

Draft Appendix B

Notice of Preparation and Notice of Preparation Comments

State Water Resources Control Board

NOTICE OF PREPARATION AND CALIFORNIA ENVIRONMENTAL QUALITY ACT SCOPING MEETING

ORDER FOR CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND WASTE DISCHARGE REQUIREMENTS FOR IMPLEMENTATION OF LARGE HABITAT RESTORATION PROJECTS STATEWIDE

NOTICE IS HEREBY GIVEN that State Water Resources Control Board (State Board) staff will hold a California Environmental Quality Act (CEQA) scoping meeting to receive public input on the content and scope of an Environmental Impact Report (EIR) that will be prepared to assess the potential environmental effects of a proposed project, Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Implementation of Large Habitat Restoration Projects Statewide (General Order). The scoping meeting will include a brief presentation about the proposed General Order followed by public comments.

The scoping meeting will be:

Tuesday, October 22, 2019 – 1:00 p.m.
Joe Serna Jr. - Cal/EPA Headquarters Building
Byron Sher Auditorium
1001 I Street, Second Floor
Sacramento, CA 95814

The State Water Board will accept both written and oral comments regarding scoping elements. Written comments may be submitted in accordance with the instructions set forth below by 12:00 p.m. noon on November 22, 2019.

Information about the scoping meeting is located on the [State Water Board web site](http://www.waterboards.ca.gov/board_info/calendar/) at: http://www.waterboards.ca.gov/board_info/calendar/ and the [State Water Board 401 Water Quality Certification and Wetlands Program webpage](https://www.waterboards.ca.gov/water_issues/programs/cwa401/) at: https://www.waterboards.ca.gov/water_issues/programs/cwa401/.

WEBCAST INFORMATION

[Video and audio broadcast of the scoping meeting](https://video.calepa.ca.gov/) will be available via the internet and can be accessed at: <https://video.calepa.ca.gov/>.

PARKING AND ACCESSIBILITY

For directions to the Joe Serna, Jr. (CalEPA) Building and public parking information, please refer to the [map on the State Water Board website](http://www.calepa.ca.gov/headquarters-sacramento/location/) at: <http://www.calepa.ca.gov/headquarters-sacramento/location/>.

The CalEPA Building is accessible to persons with disabilities. Individuals requiring special accommodations are requested to call (916) 341-5254 at least five working days prior to the meeting. Telecommunications Device for the Deaf (TDD) users may contact the California Relay Service at (800) 735-2929 or voice line at (800) 735-2922.

All visitors to the CalEPA Building are required to sign in and obtain a badge at the Visitor Services Center located just inside the main entrance (10th Street entrance). Valid picture identification may be required. Please allow up to 15 minutes for receiving security clearance.

Notice of Preparation

TO: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044

FROM LEAD AGENCY: State Water Resources Control Board
P.O. Box 2000, Sacramento, CA 95812-2000
Attention Jessica Nadolski

SUBJECT: **ORDER FOR CLEAN WATER ACT SECTION 401 WATER QUALITY
CERTIFICATION AND WASTE DISCHARGE REQUIREMENTS FOR
IMPLEMENTATION OF LARGE HABITAT RESTORATION PROJECTS
STATEWIDE**

INTRODUCTION

The State Water Board proposes to develop a General Order establishing an authorization process to improve permitting efficiency for specific types of environmentally beneficial restoration activities statewide. Pursuant to CEQA, the State Water Board will be the Lead Agency and will prepare an EIR for the proposed General Order.

BACKGROUND

The State Water Board has previously authorized a General Water Quality Certification (General WQC) for small habitat restoration projects that (a) shall not exceed five acres or a cumulative total of 500 linear feet of stream bank or coastline and (b) qualify for the CEQA Class 33 Categorical Exemption (CEQA Guidelines Section 15333). Restoration projects that fall outside the project size limits of the General WQC for small habitat restoration must obtain individual WQCs and/or waste discharge requirements (WDRs) from the State Water Board or Regional Water Quality Control Boards (Regional Boards). The process of obtaining individual authorization can be time consuming and

increase the cost of regulatory compliance as compared to obtaining authorization under a General Order that provides programmatic coverage. Restoration proponents seeking authorization for larger projects beyond the scale of the General WQC for small habitat restoration often do not have the funding to seek individual permits. This indicates the need for a General Order that will expedite the regulatory approval process for large habitat restoration projects. The proposed General Order for large habitat restoration projects is intended as a companion, not a replacement, to the General WQC for small habitat restoration.

GENERAL ORDER (PROJECT) DESCRIPTION

This proposed General Order considers a variety of aquatic and riparian restoration types that take place throughout the State. The following proposed types of restoration are included:

1. **Stream Crossing and Fish Passage Improvements** – for upstream and downstream movement by fish and other species, and to improve functions of streams.
2. **Small Dam, Tide Gate, Flood Gate, and Legacy Structure Removal** – to improve fish and wildlife migration, tidal and freshwater circulation and flow, and water quality.
3. **Bioengineered Bank Stabilization** – to reduce fine sediment input, enhance aquatic and riparian habitat, and improve water quality.
4. **Off-Channel/Side-Channel Habitat Restoration and Enhancement** – to improve aquatic and riparian habitat for fish and wildlife and/or to restore hydrologic, hydraulic, and biogeochemical functions and processes of streams.
5. **Water Conservation Projects** – to reduce low-flow stream diversions, such as off-stream storage tanks and ponds and necessary off-channel infrastructure.
6. **Floodplain Restoration** – to improve ecosystem function through hydrological connection between streams and floodplains, including levee breaching and removal, berm and dike setback breaching and removal, and hydraulic reconnection and revegetation.
7. **Piling and Other In-Water Structure Removal** – to improve water quality and aquatic habitat for fish and wildlife.

8. **Non-native Invasive Species Removal and Native Plant Revegetation** – to improve watershed functions, such as aquatic and riparian habitat for fish and wildlife.
9. **Tidal, Subtidal, and Freshwater Wetland Establishment, Restoration, and Enhancement** – to create or improve wetland ecological functions.
10. **Stream and Riparian Habitat Establishment, Restoration, and Enhancement** – to create or restore functions of streams and riparian areas

Restoration projects must incorporate specified protection measures (as applicable), such as design guidelines or avoidance and minimization techniques, or other criteria into their project descriptions to qualify within the scope of the proposed General Order.

GENERAL ORDER (PROJECT) LOCATION

The proposed General Order addresses future activities that may occur statewide upon notification and permitting authority review. The proposed General Order would be administered, in part, within the jurisdiction of each Regional Board.

ENVIRONMENTAL BASELINE

California Code of Regulations, title 14, section 15125 states that an EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the Notice of Preparation (NOP) is published from local, regional, and, in this case, state perspectives (existing conditions). The environmental setting will constitute the baseline physical conditions that State Water Board, the Lead Agency, will use to determine whether an impact is significant. In general, the environmental baseline is the same as existing conditions.

PROJECT ALTERNATIVES

A reasonable range of potentially feasible project alternatives, in addition to the no project alternative, will be addressed, following the scoping process and will consider the views of responsible and trustee agencies and the public.

POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will analyze resources that may be affected by the proposed General Order. Resource topics to be considered for analysis in the EIR include the following:

- Aesthetics
- agriculture and forestry resources
- air quality
- biological resources
- land use and planning
- mineral resources
- noise
- population and housing

- cultural resources
- energy
- geology and soils
- greenhouse gas emissions
- hazards and hazardous materials
- hydrology and water quality (surface and groundwater resources)
- public services
- recreation
- transportation
- tribal cultural resources
- utilities/service systems
- wildfire

SUBMISSION OF WRITTEN COMMENTS

The State Water Board will accept written public comments regarding scoping. Written comment letters must be received no later than **12:00 p.m. noon on November 22, 2019**. Written comments must be addressed to:

State Water Resources Control Board
Division of Water Quality
Attention: Jessica Nadolski
P.O. Box 100, Sacramento, CA 95812-2000 (mail)
1001 I Street, 15th floor, Sacramento, CA 95814 (hand-delivered)

Comment letters may be submitted electronically, in pdf text format (if less than 15 megabytes in total size), to the [Wetlands Permitting and Enforcement Unit via e-mail](mailto:jessica.nadolski@waterboards.ca.gov) at jessica.nadolski@waterboards.ca.gov. Please indicate in the subject line: **“Comment Letter – Proposed Statewide Restoration General Order.”**

Couriers delivering hard copies of comment letters must check in with lobby security personnel, who can contact Ms. Nadolski at (916) 341-5290.

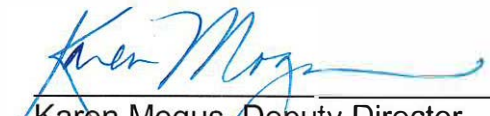
All comments received will become part of the official administrative record and may be made available for public review.

FUTURE NOTICES

Any change in the date, time, and place of the scoping meeting will be publicly noticed on the State Water Board website and through Lyris e-mail list. Any person desiring to receive future notices concerning the proposed General Order must sign up on the Lyris e-mail list. To sign up for a Lyris list, access the [email List Subscription Form](http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml) at the web address listed below, click the “Water Quality” tab, and check the box for “CWA401 – Certification and Wetlands Program”:
http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml.

Please direct questions about this notice to [Jessica Nadolski](#) at (916) 341-5290 or jessica.nadolski@waterboards.ca.gov.

10/8/19
Date



Karen Mogus, Deputy Director
Division of Water Quality
State Water Resources Control Board

November 19, 2019

Via Email



Jessica Nadolski
State Water Resources Control Board
Attn: Jessica Nadolski
P.O. Box 100
Sacramento, CA 95812-2000

Re: Comment Letter – Proposed Statewide Restoration General Order

Dear Ms. Nadolski,

The Santa Clara Valley Open Space Authority (Authority) has reviewed the Notice of Preparation (NOP) for the State Water Board proposed General Order for large habitat restoration projects and appreciates the opportunity to provide input during the scoping process.

The Authority is a public land conservation agency and special district created by the California Legislature in 1993 to balance growth with the protection of open space, natural resources, greenbelts and agricultural land. To date, the Authority has worked with farmers, ranchers, public agencies and non-profit partners to conserve and steward over 25,000 acres of open space and agricultural land in Santa Clara County through voluntary acquisition of land and conservation easements.

As part of the Authority's mission to steward lands, we plan and implement voluntary restoration projects on our lands that have multiple benefits for habitat, water quality, endangered species, and flood protection. Oftentimes these projects are located in aquatic and riparian habitats. As noted in the NOP, the process of obtaining individual authorization can be time consuming and increase the cost of regulatory compliance compared to obtaining authorization under a General Order that provides programmatic coverage.

The streamlining provided through a General Order will save the Authority time and cost which will increase the ability for us to implement large scale aquatic and riparian habitat restoration projects. The Authority supports the types of restoration included in the proposed General Order and appreciates the efforts of the State Water Board to streamline coverage.

If you have any questions regarding this letter, please contact me at mfreeman@openspaceauthority.org or (408) 224-7476.

Sincerely,

Matt Freeman
Assistant General Manager

33 Las Colinas Lane
San Jose, CA 95119
408.224.7476 T
408.224.7548 F
openspaceauthority.org

Memorandum

Date: November 19, 2019

To: State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, California 95812-2000
Attention: Jessica Nadolski

From: Department of Water Resources

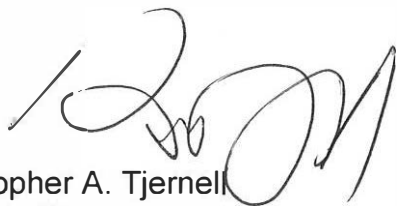
Subject: Comments on Notice of Preparation General Order for Clean Water Act Section 401

The California Department of Water Resources' (DWR) mission is to sustainably manage the water resources of California, in cooperation with other agencies, to benefit the state's people and protect, restore, and enhance natural and human environments. DWR is a proponent of habitat restoration and enhancement efforts across the State to increase ecosystem function and support endangered and threatened species recovery. Under the California EcoRestore initiative, DWR funds and implements projects pursuing 30,000 acres of habitat restoration in the Sacramento-San Joaquin Delta region.

DWR commends the State Water Resources Control Board (SWRCB) for its effort to develop a General Order for the Clean Water Act Section 401 that establishes an authorization process to improve permit efficiency for specific types of environmentally beneficial restoration activities statewide. DWR strongly supports SWRCB's proposed action and acknowledges the General Order will help expedite regulatory approval for large restoration projects while ensuring appropriate protection measures are in place.

The current process for obtaining individual authorization can be time consuming. A more efficient permitting process, such as that proposed by the General Order for implementation of large habitat restoration projects, will directly support DWR's efforts to implement aquatic and riparian habitat restoration and related environmental protection measures in a timely and more cost-effective manner. DWR encourages a broad environmental analysis to ensure comprehensive coverage of a wide-array of essential restoration projects throughout the State.

If you have any questions, you may contact Bill Harrell, EcoRestore Branch Chief at (916) 651-0711 or Bill.Harrell@water.ca.gov.



Kristopher A. Tjernell
Deputy Director

cc: Bill Harrell, Chief EcoRestore

San Francisco Bay Conservation and Development Commission

375 Beale Street, Suite 510, San Francisco, California 94105 tel 415 352 3600 fax 888 348 5190

State of California | Gavin Newsom – Governor | info@bcdc.ca.gov | www.bcdc.ca.gov

November 22, 2019

Jessica Nadolski
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95812-2000

SUBJECT: Comments on the Notice of Preparation for the Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Implementation of Large Habitat Restoration Projects Statewide

Dear Ms. Nadolski:

On October 24, 2019, the Commission received a Notice of Preparation (NOP) for the Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Implementation of Large Habitat Restoration Projects Statewide Draft Environmental Impact Report (draft EIR). Thank you for the opportunity to comment.

Although the San Francisco Bay Conservation and Development Commission (Commission) has not reviewed the NOP, the following staff comments are based on the McAteer-Petris Act, the Suisun Marsh Preservation Act (Suisun Marsh Act), the Commission's *San Francisco Bay Plan* (Bay Plan), the *Suisun Marsh Protection Plan* (Suisun Marsh Plan), the Commission's federally-approved coastal management program for the San Francisco Bay, and the federal Coastal Zone Management Act (CZMA).

Jurisdiction

The Bay Area and the Suisun Marsh support a substantial portion of the state's wetlands and also contain diked historic baylands that could support large restoration projects. The Commission's permit jurisdiction includes all tidal areas of the Bay up to the line of mean high tide or, in areas of tidal wetlands, the upland edge of tidal marsh up to five feet above mean sea level, including all areas formerly subject to tidal action that have been filled since September 17, 1965; and the shoreline band that extends 100 feet inland from and parallel to the Commission's Bay jurisdiction. The Commission also has jurisdiction over certain managed wetlands adjacent to the Bay, salt ponds, certain waterways, and the Suisun Marsh.

Commission permits are required for placement of fill, construction, dredging, and substantial changes in use within its jurisdiction, which includes wetland restoration projects. Permits are issued when the Commission finds proposed activities to be consistent with its laws, policies, and coastal zone management program. In addition, federal actions (including plans), permits, projects, licenses and grants affecting the Commission's coastal zone jurisdiction are subject to review by the Commission, pursuant to the federal CZMA, for their consistency with the Commission's federally-approved coastal management program for the Bay.



The Suisun Marsh Act grants the Commission regulatory authority to issue marsh development permits, which include restoration projects, in the primary management area of the Suisun Marsh, defined as water-covered areas, tidal marshes, diked wetlands, seasonal marshes, and certain lowland grasslands specified on the Marsh Plan Map. The Suisun Marsh Act also established a secondary management area composed principally of upland grasslands and cultivated lands, also specified on the Suisun Marsh Plan Map, to serve as a buffer between the primary management area and developed lands outside the Suisun Marsh. Within the secondary management area, local governments issue marsh development permits pursuant to a local protection program certified by the Commission, and these permits can be appealed to the Commission. Therefore, large restoration projects within the Commission's jurisdiction will require approval by the Commission.

Programmatic Permits for Large Restoration Projects

The proposed General Order would provide for large habitat restoration projects to be issued a 401 Water Quality Certification under a programmatic permit, which could reduce costs and timelines for habitat restoration. The Commission recognizes the need for fostering and expediting large-scale Bay restoration, particularly in light of rising sea level. If wetlands are not restored soon so that they can establish marsh vegetation before sea level rise accelerates, they may not be able to restore successfully. BCDC recently adopted an amendment to the Bay Plan to address fill for habitat projects, which is now pending administrative law review and is likely to be in place by the time a draft EIR is prepared for the General Order. This amendment includes policy revisions to allow larger volumes of fill for habitat projects and proposes amendments to the Bay Plan policies on Fish, Other Aquatic Organisms, and Wildlife; Tidal Marshes and Tidal Flats; Subtidal Areas; Dredging; and Shoreline Protection. Many of these policies explicitly address requirements for habitat restoration, enhancement, creation, and sea level rise adaptation projects within BCDC's jurisdiction, including specific issues that are mentioned below. As part of the Bay Plan amendment process, the Commission recognized that expediting restoration also needs to ensure that projects are designed, constructed and managed properly to ensure that they will provide anticipated benefits and not result in significant unintended adverse impacts. The draft EIR should discuss the impacts addressed by these Bay Plan policies.

While a programmatic permit for large restoration projects would encourage more restoration of Bay habitats and could potentially streamline the permitting process, large restoration projects, if not properly designed, analyzed, mitigated, and managed, could potentially pose substantial risk to Bay and Suisun Marsh natural resources. The NOP states that "restoration projects must incorporate specified protection measures (as applicable), such as design guidelines or avoidance and minimization techniques, or other criteria into their project descriptions to qualify within the scope of the proposed General Order." Based on this description, it is not clear what level of review would be required under the General Order to ensure that unintended impacts to natural resources would not occur. Recognizing this potential, it is important that the draft EIR effectively evaluate the suite of impacts that could occur if projects are permitted with expedited/less rigorous review or with less substantive mitigation requirements. The General Order should maintain an adequate review process that

will protect Bay resources and allow for appropriate mitigation of any impacts to these resources. Additionally, since the current NOP proposes the development of a generalized CEQA document, it should be acknowledged in the draft EIR that as projects are fully developed, a supplemental analysis will be necessary for project-level review.

The NOP has identified a broad list of restoration types that take place throughout the state that would be considered under the General Order, including: (1) Stream Crossing and Fish Passage Improvements; (2) Small Dam, Tide Gate, Flood Gate, and Legacy Structure Removal; (3) Bioengineered Bank Stabilization; (4) Off-Channel/Side-Channel Habitat Restoration and Enhancement; (5) Water Conservation Projects; (6) Floodplain Restoration; (7) Piling and Other In-Water Structure Removal; (8) Non-native Invasive Species Removal and Native Plant Revegetation; (9) Tidal, Subtidal, and Freshwater Wetland Establishment, Restoration, and Enhancement; and (10) Stream and Riparian Habitat Establishment, Restoration, and Enhancement. Considering this list, the staff has identified BCDC laws and policies that raise potential issues in large restoration projects that require analysis in the draft EIR. The impacts identified in laws and policies should be considered in all aspects of the draft EIR, as projects considered by the General Order may affect these issues.

Protection of Bay Habitats

The proposed types of restoration projects to be considered under the General Order could include fill placement, such as the beneficial reuse of dredged sediment or placement of upland material to establish, restore, or enhance a wetland. The McAteer-Petris Act places specific restrictions on use of fill within BCDC's jurisdiction, and states in part that fill "should be authorized only when public benefits from fill clearly exceed public detriment from the loss of the water areas and should be limited to water-oriented uses"; "should be authorized only when no alternative upland location is available for such purpose"; and should "minimize harmful effects to the bay area, such as, the reduction or impairment of the volume surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources, or other conditions impacting the environment". The law also states that "the water area authorized to be filled should be the minimum necessary to achieve the purpose of the fill."

The Bay Plan contains many policies that protect against impacts to living resources and their habitats. Policies in the Fish, Other Aquatic Organisms, and Wildlife section of the Bay Plan state:

"To assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased."

"Specific habitats that are needed to conserve, increase or prevent the extinction of any native species, species threatened or endangered, species that the California Department of Fish and Game has determined are candidates for listing as endangered or threatened under the California Endangered Species Act, or any species that provides substantial public benefits, should be protected, whether in the Bay or behind dikes."

Similarly, policies in the Tidal Marshes and Tidal Flats section of the Bay Plan state:

“Tidal marshes and tidal flats should be conserved to the fullest possible extent. Filling, diking, and dredging projects that would substantially harm tidal marshes or tidal flats should be allowed only for purposes that provide substantial public benefits and only if there is no feasible alternative.”

“Any proposed fill, diking, or dredging project should be thoroughly evaluated to determine the effect of the project on tidal marshes and tidal flats, and designed to minimize, and if feasible, avoid any harmful effects.”

“Projects should be sited and designed to avoid, or if avoidance is infeasible, minimize adverse impacts on any transition zone present between tidal and upland habitats. Where a transition zone does not exist and it is feasible and ecologically appropriate, shoreline projects should be designed to provide a transition zone between tidal and upland habitats.”

Policies in the Subtidal Areas section of the Bay Plan state, in part, that “projects in subtidal areas should be designed to minimize and, if feasible, avoid any harmful effects”, and that

“[S]ubtidal areas that are scarce in the Bay or have an abundance and diversity of fish, other aquatic organisms and wildlife (e.g., eelgrass beds, sandy deep water or underwater pinnacles) should be conserved.”

The proposed types of restoration projects to be considered under the General Order, if not permitted and conditioned carefully, could potentially result in detrimental impacts to living Bay resources, including fish, wildlife, plant communities, invertebrate communities, etc; and the habitats of these organisms. For example, the removal of dams, tide gates, flood gates, and other legacy structures could increase water turbidity and have unintended adverse impacts on downstream plant communities, such as eelgrass. Additionally, wetland establishment activities in subtidal or some tidal areas could result in habitat type conversion that inadvertently eliminates or significantly reduces the numbers of certain populations of fish or wildlife (e.g. mudflat conversion to another habitat type could disrupt foraging of certain bird guilds).

To ensure that expedited permitting of restoration projects under the General Order would not adversely impact natural resources that are protected by BCDP’s policies, the draft EIR should assess impacts of the General Order to tidal marshes, tidal flats, subtidal areas, salt ponds, and managed wetlands, both in the Bay and in the Suisun Marsh, and should discuss whether the requirements of the General Order would address the impacts raised in the McAteer-Petris Act requirements related to allowable fill, BCDP’s policies addressing natural resources in the Bay Plan, and the Suisun Marsh Protection Plan. Additionally, staff recommends that the draft EIR specify much more narrowly the types of projects that can be permitted under the General Order, and the criteria for project eligibility, to minimize the possibility of projects with negative impacts on natural resources to be permitted under the General Order.

Protection of Water Resources:

BCDP’s Bay Plan policies state, in part, the following:

In the Water Quality section:



“Bay water pollution should be prevented to the greatest extent feasible. The Bay's tidal marshes, tidal flats, and water surface area and volume should be conserved and, whenever possible, restored and increased to protect and improve water quality. Fresh water inflow into the Bay should be maintained at a level adequate to protect Bay resources and beneficial uses.”

In the Water Surface Area and Volume section:

“The surface area of the Bay and the total volume of water should be kept as large as possible in order to maximize active oxygen interchange, vigorous circulation, and effective tidal action. Filling and diking that reduce surface area and water volume should therefore be allowed only for purposes providing substantial public benefits and only if there is no reasonable alternative.”

The proposed types of restoration projects to be considered under the General Order, if not permitted and conditioned carefully, could result in unintended or unavoidable detrimental impacts to the Bay and its connected water resources, including water quality, water surface area and volume, and freshwater inflow to the Bay. For example, the removal of dams, tide gates, flood gates, and other legacy structures could alter sediment loads entering the Bay at various sites, and could alter certain water quality parameters (e.g. turbidity or nutrient concentration). Additionally, sediment placement to establish tidal wetlands could result in the conversion of open water/subtidal area to tidal marsh, and thus reduce the Bay's surface area and volume.

The Commission's law and policy provides that the policies, decisions, advice, and authority of the State Board and the San Francisco Bay Regional Water Quality Control Board should be the primary basis for the Commission to carry out its water quality responsibilities for the Bay. To ensure that expedited permitting of restoration projects under the General Order would not adversely impact water resources that are protected by BCDC's policies, the draft EIR should assess impacts of projects authorized under the General Order to water quality, water surface area and volume, and freshwater inflows, both in the Bay and in the Suisun Marsh, and should discuss whether the requirements of the General Order address impacts identified in BCDC's Bay Plan and Suisun Marsh Protection Plan policies on water resources.

Restoration Project Design and Evaluation:

Restoration projects within BCDC's jurisdiction that are permitted via the General Order will require sufficiently detailed project design and evaluation, particularly if a proposed project has the potential to adversely impact Bay resources. The Bay Plan lists specific design and evaluation criteria for restoration projects in the Tidal Marshes and Tidal Flats, Subtidal Areas, Salt Ponds, and Managed Wetlands sections of the Bay Plan. The draft EIR should discuss whether the project design and evaluation required by the General Order would provide the necessary specificity to identify and address impacts raised in large restoration projects, as specified in the relevant Bay Plan policies.

Local Setting and Site Suitability

In the Bay, specific local settings are highly variable, and for projects to be successful and minimize impacts, it is important that projects are appropriate to the local context. The Baylands Ecosystem Habitat Goals Update (2015) has highlighted areas that are suitable for restoration, and the importance of designing projects to re-connect natural sediment and hydrology to enhance project sustainability into the future. Additionally, the 2019 Adaptation Atlas highlights the importance of placing natural features in areas where they can be sustained and are appropriate for the site's natural context. Several of BCDC's recently adopted Bay Plan policies reflect the importance of considering local setting in project siting and design. A general review as suggested under the General Order does not appear to have the ability to analyze this issue. To ensure that expedited permitting of restoration projects under the General Order would not impact natural resources that are protected by BCDC's policies, the draft EIR should assess whether and how projects would fit within local setting and how this would be analyzed through the General Order.

Dredging

Projects allowed by General Order may entail the use of dredged sediment to raise the elevation of subsided land, construct necessary berms or levees, construct transition zones, or implement other sea level rise adaptation measures; and could entail dredging for tidal channel creation or enhancement. BCDC's dredging policies regulate the use of dredged sediment for restoration, as well as dredging for these purposes, within the Commission's jurisdiction. The Bay Plan Dredging Policies state, in part, that:

"Dredging should be authorized when the Commission can find: (a) the applicant has demonstrated that the dredging is needed to serve a water-oriented use or other important public purpose, such as navigational safety; (b) the materials to be dredged meet the water quality requirements of the San Francisco Bay Regional Water Quality Control Board; (c) important fisheries and Bay natural resources would be protected through seasonal restrictions established by the California Department of Fish and Game, the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service, or through other appropriate measures; (d) the siting and design of the project will result in the minimum dredging volume necessary for the project; and (e) the materials would be disposed of in accordance with Policy 3"; and

"A project that uses dredged material to create, restore, or enhance Bay or certain waterway natural resources should be approved only if:

1. The Commission, based on detailed site specific studies, appropriate to the size and potential impacts of the project, that include, but are not limited to, site morphology and physical conditions, biological considerations, the potential for fostering invasive species, dredged material stability, and engineering aspects of the project, determines all of the following:
 - a. the project would provide, in relationship to the project size, substantial net improvement in habitat for Bay species;

- b. no feasible alternatives to the fill exist to achieve the project purpose with fewer adverse impacts to Bay resources;
- c. the amount of dredged material to be used would be the minimum amount necessary to achieve the purpose of the project;
- d. beneficial uses and water quality of the Bay would be protected; and
- e. there is a high probability that the project would be successful and not result in unmitigated environmental harm...”

The draft EIR should discuss whether the requirements of the General Order would address impacts identified in BCDC’s Bay Plan policies on acceptable dredging activities.

Climate Change

Restoration projects within BCDC’s jurisdiction that are permitted via the General Order will be required to adhere to BCDC’s climate change policies. An applicable policy in the Bay Plan states, in part, that most projects “within areas that a risk assessment determines are vulnerable to future shoreline flooding that threatens public safety...should be designed to be resilient to a mid-century sea level rise projection. If it is likely the project will remain in place longer than mid-century, an adaptive management plan should be developed to address the long-term impacts that will arise based on a risk assessment using the best available science-based projection for sea level rise at the end of the century.” The draft EIR should discuss whether the General Order would consider sea level rise. Additionally, the draft EIR should consider how climate change may alter the way that allowable restoration projects will impact Bay and marsh natural resources (e.g. how might changing precipitation patterns and sea level rise impact the projects that would be allowed through the General Order).

Public Access

Projects within BCDC’s jurisdiction that are permitted via the General Order and use fill for habitat restoration will also require public access. BCDC’s public access policies state, in part, that:

“A proposed fill project should increase public access to the Bay to the maximum extent feasible, in accordance with the policies for Public Access to the Bay”;

“Public access to some natural areas should be provided to permit study and enjoyment of these areas. However, some wildlife are sensitive to human intrusion. For this reason, projects in such areas should be carefully evaluated in consultation with appropriate agencies to determine the appropriate location and type of access to be provided”; and

“Public access should be integrated early in the planning and design of Bay habitat restoration projects to maximize public access opportunities and to avoid significant adverse effects on wildlife.”

The draft EIR should discuss whether the requirements of the General Order would be consistent and compatible with BCDC's Bay Plan policies on Public Access.

Mitigation

Projects that would be permitted under the General Order could potentially have adverse impacts on natural resources that require mitigation under BCDC's Bay Plan policies. BCDC's Bay Plan states that "[p]rojects should be designed to avoid adverse environmental impacts to Bay natural resources such as to water surface area, volume, or circulation and to plants, fish, other aquatic organisms and wildlife habitat, subtidal areas, or tidal marshes or tidal flats. Whenever adverse impacts cannot be avoided, they should be minimized to the greatest extent practicable. Finally, measures to compensate for unavoidable adverse impacts to the natural resources of the Bay should be required. Mitigation is not a substitute for meeting the other requirements of the McAteer-Petris Act." The draft EIR should discuss whether the General Order would identify and address the need for mitigation for project impacts when appropriate. Additionally, the General Order should recognize that projects will require thorough evaluation to determine whether mitigation is necessary for project impacts.

Cumulative Impacts

In allowing large amounts and/or areas of restoration work under a programmatic permit, it is important to consider the cumulative impacts of the authorized projects. While BCDC does not have specific policies or laws on cumulative impacts, the combined effects of multiple restoration projects should not negatively impact Bay resources. In particular, impacts addressed in the Bay Plan that should be considered carefully in the context of multiple projects include invasive species, sediment movement, tidal hydrology, and changes to the Bay's bathymetry. For example, if multiple projects reconfigure hydrology, it is important to consider resulting changes to sediment budget and water flows, which could have implications for ecosystems Bay-wide. Additionally, invasive species control strategies or introduction potential at one site could affect other projects throughout the Bay. Bay Plan policies state, in part, that any tidal marsh or tidal flat restoration project should be designed and analyzed to account for "(b) the impact of the project on the Bay's sediment budget..." and "(e) potential invasive species introduction, spread, and control...". Similarly, "[a]ny proposed filling or dredging project in a subtidal area should be thoroughly evaluated to determine the local and Bay-wide effects of the project on: (a) the possible introduction or spread of invasive species; (b) tidal hydrology and sediment movement;...and (e) the Bay's bathymetry. Projects in subtidal areas should be designed to minimize and, if feasible, avoid any harmful effects." The draft EIR should analyze the cumulative impacts of programmatic permitting of the types of restoration projects to be addressed through the General Order.

The San Francisco Bay Plan and Suisun Marsh Protection Plan encourage the restoration of Bay habitats, and Commission staff supports efforts to streamline permitting processes. However, Commission staff believes it is important to recognize that large restoration projects can have significant impacts to Bay resources. The Commission staff believes that the adoption of a

General Order for large restoration projects should be carefully considered to ensure that these impacts are acknowledged and addressed. Thank you for the opportunity to comment on this NOP. If you have any questions regarding this letter or the Commission's policies, please contact me at (415) 352-3626 or megan.hall@bcdc.ca.gov.

Sincerely,



MEGAN HALL
Coastal Scientist

San Francisco Bay Conservation and Development Commission
375 Beale Street, Suite 510
San Francisco, California 94105
Tel: 415-352-3600
Email: info@bcdc.ca.gov
Website: www.bcdc.ca.gov

MH/gg

Meredith Parkin

From: Nadolski, Jessica@Waterboards <Jessica.Nadolski@Waterboards.ca.gov>
Sent: Tuesday, October 22, 2019 12:00 PM
To: Meredith Parkin; Erika Lovejoy
Cc: Garrison, Paul@Waterboards
Subject: FW: Comment Letter – Proposed Statewide Restoration General Order

From: Betsy Stapleton <5104stapleton@gmail.com>
Sent: Saturday, October 19, 2019 5:48 AM
To: Nadolski, Jessica@Waterboards <Jessica.Nadolski@Waterboards.ca.gov>
Subject: Comment Letter – Proposed Statewide Restoration General Order

Dear Persons,

I strongly support the creation of a Statewide general order for Restoration. My organization, the Scott River Watershed Council, has extensively used the general order for small habitat restoration, the Habitat Restoration and Enhancement Act (HREA), to permit and execute restoration in the Scott Valley of Siskiyou County. Without HREA we would have been very limited in our ability to deploy restoration for the C/ESU listed Coho salmon, and other ecological services. I believe that our HREA permitted projects are starting to be of sufficient scale to support population recovery. However, our efforts have been limited by the project size constraints of HREA, and having similar permitting for larger projects would allow us to accelerate the scale and scope of our restoration efforts.

To meet the many critical problems in front of us, such as climate change, water resilience, groundwater recharge and catastrophic fire, restoration must move beyond the 5 acre/500 linear feet of streambank impact allowed under HREA to a much larger scale. The proposed general order for large scale restoration projects would allow my organization, and many others like mine, to do so. Additionally, having a programmatic Environmental Document, would significantly reduce the cost of individual projects, allowing restoration investments to deliver more on-the-ground-results.

Again, I can not express enough how much having this order would allow the delivery of the scale of restoration projects that are necessary to address the needs of society and the environment.

Betsy Stapleton

Betsy Stapleton
Board Chair
Scott River Watershed Council
707-499-7082
www.ScottRiverWatershedCouncil.com
[Visit us on Facebook](#)



November 14, 2019

State Water Resources Control Board
Attention: Jessica Nadolski
Division of Water Quality
P.O. Box 100
Sacramento, CA 95812-2000

Subject: Comment Letter – Proposed Statewide Restoration General Order

Dear Ms. Nadolski:

Thank you for the opportunity to comment on the proposed General Order for Clean Water Act (CWA) Section 401 Water Quality Certification and Waste Discharge Requirements for Implementation of Large Habitat Restoration Projects Statewide. As a long-time partner and implementing agency of salmonid restoration projects in the Lower American River (LAR), the City of Sacramento and Water Forum are very supportive of development of a General Order that permits larger restoration projects. For over a decade, the Water Forum, Reclamation, U.S. Fish and Wildlife Service (USFWS), and the City have collaborated with stakeholders to implement successful science based salmonid restoration projects on the lower American River. This work has resulted in over 37 acres of restored habitat.

The Water Forum was established in 1993 with the co-equal goals of protecting the fishery and recreational resources of the lower American River and meeting the water needs of the Sacramento region. Water Forum staff and consultants have been working cooperatively with State and Federal fish trustee agencies and the U.S. Bureau of Reclamation to monitor conditions in the river and develop long term management strategies for responding to the declining fishery on the lower American River. The City is responsible for physically implementing the construction of ongoing LAR habitat improvements, is a signatory to the Sacramento Water Forum Agreement, and has served as the local partner on past LAR habitat improvements associated with the Central Valley Project Improvement Act (CVPIA), in coordination with the U.S. Department of the Interior, Bureau of Reclamation (Reclamation). Reclamation provides most of the project funding and is required to implement CVPIA Section 3406(b)(13) under Federal law.¹

In a natural system, sediment is constantly entering a river and moving downstream. Thus, one of the principal needs for salmonids is replacing spawning gravel of an appropriate size and creating

¹ CVPIA, Section 3406 (b)(13), directs the U.S. Department of the Interior to develop and implement a continuing program for the purpose of restoring and replenishing, as needed, salmonid spawning gravel lost due to the construction and operation of Central Valley Project dams and other actions that have reduced the availability of spawning gravel and rearing habitat in the LAR from Nimbus Dam to the confluence with the Sacramento River.

appropriate water depths and velocities at the flows that typically occur during the spawning season. This is currently accomplished by relocating gravel deposits from higher floodplain areas downstream of Folsom Dam and placing the deposits strategically within the river. The City, in association with the Water Forum, currently manages and implements this restoration work with demonstrated success; juvenile fish densities have increased from only 0.1 fish per square meter to 3.25 fish per square meter in some reaches. Additionally, spawning increased approximately 500% from a restoration action. This ongoing gravel augmentation is integral to maintaining legal operation of the Federal Central Valley Project (CVP) and supporting salmonid persistence in the LAR.

The City offers the following comments and suggestions for the State Water Resources Control Board's consideration:

1) **General Order Project Description**

As described in the Notice of Preparation, the proposed General Order considers a variety of aquatic and riparian restoration types that take place throughout the State. The following proposed types of restoration are included:

- a. **Stream Crossing and Fish Passage Improvements** – for upstream and downstream movement by fish and other species, and to improve functions of streams.
- b. **Small Dam, Tide Gate, Flood Gate, and Legacy Structure Removal** – to improve fish and wildlife migration, tidal and freshwater circulation and flow, and water quality.
- c. **Bioengineered Bank Stabilization** – to reduce fine sediment input, enhance aquatic and riparian habitat, and improve water quality.
- d. **Off-Channel/Side-Channel Habitat Restoration and Enhancement** – to improve aquatic and riparian habitat for fish and wildlife and/or to restore hydrologic, hydraulic, and biogeochemical functions and processes of streams.
- e. **Water Conservation Projects** – to reduce low-flow stream diversions, such as off-stream storage tanks and ponds and necessary off-channel infrastructure.
- f. **Floodplain Restoration** – to improve ecosystem function through hydrological connection between streams and floodplains, including levee breaching and removal, berm and dike setback breaching and removal, and hydraulic reconnection and revegetation.
- g. **Piling and Other In-Water Structure Removal** – to improve water quality and aquatic habitat for fish and wildlife.
- h. **Non-native Invasive Species Removal and Native Plant Revegetation** – to improve watershed functions, such as aquatic and riparian habitat for fish and wildlife.
- i. **Tidal, Subtidal, and Freshwater Wetland Establishment, Restoration, and Enhancement** – to create or improve wetland ecological functions.
- j. **Stream and Riparian Habitat Establishment, Restoration, and Enhancement** – to create or restore functions of streams and riparian areas.

The City respectfully requests that the following items be added to the list of proposed restoration activities included in the General Order:

- **Main Channel Gravel Augmentation** – to improve salmon and steelhead spawning habitat.
- **In-channel Grading Activities** – to rework existing bed sediment and/or prepare the channel bed for imported gravel placement.
- **Boulder Placement** – to provide fish cover, create complex flow dynamics (induced scour or reduced velocities adjacent to higher velocities), and improve habitat diversity.
- **Large and Small Woody Habitat Material Placement (rootwads, logs, willow cuttings, etc.)** – to modify flow and velocity, trap sediments, create pools, and provide cover for juvenile fish.

2) **General Order Monitoring Requirements**

Under the existing CWA Section 401 Water Quality Certification for the LAR restoration program (WDID#5A34CR00696), the City is required to abide by the following water quality standards:

In-Water Work or Diversions:

During planned in-water work or during the entire duration of temporary water diversions, any discharge(s) to waters of the state shall conform to the following water quality standards:

a. Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

b. Activities shall not cause turbidity increases in surface water to exceed:

I. where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2 NTU;

II. where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;

III. where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;

IV. where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;

V. where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Averaging periods may only be used with prior permission of the Central Valley Water Board Executive Officer.

For Folsom Lake and American River (Folsom Dam to Sacramento River), except for periods of storm runoff, the turbidity shall be less than or equal to 10 NTUs. To the extent of any conflict with the general turbidity objective, the more stringent applies.

Sampling during in-water work or during the entire duration of temporary water diversions shall be conducted via grab sample, at 4-hour intervals.

Under the existing Water Quality Certification, turbidity monitoring causes periodic difficulties during side-channel creation and gravel placement activities. These activities are necessary for effective habitat

restoration. Despite abiding by Best Management Practices, such as thorough shaking and washing of spawning gravel prior to in-water placement, it may still be difficult for the project to stay below allowed turbidity thresholds in the short-term, due to the volume of material excavation or placement. Exceeding the threshold requires halting all in river work on the project. Minimizing the window of in river work is important to project success because the work window for these projects is constricted, this also minimizes impacts. The team begins work after high summer flows -typically August- and must be done before salmon emigrate back to the system – October 1. These two constraints create a short work window which can be further shortened by a wet water year and higher flows. Stoppage of work can jeopardize the success of the project and efforts should be made to minimize them. Creating higher turbidity thresholds would increase the likelihood of a successful outcome for the project.

Any turbidity created by the project is isolated to a very short window of a few hours and during a life stage unlikely to impact listed species. During natural processes such as rain events and flood events, the NTU are higher than the regulated maximum, and consist of the same sediments that would otherwise enter the river at these times. Disturbances due to turbidity of this sort are necessarily short term and mirror natural processes (as opposed to anthropogenic activities). These disturbances do not persist downstream or after construction has stopped. These near-term disturbances should not impede restoration efforts, which produce long-lasting benefits of the very sort that water quality standards are designed to protect, including healthy populations of native fish. Restoration projects, such as these, are aiming to address the most critical limiting factor for species success, spawning and rearing habitat. Limiting these projects has the potential to harm the species. Accordingly, we request that NTU limits be set to ensure these projects can proceed while remaining protecting these species.

The focus of the proposed General Order is the permitting of larger restoration projects and the City requests that short-term turbidity monitoring thresholds under the proposed General Order be increased to allow for turbidity to temporarily not exceed 20 NTU, or for the sampling interval to be increased to 8 hours, or downstream monitoring to be increased to 3,000 ft downstream. Many of the effects of higher turbidity on salmon result from studies done during sensitive life stages. Though this is important work, this sensitivity does not apply to restoration projects of this nature.

The Water Forum and the City feel that these additions to the 401 Water Quality Certification would significantly increase the ability to implement successful salmon restoration projects in the narrow window of time available to complete the work in the LAR. We thank you again for the opportunity to comment on this exciting General Order. If you have any questions or need additional information, please contact me at (916) 808-1993 or by email at lallen@cityofsacramento.org.

Sincerely,



Lilly Allen
Project Coordinator

cc: Tom Gohring, Executive Director – Sacramento Water Forum
Janice Piñero, U.S. Department of the Interior, Bureau of Reclamation
Michael Voss, Senior Deputy Attorney, City of Sacramento

Jeff TenPas
24 East Main St
Winters, CA 95694
November 22, 2019

State Water Resources Control Board
Division of Water Quality
Attn: Jessica Nadolski
P.O. Box 100
Sacramento, CA 95814
Delivered via email: Jessica.nadolski@waterboards.ca.gov

Re: Comment Letter-Proposed Statewide Restoration General Order

Dear State Water Resources Control Board:

I am submitting written comments regarding the scoping for the proposed statewide restoration general order.

My concern is for the massive earthmoving operations (anthropogeomorphology or diesel geomorphology) that might be allowed under this General Order, and the consequent effects on floodplain structure, groundwater processes, and floodplain ecohydrology. Diesel geomorphology is in general antithetical to fluvial geomorphology in terms of floodplain structure, function, and groundwater flow.

Comments:

1. Diesel geomorphology at any scale is destructive of natural floodplain structure. Flowing waters sort sediments and lays down contrasting strata, earthmovers mix all fill in one homogenous mass.
2. The sorted strata of a fluvially-structured floodplain include sandy and gravelly layers with hydraulic conductivity that is orders of magnitude higher than the interleaved silt layers. Mixing these layers by earthmoving lowers the hydraulic conductivity to the lowest denominator, that of the silt layer. The traffic and compaction by heavy machinery lowers the hydraulic conductivity even further. All this cuts of groundwater flow.
3. A channel and bank built by diesel geomorphology may transmit less than 1/10,000 of the groundwater allowed to flow by a natural fluvially-built channel and bank.
4. Floodplain hydraulic conductivity, groundwater movement, groundwater recharge, and floodplain ecohydrology depend on floodplain structure. Diesel geomorphology should be used sparingly, even surgically, with specific goals in mind, and with knowledge of the consequences.

5. Subsurface floodplain connectivity and diesel geomorphology effects should be included in the EIR analysis. EIR should analyze how Projects will alter affects groundwater processes, pre-project floodplain groundwater elevations and ecohydrology, and groundwater recharge.
6. Knowledge should come before action. The General Order should be limited so that Projects which propose extensive landforming of channels, banks, or floodplains should be required to know the structure of the floodplain and show how the structure affects groundwater processes, pre-project floodplain groundwater elevations and ecohydrology, and groundwater recharge. Project notifications should be required to show how the Project will alter affects groundwater processes, pre-project floodplain groundwater elevations and ecohydrology, and groundwater recharge.
7. The General Order should clearly define the scope of landforming (i.e. earthmoving that is more than surficial) that is allowed under its coverage. The scope definition should include limits to any landforming in terms of surface area of bed and bank alteration, amounts, texture and composition of fill, and amount in cubic volume of earthmoving.
8. The equipment to be used and its ground pressure should be disclosed in the Scope of the General Order, in the EIR, and in the Project Notifications. Earthmoving wheeled scrapers for example have exceedingly high ground pressures (85 lbs/inch²). Land that is formed by a wheeled scraper will have its hydraulic conductivity reduced by a factor of 10 to 100. Track laying dozers or excavators may have ground pressure below 15 lbs/inch²) and still reduce hydraulic conductivity by a factor of 10 but to a lesser depth.
9. Building up a floodplain in a cut and fill operation results in building in lifts with multiple passes, with each lift compacted by traffic, resulting in compaction to great depth, and groundwater blockage to the same depth.
10. As the extent of landforming increases, as structure is altered or obliterated in more of the channel, bank, and floodplain, a threshold may be reached where floodplain groundwater falls too far for riparian forest to grow. Thresholds should be considered in the EIR.
11. The EIR should analyze where, in what circumstances, and at what scale the effects of landforming and diesel geomorphology are the best available alternative.

Case Study: Winters Putah Creek Nature Park

Winters Putah Creek Nature Park is a case in point for the impacts of diesel geomorphology. In Winters, 7900 feet of the floodplain and channel were drastically altered. Nearly all the floodplain was cleared, fill was imported, earthmoving covered over 90% of the area. Over 90% of bed and banks were altered, filled, or reconstructed. The results are becoming clear.

The EIR should consider these impacts:

- Groundwater levels in a nearby monitoring well have fallen below any levels seen since 1930.
- Stream gage data show a drop in water loss in the reach (to groundwater recharge) of 3.9 cfs.
- Groundwater monitoring in the floodplain show water levels too low to support a riparian forest.
- Mature cottonwoods spared during construction have since died.
- Repeated revegetation efforts have failed.

Data and analysis can be provided for consideration in the EIR by contacting myself.

Sincerely,

Jeff TenPas/

Meredith Parkin

From: Nadolski, Jessica@Waterboards <Jessica.Nadolski@Waterboards.ca.gov>
Sent: Friday, November 22, 2019 9:43 AM
To: Erika Lovejoy; Meredith Parkin
Cc: Garrison, Paul@Waterboards
Subject: FW: Statewide Restoration General Order

FYI – I responded to Mr Htain's questions. Thank you, -Jessica

From: Htain, Eric <ehtain@geiconsultants.com>
Sent: Wednesday, November 20, 2019 11:22 AM
To: Nadolski, Jessica@Waterboards <Jessica.Nadolski@Waterboards.ca.gov>
Subject: RE: Statewide Restoration General Order

Dear Ms. Nadolski,

GEI is a consulting firm that works primarily with local and state water agencies and our services include ecological restoration and mitigation planning and permitting. I discovered the NOP for the CEQA document related to the General Order for 401 Certification for Implementation of Large Habitat Restoration Projects Statewide on your web page. This General Order is very exciting to me as we do a lot of work with agencies in this area of stream restoration and having this streamlined permit will be of benefit to promote agencies to incorporate stream restoration into their projects.

I am very interested in seeing the text of the General Order itself and did not see a link to any text in the NOP. Is this available and can it be shared? Would the public have an opportunity to review and comment on the text of the General Order (or has this already happened)?

Thanks,

Eric

GEI

ERIC HTAIN
Senior Environmental Scientist
916.912.4940 cell: 916.835.9493
2868 Prospect Park Drive, Suite 400, Rancho Cordova, CA 95670



Meredith Parkin

From: Nadolski, Jessica@Waterboards <Jessica.Nadolski@Waterboards.ca.gov>
Sent: Friday, November 22, 2019 12:48 PM
To: Erika Lovejoy; Meredith Parkin
Cc: Garrison, Paul@Waterboards
Subject: FW: Comments on Notice of Preparation and CEQA ScopingMeeting

From: Karen Buhr <karen-buhr@carcd.org>
Sent: Friday, November 22, 2019 12:46 PM
To: Nadolski, Jessica@Waterboards <Jessica.Nadolski@Waterboards.ca.gov>
Subject: Comments on Notice of Preparation and CEQA ScopingMeeting

State Water Resources Control Board
Division of Water Quality
Attention: Jessica Nadolski
P.O. Box 100, Sacramento, CA 95812-2000

RE: Comments on Notice of Preparation and California Environmental Quality Act Scoping Meeting and General Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Implementation Of Habitat Restoration Projects Statewide

Dear Ms. Nadolski:

I am writing on behalf of the California Association of Resource Conservation Districts (CARCD). The 96 Resource Conservation Districts around the State implement local on the ground conservation. The CARCD strongly supports State Water Board action to create a more efficient permitting mechanism for habitat restoration. Our organization implements all types of restoration projects to create healthier habitat for species throughout the state. Permitting is by far the greatest barrier to our work. Creating a more efficient permitting process will help us do more on-the- ground work and get environmentally beneficial projects completed more quickly. We are especially interested in seeing stream restoration projects be covered in the permit and be included in the analysis of the environmental document. We encourage a broad environmental analysis, so the permit can comprehensively cover a wide-array of essential restoration projects throughout the State.

