

# PHASE 1 FY 2000-2001

## RUSSIAN RIVER WATERSHED MANAGEMENT AND PROTECTION STUDY

RRWC	RRWC Activities	Watershed Restoration Tasks	Public Outreach & Education	Watershed Information Assessment	Dam Modifications		Total
	facilitation local coordinator coordinator & meeting support work group support Corps - project management and planning support	salmonid restoration (biological assessment/stream surveying) water supply, water quality, water quantity, water policy and land use tributary cleanup	web page newsletter/mailings/database media packets/multimedia presentation outreach staff educational outreach speaker forms/library resources	KRIS/GIS data gap analysis assess watershed conditions collect water policy data collect land use data monitoring	structural analysis dam release review other opportunities	Phase II Plan of Action	
<b>FUNDING NEEDS</b>	<b>225</b>	<b>510</b>	<b>55</b>	<b>160</b>	<b>240</b>	<b>0</b>	<b>1190</b>
<b>STUDY EFFORT</b>	<b>Study Support</b>	<b>Work Groups - Salmonid Restoration, Water Supply/ Quality/ Quantity, and Tributary Cleanup</b>	<b>Work Group - Public Outreach &amp; Education</b>	<b>Work Group - Watershed Information Assessment</b>	<b>Work Group - Dam Modifications</b>		

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## Water Quality, Supply, and Quality Work Group

Description of Work Item	FY 2000-2001 Funding Needs (\$X1000)	FY 2000-2001 Funding Request (\$X1000)
<b>Water Supply</b>		
Assess the impacts of developing new water supplies such as raising dams, groundwater recharge, and small reservoir construction.		
Determine flows in all tributaries and main stem. Assess flows in terms of minimal critical volumes for a healthy river.		
Assess the impacts and methodologies of a no flow regime in main stem for a short period of time. Assess the impacts and methodologies for alternate flow regimes. (Moved to dam operations work group)		
<b>Water Quality</b>		
Assess all water quality data/testing (including physical, chemical and microbiological) which is currently or historically was collected in the watershed, being sure to include point and non-point sources. Recommend baseline criteria for water quality. (The Watershed Information Assessment Work Group will have input on the collection of relevant data).		
<b>Water Conservation</b>		
List all types of conservation methods which could be used in the watershed – assess the quantity which could be conserved.		
Assess the impacts of various riparian vegetation types on flow.		
Determine and assess the water consumption in the watershed.		
<b>Water Policy</b>		
Assess the policies and conflicts between individual agencies and recommend changes, if necessary.		
<b>Land Use Effects on Water Quality</b>		
Assess the impacts of urbanization and agriculture and make recommendation on: (a) groundwater recharge (b) flows/hydrographs (c) sedimentation/turbidity (d) runoff quantity and quality (e) flood regime (The Watershed Information Assessment Work Group will have input on the collection of relevant data).		
<b>TOTAL</b>	<b>250</b>	

**Watershed Information Assessment Work Group**

<b>Description of Work Item</b>	<b>FY 2000-2001 Funding Needs (\$X1000)</b>	<b>FY 2000-2001 Funding Request (\$X1000)</b>
<p>Create and maintain a comprehensive Russian River Watershed Information Assessment bibliography; the focus being the biological health of the watershed and those factors limiting the restoration of, and supporting the preservation of, healthy salmonid populations. The WIA workgroup shall identify the specific data needs of the other RRWC Working Groups and incorporate them into the bibliography. Provide information to RRWC website.</p>		
<p>Utilize and incorporate KRIS and GIS for computerized watershed information gathering and synthesis. Set priorities and time lines for areas that the RRWC should address. Implement the monitoring capabilities of KRIS and GIS to gauge watershed health and restoration through time. Provide information to RRWC website.</p>		
<p>Form a scientific and technical committee of 8-12 members to validate and interpret the data used to assess watershed conditions.</p>		
<p>Collect all water quality data/testing (including physical, chemical and microbiological) which is currently or historically was collected in the watershed, being sure to include point and non-point sources. Provide information to RRWC website.</p>		
<p>Collect information on the impact of urbanization and agriculture on:</p> <ul style="list-style-type: none"> <li>(a) groundwater recharge</li> <li>(b) flows/hydrographs</li> <li>(c) sedimentation/turbidity</li> <li>(d) runoff quantity and quality</li> <li>(e) flood regime</li> </ul> <p>Provide information to RRWC website.</p>		
<b>TOTAL</b>	<b>235</b>	<b>160</b>

