

North Fork Noyo River Tributary Complex - Large Wood Habitat Enhancement Project

2020

Introduction:

The California Conservation Corps (Permittee) will implement the North Fork (NF) Noyo River Tributary Complex - Large Wood Habitat Enhancement Project. The lack of large wood in the stream channel has affected the quality and quantity of salmonid habitat within Dewarren Creek, Middle Fork North Fork (MFNF) Noyo River and Gulch Seven by reducing the amount of large, channel-forming features and the loss of complex cover for salmonids. Recovery plans and assessments recommend adding large wood to these tributaries of the NF Noyo River. California Department of Fish and Wildlife (CDFW) stream habitat inventory reports recommend increasing woody cover in the pools and flatwater habitat units to enhance both summer and winter salmonid habitat. Additionally, large wood (LW) was found to be lacking in each stream reach with the addition of LW being a top priority restoration action according to the most recent CDFW stream inventory reports and Albin 2006 *Assessment of Stream Habitat Conditions, and Recommendations for Improvement, in the Noyo River Hydrologic Sub-Area*.

The Permittee shall not proceed with on the ground implementation until all necessary permits, consultations, and/or Notice to Proceed are secured. All habitat improvements will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* (Volume 1, Part VII <https://www.wildlife.ca.gov/Grants/FRGP/Guidance>).

Objective(s):

The specific objective of this project is to improve the quality and quantity of spawning and rearing habitat for coho salmon by installing large wood in three separate streams in the NF Noyo River Watershed. This project will result in a total of 124 large wood features consisting of 340 pieces of wood over 11,780-feet (2.23-miles) of stream, exceeding the "very good" category in all three streams for LW frequency, as outlined in federal coho recovery plans. The total LW count will increase from an existing 13 pieces (22.8/mile), to 95 (167.2/mile) on Dewarren Creek, 36 (46.3/mile) to 148 (190.36/mile) on MFNF Noyo River, and 17 (19.2/mile) to 163 (184.09/mile) pieces on Gulch Seven. The addition of appropriately sized wood to meet target criteria will enhance the quality, quantity, and complexity of spawning and rearing habitat for salmonids.

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Project Description:

Location:

The project is located on three tributaries to NF Noyo River, tributary to Noyo River, in the county of Mendocino, State of California. Gulch Seven enters NF Noyo River 3.0-miles upstream from where NF Noyo River enters mainstem Noyo River. MFNF Noyo River enters NF Noyo River 2.4-miles upstream of Gulch Seven. Dewarren Creek enters NF Noyo River 0.7-miles upstream of where MFNF Noyo River enters NF Noyo River. The center point for the Dewarren Creek project reach is 39.48436° north latitude and -123.55384° west longitude. The center point for the MFNF Noyo River project reach is 39.47799° north latitude and -123.53834° west longitude. The Gulch Seven project reach is 39.45901° north latitude and -123.51375° west longitude. Project reaches are located on the Northspur 7.5 Minute U.S. Geological Survey (USGS) Quadrangle map.

Project Set Up:

The Permittee staff will provide all project oversight, administration and implementation. The Permittee staff will move LW into place utilizing wire rope rigging techniques, grip hoists, and other hand tools. The Permittee staff will also anchor and/or pin the features according to designs. The Permittee will help to coordinate CEQA surveys, work with forester to identify trees, update site designs, flag feature locations and prepare tools and materials for implementation. Permittee Conservationist I (CI) will be the direct crew supervisor and oversee crew operations during implementation.

Subcontractor Mendocino Redwood Company Forester will approve selected trees to be felled for project sites. The forester also helps to coordinate spike camp and land access logistics.

Subcontractor Licensed Timber Operator (LTO), under direction from Permittee staff, will fell flagged redwood and Douglas-fir trees at feature locations.

Materials:

A total of 124 large wood features consisting of 340 pieces of large wood and root wads will be constructed and anchored with 1" threaded rebar, nuts, washers, 5/8" galvanized cable, cable clamps, and waterproof epoxy glue, or by wedging into riparian trees without using anchoring materials. Trees left unanchored will be at least 1.5 times the average bankfull width per CDFW Stream Restoration Manual specifications for unanchored large wood (Part VII-23).

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Tasks:

Task 1. Large Wood Acquisition:

LTO will fell flagged trees near project features as specified in site designs. Trees will be selected to minimize impacts on stream canopy, bank stability, and effects on wildlife. The majority of trees will be felled away from the channel and later pulled into the channel with the larger diameter end of log in the water.

Task 2. Install Instream Habitat Features:

Install 34 features including 82 pieces of LW within 3,000 feet of Dewarren Creek, 36 features including 112 pieces of LW within 4,105 feet of MFNF Noyo River and 54 features including 146 pieces of LW within 4,675 feet of Gulch Seven. Work will consist of the following:

- Permittee staff will construct instream log structures according to the site-specific plans to be provided, using locally available logs or logs from other locations.
- Nuts, washers, plates, cable, glue, and rebar will be ordered as applicable.
- Location of all project large wood will be documented.
- Various anchoring techniques, which will be approved by CDFW prior to the initiation of work, may be used to hold multiple logs together to form complex structures. Anchoring techniques will include wedging logs into existing rocks and logs along the riparian banks; anchoring to live mature trees growing on riparian banks; or anchoring to existing boulders. Anchoring materials will consist of 1" threaded rebar, cable, nuts and washers, and waterproof epoxy.