Thanks,
Karen Buhr
Executive Director
California Association of Resource Conservation Districts
916-524-2100

RCDs, Your Partner in Local Conservation and Agriculture



FC 1778 (09-05-19)

Project Manager: Rick Callender
Extension: 2017
Date: 12/12/2019

CEO APPROVAL REQUEST

SUBJECT: SWRCB CEQA Scoping Meeting for Large Habitat Restoration Project General Order

RECOMMENDATION:

Recommend CEO sign letter regarding the General Order for Large Habitat Restoration Projects

EL-5 COMPLIANCE:

CEQA COMPLIANCE:

Not a CEQA project.

SUMMARY:

Recommend CEO sign the comment letter to the State Water Resources Control Board regarding the Scoping Meeting for Large Habitat Restoration Project General as approved.

FINANCIAL IMPACT:

None.

ATTACHMENTS:

Letter to SWRCB

APPROVALS:

Citrix approvals attached.

_____, Unit Manager

Date

_____, COO/CEA/CFO/CPO
Click to select Business Area

Date

_____, DAO/DOO
(Name) Division

Date


Norma J. Camacho
Chief Executive Officer


Date

December 12, 2019

State Water Resources Control Board
Division of Water Quality
Attention: Jessica Nadolski
P.O. Box 100
Sacramento, CA 95812-2000

Subject: Comment Letter—Proposed Statewide Restoration General Order

Dear Ms. Nadolski:

The Santa Clara Valley Water District (Valley Water) commends the efforts of the State Water Resources Control Board to establish a general order for large habitat restoration projects. In our experience, ecologically meaningful restoration, and achieving economies of scale that reduce the unit cost of restoration often exceeds the five-acre limit for streamlined permitting of small restoration projects. While the comments fall outside of the official California Environmental Quality Act (CEQA) schedule to be entered officially to the record, we hope our submittal can inform State Water Board staff in formulating a General Order that is applicable to a wide set of restoration projects.

Valley Water understands that at this time there are no size (acre or linear feet) limitations that would be placed on projects potentially covered under this General Order. Valley Water supports this approach of not limiting the scale of what is defined as a large restoration project, as a means to more efficiently implement our restoration and stewardship goals.

Valley Water supports the State Water Resources Control Board's intention to allow other agencies to use the Environmental Impact Report (EIR) to undertake similar permit streamlining for large restoration projects. Valley Water encourages the State Water Resources Control Board to partner with the California Department of Fish and Wildlife for development of permit streamlining under Section 1602 of the Fish and Game Code, similar to the Section 1602 streamlining established under the Habitat Restoration and Enhancement Act of 2014 and based on the General Order for Small Habitat Restoration Projects (File No. SB09016GN).

Valley Water contends that multi-benefit projects, which may provide for improved flood protection, hazardous tree removal, or other benefits in addition to stream/riparian restoration, be considered for coverage under the General Order for Large Habitat Restoration Projects. Valley Water would support certain criteria be met for multi-benefit projects to be permitted under the General Order, such as: (1) one of the project's primary objectives is restoration, (2) the project is financed, at least in part, with monies set aside for the explicit purpose of restoration or stewardship, (3) the project does not

permanently impact beneficial uses established in the applicable Basin Plan, and/or (4) the percentage of hardscape (e.g., concrete, un-vegetated rip-rap, etc.) does not exceed more than a certain limited percent of the total footprint (e.g., for each acre of project footprint, a minimum of 0.9 acre of restoration must occur, allowing 0.1 acre of hardscape), among other possible limitations. Criteria for project coverage under the General Order should, at a minimum, provide a clear and reasonable definition of what level of restoration is necessary for projects to qualify for coverage, and how that level can or should be measured. The inclusion of qualifying multi-benefit projects in the General Order is, perhaps, one of the most profound steps the State Water Resources Control Board can make to increase the amount and pace of creek and wetland restoration in California. A streamlined permit process would directly encourage project sponsors to include sufficient levels of habitat restoration in projects with other primary objectives by saving time and decreasing the relative cost of projects that benefit the environment.

Valley Water understands that the project description in the Draft EIR will likely detail the specific activities that would be covered under the General Order. We encourage the State Water Resources Control Board to consider and evaluate project types and implementation methods that can be necessary for restoring habitat in urban and suburban areas. In our experience, such projects and methods may necessitate the removal of mature vegetation; significant excavation or other landscape manipulations; the use of concrete, floodwalls or similar hardscape to sufficiently stabilize restoration features; and design compromises for flood safety and community needs. Such methods, among others, are not inherently inconsistent with habitat restoration, and in densely urbanized areas they are often essential to feasible and ecologically meaningful restoration. Valley Water suggests specifically analyzing the following restoration project types:

- Under “Stream Crossing and Fish Passage Improvements,” please include evaluation of fish ladder removal (when in conjunction with fish passage barrier removal), installation of riffle-pool complexes that bypass passage barriers, installation of fish ladders that bypass passage barriers, removal/replacement of culverts that serve as fish passage barriers, and projects that separate streams from artificial lakes. Valley Water suggests the definition of fish passage barriers extend to both partial and complete passage impediments, and that the potential for wetland-type conversion be analyzed.
- Under “Bioengineered Bank Stabilization,” please include evaluation of buried rip-rap with vegetation planted on top, in addition to other bioengineered bank protections.
- Under “Floodplain Restoration,” please include excavation and fill as a method for hydraulic reconnection. Streams with modified hydrographs, historical incision, and/or adjacent mining features often require removal of existing vegetation and earthwork to establish functional floodplain elevations.
- Under “Tidal, Subtidal, and Freshwater Wetland Establishment, Restoration, and Enhancement,” please include construction of tidal ecotone habitat. Such habitat can require extensive beneficial fill and impact adjacent existing wetland, but is necessary for tidal wetlands to respond to sea level rise, provide refuge for native wildlife, and buffer wetlands from adjacent urban and municipal land uses.
- Under “Stream and Riparian Habitat Establishment, Restoration, and Enhancement,” please include evaluation of replacement of concrete-lined channel with natural materials, and allowing for vertical concrete or sheet pile walls, and separation of streams from artificial lakes/ponds, which may result in wetland-type conversion.

Ms. Jessica Nadolski
Page 3
December 12, 2019

Valley Water recommends that installation of monitoring equipment, such as fish counters, water quality testing devices, soil and geotechnical borings be covered under the General Order so long as they are completed in conjunction with a large habitat restoration project.

Again, Valley Water supports the State Water Resources Control Board to establish a general order for large habitat restoration projects. Thank you for your consideration of the above comments. Please feel free to contact Antonio Alfaro at aalfaro@valleywater.org or by phone at (916) 448-8497.

Sincerely,



Norma J. Camacho
Chief Executive Officer

By e-mail: jessica.nadolski@waterboards.ca.gov
aa:fd
1212a-l

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691 Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: <http://www.nahc.ca.gov>

RECEIVED

OCT 23 2019



October 15, 2019

DIVISION OF WATER QUALITY

Jessica Nadolski
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-2000

RE: SCH# 2019100230, Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Implementation of Large Habitat Restoration Statewide Project, Statewide

Dear Ms. Nadolski:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
 - a. A brief description of the project.
 - b. The lead agency contact information.
 - c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
 - d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).
2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
 - a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).
3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
 - a. Alternatives to the project.
 - b. Recommended mitigation measures.
 - c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).
4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
 - a. Type of environmental review necessary.
 - b. Significance of the tribal cultural resources.
 - c. Significance of the project's impacts on tribal cultural resources.
 - d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).
5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).
6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
 - a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
 - b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
 - a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
 - b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).
8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).
9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).
10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
 - a. Avoidance and preservation of the resources in place, including, but not limited to:
 - i. Planning and construction to avoid the resources and protect the cultural and natural context.
 - ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
 - b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - i. Protecting the cultural character and integrity of the resource.
 - ii. Protecting the traditional use of the resource.
 - iii. Protecting the confidentiality of the resource.
 - c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
 - d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
 - e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
 - f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).
11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
 - a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
 - b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
 - c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. **Tribal Consultation:** If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation.** There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation:** Consultation should be concluded at the point in which:
 - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
 - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
 - a. If part or all of the APE has been previously surveyed for cultural resources.
 - b. If any known cultural resources have already been recorded on or adjacent to the APE.
 - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
 - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
 - b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
 - a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
 - b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
 - a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
 - b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
 - c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address:
Andrew.Green@nahc.ca.gov.

Sincerely,



Andrew Green
Staff Services Analyst

cc: State Clearinghouse

Meredith Parkin

From: Nadolski, Jessica@Waterboards <Jessica.Nadolski@Waterboards.ca.gov>
Sent: Thursday, November 7, 2019 12:33 PM
To: Meredith Parkin; Erika Lovejoy (ELovejoy@suscon.org)
Cc: Garrison, Paul@Waterboards
Subject: FW: Stop it

Public comment

-----Original Message-----

From: Niz Brown <niz@niz.com>
Sent: Saturday, November 2, 2019 11:25 AM
To: Nadolski, Jessica@Waterboards <Jessica.Nadolski@Waterboards.ca.gov>
Subject: Stop it

there is so much money available out there for restoration.... enough... Our society has many more needs than aquatic species..!



PRUNUSKE CHATHAM, INC.

November 21, 2019

State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95812-2000
Attention: Jessica Nadolski

Re: Comment Letter – Proposed Statewide Restoration General Order

Dear Ms. Nadolski

Thank you for the opportunity to provide comments on the Notice of Preparation (NOP) for the large habitat restoration General Order. Prunuske Chatham, Inc. (PCI) is an ecological science, planning, design, and construction firm based in Sonoma County. We have over 30 years of experience in the design, permitting, and construction of both small- and large-scale habitat restoration project across northern California. We appreciate the efforts by the State Water Resources Control Board to improve efficiencies in permitting large projects through development of a statewide programmatic permit for aquatic and riparian habitat restoration. The addition of a programmatic permitting pathway for large-scale projects will help the restoration community meet larger, more impactful landscape-scale habitat improvement goals. At PCI, we have successfully utilized the existing General Order for small habitat restoration projects and fully intend to use the one developed for large-scale projects.

PCI provides the following comments on the proposed restoration types listed in the NOP and would like to see the ideas and recommendations included in the project description and analyzed in the Environmental Impact Report (EIR).

Programmatic Permitting Examples

The benefits of programmatic authorizations are immense. Restoration specialists in the Pacific Northwest utilize programmatic authorizations and consistence determinations for restoration projects on a scale that is not currently available in California. Permitting hurdles have prevented implementation of such comprehensive and forward-thinking restoration projects in California. Attached are several examples of the scale and nature of the projects implemented under programmatic authorizations in Oregon and Washington. Please consider inclusion of the types of projects illustrated in the examples for the California Restoration General Order (see Attachments A-F) and evaluate the potential benefits and impacts associated with projects of the scale and nature as those presented in the examples.

The General Order should include all activities currently covered in existing programmatic biological opinions issued by NOAA Fisheries Restoration Center (see Att. C) and other agencies to provide consistency within the regulatory community. However, to ensure that our regulatory policy remains consistent with up-to-date science and best practices, allowable restoration activities should not exclude actions that are not currently in existing programmatic authorizations.

Stage 0 Projects

The General Order should include process-based restoration of fluvial systems as a means to create dynamic and self-sustaining riverine environments. The most recent nomenclature for these projects is Stage 0 channels. Projects designed to restore a single-thread channel to a multi-thread, stable channel system can include restoration of whole valley floors as a means to restore the key physical processes that shape alluvial valleys. Methods of design and construction for whole valley floor restoration should range from progressive channel adjustment (multi-year site entry) to wholesale grading to reset valley surfaces. These project types should be explicitly identified under the *Floodplain Restoration* or *Stream and Riparian Habitat Establishment, Restoration, and Enhancement* restoration categories listed in the NOP. The approval for these types of projects should be based on the potential to improve and enhance hydrologic and biologic functions and not based on the size of the project or the amount of fill within a waters of the State.

Bioengineered Bank Stabilization Projects

Often bank stabilization projects use extensive riprap bank protection. Although use of large boulders may provide a stable streambank, riprap does not provide improved habitat conditions. Consider explicitly eliminating the use of the General Order for bank stabilization projects that depend on the extensive use of rock riprap. An exhaustive list of allowable bioengineering techniques is not necessary if the dependency upon the extensive use of rock is excluded.

Design Manuals and Risk and Uncertainty Analysis

Many of the fish passage habitat restoration design manuals used in California are static in nature and do not include the latest design ideas employed by field professionals; yet, many permits and authorizations are only issued for projects that utilize designs included in a small number of design manuals. The General Order should have fewer rigid requirements and allow for use of designs appropriate for individual sites. These designs may come from manuals or include designs that are not yet included in manuals but are used by restoration professionals. We recommend the General Order include a broad range of design criteria for each of the restoration categories and include a mechanism for use of new design ideas. Allow projects to be permitted using a risk and uncertainty analysis concept to allow for use of new design ideas.

Adaptive Management

The General Order should include means for adaptive management, as restoring degraded stream systems is complex and there are very few unimpaired reference sites available. The adaptive management process and monitoring can be essential for developing the most effective projects. Adaptive management will help improve future restoration projects by allowing management strategies to change based on an

improved understanding of ecological responses to restoration activities. An adaptive management strategy in the General Order could allow for changes in types of restoration activities included.

Size Limitations

Please do not include a maximum upper limit size constraint on projects allowed under the General Order. Project size should be based on the individual restoration goals and objectives. Limitations on size could hamper restoration efforts in some locations or limit the selection of restoration methods. The current limits of <500 feet of dewatering allowed under the small habitat restoration General Order is particularly limiting for large scale restoration projects.

Mandated Protection Measures/Upfront Conditions

The NOP states that restoration projects must incorporate specified protection measures (as applicable), such as design guidelines or avoidance and minimization techniques, or other criteria into project descriptions to qualify within the scope of the proposed General Order. Although this sounds reasonable, it is difficult to provide comments because the potential measures are not listed. It is unclear if the EIR and the General Order will include an exhaustive list or will depend on well-established practices used for restoration.

Knowing the required protection measures improves the project design process. Clear articulation of the requirements results in projects that meet agency expectations without causing numerous design revisions during the authorization process. The NOAA Fisheries Biological Opinions articulate conservation measures and conditions, which can be incorporated into project designs.

The EIR should evaluate potential project impacts with the assumption that required protection measures and upfront conditions are included as part of each project eligible to use the General Order.

Technical Advisory Committee/Technical Working Group

Eligibility for use of the large-project General Order should require use of a technical advisory committee (TAC) or technical working group (TWG) to provide guidance during project development. The State Water Quality Control Board should strongly encourage other state and federal agencies to participate and provide information needed to ensure that projects both meet agency guidelines for approval and satisfy the requirements of the new General Order.

Technical and Regulatory Water Quality Control Board Staff

Staff assigned to review and approve projects under the new General Order should have the design skills necessary to understand project elements and the role they play in attainment of project goals and objectives. Preferably, regulatory staff would participate on the TAC or TWG to provide regulatory guidance during project development and design. It is not uncommon to experience inconsistencies between technical staff and regulatory staff on individual projects.

The SWRCB should strive to have all regional water board staff consistently evaluate and permit projects under the new General Order with no major differences between

regions. It is not uncommon to have seemingly different standards from one regional water board to the next. Consistent application of the General Order is desirable.

Thank you for your consideration of the comments provided on the Notice of Preparation for the General Order for Implementation of Large Habitat Restoration Projects Statewide. If you have any questions about the comments provided, please contact me at carrie@pcz.com.

Sincerely yours,
PRUNUSKE CHATHAM, INC.

**Carrie
Lukacic**

Digitally signed by Carrie Lukacic
DN: cn=Carrie Lukacic,
o=Prunuske Chatham, Inc., ou,
email=carrie@pcz.com, c=US
Date: 2019.11.21 17:45:33 -08'00'

Carrie Lukacic
Principal Environmental Planner

Attachments: Attachment A – 6 Stage 0 South Fork Lamprey Exchange
Attachment B - Zero Order Channels
Attachment C - SRF 2018 Programmatic Permitting
Attachment D - Stage-0-Pardigm-Shift_Nov2017
Attachment E- RestorationProgrammaticsOverview9-14
Attachment F - Permitting Programmatics and MAMPs for Stage 0 1-29-19

Lower South Fork McKenzie River Floodplain Enhancement Project – Stage 0

Lamprey Information Exchange Workshop December 12, 2018



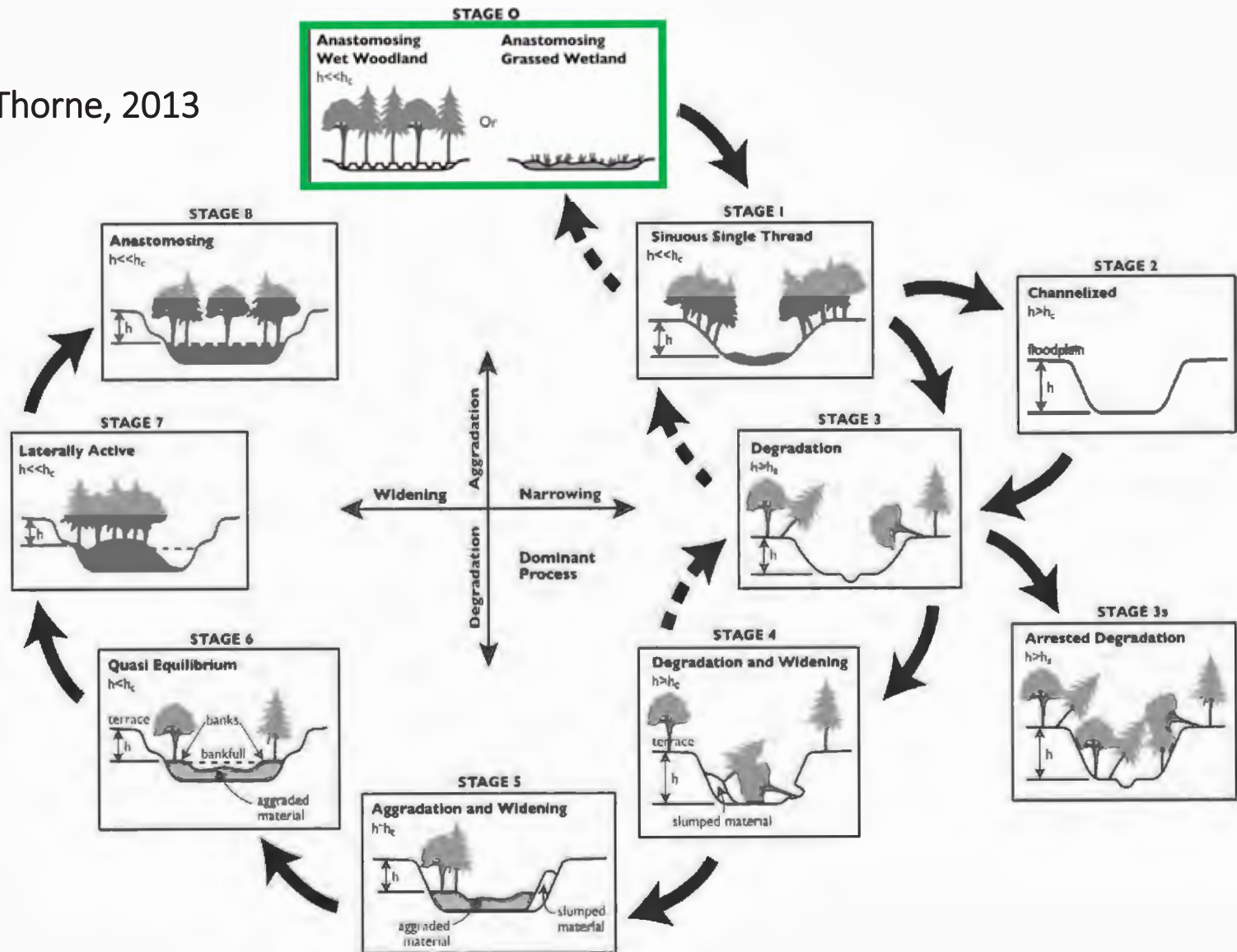
Kate Meyer
Fisheries Biologist
McKenzie River Ranger District
Willamette National Forest

Jared Weybright
Executive Director
McKenzie Watershed Council



What the heck is Stage 0?

Cluer & Thorne, 2013



Historic Floodplain Condition in Depositional Environments

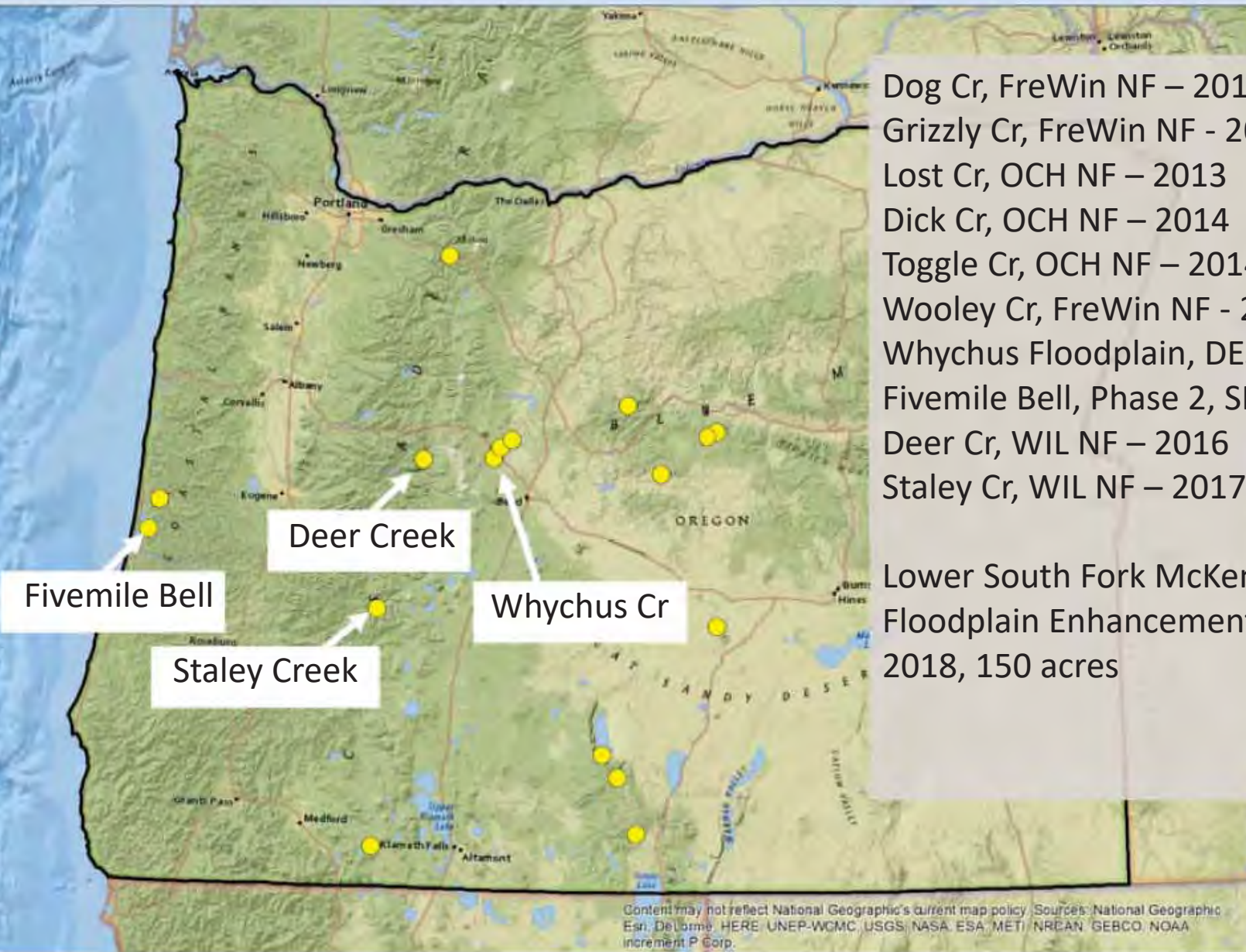
- Vegetation diversity
- Elevational diversity
- Multiple flow paths
- Downed wood
- Future wood supply
- High water table
- Beaver dams
- Frequent floodplain wetting
- Maximum patch complexity





Stream Power Per Unit Width

Locations of Forest Service Stage 0 projects in Oregon



Dog Cr, FreWin NF – 2013
Grizzly Cr, FreWin NF - 2013
Lost Cr, OCH NF – 2013
Dick Cr, OCH NF – 2014
Toggle Cr, OCH NF – 2014
Wooley Cr, FreWin NF - 2014
Whychus Floodplain, DES NF - 2014
Fivemile Bell, Phase 2, SIU NF – 2016
Deer Cr, WIL NF – 2016
Staley Cr, WIL NF – 2017

Lower South Fork McKenzie
Floodplain Enhancement, Phase 1,
2018, 150 acres

Methods Paper Published


Received: 1 May 2018 | Revised: 2 October 2018 | Accepted: 3 October 2018

DOI: 10.1002/rra.3378

RESEARCH ARTICLE

WILEY

A process-based approach to restoring depositional river valleys to Stage 0, an anastomosing channel network

Paul D. Powers¹  | Matt Helstab² | Sue L. Niezgoda³

¹United States Forest Service, Deschutes National Forest, Crescent Ranger District, Crescent, Oregon

²United States Forest Service, Willamette National Forest, Middle Fork Ranger District, Westfir, Oregon

³Department of Civil Engineering, Gonzaga University, Spokane, Washington

Correspondence

Paul D. Powers, District Fisheries Biologist, United States Forest Service, Deschutes National Forest, Crescent Ranger District, Crescent, OR.
Email: ppowers@fs.fed.us

Abstract

Stream restoration approaches most often quantify habitat degradation, and therefore recovery objectives, on aquatic habitat metrics based on a narrow range of species needs (e.g., salmon and trout), as well as channel evolution models and channel design tools biased toward single-threaded, and "sediment-balanced" channel patterns. Although this strategy enhances perceived habitat needs, it often fails to properly identify the underlying geomorphological and ecological processes limiting species recovery and ecosystem restoration. In this paper, a unique process-based approach to restoration that strives to restore degraded stream, river, or meadow systems to the premanipulated condition is presented. The proposed relatively simple Geomorphic Grade Line (GGL) design method is based on Geographic Information System (GIS) and field-based analyses and the development of design maps using relative elevation models that expose the relic predisturbance valley surface. Several case studies are presented to both describe the development of the GGL method and to illustrate how the GGL method of evaluating valley surfaces has been applied to Stage 0 restoration design. The paper also summarizes the wide applicability of the GGL method, the advantages and limitations of the method, and key considerations for future designers of Stage 0 systems anywhere in the world. By presenting this ongoing Stage 0 restoration work, the authors hope to inspire other practitioners to embrace the restoration of dynamism and diversity through restoring the processes that create multifaceted river systems that provide long-term resiliency, meta-stability, larger and

Lower South Fork McKenzie River Floodplain Enhancement Phase I

Phase I Summary

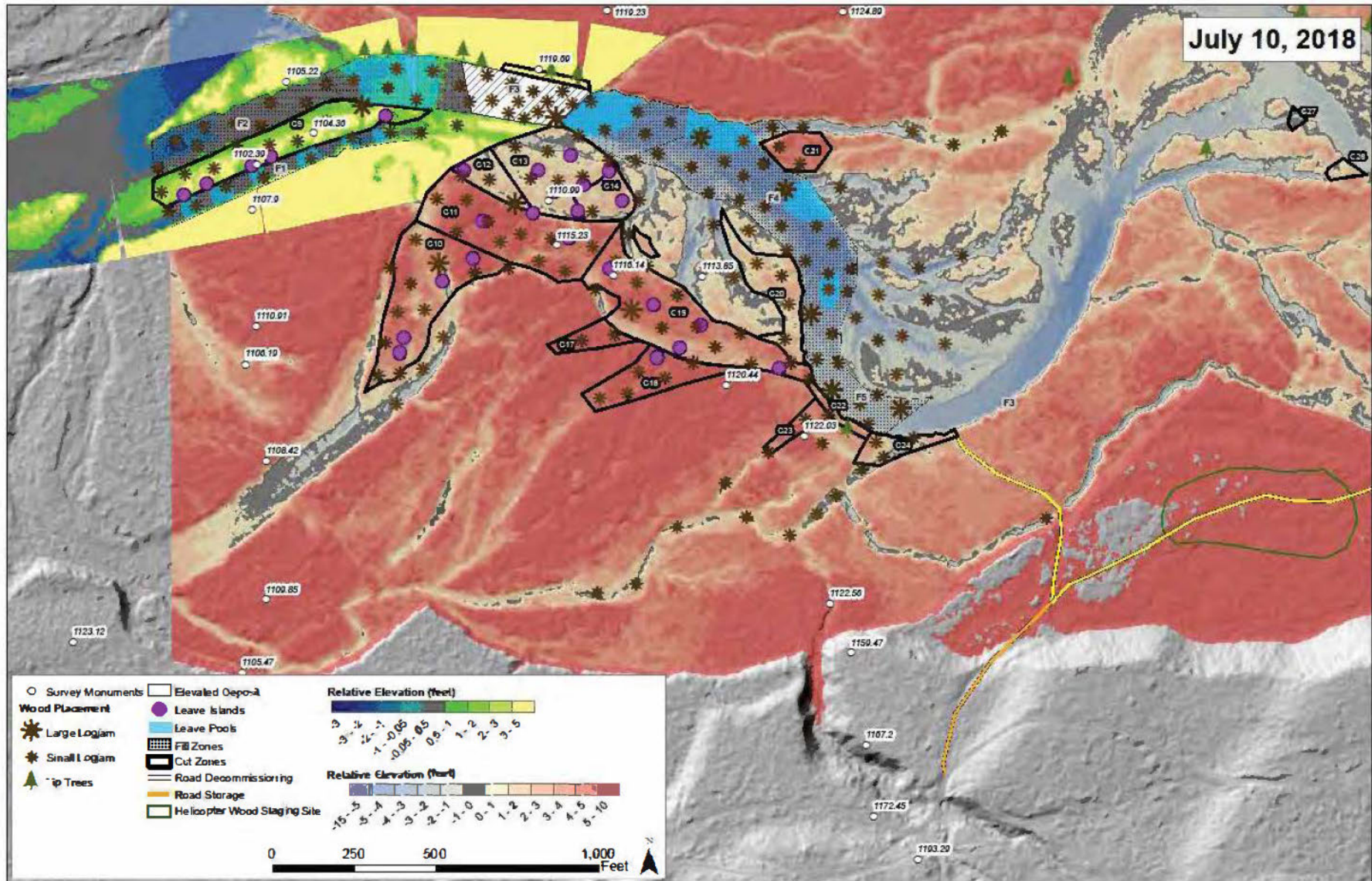
- Phase I - 150 acre project area in lower South Fork floodplain (upstream from confluence)
- Diverted entire South Fork (330 cfs) into relic side channel (USACE flow coordination)
- Significant fish salvage effort with ODFW and volunteers
- Removed ~ 85,000 cubic yards of sediment material from 16 acres of floodplain
- Aggraded 0.7 linear stream miles 1-10 feet with redistributed material
- Placed ~ 3,000 pieces of large wood throughout disturbed areas and relic floodplain channels
- Funders: USFS, OWEB, BPA (PSMFC)
- 12-weeks project period from June 1 – August 15



Partners



Phase I Design Map



Mainstem Diversion



Fish Salvage



Floodplain Cut Area



Filling the Mainstem South Fork



Large Wood Placement



Project Completion



Implementation Sequence 1

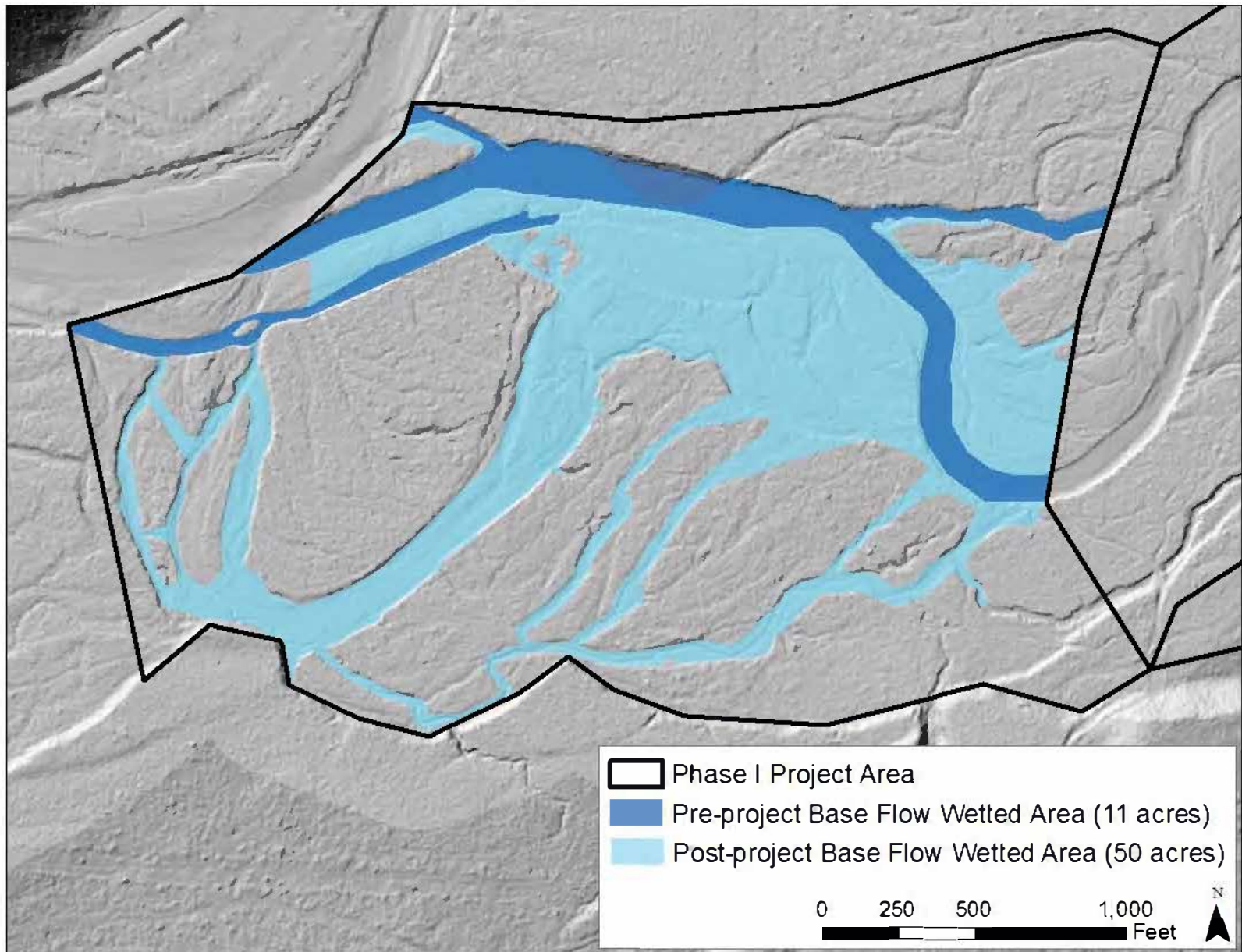


Phase I Project Cost

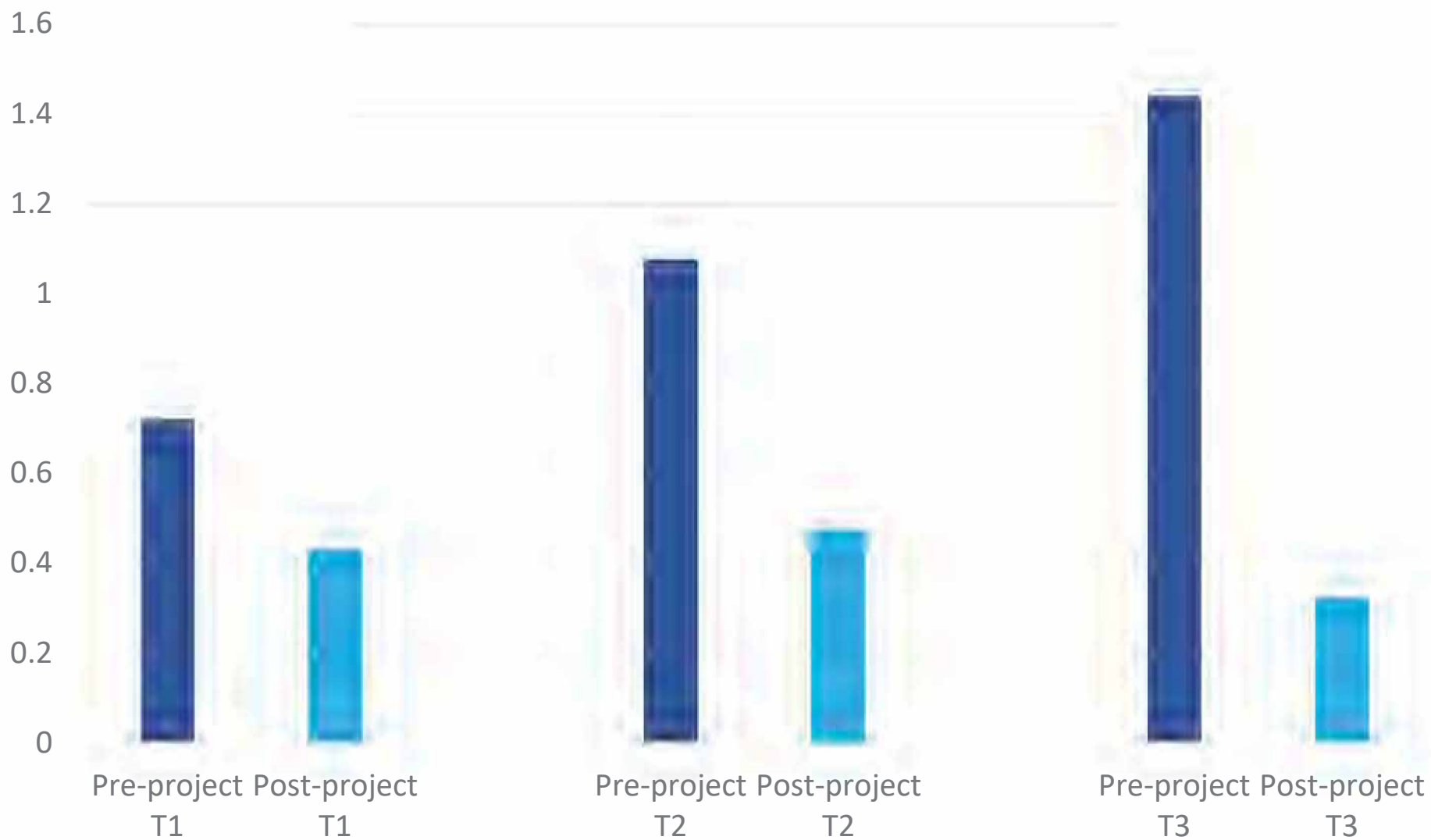
	OWEB	USFS In-kind	USFS	BPA (PSMFC)	MWC	Total
Contracted Services	\$266,840	\$0	\$855,000	\$128,810	\$0	\$1,250,650
Materials (trees)	\$0	\$400,000	\$0	\$0	\$0	\$400,000
Project Management	\$20,500	\$144,596	\$33,000	\$7,000	\$0	\$205,096
Monitoring & Reporting	\$6,200	\$20,000	\$0	\$0	\$0	\$26,200
Travel	\$1,000	\$5,000	\$0	\$554	\$3,350	\$9,904
MWC Indirect	\$30,460	\$0	\$0	\$13,636	\$0	\$44,096
Total Cost	\$325,000	\$569,596	\$888,000	\$150,000	\$3,350	\$1,935,946

Cost per acre ~ \$13,000

350% Increase in Base Flow Wetted Area

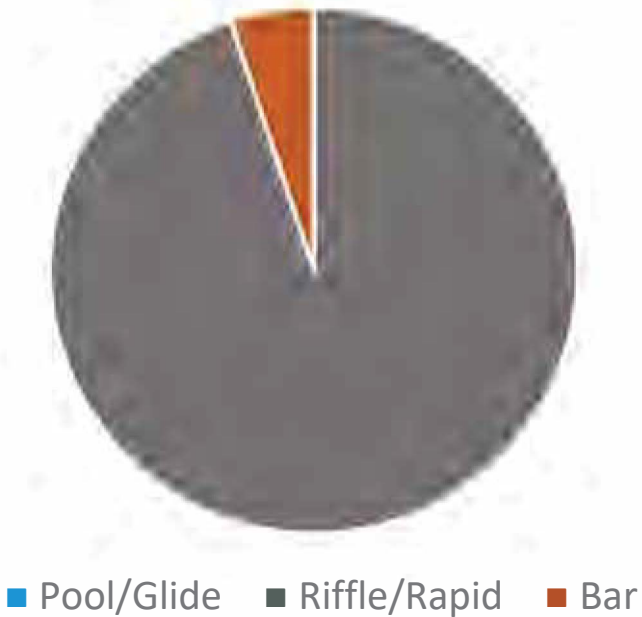


Mean Velocity (ft/sec)

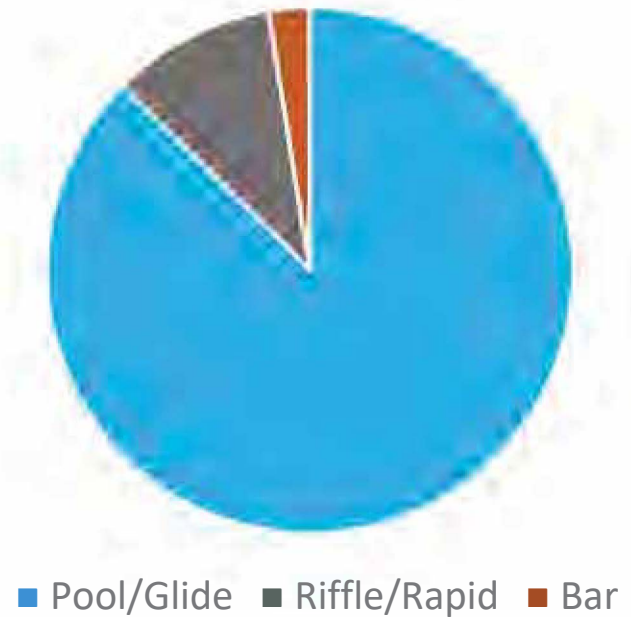


Geomorphic Features

Pre-project T3



Post-project T3



SUBSTRATE SIZE CLASSES

Vegetation

Sand

Gravel

Cobble

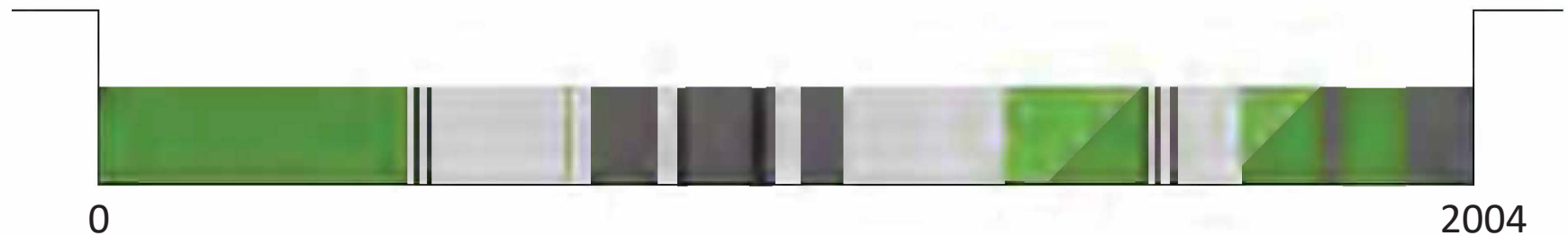
Boulder

Bedrock

TRANSECT 3 - Pre-project



TRANSECT 3 - Post-project



QUESTIONS?



2016 PRE-PROJECT



2018 POST-PROJECT

Welcome to the Conservation Lecture Series



<https://www.wildlife.ca.gov/Conservation/Lectures>

Questions? Contact Margaret.Mantor@wildlife.ca.gov



California Department of Fish and Wildlife

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CDFW Conservation Lecture Series

The Conservation Lecture Series is organized by CDFW's Habitat Conservation Planning Branch. The lecture series is designed to deliver the most current scientific information about species that are of conservation concern.

Below is a list of lectures and speakers for the Conservation Lecture Series. Lectures are open to anyone who is interested in participating. Participants may attend in-person or remotely via webinar. Please be sure to register for each class. Lectures are recorded and posted for those unable to attend the day of the event. Visit the [archive page](#) to see recordings of past lectures.

[Subscribe](#) to receive email updates and invitations to upcoming lectures.

Upcoming Lectures

Coming Soon

American Badgers - August 6, 2015, 1:00-3:00 pm. Presented by Dr. Jessie Quinn

The American badger (*Taxidea taxus*) is a Species of Special Concern in California. Funded by a grant from the CDFW Resource Assessment Program (RAP) Dr. Jessie Quinn studied the population distribution, movement behavior, and pathogen and rodenticide exposure in collaboration with the UC Davis Wildlife Health Center, with support from the OSPR Marine Wildlife Veterinary Care and Research Center. She completed a Species Status Report for the American badger for CDFW in 2009, and more recently completed a book chapter on pathogens and parasites in American badgers that will be included in the upcoming text *Badgers of the World*. Dr. Quinn's lecture will discuss the natural history of the species in California, potential threats to populations, and results of her research.

Location: Natural Resources Building, First Floor Auditorium



The Wildlife Society (TWS) Upcoming Events

Videos and Past Lectures

- [Design Validation Monitoring Klamath Watershed](#) (D.J. Bandrowski, Aaron Marin, and Rocco Flor)
- [Dogs Moving Conservation Forward](#) (Dr. Deborah (Smith) Woollett and Aimee Hurt)
- [Black Swans, Brown River](#) (Dr. Viers)
- [White-Nose Syndrome in Bats](#) (Wyatt)
- [Invasive Watersnakes](#) (Dr. Todd)
- [Tricolored Blackbird](#) (Dr. Meese)
- [Bighorn Sheep](#) (Dr. Villepique)
- [Vegetation and Flora of a Biodiversity Hotspot](#) (Dr. Ayres)
- [Foothill Yellow-legged Frog](#) (Dr. Kupferberg)
- [Spartina and California Clapper Rails](#) (Dr. Strong)
- [Townsend's Big-eared Bat](#) (Dr. Johnston)
- [California Red-Legged Frog](#) (Alvarez)
- [Salmon in the Yolo Bypass](#) (Jeffres)
- [White Abalone](#) (Dr. Aquilino)
- [Amargosa Vole](#) (Dr. Foley)
- [Desert Tortoise](#) (Jones)



Process-based Restoration to Help Farmers and Fish-

Why California Needs 10,000 More (Ecologically Functional) Dams



Michael M. Pollock NOAA Fisheries-Northwest Fisheries Science Center, Seattle Washington
Brian Cluer NOAA Fisheries Western Regional Office, Santa Rosa, California



Topics

- ▣ **Why dam channels to restore them?**
 - Answer: To create stage zero channels
 - Definitions
 - ▣ Ecologically Functional Dams
 - ▣ Stage Zero Channels or Fluvial Systems
- ▣ **Stage zero channels**
 - Attributes
 - Occurrence on the landscape
 - Ecological Importance
 - Process-based principles for restoring zero order channels and the role of EFDs
 - Examples at multiple scales



Definitions

- **Ecologically Functional Dams**
 - Natural, semi-permeable instream structures (or their human analogues), which slow transport rates of sediment and water and help to create, restore or maintain stage zero channels
 - Consist of natural materials such as wood and other organic matter, live vegetation, rock, and mud
 - Examples: wood jams, beaver dams, rock slides, debris jams, standing live trees and shrubs, emergent vegetation



Definitions

- **Stage Zero Channels**
 - A dynamically meta-stable network of anabranching channels with vegetated islands, which creates physically and biologically complex habitat that provides high levels of ecological goods and services. Occur across a wide range of stream sizes.
 - Typical characteristics include: well connected floodplains with elevated water tables, multithreaded channels, spatially variable hydrologic regimes and structurally complex aquatic and riparian habitat.



Hydrological Regime

- ▣ Floods diffused over the full width of the floodplain so flood peaks are maximally attenuated. Flood pulses diffused and subdued. High water table and close connection between stream flow and ground water ensures reliable base flows and continuous hyporhesis, though flow in smaller anabranches may be ephemeral



Hydraulics and Substrate

- ▣ Multiple channels provide maximum in-channel hydraulic diversity through partition of discharge between branches that widens range of in-channel depth/velocity combinations. Anabranches create multiple slow water margins and channels. Wide range of substrate grain sizes arranged into numerous, well-sorted bed patches.



Dimensions and Morphology

- ▣ Multiple anabranches, islands and side channels. Morphological features abound in-channel and on the extensive and fully connected floodplain, providing a high capacity to store sediment and wood and supporting diverse wetlands and aquatic habitats. Bank heights are low with stability enhanced by riparian margins, but some unvegetated banks are generated by localized erosion. Network and floodplain are highly resilient to disturbance, buffering the system.