## Dam Operations Work Group

Description of Work Item	FY 2000-2001 Funding Needs (\$X1000)	FY 2000-2001 Funding Request (\$X1000)
Technical support for organizing, retrieving, copying and distributing Corps documents that detail precipitation, stream flow and channel boundaries from before dam construction to present.		
Use dam operations information and professional consultation to determine feasibility of Park Steiner proposal to bypass Lake Mendocino and return the river to ecologically sustainable hydrologic flows. (for professional assessments of data - suggest using UC students at Hopland research station, as much as possible).		
Evaluate the feasibility and associated impacts of removing Coyote Dam. Consideration of the economic, legal, environmental adverse and beneficial effects is part of the scope.		
Evaluate the feasibility and beneficial impacts of constructing a cold water discharge structure to draw water from lower in the reservoir and transfer it downstream so that the water temperature is colder for the fish.		
Evaluate the feasibility and beneficial impacts of constructing a gated sluice associated with the cold water discharge structure to transport sediments and gravel downstream in a gradual, non-destructive manner.		
Experiment with dry river conditions (after gravel beds in #4 are built up) in late fall to kill off predatory fish and allow access to the river channel to remove debris and invasive species. River would be allowed to dry up in the upper/middle reaches for short intervals, eg. 2 weeks - periodic return of 15% flow to Eel River. Use distilled water or other sources of water to recharge the aquifer via sidestream infiltration in critical months to get the small tributaries flowing. (From Water QSQ Work Group: Assess impact and methodology of a no flow regime in main stem for a short period of time. Assess impact and methodologies for alternate flow regimes.)		
Other opportunities: --more information on current dam control ability, modeling the Russian River like the Bay model in Sausalito, study non-jurisdictional dams to evaluate beneficial impacts and salmon obstruction, inventory the beneficial uses of the watershed associated with dam operation. --form a north coast utility district that manages dam operations, water supply, sewage treatment so that the watershed is managed as a system, not piecemeal. --form a water trust similar to the land trust --determine the carrying capacity of the watershed for an optimum human population before environmental degradation is irreversible.		
<b>TOTAL</b>	<b>350</b>	<b>240</b>

## Public Outreach and Education Work Group

Note: The Public Outreach/Education members believe that it is necessary to form an editorial board (composition yet to be decided, but important that all 4 membership groups of RRWC be represented) to formulate policy and guidelines and provide oversight for outgoing information.

Description of Work Item	FY 2000-2001 Funding Needs (\$X1000)	FY 2000-2001 Funding Request (\$X1000)
<b>PUBLIC OUTREACH</b>		
A newsletter (? quarterly) should contain articles about RRWC activities, updates on projects, river issues, and a calendar of upcoming meetings of the Council and public agencies. Until our newsletter is up and running, we will request insert of our messages in newsletters of appropriate agencies and organizations.		
RRWC Website where public can access the latest information about the Council, as well as maps and reports. It would also include names, addresses, phone numbers, and e-mail. The site can also have links to individuals and organizations that are affiliated with the Council: the Corps and Resource Agency websites, river and fishery groups, etc.		
RRWC brochure - a basic handout and information piece. The brochure outlines the major problems in the watershed, the mission of the Watershed Council, composition of the Council, information about how the public can get involved, important names, addresses, and phone numbers. Each issue/working group needs to define itself within the brochure. We can seek graphics assistance from the Water Agency, the R.C.D.'s, or the Corps.		
Press releases to local media about meetings, events, projects, needed support. We believe that this could be part of the RRWC coordinator's job.		
Resources library to include printed information, videos, slides, posters, as well as lists of consultants and speakers. Speakers' forum could emanate from this group. We may include resources that are already available from the Resources Agency and others.		
<b>EDUCATION IN THE SCHOOLS</b> Note: Americorps, Circuit Riders, Sonoma State University, and Santa Rosa Junior College might provide help with education and outreach projects. <ul style="list-style-type: none"> <li>• We propose a long-range goal of a mandated and tested watershed curriculum for all elementary and high school students implemented through the State of California. Grants should be provided for elementary and high schoolteachers to develop these multi-disciplinary units. There are some good curriculum units being used now (e.g. Adopt a Watershed"). We will research what is available. We will collect information from local school districts re current watershed education, activities, and projects.</li> <li>• Short-term project will be to work with a small number of selected school districts to implement and evaluate a watershed unit. We will provide support to these schools with materials and</li> </ul>		