Task 3. Install Small Woody Debris (SWD):

Available slash and SWD will be installed into features as applicable to provide immediate cover for salmonids present at time of construction. SWD will also be installed at specific features to capture additional floating debris, increasing the volume of wood in the channel and the associated geomorphic affects. SWD will consist of branches on tops of felled trees ranging from 3- to 11-inch diameter.

Deliverables:

A total of 124 instream features consisting of 340 pieces of large wood will be constructed within three tributaries to NF Noyo River. The total stream length affected will be 11,780-feet.

Timelines:

June 15 through October 31 of the years 2021, 2022, 2023, and 2024, Permittee staff will install large wood features together with SWD within approved project reaches. Erosion control will be installed as project features are completed.

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Additional Requirements:

The Permittee will not proceed with on the ground implementation until all necessary permits and consultations are secured. Work in flowing streams is restricted per the Army Corp of Engineers Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the CDFW.

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. Any and all equipment will be removed from the streambed and flood plain areas at the end of each workday.

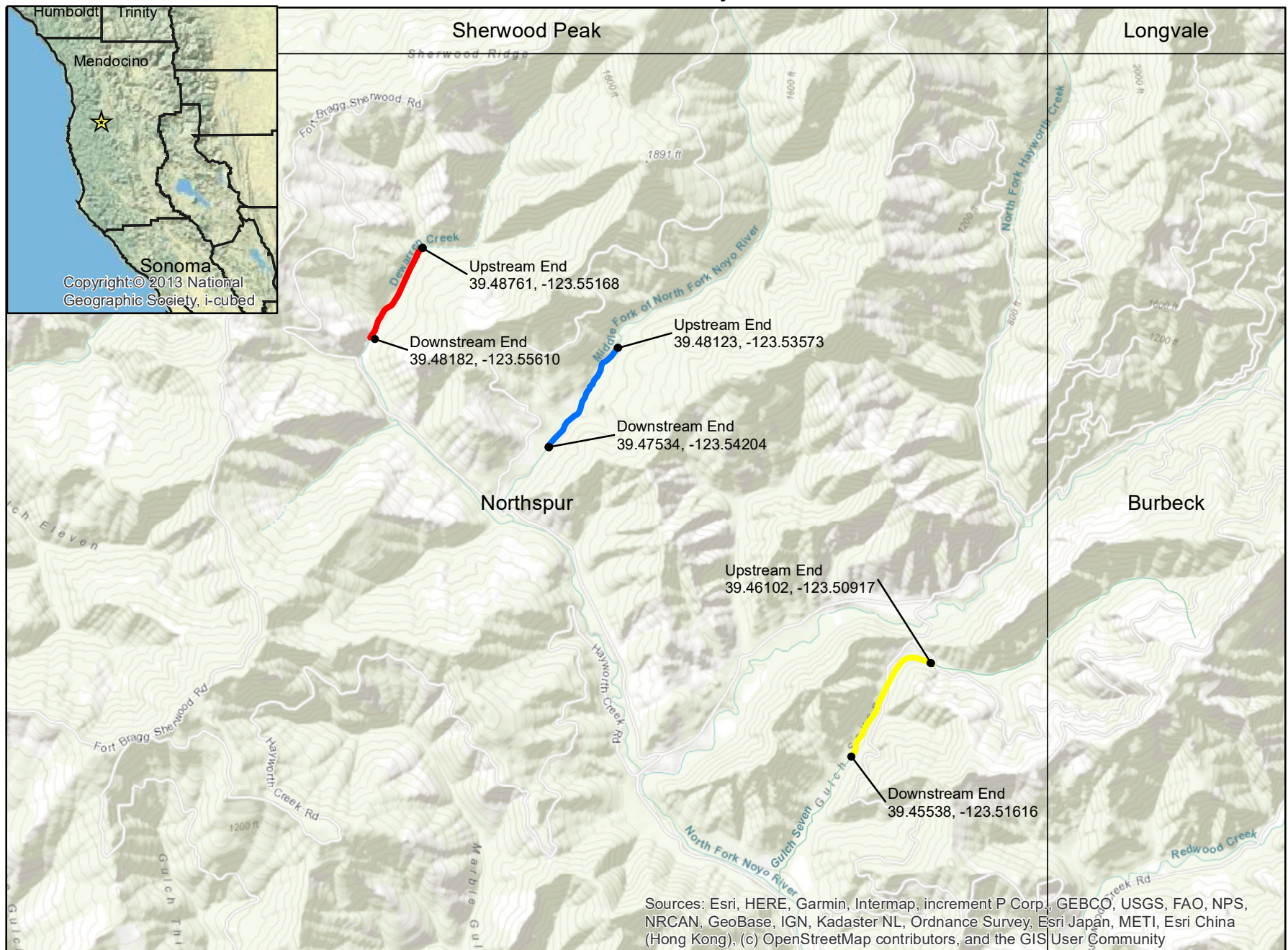
All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW *Aquatic Invasive Species Decontamination Protocol*.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

Final structure design and placement will be determined by field consultation between the Permittee staff and the CDFW Project Manager.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual*.