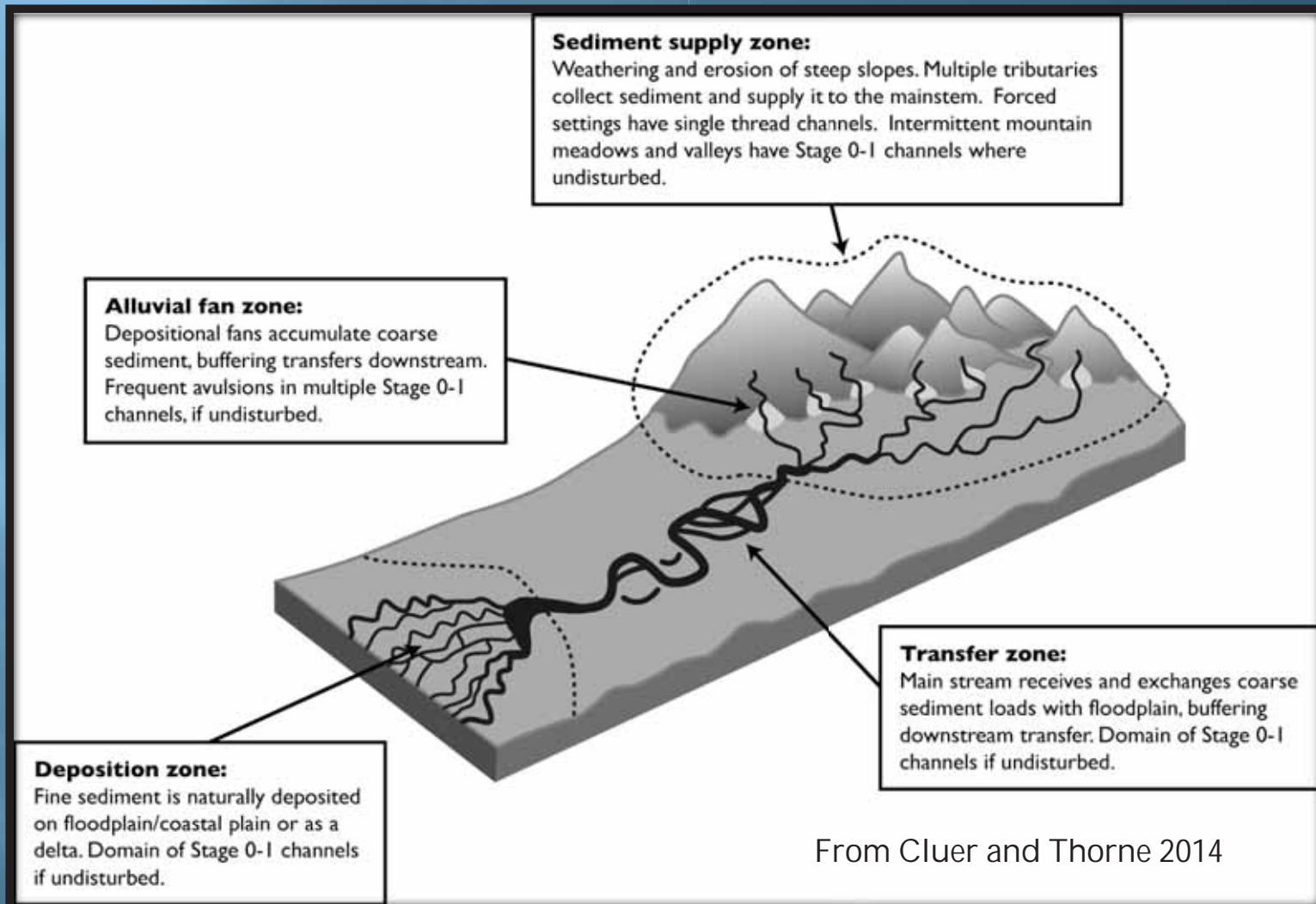


Vegetation

- Frequent, small channel adjustments and high, reliable water table create ubiquitous settings for proliferation and succession of aquatic, emergent, riparian and floodplain plants. Wet woodlands on islands and floodplain supply and retain wood, and widespread vegetation proximal to channels produces abundant leaf litter. When present, beaver use vegetation to build dams and lodges. Biogenic obstructions such as large wood, beaver dams and live vegetation help to create and retain an anabranching channel pattern.



Where Do Stage Zero Channels Occur?



From Cluer and Thorne 2014



Stage Zero Examples

Salmon River, Idaho





Stage Zero Examples

Lemhi River, Idaho





Stage Zero Examples

Peel River, Canada





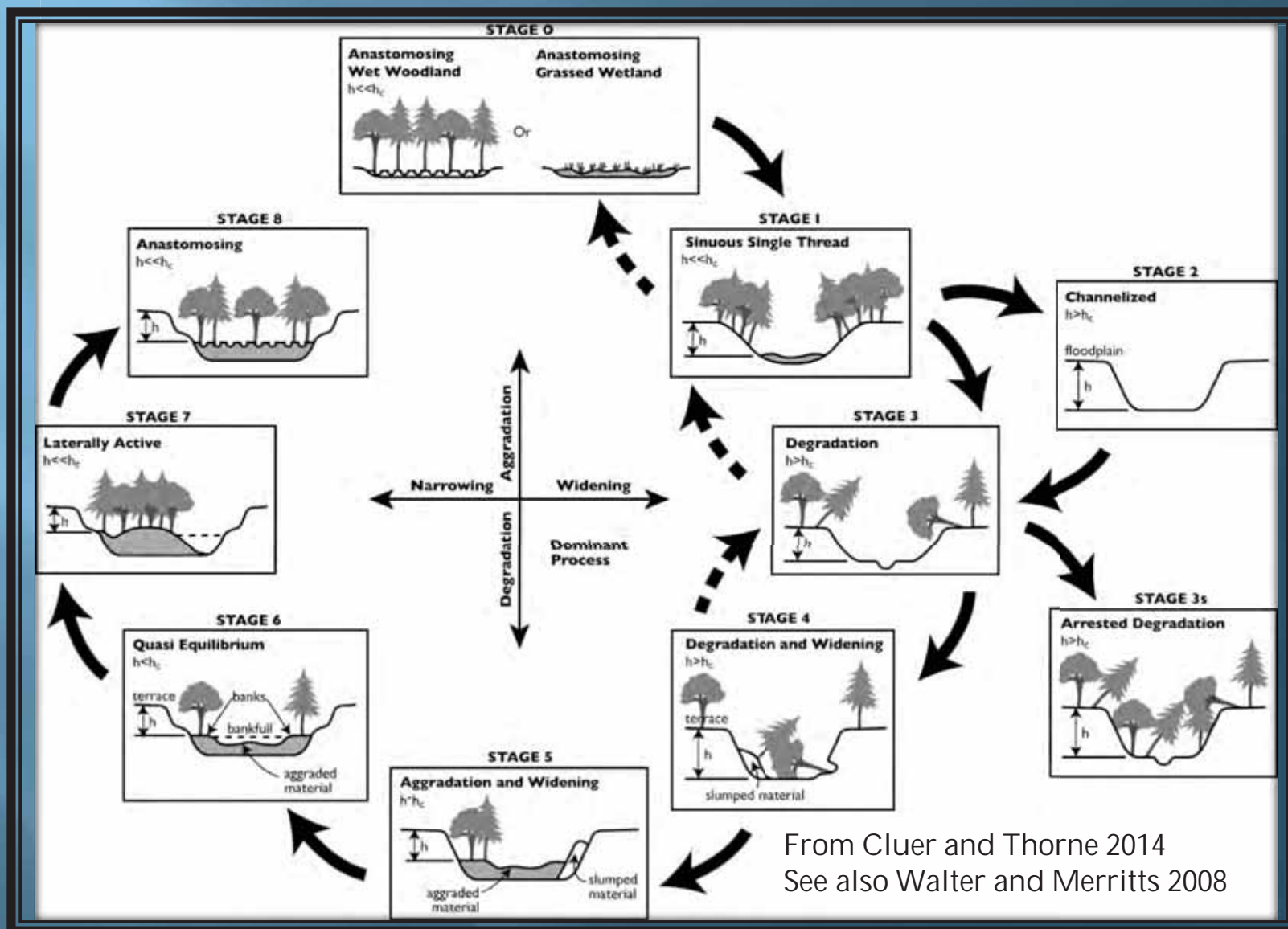
Stage Zero Examples



- ▣ Wenaha River Tributary, Eastern Oregon



The Stage Zero Channel as a Recovery Goal



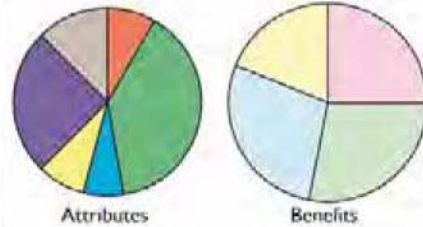


Habitat and Ecosystem Benefits Table

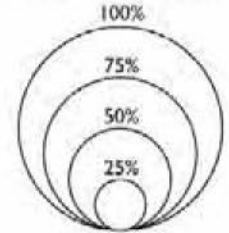
Stage	0	1	2	3	3s	4	4-3	5	6	7	8
Habitat											
Flood Refugia	3	2	0	0	0	0	1	1	1	2	2
Drought Refugia	2	3	0	0	0	0	0	0	1	3	2
Exposed tree roots	3	1	0	1	1	1	0	0	1	1	3
Water Quality											
Clarity	3	2	1	0	0	0	0	1	2	2	3
Temperature amelioration shade and hyporheic flow	3	3	1	1	2	0	0	1	2	3	3
nutrient cycling	3	2	1	0	0	0	0	1	1	2	3
Biota											
Biodiversity species richness and trophic diversity	3	2	0	1	1	1	1	1	1	2	3
Proportion of Native Biota	3	2	1	1	1	1	1	1	1	2	3
1st and 2nd Order Productivity	3	2	1	1	2	1	0	1	2	2	3
Resilience											
Disturbance	3	3	1	0	1	0	0	1	1	2	2
Flood and Drought	3	2	0	0	1	0	0	1	2	1	2
Results											
possible	33	33	33	33	33	33	33	33	33	33	33
sum	32	24	6	5	9	4	3	9	15	22	29
ratio	97%	73%	18%	15%	27%	12%	9%	27%	45%	67%	88%

STAGE 0

Anastomosing

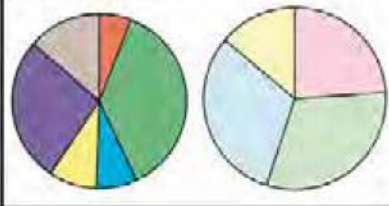


Key to percentage of benefits



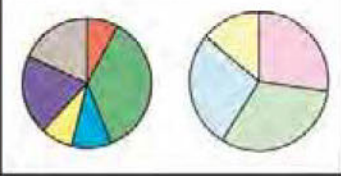
STAGE 8

Anastomosing



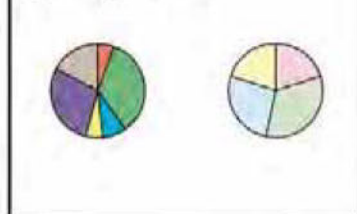
STAGE 7

Laterally Active



STAGE 6

Quasi Equilibrium



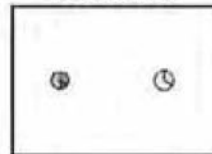
Hydrogeomorphic Attributes Table

- Physical Channel Dimensions
- Channel and Floodplain Features
- Substrate
- Hydraulics
- Vegetation
- Hydrological Regime

Habitats and Ecosystem Benefits Table

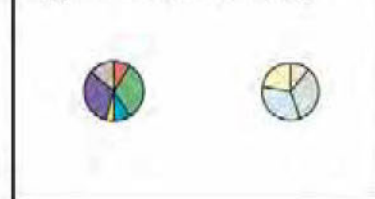
- Habitat
- Water Quality
- Biota
- Resilience

STAGE 4-3



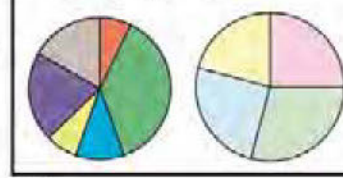
STAGE 5

Aggradation and Widening



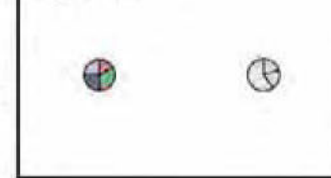
STAGE 1

Sinuuous Single Thread



STAGE 3

Degradation



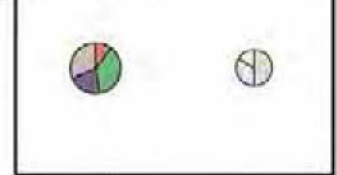
STAGE 4

Degradation and Widening



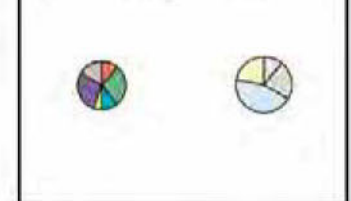
STAGE 2

Channelized

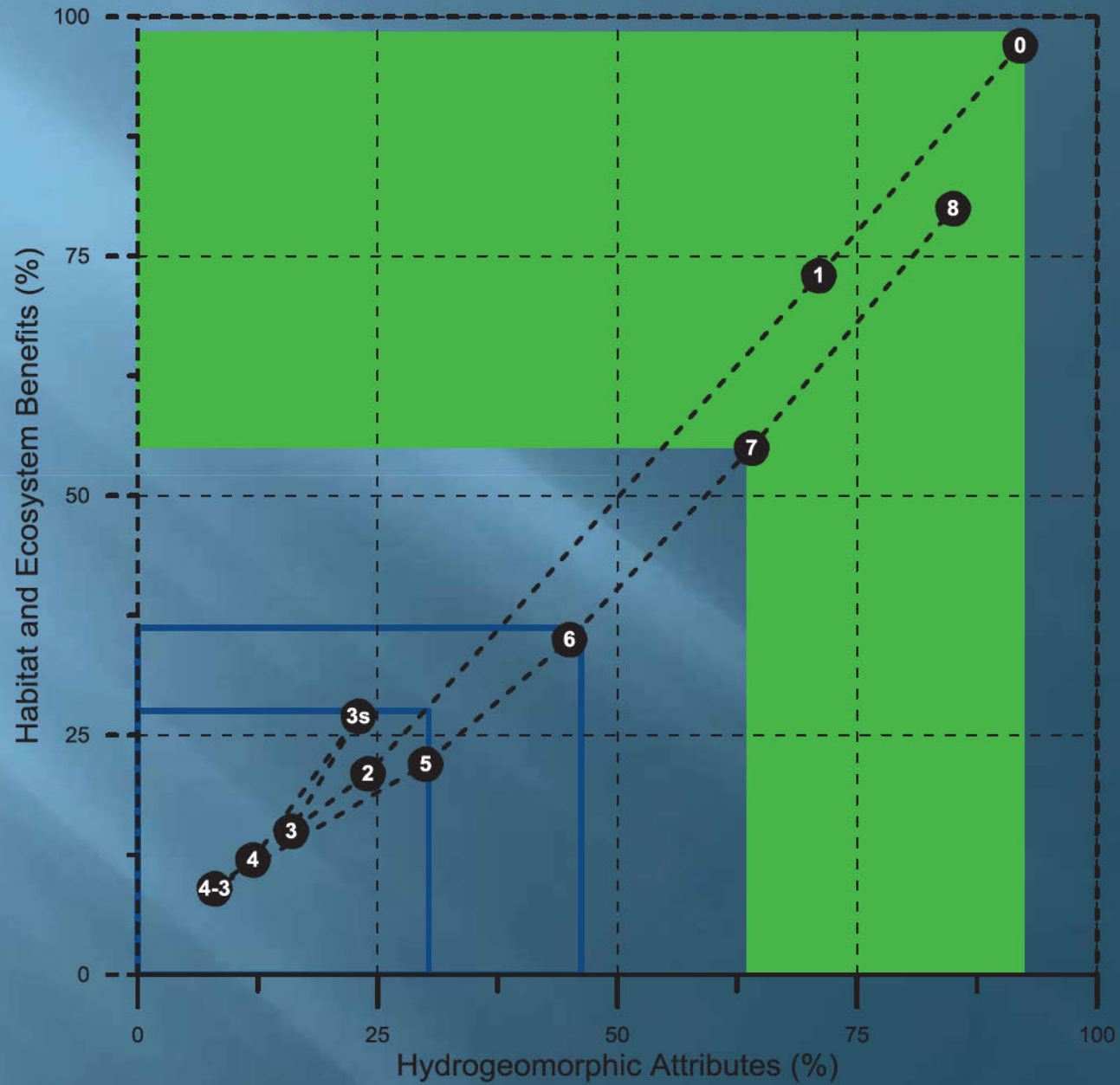


STAGE 3s

Arrested Degradation

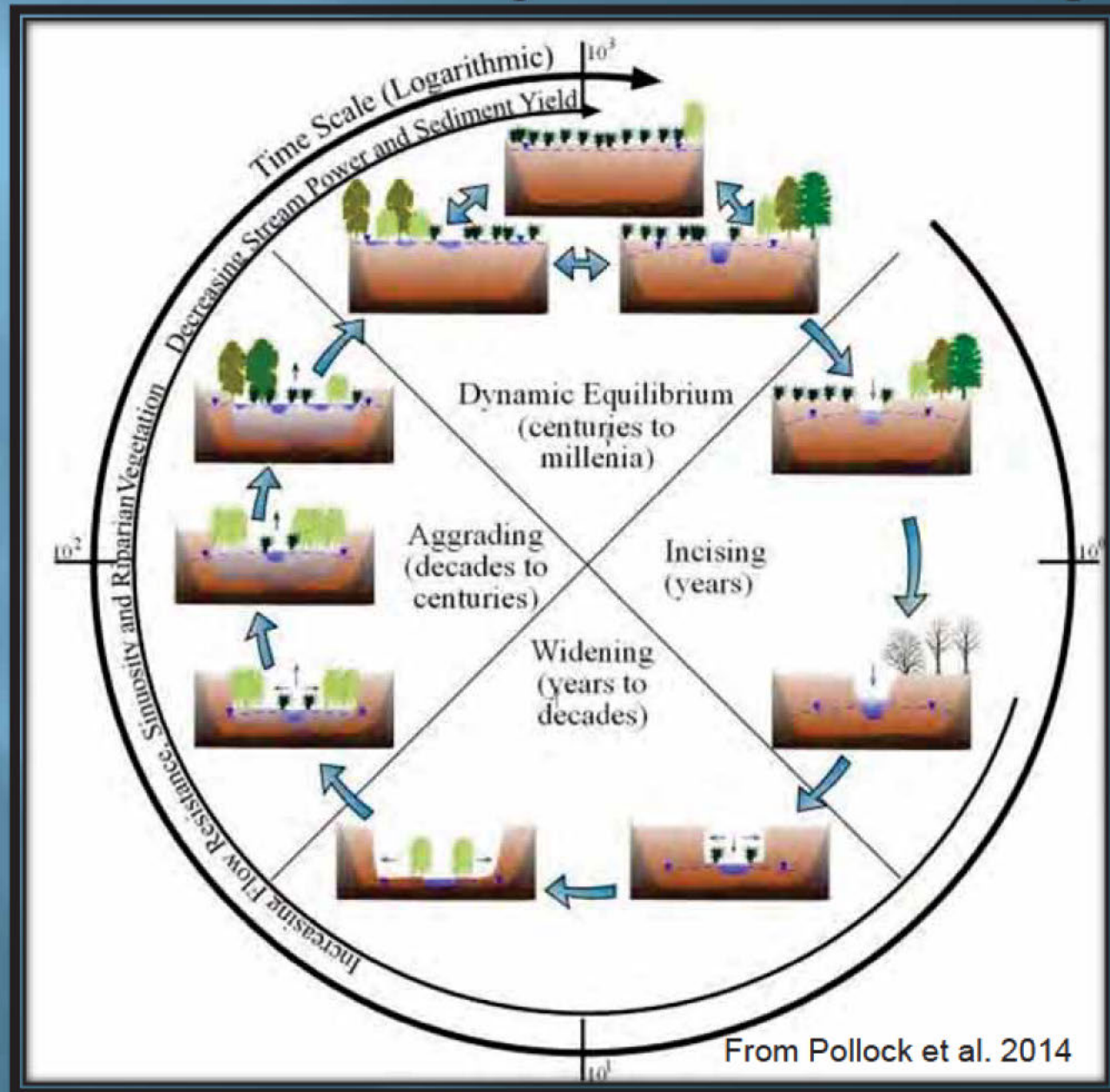


From Cluer and Thorne 2014



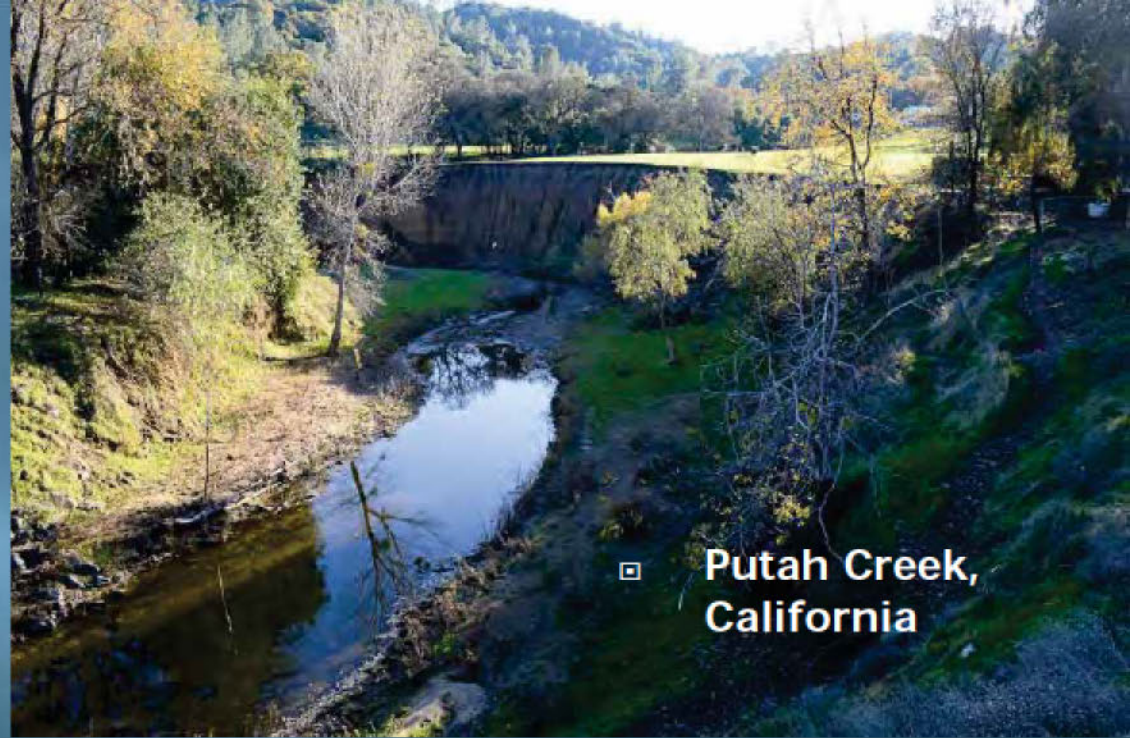


Natural Recovery Rates Can be Long





Take Home Messages

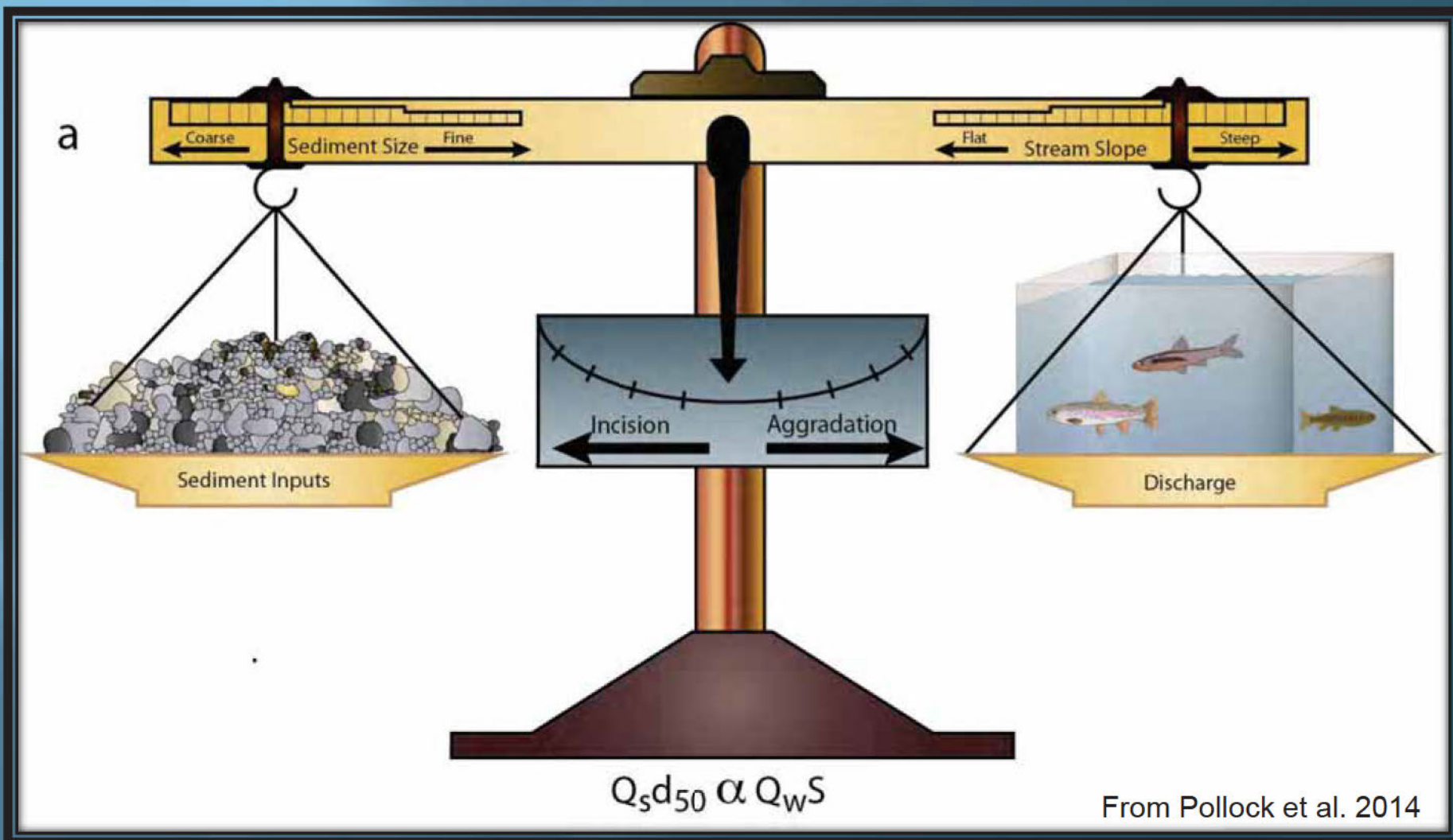


▣ Putah Creek,
California

- ▣ Degraded streams have limited ecological function
- ▣ The scale of restoration needs to be commensurate with the scale of the actions that caused the degradation
- ▣ Meaningful restoration needs to occur on a time frame relevant to recovery time frames for target species (e.g. salmon) so as to avoid extinction

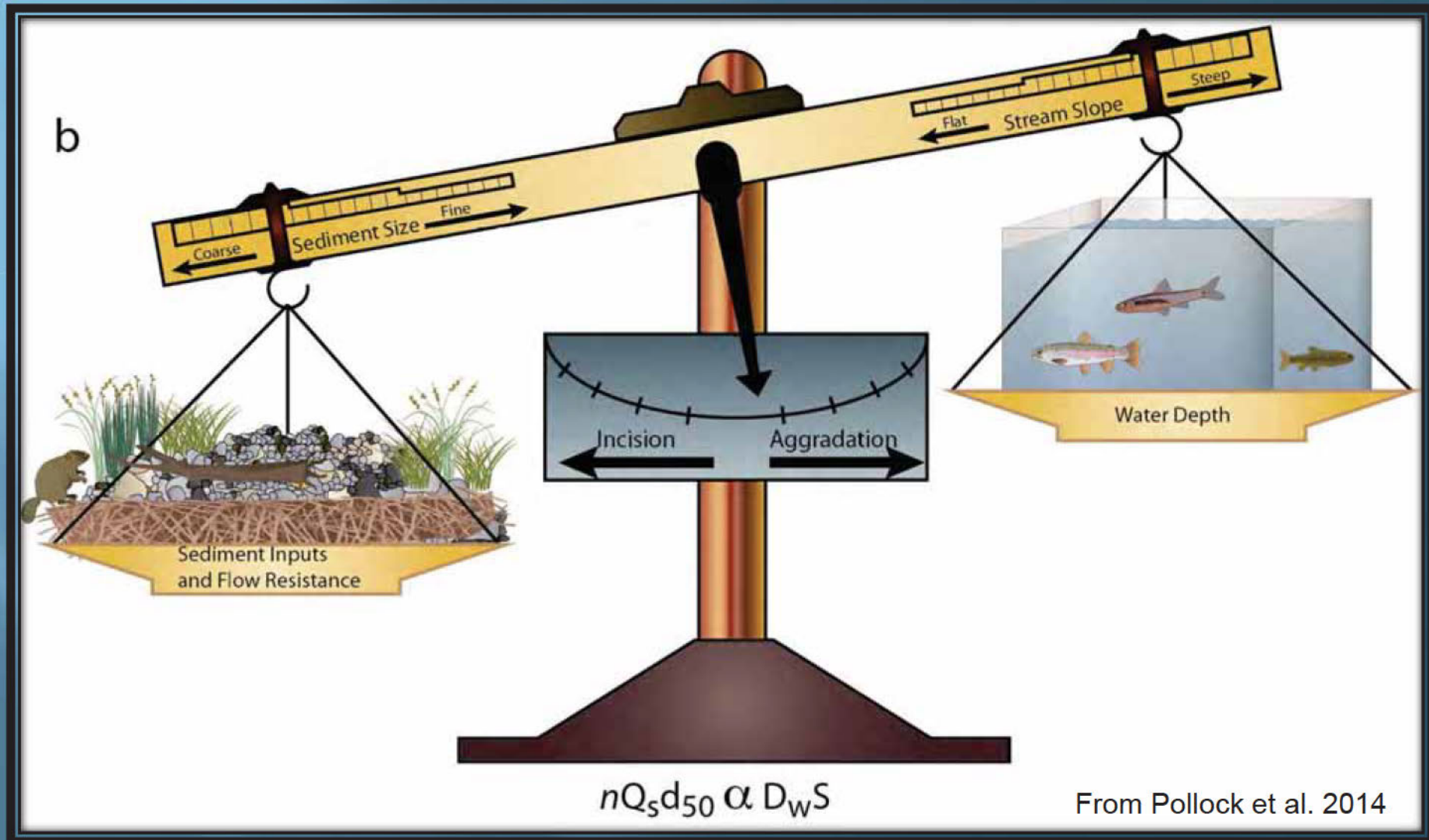


Principles for building Stage Zero System



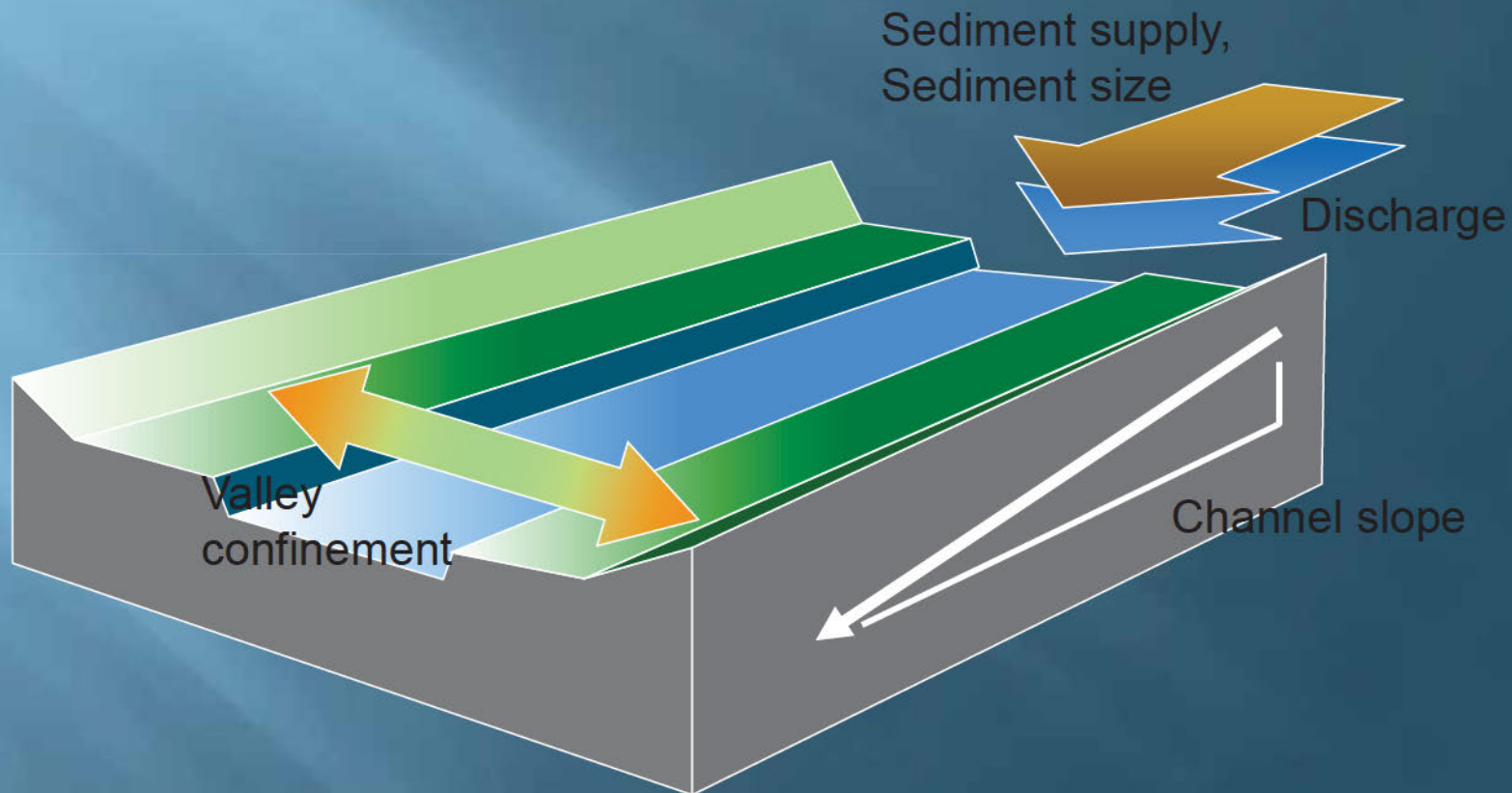


Increased Flow Resistance is Essential



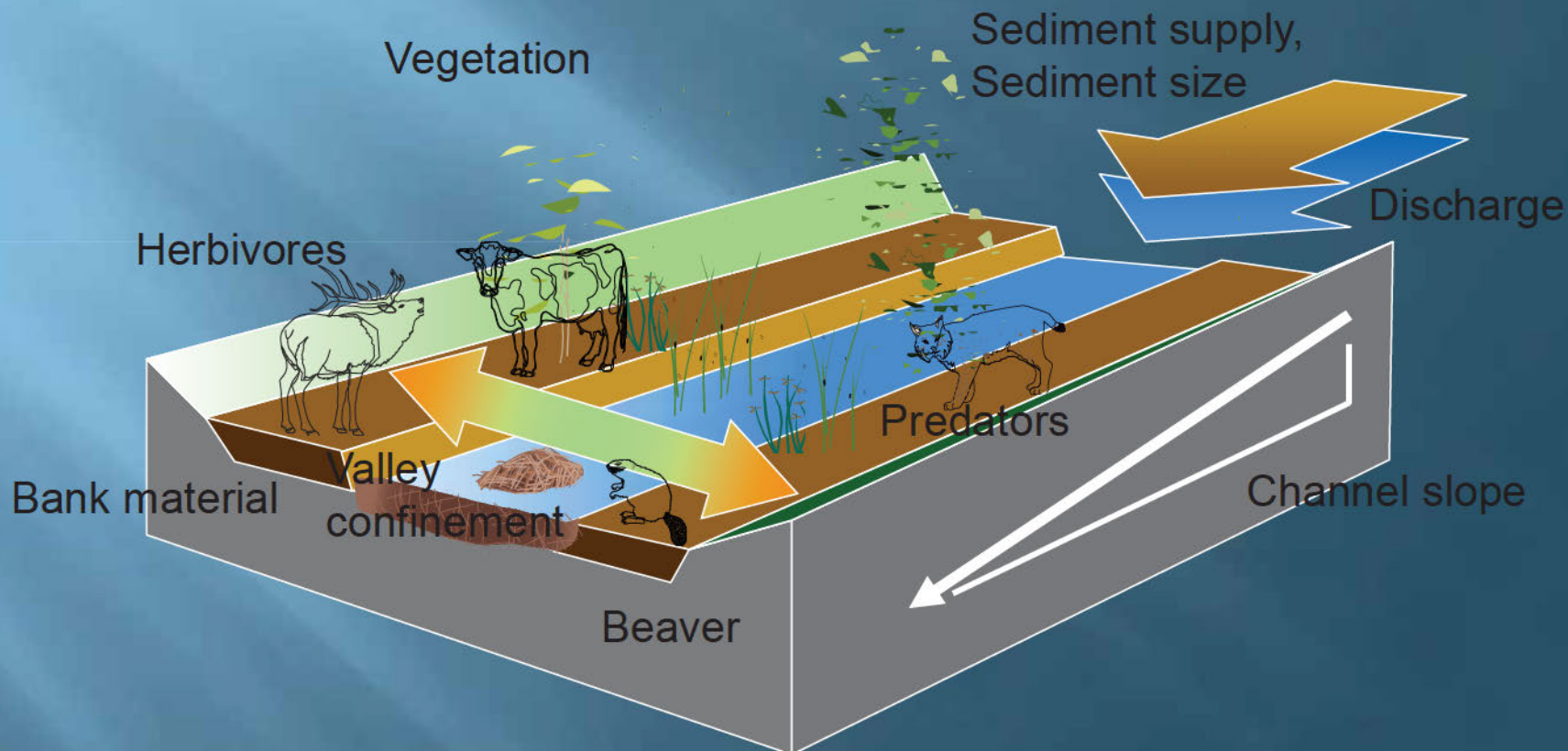


Factors Controlling Stage Zero Channel Formation





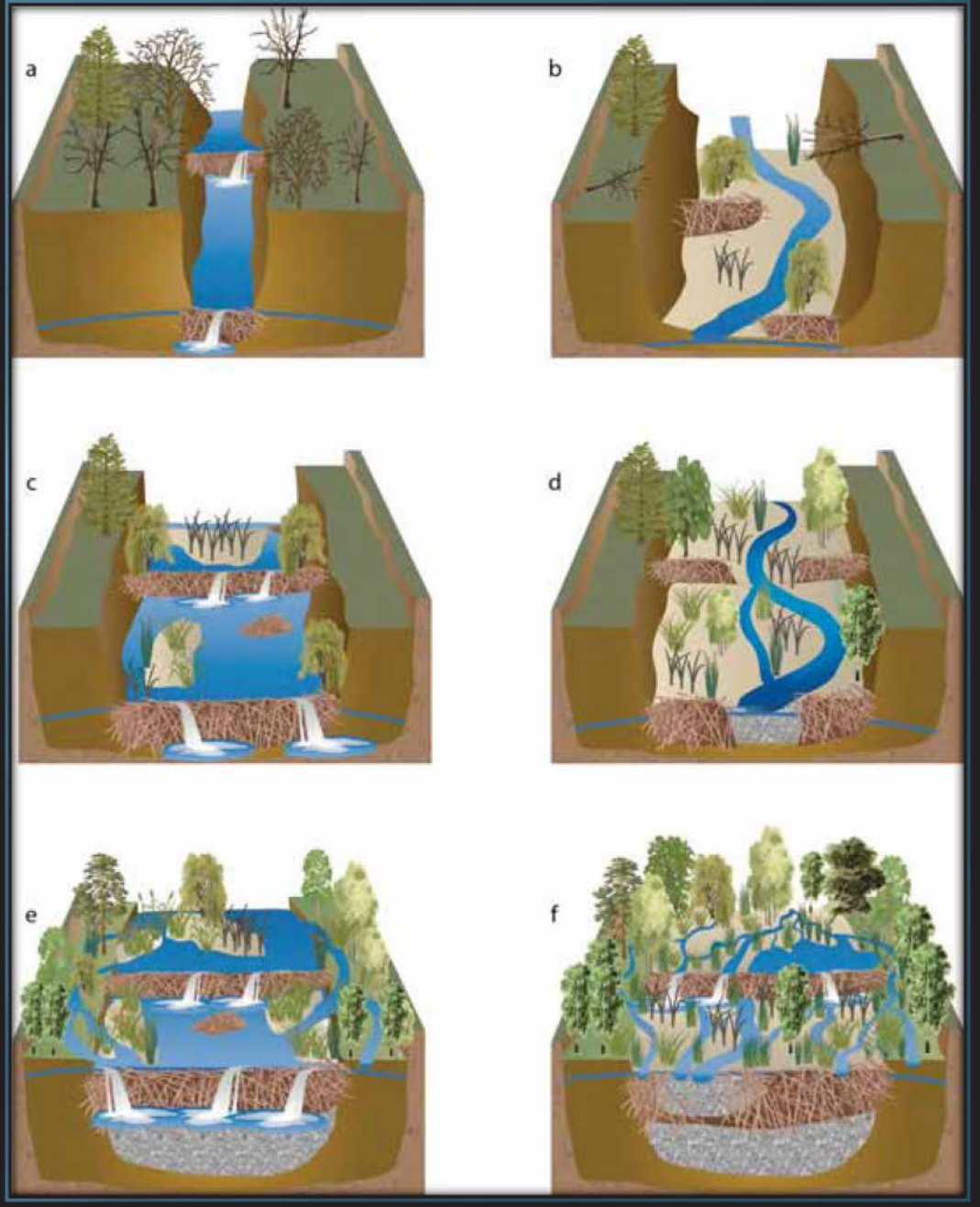
Factors Controlling Stage Zero Channel Formation



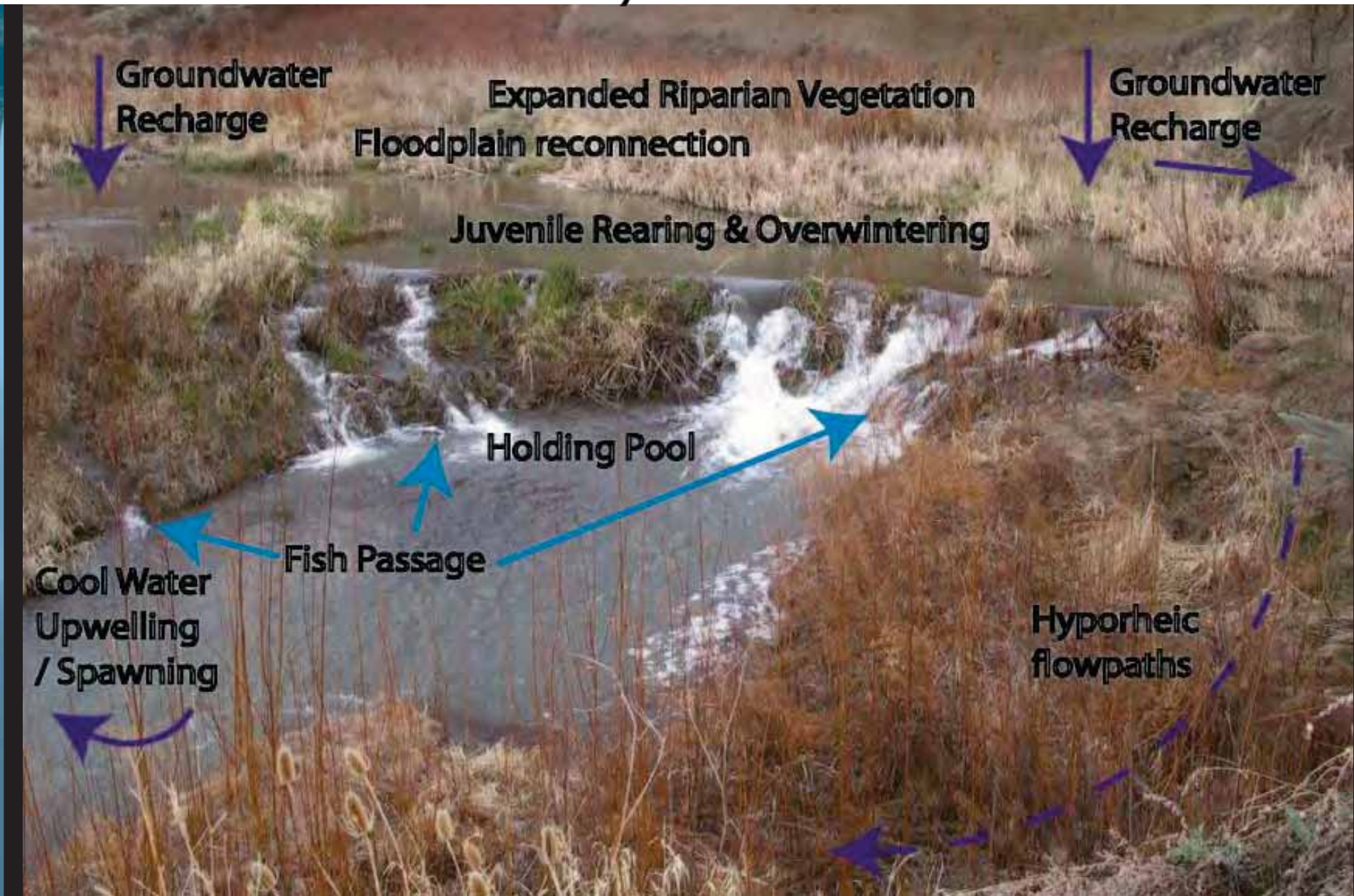


Beaver Dams

-Can reduce recovery times from Stage 1 to Stage 7-8/0 systems by 1-2 orders of magnitude (year to decades instead of decades to centuries)



Beaver dams create complex habitat that provide many benefits



Beaver Dams and Beaver Dam Analogues



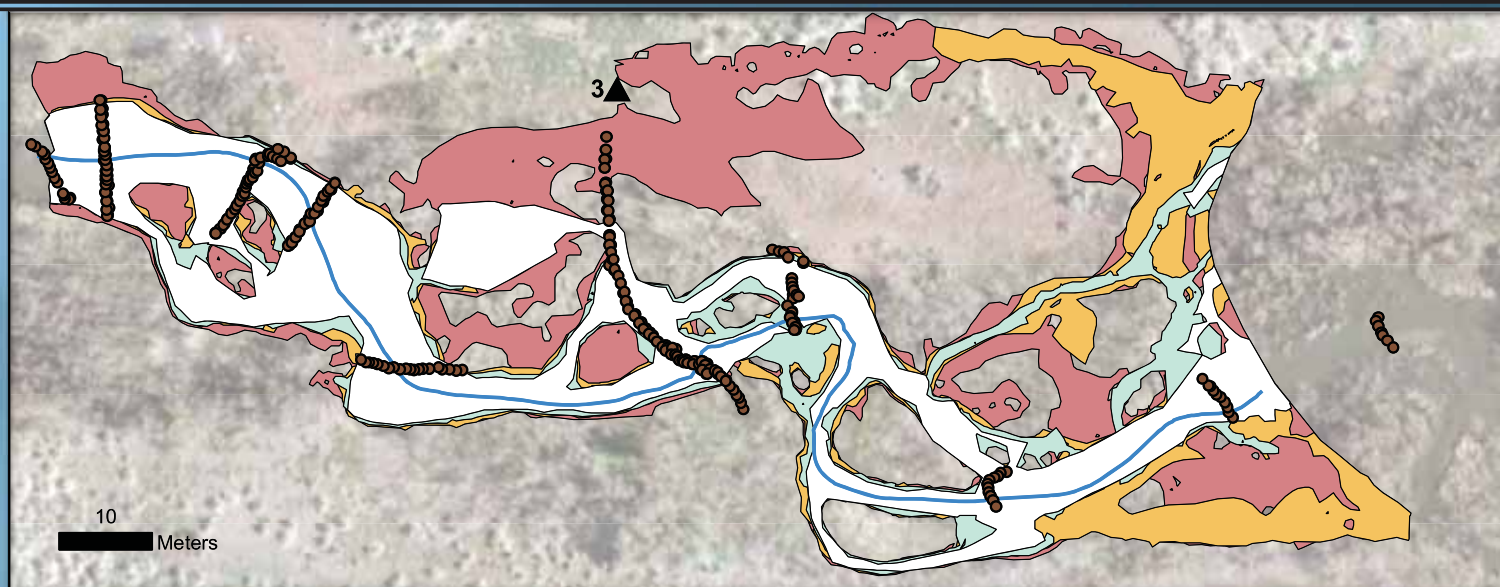


Beaver and BDAs creating a zero order "channel"



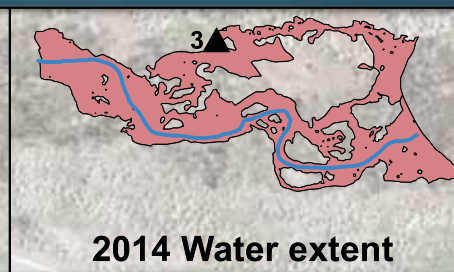
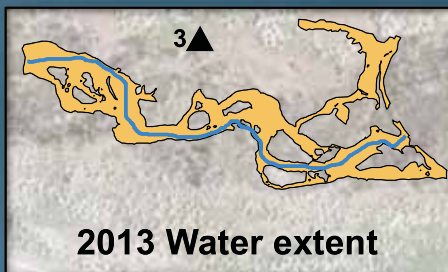


Beaver and BDAs-a 5 year sequence



Carol Volk, Unpublished

Since 2009, a combination of BDAs and beaver turned a narrow single thread channel with an infrequently inundated floodplain into a multi-threaded channel with water levels close to the floodplain surface most of the year



Survival of *O. mykiss* in Bridge and Murderers (trt and cntrl)

