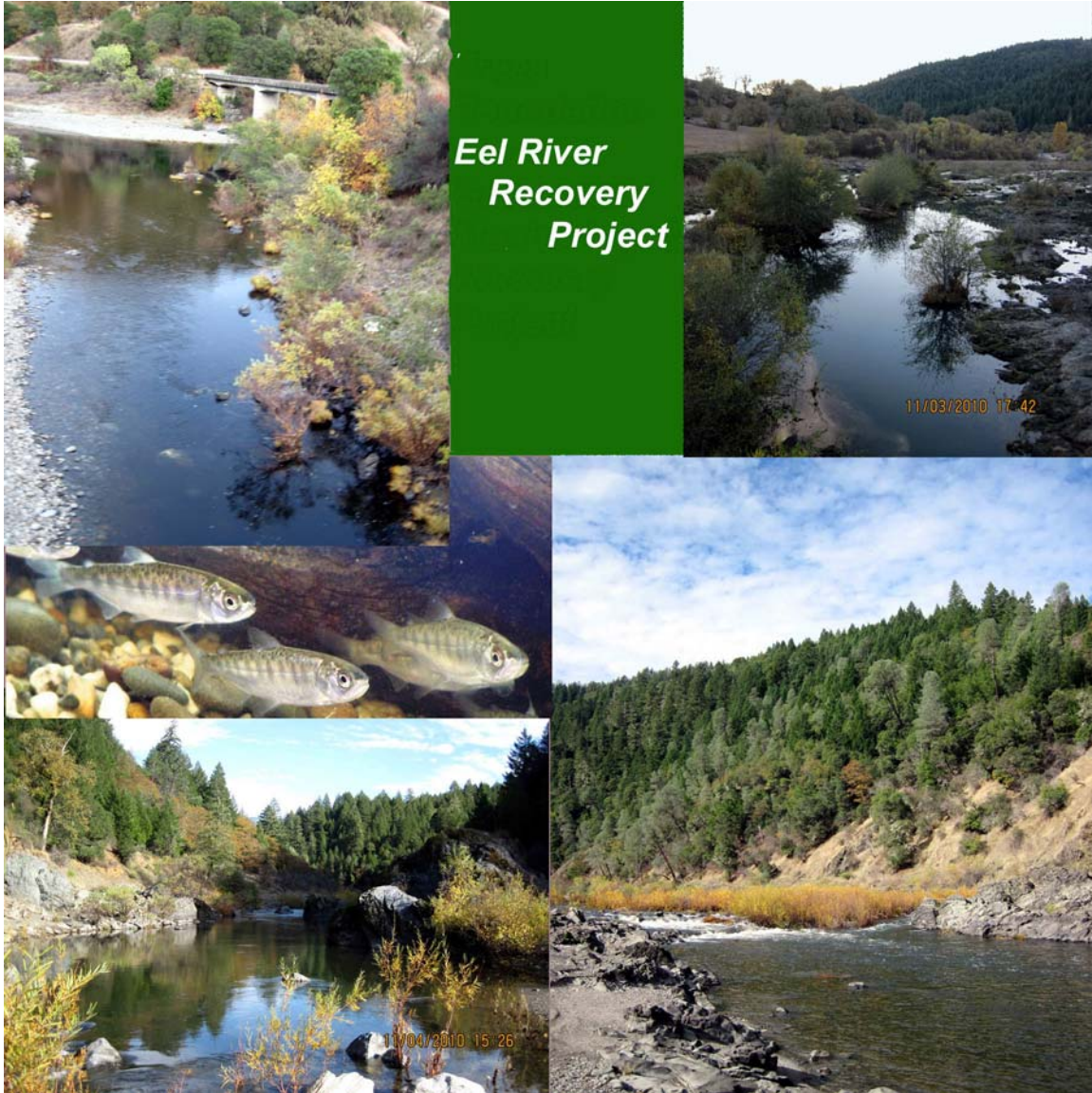


# **Eel River Recovery Project to Enable Residents to Monitor Water Quality and Fisheries and to Collectively Participate in Ecological Restoration**



