

ELK RIVER

WATERSHED STEWARDSHIP PROGRAM

Creating a community-supported recovery plan

Welcome, Elk River Residents and Stakeholders!

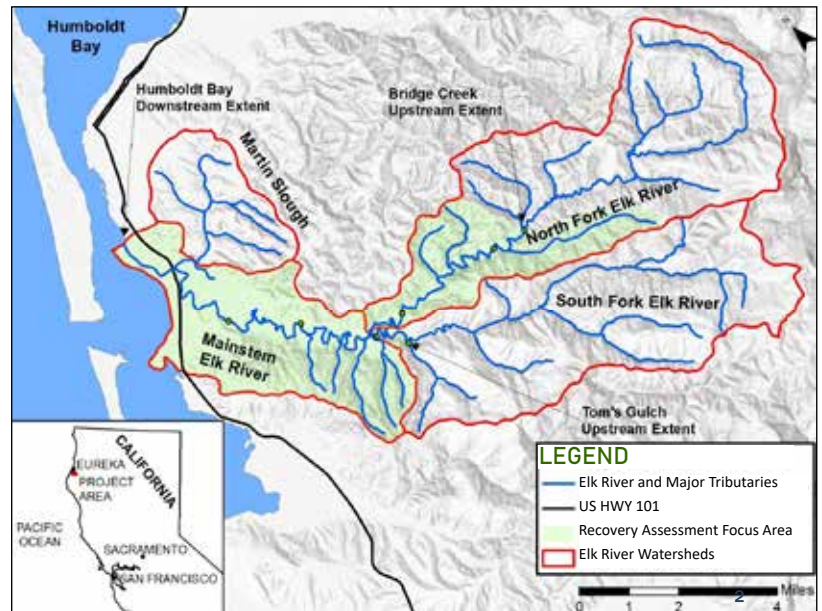
The North Coast Regional Water Quality Control Board (Regional Water Board) and our Science Team of CalTrout, Northern Hydrology and Engineering, and Stillwater Sciences invite you to explore our recently completed **Elk River Recovery Assessment and Recovery Framework** and help guide recovery planning efforts by participating in the **Elk River Watershed Stewardship Program**. The Elk River Recovery Assessment Report is available to view or download from the Regional Water Board's website using the following link: https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/elk_river/pdf/190516/ERRA%20Framework%20Final%20compiled_031419.pdf

This Recovery Assessment Report examines the causes of degraded water quality, the nuisance flooding of roadways and properties, and impaired beneficial uses including impacts to salmon and steelhead habitat in Elk River. In addition, the final report identifies a suite of actions to improve water quality conditions and reduce nuisance flooding in the watershed.

Under the leadership of our Science Team and the Regional Water Board, the recommended actions included in the framework are being considered by Elk River Stakeholders as part of the Elk River Stewardship Program.

The Elk River Stewardship Program is a voluntary and non-regulatory process to work with stakeholders to develop partnerships and on-the-ground projects to improve conditions in the watershed.

In the next steps of our Stewardship program, we intend to vet the recommendations in the Recovery Framework Report with Elk River Stakeholders, analyze them for their



overall effectiveness, and prepare an **Elk River Recovery Plan**.

To provide you opportunities to understand and learn from this information, we are hosting a series of Stewardship community meetings, providing newsletters, a link to a 15-minute video presentation by Jay Stallman (geologist on our Science Team), and access to the Final Report.

We are seeking community input on proposed actions to reduce nuisance flooding, restore impaired beneficial uses, and improve community health and safety in the Elk River watershed.

Your input is important—widespread input will strengthen the quality of the recovery solutions.

On behalf of our Science Team and the Regional Water Board, THANK YOU for your ongoing participation!

The Elk River Watershed Stewardship Program is a voluntary and non-regulatory program seeking input from landowners, stakeholders, agencies, and the affected community on potential actions to reduce nuisance flooding, restore impaired beneficial uses, and improve community health and safety in the Elk River watershed. Your input is important—and will strengthen the quality of the recovery solutions by considering and accommodating all community views.