North Fork Noyo River Tributary Complex Project Location Map
California Conservation Corps
North Fork Noyo River Watershed, Northspur Quad
Mendocino County, CA



- Site 1: Dewarren Creek
- Site 2: Middle Fork of North Fork Noyo River
- Site 3: Gulch Seven



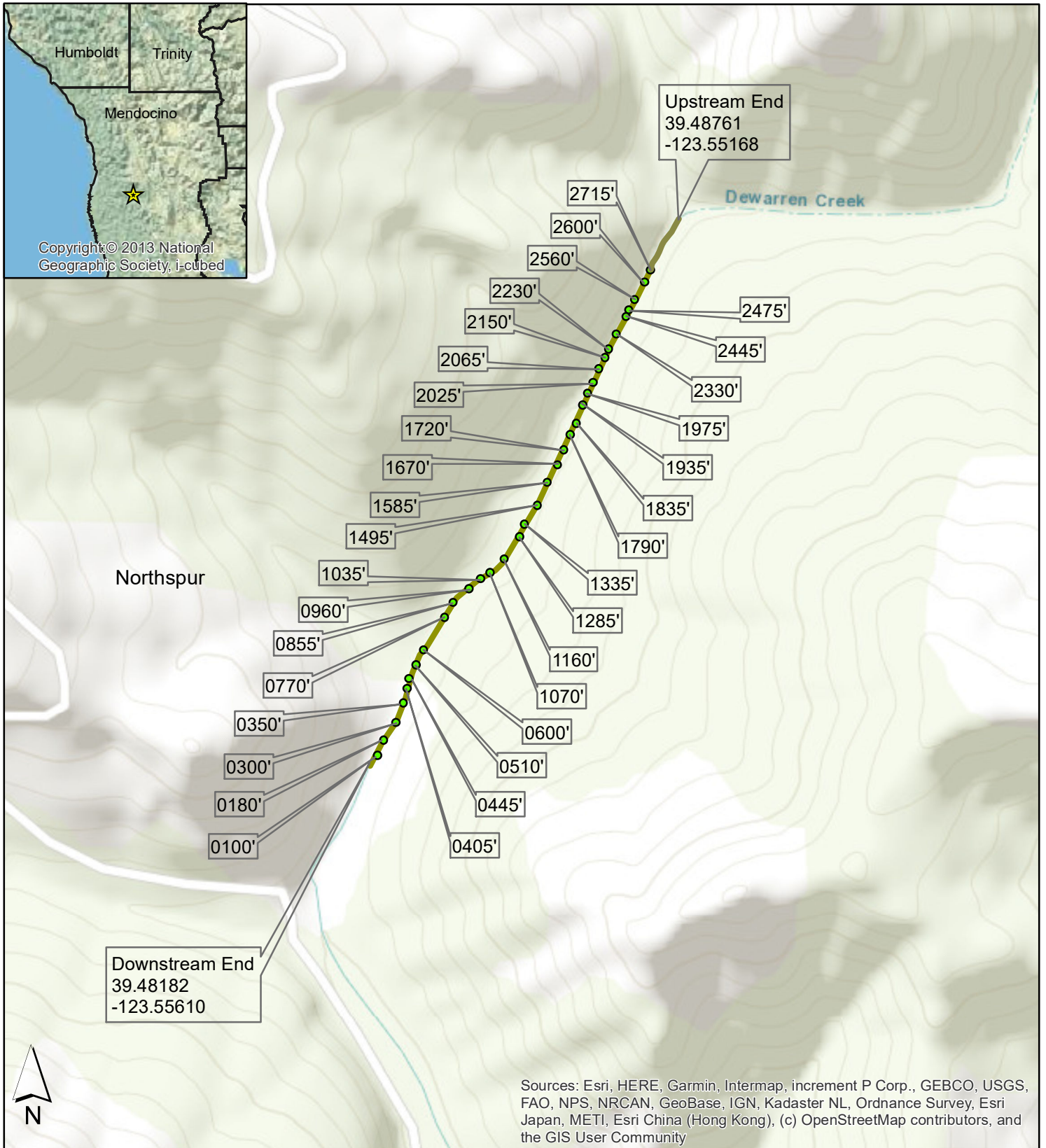
0 0.375 0.75 1.5 Miles

Site 1: Dewarren Creek Feature Locations Map