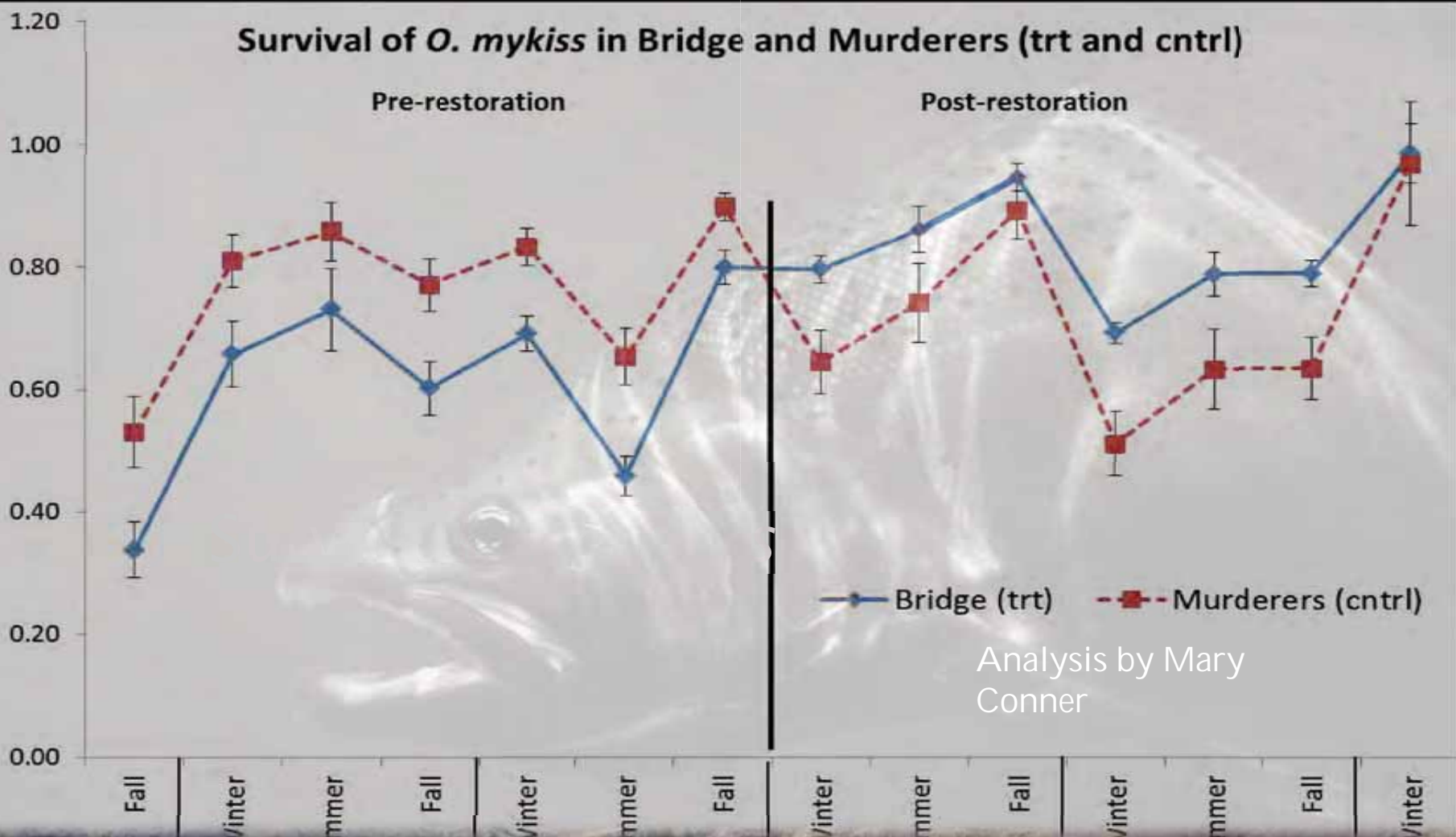
Pre-restoration

Post-restoration

O. mykiss survival season

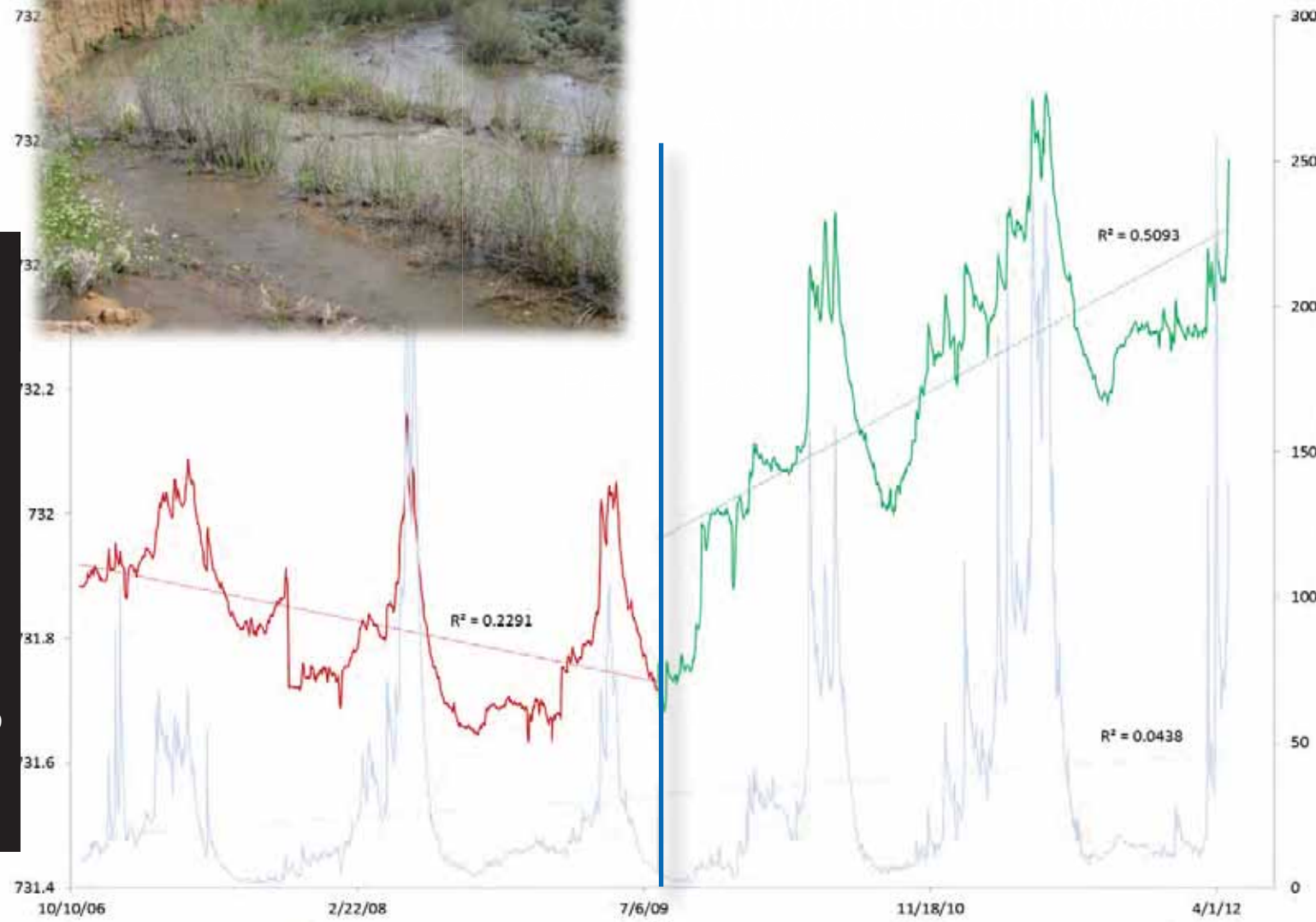
Bridge (trt) Murderers (cntrl)

Analysis by Mary
Conner



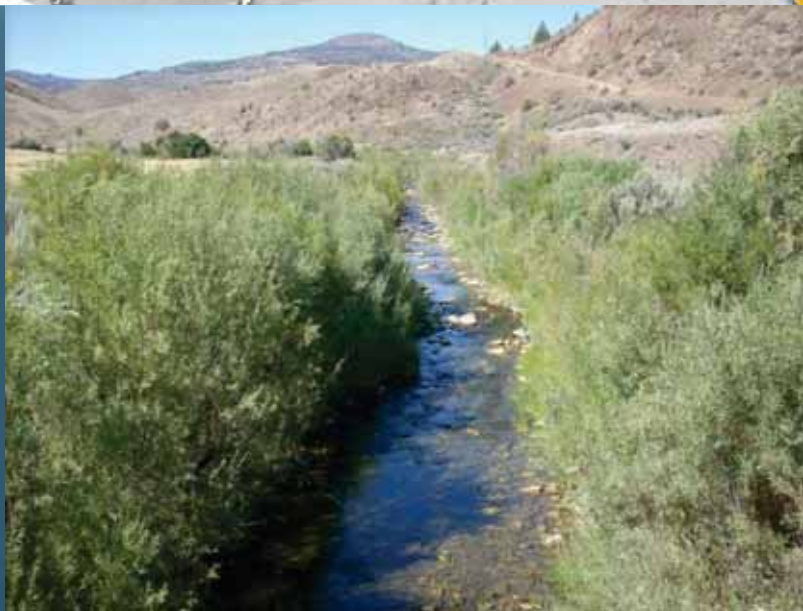
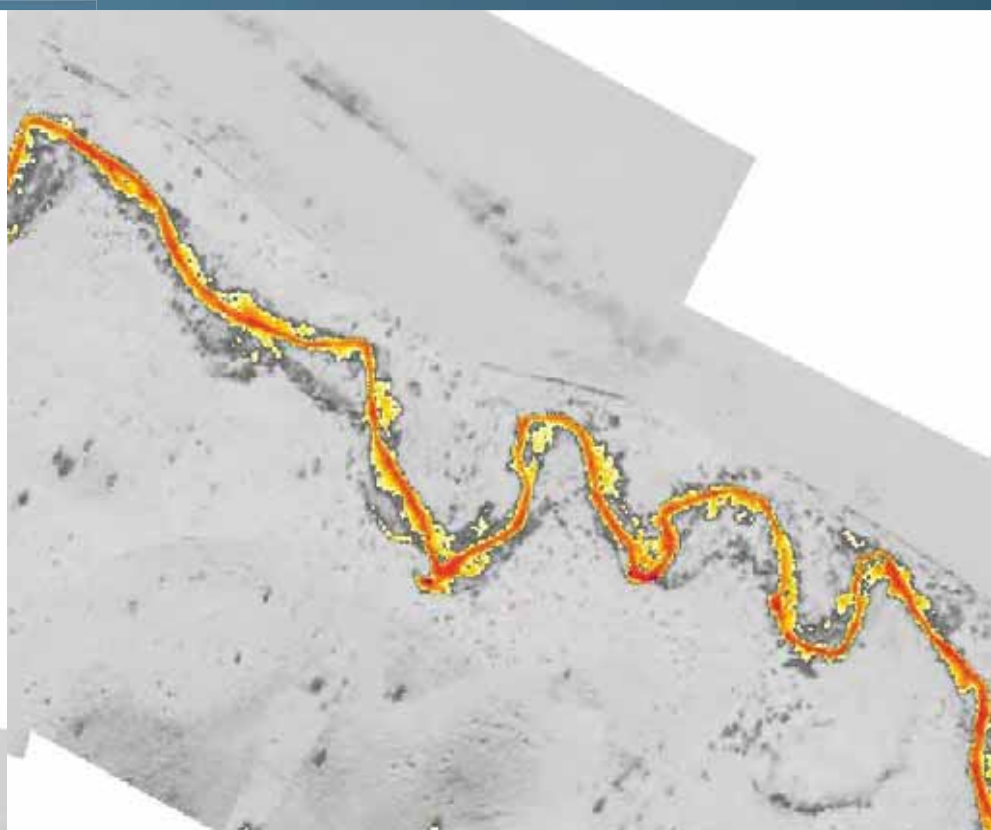
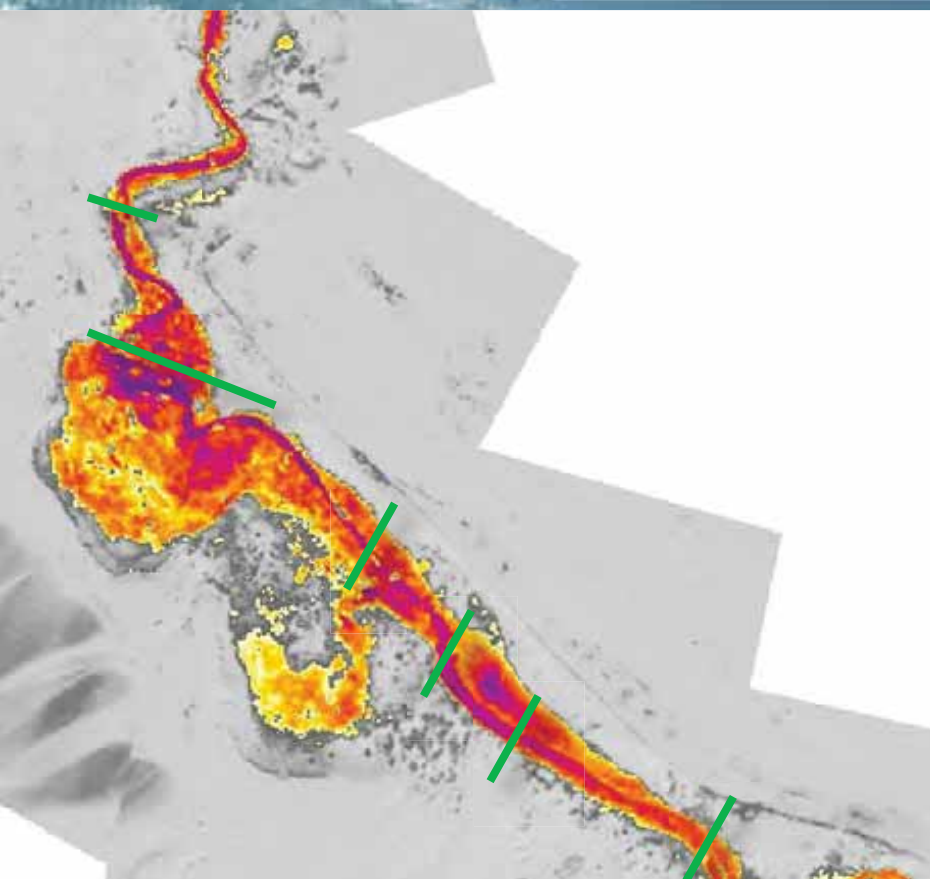


Average Groundwater Elevation (ft)



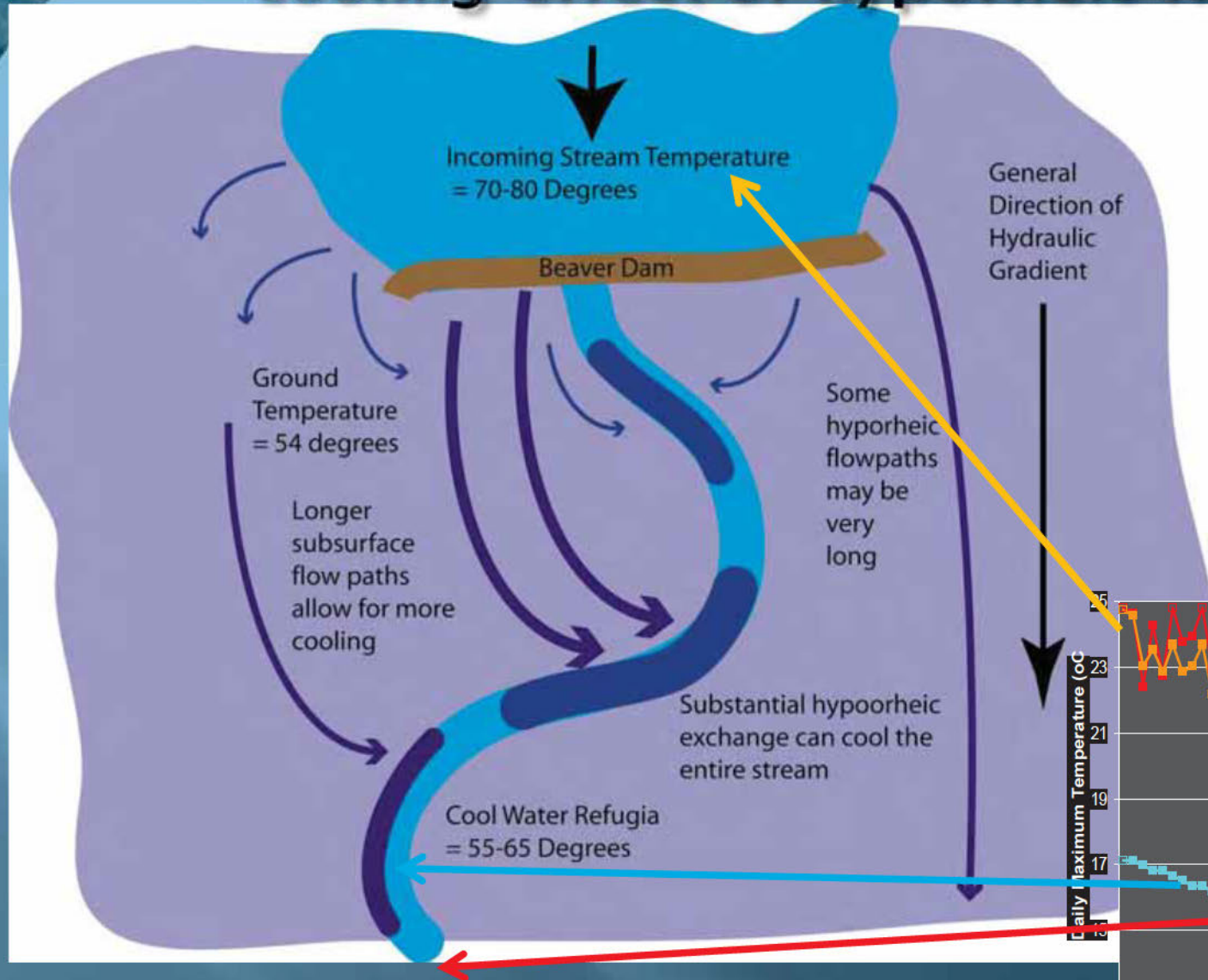
Discharge (CFS)

Time (2006-2012)

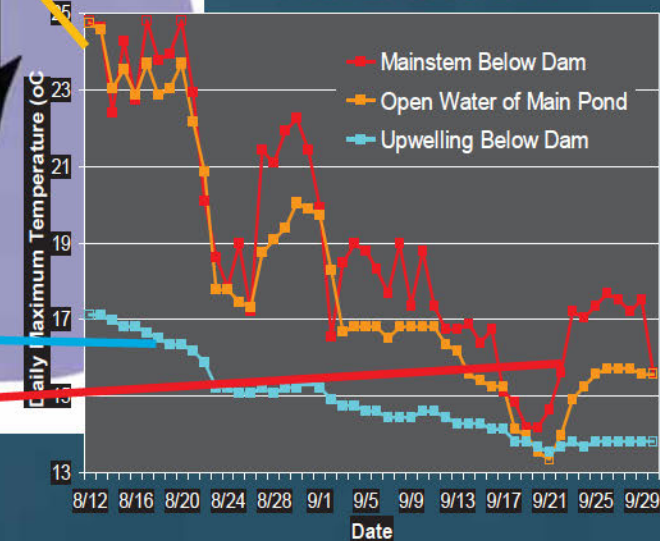




Plan view of a beaver dam showing cooling effect of hyporheic flow paths



Pollock et al. 2007





Wood Jams





Wood Jams



Hunter Ck-First
flows 2014



Post 5-yr RI flood WY15

Courtesy of Rocco Fiori



Wood-based Stage Zero Restoration Tools

Log Steps (USFS-many locales, T. McKee-Mattole R., CA)

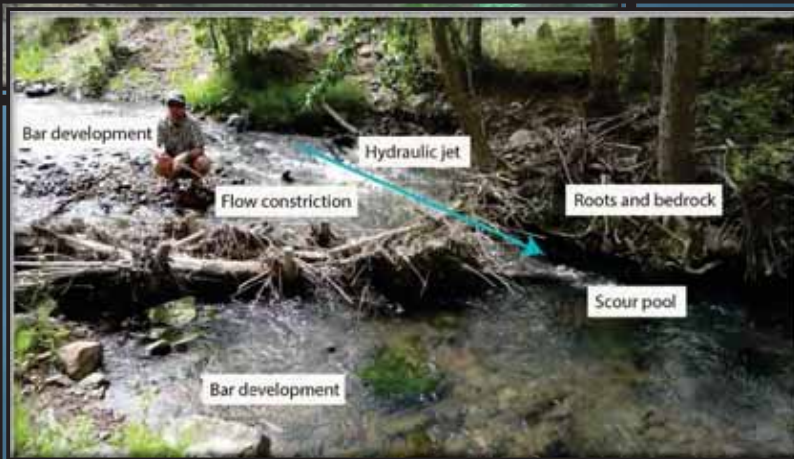
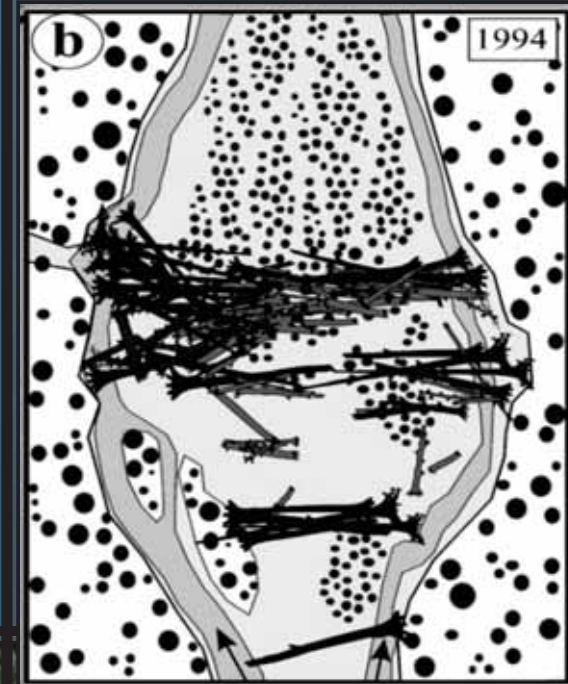
Wood Jams (Many locales, e.g. Rocco Fiori, Klamath River, CA)

Gravel Dams (Campbell Ranch-Silvies R., OR, CDA Tr., ID)

Meander Dams (Quivira Coalition, NM)

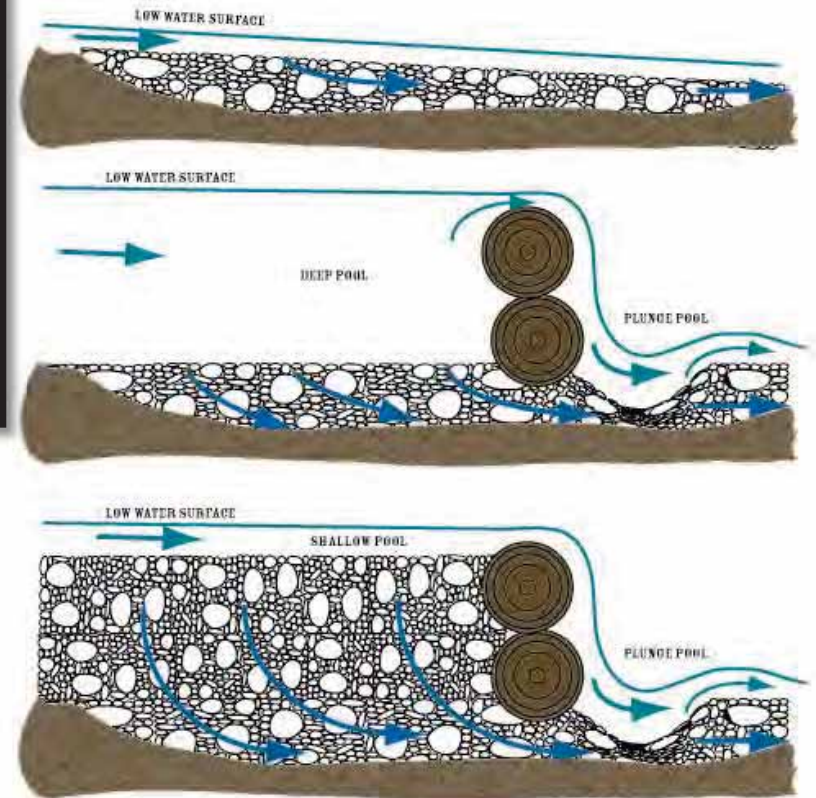
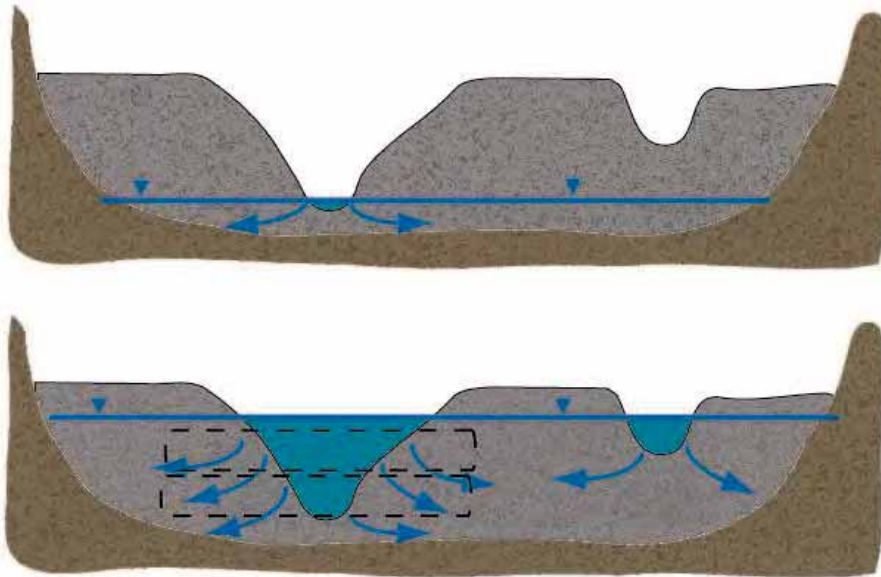
Constriction Dams (N. Bouwes-Asotin R., WA)

Choke Dams (P. Devries-Idaho)





Process-based restoration restores processes, not specific habitat types





What types of structures are appropriate?

Non-mobile--> Combination- Transport-->

Off-channel ponds	Beaver Ponds	log steps, Over-flow	Log steps, Under-flow	Bank Input Debris	Valley Jams	Flow Deflection Jams	un-stable logs	bar-apex jams	mean-der jams	log rafts	Debris flow jams
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Location

Low-gradient Habitat

Tributary channel, unconfined, unentrenched

X	X	X	X	X	X	X	X				X
---	---	---	---	---	---	---	---	--	--	--	---

Tributary channel, confined

		X	X	X	X		X				
--	--	---	---	---	---	--	---	--	--	--	--

Tributary channel, entrenched

		X	X	X	X	X	X				X
--	--	---	---	---	---	---	---	--	--	--	---

Mainstem channel, unconfined, unentrenched

X	X			X	X	X	X	X	X	X	
---	---	--	--	---	---	---	---	---	---	---	--

Mainstem channel, confined

				X	X		X				
--	--	--	--	---	---	--	---	--	--	--	--

Mainstem channel, entrenched

				X	X	X	X	X	X	X	
--	--	--	--	---	---	---	---	---	---	---	--

Estuary-distributary channels

X	X	X	X			X	X				
---	---	---	---	--	--	---	---	--	--	--	--

Estuary-main channel

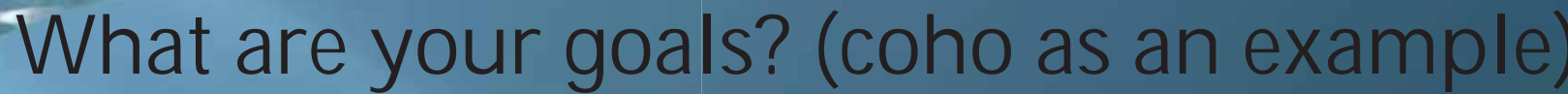
							X	X	X	X	
--	--	--	--	--	--	--	---	---	---	---	--

Medium Gradient, confined tributary habitat

		X	X	X	X		X				
--	--	---	---	---	---	--	---	--	--	--	--

High gradient, confined tributary habitat

		X	X	X	X		X				
--	--	---	---	---	---	--	---	--	--	--	--

[illegible]



Types of “Dams” that Build Stage Zero Channels/Valleys-Scaling Up

- ▣ Beaver Dams
- ▣ Live Vegetation
- ▣ Large Wood
- ▣ Levee Setbacks
- ▣ Landslides
- ▣ Alluvial Fans
- ▣ Sea Level (Rise)
- ▣ Tectonics

Increasing Time Scales

Key Functions:

- Increase flow resistance,
- Lower slope
- Reduce stream power/unit width



Levee Removal

- ❑ Can (re)create stage zero systems if channel is at grade or perched
- ❑ In incised systems, flow/sediment obstructions can accelerate habitat recovery

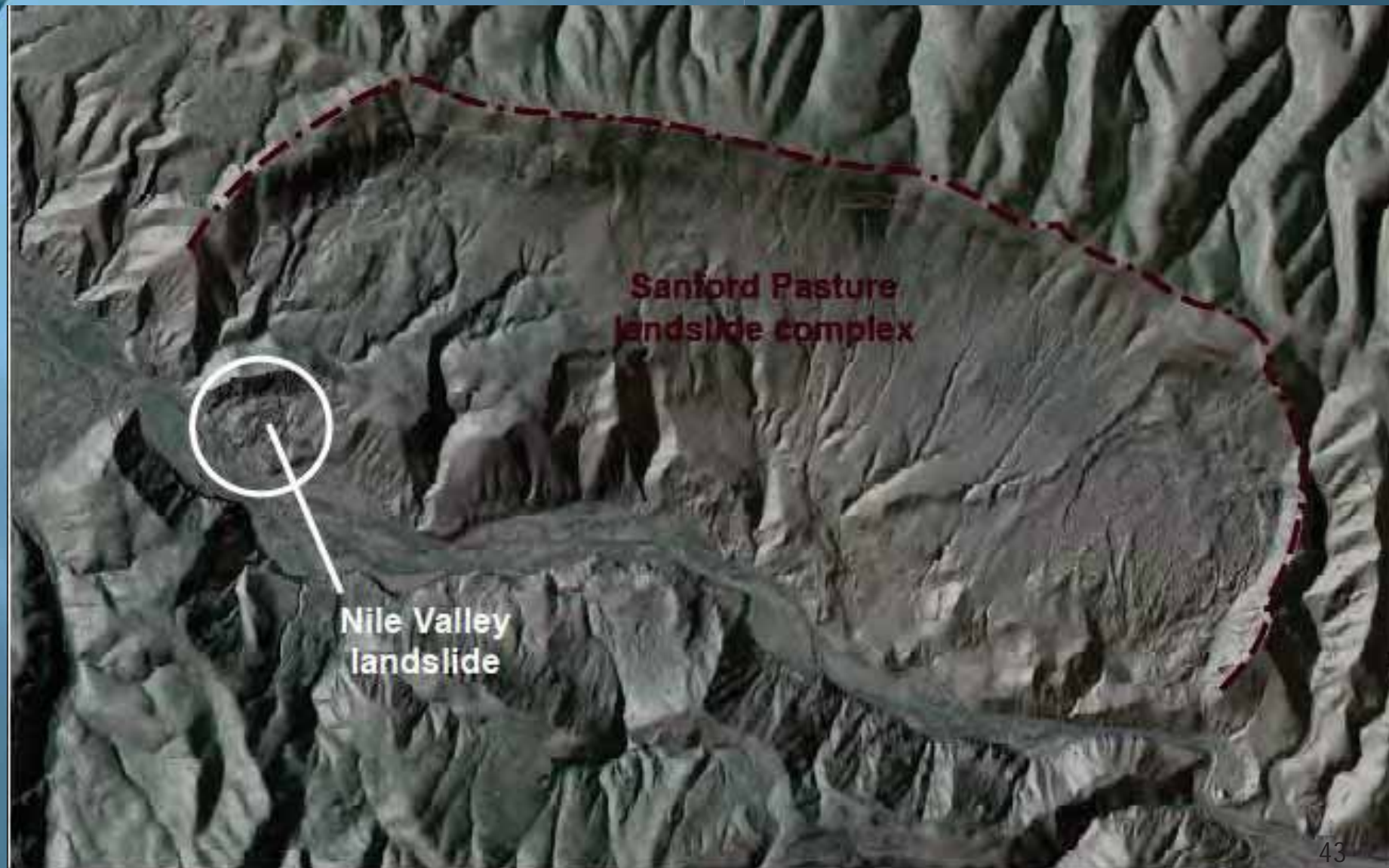


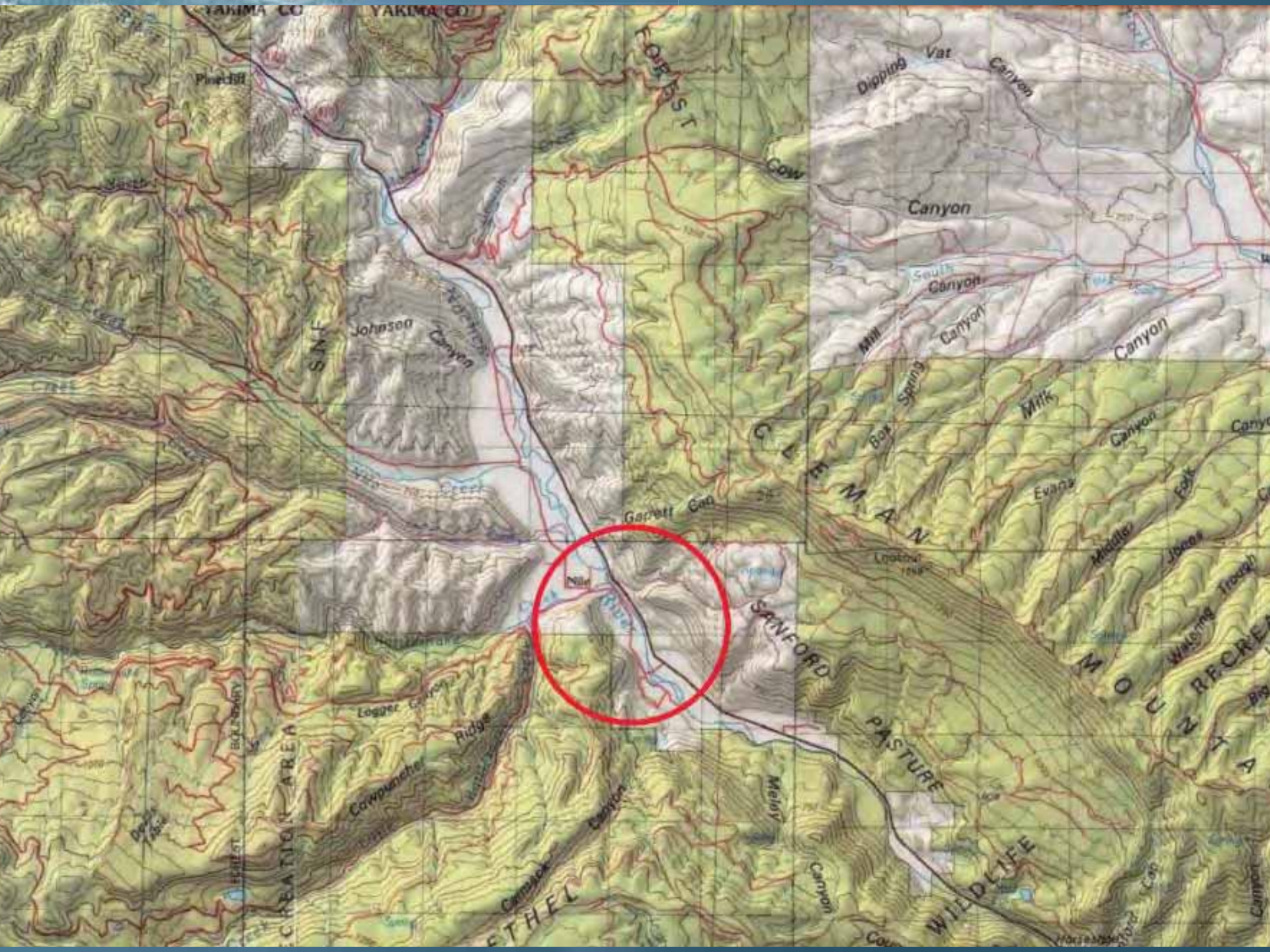
Eel River, California





Landslides-Naches River, WA (Nile Valley)







Landslides Create Good Salmon Habitat

Controls on valley width in mountainous landscapes: The role of landsliding and implications for salmonid habitat

C. May¹, J. Roering², L.S. Eaton³, and K.M. Burnett⁴

¹Department of Biology, James Madison University, Harrisonburg, Virginia 22807, USA

²Department of Geological Sciences, University of Oregon, Eugene, Oregon 97403, USA

³Department of Geology and Environmental Science, James Madison University, Harrisonburg, Virginia 22807, USA

⁴U.S. Forest Service Pacific Northwest Research Station, Corvallis, Oregon 97331, USA

ABSTRACT

A fundamental yet unresolved question in fluvial geomorphology is what controls the width of valleys in mountainous terrain. Establishing a predictive relation for valley floor width is critical for realizing links between aquatic ecology and geomorphology because the most productive riverine habitats often occur in low-gradient streams with broad floodplains. Working in the Oregon Coast Range (western United States), we used airborne lidar to explore controls on valley width, and couple these findings with models of salmon habitat potential. We defined how valley floor width varies with drainage area in a catchment that exhibits relatively uniform ridge-and-valley topography sculpted by shallow landslides and debris flows. In drainage areas $>0.1 \text{ km}^2$, valley width increases as a power law function of drainage area with an exponent of ~ 0.6 . Consequently, valley width increases more rapidly downstream than channel width (exponent of ~ 0.4), as derived by local hydraulic geometry. We used this baseline valley width–drainage area function to determine how ancient deep-seated landslides in a nearby catchment influence valley width. Anomalously wide valleys tend to occur upstream of, and adjacent to, large landslides, while downstream valley segments are narrower than predicted from our baseline relation. According to coho salmon habitat-potential models, broad valley segments associated with deep-seated landsliding resulted in a greater proportion of the channel network hosting productive habitat. Because large landslides in this area are structurally controlled, our findings indicate a strong link between geologic properties and aquatic habitat.

sediment by providing space for the formation of debris flow fans. In addition, low-gradient broad valleys with old-growth forest store the great majority of above-ground and below-ground carbon in mountain streams (Wohl et al., 2012). Understanding the links between hillslope processes and riverine habitat is particularly important for Pacific salmon (*Oncorhynchus* spp.) because these fish are intricately tied to Pacific Rim topography (Montgomery, 2000; Waples et al., 2008).

The goals of this paper are twofold. First, we seek to define an empirical relation between valley width and drainage area (akin to hydraulic geometry for river channels) in a setting with negligible influence from variable rock properties and deep-seated landslide activity. Our approach uses high-resolution topography generated from airborne lidar to define this baseline relation of valley width in a mountainous catch-



Sea level- the ultimate dam



Taku River
(southeast)
Alaska



Kuskokwim
River, Alaska



MacKenzie River, Canada



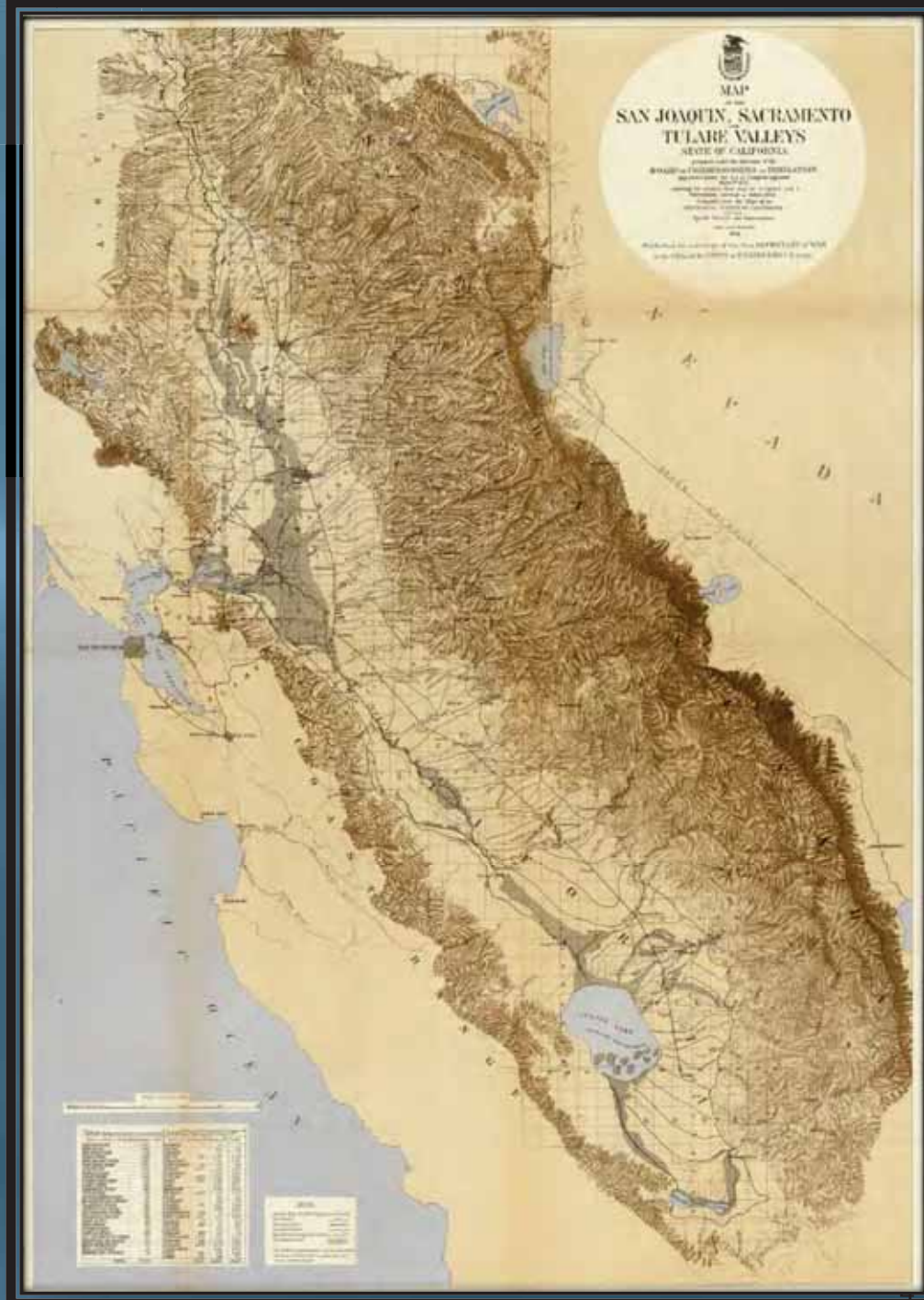


Yukon River, Alaska



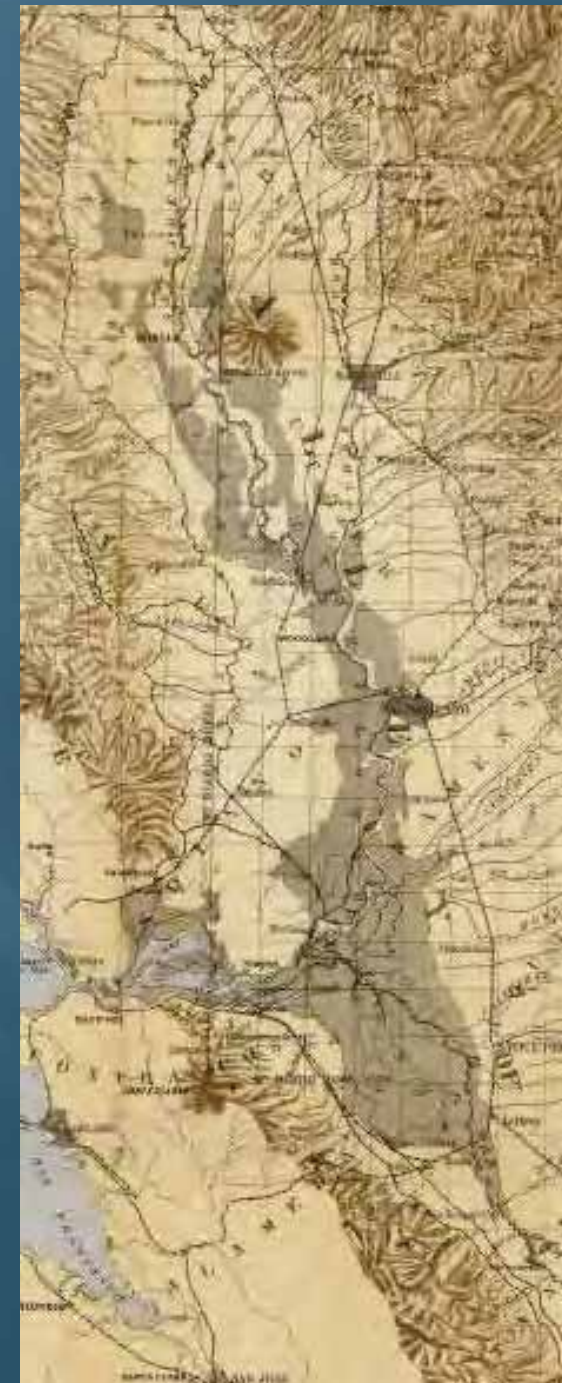


Sacramento-San Joaquin Rivers- 150 ybp



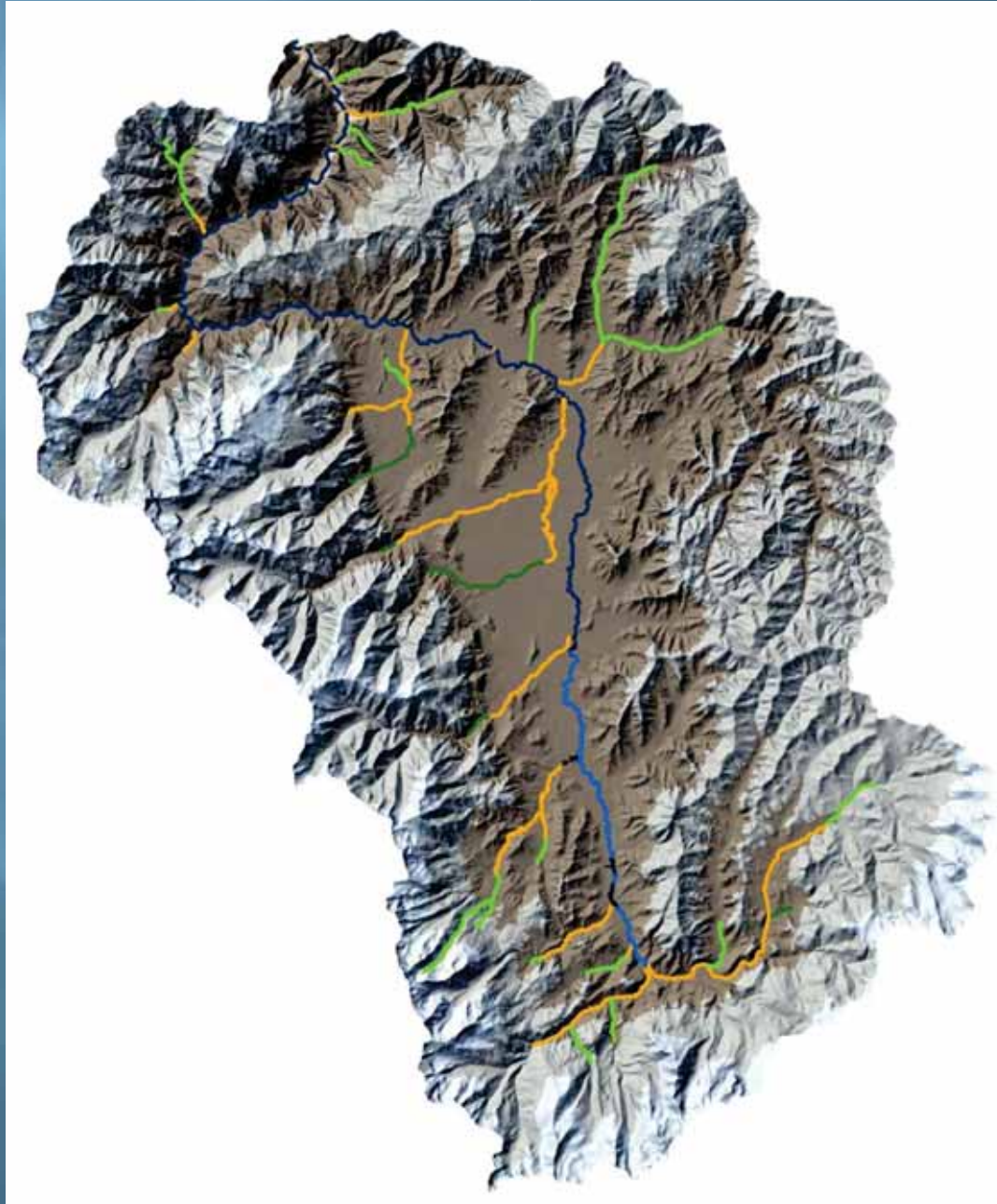


150 years ago, 5% of California was "wetlands", mostly in the Central Valley, really more of a wetland-river complex.





A Tectonic "Dam"-Scott River, Klamath Basin





Okavango River, Botswana





Sudd Swamp, South Sudan





Sea Level Rise- A Grade Changer

If all the ice melts, >200 ft sea level rise

- 1-3 m rise predicted by 2100, but predicted rates keep increasing.
- Circa 5000 yrs for 200 foot rise (big error bars), but on the scale of the rise and fall of civilizations
- Need sediment to counteract rising seas.





Really Big Low Head Dams as Tide Barriers-

-St Petersburg-16 mi

Venice-1.5 mi (3 openings)

Carquinez Strait? -1 mi





Current Water Management Paradigms are Causing Substantial Long-term Problems

**-Is this a map of the past
or a blueprint for the
future?**

**-A 150 Year Restoration
Plan? (Delta is currently
sinking)**

**-No farms, no food, and...
No water no farms,
No sediment, no farmland**

**-Floods are inconvenient
but droughts destroy
civilizations**





Conclusions

- ▣ **Sediment is a resource**
 - No sediment = no alluvial valleys
 - Base flow water elevation is key design feature
- ▣ **Three components to stream restoration**
 - Sediment, Water and Biota
- ▣ **These processes play out at multiple spatio-temporal scales to:**
 - Lower stream and valley slopes
 - Lower stream power per unit width
 - Increase retention rates of both sediment and water
 - **Benefit Fish, Benefit Farmers**



Take Home Messages



- ❑ Degraded streams have limited ecological function
- ❑ The scale of restoration needs to be commensurate with the scale of the actions that caused the degradation
- ❑ Restoration needs to occur on a time frame relevant to recovery time frames for target species (e.g. 100 years for salmon) so as to avoid extinction



Regulatory Issues

- In terms of adverse effects-spatial and temporal scales of effects needs to be reconsidered
 - Short-term v. long-term
 - Fine-scale v. coarse scale
 - Individual v. population



Regulatory Scenarios-BDs/BDAs

1. Unknown what is in pond above BD nonC/ESA adult Chinook in pool below, no “human visible” fish passage
2. C/ESA juvenile coho in pond above BD C/ESA adult coho in pool below, no “human visible” fish passage.
3. C/ESA juvenile coho abundant in pond above BD C/ESA juvenile coho in pool below, no “human visible” fish passage.
4. Scenario 3 but below BDA, stream is drying up, and the last remaining wet reach is just below the beaver dam.