Regulatory Background: Water Quality Objectives and the Sediment TMDL

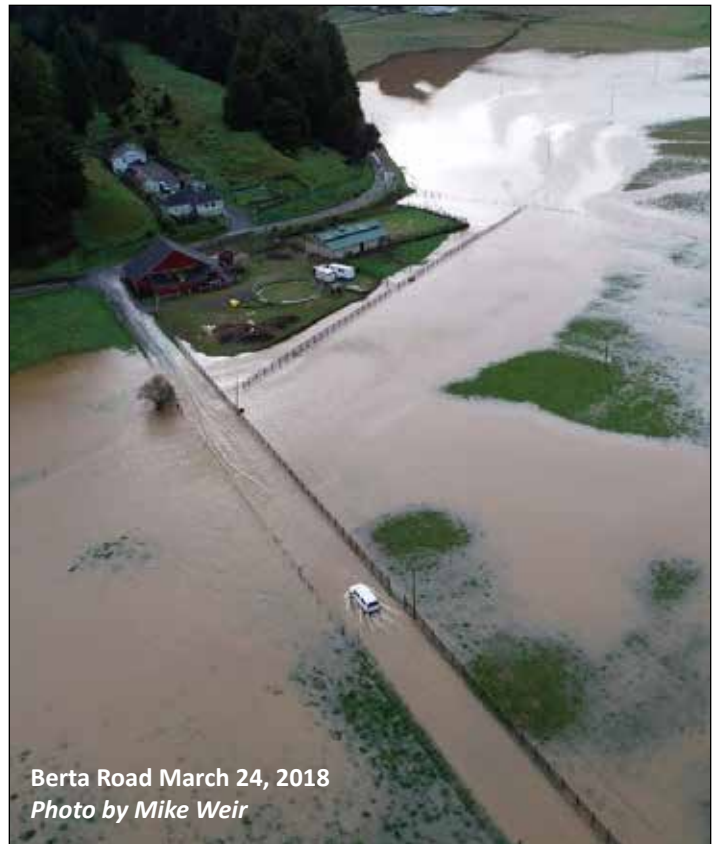
California's *Porter-Cologne Water Quality Control Act* of 1969 defines water quality objectives as the "allowable limits or levels of water quality constituents or characteristics that are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area."

In the Elk River watershed, significant disturbance related to human activity began in the late-1800s with the first harvest of old-growth redwood and the conversion of the Elk River valley and estuary to agricultural lands. These land uses have continued to the present day.

The severity of effects from timber harvest appears to have accelerated in the period between 1988-2000, prompting the Regional Water Board and US Environmental Protection Agency (USEPA) to list the Elk River as a "sediment-impaired" waterbody in 1998.

Listing a waterbody as sediment impaired requires the regulatory agencies (the Regional Water Board, the State Water Board, and the USEPA) to develop a **Total Maximum Daily Load (TMDL)** to satisfy the requirements of the federal Clean Water Act. The regulatory process also results in a **Program of Implementation** to satisfy the requirements of California's Porter-Cologne Act and begin the process of bringing back healthy water quality and watershed conditions.

In 2016, the Regional Water Board adopted an Action Plan for the Upper Elk River Sediment TMDL. This Action Plan can be found at https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/elk_river/. In the past two years, the Elk River Sediment TMDL has been codified under state and federal law.



Berta Road March 24, 2018
Photo by Mike Weir

The Program of Implementation (referred to as the **Action Plan**) associated with the Upper Elk River Sediment TMDL identifies a combination of regulatory and non-regulatory actions that will lead to attainment of water quality objectives, recover beneficial uses, protect high quality waters, and abate nuisance flooding in the watershed.

In Elk River, the Program of Implementation is an adaptive management approach. Its main components include:

- Waste Discharge Requirements to minimize sediment loads from the upper watershed
- Two non-regulatory programs intended to formulate a community supported recovery strategy – the Elk River Recovery Assessment and the Elk River Watershed Stewardship Program.

TECHNICAL TERMS

Loading capacity: The total amount of sediment a river is able to transport.

Nuisance flooding: Flooding that is injurious to health, is an obstruction to the free use of property, and affects ... an entire community or neighborhood, or any considerable number of persons.

Suspended Sediment Concentration (SSC): The portion of the sediment that is maintained in suspension by the turbulence of flowing water and

does not settle/touch the river bed. Generally comprised of fine sand, silt and clay particles.

TMDL: Total Maximum Daily Load (TMDL). The maximum amount of a pollutant that can be discharged into a waterbody from all sources and still maintain water quality standards. Under the federal Clean Water Act Section 303(d), a TMDL must be developed for all waterbodies that do not meet water quality standards.

Turbidity: the measure of relative clarity of water. Material that causes water to be turbid include clay, silt, organic matter, and microscopic organisms.

Water Quality Objectives: Numeric or narrative limits or levels of water quality elements or biological characteristics established to reasonably protect the beneficial uses of water or to prevent pollution problems within a specific area.