<p>consultants. (Some materials may be available from the Water Agency, etc.) We should work cooperatively with the Sonoma and Mendocino Offices of Education. These immediate activities will serve as a pilot project to assess curricula and gather support from within the educational community.</p> <p>Long run goals are to provide grants for teacher workshops, consultants and in-class teachers, and materials from our resource library.</p>		
<p>Technical and clerical support for organizing, retrieving, copying and distributing information</p>		
<p><b>TOTAL</b></p>	<p><b>55</b></p>	<p><b>55</b></p>

### Salmonid Restoration Work Group

Description of Work Item	FY 2000-2001 Funding Needs (\$X1000)	FY 2000-2001 Funding Request (\$X1000)
Preliminary feasibility assessment for Lake Mendocino sediment and fish bypass (Steiner) (\$100,000 proposed allocation by Dam Operations work group)		
Determine and recommend areas of key refugia for salmonids in Russian River system, mainstem and tributaries; a broad, comprehensive study that includes but is not limited to: review of literature and relevant databases; consultation with individuals and property owners for eyewitness historical, anecdotal evidence; reports from governmental agencies.		
Evaluation of removal of fish migration barriers (chemical, physical, etc.) in key refugia in selected tributaries and the mainstem of the Russian River for strategic and critical populations of wild salmonids.		
Identification and evaluation of methods of reduction of substances adverse to salmonids including but not limited to herbicide, pesticide, and sediment in runoff from roads especially into, critical spawning grounds, key refugia for salmonids in tributaries and mainstem of the Russian River.		
Review and evaluation of methods of suppression of salmonid predators including but not limited to examination of past practices and results. (eg: fishing derbies)		
Study rescue and emergency rearing programs, i.e.: Jumpstart or captive rearing		
Demonstrate and evaluate techniques of geothermal cooling of river water for purpose of overcoming adverse temperature conditions.		
Evaluate hatcheries operations for adverse impact on wild salmonids in Russian River system.		
Determine critical minimum flows for key refugia for salmonids in Russian River system.		
Clerical and logistical support for the workgroup (grant writing)		
Support Department of Fish and Game Watershed Assessment and Restoration project (currently funded under SB 271)		
<b>TOTAL</b>	<b>460</b>	