Regulatory Scenarios-BDs/BDAs

1. C/ESA juvenile coho in pond above BDA nonC/ESA adult Chinook in pool below, no “human visible” fish passage
2. C/ESA juvenile coho in pond above BDA C/ESA adult coho in pool below, no “human visible” fish passage.
3. C/ESA juvenile coho abundant in pond above BDA C/ESA juvenile coho in pool below, no “human visible” fish passage.
4. Scenario 3 but below BD, stream is drying up, and the last remaining wet reach is just below the beaver dam.
5. BD increases total amount of good habitat, but also increases total habitat that is less good (e.g. temp, DO issues)





Stage Zero Restoration:
= Process discontinuity management
= habitat management,
Does not = continuity management

- ▣ **Sediment = Essential ingredient**
 - Deposition and sorting
 - Aggradation
 - Erosion and avulsions
 - Sediment = a resource
 - No Sediment = No Valley floor
- ▣ **Water**
 - Flow diffusion
 - Groundwater recharge
 - Hyporheic exchange
 - Long inundation periods
 - Less distinction between wetlands and channels and floodplains

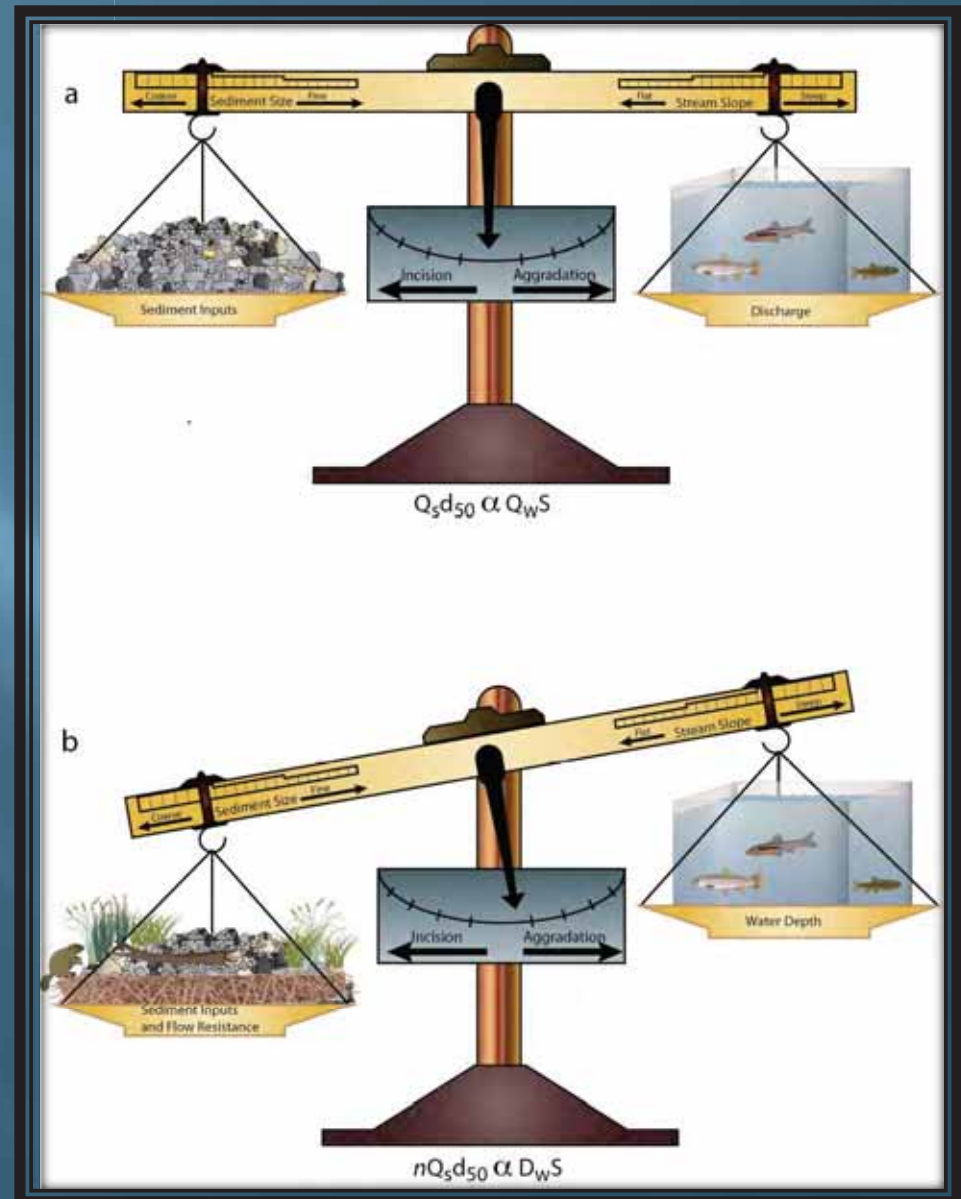


Stage Zero Attributes or Tendencies

- ▣ Multi-threaded or no definable channels (vegetation)
- ▣ Common in unconfined, low-gradient valleys
- ▣ Low stream power/unit width
- ▣ Wide range of hydrologic conditions
- ▣ Abundant off-channel habitat w/long inundation periods
- ▣ Elevated water tables
- ▣ Wide range of Velocity/Depth combinations
- ▣ Blurred line between wetlands and channels
- ▣ Biological flow resistance in channels, on banks and on stream adjacent surfaces (e.g. floodplains and mid-channel islands)
 - Aquatic vegetation
 - Emergent vegetation
 - Live trees and shrubs
 - Dead trees
 - Beaver dams-dead trees and shrubs (N. Hemisphere)



Continuity of Sediment Transport or Habitat formation?





Restoration “Toolkit” for Building Stage Zero Channels/Valleys

- ▣ Beaver Dams
- ▣ Live Vegetation
- ▣ Large Wood
- ▣ Levee Setbacks
- ▣ Landslides
- ▣ Alluvial Fans
- ▣ Sea Level Rise
- ▣ Tectonics

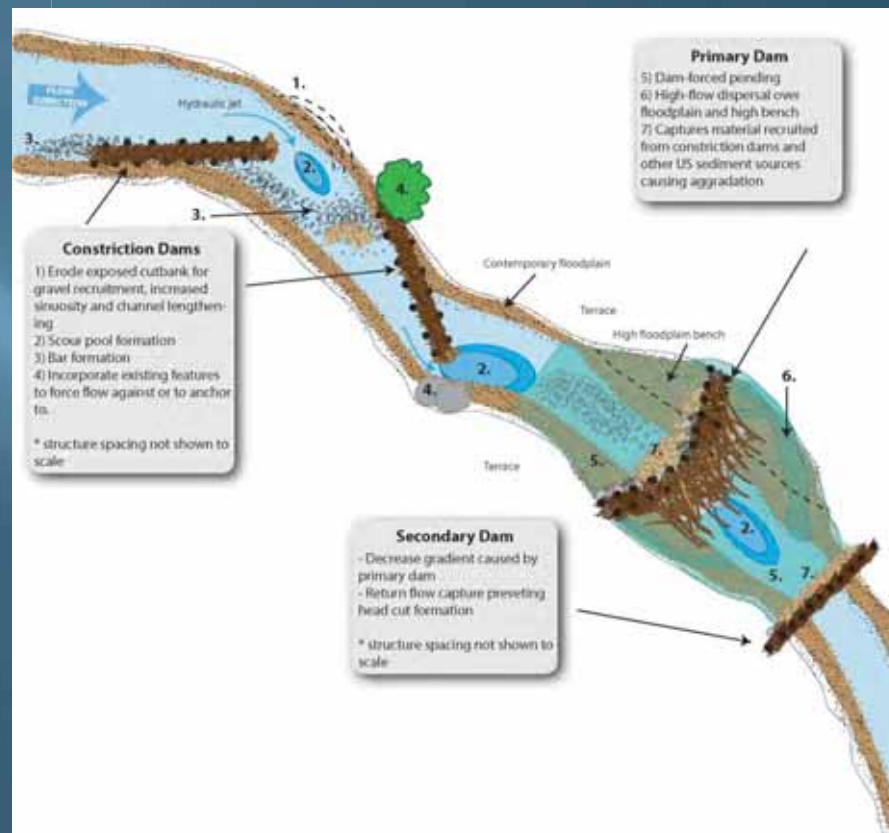
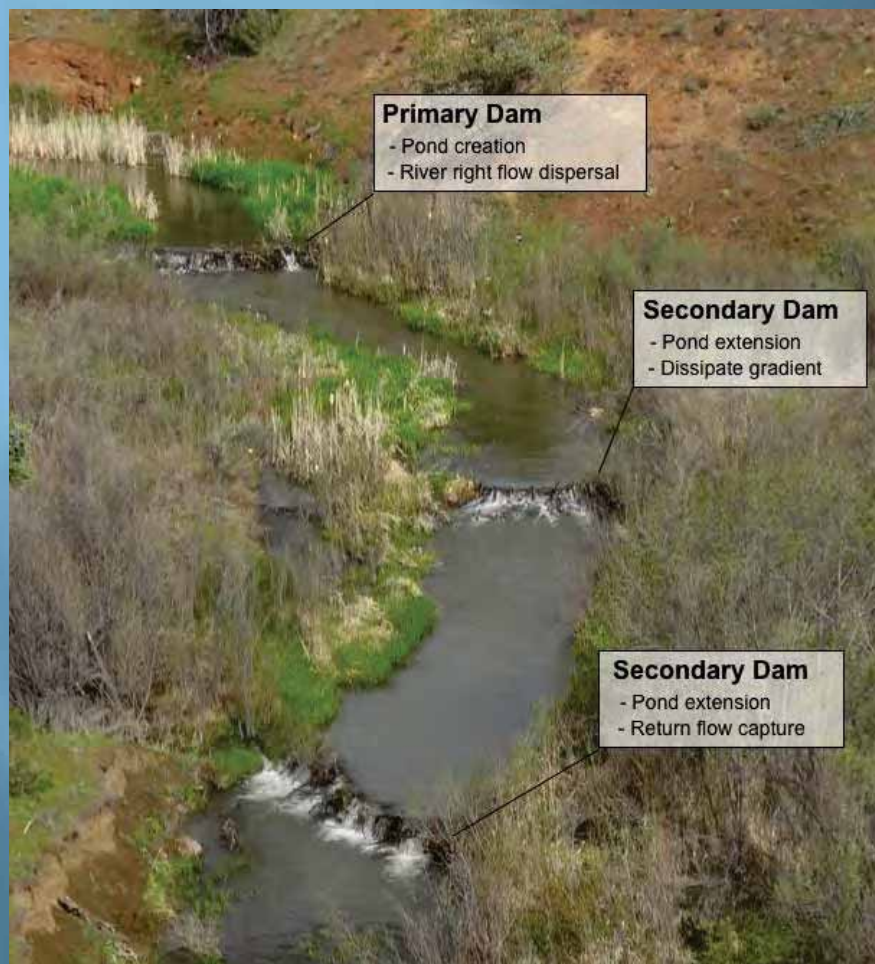
Increasing Time Scales

These Tools:

- Increase Flow Resistance,
- Lower Slopes
- Reduce Stream Power/Unit Width

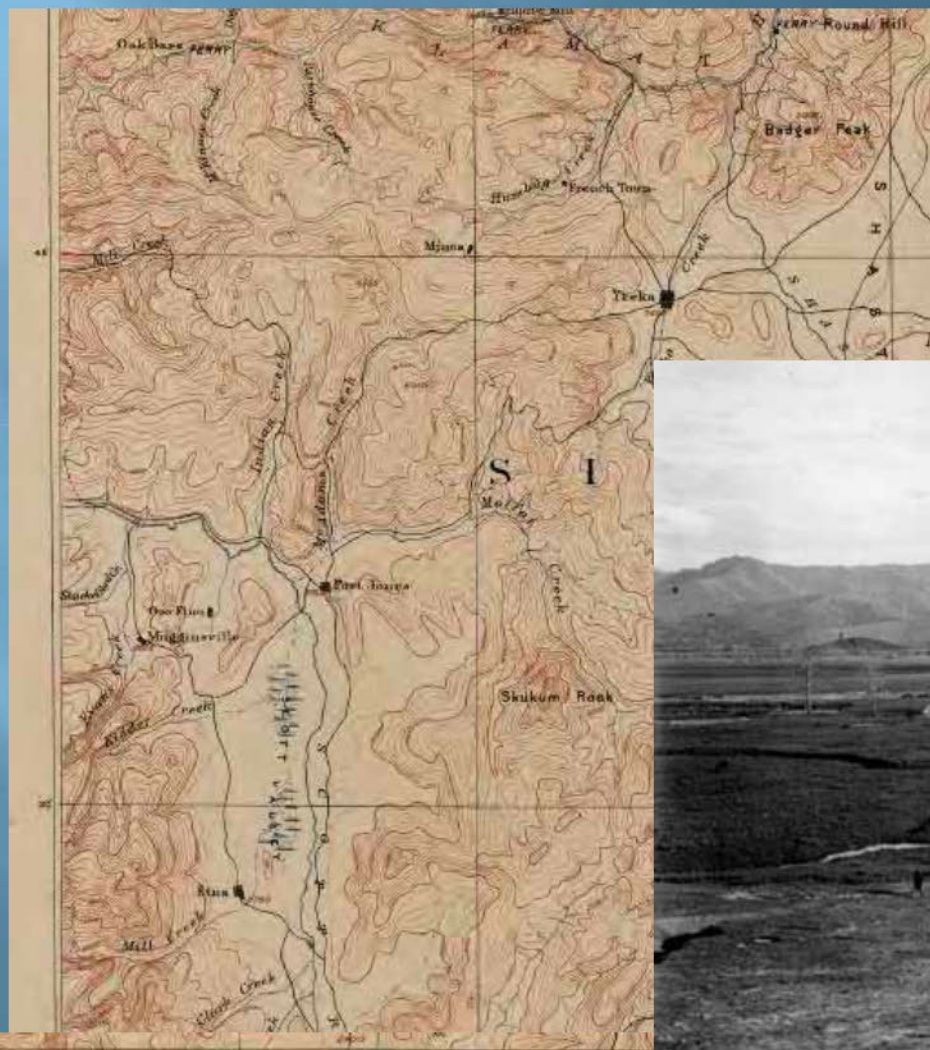


BDAs work together

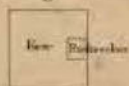




Historical data helpful: e.g. extensive wetlands and beaver dams in Scott Valley



Henry Gannett, Chief Geographer
A.H. Thompson, Geographer in charge
Triangulation by Mark B. Kerr
Topography by M. B. Kerr and Eugene Rickewick
Surveyed in 1885-86



Scale 1:250,000
Contour Interval 200 feet
2141241216

MAPS PRE-1945 TOPO CA SHASTA 1885
PCL MAP 00002

CALIF.
470

Entered at Sept. 1886. reprinted Sept. 1912

SHASTA

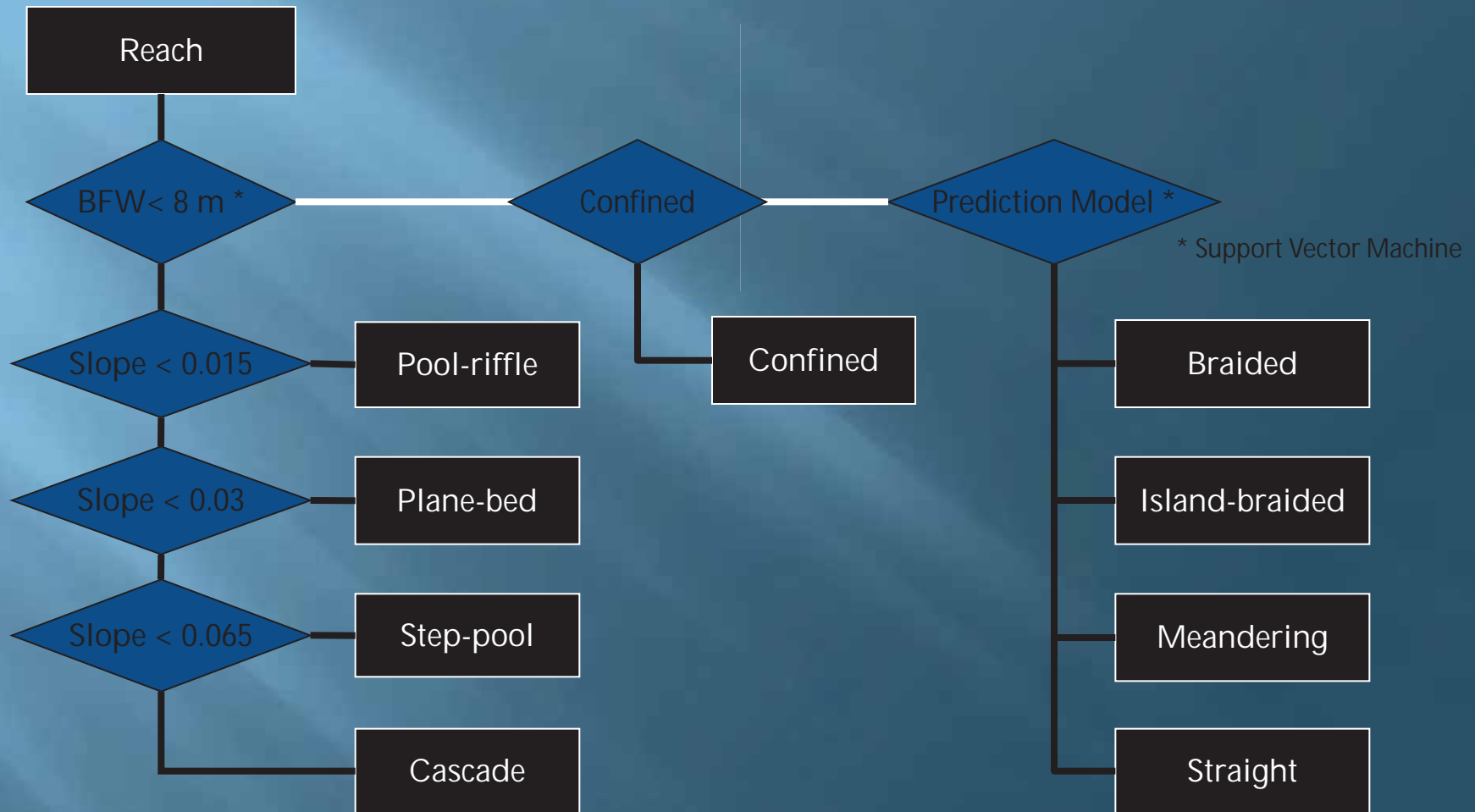


Beaver and riparian vegetation have been part of stream ecosystems for a long-time, so we are currently in a somewhat unique situation

Photos Courtesy of Carol Evans
BLM



Where are you in the network?



Small "Mountain" Channels
Montgomery and Buffington (1997)

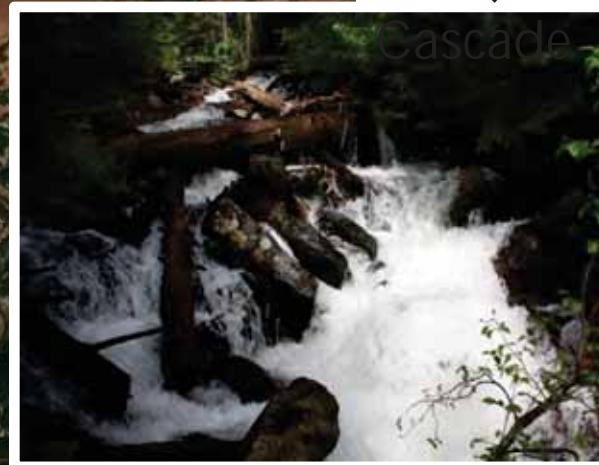
Large Unconfined Channels
Beechie and Imaki (in review)



Step Pool



Braided



Cascade



Confined



NOAA
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**Restoration
Center**

Saving Taxpayer Dollars While Protecting Natural Resources

An Overview of the NOAA Restoration Center's
Programmatic Biological Opinions and Coastal
Commission Consistency Determinations in CA

Bob Pagliuco, NOAA Restoration Center

Salmon Restoration Federation Conference, April 14, 2018

Co-Authors

Erik Schmidt - Sustainable Conservation

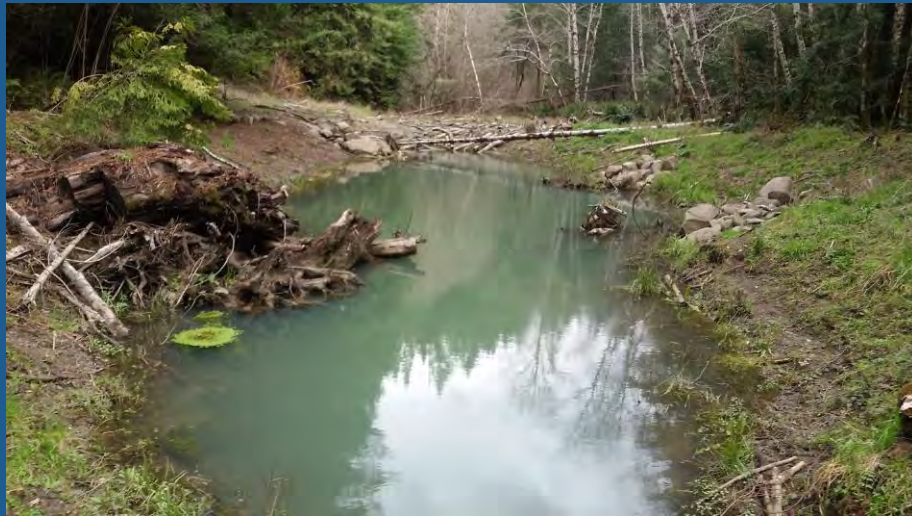
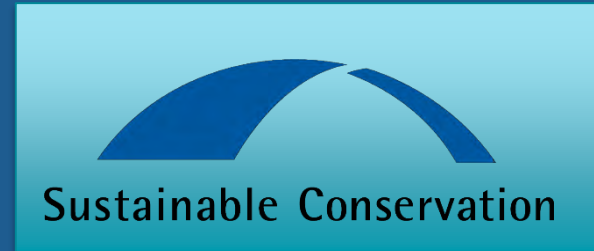
Erika Lovejoy - Sustainable Conservation

Katie Haldeman – Sustainable Conservation

Joe Pecharich – NOAA Restoration Center

Stacie Smith – ERT-NOAA Restoration Center

Ruth Goodfield - ERT-NOAA Restoration Center





Science, Service, Stewardship

National Marine Fisheries Service's Mission Statement:

“Stewardship of living marine resources for the benefit of the nation through science-based conservation and management and promotion of the health of their environment.”



2/3 of assessed waterways
in California are impaired

90% of California's wetlands
and riparian areas have been lost

350+ species of wildlife
and plants in California are
considered threatened or
endangered



ESA and Incidental Take of Listed Species



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Endangered Species Act of 1973 - provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend.

DEFINITION of TAKE: To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct (Section 3)

CIVIL PENALTIES: Fines up to \$25,000 per violation (Section 11)

CRIMINAL PENALTIES: Fines up to \$50,000 or imprisoned for up to one year, or both (Section 11)

Permits and Authorizations needed for Restoration Projects in CA



**US Army Corps
of Engineers®**



CEQA

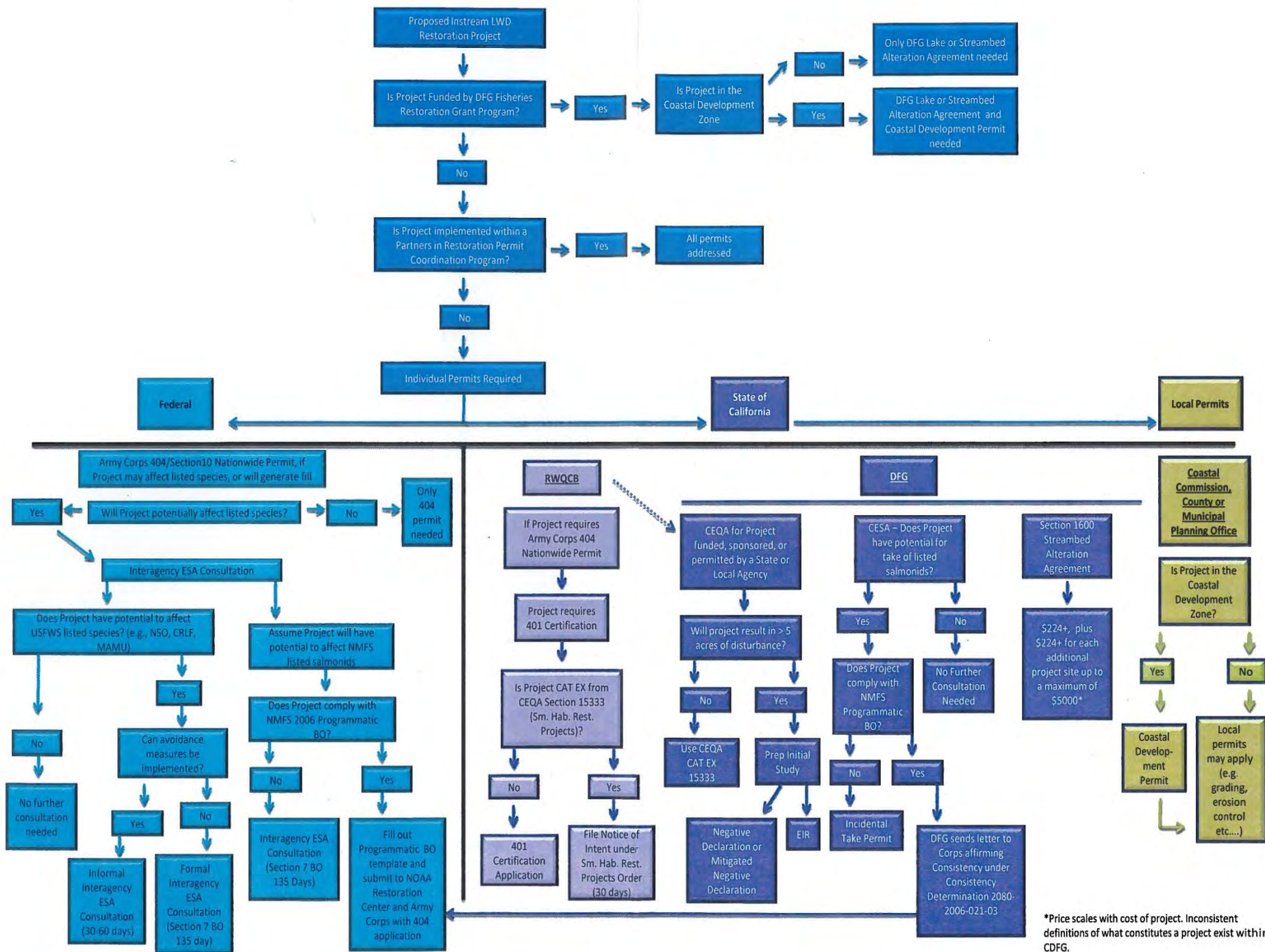


County

NEPA



NOAA FISHERIES



*Price scales with cost of project. Inconsistent definitions of what constitutes a project exist within CDFG.



Programmatic or “Simplified” *Permitting*

*A more efficient regulatory process for
qualifying projects that:*

- ✓ Covers specific project types and habitat
- ✓ Lays out conditions up front
- ✓ Saves time and resources
- ✓ Protects T and E Species



Traditional ESA Section 7 Permit Process

versus

Programmatic ESA Section 7 Process

- Develop and define project
 - Construction approach
 - Timing and sequencing
- Prepare BA
 - Conservation measures
 - Effects analysis
- Initiate consultation, agency review, and interaction
- Potential changes in approach, new measures added
- Up to 135 day review

- Develop project by reviewing PBO sideboards to inform best approach to:
 - Construction, timing
 - Conservation measures
- No BA preparation
- Effects analysis is prescribed
- Consultation and agency review accelerated
- Shorter review time



NOAA RC Programmatic Biological Opinions



**NOAA
FISHERIES**

- Santa Rosa – 2006 and 2016
- Northern CA/Arcata – 2012 (2.5 year consultation w/o SusCon)
- Southern CA/Long Beach – 2015
- Central Valley/Sacramento – 2018

Federal Nexus

- NOAA Restoration Center funding
- US Army Corps Issuance of Section 404 (CWA) or Section 10 (HRA)

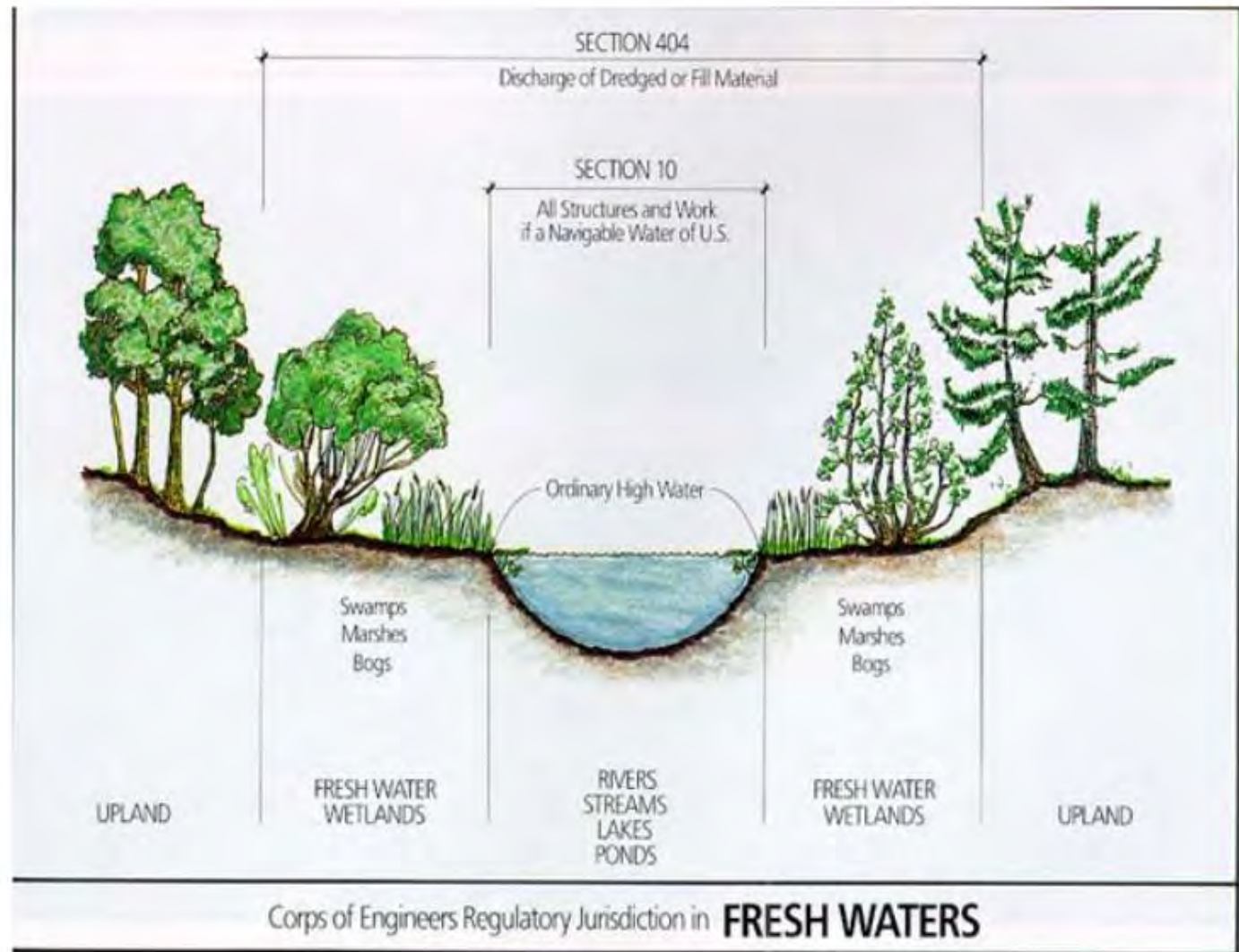
NOAA RC Programmatic is not a blanket permit (i.e., it is not a Regional General Permit) and only provides Federal ESA coverage



US Army Corps of Engineers Jurisdiction



**NOAA
FISHERIES**



Central Coast-Mendocino/Santa Rosa PBO



- PBO Duration 2016-indefinite
- Coverage - all coastal anadromous streams and estuaries (excluding the San Francisco Bay) from San Luis Obispo County (Salinas River and tributaries) north to, but not including, the Mattole River.
- Species Covered
 - Endangered CCC coho salmon ESU
 - Threatened NC steelhead Distinct Population Segment (DPS)
 - Threatened CCC steelhead DPS
 - Threatened S-CCC steelhead DPS
 - Threatened CC Chinook salmon ESU
 - Critical Habitat and EFH

Covered Activities – Santa Rosa



NOAA
FISHERIES

- Instream Habitat Improvements
- Instream Barrier Modification/Passage Improvement
- Stream Bank and Riparian Habitat Restoration
- Upslope Watershed Restoration
- Creation of Off-channel/Side-channel Habitat Features
- Removal of Small Dams
- Water Conservation Projects
- Beaver Dam Analogues



Santa Rosa PBO Limitations



**NOAA
FISHERIES**



- Maximum of 40 projects per year to be authorized under the Program
- Construction window is from June 15 Through October 31.
- Dewatered area \leq 1000 feet
- \leq 1 acre disturbed for staging area
- Any stream crossing removals in a salmonid bearing stream must be 1500 meters apart.
- Crossings in a non-fish bearing stream must be 100 feet apart.
- Overstory canopy cannot be reduced by more than 20%
- Removal of native trees with defects, cavities, leaning toward the stream channel, nest, late seral characteristics, and large snags > 16 in diameter at breast height (dbh) will be retained.*
- Downed trees (logs) > 24 in. dbh and 10 ft. long will be retained on upslope sites or used for instream habitat improvement projects.

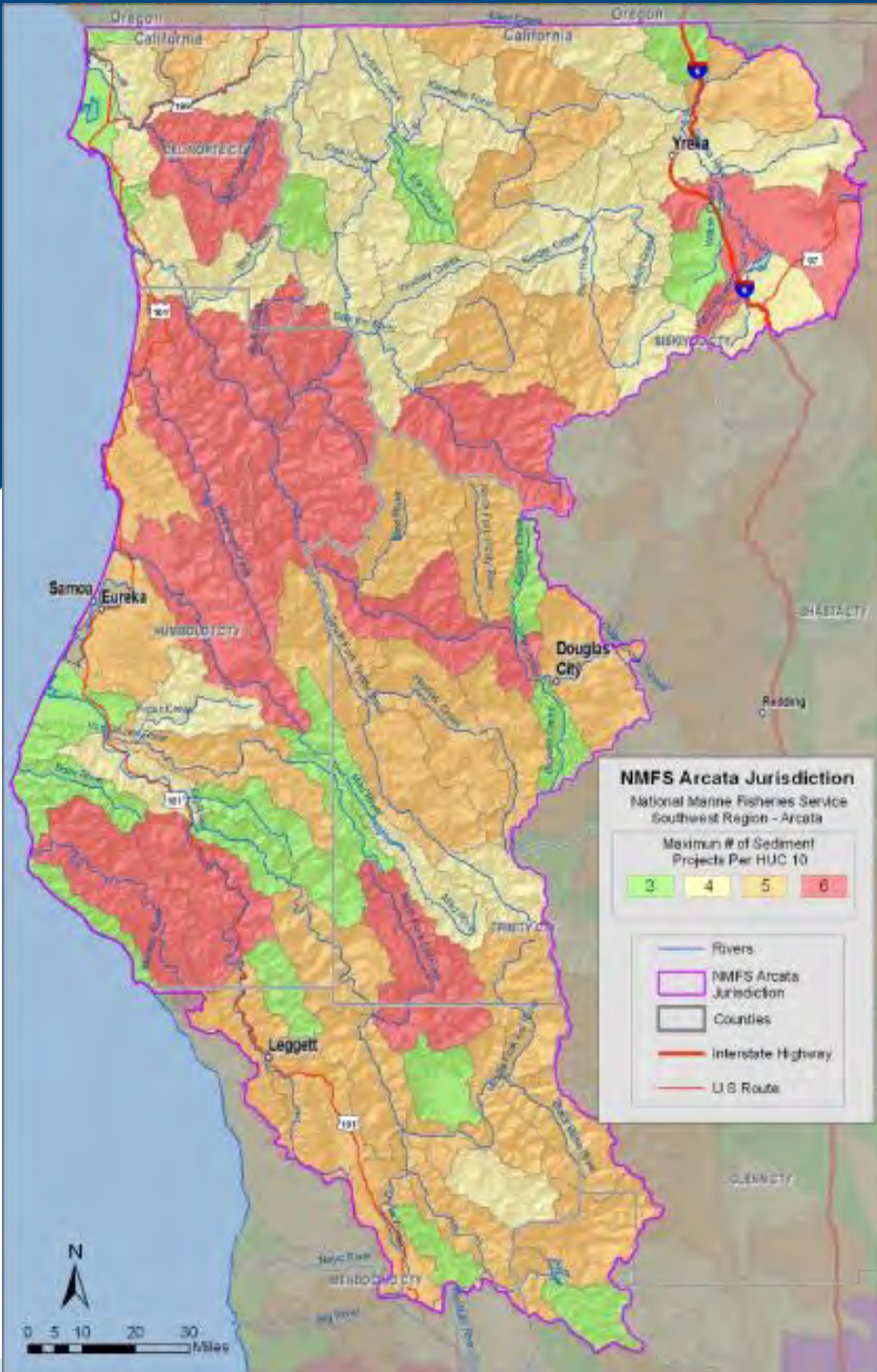
Northern CA/Arcata PBO

PBO Duration 2012-2022

Coverage from the Mattole River to the OR border

Species Covered

- Threatened Southern Oregon/Northern California Coast (SONCC) coho salmon ESU
- Threatened California Coastal (CC) Chinook Salmon ESU
- Threatened Northern California (NC) steelhead DPS
- Threatened Southern DPS of Pacific Eulachon
- Endangered Southern Resident Killer Whales DPS
- Threatened Southern DPS of North American Green Sturgeon
- Critical Habitat and EFH



Covered Activities - Arcata



NOAA
FISHERIES

- Instream Enhancement/Restoration
- Instream Barrier Modification/Passage Improvement
- Bioengineering/Riparian Habitat Restoration
- Upslope Watershed Restoration
- Removal of Small Dams (permanent and flashboard)
- Creation of Off-channel/Side Channel Habitat
- Developing Alternative Stockwater Supply
- Tailwater Collection Ponds
- Water Storage Tanks
- Piping Ditches (need a 1707)
- Fish Screens
- Headgates and Water Measuring Devices



Arcata PBO Limitations

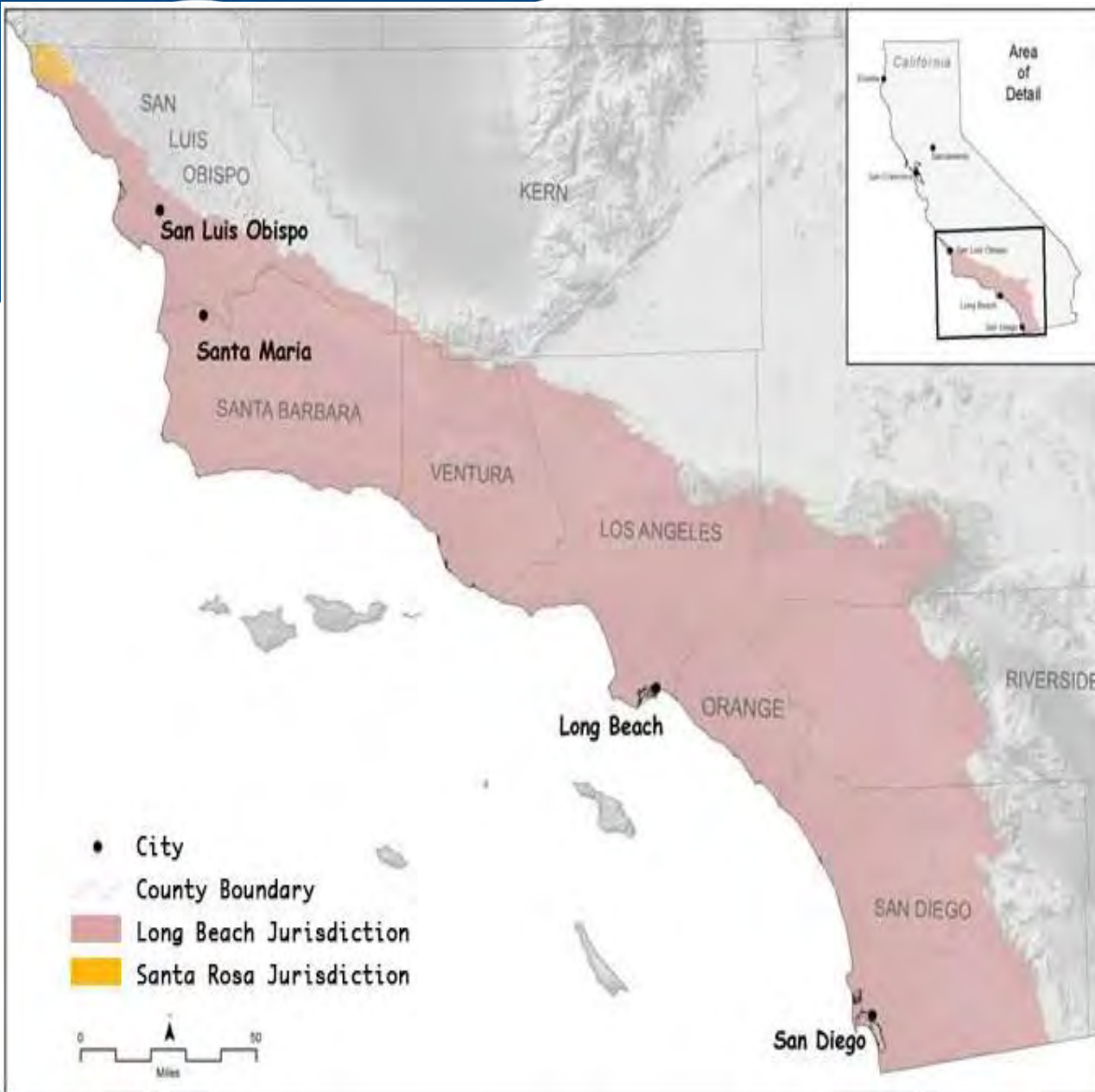


**NOAA
FISHERIES**

- Maximum of 60 projects per year to be authorized under the Program
- Dewatered area \leq 1000 feet
- \leq 0.25 acre disturbed for staging area
- The general construction season will be from June 15 to November 1.
- *Buffer Between Projects Implemented in the Same Year* - 800 ft downstream buffer from any other sediment producing projects



Southern CA/Long Beach PBO



- PBO Duration - 2015-2025
- Northern San Luis Obispo County line to the U.S.-Mexico border.
- Species Covered
 - Threatened South-Central California Coast Steelhead DPS
 - Endangered Southern California Coast Steelhead DPS

Covered Activities – Long Beach



NOAA
FISHERIES

- Instream Habitat Improvements
- Instream Barrier Modification/Passage Improvement
- Bioengineering/Riparian Habitat Restoration
- Upslope Watershed Restoration
- Creation of Off-channel/Side Channel Habitat
- Water Conservation Projects
- Fish Screens
- Removal of Small Dams (explosives allowed)



Southern CA/Long Beach PBO Limitations



NOAA
FISHERIES

- Maximum of 15 projects per year to be authorized under the Program
- Dewatered area \leq 500 feet
- No dam removal projects that impound more than 900-cubic yards of sediment
- No riprap bank protection, other than bridge installation projects where the minimum amount of riprap needed to protect against scour is permitted
- No construction of new or retrofitting of older fish ladders/fish ways
- \leq 0.5 acre disturbed for staging area
- The general construction season is from June 1 to November 30.
- *Downed trees (logs) > 24-in. dbh and 10-ft. long will be retained on upslope sites or used for instream habitat improvement projects.*



Central Valley/Sacramento PBO



- PBO Duration 2018-2028
- USFWS just signed on
- Covered Species:
 - Sacramento River winter-run Chinook salmon ESU
 - Central Valley spring-run Chinook salmon ESU
 - Central Valley steelhead DPS
 - Southern DPS of North American Green sturgeon
 - Critical Habitat and EFH

Proposed Covered Activities - Sacramento



**NOAA
FISHERIES**

- Levee setback/breaching & floodplain restoration
- Wetland restoration & enhancement
- Creation of off-channel/side-channel habitat
- In-stream habitat improvements
- Bio-engineered streambank stabilization & riparian restoration
- In-stream barrier removal/modification
- Fish screens/diversion screening
- In-stream flow enhancement/ water conservation
- Upslope watershed restoration
- Invasive spp. removal & riparian revegetation (Includes Herbicides)
- Piling and Other Instream Structure Removal to Benefit Water Quality and Habitat
- Seasonal inundation of active ag land for primary productivity
- Fish monitoring



Sacramento PBO Limitations (Proposed)



NOAA
FISHERIES

- Maximum of 60 projects per year to be authorized under the Program
- No use of undersized riprap (100 yr flow)
- No managed surrogate floodplain projects that require manual ingress and egress of juvenile salmonids.
- Dewatered area \leq 1000 feet
- \leq 0.5 acre disturbed for staging area
- The general construction season will be from June 1 to October 31.





NOAA FISHERIES



NOAA

APPLICATION FOR INCLUSION IN THE NOAA RC
ARCATA OFFICE PROGRAMMATIC BIOLOGICAL OPINION

INSTRUCTIONS

- Read through the Programmatic Biological Opinion (BO) to determine if the project fits under the described activities.
- Fill out an [online application from the U.S. Army Corps of Engineers](#), if necessary.
- Fill out the application below.
- Review the list of specific "Minimization and Mitigation measures" on the last pages of this application.
- Sign and date the application.
- Attach a map of the project site, project site photos, a dewatering plan, and any other documents as necessary, then submit the completed form to the NOAA Restoration Center by e-mailing it to bob.pagliuca@noaa.gov.

General Information

Applicant Name

Landowner Name

Project Name

Project Location

Project Start Date

Stream

Latitude

Project End Date

Watershed Select

Longitude

Project Description

How is your project expected to fit under the Programmatic BO?

This project is applying for / has received funding from the NOAA Restoration Center.

This project is expected to require / has received a permit from the U.S. Army Corps of Engineers.

Which salmonid species are present at your project site?

Southern Oregon / Northern California Coho Salmon

Central California Chinook Salmon

Upper Klamath / Trinity River Chinook Salmon

Northern California Steelhead Trout

Klamath Mountains Province Steelhead Trout

What is the current problem addressed by this project? What is the context of this issue in the watershed?

What solution are you proposing? What are the goals, objectives, and proposed benefits of your project?



**NOAA
FISHERIES**



NOAA

APPLICATION FOR INCLUSION IN THE NOAA RC
ARCATA OFFICE PROGRAMMATIC BIOLOGICAL OPINION

PROJECT INFORMATION (continued)

Please indicate the type(s) of techniques your project is likely to involve.

Check all that apply.

Bioengineering and/or riparian habitat restoration
Upslope watershed restoration
Instream habitat structures and/or improvements
Barrier modification for fish passage improvement
Removal of small dam(s), permanent and/or flashboard
Creation of off-channel/side-channel habitat

Development of alternative stockwater supply
Creation of tailwater collection pond(s)
Construction/use of water storage tank(s)
Construction/use of piping ditch(es)
Installation of fish screen(s)
Use of headgate(s)/water measuring device(s)

Will construction occur between Jun 15 - Nov 1? _____

Will riparian vegetation (>2 inches dbh) removal exceed 0.25 acres? _____

Will native trees >16 inches dbh and 20 feet high with cavities, trees with nests, or trees > 36 inches dbh be removed? _____

Will dewatering and/or fish relocation be required? _____

Will mechanized equipment be working in the stream channel or within 25 feet of a wetted channel? _____

Will the project involve activities not described as a part of the Proposed Action section (Section II) in the Biological Opinion?
If so, please explain.

Please describe the specific construction elements of your project, including dimensions, timing, equipment used, and any staging area / access roads needed.

What minimization and avoidance measures are already planned as a part of this project?

Please attach photos and a map of the project site.

Attach photos separately. Pre-project photos should be taken from the four cardinal directions and from established locations for comparison to post-project photos. Post-project photo documentation will be required of all approved projects.



NOAA FISHERIES



NOAA RC ARCATA OFFICE PROGRAMMATIC BIOLOGICAL OPINION POST-PROJECT MONITORING FORM

INSTRUCTIONS

- Fill out the NOAA RC Arcata Office Programmatic Biological Opinion Post-Project Monitoring Form below.
- Send the completed form to the NOAA Restoration Center at fish.recovery@noaa.gov.

General Information

Applicant Name			
Landowner Name			
Project Name	Applicant Name		
Project Location			
Project Start Date	Stream	Latitude	
Project End Date	Watershed	Select	Longitude

General Questions (applicable to all projects to quantify impacts and benefits to fish)

Target Species (check all that apply)	<input type="checkbox"/> SONCC Coho <input type="checkbox"/> CCC Chinook	<input type="checkbox"/> UKTR Chinook <input type="checkbox"/> NC Steelhead	<input type="checkbox"/> KMP Steelhead
Restoration/ Disturbance	<ul style="list-style-type: none">Total linear feet of upstream habitat made accessibleTotal linear feet of stream bank stabilized or planted with riparian speciesTotal linear feet of stream disturbedTotal linear feet of stream dewatered		
Fish Relocation	<ul style="list-style-type: none">Was NMF's notified at least two weeks prior to relocation activities?Name / contact information for the qualified biologist(s) involved in relocation. Include the DFG scientific collection permit number.Name / contact information for the qualified assistant(s) involved in relocation. Include the DFG scientific collection permit number.Where were fish relocated?What (if any) unanticipated circumstances arose during fish relocation activities?Please attach monitoring data for all relocation events. <u>Attach as a separate file.</u>		



NOAA RC ARCATA OFFICE PROGRAMMATIC BIOLOGICAL OPINION POST-PROJECT MONITORING FORM

GENERAL QUESTIONS (continued)

Please summarize the total number of fish captured, injured, and/or killed across all relocation events:

Species	Captured	Injured	Killed
Southern Oregon / Northern California Coast (SONCC) Coho			
California Coastal (CCC) Chinook			
Upper Klamath / Trinity River (UKTR) Chinook			
Northern California (NC) Steelhead			
Klamath Mountains Province (KMP) Steelhead			

Project Terms and Conditions

Overall

- Please describe the activities that occurred during implementation including the problems addressed by the project, timing, restoration techniques, unforeseen issues, restoration metrics (acres/miles restored), and anything else that will describe the work that has been completed during the implementation season.