The Elk River Recovery Assessment

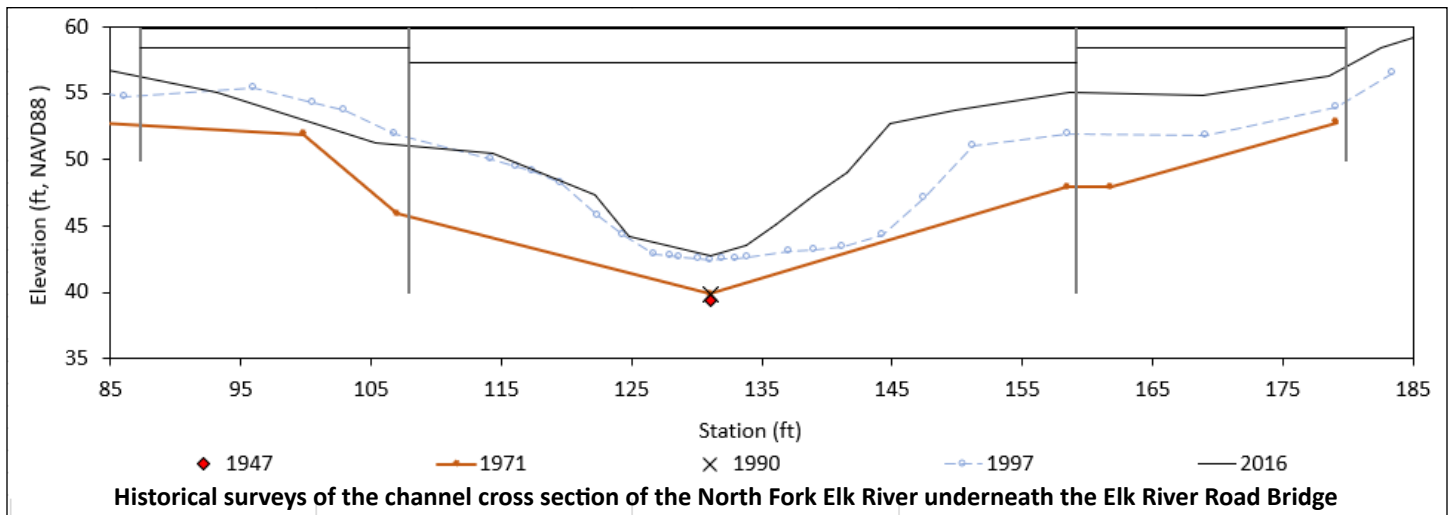
In 2014, the Regional Water Board initiated the Elk River Recovery Assessment to better understand the impairments to Elk River and to identify actions that will best resolve those impairments.

The Elk River Recovery Assessment is motivated by the need to determine if sediment deposited in the Elk River channel since approximately 1988 will remain in the river and continue to impair beneficial uses and cause nuisance flooding even with successful reduction in watershed

sediment delivery anticipated under the Regional Water Board's regulatory programs.

To answer these questions, our Science Team documented and analyzed existing conditions and developed a computer model to simulate flooding and sediment processes in the lower watershed.

The Recovery Assessment analyzed the recovery trajectory of sediment and nuisance flooding in Elk River under three "management scenarios."



Scenario #1 Existing Conditions

Key Question: If we take no action, will impaired beneficial uses improve and will nuisance flooding be reduced in the Elk River in an acceptable period of time?

Scenario #2 Reduced Sediment Loads

Key Question: If sediment loads from the upper watershed are reduced, will impaired beneficial uses improve and will nuisance flooding be reduced in the Elk River in an acceptable period of time?

Scenario #3 Mechanically Restored Channel

Key Question: If the Elk River channel is restored to pre-1980s channel size, with wood for habitat, and a healthy riparian corridor, will beneficial uses be improved and nuisance flooding be reduced in the Elk River? Will these improvements persist over time, or will the river channel re-fill with sediment?

Key Findings from the Recovery Assessment

- Under *Existing Conditions*, aggraded channel conditions will not recover to pre-1988 conditions, and the impaired beneficial uses and nuisance flooding will worsen over time.
- The *Reduced Sediment Load* scenario indicates that even with reduced sediment loads, the North Fork, South Fork, and Mainstem Elk River will continue to accumulate sediment but at a slower rate; beneficial uses and nuisance flooding will remain impaired.
- The *Modified Channel* scenario substantially reduces nuisance flooding and improves beneficial uses by coarsening the river bed, increasing the capacity to scour pools, increasing large wood storage and loading, reducing fine sediment deposition in pools and spawning gravels, improving dissolved oxygen concentrations, and improving water supply and recreation.

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Next Steps



Elk River Estuary Jan. 18, 2016
Photo by Brad Finney

The next step is a proactive outreach program to solicit input from all Stakeholders to develop community-supported actions. To this end, the Regional Water Board is implementing the Elk River Stewardship Program in 2019-2020, with the following objectives:

- Coordinate directly with watershed landowners, residents, local, state, and federal resource agency staff, and other stakeholders to solicit input and transmit information on recovery program activities;
- Provide an umbrella under which specific working groups form to coordinate resource management issues in a collaborative and transparent way; and
- Build partnerships, interpret technical studies for Stakeholders, and identify projects and future remediation actions that are feasible, fundable, and broadly supported by Stakeholders.

The Stewardship Program will result in a Recovery Plan to improve water quality and reduce nuisance flooding in Elk River.

FOR MORE INFORMATION

- **Watch a presentation on Elk River Recovery Assessment and Recovery Framework:** https://archive.org/details/Humboldt_bay_symposium_elk_river_recovery_assessment_framework_identifying_long_
- **Email questions, comments, or SUBSCRIBE to ElkStewardship@caltrout.org**
- **Read the “How TMDLs are Adopted: The Basin Planning Process” fact sheet:** https://www.waterboards.ca.gov/san-franciscobay/water_issues/programs/TMDLs/mainpagegraphics/basin_planning_fs.pdf

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