⊠ Yes □ No				
Remarks: Wetland sample point pair vegetation, hydric soils, ar	ed with SP032. Sample poir d wetland hydrology. Bound	nt taken near edge of managed wetland. S dary based on shift in vegetation and topo	Sample point meets criteria for hydrophytic graphy (i.e., at the edge of the berm).				

	Absolute	Dominant	Indicator	Dominance Test Worksheet
<u>IREE STRATUM</u> Plot Size:N/A 1	_ % cover	Species?	Status	Number of Dominant Species <u>1</u> (A) that are OBL, FACW, or FAC?
2				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:				% of dominant species that 100 (A/B)
SAPI ING/SHRUB STRATUM Plot Size:	N/A			Prevalence Index Worksheet
		•		Total % cover of: Multiply by:
·· ·		·		OBL species x1
۲ ،		·		FACW species x2
۰. ۸		•		FAC species x3
**				FACU species x4
Sapling/Shrub Stratum Total Cover:		•		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Schoenoplectus acutus	80	Yes	OBL	
2		<u> </u>		Prevalence Index = B/A =
3				Hydrophytic Vegetation Indicators
4				Dominance Test is >50%
5		<u> </u>		$\square \text{Prevalence Index is } $
6				
7				Morphological adaptations (provide supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	80	-		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed of problematic.
2		<u> </u>		_
Woody Vines Total Cover:		_		Hydrophytic M Yao D No
% Bare ground in herb stratum 0	Vegetation Present ?			

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth								
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ¹	Texture Remarks	
<u>0-12</u>	10YR 3/2	<u>88</u>	5YR 4/6	<u>12</u>	<u> </u>	PL,M	Clay	_
¹ Type: C=Col	ncentration, D=De	pletion, RM	Reduced Matrix.	² Locat	tion: PL=F	Pore Linin	ng, RC=Root Channel, M=Matrix	
Hydric Soil I	ndicators: (Appli	cable to all ۲	LRRs, unless other	wise not	ed.)		Indicators for Problematic Hydric Soils ³ :	
Histosol (Histic Ep Black His Hydroger Stratified Communication Depleted Sandy M Sandy G	A1) ipedon (A2) itic (A3) Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa rk Surface (A12) ucky Mineral (S1) eyed Matrix (S4)	C) [Co [ace (A11) [[☐ Sandy Redox (S5 ☐ Stripped Matrix (S ☐ Loamy Mucky Min ☐ Loamy Gleyed Ma ☐ Depleted Matrix (F ☑ Redox Dark Surfa ☐ Depleted Dark Su ☐ Redox Depressior ☐ Vernal Pools (F9)) eral (F1) ttrix (F2) 53) ce (F6) tface (F7) ns (F8))		 1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks) ³Indicators of hydric vegetation and wetland hydrology must be present. 	
Restrictive L	aver (if present)	:						
Type:	,,,,	-						
Depth (inch	es):		-				Hydric Soil Present ? 🛛 Yes 🗌 No	
Remarks: _{Sal}	nple point meets	redox dark s	urface (F6).					

Wetland Hydrology Indicators: Secondary Indicators (2 or more required)						
Primary Indicators (any one indicator is sufficient)						
 Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Recent Iron Reduction in PLowed S Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)					
Field Observations:						
Surface water present? 🔲 Yes 🛛 No 🛛 Depth (inches):						
Water table present? Xes No Depth (inches): 10						
Saturation Present? Xes INo Depth (inches): 2(includes capillary fringe)	Wetland Hydrology Present ? 🛛 Yes 🗌 No					
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks: Sample point with high water table (A2) and saturation (A3) to within 2 inches of soil surface. Sample point also shows inundation on aerial imagery (B7) and meets FAC-neutral test (D5).						
Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>			
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Applicant/Owner <u>Ecosystem Investme</u>	ent Partners	State CA	Sampling Point SP034			
Investigator(s) R. Korhummel, R. Akib	a-Hajim, WRA INC.	Section,Township,Range				
Landform (hillslope, terrace, etc.)Diked	1 floodplain Loca	I Relief (concave, convex, none) <u>none</u>	Slope(%) _0			
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.284</u>	76129 Long: <u>-121.7140182</u>	Datum: WGS 84			
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classific	ation PF			
Are climatic/hydrologic conditions on-s	ite typical for this time of year	? 🛛 Yes 🔲 No 🛛 (If no, explain in rei	marks)			
Are any of the following significantly di	sturbed? Degetation	🛛 Soil 🔲 Hydrology 🛛 Are "Normal Circui	mstances" present? 🛛 Yes 🔲 No			
Are any of the following naturally probl	ematic? Degetation	Soil Hydrology (If needed, expl	lain any answers in remarks)			
SUMMARY OF FINDINGS - Attac	h site map showing sam	ple point locations, transects, import	ant features, etc.			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	 Yes Xes No Yes No 	Is the Sampled Area within a Wetland?	Yes 🛛 No			
Remarks: Unpaired upland sample p hydric soils, but does not r	oint taken in elevated area ad neet criteria for hydrophytic ve	jacent to inundated marsh at southern end of egetation or wetland hydrology.	f site. Sample point meets criteria for			

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2. 3.				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:				% of dominant species that
	N/A	-		Prevalence Index Worksheet
SAPLING/SHRUB STRATUM FILL SIZE.		-		Total % cover of: Multiply by:
1. 2. 3. 4. Sapling/Shrub Stratum Total Cover:				OBL species x1 FACW species x2 FAC species x3 FACU species x4
HERB STRATUM Plot Size: 5' radius				UPL species X5
1 Bromus diandrus	30	Yes	UPL	Column Totals (A) (B)
2. Hordeum murinum	10	No	FACU	Prevalence Index = B/A =
3. Erodium moschatum	5	No	UPL	Hydrophytic Vegetation Indicators
4. Silybum marianum	t	No	UPL	\square Dominance Test is >50%
5. Brassica nigra	5	No	UPL	$\square \text{Derivelance index is } \mathcal{L} = 2.0^{1}$
6. Festuca perennis	30	Yes	FAC	Prevalence index is = 3.0</td
7				Morphological adaptations (provide supporting data in remarks)
8				\square Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	80	_		
<u>WOODY VINE STRATUM</u> Plot Size: 1	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:		-		Hydrophytic Verent 2 Ves 🛛 No
% Bare ground in herb stratum <u>20</u>	% cover of	biotic crust 0		vegetation riesent :
Remarks: Sample point dominated by FAC and L	JPL species, do	es not meet domi	inance test.	

SOIL	
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Profile descr Depth	iption: (Describe Matrix	e to the dep	th needed to docun Redo	nent the ox Feature	indicator es	or confiri	n the absence of indi	cators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rema	arks	
0-12	10YR 3/1	86	10YR 5/4	14	<u>C</u>	PL,M	Clay			
		- <u> </u>								
¹ Type: C=Co	ncentration, D=De	pletion, RM	Reduced Matrix.	² Loca	tion: PL=F	ore Linin	g, RC=Root Channel, M	/I=Matrix		
Hydric Soil I Histosol I Histic Ep Black His Stratified Completed Thick Da Sandy M Sandy G	ndicators: (Appli (A1) ipedon (A2) itic (A3) a Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfar rk Surface (A12) ucky Mineral (S1) leyed Matrix (S4)	cable to all C) ace (A11)	LRRs, unless other Sandy Redox (S5 Stripped Matrix (S Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (f Redox Dark Surfa Depleted Dark Sur Redox Depression Vernal Pools (F9)	rwise no) 66) heral (F1) atrix (F2) ⁻ 3) ce (F6) rface (F7 hs (F8)	ted.)		Indicators for Probl	lematic Hydr LRR C) (LRR B) F18) prial (TF2) remarks) c vegetation a must be prese	ic Soils ³ : and ent.	
Restrictive L Type: Depth (inch	ayer (if present)	:	_				Hydric Soil	Present ?	🛛 Yes	□ No
Remarks: _{So} i	Is appear to be dr	edged mate	rial placed on upland	I. Sampl	e point me	eets redox	dark surface (F6).			

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)	
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres along Drift Deposits (B3)(Nonriverine) Presence of Reduced Iron (C4 Surface Soil Cracks (B6) Recent Iron Reduction in PLow Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Water-Stained Leaves (B9) Water-Stained Leaves (B9)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Dry-Season Water Table (C2) Thin Muck Surface (C7) (4) Crayfish Burrows (C8) wed Soils (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:	
	-
Water table present? LI Yes X No Depth (inches):	_
Saturation Present?	── Wetland Hydrology Present ? □ Yes ⊠ No
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if ava	ailable.
Remarks: No hydrological indicators observed.	

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners	State CA	Sampling Point SP035
Investigator(s) R. Korhummel, R. Akib	a-Hajim, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	d floodplain Local	Relief (concave, convex, none) none	Slope(%) 0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.2861</u>	5497 Long: <u>-121.7121927</u>	Datum: WGS 84
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classi	fication <u>PF</u>
Are climatic/hydrologic conditions on-s	ite typical for this time of year?	🛛 Yes 🔲 No 🛛 (If no, explain in	remarks)
Are any of the following significantly di	sturbed?] Soil 🔲 Hydrology 🛛 Are "Normal Circ	cumstances" present? 🛛 Yes 🔲 No
Are any of the following naturally probl	ematic?	Soil 🛛 Hydrology (If needed, ex	xplain any answers in remarks)
SUMMARY OF FINDINGS - Attac	h site map showing samp	ble point locations, transects, impo	ortant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes □ No ⊠ Yes □ No ⊠ Yes □ No	Is the Sampled Area within a Wetland?	⊠Yes □No
Remarks: Unpaired wetland sample soils, and wetland hydrolog	point taken at edge of managed gy. Boundary based on shift in	d wetland check. Sample point meets crit vegetation and topography (i.e., at edge	eria for hydrophytic vegetation, hydric of adjacent road berm).

IREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet	
1	- % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?	
2 3		·		Total number of dominant (B) (B)	
I Tree Stratum Total Cover: _				% of dominant species that(A/B(A/B))(A/B)	
- SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet	
		-		Total % cover of: Multiply by:	
				OBL species x1	
				FACW species x2	
				FAC species x3	
				FACU species x4	
		-		UPL species x5	
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)	
<u> </u>	15	Yes	FAC	= $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$	
2. Atriplex prostrata	30	Yes	FAC		
3. Rumex crispus	5	<u>No</u>	FAC	Hydrophytic Vegetation Indicators	
4				Dominance Test is >50%	
5				Prevalence Index is = 3.0<sup 1	
6 7		·		Morphological adaptations (provide supporting data in remarks)	
B	50	<u> </u>		Problematic hydrophytic vegetation ¹ (explain)	
Herb Stratum Total Cover:	50	-		¹ Indiactors of hydric soil and watland hydrology	
WOODY VINE STRATUM Plot Size: 1	N/A			must be present, unless disturbed or problematic.	
1		<u> </u>			
2		·		-	
Woody Vines Total Cover:		-		Hydrophytic Ves INO	
% Bare ground in herb stratum <u>30</u>	% cover of	biotic crust 0	% Bare ground in herb stratum 30 % cover of biotic crust 0		

SOIL	
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Profile descu Depth	ription: (Describe Matrix	to the dep	oth needed to docum Redox	ent the ind Features	dicator o	or confirm	n the absence of indicators	;.)
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ¹	Texture	Remarks
0-12	10YR 2/1	<u> 100 </u>		·				
 	ncentration, D=De	pletion, RN	/		on: PL=P	ore Lining	g, RC=Root Channel, M=Mati	rix
Hydric Soil I	ndicators: (Appli	cable to al	I LRRs, unless other	wise noted	d.)		Indicators for Problemati	c Hydric Soils ³ :
Histosol Histic Ep Black His Hydrogel Stratified Charter for the stratified Charter for the strate for the stra	(A1) ipedon (A2) stic (A3) I Layers (A5)(LRR k (A9)(LRR D) I Below Dark Surfa rk Surface (A12) ucky Mineral (S1) leved Matrix (S4)	C) ace (A11)	 Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mind Loamy Gleyed Mai Depleted Matrix (F Redox Dark Surfact Depleted Dark Surfact Redox Depression Vernal Pools (F9) 	6) eral (F1) trix (F2) 3) ce (F6) face (F7) s (F8)			 1cm Muck (A9) (LRR C 2cm Muck (A10)(LRR E Reduced Vertic (F18) Red Parent Material (T Other (explain in remar ³Indicators of hydric vege wetland bydrology must b 	;) 3) F2) ks) tation and
Restrictive I	aver (if present)							
Type: Depth (inch	nes):		_				Hydric Soil Prese	ent? 🛛 Yes 🗌 No
Remarks: _{So} crit	il assumed hydric eria of hydrology/ł	due to long nydrophytic	to very long inundatio vegetation. Dark orga	n visible in anic materi	i aerial in ial may b	nagery, a e maskin	s well as topographic positior g redox features.	n and meeting other two

Wetland Hydrology Indicator	's:			Secondary Indicators (2 or more required)
Primary Indicators (any one ind	dicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonrivel Sediment Deposits (B2)(N Drift Deposits (B3)(Nonrivel Surface Soil Cracks (B6) Inundation Visible on Aeria Water-Stained Leaves (B9) 	rine) onriverine) erine) Il Imagery (B7))	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (E1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 	
Field Observations:				
	Yes 🖾 No	Depth (inches):		
Water table present?	Yes 🛛 No	Depth (inches): <u>14</u>		
Saturation Present? X (includes capillary fringe)	Yes 🛛 No	Depth (inches): <u>10</u>	Wetland	Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (strear	n guage, monit	oring well, aerial photos, etc.) if available	9.	
Remarks: Sample point meets (C9) and FAC-neutra	saturation (A3) I test (D5).	indicator and contains biotic crust (B12)	. Sample point als	o meets saturation visible in aerial imagery

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>
Applicant/Owner Ecosystem Investmen	t Partners	State CA	Sampling Point SP036
Investigator(s) R. Korhummel, R. Akiba	-Hajim, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	floodplain Loo	cal Relief (concave, convex, none) <u>none</u>	Slope(%) 0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.29</u>	2163128 Long: <u>-121.7120907</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay,	0 to 2 percent slopes	NWI classifi	cation <u>PF</u>
Are climatic/hydrologic conditions on-sit	e typical for this time of yea	ar? 🛛 Yes 🔲 No 🛛 (If no, explain in re	emarks)
Are any of the following significantly dis	turbed? Degetation	Soil Hydrology Are "Normal Circu	umstances" present? 🛛 Yes 🔲 No
Are any of the following naturally proble	matic? Degetation	Soil Hydrology (If needed, exp	plain any answers in remarks)
SUMMARY OF FINDINGS - Attach	n site map showing sa	mple point locations, transects, impor	tant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	☐ Yes ⊠ No ☐ Yes ⊠ No ☐ Yes ⊠ No	Is the Sampled Area]Yes 🛛 No
Remarks: Upland sample point paired vegetation, hydric soils, or v	with SP037. Sample point vetland hydrology.	t taken on shoulder of road berm. Sample poi	nt does not meet criteria for hydrophytic

REE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
 I		Species?		Number of Dominant Species(A) that are OBL, FACW, or FAC?
<u>.</u>				Total number of dominant(B)(B)
Tree Stratum Total Cover:				% of dominant species that0 (A/B0 (A/B0))
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
2 3 4				OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
<u>HERB STRATUM</u> Plot Size: 5' radius				Column Totals (A) (B
Geranium dissectum	70	Yes	UPL	
Bromus diandrus	10	No	UPL	Prevalence Index = B/A =
- Hordeum murinum	10	No	FACU	Hydrophytic Vegetation Indicators
Medicago polymorpha	5	No	FACU	Dominance Test is >50%
Malva nicaeensis	5	No	UPL	Prevalence Index is $$
)				Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover:	100			
<u>NOODY VINE STRATUM</u> Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				-
Woody Vines Total Cover:		-		Hydrophytic 🛛 Yes 🛛 No
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		Vegetation Present ?

SOIL	
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Profile descu Depth	ription: (Describe Matrix	to the de	oth needed to docume Redox	ent the ind	licator o	r confirn	n the absence of indicate	ors.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Remark	s	
0-12	10YR 3/1	100								
¹ Type: C=Co Hydric Soil I	ncentration, D=De	pletion, RM	/-Reduced Matrix.	² Location	n: PL=Pc	ore Lining	, RC=Root Channel, M=N Indicators for Problem	Matrix natic Hydric S	Soils ³ :	
Histosol Histic Ep Black His Hydrogel Stratified 1cm Muc Depleted Thick Da Sandy M	(A1) ipedon (A2) stic (A3) n Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa rk Surface (A12) ucky Mineral (S1)	C) ce (A11)	 Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mine Loamy Gleyed Matrix Depleted Matrix (F3) Redox Dark Surfac Depleted Dark Surfac Redox Depressions Vernal Pools (F9) 	i) ral (F1) rix (F2) 3) e (F6) face (F7) s (F8)			 1cm Muck (A9) (LRI 2cm Muck (A10)(LR Reduced Vertic (F18 Red Parent Material Other (explain in ren ³ Indicators of hydric vertice	R C) R B) 8) I (TF2) marks) egetation and		
□ Sandy G	leyed Matrix (S4)						wetland hydrology mu	st be present	•	
Restrictive I Type: Depth (inch	_ayer (if present): nes):		_				Hydric Soil Pr	esent?] Yes	🖾 No
Remarks: _{Sa}	mple point does no	ot meet ind	icators of hydric soils.							

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches):	Wetland I	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available		
Remarks: No hydrological indicators present.			

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>		
Applicant/Owner Ecosystem Investmen	t Partners	State CA	Sampling Point SP037		
Investigator(s) R. Korhummel, R. Akiba	Hajim, WRA INC.	Section,Township,Range			
Landform (hillslope, terrace, etc.)Diked	loodplain Local F	Relief (concave, convex, none) <u>none</u>	Slope(%) _0		
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.2915</u>	8088 Long: <u>-121.711753</u>	Datum: WGS 84		
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF					
Are climatic/hydrologic conditions on-sit	e typical for this time of year?	🛛 Yes 🔲 No 🦳 (If no, explain in ren	narks)		
Are any of the following significantly dist	urbed?] Soil 🔲 Hydrology 🛛 Are "Normal Circun	nstances" present? 🛛 Yes 🔲 No		
Are any of the following naturally problem	matic?] Soil 🔲 Hydrology (If needed, expla	ain any answers in remarks)		
SUMMARY OF FINDINGS - Attach	site map showing samp	le point locations, transects, importa	ant features, etc.		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	I Yes □ No I Yes □ No I Yes □ No	Is the Sampled Area within a Wetland?	Yes 🛛 No		
Remarks: Wetland sample point paired	d with SP036. Sample point ta	aken at edge of managed wetland check. Sa	ample point meets criteria for		

hydrophytic vegetation, hydric soils, and wetland hydrology. Boundary based on shift in vegetation and topography (i.e., at edge of adjacent road berm).

VEGETATION	(use scientific names)

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover			Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant generation 2 (B)
4 Tree Stratum Total Cover:				% of dominant species that are OBL, FACW, or FAC?
	 N/A	-		Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
2				OBL species x1
2				FACW species x2
4				FAC species x3
Sapling/Shrub Stratum Tatal Covery				FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Lythrum hyssopifolia	20	Yes	OBL	
2. Polypogon australis	18	Yes	FACW	
3. Cyperus eragrostis	2	No	FACW	Hydrophytic Vegetation Indicators
4. Ludwigia sp.	1	No	OBL	Dominance Test is >50%
5				Prevalence Index is $$
6				Morphological adaptations (provide
7				supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	40	_		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		_		Hydrophytic No.
% Bare ground in herb stratum <u>60</u>	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Advantageous roots on Polypogon. Sa	ample point don	ninated by OBL ar	nd FACW spe	cies, meets dominance test.

Profile descr Depth	iption: (Describe Matrix	e to the dep	th needed to docu Red	ment the ox Feature	indicator es	or confir	rm the absence of indicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc1	Texture Remarks		
0-12	<u>10YR 3/1</u>	88	5YR 4/6	12	<u>C</u>	PL	Clay		
¹ Type: C=Con	ncentration, D=De	epletion, RM	Reduced Matrix.	² Loca	tion: PL=F	Pore Linin	ng, RC=Root Channel, M=Matrix		
Hydric Soil I	ndicators: (Appli	icable to all	LRRs, unless othe	erwise no	ted.)		Indicators for Problematic Hydric Soils ³ :		
	(AT) inedon (A2)		\Box Sandy Redux (S:	5) 56)			$\square 1 \text{cm Muck (A9) (LRR C)}$	ſ	
Black His	stic (A3)		Loamy Mucky Mi	neral (F1)			$\square \text{ Reduced Vertic (E18)}$	1	
Hydroger	n Sulfide (A4)		Loamy Gleyed M	atrix (F2)			Red Parent Material (TF2)		
Stratified	Layers (A5)(LRR	C)	Depleted Matrix ((F3)			Other (explain in remarks)		
1cm Muc	k (A9)(LRR D)		Redox Dark Surf	ace (F6)					
	Below Dark Surfa	ace (A11)	Depleted Dark Si	urface (F7)				
	rk Sufface (A12)		Redox Depressio	ons (F8)			31. dia tanàna 61. dia mandritra dia dia dia dia dia dia dia dia dia di		
Sandy Mucky Mineral (S1) Uvernal Pools (F9)						indicators of hydric vegetation and			
Terrer	ayer (ii present)	-						1	
Type:			_						
Depth (inch	ies):		_				Hydric Soil Present ? 🛛 Yes 🗌 No		
Remarks: _{Sai}	mple point meets	redox dark	surface (F6).				•		
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		(/-						
								ſ	

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)	
□ Surface Water (A1) □ Salt Crus □ High Water Table (A2) □ Biotic Cru □ Saturation (A3) □ Aquatic In □ Water Marks (B1)(Nonriverine) □ Hydroger □ Sediment Deposits (B2)(Nonriverine) □ Oxidized □ Drift Deposits (B3)(Nonriverine) □ Presence □ Surface Soil Cracks (B6) □ Recent In □ Inundation Visible on Aerial Imagery (B7) □ Other (Explanation Character (B9)	Water Marks (B1) (Riverine) 11) Sediment Deposits (B2) (Riverine) B12) Drift Deposits (B3) (Riverine) tebrates (B13) Drainage Patterns (B10) Ifide Odor (C1) Dry-Season Water Table (C2) zospheres along Living Roots (C3) Thin Muck Surface (C7) Reduced Iron (C4) Crayfish Burrows (C8) Reduction in PLowed Soils (C6) Saturation Visible on Aerial Imagery (C9) n in Remarks) Shallow Aquitard (D3) KeAC-Neutral Test (D5) KeAC-Neutral Test (D5)
Field Observations:	
Surface water present? Yes X No Depth (inche	
Water table present? 🛛 🛛 Yes 🔲 No 🛛 Depth (inche	5
Saturation Present? X Yes No Depth (inche (includes capillary fringe)	0 Wetland Hydrology Present ? ⊠ Yes □ No
Describe recorded data (stream guage, monitoring well, aer	hotos, etc.) if available.
Remarks: Sample point has high water table (A2) and satura sulfide oder (C1) was encountered during pit exca	(A3) to the soil surface. Inundation is visible in aerial imagery (B7) and hydrogen on. Sample point also meets FAC-neutral test (D5).

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>
Applicant/Owner <u>Ecosystem Investmen</u>	t Partners	State CA	Sampling Point SP038
Investigator(s) R. Korhummel, R. Akiba-	Hajim, WRA INC.	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked f	loodplain Loca	al Relief (concave, convex, none) <u>none</u>	Slope(%) _0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.298</u>	337392 Long: <u>-121.7051162</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay,	0 to 2 percent slopes	NWI classifica	ation <u>PF</u>
Are climatic/hydrologic conditions on-site	e typical for this time of year	? 🛛 Yes 🔲 No 🛛 (If no, explain in rer	narks)
Are any of the following significantly dist	urbed? Degetation	Soil 🔲 Hydrology Are "Normal Circur	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	matic?	Soil Hydrology (If needed, expl	ain any answers in remarks)
SUMMARY OF FINDINGS - Attach	site map showing sam	ple point locations, transects, import	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	I Yes □ No I Yes □ No I Yes □ No	Is the Sampled Area 🛛 🕅 within a Wetland?	Yes 🗆 No
Remarks: Wetland sample point paired hydrophytic vegetation, hydrophytic veget	t with SP039. Sample point ic soils, and wetland hydrol	taken at edge of managed wetland check. Sogy. Boundary based on shift in vegetation a	ample point meets criteria for nd topography (i.e., at edge of adjacent

road berm).

REE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
				Total number of dominant(B)(B)
Tree Stratum Total Cover				% of dominant species that(A/B(A/B)) are OBL, FACW, or FAC?
APLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet
		-		Total % cover of:Multiply by:
				OBL species x1
				FACW species x2
				FAC species x3
Sapling/Shrub Stratum Total Cover				FACU species x4
	•	-		UPL species x5
ERB STRATUM Plot Size: 5 radius	3	Vee		Column Totals (A) (B)
Polypogon australis	. <u>40</u>			Prevalence Index = B/A =
		No		
		<u> </u>		Hydrophytic Vegetation Indicators
Helminthotheco.achioides	- 10	<u> </u>	FAC	Dominance Test is >50%
	2			Prevalence Index is $$
·				Morphological adaptations (provide supporting data in remarks)
				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover	:60	-		
(OODY VINE STRATUM Plot Size:	N/A			'Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
·				-
Woody Vines Total Cover	:	-		Hydrophytic X Yes I No
% Bare ground in herb stratum <u>30</u>	% cover of	biotic crust 0		Vegetation Present ?

SOIL	
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Profile descr Depth	iption: (Describe Matrix	to the dep	th needed to docum Redo	ent the i x Feature	ndicator es	or confir	rm the absence of indicators.) –		
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ¹	TextureRemarks	_	
<u>0-12</u>	10YR 3/2	<u>92</u>	<u>10YR 5/6</u>	<u>8</u>	<u>c</u>			- - -	
¹ Type: C=Cor Hydric Soil I	ncentration, D=De	pletion, RM	=Reduced Matrix. LRRs, unless other	² Loca	tion: PL=F	Pore Linin	ng, RC=Root Channel, M=Matrix Indicators for Problematic Hydric Soils ³ :	-	
Hydric Soir Indicators: (Applicable to a Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)(LRR C) 1cm Muck (A9)(LRR D) Depleted Below Dark Surface (A11) Thick Dark Surface (A12)			 Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Vernal Pools (F9) 				 1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks) 		
Sandy G	eyed Matrix (S4)		_ ()				wetland hydrology must be present.		
Restrictive L Type: Depth (inch	.ayer (if present) es):		_				Hydric Soil Present ? 🛛 Yes 🗌 No		
Remarks: _{Sal}	nple point meets	redox dark s	surface (F6).				•		

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)						
Primary Indicators (any one indicator is sufficient)							
 Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres along Living Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Shallow Aquitard (D3) FAC-Neutral Test (D5)						
Field Observations:							
Surface water present? Yes No Depth (inches):							
Water table present? Xes INo Depth (inches): <u>10</u>							
Saturation Present? Xes No Depth (inches): 8 (includes capillary fringe)	Wetland Hydrology Present ? 🛛 Yes 🔲 No						
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.							
Remarks: Sample point has high water table (A2) and saturation (A3) to 8 inches belov aerial imagery (C9) and the FAC-neutral test (D5).	v the soil surface. Sample point also meets saturation visible on						

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>					
Applicant/Owner Ecosystem Investment	Partners	State <u>CA</u>	Sampling Point SP039					
Investigator(s) R. Korhummel, R. Akiba-Hajim, WRA INC. Section, Township, Range								
Landform (hillslope, terrace, etc.)Diked f	loodplain Loc	al Relief (concave, convex, none) <u>none</u>	Slope(%) 0					
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.29</u>	853463 Long: <u>-121.7052258</u>	Datum: WGS 84					
Soil Map Unit Name Sacramento clay,	0 to 2 percent slopes	NWI classific	cation PF					
Are climatic/hydrologic conditions on-site	e typical for this time of yea	ar? 🛛 Yes 🔲 No 🛛 (If no, explain in re	marks)					
Are any of the following significantly dist	urbed? Degetation	Soil Hydrology Are "Normal Circu	mstances" present? 🛛 Yes 🔲 No					
Are any of the following naturally probler	natic? Degetation	Soil Hydrology (If needed, exp	lain any answers in remarks)					
SUMMARY OF FINDINGS - Attach	site map showing sar	<u>nple point locations, transects, impor</u>	tant features, etc.					
Hydrophytic Vegetation Present? I Hydric Soil Present? I Wetland Hydrology Present? I]Yes 🖾 No]Yes 🖾 No]Yes 🖾 No	Is the Sampled Area within a Wetland?]Yes 🖾 No					
Remarks: Upland sample point paired with SP038. Sample point taken on shoulder of road berm. Sample point does not meet criteria for hydrophytic vegetation, hydric soils, or wetland hydrology.								

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2		·		Total number of dominant species across all strata?
4 Tree Stratum Total Cover:				% of dominant species that 0 (A/B) are OBL, FACW, or FAC?
	Ν/Α	-		Prevalence Index Worksheet
SAPLING/SHRUB STRATUM FIOUSIZE.	N/A	-		Total % cover of: Multiply by:
1 2 3 4 Sapling/Shrub Stratum Total Cover				OBL species x1 FACW species x2 FAC species x3 FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Medicago polymorpha	55	Yes	FACU	
2. Helminthotheca echioides	10	<u>No</u>	FAC	
3. Brassica nigra	t	<u>No</u>		Hydrophytic Vegetation Indicators
4. Bromus diandrus	5	<u>No</u>		Dominance Test is >50%
5. Vicia sativa	t	<u>No</u>	FACU	Prevalence Index is $$
6 7 8.		·		 Morphological adaptations (provide supporting data in remarks) Droblematic hydrophytic vogetation¹ (ovplain)
Herb Stratum Total Cover:	70			
WOODY VINE STRATUM Plot Size: 1	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		_		Hydrophytic Tyes X No
% Bare ground in herb stratum <u>25</u>	% cover of	biotic crust 0		Vegetation Present ?

SOIL	
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Profile descu Depth	iption: (Describe Matrix	to the de	pth needed to docume Redox	ent the ind Features	licator o	r confirn	n the absence of indic	cators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rema	arks	
0-12	10YR 3/2	100								
¹ Type: C=Co Hydric Soil I	ncentration, D=De	pletion, RN	И=Reduced Matrix.	² Locatior vise noted		pre Lining	, RC=Root Channel, M Indicators for Probl	1=Matrix lematic Hydr	ic Soils ³ :	
Histosol Histic Ep Black His Hydroget Stratified Check Depleted Sandy M Sandy G	(A1) ipedon (A2) stic (A3) h Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa rk Surface (A12) ucky Mineral (S1) leved Matrix (S4)	C) ace (A11)	 Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mine Loamy Gleyed Matrix Depleted Matrix (F3) Redox Dark Surface Depleted Dark Surface Redox Depressions Vernal Pools (F9)) ral (F1) rix (F2) 3) e (F6) ace (F7) s (F8)			Icm Muck (A9) (I Ccm Muck (A10)(Reduced Vertic (Red Parent Mate Other (explain in Indicators of hydric wetland hydrology (LRR C) (LRR B) F18) rrial (TF2) remarks) c vegetation a	ind	
Bostrictivo I	avor (if prosont)								5111.	
Type:			_							
Depth (inch	les):						Hydric Soil	Present ?	🛛 Yes	🛛 No
Remarks: _{Sa}	mple point does no	ot meet ind	licators of hydric soils.							

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)		
Primary Indicators (any one indicator is suffici				
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 		
Field Observations:				
	Depth (inches):			
Water table present?	Depth (inches):			
Saturation Present?	Depth (inches):	Wetland I	Hydrology Present ? 🛛 Yes 🛛 No	
Describe recorded data (stream guage, monite	oring well, aerial photos, etc.) if available	9.		
Remarks: No hydrological indicators present.				

Project/Site Liberty Farms	City	County Solano	Sampling Date 4/4/2018					
Applicant/Owner Ecosystem Investmen	t Partners (EIP)	State CA	Sampling Point SP040					
Investigator(s) A. Arthur; WRA Inc		Section,Township,Range						
Landform (hillslope, terrace, etc.)Diked	floodplain Local R	Relief (concave, convex, none) <u>Slightly</u>	concave Slope(%) 0-2%					
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.31371</u>	6 Long: <u>-121.702644</u>	Datum: WGS 84					
Soil Map Unit Name Sacramento clay,	0 to 2 percent slopes	NWI class	sification <u>PF</u>					
Are climatic/hydrologic conditions on-sit	e typical for this time of year?	🛛 Yes 🔲 No 🦳 (If no, explain in	n remarks)					
Are any of the following significantly dis	turbed?	Soil Hydrology Are "Normal Ci	rcumstances" present? 🛛 Yes 🔲 No					
Are any of the following naturally proble	matic?	Soil Hydrology (If needed, e	explain any answers in remarks)					
SUMMARY OF FINDINGS - Attach	site map showing sampl	<u>e point locations, transects, imp</u>	ortant features, etc.					
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes □ No ⊠ Yes □ No ⊠ Yes □ No	Is the Sampled Area within a Wetland?	🛛 Yes 🛛 No					
temarks: Wetland sample point paired with SP041. Sample point taken in swale-like feature in northern portion of Libery Farms. Sample point meets								

criteria for hydrophytic plants, hydric soils, and wetland hydrology. Wetland boundary based on shift in vegetation and slight change in elevation.

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
 1	% cover	Species?		Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant(B)
4 Tree Stratum Total Cover:				% of dominant species that100(A/B) are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A			Prevalence Index Worksheet Total % cover of: Multiply by:
1. 2. 3. 4.				OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover: HERB STRATUM Plot Size: 10' x 10' 1. Lotus corniculatus 10' x 10'	50	Y	FAC	FACU species x4 UPL species x5 Column Totals (A)
2. Festuca perennis	30	Υ	FAC	Prevalence Index = B/A =
3. Helminthotheca echioides 4. Lactuca serriola 5	10 5 	<u>N</u> N	FAC FACU	Hydrophytic Vegetation Indicators ☑ Dominance Test is >50% □ Prevalence Index is = 3.0<sup 1 □ Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover: WOODY VINE STRATUM Plot Size:	95 N/A			Problematic hydrophytic vegetation ' (explain) ¹ Indicators of hydric soil and wetland hydrology
1.				must be present, unless disturbed or problematic.
Woody Vines Total Cover: % Bare ground in herb stratum <u>5</u>	% cover of b	piotic crust		Hydrophytic Vegetation Present ?

Remarks: Sample point dominated by FAC species, meets dominance test.

VEGETATION (use scientific names)

SOIL								Sampling Po	oint SP04	.0
Profile desc	ription: (Describe	e to the de	pth needed to docur	nent the	indicator	or confir	n the absence of in	dicators.)		
_(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Rema	arks	
0-8	2.5 Y 3/1	95	7.5YR 3/4	5	С	М	Clayey Loam			
8-12	<u>2.5 Y 3/1</u>	98	7.5YR 3/4	2	C	<u>M</u>	Clayey Loam			
¹ Type: C=Co	ncentration, D=De	epletion, RI	M=Reduced Matrix.	² Loca	ition: PL=F	Pore Lining	g, RC=Root Channe	I, M=Matrix		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric S Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Black Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muck (A10)(LRR B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) 1 cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Thick Dark Surface (A12) Redox Depressions (F8) 3Indicators of hydric vegetation and wetland hydrology must be present.						ic Soils ³ : and ent.				
Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present ?										
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).				•			

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)							
Primary Indicators (any one indicator is sufficient)	Water Marks (B1)(Bivorino)							
□ Surface Water (A1) □ Salt Crust (B11) □ High Water Table (A2) □ Biotic Crust (B12) □ Saturation (A3) □ Aquatic Invertebrates (B13) □ Water Marks (B1)(Nonriverine) □ Hydrogen Sulfide Odor (C1) □ Sediment Deposits (B2)(Nonriverine) □ Oxidized Rhizospheres along I □ Drift Deposits (B3)(Nonriverine) □ Presence of Reduced Iron (C4 □ Surface Soil Cracks (B6) □ Recent Iron Reduction in PLow □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Water-Stained Leaves (B9) □ Stater State	A Vater Marks (BT)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9 Shallow Aquitard (D3) FAC-Neutral Test (D5)							
Field Observations:								
Surface water present? Yes X No Depth (inches):	<u> </u>							
Water table present? Xes INo Depth (inches): 8	_							
Saturation Present? Xes No Depth (inches): 0 (includes capillary fringe)	── Wetland Hydrology Present ? ⊠ Yes □ No							
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.								
Remarks: Sample point meets high water table (A2) and saturation (A3) indicators.								

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>				
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners (EIP)	State CA	Sampling Point SP041				
Investigator(s) A. Arthur; WRA Inc		Section,Township,Range					
Landform (hillslope, terrace, etc.)Dike	floodplain Loc	al Relief (concave, convex, none) <u>None</u>	Slope(%) 2%				
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.31</u>	3841 Long: -121.702689	Datum: WGS 84				
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classif	fication <u>PF</u>				
Are climatic/hydrologic conditions on-s	ite typical for this time of yea	ar? 🛛 Yes 🔲 No 🛛 (If no, explain in r	remarks)				
Are any of the following significantly di	sturbed?	Soil Hydrology Are "Normal Circ	cumstances" present? 🛛 Yes 🔲 No				
Are any of the following naturally probl	ematic? Degetation	Soil Hydrology (If needed, ex	plain any answers in remarks)				
SUMMARY OF FINDINGS - Attac	h site map showing sar	<u>mple point locations, transects, impo</u>	rtant features, etc.				
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	☐ Yes ⊠ No ⊠ Yes ☐ No ☐ Yes ⊠ No	Is the Sampled Area [within a Wetland?	☐Yes ⊠No				
Remarks: Upland sample point paired with SP040. Sample point taken adjacent to swale-like feature. Sample point meets criteria for hydric soils, but does not meet requirements for hydrophitic vegetation or wetland hydrology.							

Inter of the first of the		Absolute	Dominant	Indicator	Dominance Test Worksheet	
2.	1	_ % cover	Species?	Status	Number of Dominant Species	(A)
4.	2				Total number of dominant species across all strata?	(B)
SAPLING/SHRUB STRATUM Plot Size: N/A 1.	4 Tree Stratum Total Cover:		<u> </u>		% of dominant species that are OBL, FACW, or FAC?	(A/B)
1.	-	N/A	-		Prevalence Index Worksheet	
1.	SAFEING/STIKUB STIKATUM FILLSIZE.	N/74	-		Total % cover of: Multiply by:	_
Sapling/Shrub Stratum Total Cover:	1 2 3 4.				OBL species x1 FACW species x2 FAC species x3	-
HERB STRATUM Plot Size:10' × 10' 1. Bromus diandrus 30 Y NL 2. Geranium dissectum 30 Y UPL 3. Hordeum murinum 20 Y FACU Hydrophytic Vegetation Indicators 4.					FACU species x4	-
Interversion Prior Size: 10 × 10 1. Bromus diandrus 30 Y NL 2. Geranium dissectum 30 Y UPL 3. Hordeum murinum 20 Y FACU 4.			-		UPL species x5	-
1. Bronnus diandus 30 Y INL 2. Geranium dissectum 30 Y UPL Prevalence Index = B/A =	<u>HERD STRATUM</u> Plot Size: 10 x 10		V	NU	Column Totals (A)	(B)
2. Gerannum dissectum 30 1 OFE Providence mean of the line 3. Hordeum murinum 20 Y FACU Hydrophytic Vegetation Indicators 4.	1. Bromus diandrus	30	- <u> </u>		Prevalence Index = B/A =	
3. Holdedim maintain 20 1 PACO Hydrophytic Vegetation Indicators 4.	2. Geranium dissectum	20	·			
4.		20	<u> </u>	FACU	Hydrophytic Vegetation Indicators	
5.	4				Dominance Test is >50%	
6.	5				Prevalence Index is $$	
8.	6 7				Morphological adaptations (provide supporting data in remarks)	
Herb Stratum Total Cover: 80 WOODY VINE STRATUM Plot Size: N/A 1.	8				Problematic hydrophytic vegetation ¹ (exp	olain)
WOODY VINE STRATUM Plot Size: N/A 1 Indicators of hydric soil and wetland hydrold must be present, unless disturbed or probler 2.	Herb Stratum Total Cover:	80	-			
2	WOODY VINE STRATUM Plot Size: 1	N/A			¹ Indicators of hydric soil and wetland hydrolog must be present, unless disturbed or problema	y atic.
	2				_	
Woody Vines Total Cover: Hydrophytic Vec 🛛 Vec 🕅 N	Woody Vines Total Cover:		-		Hydrophytic Types XI No.	
% Bare ground in herb stratum 20 % cover of biotic crust Vegetation Present ?	% Bare ground in herb stratum 20	% cover of	biotic crust		Vegetation Present ?	

S	OI	L	

Profile desc	ription: (Describe Matrix	e to the dep	oth needed to docur Redo	nent the ox Feature	indicator es	or confiri	m the absence of indicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks
0-12	2.5 Y 2/1	85	2.5Y 4/3	10	С	M	Clayey Loam
			10YR 5/6	5	<u>C</u>	<u>M</u>	Clayey Loam
¹ Type: C=Co	ncentration, D=De	epletion, RN	1=Reduced Matrix.	² Loca	tion: PL=I	Pore Lining	ng, RC=Root Channel, M=Matrix
Hydric Soll i	(A1)	cable to al	Sandy Redox (S5	rwise no	tea.)		Indicators for Problematic Hydric Soils":
	ipedon (A2)		Stripped Matrix (S	56)			\square 1 Cm Muck (A9) (LRR C) \square 2 cm Muck (A10)(LRR B)
Black His	stic (A3)		Loamy Mucky Mir	neral (F1)			Reduced Vertic (F18)
U Hydroge	n Sulfide (A4)		Loamy Gleyed Ma	atrix (F2)			Red Parent Material (TF2)
Stratified	Layers (A5)(LRR	C)	Depleted Matrix (F3)			Other (explain in remarks)
	k (A9)(LRR D)	<i></i>	Redox Dark Surfa	ice (F6)			
	Below Dark Surfa	ace (A11)	Depleted Dark Su	Irface (F7)		
	rk Surface (A12) lucky Minoral (S1)		Redox Depressio Vornal Bools (E0)	ns (F8)			³ Indiantana at huduia un matatian and
□ Sandy M	leved Matrix (S4)						Indicators of hydric vegetation and
Restrictive	Layer (if present)	:					
Туре:			_				
Depth (inch	nes):		_				Hydric Soil Present ? 🛛 Yes 🗌 No
Remarks: _{So}	ils meet redox dar	k surface (I	=6).				
			·				

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches):	Wetland I	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available).	
Remarks: No indicators of wetland hydrolgy of	oserved.		

Project/Site Liberty Farms	City	County Solano	Sampling Date 4/4/2018
Applicant/Owner <u>Ecosystem Investme</u>	nt Partners (EIP)	State CA	Sampling Point SP042
Investigator(s) A. Arthur; WRA Inc		Section,Township,Range	
Landform (hillslope, terrace, etc.)Dikec	floodplain Local	Relief (concave, convex, none) <u>Concave</u>	Slope(%) <u>1-3%</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.311</u>	933 Long: <u>-121.706833</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay	ι, 0 to 2 percent slopes	NWI classifica	ation <u>PF</u>
Are climatic/hydrologic conditions on-s	ite typical for this time of year	? 🛛 Yes 🔲 No 🛛 (If no, explain in rer	narks)
Are any of the following significantly di	sturbed?	Soil 🔲 Hydrology 🛛 Are "Normal Circur	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	ematic?	Soil 🔲 Hydrology (If needed, expl	ain any answers in remarks)
SUMMARY OF FINDINGS - Attac	h site map showing sam	ple point locations, transects, import	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes □ No ⊠ Yes □ No ⊠ Yes □ No	Is the Sampled Area Xithin a Wetland?	Yes 🛛 No
Remarks: Wetland sample point pair criteria for hydrophytic veg	ed with SP043. Sample point etation, hydric soils, and wetle	taken in swale-like feature ending at a water- and hydrology. Boundary based on shift in ve	filled depression. Sample point meets

topography.