Construction

- Construction duration: From to
- Were all bare areas larger than 10 feet by 10 feet treated for erosion control?
- If no, please explain.
- Is photo documentation provided for erosion control?
- If so, please attach. Attach as a separate file.
- Were there any toxic leaks/spills during implementation (incl. petroleum products)?
- If yes, explain (i) how the leak or spill was contained on site (ii) if any chemicals were directly in contact with surface waters, and (iii) who was informed at the time of the accident.
- Please attach a full copy of the as-built drawings. Attach as a separate file.



NOAA RC ARCATA OFFICE PROGRAMMATIC BIOLOGICAL OPINION POST-PROJECT MONITORING FORM

PROJECT TERMS AND CONDITIONS (continued)

Revegetation

- Was revegetation proposed as part of the approved project?
- Revegetation duration: From to
- Was revegetation implemented as proposed?
- If no, please explain.

Monitoring

- Please attach photo documentation of pre- and post-project conditions. Attach as a separate file. Photos should be taken from the four cardinal directions and from established photo points for comparison to pre-project photo documentation.

Additional Information for Monitoring Reports

Fish Passage Improvement Projects

- Two annual monitoring reports shall be submitted to the NOAA RC no later than April 30th of each of the 2 years following construction, and shall contain the following information:
 - Photo reference points of barrier remediation sites shall be established following construction. Photos shall be taken under a variety of flow conditions including high winter flows (including at least one bank full event) and summer low flows once a year for a minimum of two years. For culvert projects, photo points shall also include the culvert inlet and outlet to demonstrate the condition of culvert bottom.
 - A design report, including verification of velocity, slope, water depths, and energy dissipation (if used). The purpose of including this report is to ensure design plans were met. The validation report shall include an evaluation of the barrier remediation site for elevations, depth and velocities at the range of design flows and operational configurations.

Road Projects

- Roads shall be assessed by the project manager for 2 years to ensure all drainage facilities are performing as anticipated. At least one monitoring report shall be submitted to the NOAA RC no later than June 1st of the 2nd year following construction, and shall include the following information:
 - Photos of treatment sites.
 - An assessment of the road (a) prior to the start of the winter period (October 15th) and (b) at least once during the rainy season (after 10 inches of rain, or February 15, whichever comes first).

Off-Channel Habitat Projects

- At least one monitoring report shall be submitted to the NOAA RC no later than April 30th of the year following construction, and shall contain the following information:
 - Pre- and post- (after winter flow event) information on the elevation of the inlet and outlet structure relative to the 2-year flood.
 - A description of if and when the off channel feature became disconnected from the main channel and at what flow level (cfs). This will require checking the project site daily when the off channel feature is becoming disconnected from the main channel.
 - A description of any stranded fish observed. If there are salmonids stranded, the applicant will contact Bob Pagliuca (707-825-5166) immediately to determine if a fish rescue action is necessary. CDFG Watershed Biologist Michelle Gilroy (707-445-6493) will also be contacted with fish rescue information and/or mortalities by species.

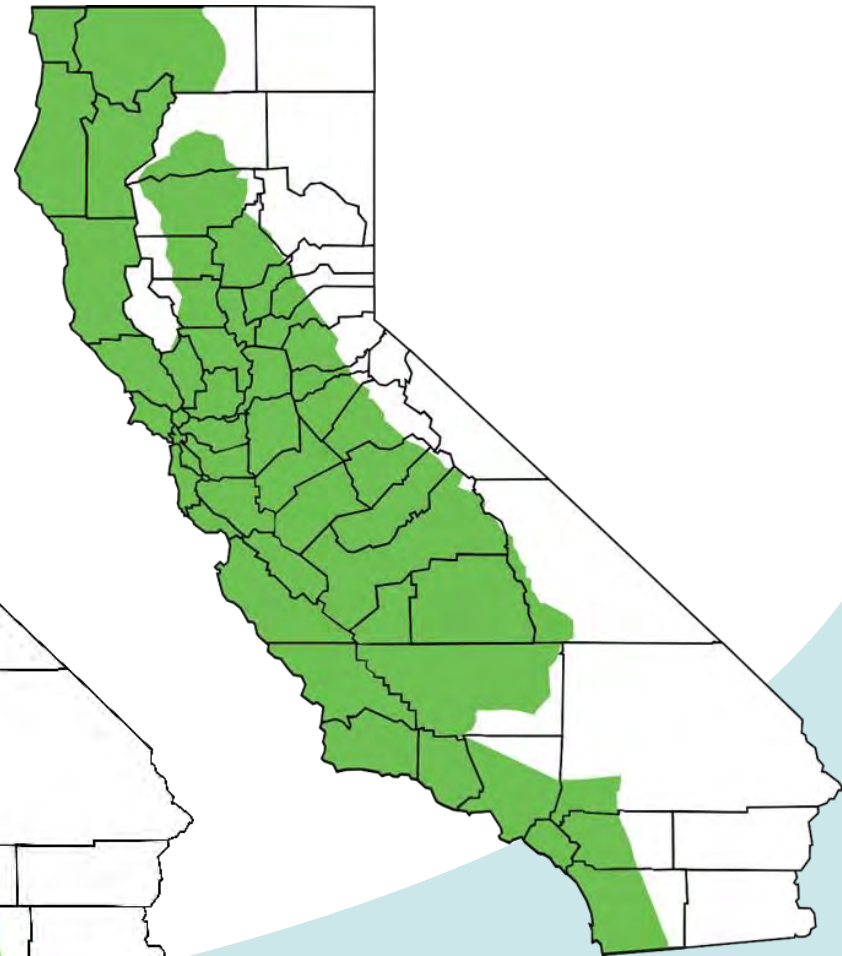


NOAA
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Current Coverage



Future Coverage



COST SAVINGS

Economic Analysis 2015



NOAA
FISHERIES



- Individual Permit (Consultant, USACE, NMFS PRD, NMFS RC)
 - NOAA RC BO & Applicant BA costs: \$25,000 to \$64,000
 - Cost of BA often comes out of grant funding
- Programmatic Permit
 - Under \$300 per project; annual costs less than \$2,000
- Cost savings of \$24,000-\$63,000 per project = more money on the ground for restoration!

NOAA RC PBO Projects



NOAA
FISHERIES

Programmatic	Number of Projects	Potential Cost Savings
Santa Rosa 2006	72	\$1,800,000 - \$4,608,000
Arcata 2012	45	\$1,080,000 - \$2,835,000
Southern CA 2015	1	\$24,000 - \$63,000
Santa Rosa 2016	19	\$456,000 - \$1,197,000
Total	140	\$3,360,000 – \$8,703,000





NOAA / California Coastal Commission Consistency Determination

- NOAA RC – funding OR technical assistance
- Alternate pathway for a coastal permit (no \$)
- North, Central and South Coasts



CCC CD Coverage and Benefits



NOAA
FISHERIES



- Northern and Central Coast CD – 2013 – Covers Oregon Border to San Luis Obispo County line.
- Southern CA CD – 2015-Covers Santa Barbara to Mexican Border
- Increased number of environmentally beneficial projects within Coastal Zone to restore coastal resources including listed species and sensitive habitats
- Short application process
- Provide the same regulatory rigor and oversight through a more efficient and collaborative process
- Reduce costs and time for project applicants and Commission staff



**NOAA
FISHERIES**



Covered Project Types

- Riparian planting/fencing
- In-stream habitat enhancement (LWD, boulders, bioengineering)
- Fish passage barrier removal
- Small dam removal
- Restoring tidal flow
- Water conservation projects
- Off channel habitat projects
- SAV restoration
- Native oyster reefs
- Wetland restoration

CCC CD	Number of Projects
Northern CA (2013)	17
Southern CA (2016)	Almost 1



**NOAA
FISHERIES**

Conclusions

- Programmatic ESA Permitting for Restoration Projects are almost available throughout all anadromous waters in CA.
- Coastal Commission Consistency Determinations are available throughout CA.
- As new programmatic BOs are developed, additional project types and more realistic protection measures are included.
- **The Programmatic BO's have saved taxpayer dollars** ranging from \$3.4 - \$8.7 million since 2006.
- We should continue to look for opportunities to develop programmatic statewide (USFWS Programmatic BO in CA)



Questions?

Arcata – bob.Pagliuco@noaa.gov

Santa Rosa – joe.pecharich@noaa.gov

Long Beach – Stacie.smith@noaa.gov

Sacramento – Ruth.goodfield@noaa.gov



Process-based Restoration of Depositional Stream Reaches— A Paradigm Shift to Stage 0

Deer Creek,
McKenzie Watershed,
Willamette National Forest



Fivemile Creek,
Coastal Lakes Watershed,
Siuslaw National Forest

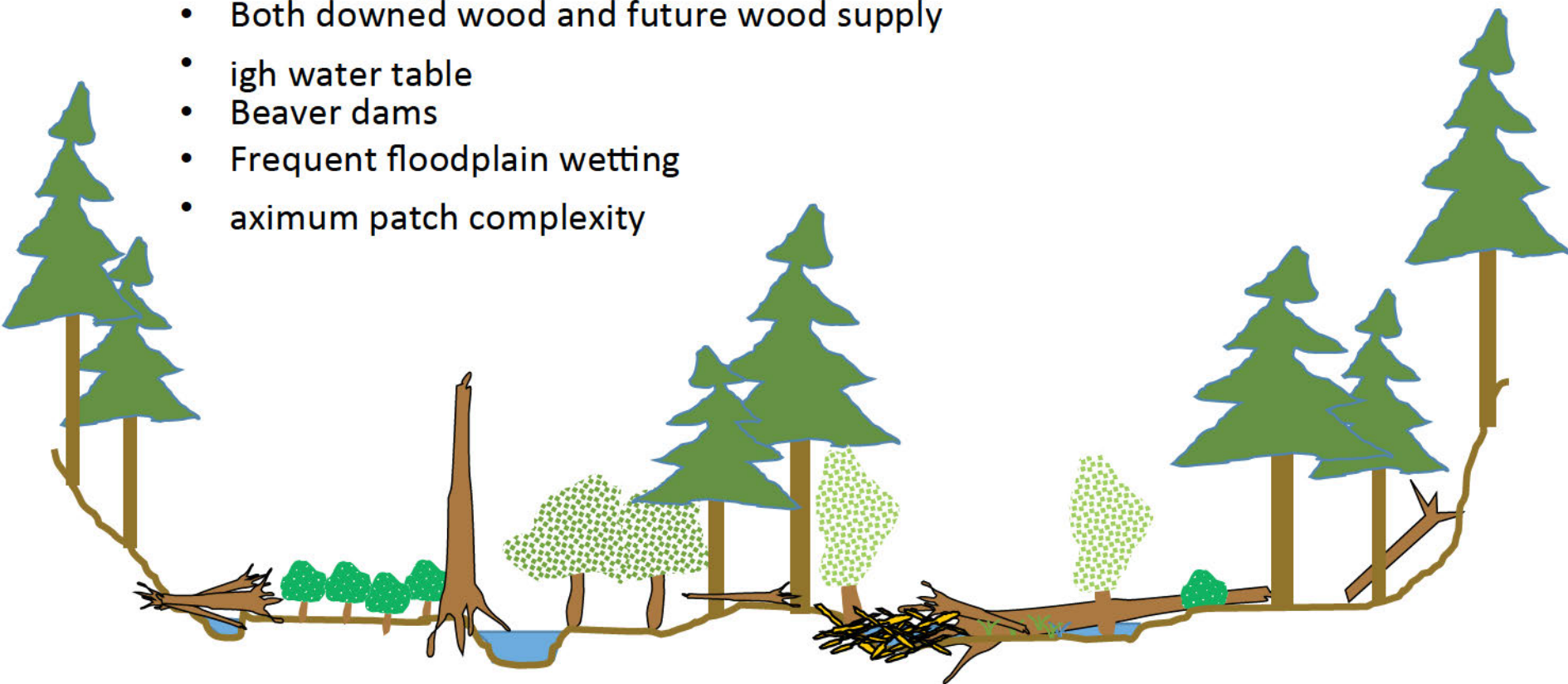


Johan Hogervorst
Forest Hydrologist
Willamette National Forest

- Historical Conditions
- Disturbance History
- Evolution of Restoration in the Pacific Northwest (particularly Oregon)
- Paradigm Shift to Stage 0 projects

Historic Floodplain Condition in Depositional Environments

- Vegetation diversity
- Elevational diversity
- Multiple flow paths
- Both downed wood and future wood supply
- High water table
- Beaver dams
- Frequent floodplain wetting
- Maximum patch complexity



Cluer and Thorne, 2013 – “STAGE 0” of the Stream Evolution Model

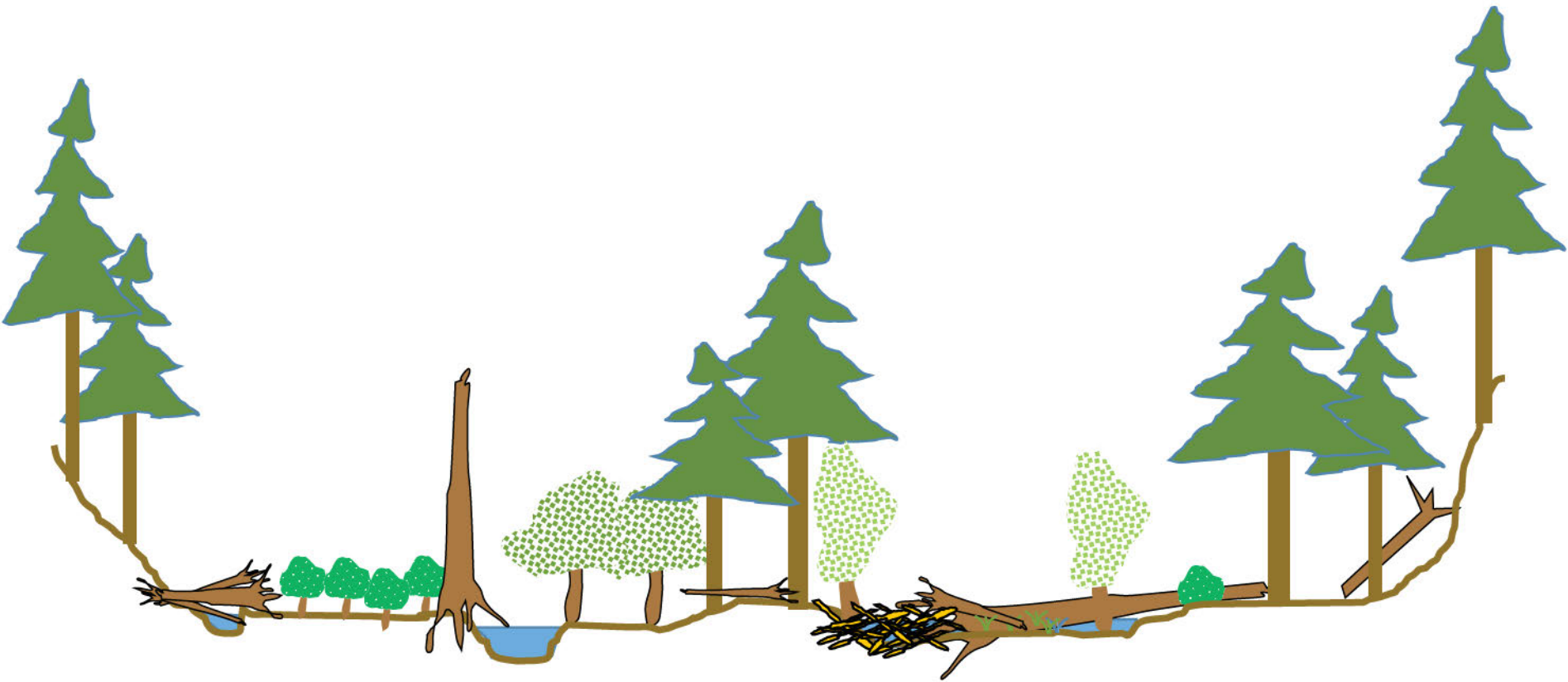
Reach-scale processes from Roni and Beechie, 2013*

<ul style="list-style-type: none">• outing and stream flow• Flood storage	} Flow Regime
<ul style="list-style-type: none">• ediment retention and storage• ediment transport• Floodplain building	} ediment Regime
<ul style="list-style-type: none">• Pool and bar formation• Channel movement	} Channel features
<ul style="list-style-type: none">• hading• oot reinforcement of banks• ood supply• Litter fall• Late season water storage (added)• ransport and storage of seeds and plant propagules	} Floodplain
<ul style="list-style-type: none">• Primary production• econdary Production• Feeding/predation	} Biology

* **Stream and Watershed Restoration: A Guide to Restoring Riverine Processes and Habitats**

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Changed Condition in Depositional Environments



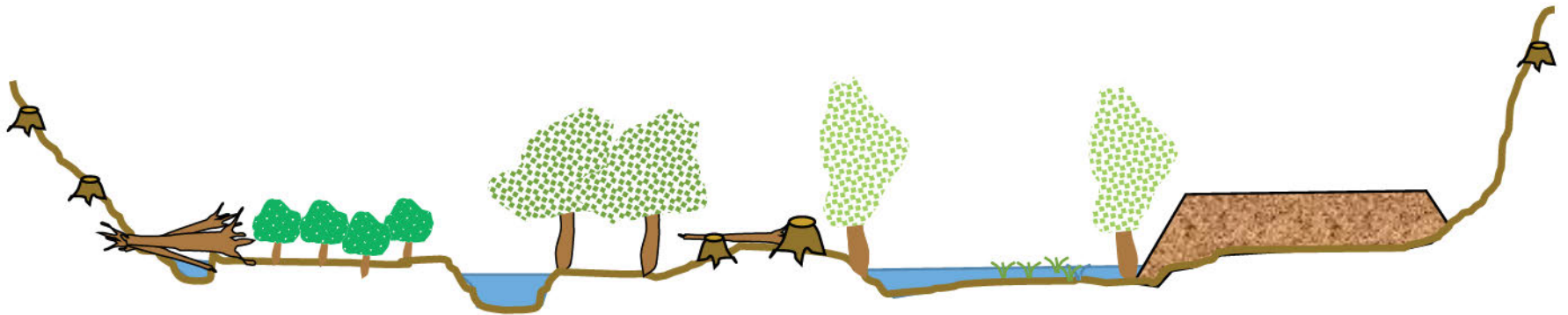
Changed Condition in Depositional Environments

- Road building



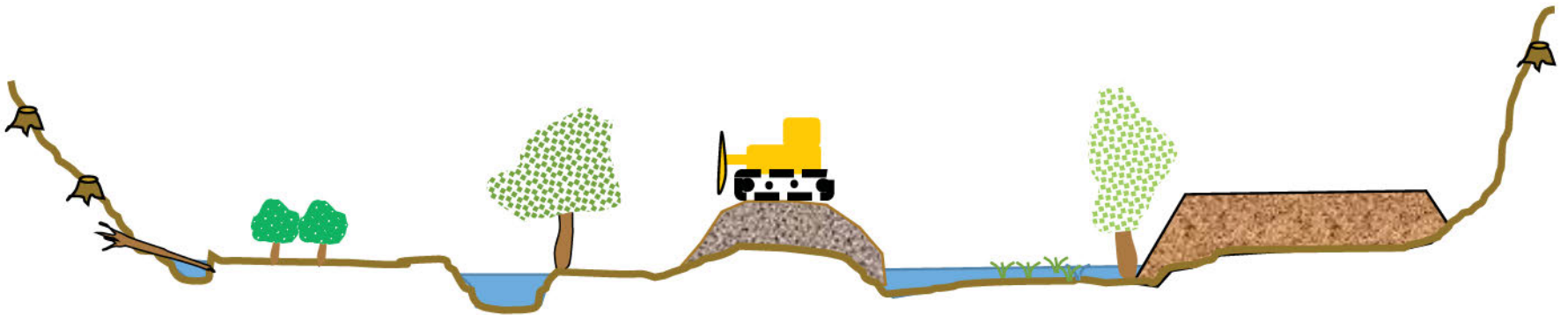
Changed Condition in Depositional Environments

- Road building
- Conifer harvest



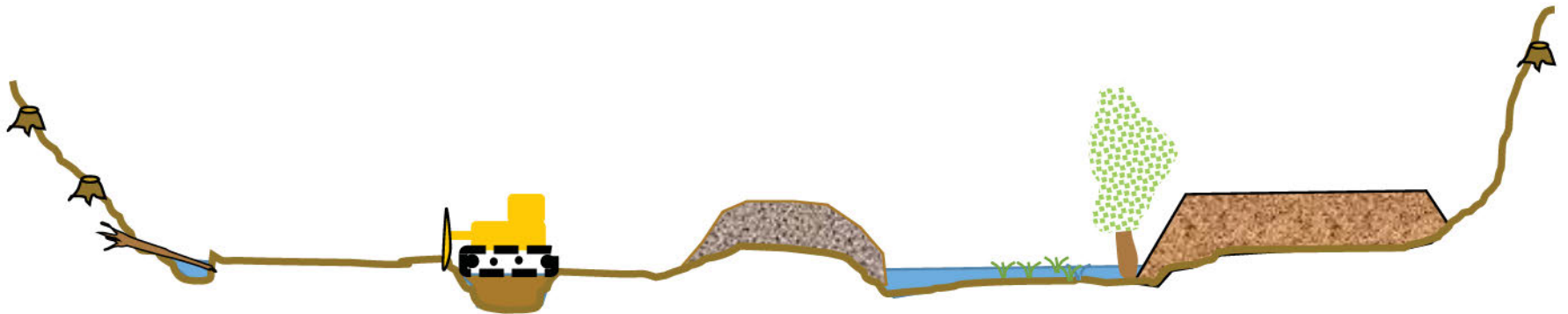
Changed Condition in Depositional Environments

- Road building
- Conifer harvest
- Diking and channelization



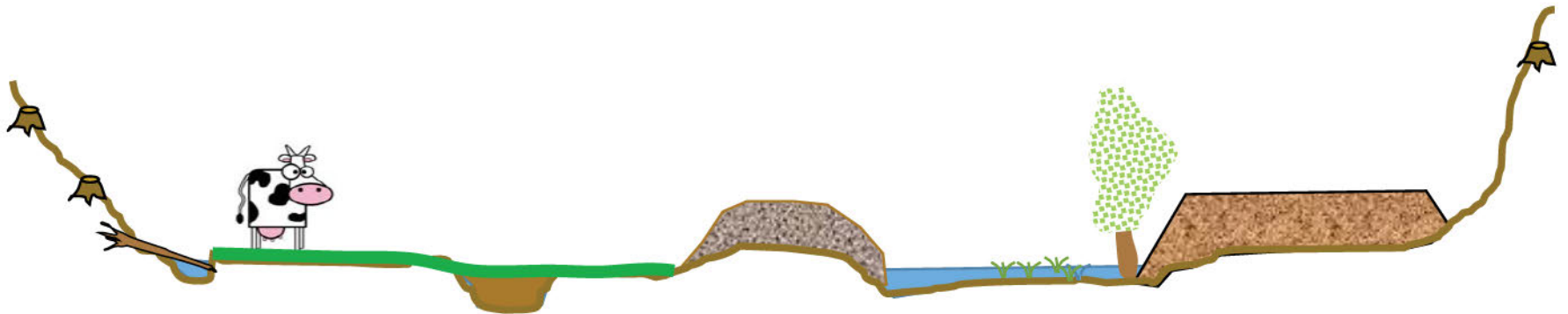
Changed Condition in Depositional Environments

- Road building
- Conifer harvest
- Diking and channelization
- Blocking or filling side channels



Changed Condition in Depositional Environments

- Road building
- Conifer harvest
- Diking and channelization
- Blocking or filling side channels
- Grazing and farming

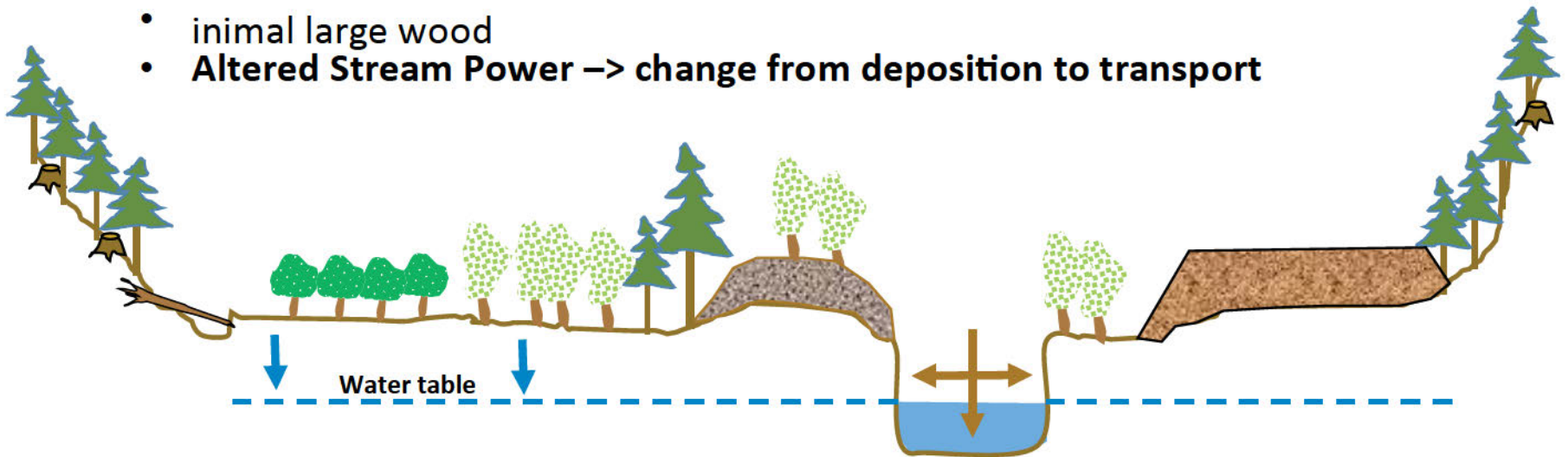


Changed Condition in Depositional Environments

- Road building
- Conifer harvest
- Diking and channelization
- Blocking or filling side channels
- Grazing and farming

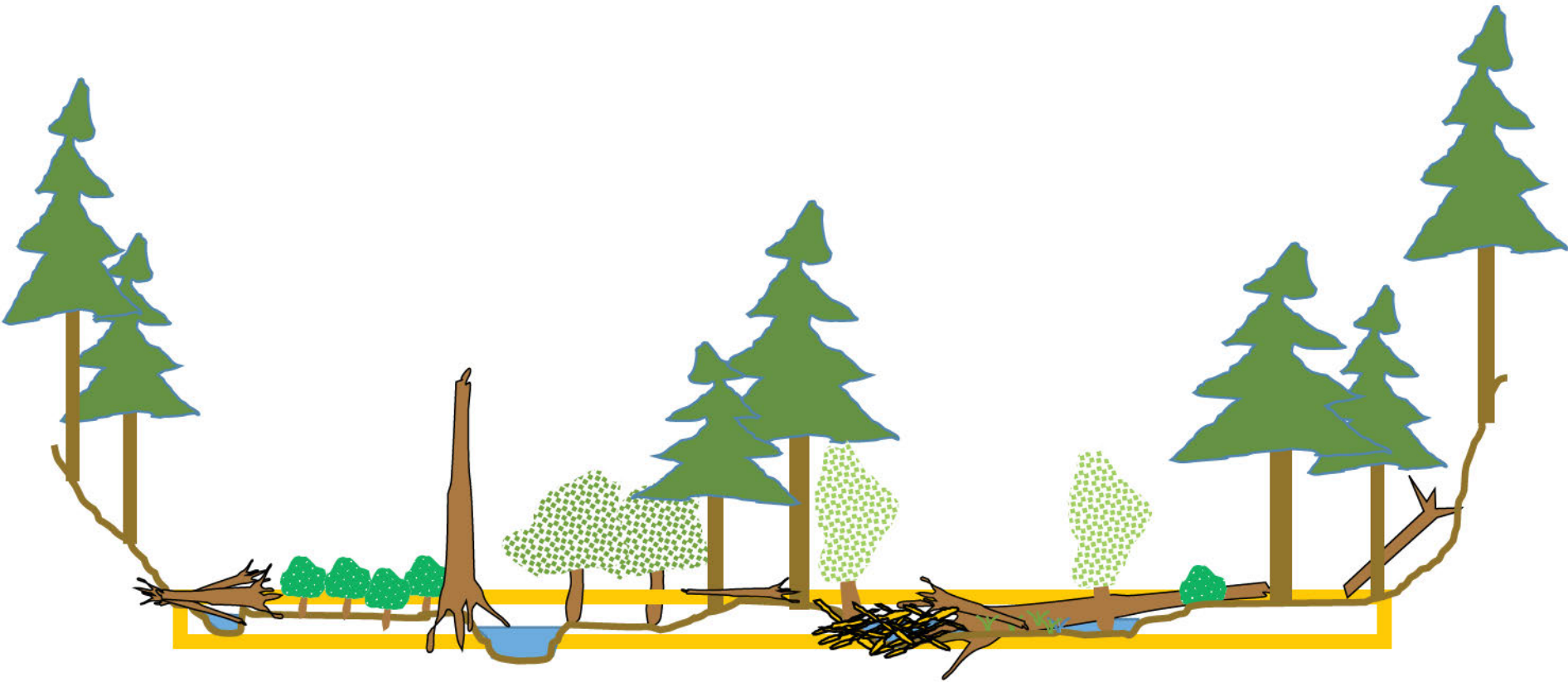
Leads to:

- Single incised channel
- Loss of water table/wetlands
- Altered vegetation types
- Minimal large wood
- **Altered Stream Power → change from deposition to transport**



Stream Evolution Model, Stages 2-4
Cluer and Thorne, 2013

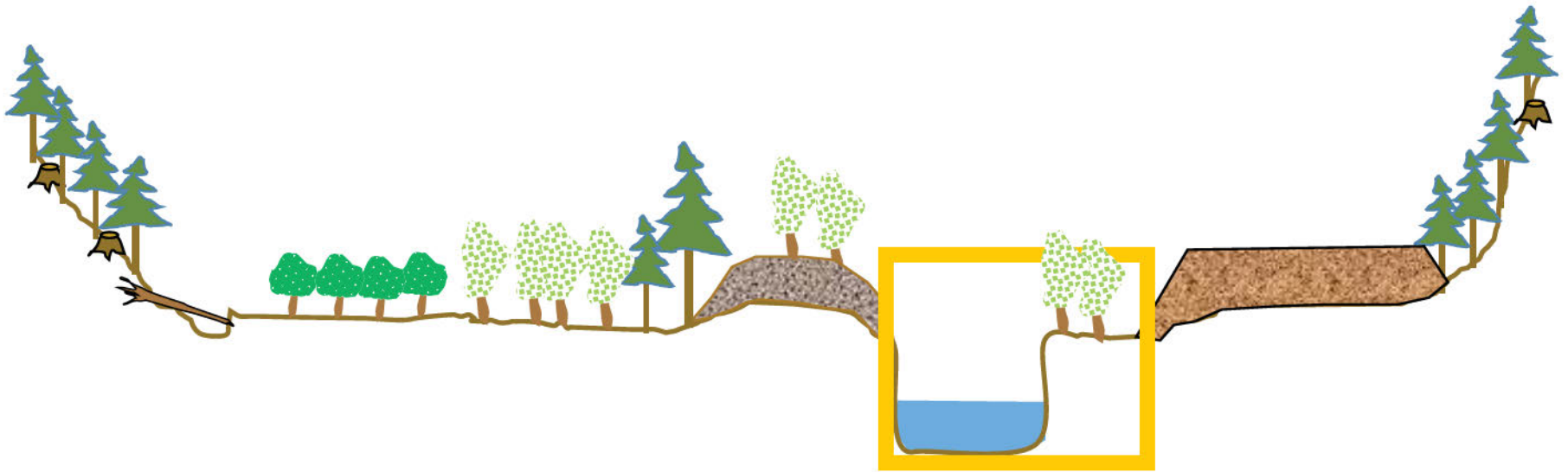
Historic Floodplain Condition in Depositional Environments



Stream Power Per Unit Width - Low

- Flow distributed throughout a roughened surface

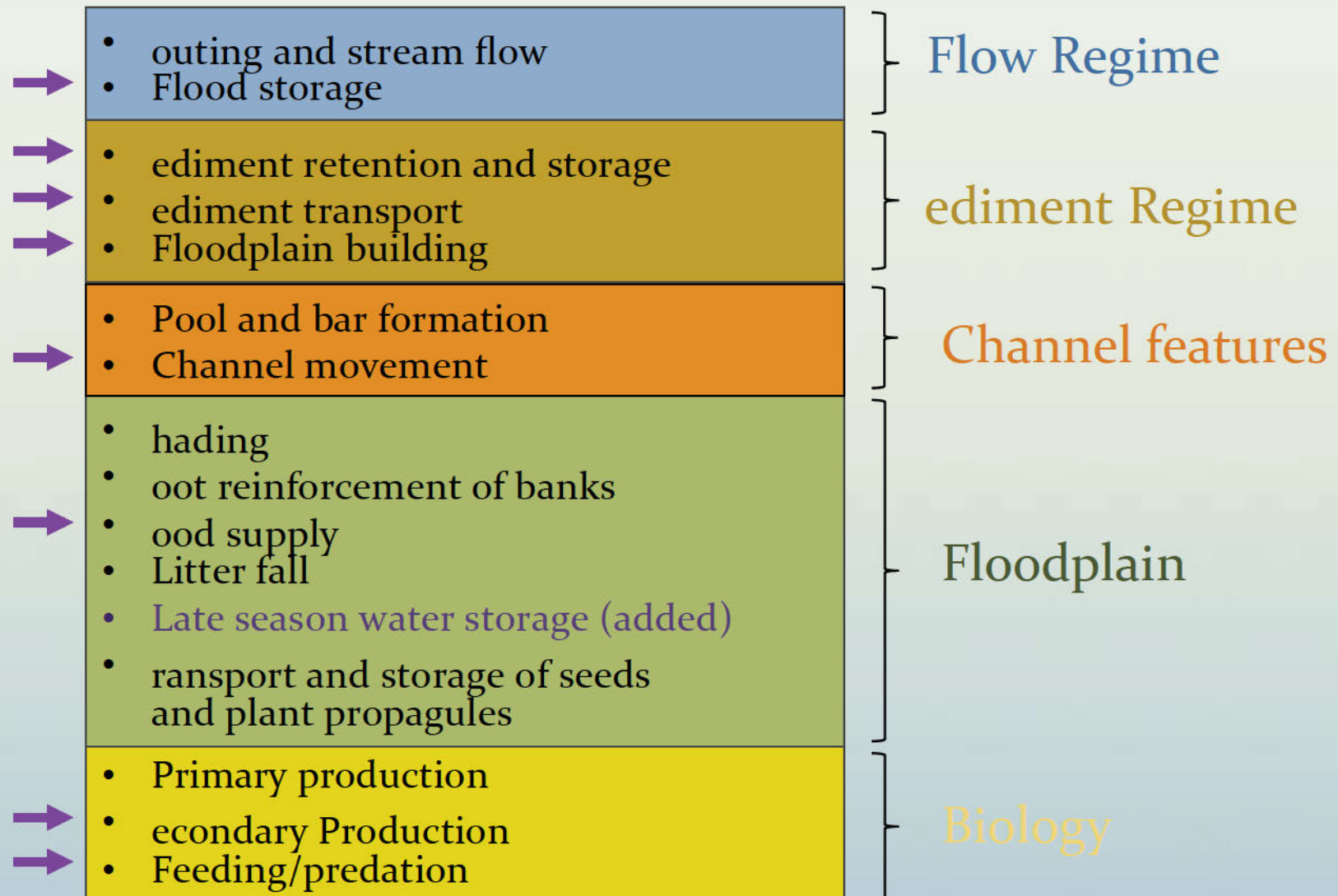
Changed Condition from Depositional to Transport Environments



Stream Power Per Unit Width - High
“fire hose effect”

Reach-scale processes from Kohl and Beechie, 2013

Critical to Native Aquatic Species



Restoration Solutions

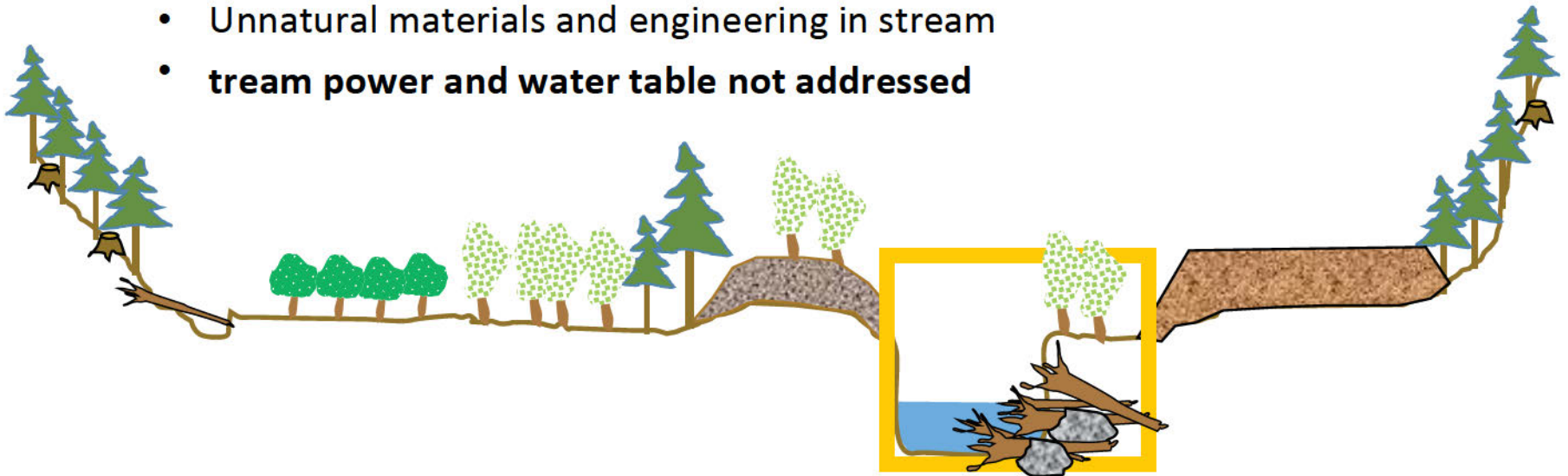
Channel-centric, form-based restoration (1980s to present)

Advantages:

- Easy to count # of structures, pools created and miles treated
- Focused treatment that's relatively inexpensive per site

Disadvantages:

- Process and function minimally addressed
- Blows out in big storms
- Unnatural materials and engineering in stream
- **stream power and water table not addressed**



Stream Power Per Unit Width - High

- Form-based restoration working against a “fire hose”

Restoration Solutions

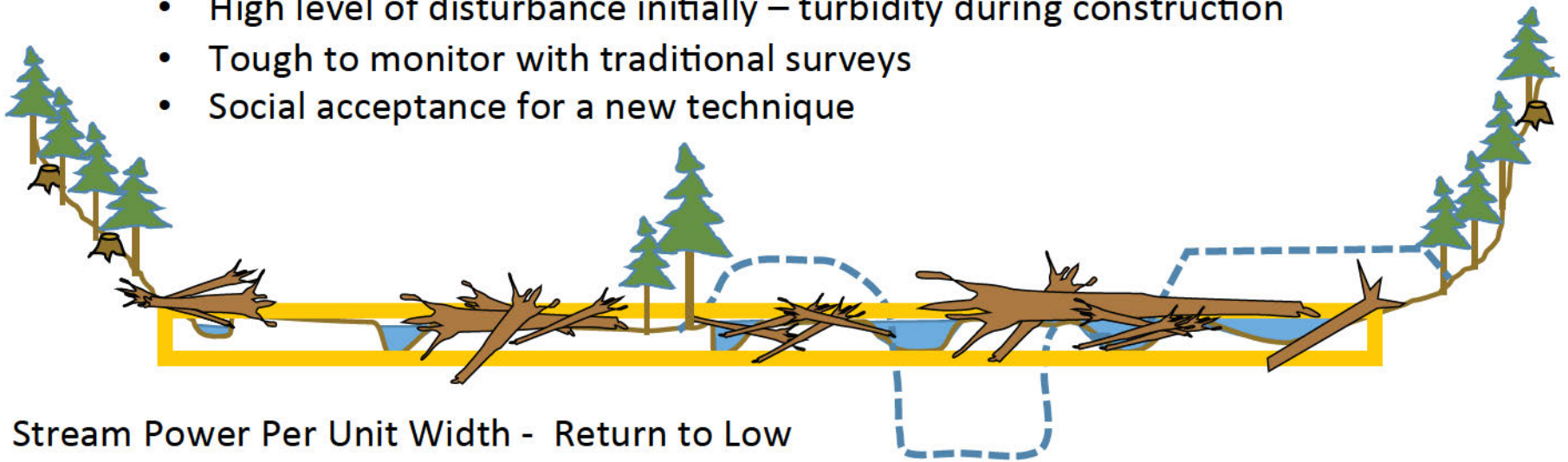
Stage 0 - Valley bottom, process-based restoration (2005 to present)

Advantages:

- Process and function fully addressed for entire floodplain
- Water table restored
- Template created for native vegetation recovery
- Patch complexity maximized with dynamic change anticipated over time
- Large storms welcome (stream energy addressed)

Disadvantages:

- High level of disturbance initially – turbidity during construction
- Tough to monitor with traditional surveys
- Social acceptance for a new technique



Floodplains ar good!

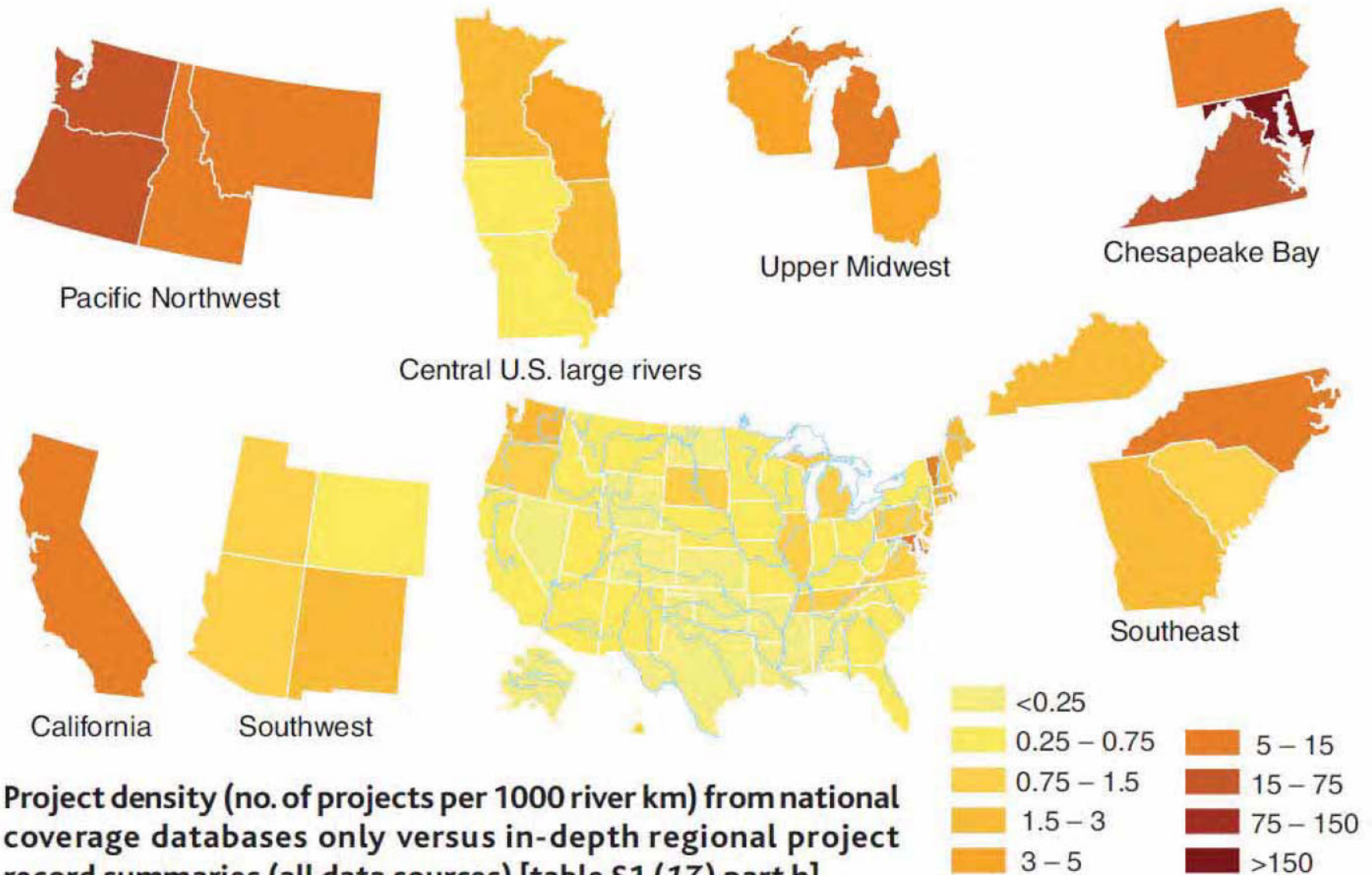




PNW RESTORATION PROGRAMMATICS

HIP III / ARBO II / PROJECTS

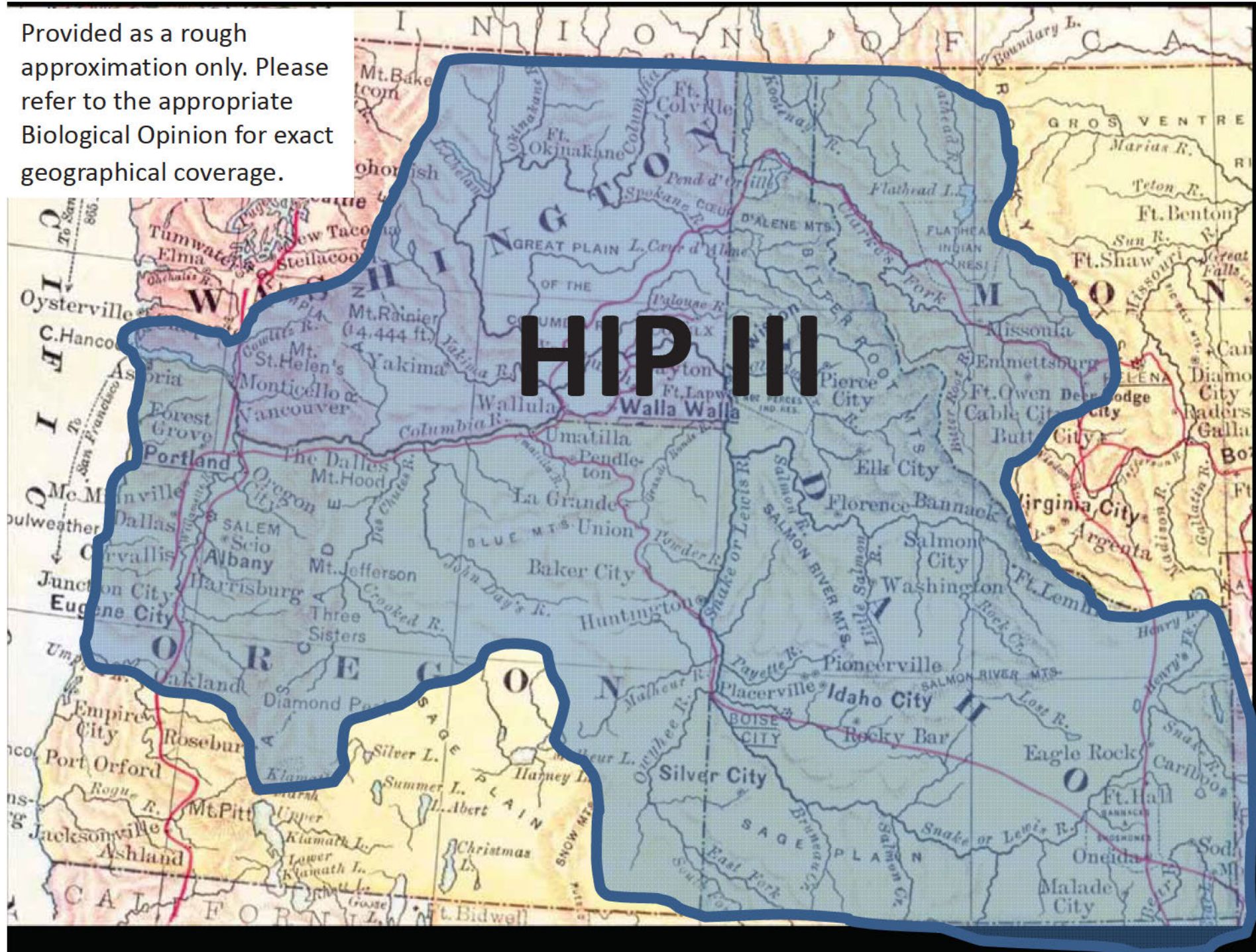
Provided for informational purposes only. Please refer to the appropriate Biological Opinion for specific information and requirements for each of the referenced Biological Opinions:
www.fws.gov/oregonfwo/ToolsForLandowners/OtherResources.asp