## Tributary Cleanup Work Group

Description of Work Item	FY 2000-2001 Funding Needs (\$X1000)	FY 2000-2001 Funding Request (\$X1000)
<p><b>Tributary Clean-Up Proposal</b></p> <p><b>Goal of the Tributary Clean-Up Working Group:</b> To enhance opportunities for the removal of harmful non-native organic and inorganic substances from Russian River tributaries.</p> <p><b>Primary Problems:</b> The tributaries of the Russian River face many of the same problems as the main stem. Because there are a large number of tributaries (#?), nearly all the tributaries flow through private land, and many of the waterways are inaccessible by kayaks or canoes during the summer and fall, clean-up activities have been limited. <i>(NOTE: Are these the key barriers to why tributary clean-up has not occurred more aggressively?)</i></p> <p>Listed below are the primary issues regarding tributary clean-up:</p> <p><b>Non-native Plants</b> Preliminary mapping, sporadic visits and anecdotal evidence suggests that there are a high number of non-native plants creating problems in the tributaries. Species include Giant Reed, Periwinkle, Tamarisk, Tree of Heaven, Himalayan Blackberry and Ivy. These plants crowd out of native species that create shady overgrowth and choke off the waterway. As a result, water temperatures heat-up, making the tributaries inhabitable to young salmonids.</p> <p><b>Current &amp; Near Future Projects</b> – Circuit Riders, working in conjunction with the Sotoyome RCD, the Sonoma County Water Agency and a variety of private landowners, has already began clean-up of some species on the main stem. They recently submitted grant applications to California Fish &amp; Game and to the Sonoma County Water Agency for mapping of Giant Reed in the main stem and in the major tributaries. Because of the size and distinctive foliage of Giant reed, this mapping can be done during the winter months using low level aerial flights.</p> <p><b>Lack of Information</b> – Circuit Riders is the primary organization working on removal of non-native plants. They have done extensive mapping of the main stem of the Russian River, but Fossil creek is the only tributary that has been extensively mapped.</p>		

In order to focus resources and to target those areas most impacted by non-native species, it is critical that accurate, geographic positioning mapping be conducted. This mapping provide the base level of information needed to begin removing and replacing harmful, non-native plants. The mapping also allows us to identify areas where harmful riprap, trash and barriers exist.

**Projected Costs of Mapping Main Tributaries in Both Mendocino & Sonoma Counties** – Other non-native species cannot be identified using aerial photos and instead must be mapped on foot. A conservative estimate of mapping these species, trash and inappropriate erosion control measures is estimated to range from \$200,000 - \$250,000. If less money was available, the mapping could be sequenced to focus on specific tributaries first.

**Roads**

Inappropriate culverts, bridges and other structures may limit the ability of salmonids to reach spawning grounds. (NOTE: Bob Clemens is talking to Bob Cooley at CDF to get his perception of the problem and to determine where there are information gaps) Potential study areas include mapping, development of educational material, working with groups doing this kind of work to develop low-cost alternatives, etc...

Current & Near-Future Projects –

Lack of Information –

Projected Costs of ...--

**Past, failed erosion measures**

Landowners, farmers and residents along the tributaries have tried many methods of slowing erosion along stream banks. Tires, wires, plants, cement, riprap, wooden structures have all been Many of these methods now create hazards and obstacles for salmonids. (Note: Bob Clemens will discuss problems, issues with Bob Cooley).

Current & Near-Future Projects –

**Lack of Information** – It is critical that the tributaries be mapped to determine the specific location of problematic erosion control measures. This mapping could be done in conjunction with the mapping of non-native plant species.

**Cost of Mapping** – If done in conjunction with the mapping of non-native plants, it is estimated that the mapping could be done for \$200,000 - \$250,000.

**Lack of public education regarding importance of tributaries**

The general public is not well-educated regarding the environmentally sensitive nature of the tributaries – this lack of information leads to people using the tributaries as dumping sites, to inappropriate uses along the banks and to the introduction of harmful plant species.

Current & Near-Future Projects –

Lack of Information –

Projected Costs of ...--

**TOTAL**

**400 to 500**

### FY 200-2001 Budget Breakdown

Description of Funding Source	Sub-Totals (\$X1000)	FY 2000-2001 Funding (\$X1000)
<b>TOTAL FUNDING AVAILABLE (via Corps/State partnership) FOR FY 2000-2001 = \$1,190,000</b>		
<b>CORPS FUNDING</b>	595	
Less Project Support	(125)	470
Planning	64.4	
Project and Programs Management (PPMD)	30	
Office of Council	2	
Contracting (2% to 3% of total contracts)	24	
Luster (PROMIS & CEFMS support)	5	
Cars 3trips/mo@\$45p/dy X 12mos.	1.6	
<b>STATE FUNDING</b>		
In-Kind Services	297.5	
Less Local Coordinator and Support (includes RWQCB staff time for mailings, SCWA staff time for meeting support, and facilitation services)	(100)	197.5
Cash	297.5	297.5
<b>TOTAL (available for work specified by RRWC)</b>		965