California Conservation Corps

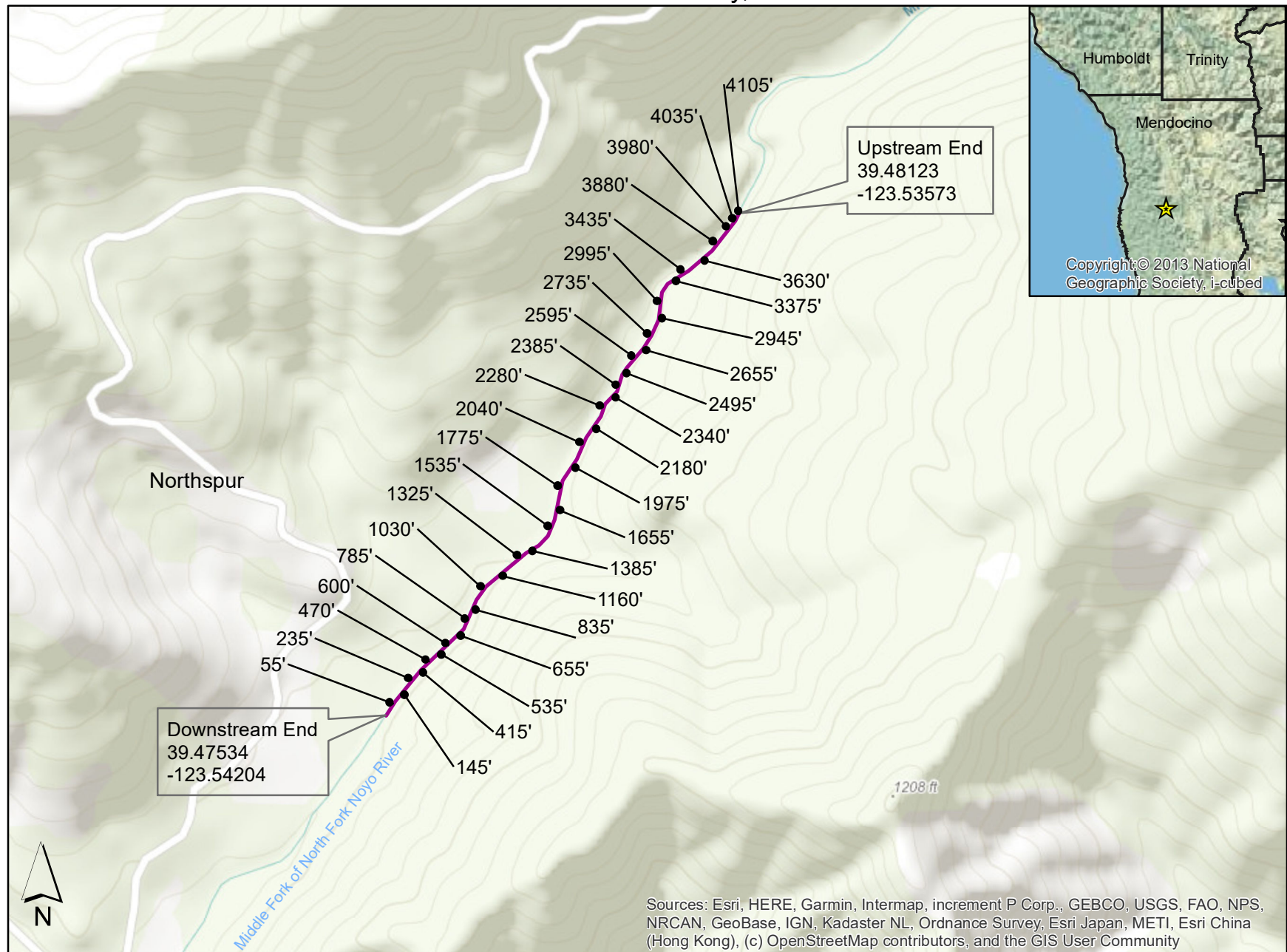
Dewarren Creek, Northspur Quad

Mendocino County, CA



0 0.125 0.25 0.5 Miles

Site 2: Middle Fork of North Fork Noyo River Feature Locations Map
California Conservation Corps
Middle Fork of North Fork Noyo River, Northspur Quad
Mendocino County, CA