REF STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
	- % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
·		· ·		Total number of dominant (B)
				% of dominant species that(A/B(A/B)) are OBL, FACW, or FAC?
- <u>APLING/SHRUB STRATUM</u> Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
		· ·		OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:		-		FACU species x4 UPL species x5
_ Elymus triticoides	95	Y	FAC	Column Totals (A) (B) Prevalence Index = B/A =
·				Hydrophytic Vegetation Indicators
·				Dominance Test is >50%
·		,		Prevalence Index is $$
: :		·		Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover:	95			Problematic hydrophytic vegetation ' (explain)
VOODY VINE STRATUM Plot Size:N	٧/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic — —
% Bare ground in herb stratum <u>5</u>	% cover of	biotic crust		Vegetation Present ?

Profile descr Depth	iption: (Describe Matrix	to the dep	th needed to docum Redo	ent the i	ndicator	or confirr	m the absence of indicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks
0-10	10YR 3/1	70	2.5Y 4/1	30	D	<u>M</u>	_Clay
		·					
¹ Type: C=Cor	ncentration, D=De	pletion, RM	=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	g, RC=Root Channel, M=Matrix
Hydric Soil I	ndicators: (Appli	cable to all	LRRs, unless other	wise not	ed.)		Indicators for Problematic Hydric Soils ³ :
	A1) inodon (A2)	l I	Sandy Redox (S5)	6)			$\Box 1 \text{cm Muck (A9) (LRR C)}$
	tic (A3)	ı I	Loamy Mucky Min	o) eral (F1)			Deduced Vertic (E10)
	n Sulfide (A4)	i	I oamy Gleved Ma	trix (F2)			Reduced Vertic (FTo) Red Parent Material (TE2)
Stratified	Lavers (A5)(LRR	C) [Depleted Matrix (F	3)			$\square \text{ Other (explain in remarks)}$
☐ 1cm Muc	k (A9)(LRR D)	-, [Redox Dark Surfa	ce (F6)			
Depleted	Below Dark Surfa	ice (A11)	Depleted Dark Sur	face (F7)		
Thick Da	rk Surface (A12)	Ì	Redox Depression	s (F8)			
Sandy M	ucky Mineral (S1)	[Vernal Pools (F9)				³ Indicators of hydric vegetation and
🛛 Sandy Gl	eyed Matrix (S4)						wetland hydrology must be present.
Restrictive L	.ayer (if present):	:					
Type:			_				
Depth (inch	es):		_				Hydric Soil Present ? 🛛 Yes 🗌 No
Remarks: _{Sar}	mple point meets	depleted da	rk surface (F7).				

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffic	ient)	
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Soils (C6) FAC-Neutral Test (D5)
Field Observations:		
Surface water present? Yes No	Depth (inches):	
Water table present?	Depth (inches):	
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	Wetland Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available	e.
Remarks: Algal mats (biotic crust, B12) and sa	autration (C9) visible in aerial imagery.	

Project/Site Liberty Farms	City	County Solano		Sampling Date 4/4/2018	
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners (EIP)	State	∍ <u>CA</u> Sar	mpling Point SP043	
Investigator(s) <u>A. Arthur; WRA Inc</u>		Section,Township,Ra	ange		
Landform (hillslope, terrace, etc.)Diked	d floodplain Lo	ocal Relief (concave, convex, none) <u>none</u>	Slope(%) <u>0-2%</u>	
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.</u>	311805 Long: <u>-12</u>	1.706721	Datum: WGS 84	
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF					
Are climatic/hydrologic conditions on-s	ite typical for this time of y	ear? 🛛 Yes 🗌 No 🛛 (If no,	explain in remarks)		
Are any of the following significantly di	sturbed? 🔲 Vegetatio	n 🗌 Soil 🔲 Hydrology 🛛 Are "	Normal Circumstanc	es" present? 🛛 Yes 🔲 No	
Are any of the following naturally problem	ematic? 🛛 Vegetatio	n 🛛 Soil 🔲 Hydrology (If	needed, explain any	answers in remarks)	
SUMMARY OF FINDINGS - Attac	<u>ch site map showing s</u>	ample point locations, transe	ects, important fea	atures, etc.	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	 ☐ Yes ☑ Yes ☑ No ☑ Yes ☑ No 	Is the Sampled Are within a Wetland?	∋a □ Yes	⊠ No	
Remarks: Upland sample point paire hydrophytic vegetaiton, hy	d with SP042. Sample po dric soils, or wetland hydrc	int taken in field adjacent to swale- llogy.	like feature. Sample	point does not meet criteria for	

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet	
1	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?	
2				Total number of dominant (B)	
4 Tree Stratum Total Cover:				% of dominant species that50(A/B are OBL, FACW, or FAC?	
	N/A	-		Prevalence Index Worksheet	
		-		Total % cover of: Multiply by:	
				OBL species x1	
<u> </u>				FACW species x2	
1				FAC species x3	
*				FACU species x4	
Sapling/Shrub Stratum Total Cover:		-		UPL species x5	
HERB STRATUM Plot Size: 10' x 10'				Column Totals (A) (B	
I. VIcia sativa	30	Y	FACU		
2. Lotus corniculatus	30	Y	FAC	Prevalence Index = B/A =	
3. Hordeum marinum ssp. gussoneanum	10	<u> </u>	FAC	Hydrophytic Vegetation Indicators	
 Medicago polymorpha 	5	<u> </u>	FACU	Dominance Test is >50%	
5. Helminthotheca echioides	5	<u> </u>	FAC	Prevalence Index is $$	
6 7		·		 Morphological adaptations (provide supporting data in remarks) 	
B Herb Stratum Total Cover:	80			Problematic hydrophytic vegetation ¹ (explain)	
WOODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1 2.				· · · · · · _	
Woody Vines Total Cover:		_		- Hydrophytic □ Yes ⊠ No	
% Bare ground in herb stratum 20 % cover of biotic crust			Vegetation Present ?		

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Profile desc	ription: (Describe Matrix	to the de	pth needed to docum Redo	ent the indic	ator or co	nfirm	n the absence of indicators.)	
(inches)	Color (moist)	%	Color (moist)	<u>%</u> Ty	/pe ¹ Lo	c ¹	Texture Remarks	S
0-12	10YR 3/2	100					Loamey Clay	
		·						
¹ Type: C=Co	ncentration, D=De	pletion, RI	M=Reduced Matrix.	² Location:	PL=Pore L	.ining	g, RC=Root Channel, M=Matrix	
Hydric Soil I	ndicators: (Appli	cable to a	II LRRs, unless other	wise noted.)			Indicators for Problematic Hydric S	Soils ³ :
Histosol Histic Ep Black His Hydroge Stratified C 1cm Muc Depleted Thick Da Sandy M Sandy G	(A1) ipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)(LRR bk (A9)(LRR D) I Below Dark Surfa Irk Surface (A12) lucky Mineral (S1) leyed Matrix (S4)	C) ace (A11)	 Sandy Redox (S5) Stripped Matrix (S4) Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface Depleted Dark Surface Redox Depression Vernal Pools (F9) 	6) eral (F1) trix (F2) 3) ce (F6) face (F7) is (F8)			 1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks) ³ Indicators of hydric vegetation and wetland hydrology must be present.	
Restrictive	Layer (if present)	:						
Туре:								
Depth (incl	nes):						Hydric Soil Present ?	Yes 🛛 No
Remarks: _{Sa}	mple point does n	ot meet ind	licators of hydric soils.					

Wetland Hydrology Indic	ators:				Secondary Indicators (2 or more required)
Primary Indicators (any on	e indicato	or is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nor Sediment Deposits (B3) Drift Deposits (B3)(No Surface Soil Cracks (E Inundation Visible on A Water-Stained Leaves) 2)(Nonrive nriverine) 36) Aerial Ima ; (B9)	erine) ngery (B7)	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed Other (Explain in Remarks) 	ig Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:	—	E			
Surface water present?		🛛 No	Depth (inches):		
Water table present?	🛛 Yes	🛛 No	Depth (inches):		
Saturation Present? (includes capillary fringe)	☐ Yes	🛛 No	Depth (inches):	Wetland	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (st	ream gua	age, monito	oring well, aerial photos, etc.) if availabl	e.	
Remarks: No indicators of	wetland h	yrology ob	oserved.		

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>
Applicant/Owner Ecosystem Investment Partr	ners	State CA	Sampling Point SP046
Investigator(s) S.Batiuk, WRA INC.		Section,Township,Range	
Landform (hillslope, terrace, etc.) Diked floodp	lain Local	Relief (concave, convex, none) <u>none</u>	Slope(%) <u>0-1</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.2857</u>	70343 Long: <u>-121.6986785</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0 to 2	2 percent slopes	NWI classificat	ion PF
Are climatic/hydrologic conditions on-site typic	cal for this time of year?	? 🛛 Yes 🔲 No 🛛 (If no, explain in rem	arks)
Are any of the following significantly disturbed	I? Uegetation	Soil 🔲 Hydrology Are "Normal Circum	stances" present? 🛛 Yes 🔲 No
Are any of the following naturally problematic?	?	☐ Soil ☐ Hydrology	n any answers in remarks)
SUMMARY OF FINDINGS - Attach site	map showing sam	<u>ple point locations, transects, importa</u>	nt features, etc.
Hydrophytic Vegetation Present?Image: YesHydric Soil Present?Image: YesWetland Hydrology Present?Image: Yes	s 🔲 No s 🔲 No s 🔲 No	Is the Sampled Area within a Wetland?	Yes 🛛 No
Remarks: Wetland sample point paired SP0- vegetation, hydric soils, and wetla	47. Sample point taker and hydrology. Bounda	n at edge of managed wetland check. Sample ry based on shift in vegetation and topography	point meets criteria for hydrophytic ν (i.e., at edge of adjacent road berm).

IRFE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
I	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant(B)(B)
I Tree Stratum Total Cover:				% of dominant species that(A/B(A/B)) are OBL, FACW, or FAC?
SAPI ING/SHRUB STRATUM Plot Size	 N/A	-		Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
				OBL species x1
				FACW species x2
				FAC species x3
				FACU species x4
		-		UPL species x5
<u>HERB STRATUM</u> Plot Size: 5' radius				Column Totals (A) (B
Xanthium strumarium	10	No	FAC	
2. Persicaria amphibia	15	No	OBL	
3. Helminthotheca echioides	60	Yes	FAC	Hydrophytic Vegetation Indicators
l				Dominance Test is >50%
5				Prevalence Index is $$
5 7				Morphological adaptations (provide supporting data in remarks)
3				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	85	-		
NOODY VINE STRATUM Plot Size:	N/A			Indicators of hydric soil and wetland hydrology
I				
2		·		
Woody Vines Total Cover:		-		Hydrophytic Ves INO
% Bare ground in herb stratum 5	% cover of	biotic crust 0		Vegetation Present ?

Depth	ription: (Describ Matrix	e to the de	pth needed to docu Red	ment the lox Feature	indicator es	or confir	m the absence of indic -	ators.)	
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ¹	Texture	Rema	arks
0-8	10YR 2/1	100					Loamy Clay		
8-12	10YR 2/1	<u>95</u>	7.5YR 5/6	5	<u>C</u>	M,PL	Loamy Clay		
¹ Type: C=Co	oncentration, D=D	epletion, R	M=Reduced Matrix.	² Loca	tion: PL=F	ore Linin	g, RC=Root Channel, M	l=Matrix	
Hydric Soil	Indicators: (App	licable to a	II LRRs, unless oth	erwise no	ted.)		Indicators for Probl	ematic Hvdr	ic Soils ³ :
 Histosol Histic Ep Black Hi Hydroge Stratified 1cm Mu Depleted Thick Data 	(A1) pipedon (A2) stic (A3) In Sulfide (A4) Layers (A5)(LRF ck (A9)(LRR D) d Below Dark Sur ark Surface (A12)	R C) face (A11)	 Sandy Redox (S Stripped Matrix (Loamy Mucky M Loamy Gleyed M Depleted Matrix Redox Dark Surf Depleted Dark S Redox Depression 	5) S6) latrix (F2) (F3) ace (F6) urface (F7 ons (F8))		1cm Muck (A9) (L 2cm Muck (A10)(Reduced Vertic (F Red Parent Mate Other (explain in the formula of t	LRR C) LRR B) ⁼ 18) rial (TF2) remarks)	
Sandy M	lucky Mineral (S1 Bleyed Matrix (S4))	Vernal Pools (F9)			³ Indicators of hydric wetland hydrology n	vegetation a nust be prese	and ent.
Restrictive	Layer (if present	:):							
Туре:									
Depth (inc	hes):						Hydric Soil	Present ?	🛛 Yes 🛛 No
lemarks: _{Sa}	ample point meets	redox dark	surface (F6).				-		

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
□ Surface Water (A1) □ Salt Ci ☑ High Water Table (A2) □ Biotic 0 ☑ Saturation (A3) □ Aquati □ Water Marks (B1)(Nonriverine) □ Hydrog □ Sediment Deposits (B2)(Nonriverine) □ Oxidiz □ Drift Deposits (B3)(Nonriverine) □ Preser □ Surface Soil Cracks (B6) □ Recen ☑ Inundation Visible on Aerial Imagery (B7) □ Other	rust (B11) Crust (B12) c Invertebrates (B13) gen Sulfide Odor (C1) ed Rhizospheres along Living Ro nce of Reduced Iron (C4) t Iron Reduction in PLowed Soils (Explain in Remarks)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:		
Surface water present? Yes No Depth (ind	ches):	
Water table present? Xes I No Depth (ind	ches): <u>9</u>	
Saturation Present? X Yes No Depth (ind (includes capillary fringe)	ches): 0	Wetland Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monitoring well, a	aerial photos, etc.) if available.	
Remarks: Sample point contains high water table (A2) and imagery (B7) and FAC-neutral test (D5).	d saturation to soil surface (A3).	Sample point also meets inundation visible on aerial

Project/Site Liberty Farms	City	County Solan	0	Sampling Date <u>4/4/2018</u>			
Applicant/Owner Ecosystem Investment P	artners		State <u>CA</u>	Sampling Point SP047			
Investigator(s) S.Batiuk, WRA INC.		Section,Towns	hip,Range				
Landform (hillslope, terrace, etc.)Diked flo	odplain L	ocal Relief (concave, convex	, none) <u>undulating</u>	Slope(%) <u>0-3</u>			
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38</u> .	28574749 Long	j: <u>-121.6986705</u>	Datum: WGS 84			
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-site t	ypical for this time of y	vear? 🛛 Yes 🗌 No	(If no, explain in rem	arks)			
Are any of the following significantly distur	bed?	n 🛛 Soil 🔲 Hydrology	Are "Normal Circum	stances" present? 🛛 Yes 🔲 No			
Are any of the following naturally problema	atic?	n 🗌 Soil 🔲 Hydrology	(If needed, explai	in any answers in remarks)			
SUMMARY OF FINDINGS - Attach s	ite map showing s	ample point locations, to	<u>ransects, importa</u>	nt features, etc.			
Hydrophytic Vegetation Present? Image: Comparison of the second seco	Yes 🗋 No Yes 🖾 No Yes 🖾 No	Is the Sample within a Wetla	d Area	Yes 🖾 No			
Remarks: Upland sample point paired with SP046. Sample point located on shoulder of road berm. Sample point meets criteria for hydrophytic vegetation, but does not meet criteria for hydric soils or wetland hydrology.							

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2. 3.		·		Total number of dominant genecies across all strata?
4 Tree Stratum Total Cover:				% of dominant species that are OBL, FACW, or FAC?
	N/A	-		Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
2				OBL species x1
2				FACW species x2
3				FAC species x3
*				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Malva pseudolavatera	1	No	UPL	
2. Conium maculatum	30	Yes	FACW	Prevalence Index = B/A =
3. <u>Malva nicaeensis</u>	3	No	UPL	Hydrophytic Vegetation Indicators
4. Helminthotheca echioides	40	Yes	FAC	Dominance Test is >50%
5. <u>Hirschfeldia incana</u>	1	No	UPL	\square Prevalence Index is $$
6		·		
7				supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	75	-		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1.				must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:		_		
% Bare ground in herb stratum <u>15</u>	% cover of	biotic crust <u>0</u>		Vegetation Present ?
Remarks: Litter 10%. Sample point dominated by	/ FACW specie	s, meets dominar	nce test.	

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Profile descu Depth	ription: (Describe Matrix	e to the de	pth needed to docum Redo	ent the in x Features	dicator o	r confir	n the absence of indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture F	Remarks
0-14	10YR 2/1	100					<u>Clay</u>	
		- <u> </u>						
¹ Type: C=Co	ncentration, D=De	pletion, R	M=Reduced Matrix.	² Locatio	on: PL=P	ore Linin	g, RC=Root Channel, M=Matrix	
Hydric Soil I	ndicators: (Appli	cable to a	II LRRs, unless other	wise note	d.)		Indicators for Problematic	Hydric Soils ³ :
Histosol Histic Ep Black His Hydrogel Stratified 1cm Muc Depleted Thick Da Sandy M Sandy G	(A1) ipedon (A2) stic (A3) I Layers (A5)(LRR k (A9)(LRR D) I Below Dark Surfa rk Surface (A12) ucky Mineral (S1) leyed Matrix (S4)	C) ace (A11)	 Sandy Redox (S5) Stripped Matrix (S Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Surfa Redox Depressior Vernal Pools (F9) 	6) eral (F1) trix (F2) 3) ce (F6) face (F7) is (F8)			1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2 Other (explain in remarks ³ Indicators of hydric vegetat wetland hydrology must be)) ion and present
Restrictive I	Laver (if present)	:						
Type:								
Depth (inch	nes):						Hydric Soil Present	t? 🗌 Yes 🖾 No
Remarks: _{Sa}	mple point does n	ot meet ind	dicators of hydric soils.				•	

Wetland Hydrology Indicators:		Secondary Indicators (2 or more requ	uired)
Primary Indicators (any one indicator is sufficient	nt)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) oils (C6) Saturation Visible on Aerial Image Shallow Aquitard (D3) FAC-Neutral Test (D5)	ry (C9)
Field Observations:			
Surface water present? L Yes 🛛 No E	Depth (inches):		
Water table present? 🛛 Yes 🛛 No 🛛	Depth (inches):		
Saturation Present?	Depth (inches): <u>5</u>	Wetland Hydrology Present ? 🛛 Yes 🛛	No
Describe recorded data (stream guage, monitorin	ing well, aerial photos, etc.) if available.		
Remarks: Saturation along ped face and some pe observed.	ed interior but not all ped interiors and	no water table below. No indicators of wetland hydrolog	y of

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners (EIP)	State CA	Sampling Point SP048
Investigator(s) T.Harris; WRA Inc		Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	1 floodplain Loca	al Relief (concave, convex, none) <u>None</u>	Slope(%) <u>0-2%</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.28</u>	5747 Long: <u>-121.69867</u>	Datum: WGS 84
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classif	ication <u>PF</u>
Are climatic/hydrologic conditions on-s	ite typical for this time of yea	r? 🛛 Yes 🔲 No 🛛 (If no, explain in r	emarks)
Are any of the following significantly di	sturbed? Degetation	Soil Hydrology Are "Normal Circ	umstances" present? 🛛 Yes 🔲 No
Are any of the following naturally probl	ematic? Degetation	Soil Hydrology (If needed, ex	plain any answers in remarks)
SUMMARY OF FINDINGS - Attac	h site map showing san	nple point locations, transects, impo	rtant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes □ No □ Yes X No □ Yes X No	Is the Sampled Area	∃Yes ⊠No
Remarks: Upland sample point paire wetland hydrology.	d with SP049. Sample point	meets criteria for hydrophytic vegetation, bu	t does not meet criteria for hydric soils or

VEGETATION (use scientific names)				
TREE STRATUM Plot Size N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2		·		Total number of dominant(B)(B)
4 Tree Stratum Total Cover:				% of dominant species that(A/B) are OBL, FACW, or FAC?
	N/A			Prevalence Index Worksheet
SAPLING/SHRUB STRATUM PIOL SIZE:	IN/A			Total % cover of: Multiply by:
1. 2. 3.				OBL species x1 FACW species x2 FAC species x3
		·		FACU species x4
Sapling/Shrub Stratum Total Cover:				UPL species x5
HERB STRATUM Plot Size: 10' x 10'				Column Totals (A) (B)
1. <u>Festuca perennis</u>	40	Y	FAC	
2. Lotus corniculatus	40	Y	FAC	Prevalence Index = B/A =
3. Helminthotheca echiodes	10	<u> N </u>	FAC	Hydrophytic Vegetation Indicators
4. Lepidium latifolium	7	<u> N </u>	FAC	Dominance Test is >50%
5. <u>Rumex crispus</u>	3	<u> </u>	FAC	Prevalence Index is $$
6 7		·		Morphological adaptations (provide supporting data in remarks)
		·		Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100			¹ Indicators of hydric coil and watland hydrology
WOODY VINE STRATUM Plot Size: 1.	N/A			mutators of hydric son and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover: % Bare ground in herb stratum <u>0</u>	% cover of	biotic crust		Hydrophytic Vegetation Present ?
Remarks: Sample point dominated by FAC speci	es, meets the do	ominance test.		1

Profile descr Depth	iption: (Describe Matrix	to the de	pth needed to docum Redo	ent the ind x Features	dicator o	or confirm	m the absence of indicators.) -
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks
0-12+	10YR 3/1	100	<u>-</u>	·		<u>-</u>	Clayey Loam
			M=Reduced Matrix		on [.] PI =P		ng RC=Root Channel M=Matrix
Hydric Soil I	ndicators: (Appli	cable to a	II LRRs, unless other	wise note	d.)		Indicators for Problematic Hydric Soils ³ :
 Hydric Son Indicators: (Applicable to all Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5)(LRR C) 1 cm Muck (A9)(LRR D) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) 			 Sandy Redox (S5 Stripped Matrix (S Loamy Mucky Min Loamy Gleyed Matrix (F Depleted Matrix (F Redox Dark Surfa Depleted Dark Su Redox Depressior Vernal Pools (F9) 	6) eral (F1) trix (F2) 3) ce (F6) face (F7) s (F8)			 1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks) ³Indicators of hydric vegetation and wetland hydrology must be present
Restrictive I	aver (if present)						
Type: Depth (inch	es):		_				Hydric Soil Present ? 🗌 Yes 🖾 No
Remarks: _{Sar}	nple point does n	ot meet inc	licators of hydric soils.				

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)				
Primary Indicators (any one indicator is suffic	ient)		Water Marka (P1)(Piveripa)				
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 					
Field Observations:							
	Depth (inches):						
Water table present? LI Yes XI No	Depth (inches):						
Saturation Present?	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🛛 No				
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.							
Remarks: No indicators of wetland hydrology	observed.						

Project/Site Liberty Farms	City	County Solano		Sampling Date 4/4/2018				
Applicant/Owner Ecosystem Investment Par	tners (EIP)	State (<u>CA</u> Sa	Sampling Point SP049				
Investigator(s) T.Harris; WRA Inc		Section,Township,Ran	ge					
Landform (hillslope, terrace, etc.)Diked flood	plain Loca	al Relief (concave, convex, none)	None	Slope(%)	0-2%			
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.28</u>	5747 Long: <u>-121.</u>	69867	Datum: WGS 84				
Soil Map Unit Name <u>Sacramento clay, 0 to</u>	Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-site typ	ical for this time of yea	? 🛛 Yes 🔲 No 🛛 (If no, e	xplain in remarks)					
Are any of the following significantly disturbe	d?	Soil Hydrology Are "No	ormal Circumstanc	ces" present? 🛛 Yes	🗆 No			
Are any of the following naturally problematic	? DVegetation	Soil Hydrology (If ne	eeded, explain any	/ answers in remarks)				
SUMMARY OF FINDINGS - Attach site	e map showing san	ple point locations, transec	<u>ts, important fe</u>	atures, etc.				
Hydrophytic Vegetation Present?X YeHydric Soil Present?X YeWetland Hydrology Present?X Ye	es 🗌 No es 🔲 No es 🔲 No	Is the Sampled Area within a Wetland?	Yes	🗆 No				
Remarks: Wetland sample point paired with SP048. Sample point taken in swale/ditch feature. Sample point meets criteria for hydrophytic vegetation, hydric soils, and wetland hydrology. Boundary based on shift in vegetation and change in topography.								

	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species3 (A) that are OBL, FACW, or FAC?
2				Total number of dominant3(B)3
4 Tree Stratum Total Cover:				% of dominant species that(A/ are OBL, FACW, or FAC?(A/
SADI ING/SHDI IB STRATI IM Plot Size	N/A			Prevalence Index Worksheet
SAFEING/STIKUB STIKATUM FILLSIZE.	IN/A			Total % cover of: Multiply by:
1				- OBL species x1
2				FACW species x2
3		·		FAC species x3
4		·		FACU species x4
Sapling/Shrub Stratum Total Cover: _				UPL species x5
HERB STRATUM Plot Size: 2' x 10'				Column Totala (A)
1. Festuca perennis	10	Y	FAC	
2. Lotus corniculatus	10	Y	FAC	Prevalence Index = B/A =
3. Salix gooddingii (saplings)	10	Y	FACW	Hydrophytic Vegetation Indicators
4. Helminthotheca echioides	7	<u>N</u>	FAC	■ Dominance Test is >50%
5. Lepidium latifolium	3	<u>N</u>	FAC	
6.				
7				 Morphological adaptations (provide supporting data in remarks)
8				- Problematic hydrophytic vegetation ¹ (explain
Herb Stratum Total Cover:	40			
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed or problematic
2.				
Woody Vines Total Cover:				
% Bare ground in herb stratum <u>60</u>		Vegetation Present ?		

SOIL								Sampling Po	oint SP049	
Profile desc	ription: (Describe	e to the de	pth needed to docu	ment the	indicator	or confir	m the absence of in	dicators.)		
Uepin (inches)	Color (moist)	%	Color (moist)	<u>ox realui</u> %	Tvpe ¹	Loc ¹	- Texture	Rem	arks	
<u>(inionico)</u>)-6	10YR 3/1	100	-	- //	-	-	Clavev Loam			
					·					
6-12	10YR 4/1	85	2.5Y 4/4	5	<u>C</u>	M	Clayey Loam			
			<u>5Y 3/1</u>	10	D	M	Clayey Loam			
Type: C=C	oncentration, D=De	epletion, R	M=Reduced Matrix.	² Loca	ation: PL=F	- Pore Linir	g, RC=Root Channel	I, M=Matrix		
Iydric Soil	Indicators: (Appl	icable to a	III LRRs, unless othe	erwise no	oted.)		Indicators for Pro	oblematic Hydr	ic Soils ³ :	
	(A1) ninodon (A2)		Sandy Redox (S	5)			1cm Muck (A9	9) (LRR C)		
	istic (A3)			ineral (F1)		2cm Muck (A1	10)(LRR B)		
	n Sulfide (A4)			latrix (F2))			IC (F18) starial (TF2)		
Stratifie	d Lavers (A5)(LRR	C)	Depleted Matrix	(F3)				in romarks)		
1cm Mu	ck (A9)(LRR D)	-,	Redox Dark Surf	ace (F6)				in remarks)		
Deplete	d Below Dark Surfa	ace (A11)	Depleted Dark S	urface (F7	7)					
Thick D	ark Surface (A12)	, ,	Redox Depressio	ons (F8)	,					
Sandy N	/ucky Mineral (S1)		Vernal Pools (F9)			³ Indicators of hvo	dric vegetation a	and	
Sandy C	Gleyed Matrix (S4)		· ·				wetland hydroloc	y must be pres	ent.	
Restrictive	Layer (if present)	:								
Туре:										
Depth (inc	hes):						Hydric S	oil Present ?	🛛 Yes 🛛	No
Remarks: c	ample pointmoote		otrix (E3)				•			
0		Jepieleu II	iauix (F3).							

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficien	nt)	
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6) Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:		
Surface water present? Yes X No L	Depth (inches):	
Water table present? LI Yes XI No [Depth (inches):	
Saturation Present? Xes No C (includes capillary fringe)	Depth (inches): <u>6</u>	Wetland Hydrology Present ? 🛛 Yes 🔲 No
Describe recorded data (stream guage, monitori	ing well, aerial photos, etc.) if available	e.
Remarks: Hydrology based on presence of water	er staining on grass blades (B9).	

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>					
Applicant/Owner Ecosystem Investment Par	tners (EIP)	State CA	Sampling Point SP050					
Investigator(s) T.Harris; WRA Inc		Section,Township,Range						
Landform (hillslope, terrace, etc.)Diked flood	plain Loc	cal Relief (concave, convex, none) <u>None</u>	Slope(%) <u>0-2%</u>					
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.31</u>	2024 Long: <u>-121.698748</u>	Datum: WGS 84					
Soil Map Unit Name Sacramento clay, 0 to	2 percent slopes	NWI classific	ation <u>PF</u>					
Are climatic/hydrologic conditions on-site typ	ical for this time of yea	ar? 🛛 Yes 🗌 No 🛛 (If no, explain in rei	marks)					
Are any of the following significantly disturbe	d? DVegetation	Soil Hydrology Are "Normal Circuit	mstances" present? 🛛 Yes 🔲 No					
Are any of the following naturally problematic	? DVegetation	Soil Hydrology (If needed, expl	ain any answers in remarks)					
SUMMARY OF FINDINGS - Attach site	e map showing sar	mple point locations, transects, import	ant features, etc.					
Hydrophytic Vegetation Present?X YeHydric Soil Present?X YeWetland Hydrology Present?X Ye	es 🗌 No es 🔲 No es 🔲 No	Is the Sampled Area kithin a Wetland?	Yes 🗆 No					
Remarks: Wetland sample point paired with SP051. Sample point taken near edge of swale/ditch. Sample point meets criteria for hydrophytic vegetaion, hydric soils, and wetland hydrology. Wetland boundary based on sharp transition in vegetation.								

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3		·		Total number of dominant (B) (B)
I Tree Stratum Total Cover:				% of dominant species that(A/B(A/B)) are OBL, FACW, or FAC?
SAPI ING/SHRUB STRATUM Plot Size	 N/A	-		Prevalence Index Worksheet
	1077	-		Total % cover of: Multiply by:
		·		OBL species x1
				FACW species x2
). 		·		FAC species x3
•				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' x 5'				Column Totals (A) (B
Elymus triticoides	50	Y	FAC	
2. Cyperus eragrostis	35	Y	FACW	Prevalence Index = B/A =
3. Festuca arundinacea	10	<u> </u>	FACU	Hydrophytic Vegetation Indicators
L. Paspalum dilatatum	3	<u> </u>	FAC	Dominance Test is >50%
5. Rumex crispus	1	<u> </u>	FAC	\square Prevalence Index is $\leq 1.20^{1}$
6. Helminthotheca echiodes	1	<u> </u>	FAC	Morphological adaptations (provide
· ·				supporting data in remarks)
Horb Stratum Total Cover	100			Problematic hydrophytic vegetation ¹ (explain)
		-		¹ Indicators of hydric soil and wetland hydrology
WOODY VINE STRATUM Plot Size:	N/A			must be present, unless disturbed or problematic.
		- <u> </u>		•
2 Woody Vines Total Cover:		·		Hydrophytic ⊠ Vac □ Na
% Bare ground in herb stratum <u>0</u>	Vegetation Present ?			

SOIL								Sampling Po	oint SP05	60
Profile desc	ription: (Describe	e to the de	pth needed to docur	nent the	indicator	or confiri	m the absence of ind	icators.)		
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Rema	arks	
0-7	2.5Y 3/1	100	-		-	-	Loamy Clay			
7-12+	2.5Y 3/1	93	10YR 4/3	5	С	M	Loamy Clay			
			10Y 3/1	2	D	<u>M</u>	Loamy Clay			
17.000				21						
Type: C=Co	ncentration, D=De	epletion, RN	M=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	g, RC=Root Channel,	M=Matrix	· · · · · · · · · · · · · · · · · · ·	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators feedback Histosol (A1) Sandy Redox (S5) 1 cm Muc Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muc Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (ex) 1 cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (ex) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) 3 Indicators wetland hyr Restrictive Layer (if present): Image: Construct of the second seco						I cm Muck (A9) 2cm Muck (A10) Reduced Vertic Red Parent Mat Other (explain in ³ Indicators of hydr wetland hydrology	(LRR C))(LRR B) (F18) erial (TF2) n remarks) ric vegetation a must be prese	and ent.		
Donth (incl	205):		_						_	_
Deptil (Ilici	les).						Hydric So	il Present ?	Yes Yes	∐ No
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).							

Wetland Hydrology India	cators:				Secondary Indicators (2 or more required)
Primary Indicators (any or	ne indicato	or is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 			Salt Crust (B11) Salt Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed Soils (C6) Other (Explain in Remarks)		 Water Marks (BT)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			Donth (inches):		
Water table present?	□ Yes		Depth (inches):		
Saturation Present? (includes capillary fringe)	🛛 Yes	🗆 No	Depth (inches): 8	Wetland	Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (s	tream gua	ige, monit	oring well, aerial photos, etc.) if availa	ble.	
Remarks: Soils endosatura blades (B9).	ated to 8 ir	nches belo	ow the soil surface, but no water table	observed below. Sa	ample point contains water-stained grass

Project/Site Liberty Farms City		County Solano		Sampling Date 4/4/201	8
Applicant/Owner <u>Ecosystem Investme</u>	nt Partners (EIP)	:	State <u>CA</u>	Sampling Point SP051	
Investigator(s) T.Harris; WRA Inc		Section, Townshi	ip,Range		
Landform (hillslope, terrace, etc.)Diked	I floodplain Lo	ocal Relief (concave, convex, r	none) <u>none</u>	Slope(%) <u>(</u>)-2%
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3</u>	12081 Long:	-121.698901	Datum: WGS 84	
Soil Map Unit Name Sacramento clay	/, 0 to 2 percent slopes		NWI classifica	ition <u>PF</u>	
Are climatic/hydrologic conditions on-s	ite typical for this time of y ϵ	ar? 🛛 Yes 🗌 No 🤃	lf no, explain in rem	narks)	
Are any of the following significantly dis	sturbed? Degetation	ז 🗋 Soil 🔲 Hydrology 🖉	Are "Normal Circum	ıstances" present? 🛛 Yes 🛛] No
Are any of the following naturally proble	ematic? Degetation	ז 🗋 Soil 🔲 Hydrology	(If needed, expla	in any answers in remarks)	
SUMMARY OF FINDINGS - Attac	h site map showing sa	imple point locations, tra	ansects, importa	ant features, etc.	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes □ No □ Yes ⊠ No □ Yes ⊠ No	ls the Sampled within a Wetlar	I Area 🔲	Yes 🛛 No	
Remarks: Upland sample point paired meets criteria for hydrophy	d with SP050. Sample poir tic vegetation, but does no	nt taken in field adjacent to dit t meet criteria for hydric soils	ches created for we or wetland hydroloc	⇒tland management. Sample p gy.	oint

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet		
1	- % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?		
2 3				Total number of dominant(B)(B)		
4 Tree Stratum Total Cover:				% of dominant species that(A/B are OBL, FACW, or FAC?		
- SARI ING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet		
		-		Total % cover of: Multiply by:		
·				OBL species x1		
<u>.</u>				FACW species x2		
· ·				FAC species x3		
T				FACU species x4		
		-		UPL species x5		
HERB STRATUM Plot Size: 5' x 5'				Column Totals (A) (B		
I. Elymus triticoides	85	Y	FAC			
2. Festuca arundinacea	5	<u> </u>	FACU			
3. Helminthotheca echioides	5	<u> </u>	FAC	Hydrophytic Vegetation Indicators		
geranium dissectum	5	<u> </u>	UPL	Dominance Test is >50%		
5. Lepidium latifolium	t	<u> </u>	FAC	Prevalence Index is $$		
6. Bromus hordeaceus	t	N	FACU	Morphological adaptations (provide supporting data in remarks)		
6	100			Problematic hydrophytic vegetation ¹ (explain)		
Herb Stratum Total Cover:	100	-		¹ Indicators of hydric soil and watland hydrology		
WOODY VINE STRATUM Plot Size:	N/A			must be present, unless disturbed or problematic.		
1				· · · · · · · · · · · · · · · · · · ·		
2				-		
Woody Vines Total Cover:		-		Hydrophytic Ves INO		
% Bare ground in herb stratum 0 % cover of biotic crust				Vegetation Present ?		

SOII	
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Profile descu	ription: (Describe Matrix	e to the de	pth needed to docur Redo	nent the i	n dicator (or confirm	m the absence of indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	TextureRemarks	
0-12	10YR 3/1	100		<u> </u>			Loamy Clay	
			·					
¹ Type: C=Co	ncentration, D=De	pletion, R	M=Reduced Matrix.	² Locat	ion: PL=P	ore Lining	g, RC=Root Channel, M=Matrix	
Hydric Soil I	ndicators: (Appli	cable to a	II LRRs, unless othe	rwise not	ed.)		Indicators for Problematic Hydric Soils ³ :	
Histosol	(A1) Jipedon (A2)		Sandy Redox (S5	5) 36)			□ 1cm Muck (A9) (LRR C)	
Black His	stic (A3)		Loamy Mucky Mir	neral (F1)			Cm Muck (A10)(LRR B) Reduced Vertic (E18)	
Hydroge	n Sulfide (A4)		Loamy Gleyed Ma	atrix (F2)			Red Parent Material (TF2)	
Stratified	Layers (A5)(LRR	C)	Depleted Matrix (F3)			Other (explain in remarks)	
1cm Muc	k (A9)(LRR D)		Redox Dark Surfa	ice (F6)				
	Below Dark Surfa	ace (A11)	Depleted Dark Su	Irface (F7)				
□ I I I I I I I I I I I I I I I I I I I	rk Sufface (A12) lucky Mineral (S1)			ns (⊢8)			³ Indiantara of hydria vagatation and	
Sandy G	leved Matrix (S4)						wetland bydrology must be present	
Restrictive I	Laver (if present)	:						
Type:								
Depth (inch	nes):						Hydric Soil Present ? 🛛 Yes 🛛	No
Remarks: _{Sa}	mple point does n	ot meet hy	dric soil indicators.					

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)			
Primary Indicators (any one indicator is sufficie	ent)					
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	Salt Crust (B11) Solution Sol		 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 			
Field Observations:						
Surface water present? Yes X No	Depth (inches):					
Water table present?	Depth (inches):					
Saturation Present?	Depth (inches):	Wetland H	lydrology Present ? 🛛 Yes 🛛 No			
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks: No indicators of wetland hydrology o	bserved.					

Project/Site Liberty Farms City		County Solano	Sampling Date <u>4/4/2018</u>				
Applicant/Owner Ecosystem Investment Partne	rs	State CA	Sampling Point SP052				
Investigator(s) S.Batiuk, WRA INC.		Section,Township,Range					
Landform (hillslope, terrace, etc.)Diked floodpla	in Local Re	lief (concave, convex, none) none	Slope(%) <u>0</u>				
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.29234</u>	Long: <u>-121.701494</u>	Datum: WGS 84				
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-site typica	I for this time of year?	🛛 Yes 🔲 No 🛛 (If no, explain in rem	arks)				
Are any of the following significantly disturbed?	□ Vegetation □ \$	Soil 🔲 Hydrology 🛛 Are "Normal Circum	stances" present? 🛛 Yes 🔲 No				
Are any of the following naturally problematic?	□ Vegetation □ S	Soil 🔲 Hydrology 👘 (If needed, explai	in any answers in remarks)				
SUMMARY OF FINDINGS - Attach site m	nap showing sample	point locations, transects, importa	nt features, etc.				
Hydrophytic Vegetation Present?YesHydric Soil Present?XesWetland Hydrology Present?Yes	⊠ No □ No ⊠ No	Is the Sampled Area	Yes 🖾 No				
Remarks: Upland sample point paired with SP hydric soils, but does not meet crite	053. Sample point locat ria for hydrophytic veget	ed on elevated area inset in managed wet ation or wetland hydrology.	and check. Sample point contains				

	Absolute	Dominant	Indicator	Dominance Test Worksheet
IREE STRATOM Plot Size: N/A 1.	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:		·		% of dominant species that (A/B) are OBL, FACW, or FAC?
- SADI INC/SHDI IB STDATI IM Diot Size :	N/A	-		Prevalence Index Worksheet
SAFLING/SHRUB STRATUM FILL SIZE.	IN/A	-		Total % cover of: Multiply by:
1				OBL species x1 FACW species x2 FAC species x3 FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Melilotus indicus	70	Yes	FACU	
2. Melilotus albus	5	No	FACU	Prevalence Index = B/A =
3. Medicago polymorpha	2	No	FACU	Hydrophytic Vegetation Indicators
4. Atriplex prostrata	1	No	FACW	Dominance Test is >50%
5				Prevalence Index is $$
6 7				Morphological adaptations (provide supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	78	-		
WOODY VINE STRATUM Plot Size: I 1.	N/A			must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		-		Hydrophytic Yes X No
% Bare ground in herb stratum 22	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Sample point dominated by FACU spec	ies, does not n	neet dominance t	est.	

-rofile desc	ription: (Describ	e to the de	pth needed to docur	ment the	indicator	or confir	m the absence of	indicators.)	
Depth (inches)	<u>Matrix</u> Color (moist)	%	Color (moist)	<u>ox ⊢eatur</u> %	<u>es</u> Tvpe ¹	Loc ¹	- Texture	Rem	narks
.7	10YR 2/1	98	7.5YR 3/4	2	<u>C</u>	PL	Clay		
-10	10YR 2/1	10					Sandy Clay		
10	2.5Y 4/2	90					Sandy Clay	non-redox mo	ttles
)+	10YR 4/3	100					Sandy Clay		
ype: C=Co	oncentration, D=D	epletion, RI	M=Reduced Matrix.	² Loca	ation: PL=F	Pore Linin	g, RC=Root Chan	nel, M=Matrix	3
Histic E Black Hi Hydroge Stratifie 1 cm Mu Deplete Thick Da Sandy M Sandy O	pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5)(LRF ck (A9)(LRR D) d Below Dark Surf ark Surface (A12) /lucky Mineral (S1 Sleyed Matrix (S4)	R C) face (A11))	Stripped Matrix (5 Loamy Mucky Mi Loamy Gleyed M Depleted Matrix (Redox Dark Surfa Depleted Dark Su Redox Depressio Vernal Pools (F9	S6) neral (F1 atrix (F2) (F3) ace (F6) urface (F7 ons (F8))) 7)		2cm Muck (2cm Muck (2cm Auck (Action of the second s	Alo)(LRR B) ertic (F18) Material (TF2) ain in remarks) hydric vegetation logy must be pres	and sent.
estrictive Type: Depth (inc	Layer (if present)):	_				Hvdric	: Soil Present ?	🛛 Yes 🗖 No
marks: _{Sa}	ample point meets	redox dark	surface (F6).						
Remarks: _{Sa}	ample point meets	redox dark	surface (F6).						

Wetland Hydrology Indic Primary Indicators (any or	ators: le indicato	or is suffici	ent)		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)			 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 		
Field Observations: Surface water present?	☐ Yes	🛛 No	Depth (inches):			
Water table present?	🗌 Yes	🛛 No	Depth (inches):			
Saturation Present? (includes capillary fringe)	☐ Yes	🛛 No	Depth (inches):	Wetland	Hydrology Present ?	🗆 Yes 🖾 No
Describe recorded data (st	tream gua	ige, moniti	oring well, aerial photos, etc.) if available	ð.		
Remarks:No wetland hydr	ology indi	cators pre	sent.			
US Army Corps of Enginee	ers					Arid West

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>			
Applicant/Owner Ecosystem Investme	nt Partners	State CA	Sampling Point SP053			
Investigator(s) S.Batiuk, WRA INC.		Section,Township,Range				
Landform (hillslope, terrace, etc.)Diked	I floodplain Loca	I Relief (concave, convex, none) <u>none</u>	Slope(%) 0			
Subregion(LRR) LRR C (Medit. CA) Lat: <u>38.292358</u> Long: <u>-121.701621</u> Datum: <u>WGS 84</u>						
Soil Map Unit Name Sacramento clay	ι, 0 to 2 percent slopes	NWI cla	assification PF			
Are climatic/hydrologic conditions on-s	ite typical for this time of year	? 🛛 Yes 🔲 No 🛛 (If no, explain	n in remarks)			
Are any of the following significantly di	sturbed?	Soil Hydrology Are "Normal	Circumstances" present? 🛛 Yes 🔲 No			
Are any of the following naturally probl	ematic?	Soil Hydrology (If needed	d, explain any answers in remarks)			
SUMMARY OF FINDINGS - Attac	h site map showing sam	ple point locations, transects, in	nportant features, etc.			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	I Yes ☐ No I Yes ☐ No I Yes ☐ No	Is the Sampled Area within a Wetland?	🛛 Yes 🛛 No			
Remarks: Wetland sample point pair vegetation, hydric soils, an	ed with SP052. Sample point d wetland hydrology. Bounda	taken in managed wetland check. San	nple point meets criteria for hydrophytic ography.			

IREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
·	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
				Total number of dominant2 (B)
 Tree Stratum Total Cover:				% of dominant species that(A/B) are OBL, FACW, or FAC?(A/B)
APLING/SHRUB STRATUM Plot Size:	N/A			Prevalence Index Worksheet Total % cover of: Multiply by:
 Sapling/Shrub Stratum Total Cover:				OBL species x1 FACW species x2 FAC species x3 FACU species x4
IERB STRATUM Plot Size: 5' radius				Column Totala (A) (B)
Schoenoplectus acutus	45	Yes	OBL	
. Typha latifolia	45	Yes	OBL	Prevalence Index = B/A =
. Salix gooddingii (saplings)	3	No	FACW	Hydrophytic Vegetation Indicators
		·		Dominance Test is >50%
•				Prevalence Index is $$
				Morphological adaptations (provide supporting data in remarks)
3				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover: <u>VOODY VINE STRATUM</u> Plot Size:	93 N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		-		Hydrophytic X Yes I No
% Bare ground in herb stratum 0 % cover of biotic crust 0				Vegetation Present ?

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Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth								
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc1	Texture Remarks	
								—
								—
		lotion PM	-Poducod Matrix	² L ocatio	n: DI -D			
Hydric Soil I	ndicators: (Applica	able to al	I RRs unless other	wise note	d)		Indicators for Problematic Hydric Soils ³	
Histosol ((A1)		Sandy Redox (S5)		,		\square 1cm Muck (A9) (LRR C)	
Histic Ep	ipedon (A2)		Stripped Matrix (S	6)			\square 2cm Muck (A10)(LRR B)	
Black His	stic (A3)		Loamy Mucky Min	eral (F1)			Reduced Vertic (F18)	
	n Sulfide (A4)		Loamy Gleyed Ma	trix (F2)			Red Parent Material (TF2)	
		<i>,</i>)	Depleted Matrix (F Depleted Matrix (F	3) 20 (E6)			☑ Other (explain in remarks)	
	Below Dark Surfac	e (A11)	Depleted Dark Surla	face (F7)				
Thick Da	rk Surface (A12)	• ()	Redox Depression	s (F8)				
Sandy Mucky Mineral (S1)							³ Indicators of hydric vegetation and	
Sandy G	eyed Matrix (S4)						wetland hydrology must be present.	
Restrictive L	.ayer (if present):							
Type:								
Depth (inch	es):							
Doptil (illoit			_				Hydric Soil Present ? 🖾 Yes 🗋 No	
Remarks: _{Soi}	Is not assessed due	e to deep	standing water. Hydri	c soils ass	umed ba	sed on lo	ong to very long inundation visible in aerial imagery and	1 L
dor	ninance of perennia	al OBL ve	getation.					

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)								
Iminary indicators (any one indicator is sufficient) Iminary indicator (any one indicator is sufficient) Iminary indicators (any one indicator is sufficient) Iminary indicat	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drift Deposits (B1) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)								
Field Observations:									
Water table present? \square Yes \square No Depth (inches): 0									
Saturation Present?	Wetland Hydrology Present ? 🛛 Yes 🗌 No								
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.									
Remarks: Sample point contains surface water (A1) and inundation visible in aerial ima meets FAC-neutral test.	agery (B7). High water table assumed (A2). Sample point also								
Project/SiteLiberty Farms	City	County <u>Solano</u>	Sampling Date <u>4/4/2018</u>						
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Applicant/Owner Ecosystem Investment Partne	ers	State CA	Sampling Point SP054						
Investigator(s) S.Batiuk, WRA INC.		Section,Township,Range							
Landform (hillslope, terrace, etc.)Diked floodpla	ain Local Re	elief (concave, convex, none) <u>none</u>	Slope(%) 0						
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.291375</u>	Long: -121.694021	Datum: WGS 84						
Soil Map Unit Name <u>Sacramento clay, 0 to 2 p</u>	percent slopes	NWI classificati	ion PF						
Are climatic/hydrologic conditions on-site typica	al for this time of year?	Yes 🗋 No (If no, explain in rema	arks)						
Are any of the following significantly disturbed?	□ Vegetation □ €	Soil 🔲 Hydrology 🛛 Are "Normal Circums	stances" present? 🛛 Yes 🔲 No						
Are any of the following naturally problematic?	□ Vegetation □ S	Soil 🔲 Hydrology 🛛 (If needed, explair	n any answers in remarks)						
SUMMARY OF FINDINGS - Attach site r	nap showing sample	point locations, transects, importai	nt features, etc.						
Hydrophytic Vegetation Present?YesHydric Soil Present?YesWetland Hydrology Present?Yes	□ No ⊠ No ⊠ No	ls the Sampled Area 🏻 🔲 ১ within a Wetland?	∕es ⊠No						
Remarks: Upland sample point paired SP055 but does not meet criteria for hydric	. Sample point taken on soils or wetland hydrolo	shoulder of road berm. Sample point meet gy.	s criteria for hydrophytic vegetation,						

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?		Number of Dominant Species (A) that are OBL, FACW, or FAC?
2. 3.				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:				% of dominant species that(A/B) are OBL, FACW, or FAC?(A/B)
SADUNG/SHRUB STRATUM Plot Size	N/A	-		Prevalence Index Worksheet
SAFLING/SHINOD STRATOW FICEOLE.	11/71	-		Total % cover of: Multiply by:
1. 2. 3.				OBL species x1 FACW species x2
4				FACUspecies x4
Sapling/Shrub Stratum Total Cover:		-		LIPI species x5
HERB STRATUM Plot Size: 5' radius				
1. Elymus triticoides	95	Yes	FAC	
2. Malva nicaeensis	1	No	UPL	Prevalence Index = B/A =
3. Conium maculatum	1	No	FACW	Hydrophytic Vegetation Indicators
4				Dominance Test is >50%
5				Prevalence Index is $$
6 7				 Morphological adaptations (provide supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	97	-		
WOODY VINE STRATUM Plot Size: 1.	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		-		Hydrophytic Ves INO
% Bare ground in herb stratum <u>3</u>	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Sample point dominated by FAC specie	es, meets domi	nance test.		

SOI	L
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Profile desc	ription: (Describe Matrix	to the de	pth needed to docum Redox	ent the in K Features	dicator c	r confiri	rm the absence of indicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	TextureRemarks
0-14	10YR 2.1	100					Silty Clay
		·					
		·					
1 <u>Turner</u> 0-0				21			
Hydric Soil	ncentration, D=De	cable to a	M=Reduced Matrix.	Locali	on: PL=P	ore Lining	ng, RC=Root Channel, M=Mathx
Histosol Histic Ep Black His Hydrogie Stratifiee C 1cm Mud Depleted Thick Da Sandy M Sandy G	(A1) ipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)(LRR b) I Below Dark Surfa rk Surface (A12) lucky Mineral (S1) leyed Matrix (S4)	C) ace (A11)	 Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfact Depleted Dark Surfact Redox Depression Vernal Pools (F9) 	6) eral (F1) trix (F2) 3) ce (F6) face (F7) s (F8)			Icm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks) ³ Indicators of hydric vegetation and wetland hydrology must be present.
Restrictive	Layer (if present)	:					
Type:			_				
Depth (incl	nes):		_				Hydric Soil Present ? 🛛 Yes 🛛 No
Remarks: _{Sa}	mple point does n	ot meet inc	licators of hydric soils.				

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
Surface Water (A1) S High Water Table (A2) E Saturation (A3) A Water Marks (B1)(Nonriverine) E Sediment Deposits (B2)(Nonriverine) C Drift Deposits (B3)(Nonriverine) F Surface Soil Cracks (B6) F Inundation Visible on Aerial Imagery (B7) C Water-Stained Leaves (B9) F	Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living F Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed Soi Other (Explain in Remarks)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Roots (C3) Thin Muck Surface (C7) Crayfish Burrows (C8) Is (C6) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:		
Surface water present? Yes X No Dep	epth (inches):	
Water table present? 🛛 Yes 🛛 No Dep	epth (inches):	
Saturation Present?	epth (inches):	Wetland Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monitoring	g well, aerial photos, etc.) if available.	
Remarks: No wetland hydrology indicators present.	t.	

Project/Site Liberty Farms	City	County <u>Sola</u>	no	Sampling Date <u>4/4/20</u>	18
Applicant/Owner Ecosystem Investment Pa	artners		State <u>CA</u>	Sampling Point SP055	
Investigator(s) S.Batiuk, WRA INC.		Section,Town	ship,Range		
Landform (hillslope, terrace, etc.)Diked floc	dplain I	Local Relief (concave, conve	x, none) <u>concave</u>	Slope(%)	0-1
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38</u>	.291295 Lor	ng: <u>-121.694187</u>	Datum: WGS 84	
Soil Map Unit Name <u>Sacramento clay, 0 t</u>	o 2 percent slopes		NWI classifica	ation <u>PF</u>	
Are climatic/hydrologic conditions on-site ty	pical for this time of	year? 🛛 Yes 🗌 No	(If no, explain in rer	narks)	
Are any of the following significantly disturb	ed? 🗌 Vegetati	on 🔲 Soil 🔲 Hydrology	Are "Normal Circur	mstances" present? 🛛 Yes	🗆 No
Are any of the following naturally problema	tic? 🗌 Vegetati	on 🔲 Soil 🔲 Hydrology	(If needed, expla	ain any answers in remarks)	
SUMMARY OF FINDINGS - Attach si	te map showing s	sample point locations,	transects, import	ant features, etc.	
Hydrophytic Vegetation Present? Image: Comparison of the sector of t	Yes 🗌 No Yes 🔲 No Yes 🔲 No	Is the Sampl within a Wet	led Area 🛛 🖂 land?	Yes 🗌 No	
Remarks: Wetland sample point paired w hydrophytic vegetation, hydric s	ith SP054. Sample p soils, and wetland hy	point taken at edge of manag drology. Boundary based on	ed wetland check. S shift in vegetation ar	ample point meets criteria for nd topography (i.e., at edge of	adjacent

road berm).

	Absolute	Dominant	Indicator	
TREE STRATUM Plot Size: N/A	_ % cover	Species?	Status	Dominance Test Worksheet
1				Number of Dominant Species 1 (A) that are OBL, FACW, or FAC?
2		·		Total number of dominant(B)(B)
4 Tree Stratum Total Cover:		·		% of dominant species that(A/B) are OBL, FACW, or FAC?
	N/A	-		Prevalence Index Worksheet
<u>SAPLING/SHRUBSTRATUM</u> Plot Size:	N/A	-		Total % cover of: Multiply by:
1				OBL species x1
3		·		FACW species x2
4		·		FAC species x3
				FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Schoenplectus californicus	20	Yes	OBL	
2. <u>Persicaria punctata</u>	2	<u>No</u>	OBL	
3. <u>Typha latifolia</u>	2	<u>No</u>	OBL	Hydrophytic Vegetation Indicators
4. Elymus triticoides	1	<u>No</u>	FAC	Dominance Test is >50%
5				Prevalence Index is $$
6				Morphological adaptations (provide
7				supporting data in remarks)
8		·		Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	25	_		
WOODY VINE STRATUM Plot Size:	N/A			'Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed of problematic.
2				
Woody Vines Total Cover:		_		Hydrophytic X Yes D No.
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Surface water 75%. Sample point dom	ninated by OBL	species, meets de	ominance test	•
	,	. ,		

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Profile descu Depth	ription: (Describe to Matrix	o the dep	th needed to docum Redo	ent the in x Features	dicator c	r confirm	n the absence of indicators.)	
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ¹	Texture Remarks	
¹ Type: C=Co	ncentration, D=Depl	etion, RN	Reduced Matrix.	² Locati	on: PL=P	ore Lining	, RC=Root Channel, M=Matrix	
Hydric Soil I	ndicators: (Applica	able to all	LRRs, unless other	wise note	ed.)		Indicators for Problematic Hydric Soils ³ :	
Histosol	(A1) ipodon (A2)		Sandy Redox (S5)	6)			☐ 1cm Muck (A9) (LRR C)	
	stic (A3)		Loamv Muckv Min	eral (F1)			Com Muck (A10)(LRR B) Reduced Vertic (E18)	
Hydroge	n Sulfide (A4)		Loamy Gleyed Ma	trix (F2)			Red Parent Material (TF2)	
Stratified	Layers (A5)(LRR C)	Depleted Matrix (F	3)			Other (explain in remarks)	
1cm Muc	k (A9)(LRR D) Rolow Dark Surfaa	o (A11)	Redox Dark Surface	ce (F6)				
	rk Surface (A12)	e (ATT)	Redox Depression	is (F8)				
Sandy M	ucky Mineral (S1)		Vernal Pools (F9)	- ()			³ Indicators of hydric vegetation and	
Sandy G	leyed Matrix (S4)						wetland hydrology must be present.	
Restrictive I	_ayer (if present):							
Туре:			_					
Depth (inch	nes):		_				Hydric Soil Present ? 🛛 Yes [□ No
Remarks: co	ile pot opposed due	to doop	atanding water Uvdr	io opilo opi		and on lo	ng to yory long inundation visible in periol image	on/ and
doi	minance of perennia	al OBL vec	station.		sumeu ba			ery anu
			•					

Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)			
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates Water Marks (B1)(Nonriverine) Hydrogen Sulfide Od Sediment Deposits (B2)(Nonriverine) Oxidized Rhizosphere Drift Deposits (B3)(Nonriverine) Presence of Reducee Surface Soil Cracks (B6) Recent Iron Reductio Inundation Visible on Aerial Imagery (B7) Other (Explain in Ren Water-Stained Leaves (B9) Water-Stained Leaves (B9)	Image: Salt Crust (B11) Image: Water Marks (B1)(Riverine) Image: Biotic Crust (B12) Image: Drift Deposits (B3)(Riverine) Image: Aquatic Invertebrates (B13) Image: Drift Deposits (B3)(Riverine) Image: Hydrogen Sulfide Odor (C1) Image: Drift Deposits (B3)(Riverine) Image: Oxidized Rhizospheres along Living Roots (C3) Image: Drift Deposits (B3)(Riverine) Image: Patterns (B10) Image: Drift Deposits (B3)(Riverine) Image: Drift Deposits (B3)(Riverine) Image: Drift Deposits (B3)			
Field Observations:				
Water table present? \blacksquare Yes \square No Depth (inches): <u>0</u>				
Saturation Present? X Yes No Depth (inches): 0 (includes capillary fringe)	Wetland Hydrology Present ? 🛛 Yes 🗌 No			
Describe recorded data (stream guage, monitoring well, aerial photos, e	c.) if available.			
Remarks: Sample point contains surface water (A1). High water table (A saturation visible in aerial imagery (C9) and the FAC-neutral te	2) assumed based on extensive inundation in area. Sample point also meets st (D5).			

Project/Site Liberty Farms	City	County <u>Solano</u>		Sampling Date 4/4/2018
Applicant/Owner Ecosystem Investme	nt Partners	Sta	te <u>CA</u> Sar	mpling Point SP056
Investigator(s) S.Batiuk, WRA INC.		Section,Township,F	Range	
Landform (hillslope, terrace, etc.)Dikec	l floodplain L	ocal Relief (concave, convex, non	ie) <u>convex</u>	Slope(%) _0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.</u> 2	298692 Long: <u>-1</u>	21.697415	Datum: WGS 84
Soil Map Unit Name Sacramento clay	v, 0 to 2 percent slopes		NWI classification P	F
Are climatic/hydrologic conditions on-s	ite typical for this time of y	ear? 🛛 Yes 🗌 No 🛛 (If no	o, explain in remarks)	
Are any of the following significantly di	sturbed? 🔲 Vegetatio	n 🛛 Soil 🗋 Hydrology Are	"Normal Circumstance	es" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	ematic? 🛛 Vegetatio	n 🛛 Soil 🗋 Hydrology (If needed, explain any	answers in remarks)
SUMMARY OF FINDINGS - Attac	h site map showing s	ample point locations, trans	ects, important fea	atures, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	 Yes Yes Yes Yes No 	Is the Sampled A within a Wetland?	rea □ Yes ?	⊠ No
Remarks: Upland sample point paired criteria for hydrophytic veg	d with SP057 and SP058. etation, hydric soils, or we	Sample point taken on shoulder of taken on shoulder of the stand hydrology.	of bermed access road	I. Sample point does not meet

1.	TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
2.	1	- % cover	Species?	Status	Number of Dominant Species 1 (A) that are OBL, FACW, or FAC?
4.	2 3				Total number of dominant3_(B)
SAPLING/SHRUB STRATUM Plot Size: N/A 1.	4 Tree Stratum Total Cover: _				% of dominant species that33(A/B) are OBL, FACW, or FAC?
1.	- SAPLING/SHRUB STRATUM Plot Size	N/A	-		Prevalence Index Worksheet
	1		•		Total % cover of: Multiply by:
2.	·· ?				OBL species x1
A.	^{2.}		·		FACW species x2
Sapling/Shrub Stratum Total Cover:			·		FAC species x3
Saping/Shrub Stratum Total Cover:	+		·		FACU species x4
HERB STRATUM Plot Size: 5' radius 1. Melilotus indicus 40 Yes FACU 2. Medicago polymorpha 20 Yes FACU 3. Helminthotheca echoides 20 Yes FAC 4. Festuca perennis 10 No FAC 5.	Sapling/Shrub Stratum Total Cover: _		-		UPL species x5
1. Melilotus indicus 40 Yes FACU Prevalence Index = B/A = 2. Medicago polymorpha 20 Yes FACU Prevalence Index = B/A = 3. Helminthotheca echoides 20 Yes FAC Hydrophytic Vegetation Indicators 4. Festuca perennis 10 No FAC Dominance Test is >50% 5.	HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
2. Medicago polymorpha 20 Yes FACU Prevalence Index = B/A =	1. Melilotus indicus	40	Yes	FACU	
3. Helminthotheca echoides 20 Yes FAC Hydrophytic Vegetation Indicators 4. Festuca perennis 10 No FAC Dominance Test is >50% 5.	2. <u>Medicago polymorpha</u>	20	Yes	FACU	Prevalence Index = B/A =
4. Festuca perennis 10 No FAC □ Dominance Test is >50% 5	3. Helminthotheca echoides	20	Yes	FAC	Hydrophytic Vegetation Indicators
5.	4 . Festuca perennis	10	No	FAC	Dominance Test is >50%
6.	5		·		Prevalence Index is $$
8.	6				 Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover: 90 WOODY VINE STRATUM Plot Size: N/A 1.	8				Problematic hydrophytic vegetation ¹ (explain)
WOODY VINE STRATUM Plot Size: N/A Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 1.	Herb Stratum Total Cover:	90			
1.	WOODY VINE STRATUM Plot Size:	N/A			must be present unless disturbed or problematic
2	1				······································
Woody Vines Total Cover: Hydrophytic % Bare ground in herb stratum 5 % cover of biotic crust 0	2		·		
% Bare ground in herb stratum 5 % cover of biotic crust 0	Woody Vines Total Cover:				Hydrophytic Tyes X No
	% Bare ground in herb stratum <u>5</u>	% cover of	biotic crust <u>0</u>		Vegetation Present ?

Profile descu Depth	iption: (Describe Matrix	to the dep	oth needed to docun Redo	nent the i	indicator es	or confiri	rm the absence of indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks	
0-14	10YR 2/1	<u> 100 </u>	7.5YR 3/4	+	<u>C</u>	<u>PL</u>	Clay	_
 ¹ Type: C=Co	ncentration, D=De	pletion, RM	I=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	ng, RC=Root Channel, M=Matrix	_
Hydric Soil I	ndicators: (Appli	cable to al	LRRs, unless othe	rwise no	ted.)		Indicators for Problematic Hydric Soils ³ :	
Histosol Histic Ep Black His Stratified Completed Thick Da Sandy M Sandy G	(A1) ipedon (A2) stic (A3) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa rk Surface (A12) ucky Mineral (S1) leved Matrix (S4)	C) nce (A11)	 Sandy Redox (S5 Stripped Matrix (S Loamy Mucky Mir Loamy Gleyed Matrix (I Depleted Matrix (I Redox Dark Surfa Depleted Dark Su Redox Depressio Vernal Pools (F9)) S6) heral (F1) atrix (F2) F3) ace (F6) Irface (F7 ns (F8))		 1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks) ³Indicators of hydric vegetation and wetland hydrology must be present 	
Bostrictivo I	avor (if present)							-
Type: Depth (inch	les):		_				Hydric Soil Present ? 🛛 Yes 🛛 No	
Remarks: _{Sa}	mple point does n	ot meet ind	icators for hydric soils	5.				

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland I	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available).	
Remarks: No wetland hydrology indicators pre	sent.		

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>4/4/2018</u>
Applicant/Owner <u>Ecosystem Investment Partners</u>		State CA	Sampling Point SP057
Investigator(s) S.Batiuk, WRA INC.		Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked floodplain	Local Relie	ef (concave, convex, none) <u>concave</u>	Slope(%) _0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.298692</u>	Long: <u>-121.697388</u>	Datum: WGS 84
Soil Map Unit Name <u>Sacramento clay, 0 to 2 perc</u>	ent slopes	NWI classificati	on <u>PF</u>
Are climatic/hydrologic conditions on-site typical for	r this time of year?	Yes 🔲 No 🛛 (If no, explain in rema	arks)
Are any of the following significantly disturbed?	□ Vegetation □ So	il 🔲 Hydrology 🛛 Are "Normal Circums	stances" present? 🛛 Yes 🔲 No
Are any of the following naturally problematic?	□ Vegetation □ So	il 🔲 Hydrology (If needed, explair	n any answers in remarks)
SUMMARY OF FINDINGS - Attach site map	<u>showing sample p</u>	oint locations, transects, importa	<u>nt features, etc.</u>
Hydrophytic Vegetation Present?X YesHydric Soil Present?X YesWetland Hydrology Present?Yes	No No No	Is the Sampled Area אי ש within a Wetland?	∕es □No
Remarks: Wetland sample point paired with SP05	56. Sample point taken	at edge of managed wetland check. Sar	nple point meets criteria for

hydrophytic vegetation, hydric soils, and wetland hydrology. Boundary based on shift in vegetation and topography (i.e., at edge of adjacent road berm).

VEGETATION (u	ise scientific names)
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TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1				Number of Dominant Species (A) that are OBL, FACW, or FAC?
2. 3.				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:		·		% of dominant species that100 (A/B) are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size	N/A			Prevalence Index Worksheet
		•		Total % cover of:Multiply by:
2		·		OBL species x1
3		·		FACW species x2
4.		·		FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
				UPL species x5
HERB STRATUM Plot Size: 5 radius	20	Vaa		Column Totals (A) (B)
1. Bolboshoenus mantinus	30			Prevalence Index = B/A =
2. Ludwigid sp.	10	<u> </u>		
	5	<u> </u>		Hydrophytic Vegetation Indicators
Elymas inicoldes Bersicaria amphibia	3	<u> </u>		Dominance Test is >50%
	5			Prevalence Index is $$
0		·		Morphological adaptations (provide
/ ¹ ·		·		supporting data in remarks)
0	51	·		Problematic hydrophytic vegetation ¹ (explain)
	51			¹ Indicators of hydric soil and wetland hydrology
VVOODY VINE STRATUM Plot Size:	N/A			must be present, unless disturbed or problematic.
1 ·		·		
		·		
woody vines Total Cover:				Hydrophytic X Yes I No
				Vegetation Present ?
% Bare ground in herb stratum	% cover of	biotic crust 0		Vegetation Present ? — — —

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Profile description: (Describe to the de Depth Matrix	pth needed to docum Redo	nent the indicator x Features	or confirn	n the absence of ind	icators.)	
(inches) Color (moist) %	Color (moist)	<u>%</u> Type ¹	Loc ¹	Texture	Remar	ks
	·					
¹ Type: C=Concentration, D=Depletion, R	M=Reduced Matrix.	² Location: PL=I	Pore Lining	, RC=Root Channel,	M=Matrix	
Hydric Soil Indicators: (Applicable to a	III LRRs, unless other	wise noted.)		Indicators for Prol	plematic Hydric	Soils ³ :
Histosol (A1)	Sandy Redox (S5)		1cm Muck (A9)	(LRR C)	
Histic Epipedon (A2)	Stripped Matrix (S	6)		2cm Muck (A10)(LRR B)	
Black Histic (A3)	Loamy Mucky Min	eral (F1)		Reduced Vertic	(F18)	
Hydrogen Sulfide (A4)	Loamy Gleyed Ma	itrix (F2)		Red Parent Mat	erial (TF2)	
Stratified Layers (A5)(LRR C)	Depleted Matrix (H	-3)		🛛 Other (explain in	n remarks)	
		се (F6) тала (Г7)				
Depieted Below Dark Surface (ATT)						
Sandy Mucky Mineral (S1)	Vernal Pools (EQ)	IS (FO)		³ Indiactors of hude	is vegetation on	d
\square Sandy Mucky Mineral (S1) \square Sandy Gleved Matrix (S4)				indicators of hydr	ic vegetation an	d .+
					must be preser	IL.
Restrictive Layer (if present):						
Туре:						
Depth (inches):				Hydric So	il Present ?	🛛 Yes 🛛 No
Remarks: Soils not assessed due to stan	ding water. Hydric soil	s assumed based	on long to	very long inundation	visible in aerial ir	magery and

Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres along Living Drift Deposits (B3)(Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in PLowed S Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Water-Stained Leaves (B9) Water-Stained Leaves (B9)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Soils (C6) FAC-Neutral Test (D5)
Field Observations: Surface water present?	
Water table present? Xes No Depth (inches): 0	
Saturation Present? Xes INo Depth (inches): 0 (includes capillary fringe)	Wetland Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available	
Remarks: Sample point contains surface water (A1). High water table (A2) assumed b saturation visible in aerial imagery (C9) and the FAC-neutral test (D5).	ased on extensive inundation in area. Sample point also meets

Project/Site Liberty Farms	City	County	Solano	Sampling Date <u>4/4/2018</u>
Applicant/Owner <u>Ecosystem Investment Pa</u>	Inthers		State <u>CA</u>	Sampling Point SP058
Investigator(s) S.Batiuk, WRA INC.		Section,	Township,Range	
Landform (hillslope, terrace, etc.)Diked floor	dplain	Local Relief (concave, o	convex, none) <u>concave</u>	Slope(%) 0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>3</u> 8	8.298827	Long: <u>-121.697278</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0 to	2 percent slopes		NWI classific	ation PF
Are climatic/hydrologic conditions on-site ty	pical for this time of	fyear? 🛛 Yes 🗌 No	o (If no, explain in re	marks)
Are any of the following significantly disturb	ed? 🔲 Vegetati	tion 🔲 Soil 🔲 Hydrol	ogy Are "Normal Circu	mstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problemat	ic? 🛛 Vegetati	tion 🔲 Soil 🔲 Hydrol	ogy (If needed, exp	lain any answers in remarks)
SUMMARY OF FINDINGS - Attach sit	te map showing	sample point location	<u>ons, transects, impor</u> t	tant features, etc.
Hydrophytic Vegetation Present? X Hydric Soil Present? X Wetland Hydrology Present? X	′es □ No ′es □ No ′es □ No	Is the Sa within a	ampled Area 🛛 🛛 🕅	Yes 🗌 No
Remarks: Wetland sample point paired wi hydrophytic vegetation, hydric s	th SP056. Sample coils, and wetland hy	point taken at edge of m ydrology. Boundary bas	nanaged wetland check. S ed on shift in vegetation a	Sample point meets criteria for Ind topography (i.e., at edge of adjacent

road berm).

REE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
		Species?		Number of Dominant Species(A) that are OBL, FACW, or FAC?
2		- <u> </u>		Total number of dominant(B)(B)
Tree Stratum Total Cover:		·		% of dominant species that 100 (A/B) are OBL, FACW, or FAC?
<u>SAPLING/SHRUB STRATUM</u> Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
·		·		OBL species x1 FACW species x2 FAC species x3 FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
<u>1ERB STRATUM</u> Plot Size : <u>5 radius</u> I. <u>Typha latifolia</u> .	95	Yes	OBL	Column Totals (A) (B)
/		· ·		
,				Hydrophytic Vegetation Indicators ☑ Dominance Test is >50% □ Prevalence Index is = 3.0<sup 1 □ Morphological adaptations (provide supporting data in remarks) □ Prevalence is backeter backete
Herb Stratum Total Cover: <u>NOODY VINE STRATUM</u> Plot Size:I	95 N/A	·		Problematic hydrophytic vegetation (explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vines Total Cover:	% cover of	biotic crust <u>0</u>		Hydrophytic ⊠ Yes □ No Vegetation Present ?

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Profile description: (Describe to the dep	th needed to docum Redo:	ent the in Feature	ndicator o	or confirm	n the absence of indicators.)	
	Color (moist)	<u>%</u>	Type ¹	Loc ¹	TextureRemarks	
¹ Type: C=Concentration, D=Depletion, RM	=Reduced Matrix.	² Locat	ion: PL=P	ore Lining	, RC=Root Channel, M=Matrix	
Hydric Soil Indicators: (Applicable to all	LRRs, unless other	wise not	ed.)		Indicators for Problematic Hydric Soils ³ :	
Histosol (A1)	Sandy Redox (S5)	2)			1cm Muck (A9) (LRR C)	
□ HISTIC Epipedon (A2) □ □ Black Histic (A3)	Loamy Mucky Min	o) eral (F1)			□ 2cm Muck (A10)(LRR B)	
Hvdrogen Sulfide (A4)	Loamy Gleved Ma	trix (F2)			Reduced Vertic (F18) Red Parent Material (TE2)	
Stratified Layers (A5)(LRR C)	Depleted Matrix (F	3)			\mathbf{X} Other (explain in remarks)	
1cm Muck (A9)(LRR D)	Redox Dark Surfac	ce (F6)				
Depleted Below Dark Surface (A11)	Depleted Dark Sur	face (F7)				
Thick Dark Surface (A12)	Redox Depression	s (F8)			3	
Sandy Mucky Mineral (ST)					Indicators of hydric vegetation and	
Restrictive Laver (if present):						
Depth (inches):	_					
	-				Hydric Soil Present ? 🖾 Yes 🗋 No	
Remarks: Soils not assessed due to standi	ng water. Hydric soils	s assume	d based o	n long to	very long inundation visible in aerial imagery and	
dominance of perennial OBL veg	etation.			-		
HYDROLOGY						
Wetland Hydrology Indicators:					Secondary Indicators (2 or more required	d)
Primary Indicators (any one indicator is suff	icient)					

Primary Indicators (any one indicator is sufficient)						
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres along Livin Drift Deposits (B3)(Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in PLowed S Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Water-Stained Leaves (B9) Heaves (B9)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Shallow Aquitard (D3) FAC-Neutral Test (D5)					
Field Observations: Surface water present? Xes No Depth (inches): 6						
Water table present? X Yes I No Depth (inches): 0						
Saturation Present? Xes No Depth (inches): 0	Wetland Hydrology Present ? 🛛 Yes 🔲 No					
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks: Sample point contains surface water (A1). High water table (A2) assumed to saturation visible in aerial imagery (C9) and the FAC-neutral test (D5).	based on extensive inundation in area. Sample point also meets					

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>5/9/2018</u>
Applicant/Owner <u>Ecosystem Investment</u>	Partners	State CA	Sampling Point SP059
Investigator(s) S. Batiuk, R. Akiba-Hajim	; WRA Inc	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked fl	oodplain Loc	cal Relief (concave, convex, none) <u>None</u>	Slope(%) 0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3</u> 1	1347318 Long: <u>-121.7032153</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, () to 2 percent slopes	NWI classifica	ation <u>PF</u>
Are climatic/hydrologic conditions on-site	typical for this time of yea	ar? 🛛 Yes 🔲 No 🛛 (If no, explain in rer	marks)
Are any of the following significantly distu	Irbed? Degetation	Soil Hydrology Are "Normal Circur	mstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	natic?	Soil Hydrology (If needed, expl	ain any answers in remarks)
SUMMARY OF FINDINGS - Attach	site map showing sa	mple point locations, transects, import	ant features, etc.
Hydrophytic Vegetation Present? Image: Comparison of the sent? Hydric Soil Present? Image: Comparison of the sent? Wetland Hydrology Present? Image: Comparison of the sent?	ÌYes □No]Yes ⊠No]Yes ⊠No	Is the Sampled Area uithin a Wetland?	Yes 🖾 No
Remarks: Upland sample point paired v vegetation, but does not mee	vith SP060. Sample point t criteria for hydric soils o	t taken in field adjacent to swale/ditch. Sample or wetland hydrology.	point meets criteria for hydrophytic

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute % covor	Dominant	Indicator	Dominance Test Worksheet
1				Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant3(B)3
4 Tree Stratum Total Cover:				% of dominant species that67(A/B)
SAPI ING/SHRUB STRATUM Plot Size:	N/A			Prevalence Index Worksheet
		•		Total % cover of: Multiply by:
' ·		·		OBL species x1
2 3		·		FACW species x2
		·		FAC species x3
				FACU species x4
				UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. <u>Festuca perennis</u> .	40	YY	FAC	
2. <u>Melilotus albus</u>	20	Y	NL	
3. Lotus corniculatus	20	Y	FAC	Hydrophytic Vegetation Indicators
4. Hordeum marinum	7	<u> </u>	FAC	Dominance Test is >50%
5. Hordeum jubatum	5	<u> </u>	FAC	Prevalence Index is $$
6. Lepidium latifolium	2	<u> </u>	FAC	Morphological adaptations (provide
7. Hordeum brachyantherum	t	<u> </u>	FACW	supporting data in remarks)
^{8.}	0.1	·		Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	94			¹ Indicators of hydric soil and watland hydrology
WOODY VINE STRATUM Plot Size:	N/A			must be present, unless disturbed or problematic.
1 ·				· · · · · · · · · · · · · · · · · · ·
^{2.}		·		
Woody Vines Total Cover:				Hydrophytic Ves INO
% Bare ground in herb stratum <u>6</u>	% cover of	biotic crust		Vegetation Present ?
Remarks: Sample point dominated by FAC and U	PL (NL) specie	s, meets domina	nce test.	

Profile descri Depth	ption: (Describe Matrix	to the de	epth needed to docun Redo	nent the in x Feature	ndicator o	or confirm	rm the absence of indicators.) –	
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ¹	Texture Remarks	
0-12	_10YR 3/1	100		 				
		pletion, RI	M=Reduced Matrix.	 ²Locat	ion: PL=P	ore Lining	ng, RC=Root Channel, M=Matrix	
Hydric Soil Ir	ndicators: (Applie	cable to a	all LRRs, unless othe	wise not	ed.)		Indicators for Problematic Hydric Soils ³ :	
Histosol (Histic Epi Black His Hydrogen Stratified 1cm Mucl Depleted Thick Dar Sandy Mu Sandy Gl	A1) pedon (A2) tic (A3) Sulfide (A4) Layers (A5)(LRR < (A9)(LRR D) Below Dark Surfa k Surface (A12) icky Mineral (S1) eyed Matrix (S4)	C) ce (A11)	Sandy Redox (S5 Stripped Matrix (S Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (I Redox Dark Surfa Depleted Dark Sur Redox Depression Vernal Pools (F9)) heral (F1) hatrix (F2) F3) ce (F6) rface (F7) hs (F8)	,		 1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks) ³Indicators of hydric vegetation and wetland hydrology must be present. 	
Restrictive L	ayer (if present):							
Type: Depth (inch	es):		<u> </u>				Hydric Soil Present ? 🛛 Yes 🛛 No	
Remarks: _{Sar}	nple point does no	ot meet hy	/dric soil indicators.					

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)	
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B1 Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres a Drift Deposits (B3)(Nonriverine) Presence of Reduced Iro Surface Soil Cracks (B6) Recent Iron Reduction in Inundation Visible on Aerial Imagery (B7) Other (Explain in Remark Water-Stained Leaves (B9) Water-Stained Leaves (B9)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (C3) Thin Muck Surface (C7) Crayfish Burrows (C8) PLowed Soils (C6) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:	
Water table present?	
Saturation Present?	─────────────────────────────────────
Describe recorded data (stream guage, monitoring well, aerial photos, etc.)	f available.
Remarks: No wetland hydrology indicators observed.	

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>5/9/2018</u>		
Applicant/Owner Ecosystem Investment	Partners	State CA	Sampling Point SP060		
Investigator(s) S. Batiuk, R. Akiba-Hajim;	WRA Inc	Section,Township,Range			
Landform (hillslope, terrace, etc.) Diked flo	odplain Loca	Relief (concave, convex, none) <u>Concave</u>	Slope(%) 0		
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.313</u>	46896 Long: <u>-121.7031082</u>	Datum: WGS 84		
Soil Map Unit Name <u>Sacramento clay, C</u>) to 2 percent slopes	NWI classifica	ation <u>PF</u>		
Are climatic/hydrologic conditions on-site	typical for this time of year	? 🛛 Yes 🔲 No 🛛 (If no, explain in rer	narks)		
Are any of the following significantly distu	rbed?	□ Soil □ Hydrology Are "Normal Circur	nstances" present? 🛛 Yes 🔲 No		
Are any of the following naturally problem	atic?	Soil Hydrology (If needed, expl	ain any answers in remarks)		
SUMMARY OF FINDINGS - Attach	site map showing sam	<u>ple point locations, transects, import</u>	ant features, etc.		
Hydrophytic Vegetation Present? Image: Constraint of the sent? Hydric Soil Present? Image: Constraint of the sent? Wetland Hydrology Present? Image: Constraint of the sent?	Yes □ No Yes □ No Yes □ No	Is the Sampled Area 🛛 🖂 within a Wetland?	Yes 🗆 No		
Remarks: Wetland sample point paired	with SP059. Sample point	is located in a broad, long, shallow, manmad	e swale/ditch at the east end of the		

check in the northern portion of Liberty Farms. Sample point is located in a broad, long, shallow, manmade swale/ditch at the east end of the check in the northern portion of Liberty Farms. Sample point meets wetland criteria for hydrophytic vegetation, hydric soils, and hydrology. Boundary based on shift in topography (i.e., edge of swale/ditch).

	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant gpecies across all strata?
4 Tree Stratum Total Cover:				% of dominant species that(A/B) are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet
1		-		Total % cover of: Multiply by:
2				OBL species x1
				FACW species x2
4.				FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
HERB STRATI IM Plot Size: 5' radius		-		UPL species x5
Rumex crispus	40	Y	FAC	Column Totals (A) (B)
2. Atriplex prostrata	25	Y	FACW	Prevalence Index = B/A =
3. Crypsis schoenoides	15	N	FACW	Hydrophytic Vegetation Indicators
4.				$\mathbf{X} \text{Dominance Test is >50\%}$
5				$\square \text{Prevalence Index is } < 1 = 3.0^{1}$
6				
7				- supporting data in remarks)
3				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	80	-		
NOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
I				
2		- <u> </u>		-
Woody Vines Total Cover:		-		Hydrophytic X Yes No
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 20		Vegetation Present ?

SOIL	
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Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features									
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rema	arks
0-1	7.5YR 2.5/1		-		-	-	Clay	Abundant roots	3
1-12	10YR 3/1	90	7.5YR 4/4	10	C	<u>M, PL</u>	Clay		
		- <u> </u>							
¹ Type: C=Co	ncentration, D=D	epletion, RN	/I=Reduced Matrix.	² Loca	tion: PL=I	Pore Linin	g, RC=Root Channe	el, M=Matrix	
Hydric Soil	ndicators: (Appl	icable to al	LRRs, unless othe	rwise no	ted.)		Indicators for Pr	oblematic Hydri	ic Soils ³ :
Histosol Histic Ep Black His Hydroge Stratified 1cm Mud Depleted Thick Da	(A1) ipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)(LRF :k (A9)(LRR D) I Below Dark Surf rk Surface (A12)	RC) ace (A11)	 Sandy Redox (Sf Stripped Matrix (Sf Loamy Mucky Mi Loamy Gleyed M Depleted Matrix (Sf Redox Dark Surfa Depleted Dark Surfa Redox Depression 	5) S6) atrix (F1) atrix (F2) F3) ace (F6) urface (F7 uns (F8))		1cm Muck (At 2cm Muck (At Reduced Vert Red Parent M Other (explain)	9) (LRR C) 10)(LRR B) tic (F18) laterial (TF2) n in remarks)	
Sandy M	ucky Mineral (S1 leyed Matrix (S4))	Vernal Pools (F9)			[°] Indicators of hy wetland hydrolo	<pre>/dric vegetation a gy must be prese</pre>	ind ent.
Restrictive	ayer (if present):							
Туре:			_						
Depth (incl	nes):						Hydric S	Soil Present ?	🛛 Yes 🛛 No
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).						

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient	ent)	
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Soils (C6) FAC-Neutral Test (D5)
Field Observations:		
Surface water present? Yes No	Depth (inches):	
Water table present?	Depth (inches):	
Saturation Present?	Depth (inches):	Wetland Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monito	oring well, aerial photos, etc.) if available	e.
Remarks: Contains biotic crust (B12) and also	meets saturation visible in aerial imager	ery (C9) and the FAC-neutral test (D5).

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>5/9/2018</u>
Applicant/Owner Ecosystem Investmen	It Partners	State CA	Sampling Point SP061
Investigator(s) S. Batiuk, R. Akiba-Hajir	n; WRA Inc	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	floodplain Lc	ocal Relief (concave, convex, none) <u>None</u>	Slope(%) _0
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3</u>	20892192 Long: <u>-121.7013691</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay,	0 to 2 percent slopes	NWI classific	cation <u>PF</u>
Are climatic/hydrologic conditions on-sit	e typical for this time of ye	ear? 🛛 Yes 🔲 No 🛛 (If no, explain in re	marks)
Are any of the following significantly dis	turbed? Vegetatior	n 🔲 Soil 🔲 Hydrology 🛛 Are "Normal Circu	mstances" present? 🛛 Yes 🔲 No
Are any of the following naturally proble	matic? Degetation	n 🗋 Soil 🔲 Hydrology (If needed, exp	lain any answers in remarks)
SUMMARY OF FINDINGS - Attach	<u>ı site map showing sa</u>	ample point locations, transects, impor	tant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	□Yes ⊠No □Yes ⊠No □Yes ⊠No	Is the Sampled Area within a Wetland?	Yes 🖾 No
Remarks: Upland sample point paired Liberty Farms. Sample poir	with SP062. Sample poir nt does not meet criteria fo	nt is located in a flat field adjacent to a shallow or hydrophytic vegetation, hydric soils, or wetlar	depression in the northern portion of nd hydrology.

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:				% of dominant species that
SAPLING/SHRUB STRATUM Plot Size	N/A	-		Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
·· ·				OBL species x1
··				FACW species x2
, 1				FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B
1. Festuca perennis	35	<u> </u>	FAC	
2. Melilotus albus	25	- <u>Y</u>		
3. Rumex crispus	10	<u> </u>	FAC	Hydrophytic Vegetation Indicators
4. Hordeum marinum	10	<u> </u>	FAC	Dominance Test is >50%
5. Lotus corniculatus	5	<u> </u>	FAC	Prevalence Index is = 3.0<sup 1
6. Lepidium latifolium	3	<u> </u>	FAC	Morphological adaptations (provide
7. Crypsis schoenoides	2	<u> </u>		supporting data in remarks)
B. Polypogon monspellensis	t	<u> </u>	FACW	Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:		-		
WOODY VINE STRATUM Plot Size:	N/A			must be present unless disturbed or problematic
1				
2				-
Woody Vines Total Cover:		-		Hydrophytic Ves 🛛 No
% Bare ground in herb stratum 10 % cover of biotic crust 0				Vegetation Present ?

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Profile descr	iption: (Describe Matrix	e to the de	pth needed to docun Redo	nent the in ox Feature	ndicator o	or confirm	m the absence of indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Rema	arks
0-13	10YR 3/1	100	-					
							- <u></u>	
'Type: C=Cor	ncentration, D=De	epletion, R	M=Reduced Matrix.	Locat ²	ion: PL=P	ore Lining	g, RC=Root Channel, M=Matrix	· • • 3
Histosol (Histic Ep Black His Hydroger Stratified 1cm Muc Depleted Sandy M Sandy M	A1) ipedon (A2) tic (A3) t Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfark Surface (A12) ucky Mineral (S1) eved Matrix (S4)	C) ace (A11)	□ Sandy Redox (S5 □ Stripped Matrix (S □ Loamy Mucky Mir □ Loamy Gleyed Ma □ Depleted Matrix (I □ Redox Dark Surfa □ Depleted Dark Surfa □ Depleted Dark Surfa □ Redox Depression □ Vernal Pools (F9)) 66) heral (F1) atrix (F2) F3) ice (F6) rface (F7) ns (F8)	,		1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks)	and
Bestrictive I								
Type:	.ayer (ii present)	•						
Depth (inch	es):						Hydric Soil Present ?	🗌 Yes 🖾 No
Remarks: _{Sar}	nple point does n	ot meet hy	dric soil indicators.					