Concept Framework by:  
Patrick Higgins  
Consulting Fisheries Biologist

**Sponsored by the Trees Foundation**

September 2011

## **Foreword**

There is a huge amount of community concern about the state of the Eel River and its declining health that could be translated into support for a citizen-based monitoring program and “bottom up” approach to participatory restoration. The Trees Foundation in Garberville has a long history of supporting grassroots organizing in the Eel River Basin and is trusted by the public. Therefore, it is logical choice to convene an effort to build the capacity of the community to take the pulse of the Eel River, to share information about the health of the watershed, and to formulate and implement a restoration strategy. While the Trees Foundation will serve as the non-profit fiscal sponsor, committed volunteers, including resource professionals, will manage the *Eel River Recovery Project*. After assessing community needs, the advisory committee will write grants or win contracts to acquire the resources to implement the project.

## **Needs Statement**

Generations of northern Californians have treasured the Eel River for its fish runs and its recreational opportunities. For some time salmon and steelhead have been mostly declining and water quality problems have become so acute that toxic algae sometimes closes major tributaries of the river to any contact. The Eel River watershed is large (3684 square miles) and remote and most of the land is privately owned. There are no major federal or State programs focused on Eel River restoration and there are insufficient fisheries and water quality data collected to monitor trends. Trees is uniquely positioned to start a discussion about problems and to help citizens build a framework for a grassroots lead restoration initiative.

## **Program Elements**

People living by the Eel River or one of its tributaries have witnessed changes over time but have no way of validating their observations about the declining health of the river or discerning what is causing problems. Because there is no agency or entity that coordinates data collection on aquatic health available to consult with citizens or to help them with collecting data to diagnose problems, the *Eel River Recovery Project* will try to supply this service. Citizen based monitoring will help plug data gaps and supply information so people in the watershed can clearly understand the nature and origin of problems. Periodic community meetings, workshops and retreats will provide a mechanism for guiding the project. More advanced activities would be shaping a comprehensive restoration strategy and then acquiring resources for implementation.

Community Meetings: The Trees Foundation has been awarded a Bill Graham Foundation grant to do outreach in the Eel River basin to inform citizens about fish and water quality trends, water conservation techniques and ways to control pollution. Three meetings will be held from September 7-10 in Fortuna, Garberville/Redway and Willits (see memo on details of planning). These meetings and all that follow under this project will not only be for explaining the nature of fishery and water quality problems, but also to establish a community dialog and begin discussion of solutions.

As more data are collected or acquired from agencies and analyzed, results will be presented at community meetings where a feedback loop can be established to help test hypotheses that ultimately shape the restoration strategy. The project will be solutions oriented and each meeting will also have presentations about new technologies or successful pilot projects, such as water conservation, pollution prevention and toxic algae suppression. Professional facilitators will be hired so that there is a free flow of information and they will capture feedback from the community and create reports of findings for each that creates a foundation of trust and track progress. This should help win over community participants because they feel like they are being listened to and they will therefore feel more ownership.

Monitoring: Science is powerful and its application for answering questions about the Eel River's health can empower the community. Restoration of the river and its watershed can only succeed if there is sufficient information to understand the nature of problems and data are collected continuously at a number of locations to gauge trends and to practice adaptive management. A great deal of useful data have been collected by agencies or other cooperating entities, such as water temperature (Friedrichsen 1998, 1999, 2001, 2003), water flows (USGS), water quality (NCRWQCB) and fisheries (CDFG). These data will be acquired to serve as a baseline and/or to judge historic trends.

Where possible additional data will be collected at the same locations and the network of monitoring sites expanded. The emphasis of monitoring will begin with water temperature because it is a powerful surrogate for suitability for salmon and steelhead and also for flow (water warms as its volume diminishes). Photopoints with recorded geographic position (GPS) are also extremely easy to capture and yet very powerful in understanding changes over time. More complex and ambitious monitoring in the future could include installing flow gauges or total station devices, conducting salmon spawning surveys, measuring habitat trends (V\*) and collecting other types of water quality data (pH, D.O., nutrients, toxic algae).

All water quality and flow monitoring will have to meet rigorous quality assurance and quality control, which will require teaching and training by qualified professionals. Data organization and management could ultimately fall with an agency or Tribe that steps forward to manage a basin-wide information system. This institutional support is more desirable than attempting to build that capacity using continuous grant funding.