Project Reach

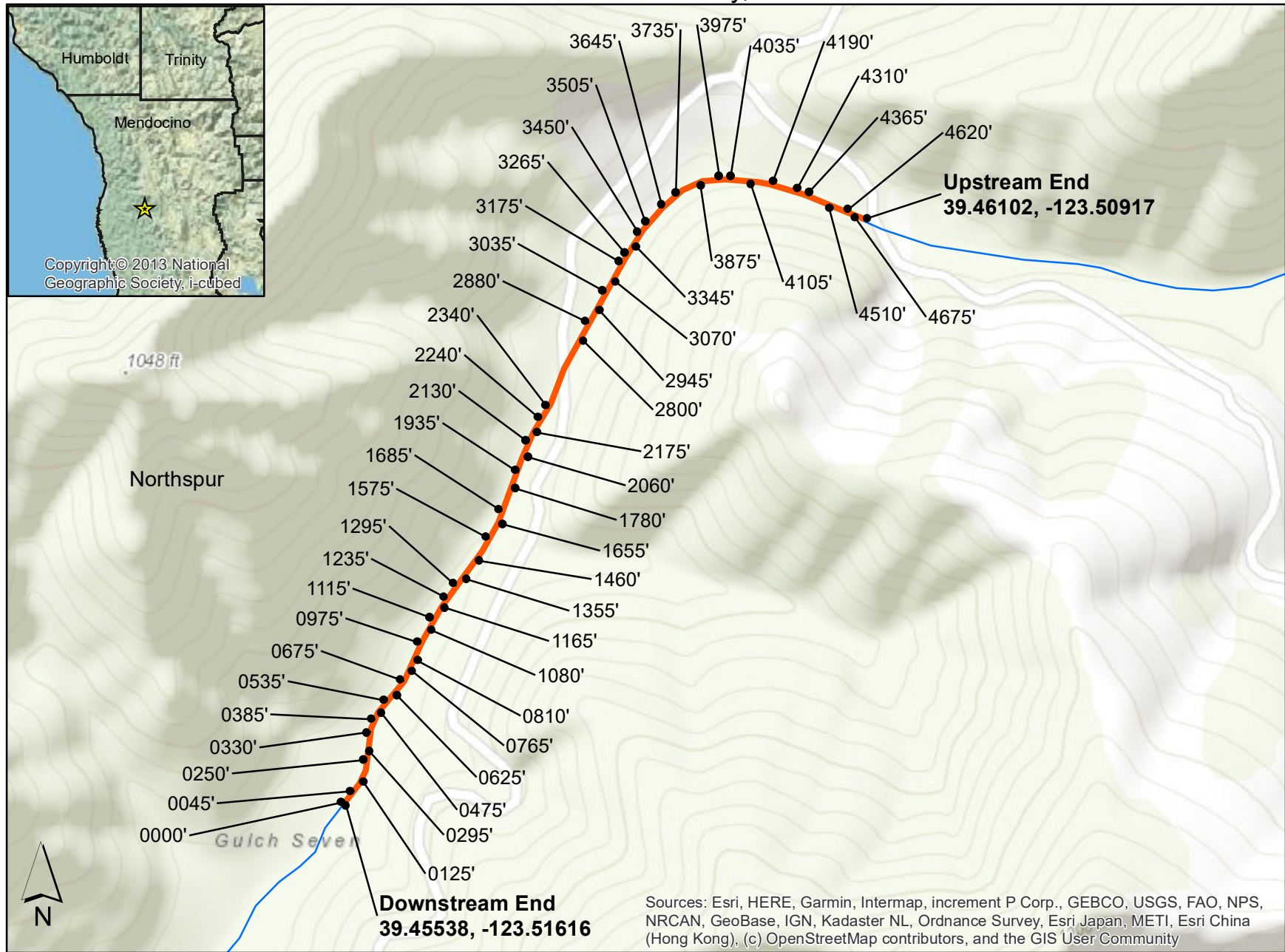
0 0.125 0.25 0.5 Miles

Site 3: Gulch Seven Feature Locations Map

California Conservation Corps