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland I	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available).	
Remarks: No indicators of wetland hydrology of	bserved.		

Project/Site Liberty Farms	City	County Solano	Sampling Date 5/9/2018
Applicant/Owner Ecosystem Investment Partners		State CA	Sampling Point SP062
Investigator(s) S. Batiuk, R. Akiba-Hajim; WRA In	IC	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked floodplain	Local Re	lief (concave, convex, none) <u>Concave</u>	Slope(%) <u>0</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.308946</u>	17 Long: <u>-121.7014247</u>	Datum: WGS 84
Soil Map Unit Name <u>Sacramento clay, 0 to 2 per</u>	cent slopes	NWI classificat	ion PF
Are climatic/hydrologic conditions on-site typical f	or this time of year?	🛛 Yes 🔲 No 🦳 (If no, explain in rem	arks)
Are any of the following significantly disturbed?	□ Vegetation □ S	Soil 🔲 Hydrology 🛛 Are "Normal Circum	stances" present? 🛛 Yes 🔲 No
Are any of the following naturally problematic?	□ Vegetation □ S	Soil 🔲 Hydrology 👘 (If needed, explai	n any answers in remarks)
SUMMARY OF FINDINGS - Attach site ma	p showing sample	point locations, transects, importa	nt features, etc.
Hydrophytic Vegetation Present?X YesHydric Soil Present?X YesWetland Hydrology Present?X Yes] No] No] No	Is the Sampled Area 🛛 🕅 within a Wetland?	Yes 🛛 No
Remarks: Wetland sample point paired with SP(061. SP062 is located	in a shallow depression in a flat field near	the northern end of Liberty Farms.

SP062 meets wetland criteria for hydrophytic vegetation, hydric soils, and hydrology. Boundary based on a shift in vegetation and topography.

	Absolute	Dominant	Indicator			
TREE STRATUM Plot Size: N/A	_ % cover	Species?	Status	Dominance lest Workshee	t	
1				Number of Dominant Species that are OBL, FACW, or FAC	?3	(A)
2				Total number of dominant	3	(B)
3				species across all strata?		_ (0)
4 Tree Stratum Total Cover:				% of dominant species that are OBL, FACW, or FAC?	100	(A/B)
	N/A			Prevalence Index Workshe	et	
SAPLING/SHRUBSTRATUM Plot Size:	N/A			Total % cover of:	Multiply by:	<u> </u>
1				OBL species	1	
2				FACW species	2	
3				FAC species	3	_
4				FACU species	4	_
Sapling/Shrub Stratum Total Cover:				UPL species	5	
HERB STRATUM Plot Size: 5' radius				Column Totals	Δ)	— (B)
1. Polypogon monspeliensis	30	Υ	FACW			_ (0)
2. Hordeum brachyantherum	15	Υ	FACW	Prevalence Index = B/A =		_
3. Festuca perennis	15	Y	FAC	Hydrophytic Vegetation Inc	licators	
4. Rumex crispus	7	N	FAC	Dominance Test is >50%		
5. Crypsis schoenoides	5	<u> </u>	FACW	\square Prevalence Index is $$	3 0 ¹	
6. Helminthotheca echioides	2	N	FAC		<i></i>	
7				supporting data in remar	is (provide ks)	
8				Problematic hydrophytic	vegetation ¹ (ex	plain)
Herb Stratum Total Cover:	74					
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and w	vetland hydrolo	gy
1				must be present, unless distu	bed or problem	iatic.
2				-		
Woody Vines Total Cover:				Hydrophytic		_
% Bare ground in herb stratum 5	% cover of	biotic crust 5		Vegetation Present ?		J
Remarks: Litter: 16%. Sample point dominated b	y FACW and FA	AC species, mee	ts dominance	test.		

SOIL	
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Profile descr	iption: (Describe Matrix	e to the dep	oth needed to docur Red	ment the ox Featur	indicator es	or confir	m the absence of indic	ators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc1	Texture	Rema	rks	
0-13	10YR 3/1	95	10YR 4/4	5	<u>C</u>	<u>M, PL</u>	Clay			
				 	·					
¹ Type: C=Co	ncentration, D=De	epletion, RM	I=Reduced Matrix.	² Loca	ation: PL=I	Pore Linin	g, RC=Root Channel, M	l=Matrix	2	
Histosol (Histosol (Histic Ep Black His Hydroger Stratified 1cm Muc Depleted Thick Da	(A1) ipedon (A2) stic (A3) Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surface rk Surface (A12)	C) ace (A11)	□ Sandy Redox (Sf □ Stripped Matrix (f □ Loamy Mucky Mi □ Loamy Gleyed M □ Depleted Matrix (f □ Redox Dark Surf □ Depleted Dark Strip □ Redox Depression	5) S6) neral (F1) atrix (F2) (F3) ace (F6) urface (F7) nns (F8)) 7)			Effatic Hydri LRR B) ⁼ 18) rial (TF2) remarks)	. 30115 .	
☐ Sandy M ☐ Sandy G	ucky Mineral (S1) leyed Matrix (S4)		└ Vernal Pools (F9)			³ Indicators of hydric wetland hydrology n	vegetation ai nust be prese	nd nt.	
Restrictive L	ayer (if present)	:								
Type: Depth (inch	es):		_				Hydric Soil	Present ?	🛛 Yes 🗌 No	o
Remarks: _{Sai}	mple point meets	redox dark :	surface (F6).							

red)
y (C9)
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Project/Site Liberty Farms	City	County Solano	Sampling Date <u>5/9/2018</u>
Applicant/Owner <u>Ecosystem Investment Receiption</u>	Partners	State CA	Sampling Point SP063
Investigator(s) S. Batiuk, R. Akiba-Hajim;	WRA Inc	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked flo	odplain Lo	cal Relief (concave, convex, none) <u>none</u>	Slope(%) <u>0-1</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3</u>	0628618 Long: <u>-121.6959156</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0	to 2 percent slopes	NWI classifica	tion <u>PF</u>
Are climatic/hydrologic conditions on-site	typical for this time of ye	ar? 🛛 Yes 🔲 No 🛛 (If no, explain in rem	arks)
Are any of the following significantly distu	rbed?	Soil Hydrology Are "Normal Circum	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	atic?	Soil Hydrology (If needed, expla	in any answers in remarks)
SUMMARY OF FINDINGS - Attach	ite map showing sa	mple point locations, transects, importa	int features, etc.
Hydrophytic Vegetation Present? Image: Comparison of the sent? Hydric Soil Present? Image: Comparison of the sent? Wetland Hydrology Present? Image: Comparison of the sent?	Yes INO Yes INO Yes INO	Is the Sampled Area uthin a Wetland?	Yes 🖾 No
Remarks: Upland sample point paired w Sample point meets criteria for	ith SP064. Sample poin or hydrophytic vegetation	t taken on slight rise adjacent to manmade pond , but does not meet criteria for hydric soils or we	l at eastern edge of Liberty Farms. tland hydrology.

REE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
l	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant(B)(B)
I Tree Stratum Total Cover:				% of dominant species that(A/B(A/B)) are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
				OBL species x1
				FACW species x2
·		- <u></u>		FAC species x3
				FACU species x4
		-		UPL species x5
<u>HERB STRATUM</u> Plot Size: 5' radius				Column Totals (A) (B
Festuca perennis	65	<u> </u>	FAC	
2. Lepidium latifolium	15	<u> </u>	FAC	
3. Phalaris aquatica	15	<u> </u>	FACU	Hydrophytic Vegetation Indicators
Melilotus sp	5	<u> </u>		Dominance Test is >50%
5		<u> </u>		Prevalence Index is $$
3 7				Morphological adaptations (provide supporting data in remarks)
3		<u> </u>		Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	-		1. The discount of the data and the development to the development
NOODY VINE STRATUM Plot Size:	N/A			must be present unless disturbed or problematic
l				
2		·		-
Woody Vines Total Cover:			Hydrophytic Ves INO	
% Bare ground in herb stratum 0	% cover of	biotic crust 0		Vegetation Present ?

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicate Depth						rm the absence of indicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks	
0-14	2.5Y 2.5/1	100	7.5YR 4/4	+	<u>C</u>	<u>M, PL</u>		
		pletion, RN	I=Reduced Matrix.	 	tion: PL=F		ng, RC=Root Channel, M=Matrix	
Hydric Soil I	ndicators: (Appli	cable to al	I LRRs, unless othe	rwise no	ted.)		Indicators for Problematic Hydric Soils ³ :	
Histosol (Histic Epi Black His Hydroger Stratified 1cm Muc Depleted Thick Daa Sandy M	A1) ipedon (A2) tic (A3) i Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfar rk Surface (A12) ucky Mineral (S1) oved Matrix (S1)	C) ace (A11)	Sandy Redox (S5 Stripped Matrix (S Loamy Mucky Min Loamy Gleyed Matrix (Depleted Matrix (Redox Dark Surfa Depleted Dark SL Redox Depressio Vernal Pools (F9)	5) S6) heral (F1) atrix (F2) F3) ace (F6) urface (F7 ns (F8))		 1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks) ³Indicators of hydric vegetation and explanation and explanation and explanation and explanation. 	
	eyed Matrix (54)						wetland hydrology must be present.	
Restrictive L Type: Depth (inch	.ayer (if present) es):		_				Hydric Soil Present ? 🛛 Yes 🛛 No	
Remarks: _{Sar}	nple point does n	ot meet hyc	Iric soil indicators.					

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)					
Primary Indicators (any one indicator is sufficient)						
Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B1 Water Marks (B1)(Nonriverine) Hydrogen Sulfide Odor (C Sediment Deposits (B2)(Nonriverine) Oxidized Rhizospheres a Drift Deposits (B3)(Nonriverine) Presence of Reduced Iro Surface Soil Cracks (B6) Recent Iron Reduction in Inundation Visible on Aerial Imagery (B7) Other (Explain in Remark Water-Stained Leaves (B9) Water-Stained Leaves (B9)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (C3) Thin Muck Surface (C7) Crayfish Burrows (C8) PLowed Soils (C6) Shallow Aquitard (D3) FAC-Neutral Test (D5)					
Field Observations:						
Water table present?						
Saturation Present?	─────────────────────────────────────					
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks: No wetland hydrology indicators observed.						

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>5/9/2018</u>					
Applicant/Owner Ecosystem Investment Partr	ners	State CA	Sampling Point SP064					
Investigator(s) S. Batiuk, R. Akiba-Hajim; WR	A Inc	Section,Township,Range						
Landform (hillslope, terrace, etc.)Diked floodp	lain Local	Relief (concave, convex, none) <u>flat</u>	Slope(%) <u>0-1</u>					
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.306</u> 2	28903 Long: <u>-121.695967</u>	Datum: WGS 84					
Soil Map Unit Name Sacramento clay, 0 to 2	Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-site typic	Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 🛛 (If no, explain in remarks)							
Are any of the following significantly disturbed	? Vegetation] Soil ☐ Hydrology Are "Normal Circu	mstances" present? 🛛 Yes 🔲 No					
Are any of the following naturally problematic?	? □ Vegetation □] Soil ☐ Hydrology (If needed, exp	lain any answers in remarks)					
SUMMARY OF FINDINGS - Attach site	map showing sam	ole point locations, transects, impor	tant features, etc.					
Hydrophytic Vegetation Present?Image: YesHydric Soil Present?Image: YesWetland Hydrology Present?Image: Yes	s 🗌 No s 🔲 No s 🔲 No	Is the Sampled Area 🛛 🖂 within a Wetland?]Yes □No					
Remarks: Wetland sample point paired with SP063. Sample point taken in managed weltand check, adjacent to slight rise around manmade pond. Sample point meets criteria for hydrophytic vegetation, hydric soils, and wetland hydrology. Boundary based on change in vegetation								

associated with rise in topography and loss of hydric soil and wetland hydrology indicators.

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?	Status	Number of Dominant Species3(A) that are OBL, FACW, or FAC?
2 3		·		Total number of dominant3(B)
4 Tree Stratum Total Cover:				% of dominant species that(A/B) are OBL, FACW, or FAC?
	 Ν/Δ	-		Prevalence Index Worksheet
SAPEING/STIKUB STRATUM PIOUSIZE.	N/A	-		Total % cover of: Multiply by:
1. 2. 3.				OBL species x1 FACW species x2 FAC species x3
4				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				
1. Crypsis schoenoides	30	Y	FACW	
2. Rumex crispus	25	Y	FAC	Prevalence Index = B/A =
3. Lepidium latifolium	15	Y	FAC	Hydrophytic Vegetation Indicators
4				Dominance Test is >50%
5				\square Prevalence Index is $$
6				
7				supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	70	_		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:		-		Hydrophytic Vegetation Present ?
% Bare ground in herb stratum <u>10</u>	% cover of	biotic crust 20		
Remarks: Sample point dominated by FAC and F	ACW species,	meets dominance	e test.	

SOIL								Sampling P	oint SP064	
Profile desc	ription: (Describe	e to the de	pth needed to docu	ment the	indicator	or confir	m the absence of ir	ndicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ¹	Texture	Rem	arks	
0-10	2.5Y 3/1	95	7.5YR 4/4	5	С	M, PL	Clay			
10-12	2.5Y 3/1	65	7.5YR 4/4	5	С	M, PL	Clay			
	10Y 2.5/1	30						non-redox mot	ttles	
12-16	2.5Y 3/1	80	7.5YR 4/4	5		_	Clay			
	5Y 4/2	15			. <u> </u>					
¹ Type: C=Co	oncentration. D=De	pletion. R	M=Reduced Matrix.	² Loca	ation: PL=	 Pore Linin		I. M=Matrix		
Hydric Soil	Indicators: (Appl	icable to a	II LRRs, unless othe	erwise no	ted.)		Indicators for Pr	oblematic Hyd	ric Soils ³ :	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muck (A10)(LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) 1 cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) 3Indicators of hydric vegetation and wetland hydrology must be present. Restrictive Layer (if present): Type:										
Remarks: Sa	ample point meets	redox dark	surface (F6).				Hydric S	oil Present ?	⊠ Yes L	_ No
	· ·		. ,							

Secondary Indicators (2 or more required)							
Secondary indicators (2 of mole required) Water Marks (B1)(Riverine) Drift Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Shallow Aquitard (D3) EAC-Neutral Test (D5)							
Wetland Hydrology Present ? 🛛 Yes 🗆 No							
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.							
Remarks: Sample point contains biotic crust (B12) and also meets saturation visible on aerial imagery (C9) and the FAC-neutral test (D5).							

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Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>5/9/2018</u>				
Applicant/Owner Ecosystem Investment Partne	rs	State CA	Sampling Point SP065				
Investigator(s) S. Batiuk, R. Akiba-Hajim; WRA	Inc	Section,Township,Range					
Landform (hillslope, terrace, etc.)Diked floodplai	in Local Re	Relief (concave, convex, none) slightly concave Slope(%) 0-2					
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.306407</u>	99 Long: <u>-121.7222564</u>	Datum: WGS 84				
Soil Map Unit Name Sacramento clay, 0 to 2 p	Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF						
Are climatic/hydrologic conditions on-site typical	I for this time of year?	🛛 Yes 🔲 No 🛛 (If no, explain in rem	arks)				
Are any of the following significantly disturbed?	□ Vegetation □ S	Soil 🔲 Hydrology 🛛 Are "Normal Circum	stances" present? 🛛 Yes 🔲 No				
Are any of the following naturally problematic?	□ Vegetation □ S	Soil 🔲 Hydrology 👘 (If needed, explai	n any answers in remarks)				
SUMMARY OF FINDINGS - Attach site m	ap showing sample	point locations, transects, importa	nt features, etc.				
Hydrophytic Vegetation Present?X YesHydric Soil Present?X YesWetland Hydrology Present?X Yes	□ No □ No □ No	Is the Sampled Area 🛛 🕅 within a Wetland?	Yes 🛛 No				
Remarks: Wetland sample point paired with SI	P066. Sample point take	en at lower elevation of irrigated pasture.	Sample point meets wetland criteria				

semarks: Wetland sample point paired with SP066. Sample point taken at lower elevation of irrigated pasture. Sample point meets wetland criteria for hydrophytic vegetation, hydric soils, and hydrology. Boundary based on signatures in aerial imagery corresponding to shifts in vegetation.

VEGETATION (use scientific names)					
	Absolute	Dominant	Indicator	Dominance Test Worksheet	
1	% cover	Species?	Status	Number of Dominant Species (that are OBL, FACW, or FAC?	(A)
2		· ·		Total number of dominant	(B)
4 Tree Stratum Total Cover:				% of dominant species that(are OBL, FACW, or FAC?((A/B)
	N/A	•		Prevalence Index Worksheet	
SAPLING/SHRUBSTRATUM FILLSIZE.	IN/A			Total % cover of: Multiply by:	_
1. 2. 3.		· ·		OBL species x1 FACW species x2 FAC species x3	-
ASapling/Shrub Stratum Total Cover:		· ·		FACU species x4	-
HERB STRATUM Plot Size: 5' radius					- (D)
1. Juncus mexicanus	60	Y	FACW		- (B)
2. Lotus corniculatus	20	Y	FAC	Prevalence Index = B/A =	-
3. Hordeum jubatum	10	<u> N </u>	FAC	Hydrophytic Vegetation Indicators	
4. Poa annua	10	<u> </u>	FAC	Dominance Test is >50%	
5				Prevalence Index is $$	
6 7		· ·		Morphological adaptations (provide supporting data in remarks)	
Herb Stratum Total Cover:	100	· ·		Problematic hydrophytic vegetation ' (expl	lain)
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problema	/ itic.
2.					
Woody Vines Total Cover: % Bare ground in herb stratum <u>0</u>	% cover of biotic crust 0			Hydrophytic Vegetation Present ?	
% Bare ground in herb stratum 0 Remarks: Sample point dominated by FAC and F	ACW plants, m	biotic crust <u>0</u> eets dominance t	est.		

SOIL								Sampling Po	oint SP06	5
Profile descr	ription: (Describ	e to the de	pth needed to docur	nent the	indicator	or confirm	n the absence of ir	ndicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rem	arks	
0-3	2.5Y 2.5/1	85	7.5YR 4/4	15	С	PL, M, RC	Clay	Abundant root	S	
3-9	2.5Y 2.5/1	75	7.5YR 4/4	25	С	PL,RC	Clay			
9-13	2.5Y 2.5/1	70	5Y 5/2	30	D	<u>M</u>	Clay			
·								·		
¹ Type: C=Co	ncentration, D=D	epletion, RI	M=Reduced Matrix.	² Loca	tion: PL=	Pore Lining	g, RC=Root Channe	I, M=Matrix		
Hydric Soil I	ndicators: (Appl	icable to a	II LRRs, unless othe	rwise no	ted.)		Indicators for Pr	oblematic Hydi	ric Soils ³ :	
HISTOSOL	(A1) vinedon (A2)		Sandy Redox (S5) 36)			1cm Muck (As			
Black His	stic (A3)		Loamv Muckv Mir	neral (F1)				10)(LRR B) ic (E18)		
Hydroger	n Sulfide (A4)		Loamy Gleyed Ma	atrix (F2)			Red Parent M	aterial (TF2)		
Stratified	Layers (À5)(LRF	RC)	Depleted Matrix (F3) `́			Other (explain	in remarks)		
🔲 1cm Muc	k (A9)(LRR D)		Redox Dark Surfa	ace (F6)			— (+	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Depleted	I Below Dark Surf	ace (A11)	Depleted Dark Su	ırface (F7	")					
Thick Da	rk Surface (A12)		Redox Depressio	ns (F8)			2			
Sandy M	lucky Mineral (S1)	☐ Vernal Pools (F9)				³ Indicators of hy	dric vegetation a	and	
Sandy G	leyed Matrix (S4)						wetland hydrolog	gy must be pres	ent.	
Restrictive L	Layer (if present):								
Type:										
Depth (inch	nes):		_				Hydric S	oil Present ?	🛛 Yes	🗆 No
Remarks: Sa	mple point meets	hoth denle	ted dark surface (F7)	and redo	x dark sur	face (F6)	•			
Gu		both dopie				uoo (i o).				
	ay .									

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)				
Primary Indicators (any one indicator is sufficier Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	nt) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) oils (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)				
Field Observations: Surface water present? ☐ Yes ☑ No Water table present? ☐ Yes ☑ No Saturation Present? ☑ Yes ☐ No (includes capillary fringe)	Depth (inches): Depth (inches): Depth (inches): <u>13</u>	Wetland Hydrology Present ? 🛛 Yes 🛛 No				
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available. Remarks: Sample point contains oxidized rhizospheres along living roots (C3) and meets the FAC-neutral test (D5).						

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>5/9/2018</u>					
Applicant/Owner Ecosystem Investmer	nt Partners	State CA	Sampling Point SP066					
nvestigator(s) <u>S. Batiuk, R. Akiba-Hajim; WRA Inc</u> Section, Township, Range								
Landform (hillslope, terrace, etc.)Diked	floodplain Loc	cal Relief (concave, convex, none) <u>None</u>	Slope(%) <u>0-2</u>					
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.30</u>	060804 Long: <u>-121.7222002</u>	Datum: WGS 84					
Soil Map Unit Name Sacramento clay,	Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 🛛 (If no, explain in remarks)								
Are any of the following significantly dis	turbed? Degetation	Soil Hydrology Are "Normal Circu	ımstances" present? 🛛 Yes 🔲 No					
Are any of the following naturally proble	matic? DVegetation	Soil Hydrology (If needed, exp	lain any answers in remarks)					
SUMMARY OF FINDINGS - Attach	n site map showing sar	mple point locations, transects, impor	tant features, etc.					
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	□ Yes ⊠ No ⊠ Yes □ No □ Yes ⊠ No	Is the Sampled Area within a Wetland?]Yes 🛛 No					
Remarks: Upland sample point paired soils, but does not meet crit	with SP065. Sample point teria for hydrophytic vegeta	t taken near lower portion of irrigated pasture. tion or wetland hydrology.	Sample point meets criteria for hydric					

	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:		<u> </u>		% of dominant species that(A/B) are OBL, FACW, or FAC?(A/B)
	N/A	-		Prevalence Index Worksheet
SAPLING/SHRUB STRATUM FIOUSIZE.	N/A	-		Total % cover of: Multiply by:
1.				OBL species x1 FACW species x2 FAC species x3 FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. <u>Festuca arundinacea</u> -	75	<u> </u>	FACU	
2. Lotus corniculatus	15	<u> </u>	FAC	
3. Trifolium repens	10	<u> </u>	FACU	Hydrophytic Vegetation Indicators
4				Dominance Test is >50%
5				Prevalence Index is $$
6 7				Morphological adaptations (provide supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	-		
WOODY VINE STRATUM Plot Size: I 1.	N/A			Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		-		Hydrophytic Tyes X No
% Bare ground in herb stratum 0	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Sample point dominated by FACU spec	ies, does not n	neet dominance t	est	

SOIL								Sampling P	oint SP066	
Profile desc	ription: (Describe	e to the de	pth needed to docu	ment the	indicator	or confir	m the absence of i	ndicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rem	arks	
0-2	2.5Y 2.5/1	85	7.5YR 4/4	15	С	PL, M	Clay	Abundant root	S	
2-10	2.5Y 2.5/1	95	7.5YR 4/4	5	С	PL, M	Clay			
10-14	2.5Y 2.5/1	86	7.5YR 4/4	7	С	PL, M	Clay			
			5Y 5/2	7	<u>D</u>	M	Clay			
¹ Type: C=Co	oncentration, D=De	epletion, RI	M=Reduced Matrix.	2Loca	ation: PL=I	Pore Linin	 g, RC=Root Channe	 el, M=Matrix		
Hydric Soil	Indicators: (Appl	icable to a	II LRRs, unless othe	erwise no	oted.)		Indicators for Pr	oblematic Hyd	ric Soils ³ :	
Histosol	(A1)		Sandy Redox (S	5)			1cm Muck (A	9) (LRR C)		
Histic Ep	oipedon (A2)		Stripped Matrix (S6)			2cm Muck (A	10)(LRR B)		
Black Hi	stic (A3)		Loamy Mucky M	ineral (F1)		Reduced Vert	tic (F18)		
	n Sulfide (A4)	-		latrix (F2)			Red Parent N	laterial (TF2)		
	d Layers (A5)(LRR	C)	Depleted Matrix	(F3)			Other (explain in remarks)			
	ck (A9)(LRR D)		Redox Dark Surf	ace (F6)						
	d Below Dark Surfa	ace (A11)		urface (F	()					
	ark Surface (A12)			ons (⊦8)			3			
	lucky Mineral (S1)		U Vernal Pools (F9)			°Indicators of hy	dric vegetation	and	
Sandy G	eleyed Matrix (S4)						wetland hydrolo	gy must be pres	ent.	
Restrictive	Layer (if present)	:								
Type:	h									
Depth (Incl	nes):		_				Hydric S	Soil Present ?	🛛 Yes 🗌 N	C
Remarks: _{Sa}	ample point meets	redox dark	surface (F6).				·			
YUROLOO	ΞY									

Wetland Hydrology Indic	ators:			Secondary Indicators (2 or more required)
Primary Indicators (any on	e indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nor Sediment Deposits (B3) Drift Deposits (B3)(No Surface Soil Cracks (E Inundation Visible on A Water-Stained Leaves) 2)(Nonriverine) nriverine) 36) Aerial Imagery (B7) 5 (B9)	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:				
Surface water present?	∐ Yes ∐ No	Depth (inches):		
Water table present?	🗌 Yes 🔲 No	Depth (inches):		
Saturation Present? (includes capillary fringe)	🛛 Yes 🔲 No	Depth (inches): <u>0-14</u>	Wetland	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (st	tream guage, monito	oring well, aerial photos, etc.) if available).	
Remarks:Sample point sa determined to la	turated throughout s ck wetland hydrolog	oil profile, but no water table present be y.	low, thereby not m	eeting all requirements of A3. Sample point
LIS Army Corpo of Engine				Arid \M/aat

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Project/Site Liberty Farms	City	County Solano	Sampling Date <u>5/9/2018</u>					
Applicant/Owner <u>Ecosystem Investment</u>	Partners	State CA	Sampling Point SP067					
Investigator(s) T. Harris, N. Clark; WRA I	nc	Section,Township,Range						
Landform (hillslope, terrace, etc.) Diked flo	oodplain Lo	ocal Relief (concave, convex, none) <u>None</u>	Slope(%) 0					
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.</u> 3	31327974 Long: <u>-121.7018612</u>	Datum: WGS 84					
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF								
Are climatic/hydrologic conditions on-site	typical for this time of y	ear? 🛛 Yes 🔲 No 🛛 (If no, explain in re	emarks)					
Are any of the following significantly distu	rbed?	n 🔲 Soil 🔲 Hydrology 🛛 Are "Normal Circu	umstances" present? 🛛 Yes 🔲 No					
Are any of the following naturally problem	atic?	n 🔲 Soil 🔲 Hydrology 👘 (If needed, exp	olain any answers in remarks)					
SUMMARY OF FINDINGS - Attach	site map showing s	ample point locations, transects, impo	rtant features, etc.					
Hydrophytic Vegetation Present? Image: Comparison of the sent? Hydric Soil Present? Image: Comparison of the sent? Wetland Hydrology Present? Image: Comparison of the sent?	Yes ☐ No Yes ⊠ No Yes ⊠ No	Is the Sampled Area within a Wetland?]Yes ⊠No					
Remarks: Unpaired upland sample poin vegetation, but does not mee	Lemarks: Unpaired upland sample point taken in area with dark signature (saturation) on aerial imagery. Sample point meets criteria for hydrophytic vegetation, but does not meet criteria for hydric soils or wetland hydrology.							

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
		Species?		Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant species across all strata? 2 (B)
4 Tree Stratum Total Cover: _		•		% of dominant species that(A/B)(A/B)(A/B)
-	 N/A	•		Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
·				OBL species x1
···				FACW species x2
·				FAC species x3
*				FACU species x4
		-		UPL species x5
<u>HERB STRATUM</u> Plot Size: 5' radius				Column Totals (A) (B)
1. Festuca perennis	25	Y	FAC	
2. Hordeum marinum	20	Y	FAC	Prevalence Index = B/A =
3. Trifolium repens	10	<u> </u>	FACU	Hydrophytic Vegetation Indicators
Polypogon monspeliensis	10	<u>N</u>	FACW	Dominance Test is >50%
5. Polygonum aviculare _	10	<u> </u>	UPL	\Box Prevalence Index is = 3.0<sup 1
6. Lotus corniculatus _	10	<u>N</u>	FAC	
7. Rumex crispus	10	<u>N</u>	FAC	supporting data in remarks)
B. Lactuca serriola _	3	<u>N</u>	FACU	Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	_		
WOODY VINE STRATUM Plot Size:	√/A			¹ Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:		· <u> </u>		Hvdrophytic Ray Charles
 % Bare ground in herb stratum 0	% cover of	biotic crust		Vegetation Present ?

SOIL	
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Profile descr	iption: (Describe Matrix	e to the de	pth needed to docun Redo	nent the ind ox Features	dicator	or confirm	n the absence of indicate	ors.)
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ¹	Texture	Remarks
0-18	10YR 3/1	100		<u> </u>	-		<u>Clay</u>	
¹ Type: C=Co	ncentration, D=De	epletion, R	M=Reduced Matrix.	² Locatio	n: PL=P	ore Linin	g, RC=Root Channel, M=N	fatrix
Hydric Soil I	ndicators: (Appli	icable to a	ILLRRs, unless othe	rwise noted	d.)		Indicators for Problem	atic Hydric Soils ³ :
Histosol	(A1)		Sandy Redox (S5)			1cm Muck (A9) (LRF	R C)
Histic Ep	ipedon (A2)		Stripped Matrix (S	56) 56)			2cm Muck (A10)(LR	R B)
	STIC (A3)			neral (F1)			Reduced Vertic (F18	3)
	Lavore (A5)/LPP	(\mathbf{C})		auix (FZ) E2)			Red Parent Material	(1F2)
		. ()	Redox Dark Surfa	-3) ICE (E6)			U Other (explain in rem	narks)
	Below Dark Surf	ace (A11)	Depleted Dark Su	rface (F7)				
	rk Surface (A12)		Redox Depressio	ns (F8)				
Sandy M	ucky Mineral (S1)		Vernal Pools (F9)				³ Indicators of hydric ve	egetation and
Sandy G	leyed Matrix (S4)		_ ()				wetland hydrology mus	st be present.
Restrictive L	ayer (if present)	:						•
Туре:								
Depth (inch	ies):						Hydric Soil Pre	esent ? 🛛 Yes 🛛 No
Remarks: Sa	mple point does n	ot meet in	dicators for hydric soils	3. 				
	- •		-					

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland I	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monite	oring well, aerial photos, etc.) if available		
Remarks: Sample point meets saturation visib wetland hydrology.	le on aerial imagery, but no other hydrolo	ogy indicators were	observed. Sample point determined to lack

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>5/9/2018</u>				
Applicant/Owner Ecosystem Investment Partners		State CA	Sampling Point SP068				
Investigator(s) T. Harris, N. Clark; WRA Inc		Section,Township,Range					
Landform (hillslope, terrace, etc.) Diked floodplain	Local Re	lief (concave, convex, none) <u>Concave</u>	Slope(%) <u>0-1</u>				
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.313890</u>	32 Long: <u>-121.698168</u>	Datum: WGS 84				
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-site typical for	Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 👘 (If no, explain in remarks)						
Are any of the following significantly disturbed?	□ Vegetation □ S	oil 🔲 Hydrology 🛛 Are "Normal Circums	stances" present? 🛛 Yes 🔲 No				
Are any of the following naturally problematic?	□ Vegetation □ S	oil 🛛 Hydrology (If needed, explai	n any answers in remarks)				
SUMMARY OF FINDINGS - Attach site ma	p showing sample	point locations, transects, importa	nt features, etc.				
Hydrophytic Vegetation Present?X YesHydric Soil Present?X YesWetland Hydrology Present?X Yes] No] No] No	Is the Sampled Area אין Within a Wetland?	∕es □No				
Remarks: Wetland sample point paired with SPC hydric soils, and wetland hydrology.	069. Sample point take The boundary was base	en in wetland ditch. Sample point meets cr ed on a shift in topography and vegetation.	iteria for hydrophytic vegetation,				

IREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
·	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant 2(B)
Tree Stratum Total Cover:				% of dominant species that
SAPLING/SHRUB STRATUM Plot Size:	N/A			Prevalence Index Worksheet Total % cover of: Multiply by:
2. 3. 4 Sapling/Shrub Stratum Total Cover:		·		OBL species x1 FACW species x2 FAC species x3 FACU species x4 UPL species x5
HERB STRATUM Plot Size: 5' radius		v	FAC	Column Totals (A) (B)
2. Cyperus eragrostis	40	Y	FACW	Prevalence Index = B/A =
i.	100 N/A			Hydrophytic Vegetation Indicators ☑ Dominance Test is >50% □ Prevalence Index is = 3.0<sup 1 □ Morphological adaptations (provide supporting data in remarks) □ Problematic hydrophytic vegetation ¹ (explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2 Woody Vines Total Cover: % Bare ground in herb stratum	_ % cover of	biotic crust		Hydrophytic ⊠ Yes □ No Vegetation Present ?

SOIL	
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Profile descr Depth	iption: (Describe Matrix	e to the dep	oth needed to docun Redo	nent the i	i ndicator es	or confiri	m the absence of indicators.) –		
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ¹	TextureRemarks		
0-5	10YR 3/1	100	-				Clay		
<u>5-15</u>	10YR 3/1	90	<u>2.5Y 4/2</u>	10	D	<u>M</u>	<u> </u>	—	
				·					
¹ Type: C=Cor	ncentration, D=De	epletion, RM	1=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	ng, RC=Root Channel, M=Matrix		
Hydric Soil II	ndicators: (Appl	icable to al	I LRRs, unless othe	rwise not	ted.)		Indicators for Problematic Hydric Soils ³ :		
Histosol (AI) nedon (A2)		Sandy Redox (S5	9) 36)			☐ 1cm Muck (A9) (LRR C)		
	tic (A3)		Loamy Mucky Mir	heral (F1)			D Bodycod Vertic (E18)		
	n Sulfide (A4)		Loamy Gleved Ma	atrix (F2)			Reduced Vertic (FTo) Red Parant Material (TE2)		
☐ Stratified	Lavers (A5)(LRR	(C)	Depleted Matrix (F3)			$\square \text{ Area Falent Material (1F2)}$		
🗍 1cm Muc	k (A9)(LRR D)	- /	Redox Dark Surfa	ace (F6)					
Depleted	Below Dark Surfa	ace (A11)	Depleted Dark Su	irface (F7)				
Thick Da	rk Surface (A12)		Redox Depression	ns (F8)					
Sandy M	ucky Mineral (S1)		Vernal Pools (F9)				³ Indicators of hydric vegetation and		
Sandy GI	eyed Matrix (S4)						wetland hydrology must be present.		
Restrictive L	ayer (if present).	:							
Туре:			_						
Depth (inch	es):		_				Hydric Soil Present ? 🛛 Yes 🗌 No		
Remarks: _{Sar}	nple point meets	depleted da	ark surface (F7).						

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici-		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	g Roots (C3) Soils (C6) Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)	
Field Observations:		
Surface water present? Yes X No	Depth (inches):	
Water table present? 🛛 🛛 Yes 🔲 No	Depth (inches): <u>8</u>	
Saturation Present? Xes I No (includes capillary fringe)	Depth (inches): 0	Wetland Hydrology Present ? 🛛 Yes 🔲 No
Describe recorded data (stream guage, monito	oring well, aerial photos, etc.) if available	9.
Remarks: Sample point meets the high water t	able (A2), saturation (A3), water-stained	l leaves (B9), Biotic Crust (B12) and FAC-neutral test (D5).

Project/Site Liberty Farms	City	County Solano		Sampling Date <u>5/9/2018</u>
Applicant/Owner Ecosystem Investment P	artners	St	tate <u>CA</u> Sa	mpling Point SP069
Investigator(s) T. Harris, N. Clark; WRA In	IC	Section, Township	,Range	
Landform (hillslope, terrace, etc.)Diked flo	odplain L	ocal Relief (concave, convex, no	one) <u>None</u>	Slope(%) 2
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38</u> .	3138743 Long: -	-121.6981636	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0	to 2 percent slopes		NWI classification <u>F</u>	F
Are climatic/hydrologic conditions on-site t	ypical for this time of y	vear? 🛛 Yes 🗌 No 🛛 (If	no, explain in remarks)	
Are any of the following significantly distur	bed?	on 🗌 Soil 🔲 Hydrology Ar	re "Normal Circumstanc	es" present? 🛛 Yes 🔲 No
Are any of the following naturally problema	atic? 🛛 Vegetatio	on 🛛 Soil 🔲 Hydrology	(If needed, explain any	answers in remarks)
SUMMARY OF FINDINGS - Attach s	ite map showing s	ample point locations, tran	<u>nsects, important fe</u>	atures, etc.
Hydrophytic Vegetation Present? Image: Comparison of the second seco	Yes 🖾 No Yes 🖾 No Yes 🖾 No	Is the Sampled A within a Wetland	Area 🛛 Yes d?	⊠ No
Remarks: Upland sample point paired wi vegetation, but does not meet	th SP068. Sample po criteria for hydric soils	int taken in field adjacent to ditch or wetland hydrology.	h. Sample point meets	wetland criteria for hydrophytic

VEGETATION (use scientific names)	Abaaluta		lu ali a a ta u	Ι
TREE STRATUM Plot Size: N/A	Absolute — % cover	Dominant Species?	Status	Dominance Test Worksheet
1				Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant generation (B)
4 Tree Stratum Total Cover:		·		% of dominant species that67(A/B) are OBL, FACW, or FAC?
	NI/A	-		Prevalence Index Worksheet
SAPLING/SHRUB STRATUM Flot Size.	IN/A	-		Total % cover of: Multiply by:
1				OBL species x1
2				FACW species x2
3		·		FAC species x3
				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Festuca perennis	30	Y	FAC	
2. Lotus corniculatus	30	Y	FAC	Prevalence Index = B/A =
3. Melilotus indicus	25	Y	FACU	Hydrophytic Vegetation Indicators
4. Lactuca serriola	5	<u> </u>	FACU	Dominance Test is >50%
5. Rumex crispus	5	<u>N</u>	FAC	Prevalence Index is $$
6. Hordeum murinum	3	<u>N</u>	FAC	
7. Helminthotheca echioides	2	<u>N</u>	FAC	supporting data in remarks)
8. Sonchus asper	t	<u> </u>	FAC	Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	-		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1.				must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:		_		
% Bare ground in herb stratum % cover of biotic crus				Vegetation Present ?
Remarks: Sample point dominated by FAC and F	ACU species, n	neets dominance	test.	•

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Profile descr Depth	iption: (Describe Matrix	to the de	pth needed to docum Redo	ent the in x Feature	n dicator c s	or confirm	rm the absence of indicators.) –
(inches)	Color (moist)	%	Color (moist)		Type ¹	_Loc ¹	Texture Remarks
0-14	10YR 3/1	<u>100</u>					
¹ Type: C=Cor Hydric Soil Ir	ncentration, D=De	pletion, RI	M=Reduced Matrix.	² Locat wise not	ion: PL=P ed.)	ore Lining	ng, RC=Root Channel, M=Matrix Indicators for Problematic Hydric Soils ³ :
☐ Histosol (☐ Histic Epi ☐ Black His ☐ Hydroger ☐ Stratified ☐ 1cm Muc ☐ Depleted ☐ Thick Dar ☐ Sandy Mu	A1) pedon (A2) tic (A3) I Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa k Surface (A12) ucky Mineral (S1)	C) ce (A11)	 Sandy Redox (S5) Stripped Matrix (S Loamy Mucky Min Loamy Gleyed Matrix (F Redox Dark Surfa Depleted Dark Surfa Depleted Dark Surfa Vernal Pools (F9) 	6) eral (F1) trix (F2) '3) ce (F6) face (F7) is (F8)	,		 1cm Muck (A9) (LRR C) 2cm Muck (A10)(LRR B) Reduced Vertic (F18) Red Parent Material (TF2) Other (explain in remarks)
Sandy Gl	eyed Matrix (S4)		_ ()				wetland hydrology must be present.
Restrictive L Type: Depth (inch	ayer (if present): es):						Hydric Soil Present ? 🗌 Yes 🛛 No
Remarks: _{Sar}	nple point does no	ot meet inc	licators for hydric soils				

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici			
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 	
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present? 🛛 🛛 Yes 🛛 No	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monito	oring well, aerial photos, etc.) if available		
Remarks: No indicators of wetland hydrology o	observed.		

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>5/9/2018</u>
Applicant/Owner <u>Ecosystem Investment</u>	Partners	State CA	Sampling Point SP070
Investigator(s) T. Harris, N. Clark; WRA I	nc	Section,Township,Range	
Landform (hillslope, terrace, etc.) Diked flo	oodplain Lo	ocal Relief (concave, convex, none) <u>None</u>	Slope(%) _1
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.</u> 3	31348638 Long: <u>-121.6976593</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0	to 2 percent slopes	NWI classifi	cation <u>PF</u>
Are climatic/hydrologic conditions on-site	typical for this time of y	ear? 🛛 Yes 🔲 No 🛛 (If no, explain in re	emarks)
Are any of the following significantly distu	rbed?	n 🔲 Soil 🔲 Hydrology 🛛 Are "Normal Circu	umstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	atic?	n 🔲 Soil 🔲 Hydrology 💦 (If needed, exp	plain any answers in remarks)
SUMMARY OF FINDINGS - Attach	site map showing s	ample point locations, transects, impor	tant features, etc.
Hydrophytic Vegetation Present? Image: Comparison of the second seco	Yes ☐ No Yes ⊠ No Yes ⊠ No	Is the Sampled Area within a Wetland?]Yes 🛛 No
Remarks: Unpaired upland sample poin vegetation, but does not mee	t taken in area with dark t criteria for hydric soils	signature (saturation) in aerial imagery. Sam or wetland hydrology.	ble point meets criteria for hydrophytic

	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 ·				Total number of dominant species across all strata?
4 Tree Stratum Total Cover:				% of dominant species that67(A/B)
SAPI ING/SHRUB STRATUM Plot Size	N/A	-		Prevalence Index Worksheet
		•		Total % cover of: Multiply by:
·· ·		·		OBL species x1
^{2.}		·		FACW species x2
3		·		FAC species x3
4 ·		·		FACU species x4
Sapling/Shrub Stratum Total Cover:				UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Trifolium repens	35	Y	FACU	
2. Hordeum marinum	20	Y	FAC	Prevalence Index = B/A =
3. Lotus corniculatus	20	Y	FAC	Hydrophytic Vegetation Indicators
4 . Festuca perennis	15	<u> </u>	FAC	Dominance Test is >50%
5. Rumex crispus	5	<u> </u>	FAC	\square Browelence Index is $$
6. Helminthotheca echioides	5	<u> </u>	FAC	
7				Morphological adaptations (provide supporting data in remarks)
^{8.}		·		Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100			1
WOODY VINE STRATUM Plot Size:	N/A			'Indicators of hydric soil and wetland hydrology
1				Indist be present, unless disturbed of problematic.
2				
Woody Vines Total Cover:				Hydrophytic M Yee T No
% Bare ground in herb stratum % cover of biotic crust				Vegetation Present ?

SOIL	
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Profile descu	ription: (Describe Matrix	e to the de	pth needed to docur Red	nent the i ox Feature	indicator	or confir	m the absence of indic	ators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rem	arks	
0-4	2.5Y 3/1	100			-	-	<u>C</u>			
4-14	10YR 3/1	100	<u> </u>	· <u>-</u>			<u> </u>			
¹ Type: C=Co	ncentration, D=De	epletion, R	M=Reduced Matrix.	² Loca	tion: PL=F	ore Linin	g, RC=Root Channel, M	=Matrix	3	
Histosol Histic Ep Black His Hydrogel Stratified 1cm Muc Depleted Thick Da Sandy M Sandy G	(A1) ipedon (A2) stic (A3) n Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surface rk Surface (A12) ucky Mineral (S1) leyed Matrix (S4)	: C) ace (A11)	 Sandy Redox (S5 Stripped Matrix (S6 Loamy Mucky Mi Loamy Gleyed M Depleted Matrix (Redox Dark Surfa Depleted Dark St Redox Depression Vernal Pools (F9) 	5) S6) neral (F1) atrix (F2) F3) ace (F6) urface (F7 ns (F8)))		Icm Muck (A9) (L 2cm Muck (A10)(L Reduced Vertic (F Red Parent Mater Other (explain in r ³ Indicators of hydric wetland hydrology m	RR C) .RR B) 18) ial (TF2) emarks) vegetation a nust be prese	and ent.	
Restrictive I	_ayer (if present)	:								
Туре:										
Depth (inch	ies):						Hydric Soil I	Present ?	□ Yes D	🛛 No
Remarks: _{Sa}	mple point does n	ot meet hy	dric soil indicators.							