Outreach: Effort will be exerted to publicize the *Eel River Recovery Project* to increase participation and inform the community. Methods of community outreach will include a website, guest editorials to newspapers, press releases or feature stories in the local press, news interviews and participation in talk shows, especially on community radio stations such as KMUD, KZYX and KHSU. The website could be updated regularly and provide information on changing toxic algae conditions, water pollution studies and fisheries reports. In addition to documents, data could also be archived in standard formats on the website, since there is no clearing house that makes such information easily available at

present. Photopoints linked to GPS locations can be using Google Earth so that the public can see how different locations on the Eel River look year around. Trees Foundation staff were interested in preparation of hand outs or brochures on subjects like toxic algae so that residents can pick them up around town or have something to take home with them to share from community meetings. If the *Eel River Recovery Project* progresses to the restoration planning stage, significant meeting time will be required both in the scoping and comment phases of document preparation. A good practical idea offered for increasing the profile of events is to seek co-sponsorships, such as KHUM.

Restoration Planning: Preliminary results using existing data would suggest that the Eel River is becoming flow limited and nutrient enriched, but more data are needed to confirm this. The underlying assumption or prevailing hypothesis is that tributary productivity is diminishing. Therefore, implementation of water conservation and pollution prevention measures are needed throughout the watershed to improve fish habitat in tributaries but also to combat mainstem problems like algae blooms, including toxic species. As sufficient data are collected to confirm hypotheses, it may be desirable to seek funding for a comprehensive restoration plan that includes a broad spectrum of activities but with a system of prioritization. The approach should follow ecological restoration principals, which are emerging as the “best science” approach. (See [www.ser.org/pdf/SER\\_Briefing\\_Note\\_May\\_2008.pdf](http://www.ser.org/pdf/SER_Briefing_Note_May_2008.pdf)). All actions should be continually tested to gauge success and an effectiveness monitoring strategy would be included in the restoration plan. Also, future scenarios will be included in the plan with a spectrum of alternatives in the event that data suggests the need to adapt strategies.

Restoration Implementation: In a watershed the size of the Eel River, restoration is likely to require tens of millions of dollars, but many small low cost measures implemented throughout the watershed could have huge cumulative benefit. The *Eel River Recovery Project* will obviously need to establish many partnerships with agencies, Tribes and other non-profit organizations to collaborate on restoration implementation, if long term efforts are to succeed.

### **Project Advisors**

The Eel River Recovery Project will benefit from the participation of numerous basin residents as advisors (Table 1). The people within the Eel River Basin who have volunteered have an in-depth knowledge of their community and the river and will help keep the project grounded and relevant. People with skills to implement the project who live inside and outside the Eel River basin will also participate as advisors, make recommendations for grant strategies, help write the grants and then also in some cases assist in their performance as contractors. Participation includes joining quarterly conference calls and attending one annual retreat. As grants are identified and pursued, communications will be electronic mails, which will be shared with interested Trees Foundation board members by staffer Doug Wallace. Fisheries biologist Patrick Higgins will be coordinating the project.