Gulch Seven, Northspur Quad

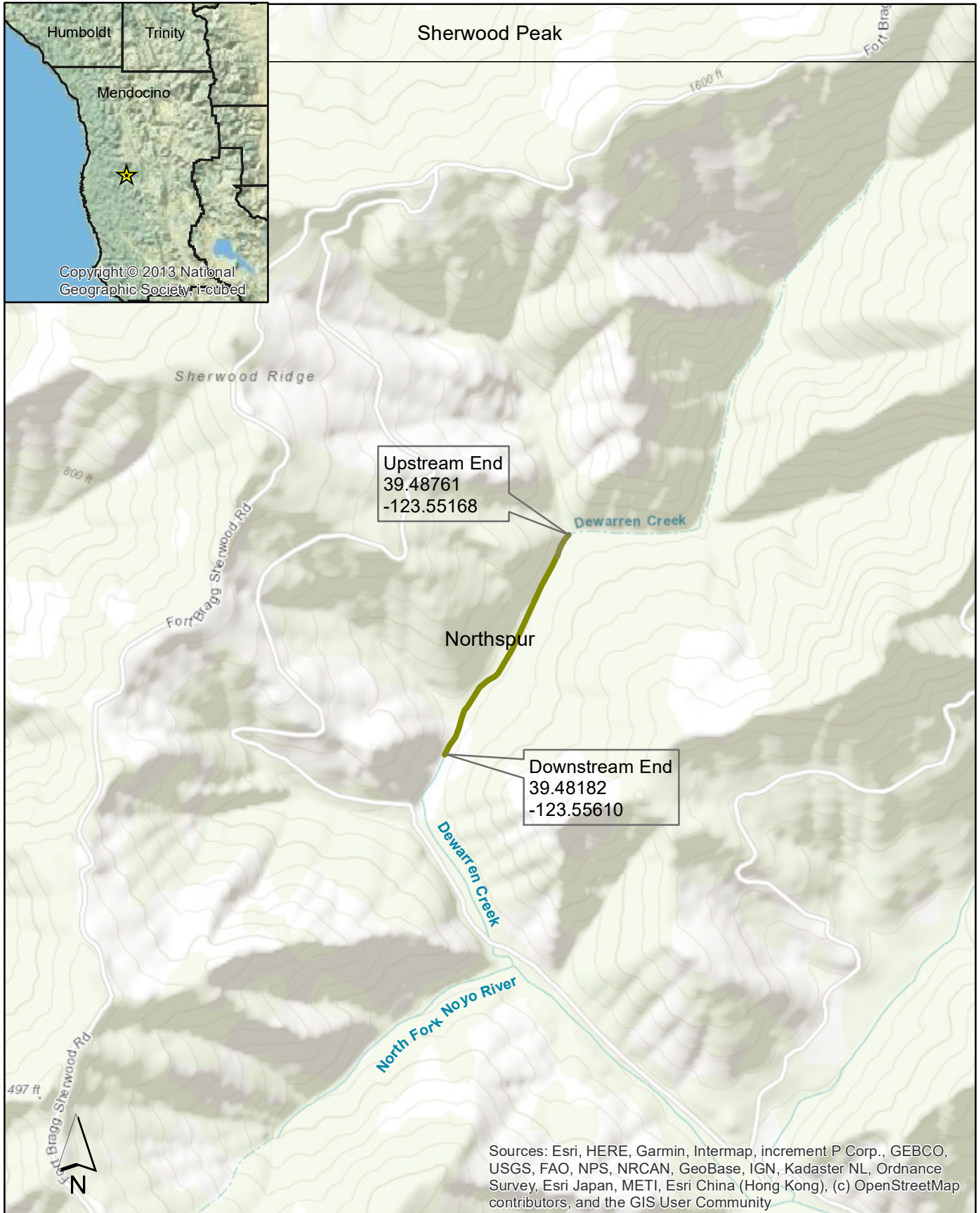
Mendocino County, CA



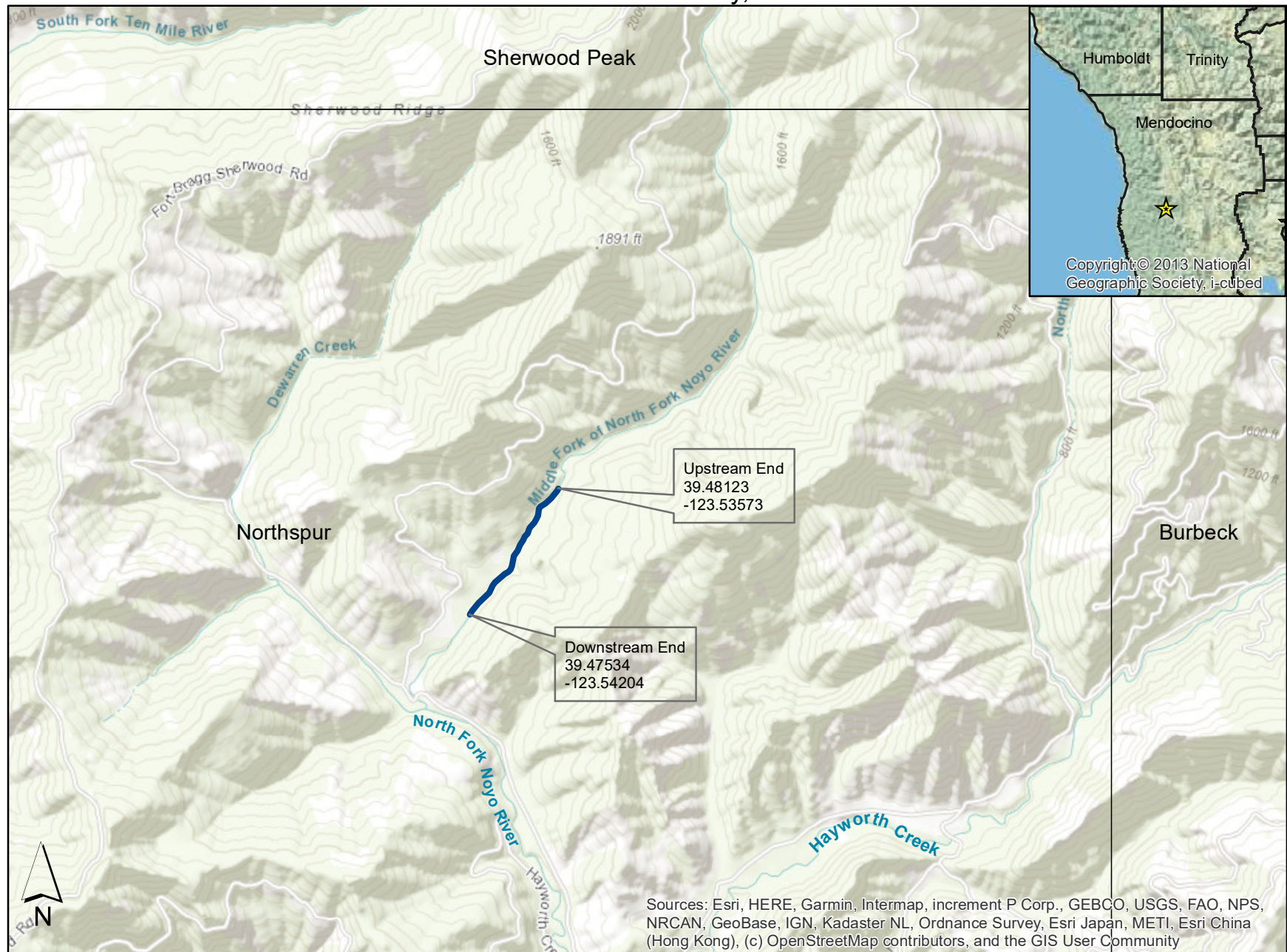
- Gulch Seven Project Reach
- Gulch Seven