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)	
Surface Water (A1) Salt Crust (B1) High Water Table (A2) Biotic Crust (B Saturation (A3) Aquatic Inverter Water Marks (B1)(Nonriverine) Hydrogen Sulf Sediment Deposits (B2)(Nonriverine) Oxidized Rhize Drift Deposits (B3)(Nonriverine) Presence of R Surface Soil Cracks (B6) Recent Iron Re Inundation Visible on Aerial Imagery (B7) Other (Explain Water-Stained Leaves (B9) Water-Stained Leaves (B9)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Prift Deposits (B3)(Riverine) Prift Deposits (B1) Prift Deposits (B1) Prift Deposits (C1) Privacion (C2) Print Muck Surface (C7) Privacion (C4) Proved Soils (C6) Naturation Visible on Aerial Imagery (C9) Proved Soils (C6) Proved Soils (C6) Proved Soils (C2) Proved Soils (C2) Proved Soils (C2) Proved Soils (C2) Proved Soils (C3) Proved Soils (C3) P
Field Observations:	
Surface water present?	
Water table present?	
Saturation Present? Yes X No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present ?
Describe recorded data (stream guage, monitoring well, aerial ph	os, etc.) if available.
Remarks:Sample point contains saturation visible in aerial image hydrology.	, but no other hydrology indicators. Sample point determined to lack wetland

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>5/9/2018</u>
Applicant/Owner <u>Ecosystem Investment</u> F	artners	State <u>CA</u>	Sampling Point SP071
Investigator(s) T. Harris, N. Clark; WRA Ir	10	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked flo	odplain L	ocal Relief (concave, convex, none) <u>None</u>	Slope(%) <u>1</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.</u>	31302147 Long: <u>-121.6959156</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0	to 2 percent slopes	NWI class	ification <u>PF</u>
Are climatic/hydrologic conditions on-site t	typical for this time of y	rear? 🛛 Yes 🗌 No 🛛 (If no, explain in	remarks)
Are any of the following significantly distur	bed? 🔲 Vegetatio	n 🔲 Soil 🔲 Hydrology 🛛 Are "Normal Cir	rcumstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problema	atic? 🔲 Vegetatio	n 🗌 Soil 🔲 Hydrology (If needed, e	explain any answers in remarks)
SUMMARY OF FINDINGS - Attach s	ite map showing s	ample point locations, transects, imp	ortant features, etc.
Hydrophytic Vegetation Present? Image: Comparison of the second seco	Yes 🖾 No Yes 🖾 No Yes 🖾 No	Is the Sampled Area within a Wetland?	🗆 Yes 🛛 No
Remarks: Unpaired upland sample point vegetation, but does not meet	taken in area with darl criteria for hydric soils	k signature (saturation) in aerial imagery. Sar or wetland hydrology.	nple point meets criteria for hydrophytic

REF STRATUM Plot Size N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet		
·	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?		
·		·		Total number of dominant species across all strata? 2 (B)		
Tree Stratum Total Cover:				% of dominant species that 100 (A/B are OBL, FACW, or FAC?		
APLING/SHRUB STRATUM Plot Size:	N/A	•		Prevalence Index Worksheet		
		-		Total % cover of: Multiply by:		
·		·		OBL species x1		
·		•		FACW species x2		
		•		FAC species x3		
·				FACU species x4		
Sapling/Shrub Stratum Total Cover:		-		UPL species x5		
ERB STRATUM Plot Size: 5' radius				Column Totals (A) (B		
Hordeum marinum	40	Y	FAC			
Lotus corniculatus	40	Y	FAC	Prevalence Index = B/A =		
Trifolium repens	10	<u> </u>	FACU	Hydrophytic Vegetation Indicators		
Lepidium latifolium	5	<u>N</u> N	FAC FAC	Dominance Test is >50% □ Prevalence Index is = 3.0<sup 1		
Festuca perennis	3					
Helminthotheca echioides	2	<u>N</u>	FAC	Morphological adaptations (provide supporting data in remarks)		
Herb Stratum Total Cover	100	•		Problematic hydrophytic vegetation ' (explain		
NOODY VINE STRATUM Plot Size N/A		-		¹ Indicators of hydric soil and wetland hydrology		
				must be present, unless disturbed or problematic.		
Woody Vines Total Cover:		<u> </u>		Hydrophytic Marcon No.		
% Bare ground in herb stratum	Vegetation Present ?					

SOIL	
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Depth	Matrix		Redo	ox Features	1 . 1		Demonster		
(inches)	Color (moist)	%	Color (moist)	% Туре	Loc'	Texture	Remarks		
0-14	2.5Y 3/1	<u> 100 </u>		· <u>- </u>		<u>Clay</u>			
				· ·					
¹ Type: C=Co	ncentration, D=De	epletion, RI	M=Reduced Matrix.	² Location: PL:	=Pore Linin	g, RC=Root Channel, M	=Matrix		
Hydric Soil II	ndicators: (Appli	cable to a	II LRRS, UNIESS OTHE	rwise noted.)		Indicators for Proble	Indicators for Problematic Hydric Soils ³ :		
	ipedon (A2)		Stripped Matrix (S	56)		C 1Cm Muck (A9) (L	$\square 1 \text{ cm Muck (A9) (LRR C)}$		
Black His	tic (A3)		Loamy Mucky Mi	neral (F1)		Reduced Vertic (F	$\square \text{ Reduced Vertic (F18)}$		
Hydroger	n Sulfide (A4)		Loamy Gleyed M	atrix (F2)		Red Parent Material (TF2)			
Stratified Stratified Control Stratified Stratified Stratified Stratified Stratified Stratified Stratifie	Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa	C) ace (A11)	Depleted Matrix (Redox Dark Surfa Depleted Dark Su	F3) ace (F6) urface (F7)		☐ Other (explain in r	emarks)		
	rk Surface (A12) ucky Mineral (S1)			ns (F8)		³ Indiactors of hudria	vegetation and		
Sandy Middky Milleral (S1)						wetland hydrology m	wetland hydrology must be present.		
Restrictive L	ayer (if present)	:							
Type:									
Depth (inch	es):					Hydric Soil I	Present ? 🗌 Yes 🖾 No		
Remarks: _{Sai}	mple point does n	ot meet hy	dric soil indicators.			•			
	-								

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)					
Primary Indicators (any one indicator is sufficient)						
Surface Water (A1) Salt Crust (B1 High Water Table (A2) Biotic Crust (B Saturation (A3) Aquatic Inverter Water Marks (B1)(Nonriverine) Hydrogen Sulf Sediment Deposits (B2)(Nonriverine) Oxidized Rhize Drift Deposits (B3)(Nonriverine) Presence of R Surface Soil Cracks (B6) Recent Iron Re Inundation Visible on Aerial Imagery (B7) Other (Explain Water-Stained Leaves (B9) Water-Stained Leaves (B9)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Prift Deposits (B3)(Riverine) Prift Deposits (B1) Prift Deposits (B1) Prift Deposits (C1) Privacion (C2) Print Muck Surface (C7) Privacion (C4) Proved Soils (C6) Naturation Visible on Aerial Imagery (C9) Proved Soils (C6) Proved Soils (C6) Proved Soils (C2) Proved Soils (C2) Proved Soils (C2) Proved Soils (C2) Proved Soils (C3) Proved Soils (C3) P					
Field Observations:						
Surface water present? Yes X No Depth (inches):						
Water table present?						
Saturation Present? Yes X No Depth (inches):	Wetland Hydrology Present ?					
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks:Sample point contains saturation visible in aerial image hydrology.	, but no other hydrology indicators. Sample point determined to lack wetland					
Project/Site Liberty Farms	City	Sampling Date <u>5/9/2018</u>				
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Applicant/Owner <u>Ecosystem Investme</u>	nt Partners		State <u>CA</u>	Sampling Point SP072		
Investigator(s) <u>T. Harris, N. Clark; WR</u>	A Inc	Section,Town	ship,Range			
Landform (hillslope, terrace, etc.)Diked	floodplain Loca	al Relief (concave, conve	x, none) <u>Concave</u>	Slope(%) 2		
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.313</u>	363817 Lor	ng: <u>-121.6951594</u>	Datum: WGS 84		
Soil Map Unit Name Sacramento clay	v, 0 to 2 percent slopes		NWI classifica	tion <u>PF</u>		
Are climatic/hydrologic conditions on-s	ite typical for this time of year	? 🛛 Yes 🗖 No	(If no, explain in rem	narks)		
Are any of the following significantly dis	sturbed? Vegetation	Soil 🛛 Hydrology	Are "Normal Circum	nstances" present? 🛛 Yes 🔲 No		
Are any of the following naturally proble	ematic? Degetation	Soil 🛛 Hydrology	(If needed, expla	in any answers in remarks)		
SUMMARY OF FINDINGS - Attac	<u>h site map showing sam</u>	ple point locations,	transects, importa	ant features, etc.		
Hydrophytic Vegetation Present?	🛛 Yes 🔲 No	Is the Sampl	ed Area 🛛 🖂			
Hydric Soil Present?	Yes 🛛 No	within a Wet	land?			
Wetland Hydrology Present?	🛛 Yes 🔲 No					
Remarks: Wetland sample point paire	ed SP073. Sample point is lo d wetland hydrology Bounda	cated in a seasonal wetla ary based on shift in yequ	and swale. Sample p	oint meets criteria for hydrophytic v		

	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2. 3.				Total number of dominant (B)
4 Tree Stratum Total Cover: _				% of dominant species that 100 (A/B) (A/B)
SAPI ING/SHRUB STRATUM Plot Size:	N/A			Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
^{1.}				OBL species x1
^{2.}		·		FACW species x2
		- <u> </u>		FAC species x3
				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. <u>Festuca perennis</u> _	45	Y	FAC	
2. Lotus corniculatus	30	Y	FAC	Prevalence Index = B/A =
3. <u>Rumex crispus</u> -	15	<u>N</u>	FAC	Hydrophytic Vegetation Indicators
4. Hordeum marinum	10	<u>N</u>	FAC	Dominance Test is >50%
5. Convolvulus arvensis	t	<u> </u>	NL	Prevalence Index is $$
6				
7		·		supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	-		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1.				must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:				
% Bare ground in herb stratum	% cover of	biotic crust		Vegetation Present ?
Remarks: Sample point dominated by FAC specie	s, meets domi	nance test.		

SOIL								Sampling Po	oint SP07	2
Profile desc	ription: (Describe	e to the de	pth needed to docu	ment the	indicator	or confiri	n the absence of i	ndicators.)		
_(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Rema	arks	
0-4	10YR 3/1	95	10YR 4/4	5	С	PL/RC	Clay			
4-8	10YR 3/1	100	-		-		Clay			
8-10	10YR 3/1	60	<u>.</u>				Clay			
	2.5Y 5/4	40	-		-		Clay	Soil mixing		
10-14+	10YR 3/1	100	-		-		Clay			
¹ Type: C=Co Hydric Soil Histosol Histic Ep Black Hii Hydroge Stratified	Indicators: (Appli (A1) pipedon (A2) stic (A3) n Sulfide (A4) d Layers (A5)(LRR	cable to a	M=Reduced Matrix.	² Loca erwise no 5) S6) neral (F1) latrix (F2) (F3) acc (F6)	tion: PL=F ted.)	Pore Linin	g, RC=Root Chann Indicators for P 1 cm Muck (A 2 cm Muck (A Reduced Ver Red Parent N Other (explai	el, M=Matrix roblematic Hydr .9) (LRR C) .10)(LRR B) tic (F18) /Jaterial (TF2) n in remarks)	ic Soils ³ :	
Depleted Thick Da Sandy M Sandy G	I Below Dark Surfa ark Surface (A12) lucky Mineral (S1) ileyed Matrix (S4)	ace (A11)	Depleted Dark Su Redox Depressio Vernal Pools (F9	urface (F7 ons (F8))	<i>(</i>)		³ Indicators of h wetland hydrolo	ydric vegetation a ogy must be prese	and ent.	
Type:	Layer (ii present)	-								
Depth (incl	nes):		_				Hydric	Soil Present ?	🛛 Yes	🗆 No
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).				ł			

Wetland Hydrology Indicators:			Secondary Indicators (2	2 or more required)				
Primary Indicators (any one indicator is suffic	ient)							
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	Water Marks (B1)(R Sediment Deposits Drift Deposits (B3)(I Drainage Patterns (Dry-Season Water Thin Muck Surface Crayfish Burrows (C Saturation Visible oi Shallow Aquitard (D FAC-Neutral Test ([]	(B2)(Riverine) (B2)(Riverine) Riverine) B10) Table (C2) (C7) (C7) (C7) (C7) (C8) n Aerial Imagery (C9) (C9) (C9)				
Field Observations:								
Surface water present? Yes No	Depth (inches):							
Water table present? Yes X No	Depth (inches):							
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	Wetland H	lydrology Present ?	🛛 Yes 🛛 No				
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.								
Remarks: Sample point contains oxidized rhiz	ospheres along living roots (C3).							

Project/Site Liberty Farms	City	County	Solano	Sampling Date <u>5/9/2</u>	:018
Applicant/Owner <u>Ecosystem Investment Par</u>	tners		State <u>CA</u>	Sampling Point SP073	
Investigator(s) T. Harris, N. Clark; WRA Inc		Section,T	ownship,Range		
Landform (hillslope, terrace, etc.)Diked flood	plain Lo	ocal Relief (concave, co	onvex, none) <u>None</u>	Slope(%)	1
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.</u> 3	31365952	Long: <u>-121.695236</u>	Datum: WGS 84	
Soil Map Unit Name <u>Sacramento clay, 0 to</u>	2 percent slopes		NWI classifi	ication <u>PF</u>	
Are climatic/hydrologic conditions on-site typ	ical for this time of y	ear? 🛛 Yes 🗌 No	(If no, explain in r	emarks)	
Are any of the following significantly disturbe	d? 🗌 Vegetation	n 🔲 Soil 🔲 Hydrolo	gy Are "Normal Circ	umstances" present? 🛛 Yes	🗆 No
Are any of the following naturally problematic	? 🛛 Vegetation	n 🔲 Soil 🔲 Hydrolo	gy (If needed, exp	plain any answers in remarks)	
SUMMARY OF FINDINGS - Attach site	e map showing s	ample point locatio	ns, transects, impor	rtant features, etc.	
Hydrophytic Vegetation Present? Ye Hydric Soil Present? Ye Wetland Hydrology Present? Ye	es □ No es ⊠ No es ⊠ No	Is the Sa within a ^y	mpled Area [Wetland?	☐Yes ⊠No	
Remarks: Upland sample point paired with hydrophytic vegetation, but does	SP072. Sample poi not meet criteria for	nt taken adjacent to se hydric soils or wetland	asonal wetland swale. \$ hydrology.	Sample point meets criteria for	

VEGETATION (use scientific names)				1
TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant	Indicator Status	Dominance Test Worksheet
1				Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant1(B)
4 Tree Stratum Total Cover:				% of dominant species that(A/B) are OBL, FACW, or FAC?(A/B)
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
2 3 4				OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:		-		FACU species x4 UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. <u>Festuca perennis</u>	40	Y	FAC	
2. <u>Convolvulus arvensis</u>	15	<u> </u>	NL	
3. Hordeum murinum	10	<u> </u>	FAC	Hydrophytic Vegetation Indicators
4. Geranium dissectum	5	<u> </u>	UPL	Dominance Test is >50%
5. <u>Vicia sativa</u>	5	<u> </u>	FACU	Prevalence Index is $$
6. <u>Medicago sativa</u> 7	5	<u>N</u>	UPL	Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover:	80			Problematic hydrophytic vegetation (explain)
WOODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2 Woody Vines Total Cover:				Hydrophytic Marca Data
% Bare ground in herb stratum <u>10</u>	% cover of	biotic crust		Vegetation Present ?
Remarks: Sample point doinated by FAC species	s, meets domina	ance test.		

SOIL								Sampling Po	oint <u>SP07</u>	3
Profile desc	ription: (Describe	e to the de	epth needed to docu	iment the	indicator	or confir	m the absence of	indicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rem	arks	
0-4	2.5Y 3/1	100	-		-	-	Clay			
4-6	2.5Y 3/1	70	<u> </u>		-	-	Clay	Soil mixing		
	10YR 5/6	30	<u> </u>		-	-	Clay loam	non-redox mot	tles	
6-12	2.5Y 3/1	100	<u> </u>				Clay			
¹ Type: C=Co	oncentration, D=De	epletion, R	M=Reduced Matrix.	² Loca	ation: PL=F	Pore Linin	g, RC=Root Chanr	nel, M=Matrix		
Histosol Histoc E Black H Hydroge Stratifie Check Da Sandy M Sandy M	(A1) pipedon (A2) istic (A3) on Sulfide (A4) d Layers (A5)(LRR ck (A9)(LRR D) d Below Dark Surf ark Surface (A12) Mucky Mineral (S1) Bleyed Matrix (S4)	(C) ace (A11)	 Sandy Redox (S Stripped Matrix Loamy Mucky M Loamy Gleyed M Depleted Matrix Redox Dark Sur Depleted Dark S Redox Depressi Vernal Pools (F9) 	(S6) (S6) Iineral (F1) Aatrix (F2) (F3) face (F6) Surface (F7 ons (F8) 9)) 7)		a Icm Muck (a 2cm Muck (a 2cm Muck (a Reduced Ve a Red Parent b Other (explate a Other (explate b Wetland hydrol b Content A A A A A A A A A A A A A A A A A A A	A9) (LRR C) A10)(LRR B) Prtic (F18) Material (TF2) in in remarks) hydric vegetation a logy must be pres	and ent.	
Type:	Layer (if present)):								
Depth (inc	hes):		_				Hydric	Soil Present ?	□ Yes	🛛 No
Remarks: _{Sa}	ample point does r	not meet in	dicators for hydric so	ils.			- i			

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficie	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 	
Field Observations:	Donth (inchoo):		
Water table present? ☐ Yes ☑ No Saturation Present? ☐ Yes ☑ No	Depth (inches): Depth (inches):		
(includes capillary fringe)		Wetland I	Hydrology Present ? LI Yes 🖄 No
Describe recorded data (stream guage, monitor	ring well, aerial photos, etc.) if available		
Remarks: No indicators of wetland hydrology ob	oserved.		

Project/Site Liberty Farms	City	County <u>Sola</u>	ino	Sampling Date <u>5/9/2018</u>				
Applicant/Owner Ecosystem Investmen	t Partners		State <u>CA</u>	Sampling Point SP074				
Investigator(s) T. Harris, N. Clark; WRA	Inc	Section,Town	iship,Range					
Landform (hillslope, terrace, etc.)Diked	floodplain	Local Relief (concave, conve	x, none) <u>None</u>	Slope(%) 1				
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38</u>	3.31011004 Lor	ng: <u>-121.6941661</u>	Datum: WGS 84				
Soil Map Unit Name Sacramento clay,	0 to 2 percent slopes		NWI classifica	ation <u>PF</u>				
Are climatic/hydrologic conditions on-sit	Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 🛛 (If no, explain in remarks)							
Are any of the following significantly dis	turbed? 🔲 Vegetat	ion 🛛 Soil 🔲 Hydrology	Are "Normal Circur	nstances" present? 🛛 Yes 🔲 No				
Are any of the following naturally proble	matic? 🛛 Vegetat	ion 🛛 Soil 🔲 Hydrology	(If needed, expla	ain any answers in remarks)				
SUMMARY OF FINDINGS - Attach	site map showing	sample point locations,	transects, import	ant features, etc.				
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	X Yes □ No □ Yes X No □ Yes X No	Is the Sampl within a Wet	led Area 🛛 🗌 land?	Yes 🖾 No				
Remarks: Upland sample point paired does not meet criteria for hy	with SP075. Sample p dric soils or wetland hy	oint taken at edge of field. Sa drology.	ample point meets cri	iteria for hydrophytic vegetation, but				

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1		Species?		Number of Dominant Species (A) that are OBL, FACW, or FAC?
2		·		Total number of dominant3(B)
4 Tree Stratum Total Cover:				% of dominant species that67(A/B are OBL, FACW, or FAC?
SAPI ING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
·· · . 2				OBL species x1
··		·		FACW species x2
 4		·		FAC species x3
Sapling/Shrub Stratum Total Cover:		·		FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B
1. Melilotus indicus	40	<u> </u>	FACU	
2. Rumex crispus	20	<u> </u>	FAC	
3. Xanthium strumarium	20	<u> </u>	FAC	Hydrophytic Vegetation Indicators
4. Unknown grass	10	<u> </u>	?	Dominance Test is >50%
5. Lactuca serriola	5	<u> </u>	FACU	Prevalence Index is $$
6. Rumex pulcher	5	N	FAC	Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover:	100			Problematic hydrophytic vegetation (explain)
WOODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
^{1.} 2		·		
Woody Vines Total Cover:		·		Hydrophytic ⊠ Yes □ No
% Bare ground in herb stratum 0	% cover of	biotic crust		vegetation Present ?

SOIL	
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Profile descr	iption: (Describe Matrix	to the de	pth needed to docun Redo	n ent the indicato ox Features	r or confir	m the absence of indicator	rs.)
(inches)	Color (moist)	%	Color (moist)	% Type ¹	Loc1	Texture	Remarks
0-14	2.5Y 3/1	100		<u> </u>		<u> </u>	
		- <u> </u>					
¹ Type: C=Cor	ncentration, D=De	pletion, RI	M=Reduced Matrix.	² Location: PL=	Pore Linin	g, RC=Root Channel, M=Ma	atrix
Histosol (Histosol (Histic Epi Black His Hydroger Stratified 1cm Muc Depleted Thick Daa	A1) pedon (A2) tic (A3) n Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa rk Surface (A12)	C) ace (A11)	Sandy Redox (S5 Stripped Matrix (S Loamy Mucky Mir Loamy Gleyed Matrix (I Redox Dark Surfa Depleted Dark Surfa Redox Depression) ineral (F1) atrix (F2) =3) ince (F6) inface (F7) ins (F8)		1cm Muck (A9) (LRR 2cm Muck (A10)(LRR Reduced Vertic (F18) Red Parent Material (Other (explain in rema	TF2) arks)
Sandy Mi	ucky Mineral (S1) eyed Matrix (S4)		Vernal Pools (F9)			Indicators of hydric veg wetland hydrology must	jetation and be present.
Restrictive L	ayer (if present).	:					
Туре:							
Depth (inch	es):					Hydric Soil Pres	sent ? 🗌 Yes 🖾 No
Remarks: _{Sar}	nple point does n	ot meet ind	licators of hydric soils.				

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)	t)	
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:		
Surface water present? Yes X No De	Depth (inches):	
Water table present? 🛛 🛛 Yes 🛛 No 🛛 De	Depth (inches):	
Saturation Present?	Depth (inches):	Wetland Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monitoring	ng well, aerial photos, etc.) if available.).
Remarks: No wetland hydrology indicators observ	ved.	

Project/Site Liberty Farms	City	County <u>Solano</u>		Sampling Date 5/9/2018
Applicant/Owner <u>Ecosystem Investment</u> F	Stat	e <u>CA</u> Sa	ampling Point SP075	
Investigator(s) T. Harris, N. Clark; WRA Ir	IC	Section,Township,R	ange	
Landform (hillslope, terrace, etc.)Diked flo	odplain I	ocal Relief (concave, convex, non	e) <u>None</u>	Slope(%) <u>0</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38</u>	.30846995 Long: <u>-1</u> 2	21.6972823	Datum: WGS 84
oil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF				
Are climatic/hydrologic conditions on-site	ypical for this time of	year? ⊠ Yes □ No (If no	o, explain in remarks))
Are any of the following significantly distur	bed? 🔲 Vegetati	on 🗌 Soil 🔲 Hydrology Are	"Normal Circumstand	ces" present? 🛛 Yes 🔲 No
Are any of the following naturally problema	atic? 🛛 Vegetati	on 🗌 Soil 🔲 Hydrology (I	f needed, explain an	y answers in remarks)
SUMMARY OF FINDINGS - Attach s	ite map showing	ample point locations, trans	<u>ects, important fe</u>	atures, etc.
Hydrophytic Vegetation Present?Image: Constraint of the sent?Hydric Soil Present?Image: Constraint of the sent?Wetland Hydrology Present?Image: Constraint of the sent?	Yes INO Yes INO Yes INO	Is the Sampled Ar within a Wetland?	jea ⊠ Yes	□ No
Remarks: Wetland sample point paired w hydric soils, and wetland hydro	vith SP074. Sample p blogy. Boundary base	oint located at edge of field. Samp d on shift in vegetation.	le point meets criteri	a for hydrophytic vegetation,

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species(A) that are OBL, FACW, or FAC?
2				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:				% of dominant species that
	N/A	-		Prevalence Index Worksheet
AFLING/SHRUBSTRATUM FILLSIZE.	IN/A	-		Total % cover of: Multiply by:
1 2				OBL species x1
3.				FACW species x2
4.				FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5 radius		V		Column Totals (A) (B)
	20	- <u>r</u>		Prevalence Index = B/A =
2. Crypsis scribenoides	5	<u> </u>		
S. Polygonum aviculare	Z	<u> </u>		Hydrophytic Vegetation Indicators
4. Rumex crispus	1	<u> </u>		Dominance Test is >50%
	1	<u> </u>		Prevalence Index is $$
6. Lotus comiculatus		N		Morphological adaptations (provide supporting data in remarks)
B		<u> </u>		Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	30	-		
WOODY VINE STRATUM Plot Size:	N/A			'Indicators of hydric soil and wetland hydrology
1		. <u> </u>		Indist de present, unless disturbed of problematic.
2				
Woody Vines Total Cover:	Woody Vines Total Cover:			Hydrophytic No.
% Bare ground in herb stratum 35	% cover of	biotic crust 35		Vegetation Present ?

SOIL								Sampling Po	oint SP075	
Profile desc	ription: (Describe	to the dep	oth needed to docun	nent the	indicator	or confir	n the absence of in	dicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rema	arks	
0-6	2.5Y 3/1	100	-	-	-	-	Clay			
6-12	2 57 3/1	80	10VR 5/6	10	C					
0-12	2.51 5/1	00	1011(3/0	10	<u> </u>					
			2.5Y 4/1	10	D	PL/M	Clay			
		·								
¹ Type: C=Co	ncentration, D=De	pletion, RN	I=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	g, RC=Root Channe	l, M=Matrix		
Hydric Soil I	ndicators: (Appli	cable to al	LRRs, unless other	wise no	ted.)		Indicators for Pro	oblematic Hydr	ic Soils ³ :	
Histosol	(A1)		Sandy Redox (S5)			1cm Muck (A9) (LRR C)		
Histic Ep	ipedon (A2)		Stripped Matrix (S	6)			2cm Muck (A1	2cm Muck (A10)(LRR B)		
	stic (A3)		Loamy Mucky Mir	ieral (F1)			Reduced Verti	Reduced Vertic (F18)		
	n Sulfide (A4)	0)	Loamy Gleyed Ma	atrix (F2)			Red Parent Ma	Red Parent Material (TF2)		
	Layers (A5)(LRR	C)	Depleted Matrix (I	-3)			Other (explain)	in remarks)		
	CK (A9)(LRR D) L Dalaus Davis Currie	(111)	Redox Dark Suria	се (го) така (Г7	' \					
	Below Dark Suria	ice (ATT))					
	Irk Surface (ATZ)			IS (FO)			31			
	loved Matrix (S4)						Indicators of hydrologic	dric vegetation a	and	
					wetland hydrolog	gy must be prese	ent.			
Restrictive	Layer (if present)									
Туре:			_							
Depth (inch	nes):						Hydric S	oil Present ?	🛛 Yes 🛛 No	
Remarks: Sa	mple point meets	the reday d	ark surface (E6)				8			

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suf	icient)	
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (E Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Soils (C6) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:		
Surface water present? Yes X No	Depth (inches):	
Water table present?	Depth (inches):	
Saturation Present?	Depth (inches):	Wetland Hydrology Present ? 🛛 Yes 🔲 No
Describe recorded data (stream guage, mo	nitoring well, aerial photos, etc.) if available	e.
Remarks: Sample point contains surface so	il cracks (B6) and biotic crust (B12). Samp	ple point also meets saturation visible on aerial imagery (C9).

Project/Site Liberty Farms	City	County Solano	Sampling Date <u>5/9/2018</u>
Applicant/Owner Ecosystem Investmen	t Partners	State CA	Sampling Point SP076
Investigator(s) T. Harris, N. Clark; WRA	Inc	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	floodplain L	ocal Relief (concave, convex, none) <u>None</u>	Slope(%) <u>0</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38</u> .	30846989 Long: <u>-121.6972795</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay,	0 to 2 percent slopes	NWI classi	fication <u>PF</u>
Are climatic/hydrologic conditions on-sit	e typical for this time of y	ear? 🛛 Yes 🗌 No 🛛 (If no, explain in i	remarks)
Are any of the following significantly dis	turbed? 🔲 Vegetatio	n 🔲 Soil 🔲 Hydrology 🛛 Are "Normal Circ	cumstances" present? 🛛 Yes 🔲 No
Are any of the following naturally proble	matic? 🛛 Vegetatio	n 🔲 Soil 🔲 Hydrology 🤍 (If needed, ex	plain any answers in remarks)
SUMMARY OF FINDINGS - Attach	n site map showing s	ample point locations, transects, impo	ortant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes □ No ⊠ Yes □ No ⊠ Yes □ No	Is the Sampled Area within a Wetland?	⊠Yes □No
Remarks: Wetland sample point paire hydrophytic vegetation, hyd	d with SP077. Sample portion of the solid structure of the solid str	oint located in dense marsh vegetation in midd lrology. Boundary based on shift in vegetation	ld of field. Sample point meets criteria for .

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet		
1	_ % cover	Species?	Status	Number of Dominant Species3 (A) that are OBL, FACW, or FAC?		
2 3		·		Total number of dominant3(B)		
4 Tree Stratum Total Cover:				% of dominant species that		
SADI ING/SHRI IB STRATI IM Plot Size .	N/A	-		Prevalence Index Worksheet		
		-		Total % cover of: Multiply by:		
· ·				OBL species x1		
<u>. </u>				FACW species x2		
		·		FAC species x3		
••		·		FACU species x4		
Sapling/Shrub Stratum Total Cover:		-		UPL species x5		
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)		
1. Typha latifolia	30	Y	OBL			
2. Bolboschoenus maritimus	25	Y	OBL	Prevalence Index = B/A =		
3. <u>Festuca perennis</u>	20	Y	FAC	Hydrophytic Vegetation Indicators		
4. Atriplex prostrata	15	<u> </u>	FACW	Dominance Test is >50%		
5. Lotus corniculatus	10	<u> </u>	FAC	\square Provolonce Index is $c/=3.0^1$		
6		·		Morphological adaptations (provide		
· · .		·		supporting data in remarks)		
	100			Problematic hydrophytic vegetation ¹ (explain)		
	100	-		¹ Indicators of hydric soil and wetland hydrology		
WOODY VINE STRATUM Plot Size:	N/A			must be present, unless disturbed or problematic.		
^{1.} 2						
Woody Vines Total Cover						
% Bare ground in herb stratum 0 % cover of biotic crust				Vegetation Present ?		

SOIL	
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Profile descr Depth	iption: (Describe Matrix	to the de	epth needed to docu	ment the in lox Feature	n dicator (or confirr	n the absence of i	ndicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Remarks
2-0	10YR 2/2	100	<u> </u>				Organic	Organic layer
0-12	10YR 2/1	100	<u> </u>				Clay	
				- <u> </u>				
¹ Type: C=Cor	ncentration, D=De	pletion, RI	M=Reduced Matrix.	² Locat	ion: PL=P	ore Lining	g, RC=Root Channe	el, M=Matrix
Hydric Soil I Histosol (Histic Ep Black His Hydroger Stratified 1cm Muc Depleted Thick Dai Sandy M Sandy G	ndicators: (Appli A1) pedon (A2) tic (A3) Sulfide (A4) Layers (A5)(LRR k (A9)(LRR D) Below Dark Surfa rk Surface (A12) ucky Mineral (S1) eyed Matrix (S4)	Cable to a C) ce (A11)	all LRRs, unless oth Sandy Redox (S Stripped Matrix (Loamy Mucky M Loamy Gleyed M Depleted Matrix Redox Dark Surf Depleted Dark S Redox Depressio Vernal Pools (FS	erwise not 5) S6) ineral (F1) fatrix (F2) (F3) iace (F6) urface (F6) urface (F7) ons (F8)	ed.)		Indicators for Pi 1cm Muck (A 2cm Muck (A Reduced Ver Red Parent M Other (explain ³ Indicators of hy wetland hydrolo	roblematic Hydric Soils ³ : 9) (LRR C) 10)(LRR B) tic (F18) faterial (TF2) n in remarks) ydric vegetation and gy must be present.
Restrictive L Type: Depth (inch	.ayer (if present): es):		_				Hydric S	Soil Present ? 🛛 Yes 🗌 No
Remarks: _{Soi}	Is are assumed hy	/dric base	on near domiance of	obligate w	etland veç	getation.	-	

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present? 🛛 🛛 Yes 🛛 No	Depth (inches):		
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches):	Wetland H	lydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available		
Remarks: SP077 meets the Biotic Crust hydric	soil indicator and meets two secondayr	indicators.	

Project/Site Liberty Farms	City	County	Solano	Sampling Date <u>5/9/2018</u>
Applicant/Owner Ecosystem Investment P		State <u>CA</u>	Sampling Point SP077	
Investigator(s) T. Harris, N. Clark; WRA In	с	Section,	Fownship,Range	
Landform (hillslope, terrace, etc.)Diked floo	odplain	Local Relief (concave, c	onvex, none) <u>None</u>	Slope(%) <u>1</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>3</u>	8.30862564	Long: <u>-121.6970922</u>	Datum: WGS 84
oil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF				
Are climatic/hydrologic conditions on-site t	pical for this time o	fyear? 🛛 Yes 🗌 No	o (If no, explain in re	marks)
Are any of the following significantly distur	oed? 🔲 Vegeta	tion 🔲 Soil 🔲 Hydrold	ogy Are "Normal Circu	mstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problema	tic? 🗌 Vegeta	tion 🛛 Soil 🔲 Hydrold	ogy (If needed, expl	lain any answers in remarks)
SUMMARY OF FINDINGS - Attach s	ite map showing	sample point location	ons, transects, import	tant features, etc.
Hydrophytic Vegetation Present?☑Hydric Soil Present?□Wetland Hydrology Present?☑	Yes □ No Yes ⊠ No Yes □ No	ls the Sa within a	Impled Area	Yes 🖾 No
Remarks: Upland sample point paired wit for hydrophytic vegetation and	h SP076. Sample p has weak wetland h	point located in middle of hydrology (based on 2 sec	field, adjacent to marsh v condary indicators), but d [,]	regetation. Sample point meets criteria oes not meet criteria for hydric soils.

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet	
I	- % cover	Species?	Status	Number of Dominant Species3 (A) that are OBL, FACW, or FAC?	
<u>.</u>				Total number of dominant species across all strata? 3 (B)	
 Tree Stratum Total Cover:				% of dominant species that(A/B(A/B))(A/B)	
- SADUNG/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet	
	1 1// 1	-		Total % cover of: Multiply by:	
·				OBL species x1	
·				FACW species x2	
·				FAC species x3	
				FACU species x4	
		-		UPL species x5	
<u>IERB STRATUM</u> Plot Size: 5' radius				Column Totals (A) (B	
Festuca perennis	40	<u> </u>	FAC		
Atriplex prostrata	20	Y	FACW		
Lotus corniculatus	20	<u> </u>	FAC	Hydrophytic Vegetation Indicators	
Lepidium latifolium	10	<u> </u>	FAC	Dominance Test is >50%	
Rumex crispus	8	<u> </u>	FAC	Prevalence Index is $$	
;Xanthium strumarium	2	N	FAC	Morphological adaptations (provide supporting data in remarks)	
······································	100			Problematic hydrophytic vegetation ¹ (explain)	
Herb Stratum Total Cover:	100	-		11- ticotors of hydric coil and watland hydrology	
NOODY VINE STRATUM Plot Size:	N/A			must be present unless disturbed or problematic	
۔ Woody Vines Total Cover: _				Hydrophytic ⊠l Yes □ No	
% Bare ground in herb stratum 0 % cover of biotic crust			Vegetation Present ?		

SOIL	
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Profile descr Depth	iption: (Describe Matrix	e to the de	pth needed to docur Redo	nent the i	ndicator o	or confiri	n the absence of indica	itors.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rema	arks	
0-6	2.5Y 3/1	100	-				Clay			
6-12	10YR 3/2	100	<u> </u>	- <u>-</u>			<u>Clay</u>			
				·						
¹ Type: C=Co	ncentration. D=De	pletion. R	M=Reduced Matrix.	² Locat	tion: PL=F	ore Linin	g. RC=Root Channel. M=	Matrix		
Hydric Soil I	ndicators: (Appli	cable to a	II LRRs, unless othe	rwise not	ed.)		Indicators for Proble	matic Hvdr	ic Soils ³ :	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) 1cm Muck (A9)(LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9)						1cm Muck (A9) (LF 2cm Muck (A10)(LI Reduced Vertic (F' Red Parent Materia Other (explain in re ³ Indicators of hydric v wetland hydrology mu	RR C) RR B) 18) al (TF2) emarks) vegetation a ust be prese	and ent.		
Restrictive L	ayer (if present)	:								
Туре:										
Depth (inch	es):						Hydric Soil P	Present ?	🗆 Yes	🛛 No
Remarks: _{Sai}	mple point does n	ot meet ind	dicators of hydric soils				•			

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 	
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present? 🛛 🛛 Yes 🛛 No	Depth (inches):		
Saturation Present? Yes X No (includes capillary fringe)	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available).	
Remarks: Sample point meets saturation visib	le on aerial imagery (C9) and the FAC-n	eutral test (D5).	

Project/Site Bowlsbey Ranch	City	County Solano)	Sampling Date <u>5/9/2018</u>						
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners		State <u>CA</u>	Sampling Point SP078						
Investigator(s) T. Harris, N. Clark; WR	A Inc	Section,Townsh	iip,Range							
Landform (hillslope, terrace, etc.)Diked	d floodplain Lo	cal Relief (concave, convex,	none) <u>None</u>	Slope(%) <u>0-1</u>						
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.3</u>	0933589 Long:	-121.7180939	Datum: WGS 84						
Soil Map Unit Name Sacramento cla	Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF									
Are climatic/hydrologic conditions on-s	site typical for this time of ye	ar? 🛛 Yes 🗌 No 🛛 (If no, explain in rem	arks)						
Are any of the following significantly di	sturbed? Degetation	Soil Hydrology	Are "Normal Circum	stances" present? 🛛 Yes 🔲 No						
Are any of the following naturally probl	ematic? Degetation	🗌 Soil 🔲 Hydrology	(If needed, expla	in any answers in remarks)						
SUMMARY OF FINDINGS - Attac	<u>ch site map showing sa</u>	mple point locations, tra	ansects, importa	nt features, etc.						
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	☐ Yes ⊠ No ☐ Yes ⊠ No ⊠ Yes □ No	Is the Sampled within a Wetla	d Area 🛛 🗋	Yes 🖾 No						
Remarks: Upland sample point paire hydrology (due to recent fl	d with SP079. Sample poin ood irrigation), but does not	nt located in middle of irrigate meet criteria for hydrophytic	d pasture. Sample vegetation or hydric	point meets criteria for wetland c soils.						

	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	- % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant3(B)3
4 Tree Stratum Total Cover: _				% of dominant species that33(A/B) are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A			Prevalence Index Worksheet
		•		Total % cover of: Multiply by:
		·		OBL species x1
		·		FACW species x2
				FAC species x3
T		·		FACU species x4
Sapling/Shrub Stratum Total Cover:				UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Sporobolus indicus	30	Y	FACU	
2. Trifolium repens	20	Y	FACU	
3. Plantago lanceolata	20	<u> </u>	FAC	Hydrophytic Vegetation Indicators
4. Lotus corniculatus	10	<u> </u>	FAC	Dominance Test is >50%
5. Distichlis spicata	10	<u> </u>	FAC	Prevalence Index is $$
6. <u>Poa sp.</u> -	8	<u> N </u>	?	
7. Rumex pulcher	2	<u> </u>	FAC	supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100			
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:		_		
% Bare ground in herb stratum	Vegetation Present ?			
Bomarke: Sample point dominated by EAC and E/		loop not most day		

SOIL								Sampling Po	oint SP07	'8
Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features										
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rem	arks	
2-0	10YR 3/3	100	-		-	-	Organic	Organic Layer		
0-4	2.5Y 3/2	100	-			. <u>-</u>	Clay			
4-12	2.5Y 2.5/1	100	-	. <u>-</u>			Clay			
¹ Type: C=Co	ncentration, D=De	epletion, RI	M=Reduced Matrix.	² Loca	tion: PL=P	ore Lining	g, RC=Root Channe	I, M=Matrix		
Hydric Soil I	ndicators: (Appl (A1)	cable to a	II LRRs, unless othe Sandy Redox (S5	rwise not	ted.)		Indicators for Pro	oblematic Hydr	ic Soils ³ :	
Histic Ep	ipedon (A2)		Stripped Matrix (S	56)			2cm Muck (A1	10)(LRR B)		
Black Hi	stic (A3)		Loamy Mucky Mi	neral (F1)			Reduced Vert	ic (F18)		
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	II Sullide (A4)	C)	Depleted Matrix (auix (FZ) F3)			Red Parent M Other (evolution	aterial (TF2)		
	ck (A9)(LRR D)	,	Redox Dark Surfa	ace (F6)				in remarks)		
Depleted	Below Dark Surfa	ace (A11)	Depleted Dark Su	urface (F7)					
Thick Da	rk Surface (A12)		Redox Depressio	ns (F8)			2			
Sandy M	lucky Mineral (S1)		U Vernal Pools (F9))			[°] Indicators of hy	³ Indicators of hydric vegetation and		
	leyed Matrix (54)						wetland hydrolog	gy must be pres	ent.	
Restrictive	Layer (if present)	:								
Type:										
Depth (incl	nes):						Hydric S	oil Present ?	☐ Yes	🛛 No
Remarks: Sa	mple point does n	ot meet inc	dicators of hydric soils							

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 	
Field Observations:			
Water table present?	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monite	oring well, aerial photos, etc.) if available	·-	
Remarks: Surface water (A1) is from the active	e flooding of the field by ranch managem	ent during the time	of sampling.

Project/Site Bowlsbey Ranch	City	County Solano		Sampling Date <u>5/9/2018</u>
Applicant/Owner Ecosystem Investment Pa	rtners		State <u>CA</u>	Sampling Point SP079
Investigator(s) T. Harris, N. Clark; WRA Inc		Section,Townshi	ip,Range	
Landform (hillslope, terrace, etc.)Diked floo	dplain L	ocal Relief (concave, convex, r	none) <u>None</u>	Slope(%) _1
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38</u> .	30994544 Long:	-121.7180111	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0 to	2 percent slopes		NWI classifi	cation <u>PF</u>
Are climatic/hydrologic conditions on-site ty	pical for this time of y	ear? 🛛 Yes 🗌 No 🛛 (I	lf no, explain in re	emarks)
Are any of the following significantly disturb	ed? 🔲 Vegetatio	n 🗌 Soil 🔲 Hydrology 🧳	Are "Normal Circı	ımstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problemat	ic? 🛛 Vegetatio	n 🔲 Soil 🔲 Hydrology	(If needed, exp	olain any answers in remarks)
SUMMARY OF FINDINGS - Attach si	te map showing s	ample point locations, tra	<u>insects, impor</u>	tant features, etc.
Hydrophytic Vegetation Present? Image: Comparison of the sector of t	Yes ☐ No Yes ☐ No Yes ☐ No	Is the Sampled within a Wetlar	l Area 🛛 🖂 nd?]Yes □No
Remarks: Wetland sample point paired win hydrophytic vegetation, hydric s	th SP078. Sample of oils, and wetland hyd	nt located near lower elevation rology. Boundary based on a	ı of irrigated pastı erial signature cor	ure. Sample point meets criteria for rresponding to shift in vegetation.