Synthesizing U.S. River Restoration Efforts

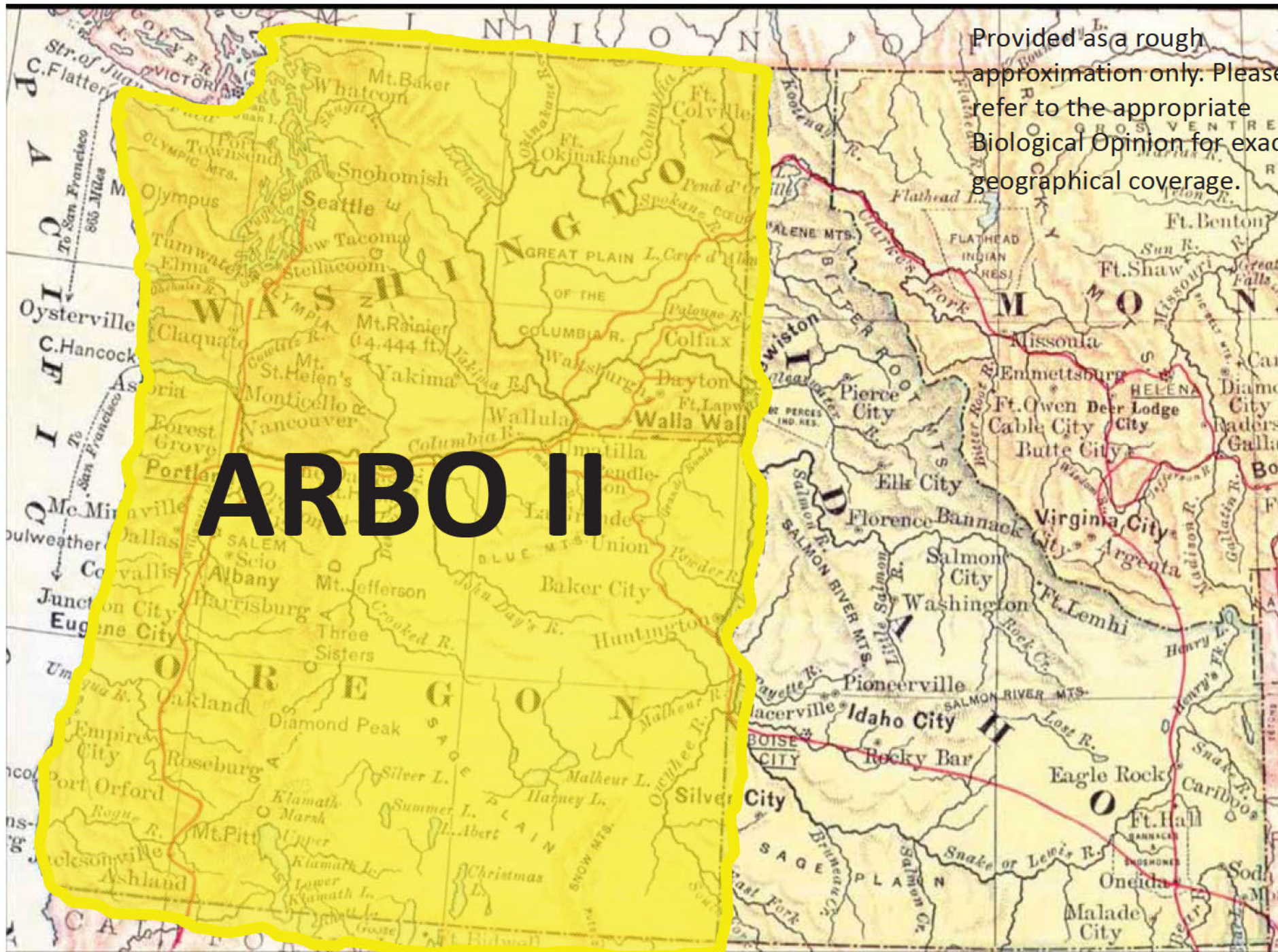
E. S. Bernhardt,^{1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100} M. A. Palmer,¹ J. D. Allan,² G. Alexander,³ K. Barnes,⁴ S. Brooks,⁵ J. Carr,⁶ S. Clayton,⁷ C. Dahm,⁸ J. Follstad-Shah,⁹ D. Galat,¹⁰ S. Gloss,¹¹ P. Goodwin,¹² D. Hart,¹³ B. Hassett,¹⁴ R. Jenkinson,¹⁵ S. Katz,¹⁶ G. M. Kendall,¹⁷ P. S. Lake,¹⁸ R. Lave,¹⁹ J. L. Meyer,²⁰ T. R. O'Donnell,²¹ L. Pagano,²² B. Powell,²³ S. Sudduth,²⁴

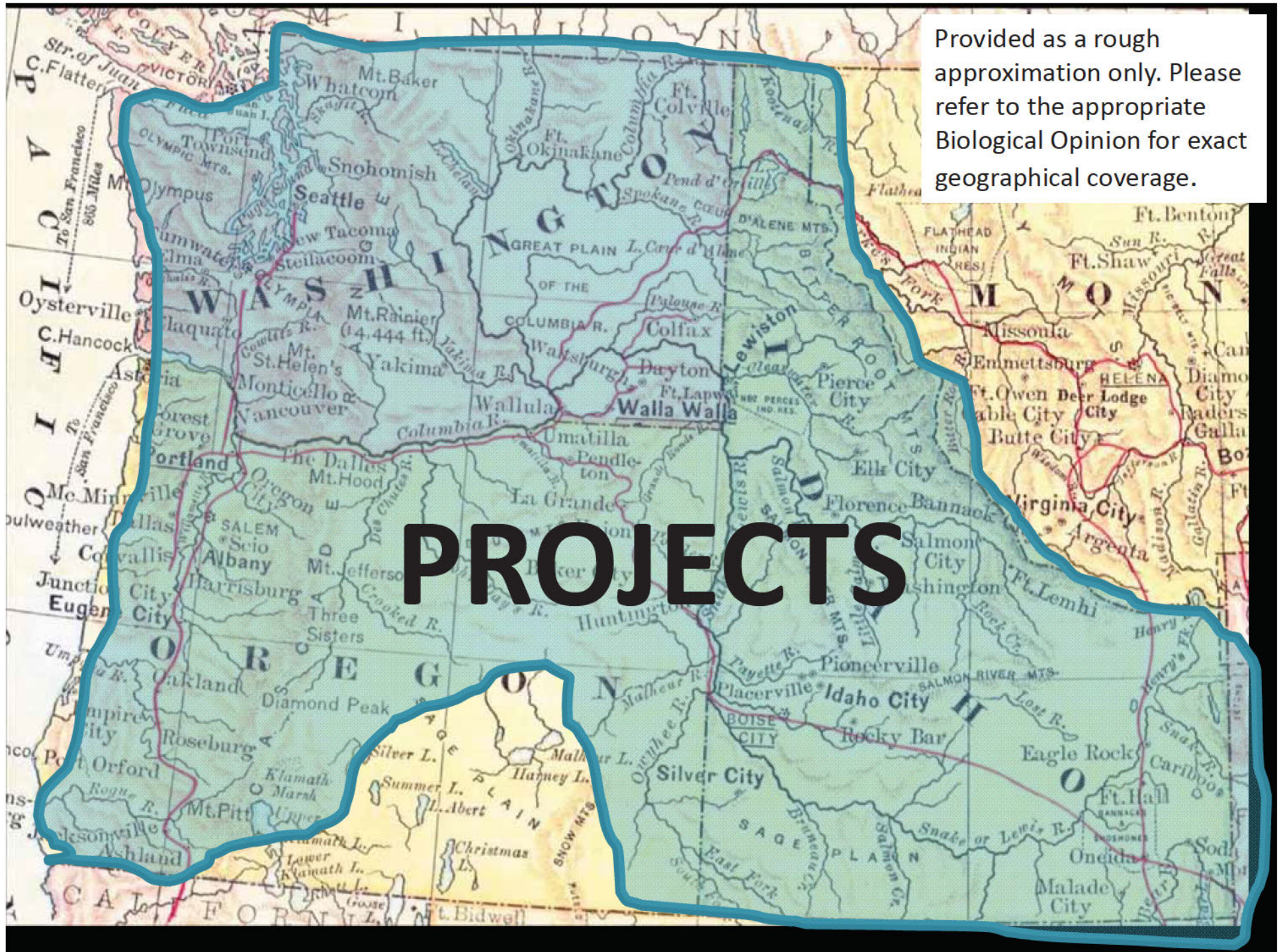
Provided as a rough approximation only. Please refer to the appropriate Biological Opinion for exact geographical coverage.



ARBO II

Provided as a rough approximation only. Please refer to the appropriate Biological Opinion for exact geographical coverage.





Provided as a rough approximation only. Please refer to the appropriate Biological Opinion for exact geographical coverage.

Biological Opinion Development & Activity Categories

A Little Background

- **HIP – Habitat Improvement Program (2013)**
 - Action Agency: Bonneville Power Administration
- **ARBO – Aquatic Restoration BiOp (2013)**
 - Action Agencies: BLM, USFS, BIA, Coquille Tribe
- **PROJECTS – Programmatic Restoration Opinion for Joint Ecosystem Conservation by The Services (2014)**
 - Action agency: USFWS BO and NOAA Restoration Center

Programmatic Commonalities

- FWS/NMFS joint process -- mirrored BOs
- Aquatic (mostly) driven programmatics
- Reinitiations for HIP (III) and ARBO (II)
 - Added and expanded activity categories
- Living documents – no BO expiration date
- Similar (but not identical) activity categories
- Similar implementation process

1. Fish Passage



Elk Creek by Amy Horstman

2. Large Wood



WF Millicoma by Janine Castro

3. Legacy Structure Removal



Marmot Dam by Janine Castro

4. Channel Reconstruction/Relocation



5. Off- and Side-Channel Habitat Restoration



Necanicum River by Doug Ray

6. Streambank Restoration



Wind River by Janine Castro

7. Set-Back or Removal of Existing Berms, Dikes, and Levees



8. Reduction/Relocation of Recreation Impacts



Photo by Janine Castro

9. Livestock Fencing, Stream Crossings and Off-Channel Livestock Watering

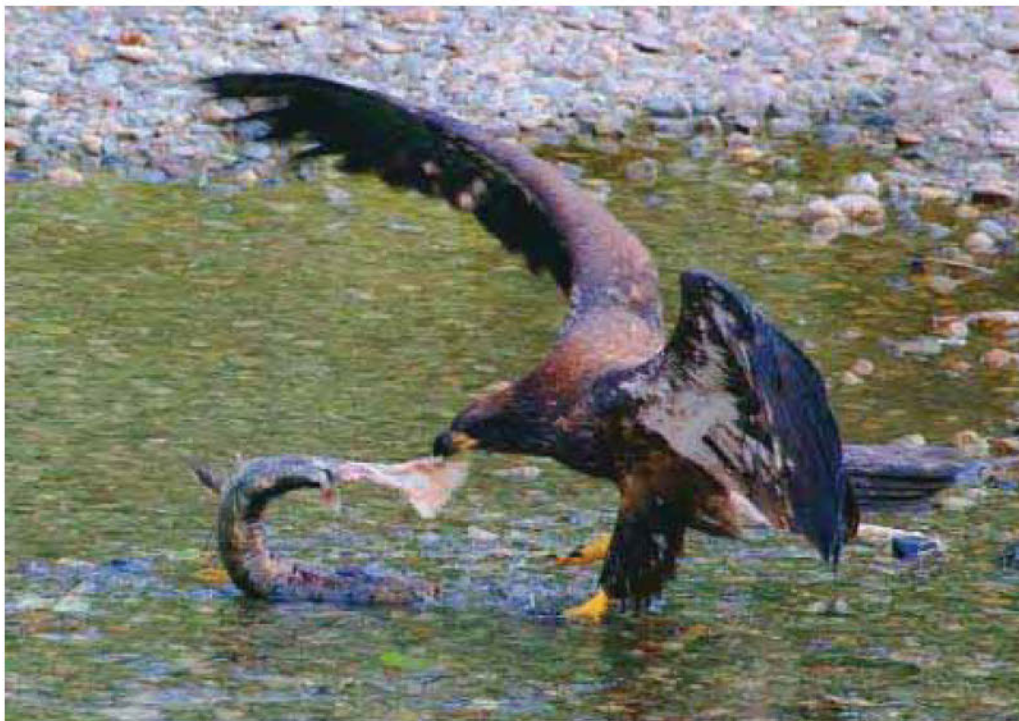


10. Piling and other Structure Removal



Dee Estuary by Creative Lens

11. In-channel Nutrient Enhancement



12. Road and Trail Erosion Control and Decommissioning





14. Juniper Removal



15. Riparian Vegetation Treatment (controlled burning)



16. Riparian Vegetative Planting



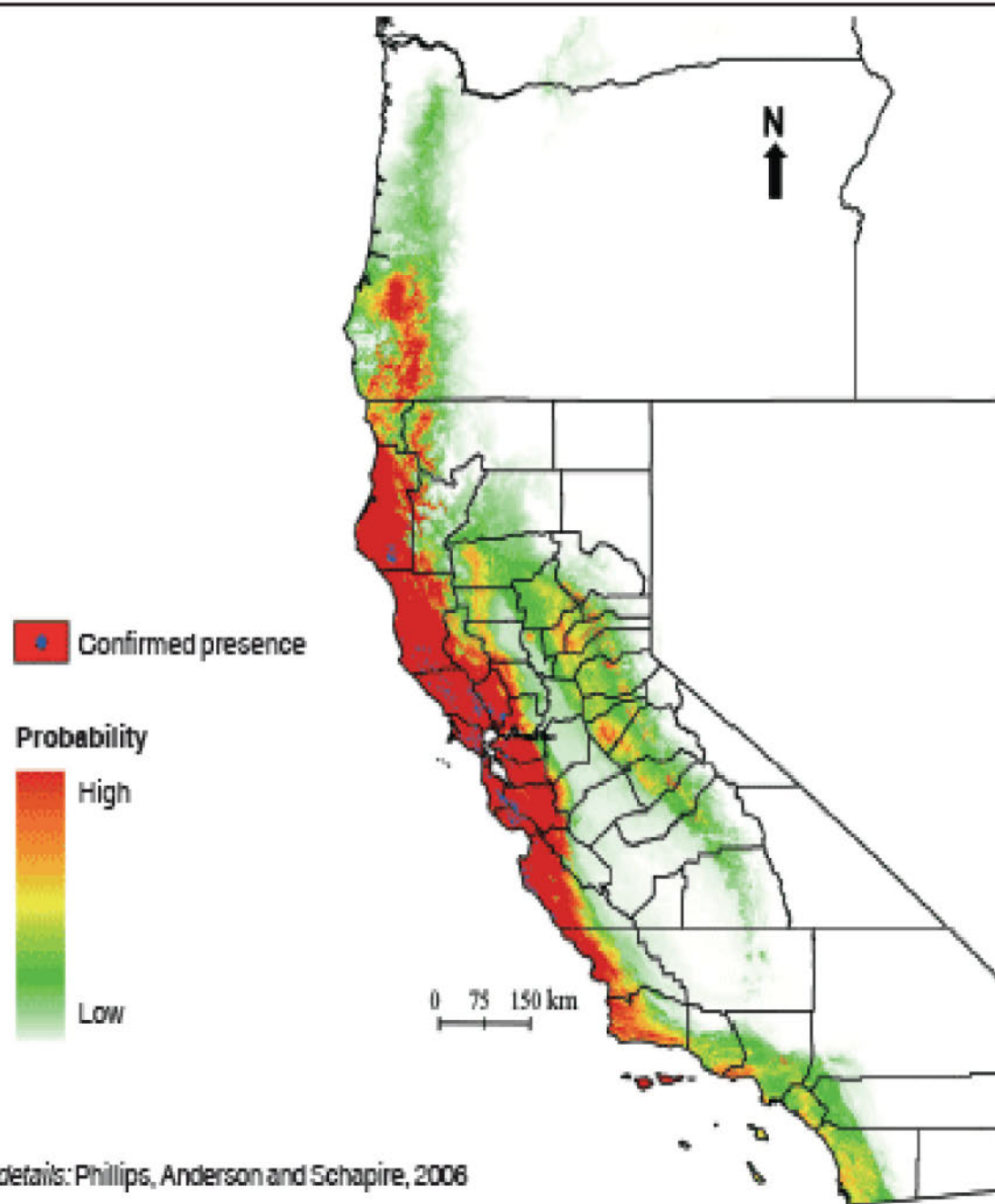
17. Bull Trout Protection



18. Beaver Habitat Restoration



19. Sudden Oak Death (SOD) Treatments



**20. Fisheries, Hydrology, Geomorphology, Wildlife, Botany,
and Cultural Surveys in Support of Aquatic Restoration**



21. Shellfish Bed/Nearshore Habitat Restoration



22. Tide/Flood Gate Removal,



Basic Activity	PROJECTS	ARBO II	HIP III
Fish Passage			
Large Wood			
Legacy Structure Removal (dams, tidegates)			
Channel Reconstruction/Relocation			
Off- and Side-Channel Habitat Restoration			
Streambank Restoration			
Set-back or Removal of Existing Berms, Dikes, and Levees			
Reduction/Relocation of Recreation Impacts			
Livestock Fencing, Stream Crossings and Off-Channel Livestock Watering			
Piling and other Structure Removal			
In-channel Nutrient Enhancement			
Road and Trail Erosion Control and Decommissioning			
Non-native Invasive Plant Control			
Juniper Removal			
Riparian Vegetation Treatment (controlled burning)			
Riparian Vegetative Planting			
Bull Trout Protection			
Beaver Habitat Restoration			
Sudden Oak Death (SOD) Treatments		(aquatic species only)	
Fisheries, Hydrology, Geomorphology Wildlife, Botany, and Cultural Surveys in Support of Aquatic Restoration			
Shellfish Bed/Nearshore Habitat Restoration			
Tide/Flood Gate Removal, Replacement, or Retrofit		(removal only)	(removal only)
= Covered Activity = Activity Not Covered			

Provided for comparative purposes only. Please refer to the appropriate Biological Opinion for exact activity coverage.

EXAMPLE General Conservation Measures

“The activities covered under this consultation are intended to protect and restore fish and wildlife habitat with long-term benefits to ESA-listed species. However, project construction may have short-term adverse effects on ESA-listed species.

To minimize these short-term adverse effects and make them predictable for purposes of programmatic analysis, the following general conservation measures are applicable to all projects.”

EXAMPLE Project Design and Site Preparation

- 1) Climate change.
- 2) State and Federal Permits.
- 3) Timing of in-water work.
- 4) Contaminants.
- 5) Site layout and flagging.
- 6) Temporary access roads and paths.
- 7) Temporary stream crossings.
- 8) Staging, storage, and stockpile areas.
- 9) Equipment.
- 10) Erosion control.
- 11) Dust abatement.
- 12) Spill prevention, control, and countermeasures.
- 13) Invasive species control.

EXAMPLE Construction Conservation Measures

- 1) Work Area Isolation & Fish Salvage.
 - Step 1: Isolate
 - Step 2: Salvage
 - Step 3: Electrofishing
 - Step 4: Dewater
 - Step 5: Re-watering
 - Step 6: Salvage Notice
- 2) Fish passage.
- 3) Construction and discharge water.
- 4) Minimize time and extent of disturbance.
- 5) Cessation of work.

EXAMPLE Post-construction Conservation Measures

- 1) Site restoration.
- 2) Revegetation.
- 3) Site access.

Inspections and Monitoring

EXAMPLE Species-Specific Conservation Measures

1.4 General Conservation Measures and Project Design Criteria for All Terrestrial and Fish Species

1. The following CMs apply to all listed terrestrial species for all programmatic activities:

- a. Aquatic restoration actions will not remove or downgrade suitable habitat (on either public or private land) for any listed terrestrial species.
- b. Effects of danger tree removal will be either discountable or insignificant to ESA-listed terrestrial species and their critical habitat.
- c. All restoration activities must have the unit's botanist and terrestrial wildlife biologist input/analysis of the project design and their site-specific species assessment to proceed. This includes a plant survey and nest analysis (or survey if deemed appropriate by the unit biologist, and suitable habitat is known to occur within the project prior to project implementation).
- d. There will be no disturbance allowed from blasting activities as they are not part of the proposed action.
- e. The unit wildlife biologist is responsible for ensuring that the correct effects determination is made for each project. The unit wildlife biologist may increase or decrease disturbance distances according to the best available scientific information and site-specific conditions. Refer to Tables 9-10. For instance, if a known spotted owl site is surveyed to protocol and the owls are determined to be non-nesting, the unit biologist may determine that no disturbance or disruption would occur and lift the associated restrictions on activities within disruption distances during the year of survey.

EXAMPLE Species-Specific Conservation Measures

Canada Lynx

- i. **CL1:** No active lynx dens are located within 270 yards (based on sight distance and attenuation of sound in forested environments) of a project.
- ii. **CL2:** The project will meet the standards and guidelines identified in the Lynx Conservation Assessment and Strategy (LCAS) and are within the LCAS thresholds (suitable, unsuitable, and denning habitat).
- iii. **CL3:** The project will not result in increased off-road vehicle access to lynx habitat during or following implementation.

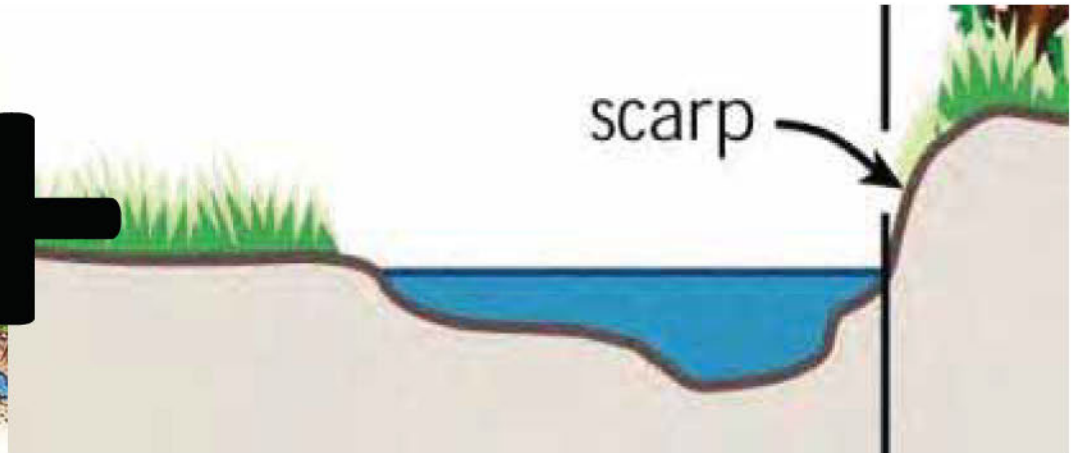
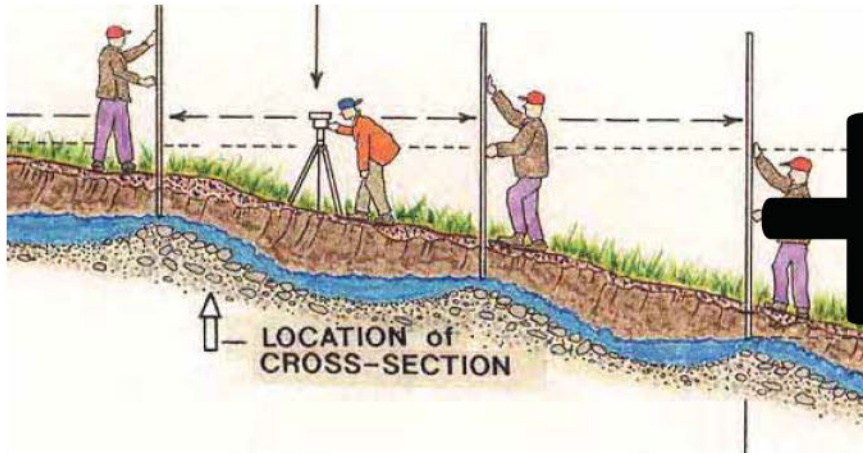
EXAMPLE Project Design Criteria

1. Fish Passage
2. Large Wood
3. Legacy Structure Removal
4. Channel Reconstruction/Relocation
5. Off- and Side-Channel Habitat Restoration
6. Streambank Restoration
7. Set-Back or Removal of Existing Berms, Dikes, and Levees
8. Reduction/Relocation of Recreation Impacts
9. Livestock Fencing, Stream Crossings and Off-Channel Livestock Watering
10. Piling and other Structure Removal
11. In-channel Nutrient Enhancement
12. Road and Trail Erosion Control and Decommissioning
13. Non-native Invasive Plant Control
14. Juniper Removal
15. Riparian Vegetation Treatment (controlled burning)
16. Riparian Vegetative Planting
17. Bull Trout Protection
18. Beaver Habitat Restoration
19. Sudden Oak Death (SOD) Treatments
20. Fisheries, Hydrology, Geomorphology, Wildlife, Botany, and Cultural Surveys
in Support of Aquatic Restoration
21. Shellfish Bed/Nearshore Habitat Restoration
22. Tide/Flood Gate Removal, Replacement, Retrofit

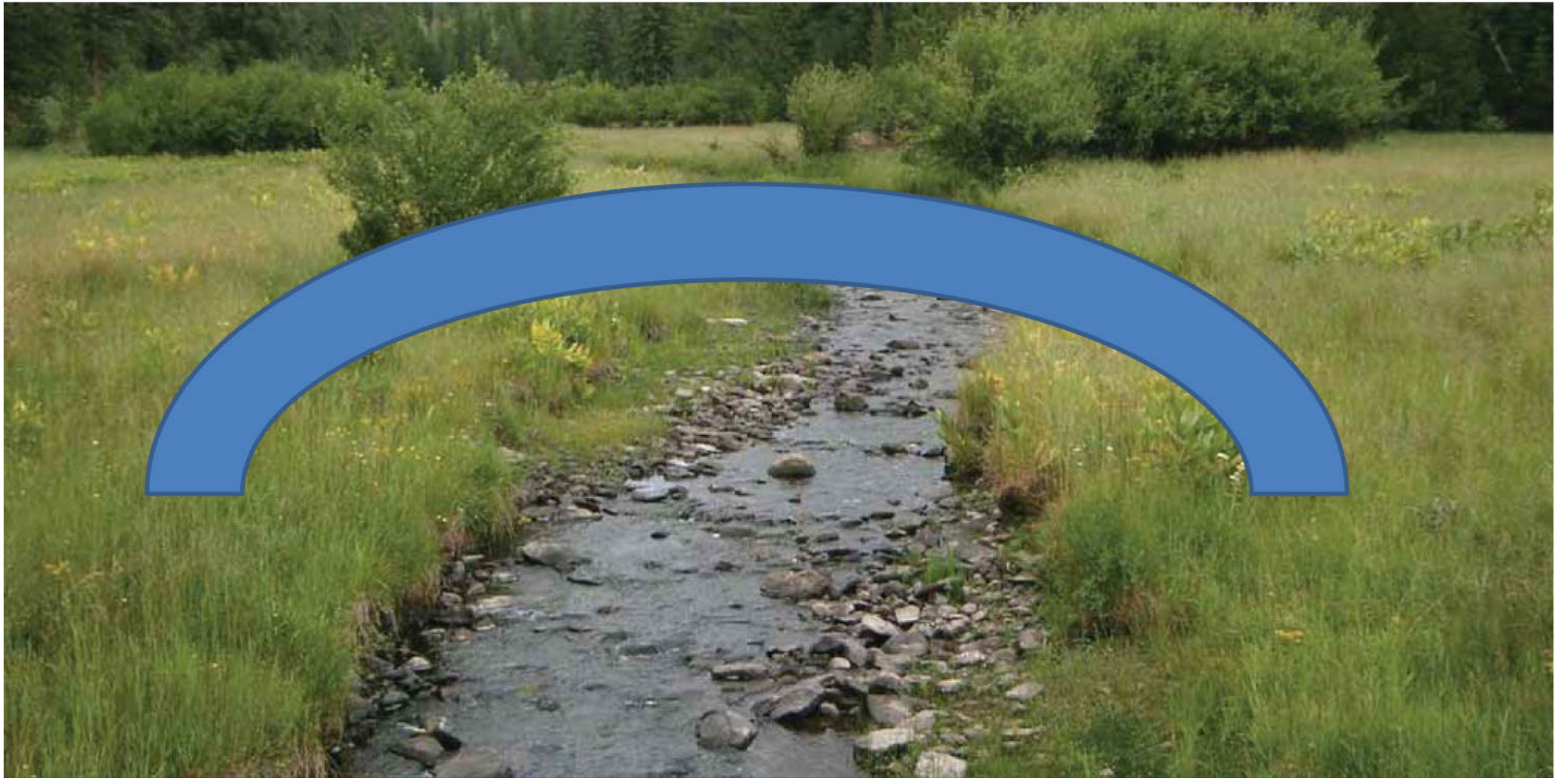


=





= Stream
Simulation



EXAMPLE Fish Passage Restoration includes the following: total removal, replacement, or resetting of culverts or bridges; stabilizing headcuts and other channel instabilities; removing, relocating, constructing, repairing, or maintaining fish ladders; and replacing, relocating, or constructing fish screens and irrigation diversions. Such projects will take place where fish passage has been partially or completely eliminated.

Stream simulation culvert and bridge projects. All road-stream crossing structures shall adhere to the most recent version of NMFS fish passage criteria ([NMFS 2011a](#)) located at: <http://www.nwr.noaa.gov/publications/hydropower/ferc/fish-passage-design.pdf> NMFS engineering review, if required, shall occur at the conceptual, post-modeling, and final design phases, which is approximated by 30%, 60%, and 90% designs.

All road-stream crossing structures shall simulate stream channel conditions per industry design standards found in any one of the following:

Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings ([USDA-Forest Service 2008](#)) or the most recent version, located at: http://stream.fs.fed.us/fishxing/aop_pdfs.html

Part XII Fish Passage Design and Implementation, Salmonid Stream Habitat Restoration Manual ([California Department of Fish and Game 2009](#)) or the most recent version, located at:

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=12512>

Water Crossings Design Guidelines ([Barnard et al. 2013](#)) or the most recent version), located at:

<http://wdfw.wa.gov/publications/01501/>

EXAMPLE General road-stream crossing criteria

Span

Span is determined by the crossing width at the proposed streambed grade.

Single span structures will maintain a clear, unobstructed opening above the general scour elevation that is at least as wide as 1.5 times the active channel width.

Multi-span structures will maintain clear, unobstructed openings above the general scour elevation (except for piers or interior bents) that are at least as wide as 2.2 times the active channel width.

Entrenched streams: If a stream is entrenched (entrenchment ratio of less than 1.4), the crossing width will accommodate the floodprone width. Floodprone width is the channel width measured at twice the maximum bankfull depth ([Rosgen 1996](#)).

Minimum structure span is 6ft.

Scour Prism

Designs shall maintain the general scour prism, as a clear, unobstructed opening (*i.e.*, free of any fill, embankment, scour countermeasure, or structural material to include abutments, footings, and culvert inverts). No scour or stream stability countermeasure may be applied above the general scour elevation.

When bridge abutments are set back beyond the applicable criteria span they may be located above the general scour elevation.

Embedment

All culvert footings and inverts shall be placed below the thalweg at a depth of 3 feet, or the Lower Vertical Adjustment Potential (LVAP) line, whichever is deeper.

LVAP, as calculated in *Stream Simulation: An ecological approach to providing passage for aquatic organisms at road crossings* ([USDA-Forest Service 2008](#))

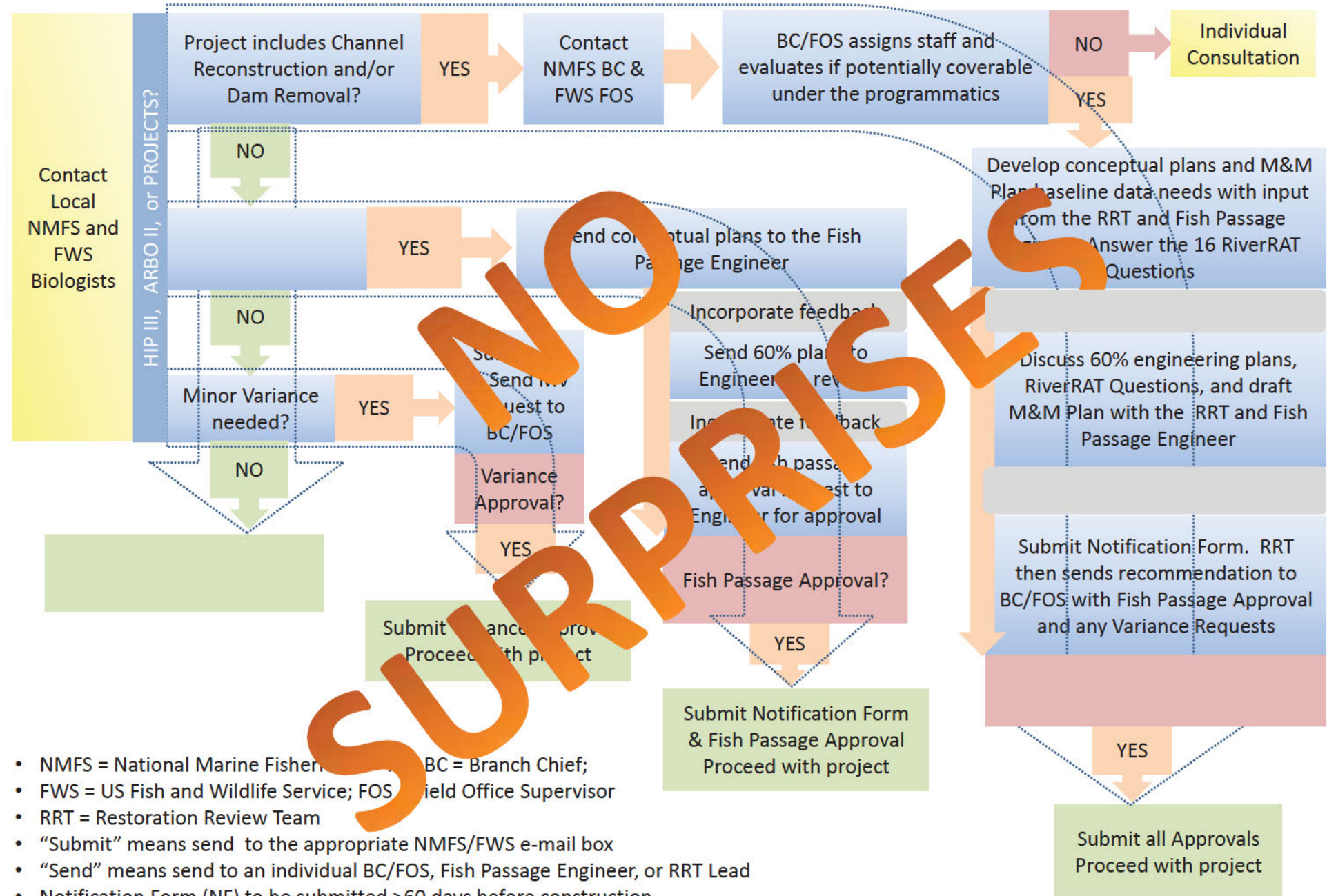
Bridges

Primary bridge structural elements will be concrete, metal, fiberglass, or untreated timber. The use of treated wood for bridge construction or replacement is not allowed under this opinion. Old railroad cars, which are commonly used as bridges, may have treated wood decking. Sample for the presence of treatment chemicals and replace treated elements with untreated wood.

All concrete will be poured in the dry, or within confined waters not connected to surface waters, and will be allowed to cure a minimum of 7 days before contact with surface water as recommended by Washington State Department of Transportation ([2010](#)).

Riprap will not be placed within the bankfull width of the stream. Riprap may only be placed below bankfull height when necessary for protection of abutments and pilings. The amount and placement of riprap will not constrict the bankfull flow. Temporary work bridges will also meet NMFS ([2011a](#)) (or the latest version).

IDEALIZED RESTORATION PROGRAMMATIC REVIEW PROCESS

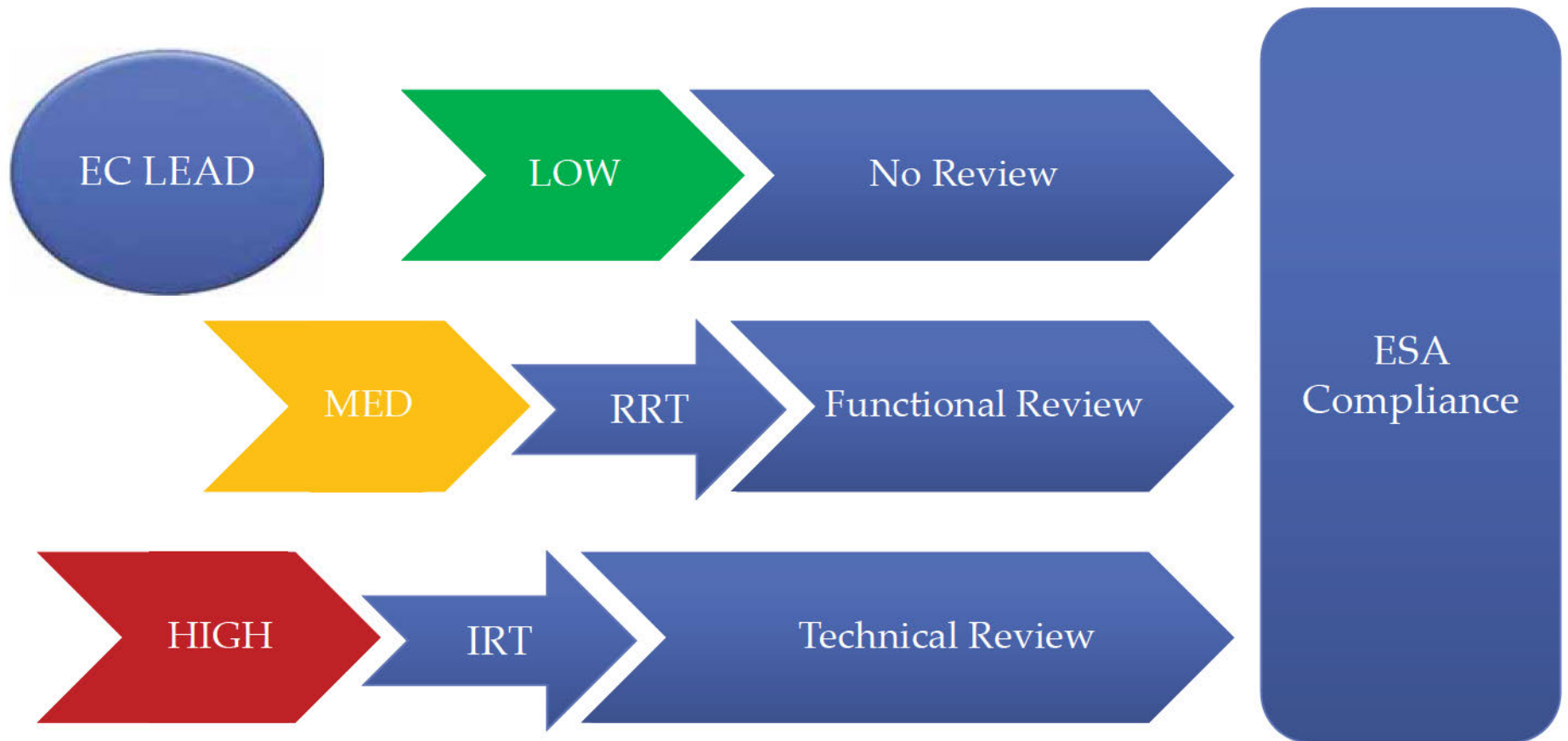


- NMFS = National Marine Fisheries Service; BC = Branch Chief;
- FWS = US Fish and Wildlife Service; FOS = Field Office Supervisor
- RRT = Restoration Review Team
- "Submit" means send to the appropriate NMFS/FWS e-mail box
- "Send" means send to an individual BC/FOS, Fish Passage Engineer, or RRT Lead
- Notification Form (NF) to be submitted >60 days before construction

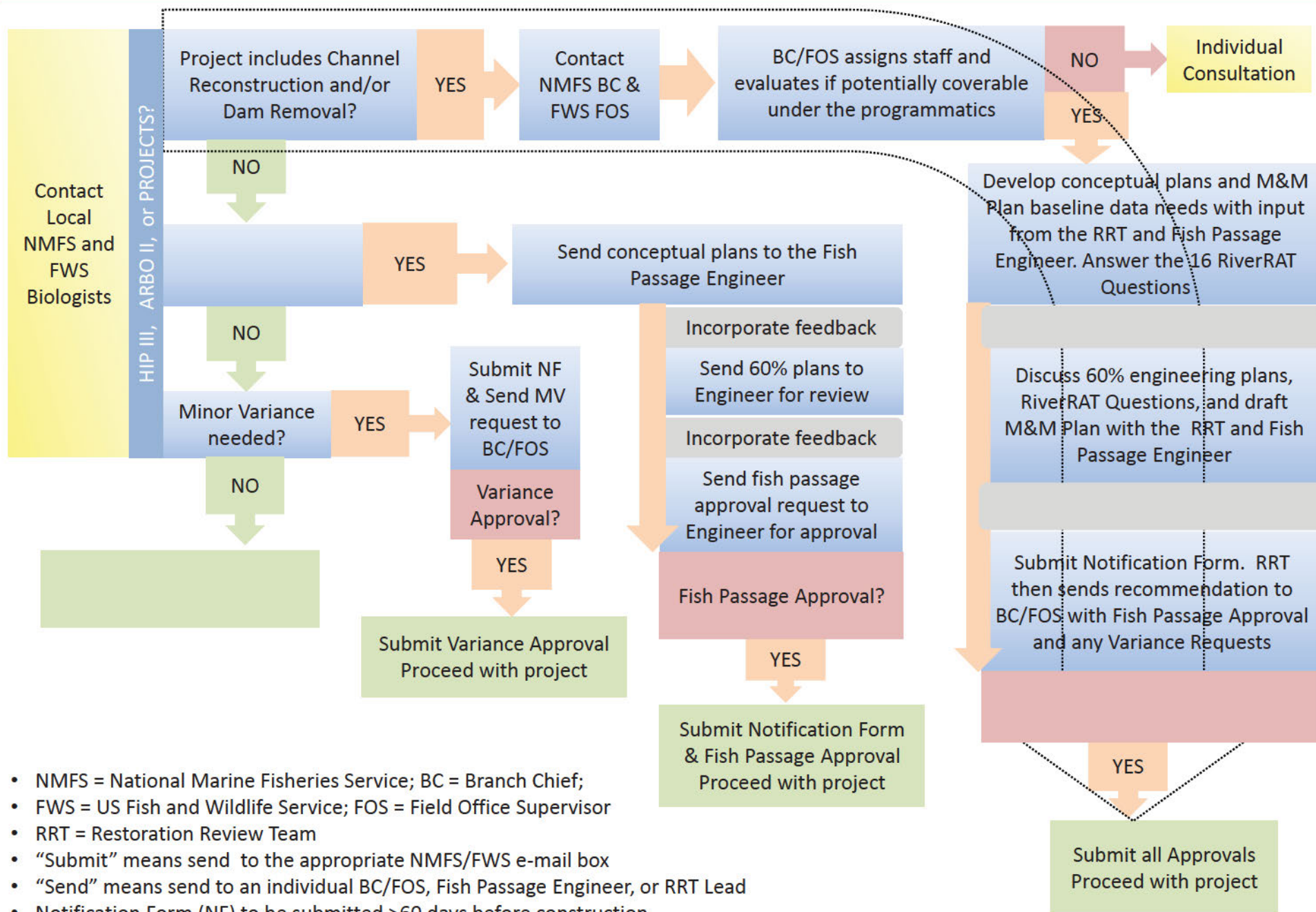
Restoration Review Teams (RRT)

- A different team for each programmatic
 - HIP III: Dan Gambetta, dagambetta@bpa.gov
 - ARBO II: Scott Peets, speets@fs.fed.us & Scott Lightcap, slightca@blm.gov
 - PROJECTS: Janine Castro, janine_m_castro@fws.gov
- Reviews:
 - Dam removal
 - Channel reconstruction/relocation projects
 - Precedent or policy setting actions, such as application of new technology
- Keeps record of meetings and decisions
- Meets on an as needed basis and annually

HIP III Restoration Review Team General Process



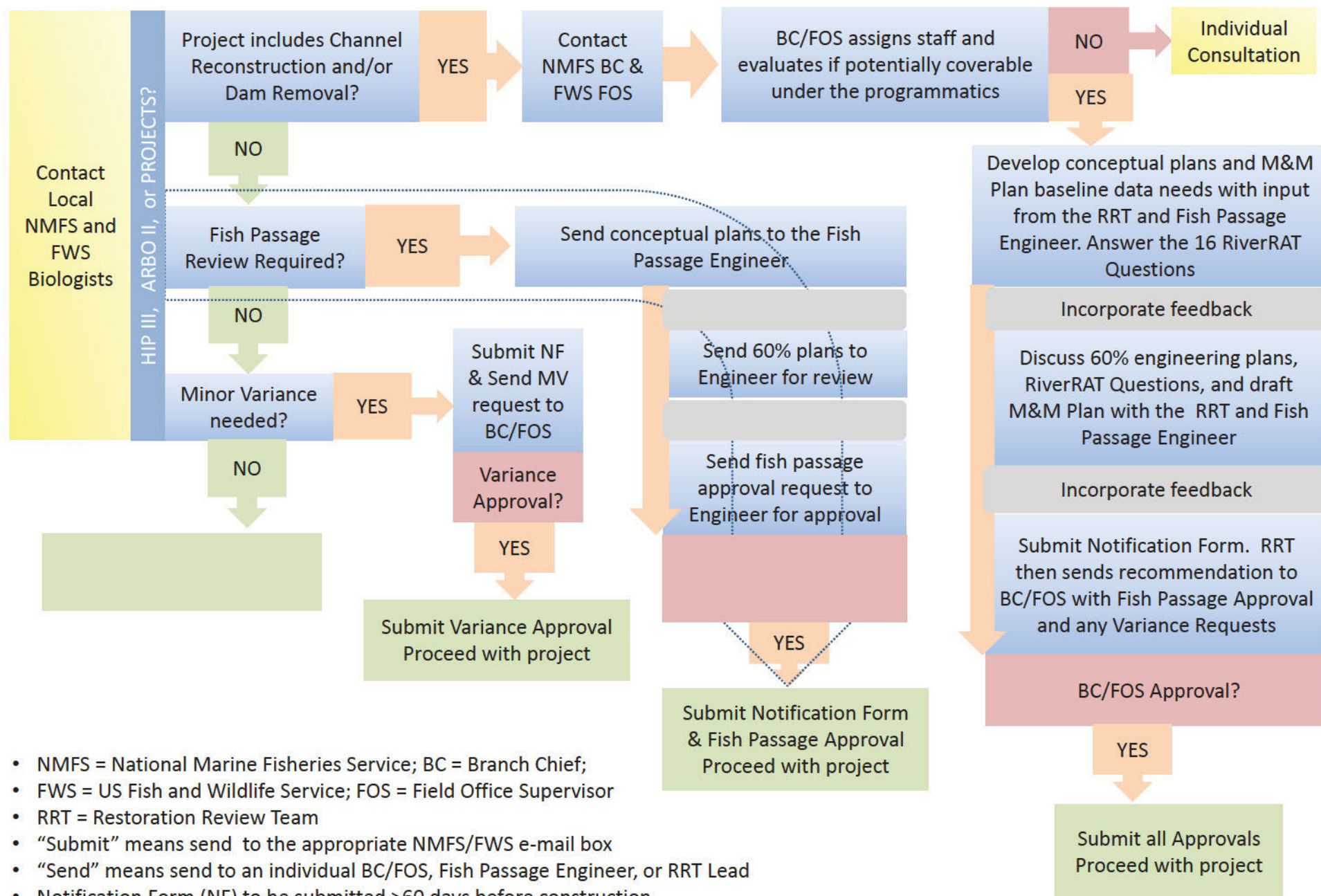
IDEALIZED RESTORATION PROGRAMMATIC REVIEW PROCESS



Fish Passage Approval

- Dewatering construction sites by pumping at a >3 cfs requires fish screen review
- Culverts and bridges that do not meet width standards
- Headcut stabilization and channel spanning non-porous rock structures that create discrete longitudinal drops > 6 inches
- Fish ladders
- Engineered log jams that occupy $>25\%$ of the bankfull area
- Irrigation diversion replacement/relocation
- Fish screen installation/replacement
- Off- and side-channel reconstruction that contain $>20\%$ of the bankfull flow
- Dam removal**
- Channel reconstruction/relocation projects**

IDEALIZED RESTORATION PROGRAMMATIC REVIEW PROCESS



Minor Variances

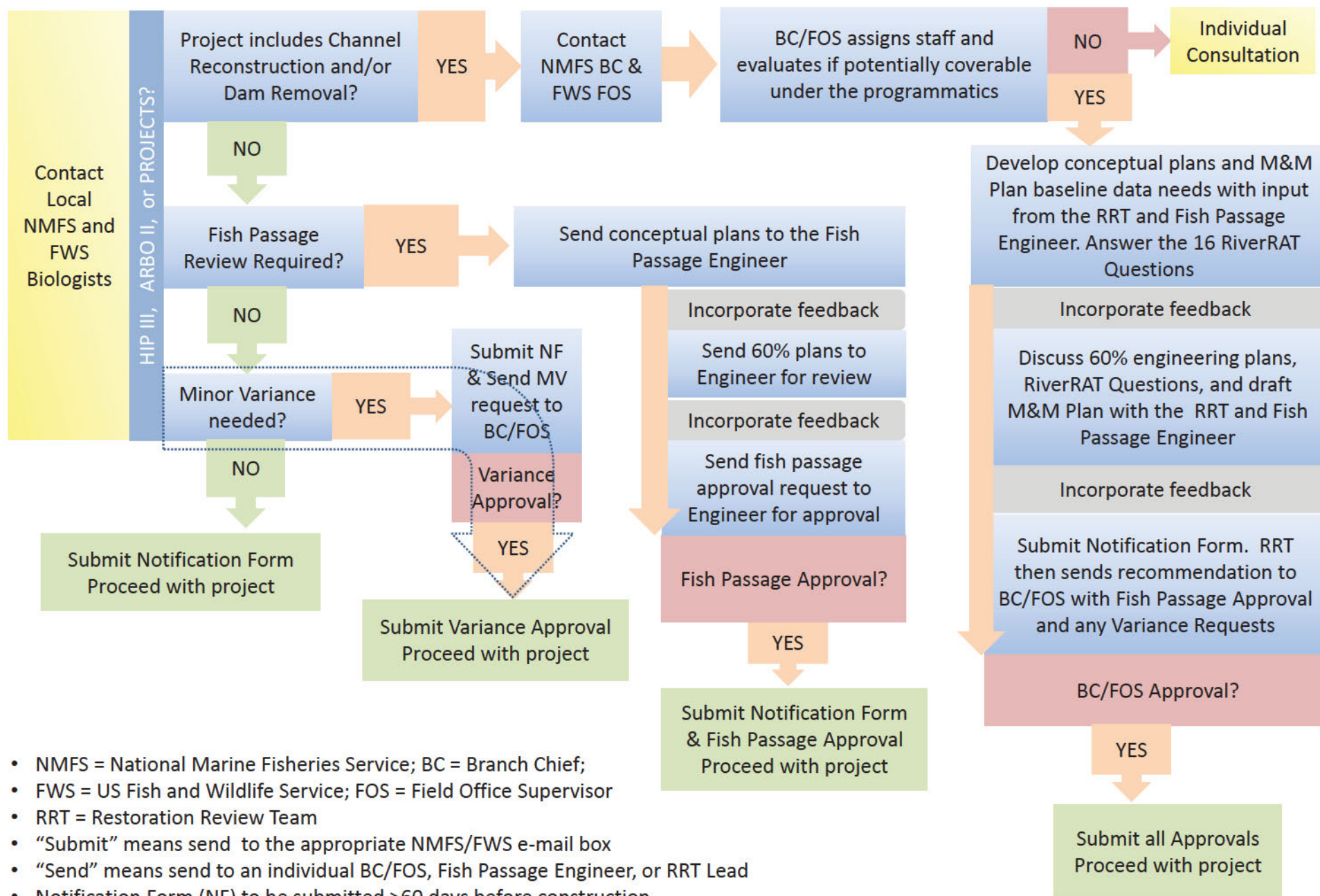
NMFS Branch Chiefs and/or FWS Field Office Supervisors will authorize variance if there is a clear conservation benefit. May be requested as part of the notification process and must:

- a. Cite ARBO II identifying number
- b. Cite the relevant criterion by page number
- c. Define the requested variance
- d. Explain why the variance is necessary
- e. Provide a rationale why the variance will either provide a conservation benefit or, at a minimum, not cause additional adverse effects.
- f. Include as attachments any necessary approvals by state agencies.