0 0.125 0.25 0.5 Miles

Site 1: Dewarren Creek Watershed Map
California Conservation Corps
Dewarren Creek, Northspur Quad
Mendocino County, CA



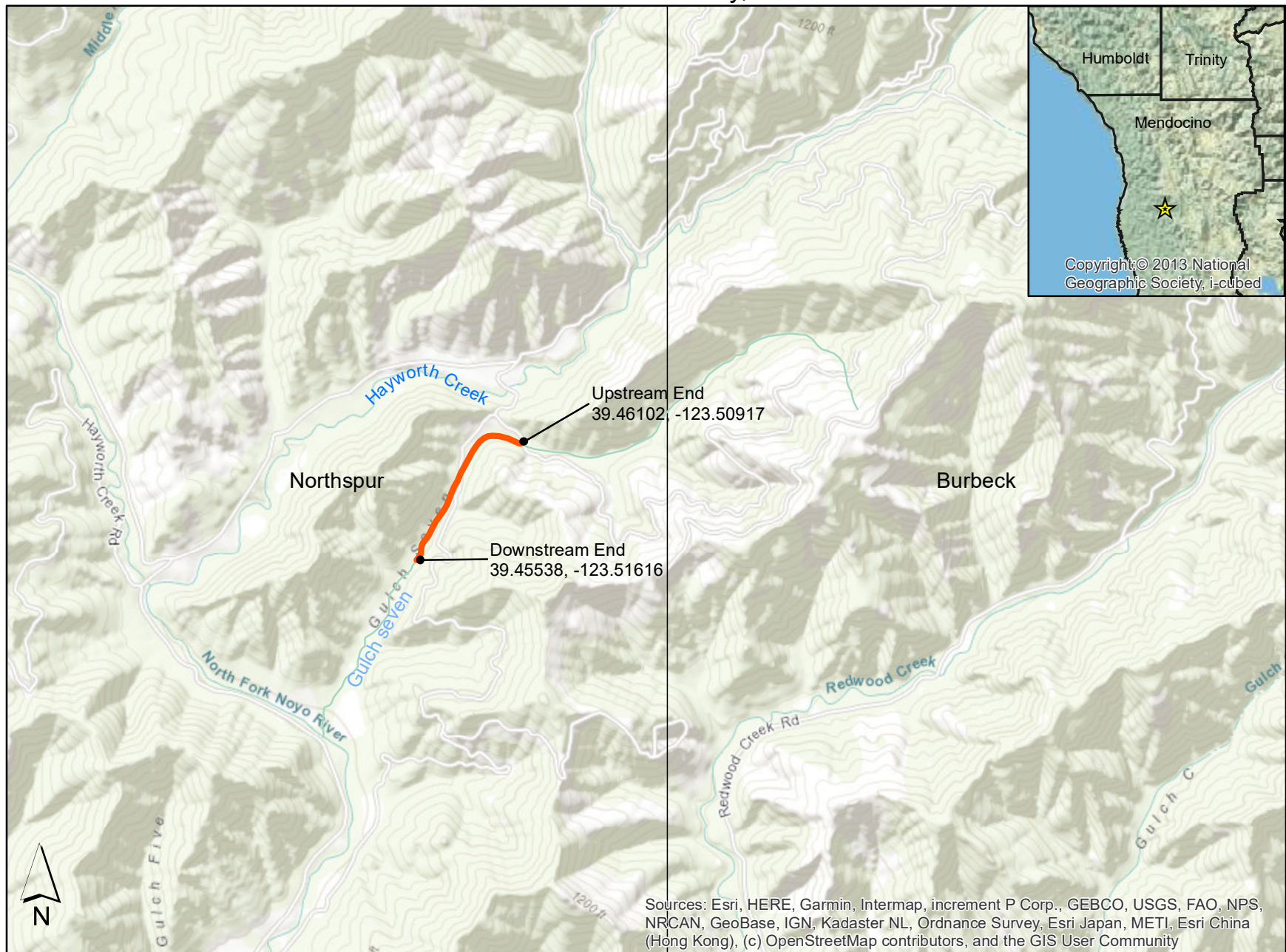
Site 2: Middle Fork of North Fork Noyo River Watershed Map
California Conservation Corps
Middle Fork of North Fork Noyo River, Northspur Quad
Mendocino County, CA



Project Reach - Middle Fork of North Fork Noyo River

0 0.25 0.5 1 Miles

Site 3: Gulch Seven Watershed Map
California Conservation Corps
Gulch Seven, Northspur Quad
Mendocino County, CA



— Gulch Seven Project Reach

0 0.25 0.5 1 Miles



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad< IS (Northspur (3912345) OR Comptche (3912335) OR Mathison Peak (3912336) OR Noyo Hill (3912346) OR Dutchmans Knoll (3912356) OR Sherwood Peak (3912355) OR Longvale (3912354) OR Burbeck (3912344) OR Greenough Ridge (3912334))