**Table 1. Eel River Recovery Project Advisory Group**

<b>First Name</b>	<b>Last Name</b>	<b>Eel Resident</b>	<b>Information</b>	<b>Phone</b>	<b>Email</b>
<i>Dotti &amp; Graham</i>	<i>Russell</i>	Y	SF Land Owners	943-1750	<a href="mailto:dotti@dotti.com">dotti@dotti.com</a> , <a href="mailto:graham@dotti.com">graham@dotti.com</a>
<i>Wallace "Wally"</i>	<i>Stahle</i>	Y	Outlet Creek (Solar Installs)		<a href="mailto:wstahle@pacific.net">wstahle@pacific.net</a>
<i>David</i>	<i>Partch</i>	Y	Outlet Cr Watershed Group	459-7054	<a href="mailto:david@thesighting.com">david@thesighting.com</a>
<i>Geoff &amp; Stephanie</i>	<i>Davis</i>	Y	Steelhead Ranch (Teacher)	923-9644	<a href="mailto:steelheadranch@yahoo.com">steelheadranch@yahoo.com</a>
<i>Jerry &amp; June</i>	<i>Albright</i>	Y	Retired (Boaters)	456-1203	<a href="mailto:paddlinjer@sbcglobal.net">paddlinjer@sbcglobal.net</a> , <a href="mailto:jajabe@sbcglobal.net">jajabe@sbcglobal.net</a>
<i>Sal</i>	<i>Steinberg</i>	Y	Retired Teacher, FOVD	768-3189	<a href="mailto:steinberg.sal@gmail.com">steinberg.sal@gmail.com</a>
<i>Karen</i>	<i>Walsh</i>	Y	Land Owner, Jack of Hearts	272-2465	<a href="mailto:karenwalsh@wildblue.net">karenwalsh@wildblue.net</a>
<i>Larry</i>	<i>Desmond</i>	Y	Water Expert, Baechtel Cr.	459-2681	<a href="mailto:larrydesmond@earthlink.net">larrydesmond@earthlink.net</a>
<i>Maria</i>	<i>Savage</i>	Y	Land Owner, Chemise Cr.	923-4487	<a href="mailto:msavage@gotsky.com">msavage@gotsky.com</a>
<i>Dave</i>	<i>Sky</i>	Y	Land Owner, EBSF Eel		<a href="mailto:dave@maidenhumboldt.com">dave@maidenhumboldt.com</a>
<i>Paul</i>	<i>Trichilo</i>	Y	GIS/Planner, FOVD	725-0232	<a href="mailto:ptrich@softhome.net">ptrich@softhome.net</a>
<i>Jamie</i>	<i>Cheralier</i>	Y	Outlet, Gardener	459-9125	<a href="mailto:jdcgarden@yahoo.com">jdcgarden@yahoo.com</a>
<i>Tam</i>	<i>Adams</i>	Y	Resort Owner	459-5439	<a href="mailto:tamara@emandal.com">tamara@emandal.com</a>
<i>Vivian</i>	<i>Helliwell</i>	N	Facilitator/Mediator	445-1976	<a href="mailto:vhelliwell@mcn.org">vhelliwell@mcn.org</a>
<i>Bill</i>	<i>Lydgate</i>	N	Hydrologist		Bill Lydgate < <a href="mailto:lydgate@sbcglobal.net">lydgate@sbcglobal.net</a> >
<i>Carlos</i>	<i>Quilez</i>	Y	Retired (Van Duzen)	768-1943	<a href="mailto:cqjess@sbcglobal.net">cqjess@sbcglobal.net</a>
<i>Goose</i>	<i>Nightgoose</i>	Y	Retired (Algae Abatement)	984-8175	
<i>Bill</i>	<i>Eastwood</i>	Y	Restoration Expert/Trees Board Member		<a href="mailto:bille@asis.com">bille@asis.com</a>
<i>Pat &amp; Diane</i>	<i>Higgins</i>	N	Scientist/Educator	822-9428 839-4987	<a href="mailto:phiggins@humboldt1.com">phiggins@humboldt1.com</a> , <a href="mailto:4joy@suddenlink.net">4joy@suddenlink.net</a>
<i>Doug</i>	<i>Wallace</i>	Y	Trees Staff	923-4377	<a href="mailto:community@treesfoundation.org">community@treesfoundation.org</a>
<i>Kelly</i>	<i>Harris</i>	Y	Outlet Cr./Bioengineer	984-7334	<a href="mailto:kelly@bioengineers.com">kelly@bioengineers.com</a>
<i>Bob &amp; Susy</i>	<i>Barsotti</i>	Y	Concert Promoter	984-8457	<a href="mailto:barsotti@mcn.org">barsotti@mcn.org</a>
<i>Betsy</i>	<i>Watson</i>	N	Mediator/Facilitator	445-7434	<a href="mailto:elizabeth.watson@humboldt.edu">elizabeth.watson@humboldt.edu</a>
<i>Chris</i>	<i>Hays</i>	Y	Angler	946-5797	<a href="mailto:imorganic@att.net">imorganic@att.net</a>
<i>Bruce</i>	<i>Holbrook-Barger</i>	Y	MF/ USFS Projects	983-6169	
<i>Renanda</i>	<i>Laughlin</i>	Y	Rio Dell – Algae Problem	764-1785	<a href="mailto:ranadariodell@att.net">ranadariodell@att.net</a>