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2		·		Total number of dominant(B)(B)
4 Tree Stratum Total Cover:		·		% of dominant species that(A/B) are OBL, FACW, or FAC?
	Ν/Δ	-		Prevalence Index Worksheet
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Total % cover of: Multiply by:
1		·		OBL species x1
2		·		FACW species x2
3		·		FAC species x3
4 ·				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				
1. Distichlis spicata	40	Y	FAC	
2. Lotus corniculatus	20	Y	FAC	Prevalence Index = B/A =
3. Hordeum brachyantherum	15	<u> </u>	FACW	Hydrophytic Vegetation Indicators
4. Plantago lanceolata	5	<u> </u>	FAC	Dominance Test is >50%
5. Sporobolus indicus	5	N	FACU	
6. Poa sp.	5	N	FACU	
7. Hordeum jubatum	3	N	FAC	Morphological adaptations (provide
8. Hordeum marinum	2	N	FAC	Supporting data in remarks) \square Broblemetic hydrophytic vegeteticn ¹ (cynlein)
Herb Stratum Total Cover:	100			
WOODY VINE STRATUM Plot Size	N/A	-		¹ Indicators of hydric soil and wetland hydrology
1.				must be present, unless disturbed or problematic.
2				•
Woody Vines Total Cover:				
% Bare ground in herb stratum 0	% cover of	- biotic crust		Vegetation Present ?
Remarks: Sample point dominated by FAC specie	es, meets domi	nance test.		

SOIL	
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Profile descu Depth	ription: (Describ Matrix	e to the de	pth needed to docu Red	ment the ox Featur	indicator es	or confir	m the absence of	indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rem	arks
2-0	7.5YR 2.5/2	100	-	<u> </u>			Organic	Oraganic layer	r
<u>0-12</u>	7.5YR 2.5/1	98	7.5YR 6/2	2	<u>C</u>	<u>M</u>	<u>Clay</u>		
17									
Type: C=Co	ncentration, D=D	epletion, Ri	M=Reduced Matrix.		tion: PL=	ore Linin	g, RC=Root Chann	el, M=Matrix	via Calla ³ .
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) 1cm Muck (A9)(LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9)							 1cm Muck (# 2cm Muck (# Reduced Ve Red Parent I Other (explate) ³Indicators of h wetland hydrole 	(49) (LRR C) (10)(LRR B) rtic (F18) Material (TF2) in in remarks) ydric vegetation a ogy must be pres	and ent.
Restrictive I	Layer (if present)):							
Туре:									
Depth (inch	nes):						Hydric	Soil Present ?	🛛 Yes 🛛 No
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).						

Wetland Hydrology Indica	tors:				Secondary Indicators (2 or more required)
Primary Indicators (any one	indicator is	s sufficie	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 			 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 	
Field Observations:					
Surface water present?	🛛 Yes 🗌] No	Depth (inches): 2		
Water table present?	🗆 Yes 🛛	🛾 No	Depth (inches):		
Saturation Present? (includes capillary fringe)	🗆 Yes 🛛	No No	Depth (inches):	Wetland	Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stre	eam guage	e, monito	ring well, aerial photos, etc.) if availabl	e.	
Remarks: Surface water (A1)) is from th	ne active	flooding of the field by ranch managen	nent during the time	e of sampling.

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>5/9/2018</u>
Applicant/Owner Ecosystem Investment Partn	ers	State <u>CA</u>	Sampling Point SP080
Investigator(s) <u>T. Harris, N. Clark; WRA Inc</u>		Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked floodpla	ain Local R	elief (concave, convex, none) <u>None</u>	Slope(%) <u>1</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>38.31144</u>	22 Long: <u>-121.7134746</u>	Datum: WGS 84
Soil Map Unit Name <u>Sacramento clay, 0 to 2</u>	percent slopes	NWI classifica	tion <u>PF</u>
Are climatic/hydrologic conditions on-site typic	al for this time of year?	X Yes INo (If no, explain in rem	larks)
Are any of the following significantly disturbed?	? □ Vegetation □	Soil Hydrology Are "Normal Circum	istances" present? 🛛 Yes 🔲 No
Are any of the following naturally problematic?	□ Vegetation □	Soil Hydrology (If needed, expla	in any answers in remarks)
SUMMARY OF FINDINGS - Attach site	nap showing sample	e point locations, transects, importa	int features, etc.
Hydrophytic Vegetation Present?YesHydric Soil Present?YesWetland Hydrology Present?Yes	X No X No X No	Is the Sampled Area uithin a Wetland?	Yes 🖾 No
Remarks: Upland sample point paired with Sl vegetation, hydric soils, or wetland	P081. Sample point loca hydrology.	ated in irrigated pasture. Sample point does	s not meet criteria for hydrophytic

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2. 3		· ·		Total number of dominant (B) (B)
4 Tree Stratum Total Cover:				% of dominant species that
	N/A	•		Prevalence Index Worksheet
SAPLING/SHRUB STRATUM FIOUSIZE.	N/A	-		Total % cover of: Multiply by:
1 2 3				OBL species x1 FACW species x2 FAC species x3
				FACU species x4
				UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. <u>Trifolium repens</u> .	30	Y	FACU	
2. Festuca perennis	30	<u> </u>	FAC	Prevalence Index = B/A =
3. Poa annua	10	<u> </u>	FAC	Hydrophytic Vegetation Indicators
4. Lotus corniculatus	10	<u> </u>	FAC	Dominance Test is >50%
5. <u>Festuca arundinacea</u> .	10	<u>N</u>	FACU	Prevalence Index is $$
6. Plantago lanceolata	5	<u> </u>	FAC	
7. Rumex crispus	5	<u> </u>	FAC	supporting data in remarks)
8		· ·		Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100			
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:% Bare ground in herb stratum <u>0</u>	_ % cover of	biotic crust <u>0</u>		Hydrophytic
Remarks: Sample point dominated by FACU and	FAC species, d	loes not meet dor	ninance test.	1

SOIL								Sampling Point SP080	
Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features									
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Remarks	
2-0	10YR 3/2	100	-	-	-	-	Organic	Organic layer	
0-8	2.5Y 2.5/1	100	<u>-</u>	<u> </u>			Clay		
8-14	2.5Y 3/1	100			-		Clay		_
									—
17				21					_
Hydric Soil I	ncentration, D=De	epletion, R	M=Reduced Matrix.		tion: PL=P	ore Lining	g, RC=Root Channe	el, M=Matrix	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) Itcm Muck (A9) (LRR C) Histosol (A2) Stripped Matrix (S6) 2cm Muck (A10)(LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) I cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Gleyed Matrix (S4) Vernal Pools (F9) ³ Indicators of hydric vegetation and wetland hydrology must be present.									
Type:									
Depth (incl	nes):		_				Hydric S	Soil Present ? 🛛 Yes 🛛 No	
Remarks: _{Sa}	mple point does n	ot meet ind	dicators of hydric soils.						

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)	
Primary Indicators (any one indicator is suffic	ient)		Weter Marka (P1)(Piveripa)	
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 		
Field Observations:				
	Depth (inches):			
Water table present? LI Yes KI No	Depth (inches):			
Saturation Present?	Depth (inches):	Wetland I	Hydrology Present ? 🛛 Yes 🛛 No	
Describe recorded data (stream guage, moni	toring well, aerial photos, etc.) if available).		
Remarks: No indicators of wetland hydrology	observed.			

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>5/9/2018</u>
Applicant/Owner <u>Ecosystem Investme</u>	nt Partners	State CA	Sampling Point SP081
Investigator(s) T. Harris, N. Clark; WR	A Inc	Section,Township,Range	
Landform (hillslope, terrace, etc.)Dikec	floodplain Loca	al Relief (concave, convex, none) <u>Non</u>	slope(%) <u>1</u>
Subregion(LRR) <u>LRR C (Medit. CA)</u>	Lat: <u>38.31</u> 1	106985 Long: <u>-121.713</u>	3829 Datum: WGS 84
Soil Map Unit Name Sacramento clay	/, 0 to 2 percent slopes	NWIc	lassification <u>PF</u>
Are climatic/hydrologic conditions on-s	ite typical for this time of year	r? 🛛 Yes 🔲 No 🛛 (If no, expla	in in remarks)
Are any of the following significantly di	sturbed? Degetation	Soil Hydrology Are "Norma	al Circumstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problem	ematic? Degetation	Soil Hydrology (If neede	ed, explain any answers in remarks)
SUMMARY OF FINDINGS - Attac	h site map showing sam	<u>ple point locations, transects, i</u>	mportant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	I Yes □ No I Yes □ No I Yes □ No	Is the Sampled Area within a Wetland?	⊠ Yes □ No
Remarks: Wetland sample point pair hydric soils, and wetland h	ed with SP080. Sample point ydrology. Boundary based o	t taken in irrigated wetland. Sample po n aerial signature corresponding to shi	pint meets criteria for hydrophytic vegetation, ft in vegetation.

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet			
1		Species?	Status	Number of Dominant Species(A) that are OBL, FACW, or FAC?			
2		·		Total number of dominant(B)(B)			
4 Tree Stratum Total Cover:				% of dominant species that(A/B(A/B))(A/B)			
SAPI ING/SHRUB STRATUM Plot Size:	N/A			Prevalence Index Worksheet			
		-		Total % cover of: Multiply by:			
·				OBL species x1			
2				FACW species x2			
				FAC species x3			
T				FACU species x4			
Sapling/Shrub Stratum Total Cover:		-		UPL species x5			
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)			
1. Distichlis spicata	80	Y	FAC				
2. Trifolium repens	10	<u> </u>	FACU				
3. Festuca perennis	5	<u> </u>	FAC	Hydrophytic Vegetation Indicators			
Lotus corniculatus	5	<u> </u>	FAC	Dominance Test is >50%			
5				Prevalence Index is $$			
6 7 8				Morphological adaptations (provide supporting data in remarks)			
Herb Stratum Total Cover:	100			Problematic hydrophytic vegetation (explain)			
WOODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
2.							
Woody Vines Total Cover:				- Hydrophytic — —			
% Bare ground in herb stratum	% cover of	over of biotic crust		Vegetation Present ?			

SOIL								Sampling Po	oint SP081
Profile desc	ription: (Describe	e to the dep	oth needed to docun	nent the i	ndicator	or confirm	n the absence of in	dicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rema	arks
2-0	10YR 2/2	100	-	-	-	-	Organic	Organic layer	
0-4	10YR 2/1	100			_		Clay		
4-12	10YR 2/1	95	10YR 4/6	5	<u>C</u>	M,RC	Clay		
		·							
¹ Type: C=Co	oncentration, D=De	epletion, RN	/=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	g, RC=Root Channe	I, M=Matrix	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ² Location: PL=Pore Lining, RC=Root Channel, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muck (A10)(LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) 1 cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) 3 ¹ Indicators of hydric vegetation and wetland bydrology must be present						ic Soils ³ : Ind ent.			
Restrictive	Layer (if present)	:							
iype:)		_						
Depth (incl	nes):						Hydric S	oil Present ?	🛛 Yes 🗌 No
Remarks: _{SF}	20816 meets the F	Redox Dark	Surface hydric soil ind	dicator.					

Wetland Hydrology Indic	ators:				Secondary Indicators (2 or more required)
Primary Indicators (any on	e indicato	or is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 			 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livir Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed Other (Explain in Remarks) 	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)	
Field Observations:			Douth (inches), 1		
Water table present?		X No	Depth (inches):		
Saturation Present? (includes capillary fringe)	☐ Yes	🛛 No	Depth (inches):	Wetland	Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (st	ream gua	age, monit	oring well, aerial photos, etc.) if availab	e.	
Remarks: Surface water is	from the	active floo	ding of the field by ranch management	during the time of s	ampling.
			-		

Project/Site Bowlesby Ranch	City	County Solano	Sampling Date 7/20/2018		
Applicant/Owner <u>Ecosystem Investment Partners</u>		State CA	Sampling Point SP082		
Investigator(s) T. Harris, S. Bennett; WRA Inc		Section,Township,Range			
Landform (hillslope, terrace, etc.)Diked floodplain	Local Re	ief (concave, convex, none) <u>None</u>	Slope(%) <u>0-1</u>		
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-121.72689</u>	71 Long: <u>38.30111052</u>	Datum: WGS 84		
Soil Map Unit Name <u>Sacramento clay, 0 to 2 perc</u>	ent slopes	NWI classificati	on PF		
Are climatic/hydrologic conditions on-site typical for	r this time of year?	🗆 Yes 🛛 No 🦳 (If no, explain in rema	arks)		
Are any of the following significantly disturbed?	□ Vegetation □ S	oil 🔲 Hydrology 🛛 Are "Normal Circums	stances" present? 🛛 Yes 🔲 No		
Are any of the following naturally problematic?	□ Vegetation □ S	oil 🔲 Hydrology (If needed, explain	n any answers in remarks)		
SUMMARY OF FINDINGS - Attach site map	showing sample	point locations, transects, importa	nt features, etc.		
Hydrophytic Vegetation Present?X YesHydric Soil Present?X YesWetland Hydrology Present?Yes	No No No	Is the Sampled Area אין שין איז	∕es ⊠No		
Remarks: Unpaired upland sample point located i	n depressional area i	n irrigated pasture. Sample point meets cr	iteria for hydrophytic vegetation and		

Remarks: Unpaired upland sample point located in depressional area in irrigated pasture. Sample point meets criteria for hydrophytic vegetation and hydric soils, but does not meet criteria for wetland hydrology. Climatic conditions were drier than normal during site visit, but was not considered problematic because hydrology is artificial.

	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species <u>1</u> (A) that are OBL, FACW, or FAC?
2		· ·		Total number of dominant (B)
4 Tree Stratum Total Cover:		· ·		% of dominant species that(A/B) are OBL, FACW, or FAC?(A/B)
SAPLING/SHRUB STRATUM Plot Size	N/A			Prevalence Index Worksheet
1		•		Total % cover of: Multiply by:
2 3				OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
HERB STRATUM Plot Size : 5' radius				UPL species x5
1 Hordeum marinum	99	Yes	FAC	Column Totals (A) (B)
2. Lepidium latifolium	1	No	FAC	Prevalence Index = B/A =
3.	100 N/A			Hydrophytic Vegetation Indicators ☑ Dominance Test is >50% □ Prevalence Index is = 3.0<sup 1 □ Morphological adaptations (provide supporting data in remarks) □ Problematic hydrophytic vegetation ¹ (explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
 Woody Vines Total Cover:	% cover of	biotic crust <u>0</u>		Hydrophytic ⊠ Yes □ No Vegetation Present ?

SOIL	
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Profile desc	ription: (Describ Matrix	e to the de	pth needed to docur Red	nent the i ox Feature	indicator es	or confirm	n the absence of ir	ndicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc1	Texture	Rema	arks
0-8	2.5Y 2.5/1	100	-	<u> </u>			Clay		
<u>8-14</u>	2.5Y 3/1	95	10YR 3/4	5	<u>C</u>	PL/RC	<u>Clay</u>	contains white	fungal mycelium
			M=Reduced Matrix						
Hvdric Soil	Indicators: (Appl	icable to a	II LRRs. unless othe	rwise no	ted.)		Indicators for Pr	oblematic Hydri	ic Soils ³
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muck (A10)(LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Redox Depressions (F8)									
Sandy M	lucky Mineral (S1) leyed Matrix (S4))	U Vernal Pools (F9)			Indicators of hy wetland hydrolog	dric vegetation a gy must be prese	nd ent.
Restrictive	Layer (if present):							
Type:	205):		—						
Deptil (Ilici	les).						Hydric S	ioil Present ?	⊠ Yes ∐ No
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).						

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffic	ient)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
Surface water present?	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	Wetland H	lydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	toring well, aerial photos, etc.) if available).	
Remarks: Soil feels dry despite other areas of	the field showing signs of recent irrigation	on. No wetland hyd	rology indicators observed.

Project/Site Bowlesby Ranch	City	County Solano		Sampling Date 7/20/2018		
Applicant/Owner Ecosystem Investment Partners		Sta	te <u>CA</u> San	npling Point SP083		
Investigator(s) T. Harris, S. Bennett; WRA Inc		Section,Township,F	ange			
Landform (hillslope, terrace, etc.)Diked floodplain	Local Relief	(concave, convex, non	e) <u>None</u>	Slope(%) <u>0-1</u>		
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-121.7264635</u>	Long: <u>38</u>	3.30250803	Datum: WGS 84		
Soil Map Unit Name Sacramento clay, 0 to 2 perce	ent slopes		NWI classification Pl	F		
Are climatic/hydrologic conditions on-site typical for	this time of year?	Yes 🗌 No (If no	o, explain in remarks)			
Are any of the following significantly disturbed?	□ Vegetation □ Soil	Hydrology Are	"Normal Circumstance	es" present? 🛛 Yes 🔲 No		
Are any of the following naturally problematic?	□ Vegetation □ Soil	Hydrology (lf needed, explain any	answers in remarks)		
SUMMARY OF FINDINGS - Attach site map	showing sample po	oint locations, trans	ects, important fea	itures, etc.		
Hydrophytic Vegetation Present? X Yes Hydric Soil Present? X Yes Wetland Hydrology Present? Yes	No No No	Is the Sampled A within a Wetland?	rea 🛛 Yes	□ No		
Remarks: Wetland sample point paired with SP084. Sample point located in lower elevation of irrigated pasture. Sample point meets criteria for hydrophytic vegetation, hydric soils, and wetland hydrology. Boundary based on aerial signatures corresponding to shift in vegetation observed on the ground. Climatic conditions were drier than normal during site visit, but was not considered problematic because hydrology is artificial.						
VEGETATION (use scientific names)						
	Absolute Dom	inant Indicator	Dominance Test V	Vorksheet		

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1				Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant(B)(B)
4 Tree Stratum Total Cover:				% of dominant species that are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet
	11/7	-		Total % cover of: Multiply by:
2				OBL species x1
3				FACW species x2
4.				FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5 radius		Vaa		Column Totals (A) (B)
1. <u>Festuca perennis</u>	35			Prevalence Index = B/A =
3 Hordeum jubatum	5	<u> </u>		
		<u>No</u>	FAC.	Hydrophytic Vegetation Indicators
Letter connectation	2	<u> </u>	?	Dominance Test is >50%
6 Sporobolus indicus	3	<u> </u>	FACU	Prevalence Index is $$
7 Cynodon dactylon	5	<u>No</u>	FACU	Morphological adaptations (provide
8. Poa sp.	5	No	?	supporting data in remarks)
Herb Stratum Total Cover:	100			Problematic hydrophytic vegetation (explain)
WOODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1				······································
2				
Woody Vines Total Cover:		-		Hydrophytic Vers I No
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		vegetation Present ?
Remarks: Sample point dominated by FAC speci	es, meets domi	nance test.		•

SOIL								Sampling Po	oint SP083	
Profile desc	ription: (Describe	to the de	oth needed to docun	nent the i	indicator	or confiri	n the absence of in	dicators.)		
_(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Rema	arks	
4-0	10YR 3/1	100	-	-	-		Organic	Organic Layer		
0-5	2.5Y 3/1	100	-		-		Clay			
5-12	2.5Y 4/1	95	5YR 4/6	5	C	PL, M	Clay			
¹ Type: C=Co	ncentration, D=De	pletion, RN	/I=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	g, RC=Root Channe	l, M=Matrix		
Hydric Soil Histosol Histic Ep Black His Hydroge Stratifiec 1cm Muc Depletec Thick Da Sandy M Sandy G	Indicators: (Appli (A1) pipedon (A2) stic (A3) n Sulfide (A4) d Layers (A5)(LRR ck (A9)(LRR D) d Below Dark Surfa ark Surface (A12) fucky Mineral (S1) sileyed Matrix (S4)	C) C) ace (A11)	ILRRs, unless othe Sandy Redox (S5 Stripped Matrix (S Loamy Mucky Mir Loamy Gleyed Matrix (I Depleted Matrix (I Redox Dark Surfa Depleted Dark Surfa Redox Depression Vernal Pools (F9)	rwise no 66) heral (F1) atrix (F2) -3) icce (F6) irface (F7 ns (F8))		Indicators for Pr	oblematic Hydr) (LRR C) (0)(LRR B) ic (F18) aterial (TF2) in remarks) dric vegetation a gy must be prese	ic Soils': and ent.	
Restrictive	Layer (if present)	:								
Depth (incl	nes):		_				Hydric S	oil Present ?	🛛 Yes 🛛 No)
Remarks: _{Sa}	mple point meets	depleted m	atrix (F3).							

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
Surface water present? X Yes I No	Depth (inches): 1		
Water table present?	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monito	oring well, aerial photos, etc.) if available).	
Remarks: Surface water (A1) from active flood	irrigation by rancher. Sample point also	o contains biotic cru	ist (B12).

Project/Site Bowlesby Ranch	City	County Solano	Sampling Date 7/20/2018
Applicant/Owner <u>Ecosystem Investment F</u>	artners	State CA	Sampling Point SP084
Investigator(s) T. Harris, S. Bennett; WRA	Inc	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked flo	odplain Loc	cal Relief (concave, convex, none) <u>None</u>	Slope(%) <u>0-1</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-121.</u>	.7264551 Long: <u>38.30240617</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0	to 2 percent slopes	NWI class	sification <u>PF</u>
Are climatic/hydrologic conditions on-site	ypical for this time of yea	ar? 🔲 Yes 🛛 No 🛛 (If no, explain ir	n remarks)
Are any of the following significantly distur	bed? Degetation	🔲 Soil 🔲 Hydrology 🛛 Are "Normal Ci	rcumstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problemation	atic? Degetation	Soil Hydrology (If needed, e	explain any answers in remarks)
SUMMARY OF FINDINGS - Attach s	ite map showing sa	mple point locations, transects, imp	oortant features, etc.
Hydrophytic Vegetation Present?Image: Constraint of the sent?Hydric Soil Present?Image: Constraint of the sent?Wetland Hydrology Present?Image: Constraint of the sent	Yes 🛛 No Yes 🗌 No Yes 🗋 No	Is the Sampled Area within a Wetland?	□Yes ⊠No
Remarks: Upland sample point paired w	th SP083. Sample poin	t meets criteria for hydric soils and wetland	hydrology, but does not meet criteria for

cemarks: Upland sample point paired with SP083. Sample point meets criteria for hydric soils and wetland hydrology, but does not meet criteria for hydrophytic vegetation. Climatic conditions were drier than normal during site visit, but was not considered problematic because hydrology is artificial.

	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant1(B)
4 Tree Stratum Total Cover:				% of dominant species that0 (A/B) are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
2 3 4				OBL species 0 x1 FACW species 0 x2 FAC species 5 x3 15
Sapling/Shrub Stratum Total Cover: <u>HERB STRATUM</u> Plot Size: 5' radius				FACU species 95 x4 380 UPL species x5
1. Festuca arundinacea	90	Yes	FACU	Column Totals 100 (A) 395 (B)
2. Paspalum dilatatum	2	No	FAC	Prevalence Index = B/A =3.95
3. Lotus corniculatus	3	No	FAC	Hydrophytic Vegetation Indicators
 4. Sporobolus indicus 5 6 	5	<u>No</u>	FACU	 Dominance Test is >50% Prevalence Index is <!--= 3.0<sup-->1
7		·		Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover:	100	- <u> </u>		Problematic hydrophytic vegetation (explain)
<u>WOODY VINE STRATUM</u> Plot Size: 1	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2 Woody Vines Total Cover: % Bare ground in herb stratum 0	% cover of	biotic crust 0		- Hydrophytic ☐ Yes ⊠ No Vegetation Present ?

SOIL	
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Profile desc	ription: (Describe Matrix	e to the dep	oth needed to docur Red	nent the i ox Feature	indicator es	or confir	m the absence of in	ndicators.)
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc1	Texture	Remarks
0-8	2.5Y 3/1	100	-	<u> </u>	-		Clay	
8-14	<u>2.5Y 4/1</u>	95	<u>5YR 3/4</u>	5	<u>s</u>	<u> </u>	<u>Clay</u>	Depleted matrix with redox
		- <u> </u>						
Type: C=Co	ncentration, D=De	epletion, RN	I=Reduced Matrix.	² Loca	tion: PL=	Pore Linin	g, RC=Root Channe	I, M=Matrix
Histosol Histoc Ep Black His Hydroge Stratified C Depleted Thick Da Sandy M Sandy G	(A1) ipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)(LRR bk (A9)(LRR D) I Below Dark Surfa rk Surface (A12) lucky Mineral (S1) leyed Matrix (S4)	C) ace (A11)	□ Sandy Redox (Sf □ Stripped Matrix (Sf □ Loamy Mucky Mi □ Loamy Gleyed M ⊠ Depleted Matrix (Green M	5) 56) neral (F1) atrix (F2) F3) ace (F6) urface (F7 ns (F8))	·)		a 1cm Muck (AS a 2cm Muck (AI a 2cm Muck (A1 b Reduced Vert c Red Parent M b Other (explain b Other (explain b A 3 Indicators of hy wetland hydrolog	dric vegetation and gy must be present.
Restrictive	Layer (if present)	:						
Depth (incl	nes):		_ _				Hydric S	coil Present ? 🛛 Yes 🗌 No
Remarks: _{Sa}	mple point meets	depleted m	atrix (F3).					

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present? 🛛 🛛 Yes 🔲 No	Depth (inches): <u>12</u>		
Saturation Present? Xes I No (includes capillary fringe)	Depth (inches): <u>8</u>	Wetland I	Hydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monite	oring well, aerial photos, etc.) if available).	
Remarks: Sample point contains high water ta	ble (A2) and saturation (A3) from recentl	y flood irrigation.	

Project/Site Bowlesby Ranch	City	County	Solano		Sampling Da	ate 7/20/20	18
Applicant/Owner Ecosystem Investment Partners			Stat	e <u>CA</u> S	ampling Point	SP085	
Investigator(s) T. Harris, S. Bennett; WRA Inc		Section	,Township,R	ange			
Landform (hillslope, terrace, etc.)Diked floodplain	Local R	elief (concave,	convex, non	e) <u>None</u>	s	lope(%) <u>0</u>	-1
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-121.7133</u>	019	Long: <u>38</u>	.3020058	Datum: <u>WG</u>	GS 84	
Soil Map Unit Name Sacramento clay, 0 to 2 perce	ent slopes			NWI classification	PF		
Are climatic/hydrologic conditions on-site typical for	this time of year?	🗆 Yes 🛛 N	lo (lf no	, explain in remarks)		
Are any of the following significantly disturbed?	□ Vegetation □	Soil 🔲 Hydro	logy Are	"Normal Circumstan	ces" present?	🛛 Yes 🗌] No
Are any of the following naturally problematic?	□ Vegetation □	Soil 🛛 Hydro	logy (I	f needed, explain an	y answers in re	marks)	
SUMMARY OF FINDINGS - Attach site map	showing sample	e point locati	ons, trans	ects, important fo	eatures, etc.		
Hydrophytic Vegetation Present? ☑ Yes Hydric Soil Present? ☑ Yes Wetland Hydrology Present? ☑ Yes	No No No	ls the S within a	ampled Ar Wetland?	ea 🛛 🛛 Yes	□ No		
Remarks: Wetland sample point paired with SP08 hydrophytic vegetation, hydric soils, and observed on the ground. Climatic cond is artificial.	36. Sample point loc d wetland hydrology litions were drier that	ated in lower e . Boundary bas n normal during	leveation of i sed on aerial g site visit, bu	rrigated pasture. Sa signatures correspo ut was not considere	ample oint meet onding to shift ir d problematic b	ts criteria fo vegetation because hy	or n drology
VEGETATION (use scientific names)							
TREE STRATUM Plot Size: N/A	Absolute [Dominant	Indicator Status	Dominance Test	Worksheet		
1				Number of Domina that are OBL, FAC	ant Species W, or FAC?	2	(A)
2				Total number of do species across all	ominant strata?	3	_(B)
4 Tree Stratum Total Cover:				% of dominant sp are OBL, FACW,	ecies that or FAC?	66	_(A/B)
SAPI ING/SHRUB STRATUM Plot Size:	 N/A		·	Prevalence Inde	x Worksheet		

Tree Stratum Total Cover: _ <u>SAPLING/SHRUB STRATUM</u> Plot Size: 1	N/A			are OBL, FACW, or FAC?
<u>SAPLING/SHRUB STRATUM</u> Plot Size: 1 – 2	N/A			Prevalence Index Worksheet
1				
2				I otal % cover of: Multiply by:
				OBL species x1
				FACW species x2
4.				FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
HERB STRATUM Plot Size: 5' radius				UPL species x5
1. Cynodon dactylon	25	Yes	FACU	Column Totals (A) (B)
2. Unknown grass 1	15	No	?	Prevalence Index = B/A =
3. Hordeum jubatum	30	Yes	FAC	- Hydrophytic Vegetation Indicators
4. Lotus corniculatus	25	Yes	FAC	- Dominance Test is >50%
5. Poa sp	5			$- \Box = Prevalence Index is $
6				
7				- supporting data in remarks)
8				- Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover: _	100			
WOODY VINE STRATUM Plot Size:N	I/A			¹ Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed or problematic.
2				_
Woody Vines Total Cover:				Hydrophytic No
% Bare ground in herb stratum 0	% cover of b	iotic crust 0		Vegetation Present ?
Remarks: Sample point dominated by FACU and F	AC species, m	eets dominance	e test.	•

SOIL								Sampling Poi	nt SP085	
Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features										
_(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Remar	rks	
3-0	10YR 2/2	100	-		-	-	Organic	Organic Layer		
0-5	2.5Y 3/1	100					Clay			
5-13	2.5Y 3/1	92	<u>5YR 4/6</u>	8	<u>C</u>	<u>C</u>	Clay			
								- <u> </u>		
¹ Type: C=Co	ncentration, D=De	pletion, RN	/=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	g, RC=Root Channe	I, M=Matrix		
Hydric Soil I	ndicators: (Appli (A1)	cable to al	I LRRs, unless other Sandy Redox (S5	r wise no t	ed.)		Indicators for Pr	oblematic Hydrid	c Soils³:	
Histic Ep	ipedon (A2)		Stripped Matrix (S	, 6)			2cm Muck (A	10)(LRR B)		
Black Hi	stic (A3)		Loamy Mucky Mir	eral (F1)			Reduced Vert	ic (F18)		
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	I Sullide (A4)	C)	Depleted Matrix (F	=3)			Red Parent M Other (explain	aterial (TF2)		
1cm Mud	ck (A9)(LRR D)	0)	Redox Dark Surfa	ce (F6)				r in remarks)		
Depleted	Below Dark Surfa	ace (A11)	Depleted Dark Su	rface (F7)					
	rk Surface (A12)		Redox Depression	าร (F8)			3			
□ Sandy IV	lucky Mineral (ST) leved Matrix (S4)		U Vernai Pools (F9)				Indicators of hy	[°] Indicators of hydric vegetation and		
Bestrictive								gy must be preser	n . .	
Turney	Layer (il present)									
			_							
Depth (incl	nes):						Hydric S	Soil Present ?	🛛 Yes 🗌 No	
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).				-			

Wetland Hydrology Indicators:		S	secondary Indicators (2 or more required)					
Primary Indicators (any one indicator is suffic	ient)	r	Weter Marke (B1)(Piverine)					
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3)	 Water Marks (B) (Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 					
Field Observations:								
Water table present?	Depth (inches): 1							
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	Wetland Hy	drology Present ? 🛛 Yes 🗖 No					
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.								
Remarks: Sample point has surface water (A1) from active flood irrigation.							

Project/Site Bowlesby Ranch	City	County Solano	Sampling Date 7/20/2018
Applicant/Owner Ecosystem Investment Partr	iers	State CA	Sampling Point SP086
Investigator(s) T. Harris, S. Bennett; WRA Inc		Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked floodpl	ain Lo	ocal Relief (concave, convex, none) <u>None</u>	Slope(%) <u>0-1</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-12</u>	1.7133156 Long: <u>38.30148908</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0 to 2	percent slopes	NWI classific	ation PF
Are climatic/hydrologic conditions on-site typic	al for this time of y	rear? 🔲 Yes 🖾 No 🛛 (If no, explain in re	marks)
Are any of the following significantly disturbed	? 🛛 Vegetatio	n 🔲 Soil 🔲 Hydrology 🛛 Are "Normal Circu	mstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problematic?	Vegetatio	n 🛛 Soil 🔲 Hydrology (If needed, expl	ain any answers in remarks)
SUMMARY OF FINDINGS - Attach site	map showing s	ample point locations, transects, import	ant features, etc.
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	5 🖾 No 5 🔲 No 5 🖾 No	Is the Sampled Area within a Wetland?	Yes 🖾 No
Remarks: Upland sample point paired with S	P085. Sample poir	nt located in irrigated pasture. Sample point me	ets indicators for hydric soils, but does

Remarks: Upland sample point paired with SP085. Sample point located in irrigated pasture. Sample point meets indicators for hydric soils, but does not meet criteria for hydrophytic vegetation or wetland hydrology. Climatic conditions were drier than normal during site visit, but was not considered problematic because hydrology is artificial.

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute % covor	Dominant	Indicator	Dominance Test Worksheet
1				Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant3(B)
4 Tree Stratum Total Cover:				% of dominant species that33(A/B) are OBL, FACW, or FAC?
	N/A	-		Prevalence Index Worksheet
SAFLING/SHRUB STRATUM FILL SIZE.	11/7	-		Total % cover of: Multiply by:
				OBL species x1
2		<u> </u>		FACW species x2
3 ·				FAC species x3
^{4.} · · · · · · · · · · · · · · · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · · _ · · · _ =				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Cynodon dactylon	30	Yes	FACU	
2. <u>Sporobolis indicus</u> .	30	Yes	FACU	Prevalence Index = B/A =
3. <u>Trifolium fragiferum</u> .	20	Yes	FAC	Hydrophytic Vegetation Indicators
4. Lotus corniculatus	5	No	FAC	Dominance Test is >50%
5. Plantago lanceolata	10	No	FAC	\square Prevalence Index is $$
6. <u>Paspalum dilatatum</u> .	5	No	FAC	
7				supporting data in remarks)
8				\square Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	_		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1.				must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:				
% Bare ground in herb stratum <u>0</u>	% cover of	- biotic crust <u>0</u>		Vegetation Present ?
Remarks: Sample point dominated by FACU and	FAC species, o	loes not meet doi	minance test.	

SOIL								Sampling Po	oint SP086	
Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
_(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Rema	arks	
3-0	10YR 2/2	100	-		-	-	Organic	Organic Layer		
0-8	2.5Y 3/1	100					Clay			
8-16	2.5Y 3/1	98	7.5YR 4/6	2	С	M	Clay			
		·					·			
		·								
¹ Type: C=Co	ncentration, D=De	pletion, RM	1=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	g, RC=Root Channel	l, M=Matrix		
Hydric Soil I Histosol Histic Ep Black His Hydroge Stratified Content Hydroge Stratified Content Hydroge Stratified Content Hydroge Stratified Sandy M Sandy G	Type: C=Concentration, D=Depletion, RM=Reduced Matrix. *Location: PL=Pore Lining, RC=Root Channel, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) Indicators for Problematic Hydric Soils ³ : Black Histic Epipedon (A2) Stripped Matrix (S6) 2cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) 1cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydric vegetation and writered by depleted water of the depleted water or write the second the depleted water or write the second the depleted water or write the second to the depleted water or write the se									
Restrictive	Layer (if present)	:								
Type:			_							
Depth (inches): Hydric Soil Present ? 🛛 Yes 🗌 No										
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).							

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)					
Primary Indicators (any one indicator is suffic	ient)		Weter Merke (P1)(Piverine)					
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 						
Field Observations:								
	Depth (inches): -							
Water table present? LI Yes KI No	Depth (inches):							
Saturation Present?	Depth (inches):	Wetland	Hydrology Present ? 🛛 Yes 🛛 No					
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.								
Remarks:Sample point lacks indicators of wetland hydrology.								

Project/Site Bowlesby Ranch	County S	Solano		Sampling Date 7/20/2	2018	
Applicant/Owner Ecosystem Investmen	t Partners		State CA		pling Point <u>SP087</u>	
Investigator(s) T. Harris, S. Bennett; WI	२A Inc	Section,T	ownship,Range			
Landform (hillslope, terrace, etc.)Diked	iloodplain	Local Relief (concave, co	onvex, none) <u>None</u>		Slope(%)	0-1
Subregion(LRR) LRR C (Medit. CA)	Lat:	-121.7135192	Long: <u>38.3001150</u>	8	Datum: WGS 84	
Soil Map Unit Name Sacramento clay,	0 to 2 percent slopes	i	NWI cla	ssification <u>PF</u>		
Are climatic/hydrologic conditions on-sit	e typical for this time	of year? 🔲 Yes 🛛 No	(If no, explain	in remarks)		
Are any of the following significantly dis	urbed? 🔲 Vegeta	ation 🔲 Soil 🔲 Hydrolog	gy Are "Normal (Circumstances	s" present? 🛛 Yes	🗆 No
Are any of the following naturally proble	matic? 🛛 Vegeta	ation 🔲 Soil 🔲 Hydrolog	Soil Hydrology (If needed, explain any answers in remarks			
SUMMARY OF FINDINGS - Attach	site map showing	g sample point location	ns, transects, im	portant feat	ures, etc.	
Hydrophytic Vegetation Present? I Hydric Soil Present? I Wetland Hydrology Present? I]Yes ⊠No]Yes ⊠No]Yes ⊠No	Is the Sa within a V	mpled Area Wetland?	☐ Yes	🖾 No	
Remarks: Upland sample point paired	with SP088. Sample	point located in middle of i	rrigated pasture. Sa	ample point do	es not meet criteria fo	or

hydrophytic vegetation, hydric soils, or wetland hydrology. Climatic conditions were drier than normal during site visit, but was not considered problematic because hydrology is artificial.

	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3		·		Total number of dominant species across all strata? 2 (B)
4 Tree Stratum Total Cover:				% of dominant species that 50 (A/B are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
2				OBL species x1 FACW species x2 FAC species x3
Sapling/Shrub Stratum Total Cover:		-		FACU species x4 UPL species x5
1. Cynodon dactylon	35	Yes	FACU	Column Totals (A) (B
2. Festuca perennis	30	Yes	FAC	Prevalence Index = B/A =
3. Festuca arundinacea	5	No	FACU	Hydrophytic Vegetation Indicators
t Trifolium fragiferum	15	No	FAC	Dominance Test is >50%
5. Sporobolus indicus	10	No	FACU	\square Prevalence Index is $$
6. Lotus corniculatus 7	5	<u>No</u>	FAC	 Morphological adaptations (provide supporting data in remarks) Destructional for the support of the
Herb Stratum Total Cover:	100			
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2 Woody Vines Total Cover:				- Hydrophytic
% Bare ground in herb stratum 0	% cover of	- biotic crust <u>0</u>		Vegetation Present ?

SOIL	
------	--

Profile desc	ription: (Describe Matrix	e to the de	pth need	led to docum Redo	nent the in x Feature	n dicator (or confirm	n the absence of in	dicators.)		
(inches)	Color (moist)	%	Colo	or (moist)		Type ¹	Loc ¹	Texture	Rema	arks	
2-0	10YR 3/1	100	-					Organic	Organic Layer		
0-12	2.5Y 3/1	100				-	-	Clay			
¹ Type: C=Co	ncentration, D=De	pletion, R	M=Reduc	ed Matrix.	² Locat	ion: PL=F	ore Lining	g, RC=Root Channel	, M=Matrix		
Hydric Soil I	ndicators: (Appli	cable to a		unless other	wise not	ed.)		Indicators for Pro	oblematic Hydr	ic Soils ³ :	
	(A1) inadan (A2)			ly Redox (S5)) 6)			1cm Muck (A9) (LRR C)		
	stic (A3)			ped Matrix (S ny Mucky Min	o) eral (F1)			2cm Muck (A1	2cm Muck (A10)(LRR B)		
	n Sulfide (A4)			ny Gleved Ma	atrix (F2)			Reduced Vertic (F18) Red Parent Material (TE2)			
Stratified	Lavers (A5)(LRR	C)		eted Matrix (F	-3)			$\square \text{ Red Farefit Material (1F2)}$			
1cm Mud	k (A9)(LRR D)	- /		ox Dark Surfa	ce (F6)						
Depleted	Below Dark Surfa	ace (A11)	Depl	eted Dark Su	rface (F7)						
Thick Da	rk Surface (A12)	· · ·		ox Depressior	າຣ (F8) ໌						
🛛 🛛 Sandy M	ucky Mineral (S1)		🛛 Vern	al Pools (F9)				³ Indicators of hydric vegetation and			
🛛 🛛 Sandy G	leyed Matrix (S4)							wetland hydrolog	wetland hydrology must be present.		
Restrictive I	Layer (if present)	:									
Туре:											
Depth (incl	nes):							Hydric S	oil Present ?	🗆 Yes 🛛	No
Remarks: _{Sa}	mple point does n	ot meet ind	dicators o	f hydric soils.							

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient			
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 	
Field Observations:			
Surface water present? Yes X No	Depth (inches):		
Water table present? 🛛 🛛 Yes 🛛 No	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monito	oring well, aerial photos, etc.) if available		
Remarks: No wetland hydrology indicators obs	erved.		

Project/Site Bowlesby Ranch	City	County Solano	Sampling Date 7/20/2018				
Applicant/Owner <u>Ecosystem Investment Partners</u>		State CA	Sampling Point SP088				
Investigator(s) T. Harris, S. Bennett; WRA Inc		Section,Township,Range					
Landform (hillslope, terrace, etc.)Diked floodplain	Local Relie	f (concave, convex, none) <u>None</u>	Slope(%) <u>0-1</u>				
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-121.713820</u>	5 Long: <u>38.29932417</u>	Datum: WGS 84				
Soil Map Unit Name <u>Sacramento clay, 0 to 2 perc</u>	ent slopes	NWI classificat	ion PF				
Are climatic/hydrologic conditions on-site typical for	this time of year?	Yes 🛛 No 🦳 (If no, explain in rem	arks)				
Are any of the following significantly disturbed?	□ Vegetation □ Soi	il 🔲 Hydrology 🛛 Are "Normal Circum	stances" present? 🛛 Yes 🔲 No				
Are any of the following naturally problematic?	□ Vegetation □ Soi	il 🔲 Hydrology 🛛 (If needed, explai	n any answers in remarks)				
SUMMARY OF FINDINGS - Attach site map	showing sample p	oint locations, transects, importa	nt features, etc.				
Hydrophytic Vegetation Present? ☑ Yes Hydric Soil Present? ☑ Yes Wetland Hydrology Present? ☑ Yes	No No No	Is the Sampled Area within a Wetland?	Yes 🛛 No				
Remarks: Wetland sample point paired with SP087. Sample point located in lower elevation of irrigated pasture. Sample point meets criteria for hydrophytic vegetation, hydric soils, and wetland hydrology. Boundary based on aerial signatures corresponding to shift in vegetation observed on the ground. Climatic conditions were drier than normal during site visit, but was not considered problematic because hydrology is artificial.							

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1		Species?		Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant (B) (B)
4				% of dominant species that100(A/B) are OBL. FACW. or FAC?100(A/B)
				Prevalence Index Worksheet
SAPLING/SHRUB STRATUM Plot Size:	N/A			Total % cover of: Multiply by:
1				
2				EACW species X1
3				
4				FACUspecies X3
Sapling/Shrub Stratum Total Cover:				LIPI species
HERB STRATUM Plot Size: 5' radius				
1. Hordeum jubatum	25	Yes	FAC	
2. Poa pratensis	60	Yes	FAC	Prevalence Index = B/A =
3. Festuca perennis	4	No	FAC	
4. Sporobolis indicus	2	No	FACU	\square Dominance Test is >50%
5. Trifolium fragiferum	5	No	FAC	
6. Lotus corniculatus	4	No	FAC	Prevalence index is = 3.0</td
7.				Morphological adaptations (provide
8.				Supporting data in remarks) \square Droblematic hydrophytic vegetation ¹ (cyclein)
Herb Stratum Total Cover:	100			
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1.				must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:				Hydrophytic
				Vegetation Present ?
% Bare ground in herb stratum 0	_ % cover of b	piotic crust 0		
Remarks: Sample point dominated by FAC specie	s, meets domin	ance test.		