Possible species within the Northspur and surrounding quads for 1723402 - North Fork Noyo River Tributary Complex - Large Wood Habitat Enhancement Project, Mendocino County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Accipiter gentilis</i> northern goshawk	ABNKC12060	None	None	G5	S3	SSC
<i>Accipiter striatus</i> sharp-shinned hawk	ABNKC12020	None	None	G5	S4	WL
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
<i>Alisma gramineum</i> grass alisma	PMALI01010	None	None	G5	S3	2B.2
<i>Arboreus pomo</i> Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
<i>Arctostaphylos nummularia ssp. mendocinoensis</i> pygmy manzanita	PDERI04280	None	None	G3?T1	S1	1B.2
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Ascaphus truei</i> Pacific tailed frog	AAABA01010	None	None	G4	S3S4	SSC
<i>Astragalus agnicidus</i> Humboldt County milk-vetch	PDFAB0F080	None	Endangered	G2	S2	1B.1
<i>Atractelmis wawona</i> Wawona riffle beetle	IICOL58010	None	None	G3	S1S2	
<i>Bombus caliginosus</i> obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
<i>Brasenia schreberi</i> watershield	PDCAB01010	None	None	G5	S3	2B.3
<i>Campanula californica</i> swamp harebell	PDCAM02060	None	None	G3	S3	1B.2
<i>Carex californica</i> California sedge	PMCYP032D0	None	None	G5	S2	2B.2
<i>Carex lenticularis var. limnophila</i> lagoon sedge	PMCYP037A7	None	None	G5T5	S1	2B.2
<i>Carex lyngbyei</i> Lyngbye's sedge	PMCYP037Y0	None	None	G5	S3	2B.2
<i>Carex saliniformis</i> deceiving sedge	PMCYP03BY0	None	None	G2	S2	1B.2



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Coastal Brackish Marsh Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coptis laciniata Oregon goldthread	PDRAN0A020	None	None	G4?	S3?	4.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Entosphenus tridentatus Pacific lamprey	AFBAA02100	None	None	G4	S4	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Erythronium revolutum coast fawn lily	PMLIL0U0F0	None	None	G4G5	S3	2B.2
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
Gilia millefoliata dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
Hesperocyparis pygmaea pygmy cypress	PGCUP04032	None	None	G1	S1	1B.2
Hesperolinon adenophyllum glandular western flax	PDLIN01010	None	None	G2G3	S2S3	1B.2
Horkelia marinensis Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lilium maritimum coast lily	PMLIL1A0C0	None	None	G2	S2	1B.1
Lupinus milo-bakeri Milo Baker's lupine	PDFAB2B4E0	None	Threatened	G1Q	S1	1B.1
Lycopodium clavatum running-pine	PPLYC01080	None	None	G5	S3	4.1
Mendocino Pygmy Cypress Forest Mendocino Pygmy Cypress Forest	CTT83161CA	None	None	G2	S2.1	
Mitellastra caulescens leafy-stemmed mitrewort	PDSAX0N020	None	None	G5	S4	4.2
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Oncorhynchus kisutch</i> pop. 4 coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G4	S2?	
<i>Oncorhynchus mykiss irideus</i> pop. 16 steelhead - northern California DPS	AFCHA0209Q	Threatened	None	G5T2T3Q	S2S3	
<i>Packera bolanderi</i> var. <i>bolanderi</i> seacoast ragwort	PDAST8H0H1	None	None	G4T4	S2S3	2B.2
<i>Pandion haliaetus</i> osprey	ABNKC01010	None	None	G5	S4	WL
<i>Pekania pennanti</i> fisher - West Coast DPS	AMAJF01021	Endangered	Threatened	G5T2T3Q	S2S3	SSC
<i>Pinus contorta</i> ssp. <i>bolanderi</i> Bolander's beach pine	PGPIN04081	None	None	G5T2	S2	1B.2
<i>Piperia candida</i> white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
<i>Pleuropogon hooverianus</i> North Coast semaphore grass	PMPOA4Y070	None	Threatened	G2	S2	1B.1
<i>Progne subis</i> purple martin	ABPAU01010	None	None	G5	S3	SSC
<i>Ramalina thrausta</i> angel's hair lichen	NLLEC3S340	None	None	G5?	S2S3	2B.1
<i>Rana aurora</i> northern red-legged frog	AAABH01021	None	None	G4	S3	SSC
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
<i>Rhyacotriton variegatus</i> southern torrent salamander	AAAAJ01020	None	None	G3G4	S2S3	SSC
<i>Rhynchospora alba</i> white beaked-rush	PMCYP0N010	None	None	G5	S2	2B.2
<i>Sidalcea malachroides</i> maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
<i>Speyeria zerene behrensii</i> Behren's silverspot butterfly	IILEPJ6088	Endangered	None	G5T1	S1	
<i>Sphagnum</i> Bog Sphagnum Bog	CTT51110CA	None	None	G3	S1.2	
<i>Taricha rivularis</i> red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Trifolium buckwestiorum</i> Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
<i>Trifolium trichocalyx</i> Monterey clover	PDFAB402J0	Endangered	Endangered	G1	S1	1B.1



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Usnea longissima</i> Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2

Record Count: 61