**Does not introduce new mechanisms of take or increased take, and it is all context dependent.*

***Requires a biological rationale.*

IDEALIZED RESTORATION PROGRAMMATIC REVIEW PROCESS



How to use your Action Implementation/Notification Form:

- Project action will determine route
- Assess if you can meet BMP/PDC (fish passage review/variance?)
- Assess your species (special conditions)
- Contact NOAA/USFWS as necessary. *“Consult early, consult often”* ...

Hint: Know what portions of the programmatic apply to your common projects types and species. Bookmark these.

Sequence of Form Submission:

- Submit to appropriate email box, which “invokes” ESA coverage.
 - **NO FORM = NO COVERAGE**
- AIF/PNF – 30 to 60 days before implementation.
- Mailbox will auto-respond w/receipt.
- Start Project, undertake fish salvage, etc.
- Submit Fish Salvage Reporting Form within 60 days of capture/release.
- Submit Action Completion Report within 60 days of work below OHW.

1. Action Notification

*****NOTE: UPDATE (5/15/2014)** - This form is now available for use with the NMFS PROJECTS Programmatic Biological Opinion, NWR-2013-10221 **AND** can be used with the existing USFWS Oregon Partners/Coastal/Recovery Programmatic BO's (Oregon & Willamette Valley) **AND** the Habitat Restoration Activities Programmatic BO for the Washington Fish & Wildlife Office. Once the USFWS issues the PROJECTS programmatic biological opinion, this form will be used with both PROJECTS BO's.

Date of Request:		BiOp Tracking Numbers: USFWS (OR): 13420-2010-F-0003 USFWS (WA): 1-3-05-FWF-0167 NMFS: NWR-2013-10221	
		Lead Action Agency: <input type="checkbox"/> USFWS <input type="checkbox"/> NOAA RC	
State:	<input type="checkbox"/> Idaho <input type="checkbox"/> Oregon <input type="checkbox"/> Washington		
Nature of habitat:	<input type="checkbox"/> Aquatic <input type="checkbox"/> Upland <input type="checkbox"/> Both		
Type of Request:	<input type="checkbox"/> Approval Required <input type="checkbox"/> No Approval Required		
Statutory Authority (Check all that apply):	<input type="checkbox"/> ESA (USFWS) <input type="checkbox"/> ESA (NMFS) <input type="checkbox"/> EFH (NMFS)		
Action Agency Contact:			
USFWS Database Number:		NOAA RC RCDB Number:	
Project Name (e.g., Hay Cr. culvert replacement):			
6th Field HUC & Name:			
Latitude & Longitude (in signed degrees format: DDD.dddd):	Latitude:	Longitude:	
Proposed Construction Period:	Start Date:	End Date:	
Proposed Length of Channel and/or Riparian Modification (Linear feet):			
Proposed Area of Herbicide Application (Acres):			
Upland acres treated (i.e. Rx burn, mowing, planting, etc.):			

Provided as an example only. Please refer to the appropriate Biological Opinion for applicable forms.

Type of Action: Identify the type of action proposed.

- ☐ Fish Passage Restoration (Stream Simulation Culvert and Bridge Projects; Headcut and Grade Stabilization; Fish Ladders; Irrigation Diversion Replacement/Relocation and Screen Installation/Replacement)
- ☐ Large Wood (LW), Boulder, and Gravel Placement; Engineered Logjams (ELJ); Constructed Riffles, Constructed Riffles, Porous Boulder Weirs and Vanes; Gravel Augmentation; Tree Removal for LW Projects
- ☐ Dam and Legacy Structure Removal
- ☐ Channel Reconstruction/Relocation
- ☐ Off- and Side-Channel Habitat Restoration
- ☐ Streambank Restoration
- ☐ Set-Back or Removal of Existing Berms, Dikes, and Levees
- ☐ Reduction/Relocation of Recreation Impacts
- ☐ Livestock Fencing, Stream Crossings and Off-Channel Livestock Watering
- ☐ Piling, Marine Debris, and other Structure Removal
- ☐ Shellfish Restoration
- ☐ In-channel Nutrient Enhancement
- ☐ Road and Trail Erosion Control and Decommissioning
- ☐ Juniper Removal
- ☐ Riparian Vegetative Planting
- ☐ Native Fish Protection
- ☐ Beaver Habitat Restoration
- ☐ Wetland Restoration
- ☐ Tide Gate Removal, Replacement, or Retrofit
- ☐ Restore Native Vegetation
- ☐ Upland Silvicultural Treatments

USFWS Species/Critical Habitat Present in Action Area: Identify the species and critical habitats present in the action area (N/A means not applicable):

Species	Critical Habitat
Mammals	
<input type="checkbox"/>	<input type="checkbox"/> Canada lynx
<input type="checkbox"/>	<input type="checkbox"/> N/A Columbian white-tailed deer (Columbia River DPS)
<input type="checkbox"/>	<input type="checkbox"/> N/A Gray wolf (Coterminous USA DPS – portions of OR and WA, not ID)
<input type="checkbox"/>	<input type="checkbox"/> N/A Grizzly bear
<input type="checkbox"/>	<input type="checkbox"/> Mazama pocket gopher (Note: Not covered until FWS PROJECTS PBO is issued)
<input type="checkbox"/>	<input type="checkbox"/> North American wolverine
<input type="checkbox"/>	<input type="checkbox"/> N/A Northern Idaho ground squirrel
<input type="checkbox"/>	<input type="checkbox"/> N/A Pygmy rabbit (Columbia Basin DPS)
<input type="checkbox"/>	<input type="checkbox"/> Southern Selkirk Mountains woodland caribou

Species	Critical Habitat
Birds	
<input type="checkbox"/>	<input type="checkbox"/> Marbled murrelet
<input type="checkbox"/>	<input type="checkbox"/> Northern spotted owl
<input type="checkbox"/>	<input type="checkbox"/> Streaked horned lark (Not covered until FWS PROJECTS PBO is issued)
<input type="checkbox"/>	<input type="checkbox"/> Western snowy (coastal) plover
Reptiles and Amphibians	
<input type="checkbox"/>	<input type="checkbox"/> Oregon spotted frog (Not covered until FWS PROJECTS PBO is issued)
Fish	
<input type="checkbox"/>	<input type="checkbox"/> Bull trout
<input type="checkbox"/>	<input type="checkbox"/> N/A Lahontan cutthroat trout
<input type="checkbox"/>	<input type="checkbox"/> Warner sucker
Invertebrates	
<input type="checkbox"/>	<input type="checkbox"/> Fender's blue butterfly
<input type="checkbox"/>	<input type="checkbox"/> Oregon silverspot butterfly
<input type="checkbox"/>	<input type="checkbox"/> Taylor's checkerspot butterfly (Not covered until FWS PROJECTS PBO is issued)
<input type="checkbox"/>	<input type="checkbox"/> Vernal pool fairy shrimp
Species	Critical Habitat
Plants	
<input type="checkbox"/>	<input type="checkbox"/> N/A Bradshaw's desert parsley
<input type="checkbox"/>	<input type="checkbox"/> Cook's lomatium
<input type="checkbox"/>	<input type="checkbox"/> N/A Gentner's fritillary
<input type="checkbox"/>	<input type="checkbox"/> N/A Golden paintbrush
<input type="checkbox"/>	<input type="checkbox"/> N/A Howell's spectacular thelypody
<input type="checkbox"/>	<input type="checkbox"/> Kincaid's lupine
<input type="checkbox"/>	<input type="checkbox"/> Large-flowered woolly meadowfoam
<input type="checkbox"/>	<input type="checkbox"/> N/A MacFarlane's four-o'clock
<input type="checkbox"/>	<input type="checkbox"/> Malheur wire-lettuce
<input type="checkbox"/>	<input type="checkbox"/> N/A Marsh sandwort
<input type="checkbox"/>	<input type="checkbox"/> N/A Nelson's checker mallow
<input type="checkbox"/>	<input type="checkbox"/> N/A Spalding's catchfly
<input type="checkbox"/>	<input type="checkbox"/> N/A Water howellia
<input type="checkbox"/>	<input type="checkbox"/> N/A Western lily
<input type="checkbox"/>	<input type="checkbox"/> Willamette daisy

Provided as an example only. Please refer to the appropriate Biological Opinion for applicable forms.

NMFS Species/Critical Habitat Present in Action Area: Identify the listed species, critical habitat, and essential fish habitat (EFH) present in the action area (N/A means not applicable):

Species	Critical Habitat	
<input type="checkbox"/>	<input type="checkbox"/>	Lower Columbia River Chinook salmon
<input type="checkbox"/>	<input type="checkbox"/>	Upper Willamette River Chinook salmon
<input type="checkbox"/>	<input type="checkbox"/>	Upper Columbia River spring-run Chinook salmon
<input type="checkbox"/>	<input type="checkbox"/>	Snake River spring/summer-run Chinook salmon
<input type="checkbox"/>	<input type="checkbox"/>	Snake River fall-run Chinook salmon
<input type="checkbox"/>	<input type="checkbox"/>	Puget Sound Chinook salmon
<input type="checkbox"/>	<input type="checkbox"/>	Columbia River chum salmon
<input type="checkbox"/>	<input type="checkbox"/>	Hood Canal summer-run chum salmon
<input type="checkbox"/>	N/A	Lower Columbia River coho salmon
<input type="checkbox"/>	<input type="checkbox"/>	Oregon Coast coho salmon
<input type="checkbox"/>	<input type="checkbox"/>	Southern Oregon/Northern California Coast coho salmon
<input type="checkbox"/>	<input type="checkbox"/>	Lake Ozette sockeye salmon
<input type="checkbox"/>	<input type="checkbox"/>	Snake River sockeye salmon
<input type="checkbox"/>	<input type="checkbox"/>	Lower Columbia River steelhead
<input type="checkbox"/>	<input type="checkbox"/>	Upper Willamette River steelhead
<input type="checkbox"/>	<input type="checkbox"/>	Middle Columbia River steelhead
<input type="checkbox"/>	<input type="checkbox"/>	Upper Columbia River steelhead
<input type="checkbox"/>	<input type="checkbox"/>	Snake River Basin steelhead
<input type="checkbox"/>	N/A	Puget Sound steelhead
<input type="checkbox"/>	<input type="checkbox"/>	Southern DPS eulachon
<i>EFH Species</i>		
<input type="checkbox"/>		Salmon, Chinook
<input type="checkbox"/>		Salmon, Coho
<input type="checkbox"/>		Coastal Pelagics
<input type="checkbox"/>		Groundfish

Terms and Conditions: Check the terms and conditions from the biological opinion that will be included as conditions for any action funded or carried out under this opinion.



Administration

- | | |
|---|---|
| <input type="checkbox"/> USFWS/NOAARC review | <input type="checkbox"/> Site assessment for contaminants |
| <input type="checkbox"/> Restoration Review Team review | <input type="checkbox"/> Funding conditions |
| <input type="checkbox"/> Request for NMFS fish passage review | <input type="checkbox"/> Fish Salvage notice |
| <input type="checkbox"/> Site access | |

General Construction Measures

- | | |
|--|---|
| <input type="checkbox"/> Flagging sensitive areas | <input type="checkbox"/> Temporary erosion controls |
| <input type="checkbox"/> Temporary access roads and paths | <input type="checkbox"/> Fish passage |
| <input type="checkbox"/> In-water work period | <input type="checkbox"/> Work area isolation |
| <input type="checkbox"/> Fish Capture and release | <input type="checkbox"/> Electrofishing |
| <input type="checkbox"/> Construction water | <input type="checkbox"/> Fish screens |
| <input type="checkbox"/> Vehicle staging and use | <input type="checkbox"/> Choice of equipment |
| <input type="checkbox"/> Work from top of bank | <input type="checkbox"/> Stationary power equipment |
| <input type="checkbox"/> Staging, Storage, and Stockpile Areas | <input type="checkbox"/> Site restoration |
| <input type="checkbox"/> Dust Abatement | <input type="checkbox"/> Temporary Stream Crossings |
| <input type="checkbox"/> Surveys | <input type="checkbox"/> Revegetation |

Invasive and non-native plant control

- | | |
|---|--|
| <input type="checkbox"/> Non-herbicide methods | <input type="checkbox"/> Power equipment |
| <input type="checkbox"/> Required herbicide buffer distances | <input type="checkbox"/> Herbicide applicator qualifications |
| <input type="checkbox"/> Herbicide transportation and safety plan | <input type="checkbox"/> Approved herbicides |
| <input type="checkbox"/> Approved herbicide adjuvants | <input type="checkbox"/> Approved herbicide carriers |
| <input type="checkbox"/> Approved dye | <input type="checkbox"/> Herbicide mixing |
| <input type="checkbox"/> Approved herbicide application rates | <input type="checkbox"/> Minimize herbicide drift and leaching |
| <input type="checkbox"/> Approved application methods | |

Types of Restoration Actions

Fish Passage Restoration

- | | |
|---|--|
| <input type="checkbox"/> Stream Crossing | <input type="checkbox"/> Fish Ladder |
| <input type="checkbox"/> Stabilize Headcut | <input type="checkbox"/> Screen Installation/Replacement |
| <input type="checkbox"/> Irrigation Diversion | <input type="checkbox"/> Grade Stabilization |

Large Wood, Boulder, and Gravel Placement

- | | |
|---|--|
| <input type="checkbox"/> Large Wood or Boulders | <input type="checkbox"/> Engineered Logjams |
| <input type="checkbox"/> Constructed Riffles | <input type="checkbox"/> Porous Boulder Structures and Vanes |
| <input type="checkbox"/> Gravel Augmentation | <input type="checkbox"/> Tree Removal for LW Projects |

Dam and Legacy Structure Removal

- | | |
|--------------------------------------|---|
| <input type="checkbox"/> Dam Removal | <input type="checkbox"/> Legacy Structure Removal |
|--------------------------------------|---|

Channel Reconstruction/Relocation

- | | |
|---|--|
| <input type="checkbox"/> Design Guidance | <input type="checkbox"/> Project documentation |
| <input type="checkbox"/> Monitoring and adaptive plan | |

Off- and Side Channel Habitat Restoration

- | | |
|---|--|
| <input type="checkbox"/> Review and approve | <input type="checkbox"/> Data requirements |
| <input type="checkbox"/> Allowable excavation | |

Provided as an example only. Please refer to the appropriate Biological Opinion for applicable forms.

Streambank Restoration

- | | |
|--|--|
| <input type="checkbox"/> Streambank shaping | <input type="checkbox"/> Soil reinforcement |
| <input type="checkbox"/> Large wood | <input type="checkbox"/> Use of rock in streambank restoration |
| <input type="checkbox"/> Planting or installing vegetation | <input type="checkbox"/> Fertilizer |
| <input type="checkbox"/> Fencing | |

Set-Back or Removal of Existing Berms, Dikes, and Levees

- | | |
|--|--|
| <input type="checkbox"/> Floodplains and Freshwater Deltas | <input type="checkbox"/> Estuary Restoration |
|--|--|

Livestock Stream Crossings and Off-Channel Livestock Watering Facilities

- | | |
|---|--|
| <input type="checkbox"/> Livestock stream crossings | <input type="checkbox"/> Off-channel watering facilities |
| <input type="checkbox"/> Livestock Fencing | |

Road and Trail Erosion Control and Decommissioning

- | | |
|---|--|
| <input type="checkbox"/> Road Decommissioning/
Stormproofing | <input type="checkbox"/> Road Relocation |
|---|--|

Juniper Tree Removal

- | | |
|---|--|
| <input type="checkbox"/> Approved juniper tree removal
methods | <input type="checkbox"/> Management of juniper slash |
|---|--|

Beaver Habitat Restoration

- | | |
|--|--|
| <input type="checkbox"/> In-channel structures | <input type="checkbox"/> Habitat Restoration |
|--|--|

Wetland Restoration (type)

- | | |
|--|---------------------------------|
| <input type="checkbox"/> Riparian | <input type="checkbox"/> Bogs |
| <input type="checkbox"/> Vernal pools | <input type="checkbox"/> Swamps |
| <input type="checkbox"/> Wetland meadows | <input type="checkbox"/> Ponds |

Tide/Flood Gate Removal, Replacement, or Retrofit

- | | |
|--|--|
| <input type="checkbox"/> Removal | <input type="checkbox"/> Replacement |
| <input type="checkbox"/> Retrofit | <input type="checkbox"/> Dike breach or setback |
| <input type="checkbox"/> Culvert or bridge | <input type="checkbox"/> Monitoring/Adaptive Management Plan |
| <input type="checkbox"/> Design Approved by NMFS | |

Restore Native Vegetation

- | | |
|---|---|
| <input type="checkbox"/> Site Preparation | <input type="checkbox"/> Planting and Maintaining Vegetation |
| <input type="checkbox"/> Prescribed Fire | <input type="checkbox"/> Control of invasive species (ie. mechanical control
or herbicide application) |

Upland Silvicultural Treatments

- | | |
|---|--|
| <input type="checkbox"/> Forest thinning | <input type="checkbox"/> Limb pruning |
| <input type="checkbox"/> Planting of native species | <input type="checkbox"/> Control of invasive species |

Provided as an example only. Please refer to the appropriate Biological Opinion for applicable forms.

2. Action Completion Report

*****NOTE: UPDATE (5/15/2014)** - This form is now available for use with the NMFS PROJECTS Programmatic Biological Opinion, NWR-2013-10221 **AND** can be used with the existing USFWS Oregon Partners/Coastal/Recovery Programmatic BO's (Oregon & Willamette Valley) **AND** the Habitat Restoration Activities Programmatic BO for the Washington Fish & Wildlife Office. Once the USFWS issues the PROJECTS programmatic biological opinion, this form will be used with both PROJECTS BO's.

A) AQUATIC (INSTREAM-RIPARIAN) PROJECT ACTIVITIES: Within 60 days of completing all work below ordinary high water (OHW) as part of an action completed under PROJECTS, submit the completed Action Completion Form with the following information to NMFS at usfws.biop.nwr@noaa.gov (USFWS projects) or noaarc.biop.nwr@noaa.gov (NOAARC projects), and/or to USFWS at projects@fws.gov (USFWS & NOAARC).

Actual Start and End Dates for the Completion of In-water Work:	Start: [REDACTED]	End: [REDACTED]
Actual Linear-feet of Riparian and/or Channel Modification:	[REDACTED]	
Actual Acreage of Herbicide Treatment	[REDACTED]	
Turbidity Monitoring/Sampling Completed	<input type="checkbox"/> Yes (include details below) <input type="checkbox"/> No	

Please include the following:

1. Photos of habitat conditions before, during, and after action completion.
2. A summary of the results of pollution and erosion control inspections, including any erosion control failure, contaminant release, and correction effort.
[REDACTED]
3. Records of turbidity monitoring (visual or by turbidimeter) including dates, times and location of monitoring. Include any exceedances and steps taken to reduce turbidity observed.
[REDACTED]

Provided as an example only. Please refer to the appropriate Biological Opinion for applicable forms.

3. Fish Salvage Reporting Form

*****NOTE: UPDATE (5/15/2014)** - This form is now available for use with the NMFS PROJECTS Programmatic Biological Opinion, NWR-2013-10221 **AND** can be used with the existing USFWS Oregon Partners/Coastal/Recovery Programmatic BO's (Oregon & Willamette Valley) **AND** the Habitat Restoration Activities Programmatic BO for the Washington Fish & Wildlife Office. Once the USFWS issues the PROJECTS programmatic biological opinion, this form will be used with both PROJECTS BO's.

If applicable: Within 60 days of completing a capture and release as part of an action completed under PROJECTS, the applicant or must submit a complete Salvage Reporting Form, with the following information to NMFS at usfws.bio.nwr@noaa.gov (USFWS projects) or noaarc.biop.nwr@noaa.gov (NOAARC projects), or USFWS at projects@fws.gov (USFWS & NOAARC projects).



**Date(s) of Fish Salvage
Operation(s):**

Supervisory Fish Biologist:

Address:

Telephone Number:

Describe methods that were used to isolate the work area and remove fish



Provided as an example only. Please refer to the appropriate Biological Opinion for applicable forms.

Fish Salvage Data

Water Temperature:

Air Temperature:

Time of Day:

ESA-Listed Species	Number Handled		Number Injured		Number Killed	
	Juvenile	Adult	Juvenile	Adult	Juvenile	Adult
Lower Columbia River Chinook salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Upper Willamette River Chinook salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Upper Columbia R. spring-run Chinook salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Snake River spring/summer-run Chinook salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Snake River fall-run Chinook salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Puget Sound Chinook salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Lake Ozette sockeye salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Columbia River chum salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Lower Columbia River coho salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Oregon Coast coho salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
S. Oregon/N. California Coasts coho salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Snake River sockeye salmon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Lower Columbia River steelhead	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Upper Willamette River steelhead	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Middle Columbia River steelhead	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Upper Columbia River steelhead	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Snake River Basin steelhead	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Eulachon	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Bull trout (FWS)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Lahontan cutthroat trout (FWS)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Warner sucker (FWS)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

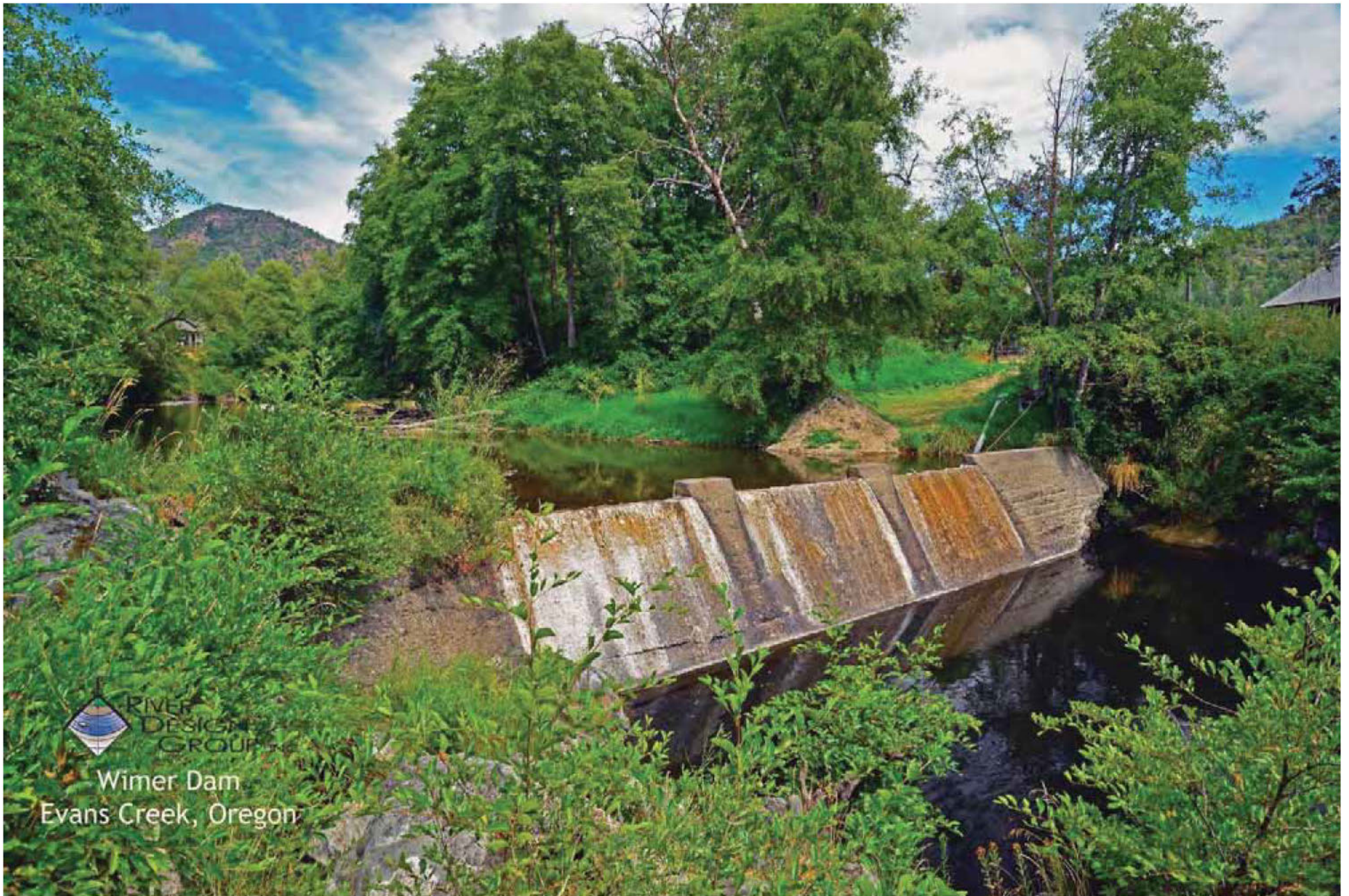
Provided as an example only. Please refer to the appropriate Biological Opinion for applicable forms.



Fielder Dam
Evans Creek, Oregon

Case Study - Use of a programmatic on an actual project that is currently in progress...

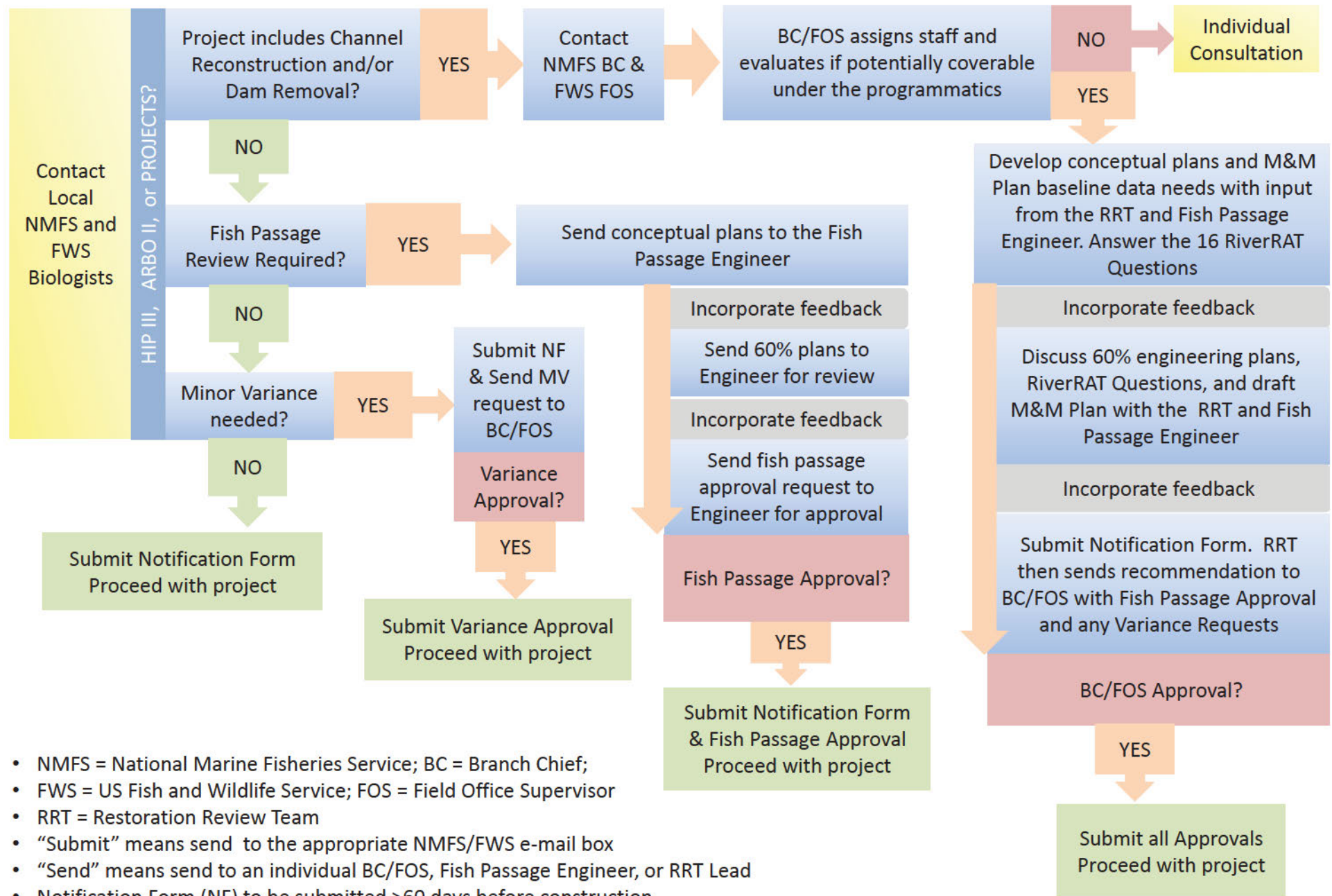




Wimer Dam
Evans Creek, Oregon



IDEALIZED RESTORATION PROGRAMMATIC REVIEW PROCESS



- NMFS = National Marine Fisheries Service; BC = Branch Chief;
- FWS = US Fish and Wildlife Service; FOS = Field Office Supervisor
- RRT = Restoration Review Team
- "Submit" means send to the appropriate NMFS/FWS e-mail box
- "Send" means send to an individual BC/FOS, Fish Passage Engineer, or RRT Lead
- Notification Form (NF) to be submitted >60 days before construction

Website and Mailboxes:

For the most up-to-date BiOp versions:

www.fws.gov/oregonfwo/ToolsForLandowners/OtherResources.asp

HIP III:

FWS: hip3@fws.gov

NMFS: hip.nwr@noaa.gov

BPA: HIP_Reporting@bpa.gov

ARBO II:

FWS: arbo@fws.gov

NMFS: ARBO.nwr@noaa.gov

PROJECTS:

FWS: projects@fws.gov

NMFS: usfws.biop.nwr@noaa.gov **OR** noaarc.biop.nwr@noaa.gov

Auto-response example: “HIP3 Item Received”

Points of Contact:

HIP III:

FWS: Chris Allen, chris_allen@fws.gov

NMFS: Nancy Munn, nancy.munn@noaa.gov

Fish Passage: Jeff Brown, jeffrey.brown@noaa.gov

RRT: Dan Gambetta, dagambetta@bpa.gov

ARBO II:

FWS: Paul Bridges, paul_bridges@fws.gov

NMFS: Ken Phippen, ken.phippen@noaa.gov

Fish Passage: Aaron Beavers, aaron.beavers@noaa.gov

RRT, FS: Scott Peets, speets@fs.fed.us

RRT, BLM: Scott Lightcap, slightca@blm.gov

PROJECTS:

FWS: Ann Gray, ann_e_gray@fws.gov

NMFS: Ken Phippen, ken.phippen@noaa.gov

Fish Passage: Aaron Beavers, aaron.beavers@noaa.gov

RRT: Janine Castro, janine_m_castro@fws.gov

Washington Fish and Wildlife Office (WFWO)

Lacey (State Office) – Bridget Moran, Division Manager

Central Washington – Jessica Gonzales, FO Supervisor

Eastern Washington – Russ MacRae, FO Supervisor

**Michelle Eames –technical POC for WFWO for HIP III consultation

Oregon Fish and Wildlife Office (OFWO)

Portland (State Office) – ES Division Manager (Jeff Dillon)

Bend FO – Nancy Gilbert, FO Supervisor

La Grande FO – Gary Miller, FO Supervisor

Roseburg FO – Jim Thrailkill, FO Supervisor

Newport FO – Laura Todd, FO Supervisor

** Chris Allen –technical POC for OFWO for HIP III consultation

Idaho Fish and Wildlife Office (IFWO)

Boise (State Office) – Russ Holder, Assistant State Supervisor

Eastern Idaho FO – David Kampwerth, Field Office Supervisor

Northern Idaho FO – Ben Conard, Field Office Supervisor

**Pam Druliner – technical POC for IFWO for HIP III consultation

Montana Fish and Wildlife Office (MFWO)

Helena (State Office) – Jodi Bush, State Supervisor; Brent Esmoil, Assistant State Supervisor

Kalispell – Tim Bodurtha, Field Office Supervisor

http://www.westcoast.fisheries.noaa.gov/about_us/index.html

← → ↻ 🏠 www.westcoast.fisheries.noaa.gov/about_us/index.html ☆ 📧 📺 📅 📍 📧 🌐 📺 📺

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WEST COAST REGION

NOAA Fisheries West Coast Region

NOAA Fisheries is dedicated to protecting and preserving our nation's living marine resources through scientific research, fisheries management, enforcement, and habitat conservation. The West Coast Region of NOAA Fisheries administers fisheries programs along the coasts of Washington, Oregon and California; and in the vast inland habitats of Washington, Oregon, California and Idaho. We work to conserve, protect, and manage salmon and marine mammals under the Endangered Species Act and Marine Mammal Protection Act, and sustainably manage West Coast fisheries as guided by the Magnuson-Stevens Fisheries Conservation Act. To achieve this mission and advance sound stewardship of these resources, we work closely with tribes, local, state and federal agencies, our stakeholders, and partners to find science-based solutions to complex ecological issues.

Regional Leadership

- Sustainable Fisheries Division
- Protected Resources Division
- Operations, Management & Information Services
- Communications & External Affairs Office

Oregon & Washington Coastal Area Office

- Interior Columbia River Basin Area Office
- California Central Valley Area Office
- California Coastal Area Office
- Locations & Contact Information

What We Do

- Aquaculture
- Fish Passage
- Habitat
- Protected Species
- Fisheries
- Hatcheries

Resources

- Permits & Authorizations
- Publications
- Maps & Data
- Education & Outreach
- Recent Stories
- Newsroom
- NOAA Affiliates

How do I?

- Contact the West Coast Region

November 18, 2019

State Water Resources Control Board
Division of Water Quality
Attention: Jessica Nadolski
P. O. Box 100
Sacramento, CA 95812-2000

Subject: Comment Letter - Proposed Statewide Restoration General Order

The State Water Resources Control Board has noticed preparation and California Environmental Quality Act Scoping meetings to assess the potential environmental effects of a proposed project, Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for implementing Large Habitat Restoration Projects Statewide (General Order). The General Order intends to improve permitting efficiency for specific types of restoration activities, assumed to be environmentally beneficial, statewide.

The notice offers ten types of aquatic and riparian restoration projects suggested for adoption:

- 1 Stream Crossings and Fish Passage Improvements
- 2 Small Dam, Tide Gate, Flood Gate and Legacy Structure Removal
- 3 Bioengineered Bank Stabilization.
- 4 Off-Channel/Side-Channel Habitat Restoration and Enhancement
- 5 Water Conservation Projects
- 6 Floodplain Restoration
- 7 Piling and other In-Water Structure Removal
- 8 Non-Native Invasive Species Removal and Native Plant Revegetation
- 9 Tidal, Subtidal, and Freshwater Wetland Establishment, Restoration and Enhancement
- 10 Stream and Riparian Habitat Establishment, Restoration and Enhancement

Assuming that all ten of the projects types being considered for this General Order will have a net environmental benefit is wrong. One type in particular, Number 5 - Water Conservation, all too often is undertaken to improve the water rights holder's capability to divert even more water than would occur under baseline (existing licensed) conditions. Therefore the scope of the proposed action should eliminate Number 5 - *Water Conservation Projects - to reduce low-flow stream diversions, such as off-stream storage tanks and ponds and necessary off-channel infrastructure.*

Assuming that all restoration project proponents will be seeking real environmental benefit is also wrong. Many project proponents are seeking a mitigation project for some other environmentally damaging project they are undertaking in which regulators are requiring them to provide mitigation for unavoidable adverse impacts. Therefore the General Order should exclude those applicants that are seeking a restoration project in

any connection with a requirement for a water supply development project requiring any action on the part of the State Water Resources Control Board's Division of Water Rights. Foremost of concern would be those applicants offering a Voluntary Settlement Agreement in lieu of water for a water rights settlement agreement. While these two exclusions, one a type of restoration project and the other a category of applicants, may seem extreme, all other types of restoration projects and project proponents can be considered for a General Order making more efficient certification and permitting. This comment does not preclude those project types from being pursued, it simply requires of them a more careful review.

Making certification and permitting easier, wildly inclusive, and allowing sloppier environmental verification and disclosure of environmental impacts just opens the door to even more costly and ineffective aquatic and riparian restoration projects. Are there examples? Yes. Some of the huge blunders tax payers have been billed for in the past include 1) the Tehama Colusa Canal Fish Facility, 2) the Montezuma Slough Control Structure, and 3) CALFED. All three examples were attempts to do the right thing but sloppy planning and/or political interference resulted in the accomplishments being only a disastrous spending program. While the scope of investment dollars in these three blunders was large, the scope of restoration projects to be considered under the General Order could likewise be cumulatively large. The desire of developers to reduce costs and maximize profits drives them to be cheap and offer a spending program of fixed cost in lieu of accountability to keep the ecosystem healthy.

Progressive government employing reasonable and protective review and permitting of projects that overall are truly beneficial is to be encouraged. However, without reasonable restraints and exceptions some parties will use the open door to steal from the common.

My experiences in working professionally as a biologist on water resource project planning in northern California for thirty-four years (1974 - 2008) and observations both during that work period and in retirement since 2008, has destroyed my confidence in the balancing of protection of beneficial uses that has taken place for decades and continues. The decimation of most of the State's fisheries, especially the Central Valley's riverine and estuarine fisheries, has been monumental. Recent developments at the Federal government level convincingly demonstrate that science is for sale. These experiences compel me to offer these views.

Sincerely,

Richard Morat
2821 Berkshire Way
Sacramento, CA 95864



NCWA
Northern California Water Association

*To advance the economic, social and environmental sustainability of Northern California
by enhancing and preserving the water rights, supplies and water quality.*

November 22, 2019

State Water Resources Control Board
Division of Water Quality
Attention: Jessica Nadolski
P.O. Box 100, Sacramento, CA 95812-2000

RE: Comments on Notice of Preparation and California Environmental Quality Act
Scoping Meeting and General Order for Clean Water Act Section 401 Water Quality
Certification and Waste Discharge Requirements for Implementation of Habitat
Restoration Projects Statewide

Dear Ms. Nadolski:

The Northern California Water Association strongly supports State Water Board action to create a more efficient permitting mechanism for habitat restoration. As the State Water Board knows, the water suppliers and landowners in the Sacramento River Basin are working hard on various restoration projects for salmon, birds and other species. A more efficient permitting process will help advance more on-the-ground work for fish and wildlife and thus get these environmentally beneficial projects completed more quickly. We encourage a broad environmental analysis, so the permit can comprehensively cover a wide-array of essential restoration projects throughout the Sacramento River Basin and throughout the state.

Please call us if you have any questions or if you would like to hear more about these various fish and wildlife programs.

Sincerely yours,

David J. Guy
President



November 22, 2019

State Water Resources Control Board
Division of Water Quality
Attention: Jessica Nadolski
P.O. Box 100, Sacramento, CA 95812-2000
jessica.nadolski@waterboards.ca.gov

Re: Scoping comments – Proposed Statewide Restoration General Order

Dear Ms. Nadolski:

The following comments are submitted on behalf of Trout Unlimited (TU), the nation's oldest and largest conservation organization dedicated to restoring and enhancing our coldwater fisheries and the habitat that supports them. TU currently has 15 full-time staff in California, eight of whom are dedicated primarily to developing and implementing on-the-ground projects to restore habitat for threatened and endangered trout and salmon populations. In the last two decades, we have completed over 100 individual restoration projects. Our North Coast Coho Program alone has installed more than 2100 individual log structures in 120 miles of stream, removed 12 instream migration barriers, and prevented over half a million cubic yards of sediment from entering critical salmon streams. Our California Water Project has, in cooperation with our various partners, implemented over two dozen projects utilizing seasonal storage and forbearance of diversion, direct release of flow, rainwater harvesting, and other methods to enhance streamflow for the benefit of native salmonids. This collective body of work has given us considerable experience with the permitting of habitat restoration projects, including the potential impacts of those projects and the measures designed to control them. Based on that experience, we offer the following scoping comments on the proposed order.

General

As a general comment, we strongly support this effort to develop a statewide general order for large habitat restoration projects. Habitat restoration is a critical component of efforts to recover threatened and endangered fish and wildlife populations statewide. Many of these species, such as coho salmon, are at risk of imminent extinction. In order to prevent extirpation of these species, it will be necessary to implement restoration at a pace and scale commensurate to the scope of the various threats to their habitat. In our experience, environmental permitting – despite the best intentions and efforts of staff for various agencies – is often a limiting factor on both the size and implementation timeline of restoration projects. While we recognize the need to ensure that such projects comply with applicable laws, and to minimize any negative impacts, we also believe that as practitioners and regulators have gained experience with common restoration methods and project types in recent years, and have developed practices to anticipate and control their likely impacts, opportunities have emerged to decrease the time and expense needed to permit restoration measures while maintaining environmental protectiveness. The existing general order for certification of small habitat restoration projects is a successful example of this, and we think the proposed general order covering larger habitat

projects could significantly increase the pace and scale at which restoration measures can be completed on the ground. This would have substantial benefits for the recovery of threatened and endangered species.

Project size

One approach that we hope will not be utilized in developing the proposed order is placing generic limits on the size of projects eligible for coverage. As you know, the existing small habitat order is limited to projects that disturb no more than 500 linear feet of stream. In our experience, this provision has frequently limited the size of individual projects, and therefore the scope of restoration we are able to implement in a given construction season. Again, we recognize the need to control project impacts, and understand the appeal of using size limits as an easily-applied surrogate for impacts such as sediment discharge. However, given the effectiveness of standardized best management practices, we find that in most cases the 500-foot limit is not a good predictor of impacts, and can cite numerous examples of projects that could have been significantly larger without posing a substantial threat to water quality. We hope that in developing the new general order, the Board will avoid the use of categorical size limits as a means of limiting impacts, in favor of more effective requirements that do not needlessly limit the scope of needed restoration.

Project types

The list of ten project types to be covered by the general order appears to cover all of the common types of riparian habitat restoration projects. We support this broad approach, which will tend to maximize the scope of projects that can potentially be covered by the order, which will in turn maximize the benefits to species recovery. We offer the following comments on specific project types.

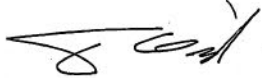
First, we note the list does not specifically identify large woody debris (LWD) projects, one of the most common and effective types of projects to create instream habitat for rearing salmonids and other aquatic species. Our understanding is that LWD projects are intended to be covered by the proposed order, and specifically are included within project type 10, Stream and Riparian Habitat Establishment, Restoration, and Enhancement. Given the increasing interest in implementing LWD projects at a larger scale where opportunities exist, we would like to ensure this project type is made eligible for coverage in the proposed order.

Second, we are glad to see that water conservation and streamflow enhancement projects are included in the list as well. In addition to the off-channel storage projects specifically identified, we propose adding another project type we have had considerable success with in recent years: direct flow releases. These projects involve releasing flow directly to stream channels to augment dry season baseflow in the late summer and early fall months. Two leading examples of this have been the Camp Meeker and Gallo Glass projects in tributaries of the Russian River. The former involved the release of flow from an existing on-stream reservoir on Porter Creek, while the latter involved the release of flow into Dutch Bill Creek from a water pipeline that supplies several local resort facilities. These projects were instigated by the Coho Partnership (of which TU is a member) during the recent drought in cooperation with the North Coast and State Water Boards and the Department of Fish and Wildlife. Both projects included monitoring requirements and other measures to address potential water quality concerns, and monitoring results demonstrate that both projects produced significant streamflow benefits and improved water quality. Additional flow release projects are now in various stages of development.

Given the proven ability of this project type to deliver habitat benefits while protecting water quality, we would encourage the Board to add it to the list of projects eligible for coverage under the proposed order.

Thank you for the opportunity to provide scoping comments regarding this proposed order. Again, we strongly support this effort by the Board, and we look forward to commenting on subsequent stages of the EIR process.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Clifford", with a stylized flourish at the end.

Matt Clifford
California Water Project Attorney



To: State Water Resources Control Board Division of Water Quality
P.O. Box 100, Sacramento, CA 95812-2000
Attention: Jessica Nadolski

Re: Comment Letter – Proposed Statewide Restoration General Order

The Pacific Coast Fish, Wildlife and Wetlands Restoration Association is a nonprofit organization specifically engaged in implementing “on the ground” habitat protection and improvement projects since 1991. Our efforts on the Northcoast region of California over the past couple decades has resulted in the completion of at least a couple hundred projects providing meaningful habitat improvement for native fish and wildlife across a broad swath of both public and private lands. (see www.pcfwwra.org)

At times obtaining 401 Water Quality Certification has been one of the major hurdles to actually being able to implement projects that improve water quality for beneficial uses. The majority of the projects we have completed have been provided CEQA coverage and other permitting through the CA Department of Fish & Wildlife’s *programmatic permitting* for their Fisheries Restoration Grants Program. Even this usually successful streamlining effort of the FRGP *programmatic permitting* has been held up through over half of the limited allowable construction season (June 15-Oct 31) waiting for an annual 401 WQC to be completed. The annual WQC process has created significant projects delays and unanticipated associated costs that at times have resulted in projects not being able to be completed.

Many of the projects we’ve done have simply not fit within the SWRCB’s General Order exemption for small scale restoration projects. We strongly encourage the State Water Resources Control Board to adopt the following: ORDER FOR CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND WASTE DISCHARGE REQUIREMENTS FOR IMPLEMENTATION OF LARGE HABITAT RESTORATION PROJECTS STATEWIDE

We also request specifically that the CDFW’s Fisheries Restoration Grant Program annual 401 WQC be included as covered by this General Order.

If you have any questions please feel free to contact me.

Mitch Farro
Projects Manager, PCFWWRA
(707) 839-5664 or mitch@pcfwwra.org



Trinity River Restoration Program

P.O. Box 1300, 1313 South Main Street, Weaverville, California 96093
Telephone: 530-623-1800, Fax: 530-623-5944

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VIA ELECTRONIC MAIL ONLY

Ms. Jessica Nadolski
State Water Resources Control Board

Subject: Support for a General Order to Facilitate Authorization of Large Habitat
Restoration Projects

Dear Ms. Nadolski,

Trinity River Restoration Program (TRRP) staff, who work to implement a restoration strategy to reestablish river function, and subsequently the Trinity River fishery in Northern California, stand firmly with the State Water Board to support your proposed efforts to streamline the permitting process for environmentally beneficial "Large Habitat" restoration activities.

As TRRP scientists work to forestall the impacts of riverine habitat loss, and to offset climate change and its cascading environmental impacts, we need every tool possible to aid large scale restoration project implementation. We need beneficial environmental effects, now.

Development of the State Water Board's proposed Environmental Impact Report to evaluate the impacts of a General Order that supports large scale restoration projects, is a first step in meeting California legal requirements. We know that the State Water Board's General Water Quality Certification for small habitat restoration projects has helped get small projects on the ground faster and with less regulatory expenses than would have otherwise been possible. We support your proposed increased scope of environmental coverage to authorize larger projects as well as the list of types of restoration projects that you include.

Habitat restoration, including large projects and integrated ecosystem efforts, is needed to counteract the tremendous scale of human impacts on every ecosystem. Large projects, which assumedly have greater temporary implementation impacts, also provide increased restoration benefits that are needed to restore functional habitats in a time-frame that allows use by dwindling and at risk species.

Our staff have been working with the North Coast Regional Water Quality Control Board as our CEQA Lead in restoration of the Trinity River. As a partner in this effort, we have worked to ensure restoration with no net loss of riparian vegetation, however, we also note the importance of non-vegetated habitat and floodplains along rivers. Consequently, we will be especially interested in your impact analyses for river restoration on hydrology and water quality.

Trinity Management Council

Don Bader, Bureau of Reclamation – Justin Ly, Chair, National Marine Fisheries Service –
Terri Simon-Jackson, USDA Forest Service – Mike Orcutt, Hoopa Valley Tribe – Dave Hillemeier, Yurok Tribe – Keith Groves, Trinity County –
Teresa Connor, California Department of Water Resources – Dan Everson, Vice Chair, US Fish & Wildlife Service –
Mike Dixon, TRRP Executive Director

Ms. Jessica Nadolski

We would appreciate the opportunity to assist in your analyses or to support your analyses by providing rehabilitation sites for monitoring.

Please contact Brandt Gutermuth (fgutermuth@usbr.gov 530.623.1806) of our office with any support needs that you might have in this endeavor. To the extent we can, we will assist.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mike Dixon", is written over the printed name.

Mike Dixon
Executive Director

cc: Gil Falcone
North Coast Regional Water Quality Control Board