Profile desc	ription: (Describ	e to the depth	needed to docun	nent the i	indicator	or confiri	m the absen	ce of ind	licators.)		
Uepth (inches)	Color (moist)	%	Color (moist)	% realure	Type ¹	Loc ¹	- Textur	re	Rema	arks	
0-8	2.5Y 3/1	100	-	-	-	-	Clay				
8-14	2 5Y 3/1	90	5YR 4/6	10	C	PI /M	Clav				
0-14	2.01 0/1		511(4/0	10	<u> </u>						
1Turney 0-0				21					NA-NA admine		
Hydric Soil	ncentration, D=De	icable to all I	RRs unless other	Loca	ted)	ore Lining	g, RC=ROOL	channel,	N=Matrix	ic Soils ³	
	(A1)		Sandy Redox (S5)	louiy			luck (A9)	(LRR C)	00113	
Histic Ep	ipedon (A2)		Stripped Matrix (S	6) (5 4)			2cm M	luck (A10)(LRR B)		
	stic (A3) n Sulfide (A4)		Loamy Mucky Mir	ieral (F1) atrix (F2)				ed Vertic	(F18) torial (TE2)		
Stratified	Layers (A5)(LRR	C)	Depleted Matrix (F	=3)			☐ Red P	(explain i	n remarks)		
	k (A9)(LRR D)		Redox Dark Surfa	ce (F6)	、			、 I	,		
Depleted	l Below Dark Surf irk Surface (A12)	ace (A11)	Redox Depression	rface (F7))						
Sandy M	ucky Mineral (S1)		Vernal Pools (F9)				³ Indicato	ors of hydi	ric vegetation a	nd	
Sandy G	leyed Matrix (S4)						wetland I	hydrology	/ must be prese	ent.	
Restrictive	Layer (if present)	:									
Type:											
Depth (incl	nes):						н	lydric So	il Present ?	🛛 Yes 🗌] No
Kemarka.											
	SY										
Wetland Hyd	Irology Indicator	s:						Seconda	ary Indicators (2	2 or more rec	quired)
Primary Indic	ators (any one inc	licator is suffic	ient)						r Marke (B1)/P	ivorino)	· · · · · ·
Surface V	Vater (A1)		☐ Salt Crust (B ⁻	11)					ment Deposits	(B2)(Riverin	e)
High Wat	er Table (A2)		Biotic Crust (B12)				Drift	Deposits (B3)(F	Riverine)	
Saturatio	n (A3) arks (B1)(Nonriver	ine)	Aquatic Inver Hydrogen Su	tebrates (Ifide Odo	(B13) r (C1)				lage Patterns (I Season Water I	B10) Table (C2)	
Sedimen	Deposits (B2)(No	onriverine)	Oxidized Rhiz	zospheres	s along Liv	ving Roots	s (C3)		Muck Surface ((C7)	
	osits (B3)(Nonrive	rine)	Presence of I	Reduced	Iron (C4)	-		Cray	fish Burrows (C	8)	
Surface S	Soil Cracks (B6) n Visible on Aeria	l Imagery (B7)	Recent Iron F	Reduction	in PLowe	d Soils (C	;6)		ration Visible or	n Aerial Ima	gery (C9)
Water-St	ained Leaves (B9)			unoj				Neutral Test (D	5))5)	
Field Observ	vations:										
Surface wate	r present?	Yes 🛛 No	Depth (inches):	0.25							
Water table p	resent?	Yes 🛛 No	Depth (inches):	14							
Saturation Pr	esent?	Yes 🛛 No	Depth (inches):	12			Wotland H	lydrolog	v Present ?		
(includes cap	illary fringe)		toring well agrial p	hotos oto			Wetland	lyarolog	y riesent :		
Describe reco	nded data (Stream	r guage, mon	toring well, aerial p	nolos, elc	.) II avalla	DIE.					
Remarks:											

Project/Site Bowlesby Ranch	City	County Solano	Sampling Date 7/20/2018				
Applicant/Owner Ecosystem Investment Partners		State CA	Sampling Point SP089				
Investigator(s) T. Harris, S. Bennett; WRA Inc		Section,Township,Range					
Landform (hillslope, terrace, etc.)Diked floodplain	Local Rel	ef (concave, convex, none) <u>None</u>	Slope(%) <u>0-1</u>				
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-121.71403</u>	B3 Long: <u>38.29426352</u>	Datum: WGS 84				
Soil Map Unit Name <u>Sacramento clay, 0 to 2 perc</u>	ent slopes	NWI classification	on <u>PF</u>				
Are climatic/hydrologic conditions on-site typical for	r this time of year? [] Yes 🛛 No 🛛 (If no, explain in rema	rks)				
Are any of the following significantly disturbed?	□ Vegetation □ S	oil 🔲 Hydrology 🛛 Are "Normal Circums	tances" present? 🛛 Yes 🔲 No				
Are any of the following naturally problematic?	□ Vegetation □ S	oil 🔲 Hydrology (If needed, explain	any answers in remarks)				
SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.							
Hydrophytic Vegetation Present? 🛛 Yes 🗖	No	Is the Sampled Area	—				
Hydric Soil Present? Xes	No	within a Wetland?	es ∐ No				
Wetland Hydrology Present?	No						
Remarks: Wetland sample point paired with SP05 hydrophytic vegetation, hydric soils, an observed on the ground. Climatic conc is artificial.	90. Sample point loca d wetland hydrology. ditions were drier than	ted in lower elevation of irrigated pasture. Boundary based on aerial signatures corre normal during site visit, but was not consid	Sample point meets criteria for sponding to shift in vegetation ered problematic because hydrology				
VEGETATION (use scientific names)							

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1				Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:		·		% of dominant species that100(A/B) are OBL, FACW, or FAC?
	NI/A	-		Prevalence Index Worksheet
SAPLING/SHRUB STRATUM FIOUSIZE.	N/A	-		Total % cover of: Multiply by:
		<u> </u>		OBL species x1
^{2.}				FACW species x2
				FAC species x3
Sapling/Shrub Stratum Total Cover				FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5' radius		Mara	540	Column Totals (A) (B)
1. Trifolium tragiterum	35	Yes		
2. Festuca perennis	30			
3. Polypogon monspellensis	2			Hydrophytic Vegetation Indicators
4. Rumex crispus	<u> </u>	<u> </u>	2 7	Dominance Test is >50%
5. Hordeum jubatum	13	<u>No</u>	: 	\square Prevalence Index is = 3.0<sup 1
 Plantago lanceolata 	3	<u>No</u>	FAC	Morphological adaptations (provide
8 Cynodon dactylon	12	<u> </u>	FACU	supporting data in remarks)
Herb Stratum Total Cover:	100	·		Problematic hydrophytic vegetation ' (explain)
WOODY VINE STRATUM Plot Size:	N/A	-		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1 ·		·		
2		·		
Woody Vines Total Cover:		-		Hydrophytic Vers INO
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		vegetation Fresent ?
Remarks: Sample point dominated by FAC specie	es, meets domi	nance test.		1

SOIL								Sampling Po	int SP089
Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
(inches)	Color (moist)	x%	Color (moist)	<u> </u>	Type ¹	Loc ¹	Texture	Rema	arks
2-0	10YR 2/1	100	-		-		Organic	Organic Layer	
0-4	2.5Y 2/1	100			-		Clay		
4-12	2.5Y 2/1	88	5YR 4/6	10	С	M	Clay		
			Black	2	<u>C</u>	<u>M</u>	Clay	manganese cor	ncentrations
							·		
Type: C=Co	ncentration, D=l	Depletion, RM=	Reduced Matrix.	Loca ² Loca	tion: PL=F	Pore Lining	g, RC=Root Channe	I, M=Matrix	0 11 ³
Histosol Histic Ep Black His Hydroge Stratified 1cm Muc Depleted	(A1) ipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)(LR k (A9)(LRR D) I Below Dark Su rk Surface (A12		Sandy Redox (S5 Stripped Matrix (S Loamy Mucky Mir Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su Redox Depression) 66) atria (F1) atrix (F2) F3) ce (F6) rface (F7) ns (F8))		1cm Muck (AS 2cm Muck (AT Reduced Vert Red Parent M Other (explain	blematic Hydri 9) (LRR C) 10)(LRR B) ic (F18) aterial (TF2) in remarks)	c Sons :
Sandy M	ucky Mineral (S	í) 🗆	Vernal Pools (F9)	. ,			³ Indicators of hy	dric vegetation a	nd
Destrictive	leyed Matrix (S4	+) 					wetland hydrolog	gy must be prese	ent.
Restrictive I	Layer (if preser	it):							
Donth (in ch									
Depth (Incr	ies):						Hydric S	oil Present ?	Xes INO
HYDROLOG	9Y								
Wetland Hyd	Irology Indicate	ors:					Second	dary Indicators (2	2 or more required)
Primary Indic Surface V High Wat Saturatio Water Ma Sediment Drift Depo Surface S Inundatio	ators (any one il Vater (A1) er Table (A2) n (A3) arks (B1)(Nonriv t Deposits (B2)(I osits (B3)(Nonriv Soil Cracks (B6) n Visible on Aer ained Leaves (B	ndicator is suffic erine) Nonriverine) verine) ial Imagery (B7 9)	alent) Salt Crust (B Biotic Crust (I Aquatic Inver Hydrogen Su Oxidized Rhiz Presence of F Recent Iron F Other (Explai	11) B12) tebrates (lfide Odoi zospheres Reduced Reduction n in Rema	B13) r (C1) s along Liv Iron (C4) in PLowe arks)	ving Roots	Wa Sec Drif Dra Dry (C3) Cra 6) Sat FAC	ter Marks (B1)(R liment Deposits (t Deposits (B3)(F inage Patterns (I -Season Water 1 n Muck Surface (yfish Burrows (C uration Visible or allow Aquitard (D C-Neutral Test (D	iverine) (B2)(Riverine) Riverine) B10) Fable (C2) (C7) (C7) a Aerial Imagery (C9 3) 05)
Field Observ	vations:								
Surface wate	r present?	Na Yes ∐ No	Depth (inches):	0.5-1					
vvater table p Saturation Pr	resent?	」Yes ⊠ No]Yes ⊠ No	Depth (inches): Depth (inches):	-					
(includes cap	illary fringe)		,			·	Wetland Hydrolo	gy Present ?	⊠ Yes ∐ No
Describe reco	orded data (strea	am guage, moni	toring well, aerial pl	hotos, etc	:.) if availa	ible.			
Remarks:									
Project/Site Bowlesby Ranch	City	County Solano	Sampling Date 7/20/2018						
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Applicant/Owner Ecosystem Investment Partners		State CA	Sampling Point SP090						
Investigator(s) T. Harris, S. Bennett; WRA Inc		Section,Township,Range							
Landform (hillslope, terrace, etc.)Diked floodplain	Local Re	lief (concave, convex, none) <u>None</u>	Slope(%) <u>0-1</u>						
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-121.7139</u> 2	286 Long: <u>38.29452087</u>	Datum: WGS 84						
Soil Map Unit Name Sacramento clay, 0 to 2 percent	cent slopes	NWI classification	on <u>PF</u>						
Are climatic/hydrologic conditions on-site typical for	or this time of year?	🗆 Yes 🛛 No 🦳 (If no, explain in rema	rks)						
Are any of the following significantly disturbed?	□ Vegetation □ S	oil 🔲 Hydrology 🛛 Are "Normal Circums	tances" present? 🛛 Yes 🔲 No						
Are any of the following naturally problematic?	□ Vegetation □ S	oil 🔲 Hydrology 👘 (If needed, explain	any answers in remarks)						
SUMMARY OF FINDINGS - Attach site map	<u>p showing sample</u>	point locations, transects, importan	t features, etc.						
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	1 No] No 1 No	Is the Sampled Area \Box Y within a Wetland?	es 🖾 No						
Remarks: Upland sample point paired with SP08	9. Sample point locat	ed in irrigated pasture. Sample point meets	indicators for hydric soils, but does						

Remarks: Upland sample point paired with SP089. Sample point located in irrigated pasture. Sample point meets indicators for hydric soils, but does not meet criteria for hydrophytic vegetation or wetland hydrology. Climatic conditions were drier than normal during site visit, but was not considered problematic because hydrology is artificial.

	Absolute	Dominant	Indicator	Deminente Test Westerheit
TREE STRATUM Plot Size: N/A	- % cover	Species?	Status	Dominance lest worksneet
1		·		Number of Dominant Species 1 (A) that are OBL, FACW, or FAC? 1 (A)
2				Total number of dominant (B)(B)
4 Tree Stratum Total Cover:		·		% of dominant species that
	NI/A	-		Prevalence Index Worksheet
<u>SAPLING/SHRUB STRATUM</u> Plot Size:	N/A	-		Total % cover of: Multiply by:
1 ·				OBL species x1
2				FACW species x2
3 ·		·		FAC species x3
4 ·		·		FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Cynodon dactylon	55	Yes	FACU	
2. <u>Festuca perennis</u>	15	No	FAC	Prevalence Index = B/A =
3. Trifolium fragiferum	25	Yes	FAC	Hydrophytic Vegetation Indicators
4 . Papsalum dilatatum	2	No	FAC	Dominance Test is >50%
5. Plantago lanceolata	1	No	FAC	\square Browslongs Index is $$
6. Festuca arundinacea	2	No	FACU	
7.				Morphological adaptations (provide
8				\square Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	_		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1.				must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:				Hydrophytic — —
% Bare ground in herb stratum 0 % cover of biotic crust 0				Vegetation Present ?
Remarks: Sample point dominated by FACU and	FAC species, c	loes not meet doi	minance test.	

SOIL	
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Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features										
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Remarks		
2-0	10YR 2/2	100	-	<u> </u>			Organic	Organic Layer		
<u>0-13</u>	<u>2.5Y 3/1</u>	98	<u>5 YR 4/6</u>	2	<u>C</u>	<u>M</u>	Clay			
¹ Type: C=Co	ncentration, D=De	epletion, RN	/=Reduced Matrix.	² Loca	tion: PL=	Pore Linin	g, RC=Root Channe	el, M=Matrix		
Hydric Soil I	ndicators: (Appl	icable to a	I LRRs, unless othe	erwise no	ted.)		Indicators for Pr	oblematic Hydric Soils ³ :		
Histosol Histic Ep Black His Hydroge Stratified Completed Thick Da	(A1) ipedon (A2) stic (A3) n Sulfide (A4) l Layers (A5)(LRR k (A9)(LRR D) l Below Dark Surf rk Surface (A12) ucky Mineral (S12)	₹C) ace (A11)	Sandy Redox (SS Stripped Matrix (S Coamy Mucky Mi Loamy Mucky Mi Depleted Matrix (Redox Dark Surfa Depleted Dark Surfa Redox Depressio Redox Depressio Vernal Poole (59)	5) S6) neral (F1) latrix (F2) (F3) ace (F6) urface (F7 ons (F8))		1cm Muck (As 2cm Muck (As 2cm Muck (As Reduced Vert Red Parent M Other (explain	9) (LRR C) 10)(LRR B) ic (F18) laterial (TF2) n in remarks)		
Sandy M	leyed Matrix (S4)))			wetland hydrolog	wetland hydrology must be present.		
Restrictive Layer (if present):										
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).							

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)					
Primary Indicators (any one indicator is sufficie						
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 			
Field Observations:						
Surface water present? Yes X No	Depth (inches):					
Water table present? 🛛 🛛 Yes 🛛 No	Depth (inches):					
Saturation Present?	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🛛 No			
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks: Sample point lacks indicators of weth	and hydrology.					

Project/Site Bowlesby Ranch	City	County Solano	Sampling Date 7/20/2018			
Applicant/Owner Ecosystem Investment Pa	artners	State <u>CA</u>	Sampling Point SP091			
Investigator(s) T. Harris, S. Bennett; WRA	Inc	Section,Township,Range				
Landform (hillslope, terrace, etc.) Diked floc	dplain L	ocal Relief (concave, convex, none) <u>None</u>	Slope(%) <u>0-1</u>			
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-12</u>	1.7134281 Long: <u>38.29694568</u>	Datum: WGS 84			
Soil Map Unit Name Sacramento clay, 0 to	o 2 percent slopes	NWI classifica	ation <u>PF</u>			
Are climatic/hydrologic conditions on-site typical for this time of year? 🔲 Yes 🛛 No 🛛 (If no, explain in remarks)						
Are any of the following significantly disturb	ed? 🔲 Vegetatio	n 🔲 Soil 🔲 Hydrology 🛛 Are "Normal Circur	nstances" present? 🛛 Yes 🔲 No			
Are any of the following naturally problema	ic? 🗌 Vegetatio	n 🗌 Soil 🔲 Hydrology 👘 (If needed, expla	ain any answers in remarks)			
SUMMARY OF FINDINGS - Attach si	te map showing s	ample point locations, transects, importa	ant features, etc.			
Hydrophytic Vegetation Present? ``` Hydric Soil Present? ``` Wetland Hydrology Present? ```	Yes ⊠ No Yes ⊠ No Yes ⊠ No	Is the Sampled Area within a Wetland?	Yes 🖾 No			
Remarks: Upland sample point paired wit vegetation, hydric soils, or wet	n SP092. Sample po and hydrology. Clima	int located in irrigated pasture. Sample point doe tic conditions were drier than normal during site v	s not meet criteria for hydrophytic <i>i</i> isit, but was not considered			

problematic because hydrology is artificial.

REE STRATUM Plot Size: N/A	Absolute % covor	Dominant	Indicator	Dominance Test Worksheet
·		Species?		Number of Dominant Species(A) that are OBL, FACW, or FAC?
				Total number of dominant(B)(B)
Tree Stratum Total Cover:				% of dominant species that (A/B) 0 (A/B) 0 (A/B) 0 (A/B) 0] 0) 0] 0
- APLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet Total % cover of: Multiply by:
				OBL species x1 FACW species x2 FAC species x3 FACU species x4
		-		UPL species x5
Sporobolis indicus	90	Yes	FACU	Column Totals (A) (B
Festuca arundinacea	5	No	FACU	Prevalence Index = B/A =
Lotus corniculatus	3	No	FAC	Hydrophytic Vegetation Indicators
Plantago lanceolata	3	No	FAC	\square Dominance Test is >50%
Trifolium fragiferum	1	No	FAC	\square Prevalence Index is $$
) / 3				Morphological adaptations (provide supporting data in remarks)
Herb Stratum Total Cover:	100	_		
VOODY VINE STRATUM Plot Size: N	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vines Total Cover:				Hydrophytic □ Yes ☑ No Vegetation Present ?
% Bare ground in herb stratum 0	_ % cover of	biotic crust U		

SOIL	
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Profile description: (Describe to the depth needed to document the indicator or confirm Depth <u>Matrix</u> Redox Features							n the absence of in	dicators.)			
(inches)	Color (moist)	%	Colo	r (moist)		Type ¹	Loc ¹	Texture	Rema	arks	
2-0	10YR 2/2	100	-			-		Organic	Organic Layer		
0-14	2.5Y 3/1	100						Clay			
¹ Type: C=Co	ncentration, D=De	pletion, R	M=Reduc	ed Matrix.	² Locat	ion: PL=F	ore Lining	g, RC=Root Channel	, M=Matrix		
Hydric Soil I	ndicators: (Appli	cable to a	ll LRRs, I	unless othe	rwise not	ed.)		Indicators for Pro	oblematic Hydr	ic Soils ³ :	
Histosol	(A1) ipedon (A2) stic (A3)		Sand	y Redox (S5 bed Matrix (S ly Mucky Mir) 66) ieral (F1)			□ 1cm Muck (A9 □ 2cm Muck (A1 □ Reduced Verti) (LRR C) 0)(LRR B) c (F18)		
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) 1cm Muck (A9)(LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)					☐ Red Parent Ma ☐ Other (explain	aterial (TF2) in remarks)					
☐ Thick Da ☐ Sandy M ☐ Sandy G	rk Surface (A12) ucky Mineral (S1) leyed Matrix (S4)		☐ Redo	x Depression al Pools (F9)	ıs (F8)			³ Indicators of hydrolog	dric vegetation any must be prese	and ent.	
Restrictive I	_ayer (if present)	:									
Туре:											
Depth (inch	ies):							Hydric S	oil Present ?	□ Yes ⊠	No
Remarks: _{Sa}	mple point does n	ot meet hy	dric soil ir	idicators.							

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)					
Primary Indicators (any one indicator is sufficie						
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 			
Field Observations:						
Surface water present? Yes X No	Depth (inches):					
Water table present? 🛛 🛛 Yes 🛛 No	Depth (inches):					
Saturation Present?	Depth (inches):	Wetland H	Hydrology Present ? 🛛 Yes 🛛 No			
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.						
Remarks: Sample point lacks indicators of weth	and hydrology.					

Project/Site Bowlesby Ranch	City	County Solano		Sampling Date 7/20/2018			
Applicant/Owner Ecosystem Investment Partners	te <u>CA</u> Sar	npling Point <u>SP092</u>					
Investigator(s) T. Harris, S. Bennett; WRA Inc		Section,Township,F	Range				
Landform (hillslope, terrace, etc.) Diked floodplain Local Relief (concave, convex, none) None Slope(%) 0-1							
Subregion(LRR) LRR C (Medit. CA) Lat: <u>-121.7134356</u> Long: <u>38.2974246</u> Datum: <u>WGS 84</u>							
Soil Map Unit Name Sacramento clay, 0 to 2 percent slopes NWI classification PF							
Are climatic/hydrologic conditions on-site typical for this time of year? 🔲 Yes 🛛 No 🛛 (If no, explain in remarks)							
Are any of the following significantly disturbed? 🛛 Vegetation 🗔 Soil 🔲 Hydrology 🛛 Are "Normal Circumstances" present? 🖾 Yes 🗔 No							
Are any of the following naturally problematic?	□ Vegetation □ S	oil 🛛 Hydrology (lf needed, explain any	answers in remarks)			
SUMMARY OF FINDINGS - Attach site map	showing sample	point locations, trans	ects, important fea	atures, etc.			
Hydrophytic Vegetation Present? X Yes Hydric Soil Present? X Yes Wetland Hydrology Present? Yes	No No No	Is the Sampled A within a Wetland?	rea 🛛 Yes ?	□ No			
Remarks: Wetland sample point paired with SP091. Sample point located in lower elevation of irrigated pasture. Sample point meets criteria for hydrophytic vegetation, hydric soils, and wetland hydrology. Boundary based on aerial signatures corresponding to shift in vegetation observed on the ground. Climatic conditions were drier than normal during site visit, but was not considered problematic because hydrology is artificial.							
VEGETATION (use scientific names)							
	Absolute D	ominant Indicator	Dominance Test V	Norksheet			

TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1		Species ?	Status	Number of Dominant Species3(A) that are OBL, FACW, or FAC?
2		· ·		Total number of dominant generation (B)
4 Tree Stratum Total Cover:				% of dominant species that are OBL, FACW, or FAC?
SAPI ING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
2				OBL species x1
3				FACW species x2
4				FAC species x3
Sapling/Shrub Stratum Total Cover:		·		FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5 radius		Vee		Column Totals (A) (B)
1. Hordeum jubalum	20	Yee		Prevalence Index = B/A =
2. Polypogon monspellensis	25			
Trifolium fraciferum		- <u>res</u> . No		Hydrophytic Vegetation Indicators
4. Inknown Aster 1	2		2	Dominance Test is >50%
5. Jotus corniculatus	3	- <u>No</u> .	FAC	Prevalence Index is $$
7 Poa sp	5	<u> </u>	2	Morphological adaptations (provide
8	0			supporting data in remarks)
Herb Stratum Total Cover:	100	·		Problematic hydrophytic vegetation ' (explain)
	N/A	-		¹ Indicators of hydric soil and wetland hydrology
	IN/A			must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		<u> </u>		Hydrophytic
		-		Vegetation Present ?
% Bare ground in herb stratum 0	% cover of	biotic crust 0		5
Remarks: Sample point dominated by FAC specie	es, meets domi	nance test.		

SOIL								Sampling Po	int SP092
Profile desc	ription: (Describe	e to the de	oth needed to docur	nent the	indicator	or confir	m the absence of i	ndicators.)	
_(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ¹	Texture	Rema	rks
2-0	10YR 3/1	100	-		-	-	Organic	Organic Layer	
0-4	2.5Y 3/1	100	-	<u> </u>	-	-	Clay		
4-12	<u>2.5Y 3/1</u>	85	5YR 5/6	15	<u>C</u>	M/PL	Clay		
		- <u> </u>		- <u> </u>					
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ² Location: PL=Pore Lining, RC=Root Channel, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Redox (S5) 1 tcm Muck (A9) (LRR C) Histic Epipedon (A2) Stripped Matrix (S6) 2 ccm Muck (A10)(LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5)(LRR C) Depleted Matrix (F3) Other (explain in remarks) 1 cm Muck (A9)(LRR D) Redox Dark Surface (F6) Other (explain in remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) ³ Indicators of hydric vegetation and							c Soils³: nd nt.		
Restrictive Type: Depth (inc	Layer (if present)	:	_				Hydric S	Soil Present ?	🛛 Yes 🗌 No
Remarks: _{Sa}	ample point meets	redox dark	surface (F6).				•		

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)							
Primary Indicators (any one indicator is suffici	Weter Marka (B1)(Piverine)							
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6) Soils (C6) G Roots (C6) G Roots (C3) G Roots (C3) G Roots (C3) G Roots (C4) G Roots (C4) G Roots (C5) G Roots (C6) G Root						
Field Observations:	Denth (inches): 0.5							
Water table present?	Depth (inches): <u>0.5</u>							
Saturation Present? Xes INo (includes capillary fringe)	Depth (inches): 10	Wetland Hydrology Present ? 🛛 Yes 🔲 No						
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.								
Remarks: Sample point has surface water (A1), high water table (A2), and saturation (A3).								

Project/Site Bowlesby Ranch	City	County Solano	Sampling Date 7/20/2018
Applicant/Owner Ecosystem Investment Pa	rtners	State CA	Sampling Point SP093
Investigator(s) T. Harris, S. Bennett; WRA	nc	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked floo	dplain Lo	ocal Relief (concave, convex, none) <u>None</u>	eSlope(%) <u>0-1</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-121</u>	Long: 38.293825	i63 Datum: WGS 84
Soil Map Unit Name Sacramento clay, 0 to	2 percent slopes	NWI cl	assification PF
Are climatic/hydrologic conditions on-site ty	pical for this time of ye	ear? 🔲 Yes 🛛 No 🛛 (If no, explai	n in remarks)
Are any of the following significantly disturb	ed?	n 🔲 Soil 🔲 Hydrology 🛛 Are "Norma	l Circumstances" present? 🛛 Yes 🔲 No
Are any of the following naturally problemat	ic?	n 🔲 Soil 🔲 Hydrology (If neede	d, explain any answers in remarks)
SUMMARY OF FINDINGS - Attach sit	te map showing sa	ample point locations, transects, in	nportant features, etc.
Hydrophytic Vegetation Present? \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ứes ⊠ No ứes □ No ứes ⊠ No	Is the Sampled Area within a Wetland?	□ Yes ⊠ No
Remarks: Unpaired upland sample point le hydrophytic vegetation or wetlan problematic because hydrology	ocated in irrigated pas nd hydrology. Climatio is artificial.	ture. Sample point meets indicators for h c conditions were drier than normal during	iydric soils, but does not meet criteria for g site visit, but was not considered

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1				Number of Dominant Species (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:				% of dominant species that50(A/B) are OBL, FACW, or FAC?
SAPLING/SHRUB STRATUM Plot Size:	N/A	-		Prevalence Index Worksheet
		-		Total % cover of:Multiply by:
. 2				OBL species x1
3				FACW species x2
۵ ۲				FAC species x3
Sanling/Shrub Stratum Total Cover:				FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5' radius			540	Column Totals (A) (B)
1. Paspalum dilatatum	55	Yes	FAC	
2. <u>Sporobolus indicus</u>	20	Yes	FACU	
3. <u>Trifolium fragiferum</u>	16	<u>No</u>	FAC	Hydrophytic Vegetation Indicators
4. Unknown aster 1	3	<u>No</u>	?	Dominance Test is >50%
5. Lotus corniculatus	3	<u> </u>	FAC	Prevalence Index is $$
6. Juncus mexicanus	3	<u>No</u>	FACW	Morphological adaptations (provide
7				supporting data in remarks)
8				Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	_		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
1				must be present, unless disturbed of problematic.
2				
Woody Vines Total Cover:		-		Hydrophytic Dives X No
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Sample point dominated by FAC and F.	ACU species, c	loes not meet dor	minance test.	

SOIL								Sampling Po	oint SP093	
Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
_(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ¹	Texture	Rema	arks	
2-0	10YR 2/2	100	-	-	-	-	Organic	Organic Layer		
0-4	2.5Y 3/1	100	<u>-</u>				Clay			
4-12	2.5Y 3/1	95	5YR 4/6	5	С	M	Clay			
							·			
							·			
¹ Type: C=Co	ncentration, D=De	epletion, RM	I=Reduced Matrix.	² Loca	tion: PL=F	Pore Lining	g, RC=Root Channe	l, M=Matrix		
Hydric Soil I	ndicators: (Appli	cable to al	LRRs, unless other	wise not	ed.)		Indicators for Pro	oblematic Hydr	ic Soils ³ :	
Histosol	(A1)		Sandy Redox (S5))			🔲 1cm Muck (A9	9) (LRR C)		
Histic Ep	ipedon (A2)		Stripped Matrix (S	6)			2cm Muck (A1	0)(LRR B)		
	stic (A3)			ieral (F1)			Reduced Verti	ic (F18)		
		()		1111X (FZ)			Red Parent Ma	ed Parent Material (TF2)		
		0)	Bedox Dark Surfa	-3) ce (E6)			U Other (explain in remarks)			
	Below Dark Surfa	ace (A11)	Depleted Dark Su	rface (F7)					
Thick Da	rk Surface (A12)		Redox Depression	ns (F8)	/					
🔲 🗌 Sandy M	ucky Mineral (S1)		Vernal Pools (F9)	(-)			³ Indicators of hy	dric vegetation a	and	
☐ Sandy G	leyed Matrix (S4)		. ,				wetland hydrolog	gy must be prese	ent.	
Restrictive I	Layer (if present)	:								
Туре:			_							
Depth (inches): Hydric Soil Present ? 🛛 Yes 🗆 No										
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).							

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)					
Primary Indicators (any one indicator is suffic	ient)		Weter Merke (P1)(Piverine)					
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 						
Field Observations:								
	Depth (inches):							
Water table present? L Yes X No	Depth (inches):							
Saturation Present?	Depth (inches):	Wetland	Hydrology Present ? 🛛 Yes 🛛 No					
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.								
Remarks: No wetland hydrology indicators ob	served.							

Project/Site Bowlesby Ranch	City	Cour	nty <u>Solano</u>		Sampling [Date 7/20/20	018
Applicant/Owner Ecosystem Investment Partne	rs		Sta	te <u>CA</u>	Sampling Point	SP096	
Investigator(s) N. Clark, R. Korhummel; WRA Ir	IC	Section	on,Township,F	Range			
Landform (hillslope, terrace, etc.)Diked floodpla	n Loo	cal Relief (concav	e, convex, nor	e) <u>None</u>		Slope(%)	0-1
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-121</u> .	7179248	Long: <u>38</u>	3.30290749	Datum: <u>W</u>	/GS 84	
Soil Map Unit Name <u>Sacramento clay, 0 to 2 p</u>	ercent slopes			NWI classificat	ion <u>PF</u>		
Are climatic/hydrologic conditions on-site typical	for this time of year	ar? 🗌 Yes 🛛	No (If n	o, explain in rema	arks)		
Are any of the following significantly disturbed?	Vegetation	🗆 Soil 🔲 Hyd	rology Are	"Normal Circum	stances" present?	Yes] No
Are any of the following naturally problematic?	☐ Vegetation	Soil Hyd	rology (lf needed, explai	n any answers in	remarks)	
SUMMARY OF FINDINGS - Attach site m	ap showing sa	mple point loca	ations, trans	ects, importa	nt features, etc		
Hydrophytic Vegetation Present?X YesHydric Soil Present?X YesWetland Hydrology Present?X Yes	□ No □ No □ No	ls the withir	Sampled A a Wetland	rea 🛛 🕅	Ƴes □No		
Remarks: Wetland sample point paired with SI hydrophytic vegetation, hydric soils, observed on the ground. Climatic c is artificial.	P097. Sample poi and wetland hydro onditions were drie	nt located in lower blogy. Boundary b er than normal dur	elevation of in based on aeria ing site visit, b	rigated pasture. I signatures corre ut was not consid	Sample point me esponding to shift dered problematic	ets criteria f in vegetatic because hy	or n /drology
VEGETATION (use scientific names)							
TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant Species?	Indicator Status	Dominance 1	est Worksheet		
1				Number of Do that are OBL,	minant Species FACW, or FAC?	2	_ (A)
2				Total number	of dominant	2	(B)

1				- that are OBL, FACW, or FAC?
2				Total number of dominant(B)
4 Tree Stratum Total Cover:		· ·		% of dominant species that(A/B) are OBL, FACW, or FAC?
	N/A	-		Prevalence Index Worksheet
SAFLING/SHRUB STRATUM Flot Size.	11/7	-		Total % cover of: Multiply by:
··				- OBL species x1
2				FACW species x2
				- FAC species x3
T				FACU species x4
Saping/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Paspalum dilatatum	40	Yes -	FAC	
2. <u>Trifolium fragiferum</u> .	15	Yes	FAC	
3. <u>Hordeum jubatum</u>	10	<u>No</u>	FAC	Hydrophytic Vegetation Indicators
4. Polypogon monspeliensis	1	<u>No</u>	FACW	- ☑ Dominance Test is >50%
5. Unknown (NC 151)	5	<u>No</u>	?	- Prevalence Index is $$
6 ·		· ·		Morphological adaptations (provide
8		<u> </u>		- Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	71	_		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1				
2				-
% Bare ground in herb stratum 29	% cover of biotic crust 0			Vegetation Present ?
Remarks: Sample point dominated by FAC specie	s, meets domin	nance test.		

SOI	L
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Profile descr Depth	iption: (Describe Matrix	to the de	epth needed to d	ocument the in Redox Feature	n dicator (or confirm	n the absence of in	dicators.)		
(inches)	Color (moist)	%	Color (mois	t) <u>%</u>	Type ¹	Loc ¹	Texture	Rema	arks	
0-12	N 4/0	75		<u> </u>	-		Clay			
0-12	10YR 3/2	25	<u> </u>				Clay	non-redox mott	tles	
			<u> </u>			-				
		·								
¹ Type: C=Co	ncentration, D=De	pletion, RI	M=Reduced Mat	rix. ² Locat	ion: PL=P	ore Lining	g, RC=Root Channel	, M=Matrix		
Hydric Soil I	ndicators: (Appli	cable to a	ILLRRs, unless	otherwise not	ed.)		Indicators for Pro	blematic Hydri	ic Soils ³ :	
Histosol ((A1)		Sandy Redo	x (S5)			1cm Muck (A9) (LRR C)		
	(AZ)			(JOC) (V Mineral (F1)			2cm Muck (A1	2cm Muck (A10)(LRR B)		
	n Sulfide (A4)		Loamy Glev	ed Matrix (F2)			Reduced Vertin	Reduced Veluc (F16)		
Stratified	Layers (A5)(LRR	C)	Depleted Ma	atrix (F3)			\square Other (explain in remarks)			
🛛 1cm Muc	k (Á9)(LRR D)	,	Redox Dark	Surface (F6)						
Depleted	Below Dark Surfa	ice (A11)	Depleted Da	rk Surface (F7)						
Thick Da	rk Surface (A12)		Redox Depr	essions (F8)			<u>^</u>			
Sandy M	ucky Mineral (S1)		U Vernal Pools	s (F9)			³ Indicators of hydric vegetation and			
	eyed Matrix (S4)						wetland hydrolog	wetland hydrology must be present.		
Restrictive L	ayer (if present)	:								
Туре:										
Depth (inch	les):						Hydric S	oil Present ?	🛛 Yes 🛛 No	
Remarks: _{Sai}	mple point meets	loamy gley	yed matrix (F2).							

Wetland Hydrology Indicators:	5	Secondary Indicators (2 or more required)					
Primary Indicators (any one indicator is sufficient)							
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (BT)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 					
Field Observations:							
Surface water present? X Yes I No	Depth (inches): <u>1</u>						
Water table present? Xes INo	Depth (inches): 0						
Saturation Present? Xes No (includes capillary fringe)	Depth (inches): 0	Wetland Hy	ydrology Present ? 🛛 Yes 🗌 No				
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available						
Remarks: Sample point has surface water (A1), high water table (A2), and saturation (A3). Sample point also meets FAC-neutral test (D5).							

Project/Site Bowlesby Ranch	City	County Solano	Sampling Date <u>7/21/2018</u>
Applicant/Owner Ecosystem Investment	Partners	State CA	Sampling Point SP097
Investigator(s) N. Clark, R. Korhummel;	WRA Inc	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked f	loodplain Lo	ocal Relief (concave, convex, none) <u>None</u>	Slope(%) <u>0-1</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-12</u>	1.7183954 Long: <u>38.30339958</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay,	0 to 2 percent slopes	NWI classi	fication PF
Are climatic/hydrologic conditions on-site	e typical for this time of y	ear? 🔲 Yes 🛛 No 🦳 (If no, explain in	remarks)
Are any of the following significantly dist	urbed? Vegetation	n 🔲 Soil 🔲 Hydrology 🛛 Are "Normal Ciro	cumstances" present? 🛛 Yes 🔲 No
Are any of the following naturally probler	natic? 🛛 Vegetation	n 🔲 Soil 🔲 Hydrology 🤍 (If needed, ex	xplain any answers in remarks)
SUMMARY OF FINDINGS - Attach	site map showing sa	ample point locations, transects, impo	ortant features, etc.
Hydrophytic Vegetation Present? I Hydric Soil Present? I Wetland Hydrology Present? I]Yes ⊠No]Yes ⊠No]Yes ⊠No	Is the Sampled Area within a Wetland?	□Yes ⊠No
Remarks: Upland sample point paired vegetation, hydric soils, or w	with SP096. Sample poi etland hydrology. Climat	nt located in irrigated pasture. Sample point c tic conditions were drier than normal during si	loes not meet criteria for hydrophytic te visit, but was not considered

problematic because hydrology is artificial.

VEGETATION (use scientific names)				
TREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	_ % cover	Species?	Status	Number of Dominant Species0 (A) that are OBL, FACW, or FAC?
2 3				Total number of dominant (B) (B)
4 Tree Stratum Total Cover:				% of dominant species that0 (A/B) are OBL, FACW, or FAC?
SAPI ING/SHRUB STRATUM Plot Size	N/A			Prevalence Index Worksheet
		-		Total % cover of: Multiply by:
' ·		·		OBL species x1
2 ·		·		FACW species x2
		- <u> </u>		FAC species x3
Sapling/Shrub Stratum Total Cover				FACU species x4
		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Festuca arundinacea	60	Yes	FACU	
2. Cynodon dactylon	20	Yes	FACU	
3. <u>Lotus corniculatus</u>	10	<u>No</u>	FAC	Hydrophytic Vegetation Indicators
4. <u>Agrostis sp.</u>	t	<u>No</u>	?	Dominance Test is >50%
5. <u>Trifoloium fragiferum</u>	10	<u>No</u>	FAC	Prevalence Index is $$
6. <u>Hordeum jubatum</u>	t	<u>No</u>	FAC	Morphological adaptations (provide
7. <u>Festuca perennis</u>	t	<u>No</u>	FAC	supporting data in remarks)
8		- <u> </u>		Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	-		
<u>WOODY VINE STRATUM</u> Plot Size:	N/A			Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:		_		Hydrophytic Types M No
% Bare ground in herb stratum 0	% cover of	biotic crust 0		Vegetation Present ?
Remarks: Sample point dominated by FACU spec	cies, does not n	neet dominance t	est.	

SOIL	
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Profile descu	ription: (Describe Matrix	e to the dep	oth needed to docun Redo	nent the i	indicator	or confir	m the absence of indica	ators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rema	rks	
0-14	10YR 3/1	99	10YR 6/2	1	С	М	Clay			
¹ Type: C=Co	ncentration. D=De	pletion. RN	/=Reduced Matrix.	² Loca	tion: PL=F	ore Linin	 g. RC=Root Channel. M=	Matrix		
Hydric Soil I	ndicators: (Appli	cable to al	I LRRs, unless othe	wise no	ted.)		Indicators for Proble	matic Hydri	c Soils ³ :	
	(A1)		Sandy Redox (S5)			1cm Muck (A9) (LF	RR C)		
□ Histic Ep	stic (A3)		Loamy Mucky Mir	6) Ieral (F1)			2cm Muck (A10)(L	RR B)		
	n Sulfide (A4)		Loamy Gleyed Ma	atrix (F2)			Reduced Vertic (F	18) al (TF2)		
Stratified	Layers (A5)(LRR	C)	Depleted Matrix (F	-3)			Other (explain in re	emarks)		
	k (A9)(LRR D)	(111)	Redox Dark Surfa	ce (F6)	·\					
	rk Surface (A12)	ace (ATT)	Redox Depression	nace (F7 ns (F8))					
Sandy M	ucky Mineral (S1)		Vernal Pools (F9)	10 (1 0)			³ Indicators of hydric v	vegetation ar	nd	
Sandy G	leyed Matrix (S4)						wetland hydrology m	ust be prese	nt.	
Restrictive I	Layer (if present)	:								
Туре:										
Depth (inch	nes):		_				Hydric Soil P	Present ?	🗆 Yes	🖾 No
Remarks: _{Sa}	mple point contair	ns redox co	ncentrations below th	e thresho	ld to satis	y any hyc	Iric soil indicators.			

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici	ent)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 	
Field Observations:			
Surface water present? 🛛 Yes 🛛 No	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland H	lydrology Present ? 🛛 Yes 🛛 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available).	
Remarks: No indicators of wetland hydrology o	bserved.		

Project/Site Bowlesby Ranch	City _		County Solano		Sampling D	ate <u>7/20/20</u>	18
Applicant/Owner Ecosystem Investm	ent Partners		s	State <u>CA</u>	Sampling Point	SP102	
Investigator(s) N. Clark, R. Korhumm	el; WRA Inc		Section,Township	p,Range			
Landform (hillslope, terrace, etc.)Dike	d floodplain	Local Relief (concave, convex, n	ione) <u>None</u>	:	Slope(%) <u>(</u>)-2
Subregion(LRR) LRR C (Medit. CA)	La	t: <u>-121.7214981</u>	Long:	38.29837065	Datum: W	GS 84	
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slop	es		NWI classificati	ion <u>PF</u>		
Are climatic/hydrologic conditions on-	site typical for this tin	ne of year? 🔲 γ	′es 🛛 No (If	f no, explain in rema	arks)		
Are any of the following significantly of	listurbed?	etation 🛛 Soil	Hydrology A	re "Normal Circums	stances" present?	🛛 Yes 🛛] No
Are any of the following naturally prob	lematic? 🔲 Veç	etation 🛛 Soil		(If needed, explair	n any answers in r	emarks)	
SUMMARY OF FINDINGS - Atta	ch site map show	ing sample poi	nt locations, tra	nsects, importar	nt features, etc.		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes □ No ⊠ Yes □ No ⊠ Yes □ No		Is the Sampled within a Wetlan	Area או אול?	∕es □No		
Remarks: Wetland sample point pai hydrophytic vegetation, hy observed on the ground. is artificial.	red with SP103. San ydric soils, and wetlar Climatic conditions w	nple point located nd hydrology. Bou ere drier than nor	in lower elevation o indary based on ae mal during site visit	f irrigated pasture. rial signatures corre , but was not consic	Sample point mee esponding to shift dered problematic	ets criteria fo in vegetation because hy	זי ז drology
VEGETATION (use scientific n	ames)						
TREE STRATUM Plot Size:	Abs N/A % c	olute Domir over Speci	ant Indicator es? Status	Dominance T	est Worksheet		
1				Number of Doi that are OBL, I	minant Species FACW, or FAC?	3	_ (A)
2				Total number of species across	of dominant s all strata?	3	_ (B)
4				% of dominant	t species that	100	(A/B)

4				_ % of dominant species that (A/B) are OBL, FACW, or FAC? (A/B)
	N/A	_		Prevalence Index Worksheet
SAPLING/SHRUB STRATUM Plot Size:	N/A	_		Total % cover of: Multiply by:
1				- OBL species x1
2				FACW species x2
3				FAC species x3
4				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
HERB STRATUM Plot Size: 5' radius				Column Totals (A) (B)
1. Agrostis avenacea	20	Yes	FACW	
2. Eleocharis macrostachya	25	Yes	OBL	Prevalence Index = B/A =
3. Trifolium fragiferum	30	Yes	FAC	Hydrophytic Vegetation Indicators
4. Paspalum dilatatum	10	No	FAC	■ Dominance Test is >50%
5. Unknown herb	15	No	?	$ \square$ Prevalence index is $$
6				
7				- supporting data in remarks)
8				- Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	100	_		— · · · · · · · · · · · · · · · · · · ·
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:		_		Hydrophytic M Ves D No
	% cover of	f biotic crust_0		Vegetation Present ?

Profile descu Depth	ription: (Describ Matrix	e to the de	pth needed to docu Red	ment the ox Featur	indicator es	or confir	m the absence of i	indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture	Rem	arks
0-2	10YR 2/2	100					loam	organic matter	
<u>2-14</u>	10YR 3/1	98	7.5YR 4/6	5	<u>C</u>	<u>M</u>	clay		
Type: C=Co	ncentration, D=D	epletion, Ri	M=Reduced Matrix.		tion: PL=F	ore Linin	g, RC=Root Chann	el, M=Matrix	
Histosol Histic Ep Black His Hydrogel Stratified 1cm Muc Depleted Thick Da	(A1) ipedon (A2) stic (A3) n Sulfide (A4) Layers (A5)(LRF k (A9)(LRR D) I Below Dark Surf rk Surface (A12) ucky Mineral (S1	₹ C) ace (A11))	 Sandy Redox (Standard Redox) Stripped Matrix (Loamy Mucky Mi Loamy Gleyed M Depleted Matrix (Redox Dark Suff Depleted Dark Si Redox Depression Vernal Pools (F9) 	5) S6) neral (F1) latrix (F2) (F3) ace (F6) urface (F7) ons (F8))	r)			(9) (LRR C) (10)(LRR B) rtic (F18) Material (TF2) in in remarks) ydric vegetation a	and
☐ Sandy G	leyed Matrix (S4)	, ,	,	,			wetland hydrolo	ogy must be pres	ent.
Restrictive I	ayer (if present):							
Туре:									
Depth (inch	nes):						Hydric	Soil Present ?	🛛 Yes 🛛 No
Remarks: _{Sa}	mple point meets	redox dark	surface (F6).						

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffic	ient)		
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	g Roots (C3) Soils (C6)	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:			
Surface water present? 🛛 Yes 🛛 No	Depth (inches):		
Water table present?	Depth (inches):		
Saturation Present?	Depth (inches):	Wetland H	lydrology Present ? 🛛 Yes 🗌 No
Describe recorded data (stream guage, monit	oring well, aerial photos, etc.) if available		
Remarks: Sample point has water-stained lea	ves (grass blades) and meets the FAC-n	eutral test.	

Project/Site Bowlesby Ranch	City	County Solano	Sampling Date 7/20/2018
Applicant/Owner <u>Ecosystem Investme</u>	ent Partners	State CA	Sampling Point SP103
Investigator(s) N. Clark, R. Korhumme	el; WRA Inc	Section,Township,Range	
Landform (hillslope, terrace, etc.)Diked	d floodplain Loca	al Relief (concave, convex, none) <u>None</u>	Slope(%) <u>0-2</u>
Subregion(LRR) LRR C (Medit. CA)	Lat: <u>-121.7</u>	213454 Long: <u>38.29762333</u>	Datum: WGS 84
Soil Map Unit Name Sacramento clay	y, 0 to 2 percent slopes	NWI classifica	tion <u>PF</u>
Are climatic/hydrologic conditions on-s	ite typical for this time of yea	r? 🛛 Yes 🛛 No 🛛 (If no, explain in rem	narks)
Are any of the following significantly di	sturbed? Degetation	Soil Hydrology Are "Normal Circum	nstances" present? 🛛 Yes 🔲 No
Are any of the following naturally probl	ematic? Degetation	Soil Hydrology (If needed, expla	in any answers in remarks)
SUMMARY OF FINDINGS - Attac	h site map showing san	nple point locations, transects, importa	ant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	 ☐ Yes ☑ Yes ☑ No ☑ Yes ☑ No 	Is the Sampled Area within a Wetland?	Yes 🖾 No
Remarks: Upland sample point paire	d with SP102. Sample point	located in irrigated pasture. Sample point does	s not meet criteria for hydrophytic

vegetation, hydric soils, or wetland hydrology. Climatic conditions were drier than normal during site visit, but was not considered problematic because hydrology is artificial.

IREE STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
l	% cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant (B) (B)
 Tree Stratum Total Cover:				% of dominant species that0 (A/B0 (A/B) (A/B0 (A/B0 (A/B0 (A/B) (A/B0 (A/B) (A/B)) (A/B) (A/B) (A/B) (A/B) (A/B)) (A/B) (A/B) (A/B) (A/B)) (A/B) (A/B) (A/B)) (A/B) (A/B) (A/B)) (A/B)) (A/B) (A/B))
	NI/A	-		Prevalence Index Worksheet
SAPLING/SHRUB STRATUM FIOUSIZE.	D/A	-		Total % cover of: Multiply by:
·				OBL species x1
				FACW species x2
·				FAC species x3
·				FACU species x4
Sapling/Shrub Stratum Total Cover:		-		UPL species x5
IERB STRATUM Plot Size: 5' radius				Column Totals (A) (B
Festuca arundinacea	50	Yes	FACU	
. Trifolium repens	15	Yes	FACU	Prevalence Index = B/A =
. Trifolium fragiferum	10	No	FAC	Hydrophytic Vegetation Indicators
Festuca perennis	10	No	FAC	Dominance Test is >50%
Lotus corniculatus	2	No	FAC	\square Prevalence Index is $$
Plantago lanceolata	3	No	FAC	
Paspalum dilatatum	5	No	FAC	Morphological adaptations (provide
Cynodon dactylon	10	No	FACU	Problematic hydrophytic vegetation ¹ (explain)
Herb Stratum Total Cover:	105	_		
WOODY VINE STRATUM Plot Size:	N/A			¹ Indicators of hydric soil and wetland hydrology
I				must be present, unless disturbed or problematic.
2.				
Woody Vines Total Cover:				Hvdrophytic State
% Bare ground in herb stratum <u>0</u>	% cover of	biotic crust 0		Vegetation Present ?

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features									
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ¹	Texture Remarks		
0-12	10YR 3/2	97	10YR 3/6	3	С	M	loam clay		
		- <u> </u>							
¹ Type: C=Co	ncentration, D=De	pletion, RM	=Reduced Matrix.	² Loca	tion: PL=I	Pore Linin	ig, RC=Root Channel, M=Matrix		
Hydric Soil I	ndicators: (Appli	cable to all	LRRs, unless othe	rwise no	ted.)		Indicators for Problematic Hydric Soils ³ :		
Histosol	(A1)	[Sandy Redox (S5)			1cm Muck (A9) (LRR C)		
Histic Ep	ipedon (A2)	L	Stripped Matrix (S	6) (54)			2cm Muck (A10)(LRR B)		
	stic (A3)	L	Loamy Mucky Mir	ieral (F1)			Reduced Vertic (F18)		
	Lavers (A5)/LRR		Loanny Gleyed Ma	auix (r∠) =3)			Red Parent Material (TF2)		
	k (A9)(I RR D)	ιο) [Redox Dark Surfa	ce (F6)					
	Below Dark Surfa	ace (A11)	Depleted Dark Su	rface (F7	.)				
Thick Da	rk Surface (A12)) í	Redox Depression	าร (F8)	,				
🛛 🗆 Sandy M	ucky Mineral (S1)	[Vernal Pools (F9)				³ Indicators of hydric vegetation and		
🛛 🛛 Sandy G	leyed Matrix (S4)						wetland hydrology must be present.		
Restrictive I	_ayer (if present)	:							
Туре:			_						
Depth (inch	ies):		_				Hydric Soil Present ? 🛛 Yes 🖾 No		
Remarks: _{Sa}	mple point contair	ns redox con	centrations below th	e thresho	ld require	d for redo	x dark surface (F6), does not meet hydric soil indicators.		

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)						
Primary Indicators (any one indicator is suffici									
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 							
Field Observations:	Douth (in choo)								
Water table present? Yes X No	Depth (inches):								
Saturation Present?	Depth (inches):	Hydrology Present ? 🛛 Yes 🛛 No							
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.									
Remarks: No indicators of wetland hydrology observed.									

Project/Site Bowlsbey Ranch	City	County Solano	Sampling Date <u>4/5/2018</u>					
Applicant/Owner Ecosystem Investme	ent Partners	State CA	Sampling Point SP104					
Investigator(s) S.Batiuk, R. Korhummel, WRA INC. Section, Township, Range								
Landform (hillslope, terrace, etc.)Dike	d floodplain Local I	Relief (concave, convex, none) <u>none</u>	Slope(%)					
Subregion(LRR) LRR C (Medit. CA)	Lat:	Long:	Datum: WGS 84					
Soil Map Unit Name Sacramento cla	y, 0 to 2 percent slopes	NWI classific	cation PF					
Are climatic/hydrologic conditions on-site typical for this time of year? 🛛 Yes 🔲 No 🛛 (If no, explain in remarks)								
Are any of the following significantly disturbed? 🛛 Vegetation 🗋 Soil 🗍 Hydrology 🛛 Are "Normal Circumstances" present? 🖾 Yes 🗋 No								
Are any of the following naturally problematic? Uegetation Soil Hydrology (If needed, explain any answers in remarks)								
SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.								
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	□ Yes ⊠ No □ Yes ⊠ No □ Yes ⊠ No	Is the Sampled Area]Yes 🛛 No					
Remarks: Upland sample point paired with SP011. Sample point taken in irrigated pasture. Sample point does not meet criteria for hydrophytic vegetation, hydric soils, or wetland hydrology.								

VEGETATION (use scientific names)				
TRFF STRATUM Plot Size: N/A	Absolute	Dominant	Indicator	Dominance Test Worksheet
1	- % cover	Species?	Status	Number of Dominant Species (A) that are OBL, FACW, or FAC?
2				Total number of dominant3(B)
4 Tree Stratum Total Cover:				% of dominant species that33(A/B)33(A/B)
	N/A	-		Prevalence Index Worksheet
	11// 1	-		Total % cover of: Multiply by:
				OBL species x1
3				FACW species x2
δ ·				FAC species x3
Sapling/Shrub Stratum Total Cover:				FACU species x4
		-		UPL species x5
HERBSTRATUM Plot Size: 5 radius		N ₂ -	FAOU	Column Totals (A) (B)
1. Festuca arundinacea	25	<u>- Yes</u> -	FACU	$\frac{1}{1}$
2. Iritolium repens	25	- <u>Yes</u> -	FACU	
3. Lotus corniculatus	25	<u>Yes</u>	FAC	Hydrophytic Vegetation Indicators
^{4.} ·				Dominance Test is >50%
5				Prevalence Index is $$
6 7				Morphological adaptations (provide
/				supporting data in remarks)
6 Herb Stratum Total Cover:	75			Problematic hydrophytic vegetation ' (explain)
	75	-		¹ Indicators of hydric soil and wetland hydrology
1	N/A			must be present, unless disturbed or problematic.
2				
Woody Vines Total Cover:				Hydrophytic 🛛 Yes 🛛 No
% Bare ground in herb stratum	_ % cover of	biotic crust 0		vegetation Present ?
Remarks: Thatch 25%. Sample point dominated	by FAC and FA	CU species, does	s not meet dor	ninance test.
	by the analy			

SOIL	
------	--

Depth	Matrix		Rec	lox Feature	es1	. 1	/	, D		
(inches)	Color (moist)	%	Color (moist)	%	lype'	Loc	lexture	Rema	arks	
0-1	<u>10YR 2/2</u>	100					Loamy Clay			
1-12	2.5Y 3/1	99	7.5YR 4/4	_ 1	<u>C</u>		Clay			
¹ Type: C=Co	oncentration, D=D	epletion, RN	/=Reduced Matrix.	² Loca	tion: PL=P	ore Linin	g, RC=Root Channel, M	=Matrix	3	
	Indicators: (Appl	icable to al	Sandy Podoy (S	erwise no 5)	ted.)		Indicators for Proble	Indicators for Problematic Hydric Soils":		
	oipedon (A2)		Stripped Matrix (5) S6)			\square 1cm Muck (A9) (LRR C) \square 2cm Muck (A10)(LRP B)			
Black Hi	stic (A3)		Loamy Mucky M	ineral (F1)			\square Reduced Vertic (F18)			
Hydroge	en Sulfide (A4)		Loamy Gleyed N	latrix (F2)			Red Parent Material (TF2)			
Stratified Layers (A5)(LRR C) Depleted Matrix (F3) 1cm Muck (A9)(LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)							Other (explain in remarks)			
	ark Surface (A12) Aucky Mineral (S1	`		ons (F8)			³ Indicators of hydrig	³ Indicators of hydric vagatation and		
Sandy G	Gleyed Matrix (S4))		')			wetland hydrology n	nust be prese	ent.	
Restrictive	Layer (if present):					,,			
Туре:										
Depth (inc	hes):						Hydric Soil	Present ?	🗆 Yes 🛛 No	
Remarks: Se	ample point contai	nst redoxim	orphic concentration	s but does	s not meet	threshold	ds required for hydric soi	il indicators		
00			erpine concontration	-, 541 400						

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)						
Primary Indicators (any one indicator is suffici	ent)		Water Marka (B1)(Bivarina)						
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)(Nonriverine) Sediment Deposits (B2)(Nonriverine) Drift Deposits (B3)(Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in PLowed S Other (Explain in Remarks) 	 Water Marks (B1)(Riverine) Sediment Deposits (B2)(Riverine) Drift Deposits (B3)(Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) 							
Field Observations:									
Surface water present? Yes No	Depth (inches):								
Water table present?	Depth (inches):								
Saturation Present?	Depth (inches):	Hydrology Present ? 🛛 Yes 🛛 No							
Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.									
Remarks: No indicators of wetland hydrology observed.									

APPENDIX D

STUDY AREA PHOTOGRAPHS



Photo 1. Example of irrigated wetlands within the pastures at Bowlsbey Ranch. Photo shows lower elevation portion of field and adjacent drainage ditch (at left). Water drains and collects at the lower elevation of the pastures, creating strong wetland conditions marked by dominance of FACW and OBL wetland species. Photo taken on April 5, 2018.



Photo 2. Example of irrigated wetlands within the pastures at Bowlsbey Ranch. Photo shows transitional area in middle portion of field marked by dominance of FACW and FAC species. Photo taken July 20, 2018.





Photo 3. Example of upland (i.e., upper) portion of irrigated pastures at Bowlsbey Ranch. Photo shows active flood irrigation using metal tubes to siphon water from the concrete irrigation ditches running along the upper end of each pasture. Photo taken on May 9, 2018.



Photo 4. Example of upland (i.e., upper) portion of irrigated pastures at Bowlsbey Ranch dominated by reed fescue (*Festuca arundinacea*, FACU). Photo taken on July 20, 2018.





Photo 5. Example of managed wetland on Liberty Farms. Photo shows marsh vegetation from southern end of the site that remains inundated for longer period of times relative to the managed wetlands in the middle and northern portions of the site. Photo taken on April 4, 2018.



Photo 6. Example of managed wetland on Liberty Farms. Photo shows marsh vegetation integrating with typical seasonal wetland/grassland vegetation. Photo taken in middle portion of the site which remains inundated for a shorter period relative to the managed wetlands in the southern portion of the site. Photo taken on April 4, 2018.





Photo 7. Example of managed wetland on Liberty Farms. Photo shows seasonal wetland (grassland) vegetation. Photo taken in northern portion of the site which remains inundated for a shorter period relative to the managed wetlands in the middle and southern portions of the site.



Photo 8. Example of perennial marsh vegetation in Duck Slough. Photo taken on September 21, 2017.





Photo 9. Example of scrub shrub wetland in Lookout Slough. Photo taken on September 29, 2017.



Photo 10. Example of scrub-shrub wetland on island adjacent to Vogel Island. Photo taken on October 2, 2017.





Photo 11. Example of seasonal wetlands on Liberty Farms. Photo taken on May 9, 2018.



Photo 12. Example of managed wetland habitat on Vogel Island. Photo taken on September 20, 2018.





Photo 13. Example of concrete-lined irrigation ditch on Bowlsbey Ranch. Photo taken on September 21, 2017.



Photo 14. Example of concrete-lined irrigation ditch (right of center) on Bowlsbey Ranch. Photo taken on January 6, 2017.





Photo 15. Example of drainage ditches on Liberty Farms. Photo taken on April 4, 2018.



Photo 16. Example of drainage ditches on Liberty Farms. Photo taken on April 4, 2018.





Photo 17. Example of drainage ditches on Bowlsbey Ranch. Taken on September 21, 2018.



Photo 18. Example of drainage ditches on Bowlsbey Ranch. Taken on September 21, 2018.





Photo 19. Lookout Slough. Photo taken September 21, 2017.



Photo 20. Duck Slough. Photo taken on January 6, 2017.





Photo 21. Sycamore Slough. Photo taken on January 6, 2017.



Photo 22. Haas Slough. Photo taken on January 6, 2017.





Photo 23. Cache Slough. Photo taken on January 6, 2017.



Photo 24. Shag Slough. Photo taken on July 28, 2017.





Photo 25. Wetland Sample Point SP01, taken on April 5, 2018.



Photo 26. Upland Sample Point SP02, taken on April 5, 2018.





Photo 27. Wetland Sample Point SP03, taken on April 5, 2018.



Photo 28. Upland Sample Point SP04, taken on April 5, 2018.





Photo 29. Wetland Sample Point SP05, taken on April 5, 2018.



Photo 30. Upland Sample Point SP06, taken on April 5, 2018.





Photo 31. Wetland Sample Point SP07, taken on April 5, 2018.



Photo 32. Upland Sample Point SP08, taken on April 5, 2018.




Photo 33. Wetland Sample Point SP09, taken on April 5, 2018.



Photo 34. Upland Sample Point SP10, taken on April 5, 2018.





Photo 35. Wetland Sample Point SP11, taken on April 5, 2018.



Photo 36. Upland Sample Point SP12, taken on April 5, 2018.





Photo 37. Wetland Sample Point SP13, taken on April 5, 2018.



Photo 38. Upland Sample Point SP16, taken on April 5, 2018.





Photo 39. Wetland Sample Point SP17, taken on April 5, 2018.



Photo 40. Wetland Sample Point SP18, taken on April 5, 2018.





Photo 41. Upland Sample Point SP19, taken on April 5, 2018.



Photo 42. Upland Sample Point SP20, taken on April 5, 2018.





Photo 43. Wetland Sample Point SP21, taken on April 5, 2018.



Photo 44. Upland Sample Point SP22, taken on April 5, 2018.





Photo 45. Wetland Sample Point SP23, taken on April 5, 2018.



Photo 46. Upland Sample Point SP24, taken on April 5, 2018.





Photo 47. Upland Sample Point SP25, taken on April 5, 2018.



Photo 48. Wetland Sample Point SP26, taken on April 5, 2018.





Photo 49. Wetland Sample Point SP27, taken on April 5, 2018.



Photo 50. Upland Sample Point SP28, taken on April 5, 2018.





Photo 51. Wetland Sample Point SP29, taken on April 4, 2018.



Photo 52. Upland Sample Point SP30, taken on April 4, 2018.





Photo 53. Wetland Sample Point SP31, taken on April 4, 2018.



Photo 54. Upland Sample Point SP32, taken on April 4, 2018.





Photo 55. Wetland Sample Point SP33, taken on April 4, 2018.



Photo 56. Upland Sample Point SP34, taken on April 4, 2018.





Photo 57. Wetland Sample Point SP35, taken on April 4, 2018.



Photo 58. Wetland Sample Point SP36, taken on April 4, 2018.





Photo 59. Wetland Sample Point SP37, taken on April 4, 2018.



Photo 60. Wetland Sample Point SP38, taken on April 4, 2018.





Photo 61. Upland Sample Point SP39, taken on April 4, 2018.



Photo 62. Wetland Sample Point SP40, taken on April 4, 2018.





Photo 63. Upland Sample Point SP41, taken on April 4, 2018.



Photo 64. Wetland Sample Point SP42, taken on April 4, 2018.





Photo 65. Upland Sample Point SP43, taken on April 4, 2018.



Photo 66. Wetland Sample Point SP46, taken on April 4, 2018.





Photo 67. Upland Sample Point SP47, taken on April 4, 2018.



Photo 68. Upland Sample Point SP48, taken on April 4, 2018.





Photo 69. Wetland Sample Point SP49, taken on April 4, 2018



Photo 70. Wetland Sample Point 50, taken on April 4, 2018.



Appendix A. Site Photographs



Photo 71. Upland Sample Point SP51, taken on April 4, 2018.



Photo 72. Upland Sample Point SP52, taken on April 4, 2018.





Photo 73. Wetland Sample Point SP53, taken on April 4, 2018.



Photo 74. Upland Sample Point SP54, taken on April 4, 2018.





Photo 75. Wetland Sample Point SP55, taken on April 4, 2018.



Photo 76. Upland Sample Point SP56, taken on April 4, 2018.





Photo 77. Wetland Sample Point SP57, taken on April 4, 2018.



Photo 78. Wetland Sample Point SP58, taken on April 4, 2018.





Photo 79. Upland Sample Point SP59, taken on May 9, 2018.



Photo 80. Wetland Sample Point SP60, taken on May 9, 2018.





Photo 81. Upland Sample Point SP61, taken on May 9, 2018.



Photo 82. Wetland Sample Point SP62, taken on May 9, 2018.





Photo 83. Upland Sample Point SP63, taken on May 9, 2018.



Photo 84. Wetland Sample Point SP64, taken on May 9, 2018.





Photo 85. Wetland Sample Point SP65, taken on May 9, 2018.



Photo 86. Upland Sample Point SP66, taken on May 9, 2018.





Photo 87. Upland Sample Point SP67, taken on May 9, 2018.



Photo 88. Wetland Sample Point SP68, taken on May 9, 2018.





Photo 89. Upland Sample Point SP69, taken on May 9, 2018.



Photo 90. Upland Sample Point SP70, taken on May 9, 2018.





Photo 91. Upland Sample Point SP71, taken on May 9, 2018.



Photo 92. Wetland Sample Point SP72, taken on May 9, 2018.





Photo 93. Upland Sample Point SP73, taken on May 9, 2018.



Photo 94. Upland Sample Point SP74, taken on May 9, 2018.





Photo 95. Wetland Sample Point SP75, taken on May 9, 2018.



Photo 96. Wetland Sample Point SP76, taken on May 9, 2018.





Photo 97. Upland Sample Point SP77, taken on May 9, 2018.



Photo 98. Upland Sample Point SP78, taken on May 9, 2018.





Photo 99. Wetland Sample Point SP79, taken on May 9, 2018.



Photo 100. Upland Sample Point SP80, taken on May 9, 2018.





Photo 101. Wetland Sample Point SP81, taken on May 9, 2018.



Photo 102. Upland Sample Point SP82, taken on July 20, 2018.





Photo 103. Wetland Sample Point SP83, taken on July 20, 2018.



Photo 104. Upland Sample Point SP84, taken on July 20, 2018.




Photo 105. Wetland Sample Point SP85, taken on July 20, 2018.



Photo 106. Upland Sample Point SP86, taken on July 20, 2018.





Photo 107. Upland Sample Point SP87, taken on July 20, 2018.



Photo 108. Wetland Sample Point SP88, taken on July 20, 2018.





Photo 109. Wetland Sample Point SP89, taken on July 20, 2018.



Photo 110. Upland Sample Point SP90, taken on July 20, 2018.





Photo 111. Upland Sample Point SP91, taken on July 20, 2018.



Photo 112. Wetland Sample Point SP92, taken on July 20, 2018.





Photo 113. Upland Sample Point SP93, taken on July 20, 2018.



Photo 114. Wetland Sample Point SP96, taken on April 5, 2018.





Photo 115. Upland Sample Point SP97, taken on April 5, 2018.



Photo 116. Upland Sample Point SP100, taken on April 5, 2018.





Photo 117. Upland Sample Point SP101, taken on April 5, 2018.



Photo 118. Wetland Sample Point SP102, taken on April 5, 2018.





Photo 119. Upland Sample Point SP103, taken on April 5, 2018.



Photo 120. Upland Sample Point SP104, taken on April 5, 2018.





Photo 121. Example of irrigated wetlands (transition zone) on Bowlsbey Ranch, taken on July 20, 2018.



Photo 122. Example of irrigated wetlands (wetter end, near drainage ditches) on Bowlsbey Ranch, taken on July 20, 2018.



APPENDIX E

PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

Appendix E. List of Observed Plant Species within the Study Area

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Abutilon theophrasti	Velvet leaf	non- native	annual herb	-	-	UPL	-
<i>Agrostis</i> sp.	Bentgrass	-	-	-	-	-	-
Alnus rhombifolia	White alder	native	tree	-	-	FACW	-
Amaranthus albus	Tumbleweed	non- native	annual herb	-	-	FACU	gen
Amaranthus californicus	California amaranth	native	annual herb	-	-	FACW	-
Anthemis cotula	Dog fennel	non- native	annual herb	-	-	FACU	-
Artemisia douglasiana	California mugwort	native	perennial herb	-	-	FAC	-
Arundo donax	Giant reed	non- native (invasive)	perennial grass	-	High	FACW	-
Asclepias fascicularis	Milkweed	native	perennial herb	-	-	FAC	gen
Asparagus officinalis ssp. officinalis	Asparagus	non- native	perennial herb	-	-	FACU	-
Atriplex prostrata	Fat-hen	non- native	annual herb	-	-	FACW	-
Atriplex semibaccata	Australian saltbush	non- native (invasive)	perennial herb	-	Moderate	FAC	-
Avena barbata	Slim oat	non- native (invasive)	annual, perennial grass	-	Moderate	-	-
Azolla filiculoides	Mosquito fern	native	fern	-	-	OBL	-

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Baccharis glutinosa	Salt marsh baccharis	native	perennial herb	-	-	FACW	-
Baccharis pilularis	Coyote brush	native	shrub	-	-	-	-
Bidens frondosa	Sticktight	native	annual herb	-	-	FACW	-
Bolboschoenus maritimus ssp. paludosus	Saltmarsh bulrush	native	perennial grasslike herb	-	-	OBL	-
Brassica nigra	Black mustard	non- native (invasive)	annual herb	-	Moderate	-	-
Bromus diandrus	Ripgut brome	non- native (invasive)	annual grass	-	Moderate	-	-
Bromus hordeaceus	Soft chess	non- native (invasive)	annual grass	-	Limited	FACU	gen
Callitriche sp.	-	-	-	-	-	-	-
Carduus pycnocephalus ssp. pycnocephalus	Italian thistle	non- native (invasive)	annual herb	-	Moderate	-	-
Carex barbarae	Valley sedge	native	perennial grasslike herb	-	-	FAC	-
Centaurea calcitrapa	Purple star thistle	non- native (invasive)	annual, perennial herb	-	Moderate	-	-
Centaurea solstitialis	Yellow starthistle	non- native (invasive)	annual herb	-	High	-	gen
Centromadia parryi ssp. rudis	Pappose tarweed	native	annual herb	Rank 4.2	-	FACW	-

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Cephalanthus occidentalis	Common buttonbush	native	shrub	-	-	OBL	-
Ceratophyllum demersum	Hornwort	native	perennial herb	-	-	OBL	-
Chenopodium album	Lambs quarters	non- native	annual herb	-	-	FACU	-
Cirsium vulgare	Bullthistle	non- native (invasive)	perennial herb	-	Moderate	FACU	-
Conium maculatum	Poison hemlock	non- native (invasive)	perennial herb	-	Moderate	FACW	-
Convolvulus arvensis	Field bindweed	non- native	perennial herb, vine	-	-	-	gen
Cotula coronopifolia	Brass buttons	non- native (invasive)	perennial herb	-	Limited	OBL	gen
Cressa truxillensis	Alkali weed	native	perennial herb	-	-	FACW	vpa
Crypsis schoenoides	Swamp grass	non- native	annual grass	-	-	FACW	vpa
Crypsis vaginiflora	African prickle grass	non- native	annual grass	-	-	OBL	vpa
<i>Cuscuta</i> sp.	-	-	-	-	-	-	-
Cynodon dactylon	Bermuda grass	non- native (invasive)	perennial grass	-	Moderate	FACU	-
Cyperus eragrostis	Tall cyperus	native	perennial grasslike herb	-	-	FACW	gen

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Daucus carota	Carrot	non- native	perennial herb	-	-	UPL	-
Daucus pusillus	Wild carrot	native	annual herb	-	-	-	-
Digitaria sanguinalis	Crabgrass	non- native	annual grass	-	-	FACU	-
Distichlis spicata	Salt grass	native	perennial grass	-	-	FAC	vpa?
Echinochloa crus-galli	Barnyard grass	non- native	annual grass	-	-	FACW	-
Echinodorus berteroi	Burhead	native	perennial herb (aquatic)	-	-	OBL	vpa?
Egeria densa	Brazilian water weed	non- native (invasive)	perennial herb	-	High	OBL	-
Eichhornia crassipes	Water hyacinth	non- native (invasive)	perennial herb	-	High	OBL	-
Eleocharis macrostachya	Spike rush	native	perennial grasslike herb	-	-	OBL	vpi?
Elymus glaucus	Blue wildrye	native	perennial grass	-	-	FACU	gen
Elymus ponticus	Tall wheat grass	non- native	perennial grass	-	-	-	-
Elymus triticoides	Beardless wild rye	native	perennial grass	-	-	FAC	gen
Epilobium brachycarpum	Willow herb	native	annual herb	-	-	-	gen
Erigeron bonariensis	Flax-leaved horseweed	non- native	annual herb	-	-	FACU	-

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Erigeron canadensis	Canada horseweed	native	annual herb	-	-	FACU	gen
Erodium cicutarium	Coastal heron's bill	non- native (invasive)	annual herb	-	Limited	-	gen
Erodium moschatum	Whitestem filaree	non- native	annual herb	-	-	-	gen
Eucalyptus camaldulensis	Red gum	non- native (invasive)	tree	-	Limited	FAC	-
Eucalyptus globulus	Blue gum	non- native (invasive)	tree	-	Limited	-	-
Eucalyptus sideroxylon	Red iron bark	non- native	tree	-	-	-	-
Euthamia occidentalis	Western goldenrod	native	perennial herb	-	-	FACW	-
Festuca arundinacea	Reed fescue	non- native (invasive)	perennial grass	-	Moderate	FACU	-
Festuca perennis	Italian rye grass	non- native (invasive)	annual, perennial grass	-	Moderate	FAC	gen
Ficus carica	Common fig	non- native (invasive)	tree	-	Moderate	FACU	-
Foeniculum vulgare	Fennel	non- native (invasive)	perennial herb	-	High	-	-
Frankenia salina	Alkali heath	native	perennial herb	-	-	FACW	vpa?

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Geranium dissectum	Wild geranium	non- native (invasive)	annual herb	_	Limited	_	den
Helenium bigelovii	Bigelow's sneezeweed	native	perennial herb	-	-	FACW	-
Helenium puberulum	Sneezeweed	native	perennial herb	-	-	FACW	-
Helianthus annuus	Hairy leaved sunflower	native	annual herb	-	-	FACU	-
Heliotropium curassavicum var. oculatum	Seaside heliotrope	native	perennial herb	-	-	FACU	-
Helminthotheca echioides	Bristly ox-tongue	non- native (invasive)	annual, perennial herb	-	Limited	FAC	-
Hibiscus lasiocarpos var. occidentalis	Woolly rose-mallow	native	perennial herb	Rank 1B.2	-	OBL	-
Hirschfeldia incana	Short-podded mustard	non- native (invasive)	perennial herb	-	Moderate	-	-
Hordeum brachyantherum	Meadow barley	native	perennial grass	-	-	FACW	gen
<i>Hordeum jubatum</i> ssp. <i>jubatum</i>	Foxtail barley	native	perennial grass	-	-	FAC	-
Hordeum marinum ssp. gussoneanum	Barley	non- native (invasive)	annual grass	-	Moderate	FAC	gen
Hordeum murinum	Foxtail barley	non- native (invasive)	annual grass	-	Moderate	FACU	-
Hydrocotyle sp.	Pennywort	native	perennial herb	-	-	OBL	-

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Juglans hindsii	Northern california black walnut	native	tree	Rank 1B.1*	-	FAC	-
Juncus balticus ssp. ater	Baltic rush	native	perennial grasslike herb	-	-	FACW	-
Juncus bufonius	Common toad rush	native	annual grasslike herb	-	-	FACW	vpa?
Juncus effusus	Common bog rush	native	perennial grasslike herb	-	-	FACW	-
Juncus mexicanus	Mexican rush	native	perennial grasslike herb	-	-	FACW	gen
Juncus patens	Rush	native	perennial grasslike herb	-	-	FACW	-
Juncus xiphioides	Iris leaved rush	native	perennial grasslike herb	-	-	OBL	gen
Kickxia elatine	Sharp point fluellin	non- native	perennial herb	-	-	UPL	-
Kickxia spuria	Fluellin	non- native	perennial herb	-	-	-	-
Lactuca saligna	Willow lettuce	non- native	annual herb	-	-	UPL	-
Lactuca serriola	Prickly lettuce	non- native	annual herb	-	-	FACU	-
Lasthenia californica ssp. californica	California goldfields	native	annual herb	-	-	FACU	-
Lathyrus jepsonii var. californicus	California tule pea	native	perennial herb	-	-	OBL	-
Lemna sp.	Duckweed	native	perennial herb	-	-	OBL	-

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Lepidium latifolium	Perennial pepperweed	non- native (invasive)	perennial herb	-	High	FAC	-
Leptochloa fusca	Sprangletop	native	annual grass	-	-	FACW	-
Lilaeopsis masonii	Mason's lilaeopsis	native	perennial herb	SR, Rank 1B.1	-	OBL	-
<i>Limonium</i> sp.	-	-	-	-	-	-	-
Lotus corniculatus	Bird's foot trefoil	non- native	perennial herb	-	-	FAC	gen
Ludwigia hexapetala	Six petal water primrose	non- native (invasive)	perennial herb	-	High	-	-
Ludwigia peploides ssp. peploides	Floating water primrose	non- native (invasive)	perennial herb	-	High	OBL	-
Lythrum californicum	Common loosestrife	native	perennial herb	-	-	OBL	-
Lythrum hyssopifolia	Hyssop loosestrife	non- native (invasive)	annual, perennial herb	-	Limited	OBL	vpa?
Maclura pomifera	Osage orange	non- native	tree, shrub	-	-	UPL	-
Malva nicaeensis	Bull mallow	non- native	annual herb	-	-	-	-
Malva pseudolavatera	Cretan mallow	non- native	shrub	-	-	-	-
Malvella leprosa	Alkali mallow	native	perennial herb	-	-	FACU	gen

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Marrubium vulgare	White horehound	non- native (invasive)	perennial herb	-	Limited	FACU	-
Medicago polymorpha	California burclover	non- native (invasive)	annual herb	-	Limited	FACU	-
Medicago sativa	Alfalfa	non- native	perennial herb	-	-	UPL	-
Melilotus albus	White sweetclover	non- native	annual, biennial herb	-	-	-	-
Melilotus indicus	Annual yellow sweetclover	non- native	annual herb	-	-	FACU	-
Mentha pulegium	Pennyroyal	non- native (invasive)	perennial herb	-	Moderate	OBL	vpa?
Morus alba	Mulberry	non- native	tree	-	-	FACU	-
Nerium oleander	Oleander	non- native	tree	-	-	-	-
Paspalum dilatatum	Dallis grass	non- native	perennial grass	-	-	FAC	-
Paspalum distichum	Knot grass	native	perennial grass	-	-	FACW	-
Persicaria amphibia	Water smartweed	native	perennial herb (aquatic)	-	-	OBL	-
Persicaria lapathifolia	Common knotweed	native	annual herb	-	-	FACW	-
Persicaria punctata	Dotted smartweed	native	perennial herb	-	-	OBL	-

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Phalaris aquatica	Harding grass	non- native (invasive)	perennial grass	-	Moderate	FACU	-
Phalaris lemmonii	Lemmon's canarygrass	native	annual grass	-	-	FACW	vpa?
Phalaris paradoxa	Hood canarygrass	non- native	annual grass	-	-	FAC	vpa?
Phoenix canariensis	Canary island date palm	non- native (invasive)	tree	-	Limited	-	-
Phoradendron leucarpum	American mistletoe	native	shrub (parasitic)	-	-	-	-
Phragmites australis	Common reed	native	perennial grass	-	-	FACW	-
Phyla nodiflora	Common lippia	native	perennial herb	-	-	FACW	-
Plantago lanceolata	Ribwort	non- native (invasive)	perennial herb	-	Limited	FAC	gen
Plantago major	Common plantain	non- native	perennial herb	-	-	FAC	-
Platanus racemosa	California sycamore	native	tree	-	-	FAC	-
Poa annua	Annual blue grass	non- native	annual grass	-	-	FAC	gen
Poa pratensis ssp. pratensis	Kentucky blue grass	non- native (invasive)	perennial grass	-	Limited	FAC	-
Polygonum aviculare	Prostrate knotweed	non- native	annual, perennial herb	-	-	FAC	gen

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Polypogon australis	Chilean beard grass	non- native	perennial grass	-	-	FACW	-
Polypogon monspeliensis	Annual beard grass	non- native (invasive)	annual grass	-	Limited	FACW	vpa?
Populus alba	White poplar	non- native	tree	-	-	-	-
Populus fremontii ssp. fremontii	Cottonwood	native	tree	-	-	FAC	-
Puccinellia distans	European alkali grass	non- native	perennial grass	-	-	FACW	-
Quercus lobata	Valley oak	native	tree	-	-	FACU	-
Ranunculus californicus	Common buttercup	native	perennial herb	-	-	FACU	gen
Ranunculus muricatus	Buttercup	non- native	annual, perennial herb	-	-	FACW	vpa?
Raphanus sativus	Radish	non- native (invasive)	annual, biennial herb	-	Limited	-	-
Rorippa palustris	Bog yellow cress	native	annual, perennial herb	-	-	OBL	-
Rosa californica	California wild rose	native	shrub	-	-	FAC	-
Rubus armeniacus	Himalayan blackberry	non- native (invasive)	shrub	-	High	FAC	-
Rubus ursinus	California blackberry	native	vine, shrub	-	-	FAC	-
Rumex acetosella	Sheep sorrel	non- native (invasive)	perennial herb	-	Moderate	FACU	gen

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Rumex crispus	Curly dock	non- native (invasive)	perennial herb	-	Limited	FAC	gen
Rumex dentatus	Toothed dock	non- native	annual, perennial herb	-	-	FACW	vpa?
Rumex fueginus	Golden dock	native	annual, perennial herb	-	-	FACW	-
Rumex pulcher	Fiddleleaf dock	non- native	perennial herb	-	-	FAC	gen
Sagittaria latifolia	Broad leaf arrowhead	native	perennial herb (aquatic)	-	-	OBL	-
Salix exigua	Narrowleaf willow	native	tree, shrub	-	-	FACW	-
Salix gooddingii	Gooding's willow	native	tree	-	-	FACW	-
Salix laevigata	Polished willow	native	tree	-	-	FACW	-
Salix lasiolepis	Arroyo willow	native	tree, shrub	-	-	FACW	-
Sambucus nigra ssp. caerulea	Blue elderberry	native	shrub	-	-	FAC	-
Samolus parviflorus	Water pimpernel	native	perennial herb	-	-	OBL	-
Schoenoplectus acutus var. occidentalis	Tule	native	perennial grasslike herb	-	-	OBL	-
Schoenoplectus californicus	California bulrush	native	perennial grasslike herb	-	-	OBL	-
<i>Setaria</i> sp.	Bristle grass	non- native	annual grass	-	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Silybum marianum	Milk thistle	non- native (invasive)	annual, perennial herb	-	Limited	-	-
Solanum sp.	Nightshade	-	-	-	-	-	-
Sonchus asper ssp. asper	Sow thistle	non- native	annual herb	-	-	FAC	-
Sonchus oleraceus	Sow thistle	non- native	annual herb	-	-	UPL	-
Sorghum halepense	Johnsongrass	non- native	perennial grass	-	-	FACU	-
Sparganium eurycarpum	Broadfruit bur reed	native	perennial herb	-	-	OBL	-
Spergularia rubra	Purple sand spurry	non- native	annual, perennial herb	-	-	FAC	gen
Sporobolus indicus	Smutgrass	non- native	perennial grass	-	-	FACU	-
Stachys albens	Cobwebby hedge nettle	native	perennial herb	-	-	OBL	-
Symphyotrichum chilense	Pacific aster	native	perennial herb	-	-	FAC	-
Symphyotrichum lentum	Suisun marsh aster	native	perennial herb (rhizomatous)	Rank 1B.2	-	OBL	-
Symphyotrichum subulatum	Eastern annual saltmarsh aster	native	annual herb	-	-	OBL	-
Tamarix sp.	Tamarisk	non- native	tree, shrub	-	-	-	-
Toxicodendron diversilobum	Poison oak	native	vine, shrub	-	-	FACU	-

Scientific Name	Common Name	Origin	Form	Rarity Status ¹	CAL-IPC Status ²	Wetland Status ³	Vernal Pool Status⁴
Tragopogon porrifolius	Salsify	non- native	perennial herb	-	-	-	-
Tribulus terrestris	Puncture vine	non- native (invasive)	annual herb	-	Limited	-	-
Trifolium fragiferum	Strawberry clover	non- native	perennial herb	-	-	FAC	-
Trifolium repens	White clover	non- native	perennial herb	-	-	FACU	-
Typha angustifolia	Narrow leaf cattail	non- native	perennial herb (aquatic)	-	-	OBL	-
Typha domingensis	Cattail	native	perennial herb	-	-	OBL	-
Typha latifolia	Broadleaf cattail	native	perennial herb (aquatic)	-	-	OBL	-
Urtica dioica	Stinging nettle	native	perennial herb	-	-	FAC	-
Verbena lasiostachys	Western vervain	native	perennial herb	-	-	FAC	-
Vicia sativa	Spring vetch	non- native	annual herb, vine	-	-	FACU	-
Vitis californica	California wild grape	native	vine, shrub	-	-	FACU	-
Washingtonia robusta	Washington fan palm	non- native (invasive)	tree	-	Moderate	FACW	-
Xanthium spinosum	Spiny cocklebur	native	annual herb	-	-	FACU	-
Xanthium strumarium	Cocklebur	native	annual herb	-	-	FAC	gen
Zeltnera muehlenbergii	Muehlenberg's centaury	native	annual herb	-	-	FAC	gen

• All plant species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2019]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2019] *Special-status only at native occurrences. The Study Area does not contain a native occurrence of this species.

¹ California Native Plant Society. 2018. Inventory of Rare and Endangered Plants (online edition, v8-03 0.39). Sacramento, California. Online at: http://rareplants.cnps.org/; most recently accessed: August 2018

- FE: Federal Endangered
- FT: Federal Threatened
- SE: State Endangered
- ST: State Threatened
- SR: State Rare
- Rank 1A: Plants presumed extinct in California
- Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
- Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere
- Rank 3: Plants about which we need more information a review list
- Rank 4: Plants of limited distribution a watch list
- ² California Invasive Plant Council. 2018. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: http://www.cal-ipc.org/paf/; most recently accessed: August 2018
 - High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
 - Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limitedmoderate distribution ecologically
 - Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
 - Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

³ Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X

- OBL: Almost always found in wetlands
- FACW: Usually found in wetlands
- FAC: Equally found in wetlands and uplands
- FACU: Usually not found in wetlands
- UPL: Almost never found in wetlands
- NL: Not listed, assumed almost never found in wetlands
- NI: No information; not factored during wetland delineation

⁴ Keeler-Wolf, T., D.R. Elam, K. Lewis, and S.A. Flint. 1998. California Vernal Pool Assessment Preliminary Report. The Resources Agency, California Department of Fish and Game, Sacramento, CA. 161 pp. with appendices

- VPI: Species restricted to vernal pools and not known from other habitats
- VPA: Species regularly occurring in vernal pools, but not restricted to them; also occurring in other wetland habitats
- GEN: Species that can occur in wetland or upland, or sometimes both, including vernal pools, pool margins, disturbed areas, and grasslands
- VPI?: Species that is VPI in certain region(s) only, and can be a VPA or GEN in other regions
- VPA?: Species that is VPA in certain region(s), and is GEN in other regions
- VPI/VPA: Species that is VPI in some regions and VPA in other regions, but not known to be GEN