SECTION 2.6

TRINITY RIVER WATERSHED MANAGEMENT AREA

The following draws upon information obtained through public input, agency contacts, and the experience of Regional Water Board staff. Presented in this document is a summary of knowledge regarding water quality issues and the existing and planned actions based on current Regional Water Board staff knowledge. The USEPA developed and adopted a TMDL for sediment in the South Fork Trinity River in 1998. The Regional Water Board is in the process of developing a region-wide TMDL sediment implementation policy that will compliment a Basin Plan Amendment for control of sediment discharges. The sediment TMDL for the Trinity River watershed (Upper, Middle and Lower) was adopted by USEPA in December 2001.

MANAGEMENT AREA DESCRIPTION

The Trinity River, a wild and scenic river located in northwestern California, is the largest tributary to the Klamath River. Its basin drains an area of about 2900 square miles of mountainous terrain, with its headwater streams originating in the Klamath and Coast Ranges. From its headwaters, the river flows 172 miles south and west through Trinity County, then north through Humboldt County and the Hoopa Valley and Yurok Indian reservations. The confluence with Klamath River at Weitchpec is about 43 miles upstream from the Pacific Ocean. In the early 1950's two major water-development features: Lewiston Dam and its reservoir and related facilities and Trinity Dam and its reservoir, known as Trinity Lake, which are jointly known as the Trinity River Diversion (TRD) of the Bureau of Reclamation's Central Valley Project (CVP) were installed above river-mile 112 and the community of Lewiston. Water stored and released from the Trinity Dam reservoir is used for power-generation and diverted to out-of-basin multiple uses throughout the Central Valley of California. Trinity River downstream of TRD is habitat for not only the anadromous salmonids and other native species, but also has populations of Brown trout.

This WMA is mostly rural with human population centered near Trinity Center, Weaverville, Lewiston, Hayfork and Hyampom. The only large-scale agriculture is cattle grazing. Timber harvest continues but at a reduced level than in the past on federal lands. The U.S. Forest Service and the Bureau of Land Management federally manage approximately 80 percent of the land in the Trinity WMA. Of the remaining 20 percent approximately half are industrial timberlands. Old access roads that are not maintained or properly decommissioned are a continual source of

sedimentation into the Trinity River and its tributaries. Tourism, including rafting, is part of the economy of this area.

Elevations range from 9,000 feet in the Trinity Alps to 250 feet at the confluence of the Trinity and Klamath Rivers near Weitchpec. Much of the Trinity WMA is prone to seismically induced landslides due to rapid ground acceleration from local and coastal seismic activity, especially during winter months when slope soils are saturated. Areas of granitic soils are productive but highly erosive. In addition, valley inner gorges, which are over steepened slopes adjacent to stream courses, are considered highly unstable. Ground water resources are relatively plentiful throughout the geologic systems, but are not well defined.

The highest elevations of the Trinity WMA are steep, treeless mountains. Below about six thousand feet elevation, the landscape is dominated by mixed conifer forests with some Red fir and Douglas fir stands with some hardwoods present. The lower elevations contain complex riparian vegetation, evergreen brush and some rangeland and chaparral. Annual precipitation averages 57 inches/year with a low of 37 inches in Weaverville and Hayfork and a higher rainfall of 75 inches in Trinity Center and 85 inches in the Hoopa Mountains. There are occasional summer thunderstorms that produce extensive runoff to streams and the river, and can set off wild fires. The TRD project diverts a majority of the upper-basin's water yield at Lewiston.

ASSESSMENT AND PROBLEM IDENTIFICATION

The quality of water in the basin ranges from the highest-quality pristine waters that emerge from the Trinity Alps wilderness into the northern mainstem tributaries, to various degrees of human-caused impairment in the mainstem and southern tributaries. The anadromous fishery has experienced severe decline in the last 40 years. Most notable is the destruction of fish habitat. Natural events and multiple land uses are responsible to varying degrees for sediment contributions through accelerated erosion and mass wasting and include timber production and harvest, road construction and maintenance, grazing, and gravel mining. Increased water temperatures in some parts of the watershed, are an issue. Additional logging, road construction and associated activities are recognized as sources of stream-impairing sediments and related summertime water temperature extremes. Also, recreational instream suction dredging for gold is a concern especially in the mainstem and canyon area. The hydrologic changes wrought by the TRD project and the geologic conditions of the basin have resulted in altered stream-channel conditions and fish habitats for many miles below Lewiston.

Concerns center around acid mine drainage from abandoned mines, mercury from historic gold mining, sediment release from subdivision development and eroded roads in areas with unstable soil and decomposed granite, septic tank use, aboveground and underground tanks, and lumber mills. These conditions and the precipitous drop in salmon and steelhead populations, which followed completion of the TRD projects in 1965, are commanding attention by US Congress, Secretary of Interior, Bureau of Reclamation, Native American tribes, and a broad collection of stakeholders (such as the Trinity River Task Force, Trinity County, and the South Fork Trinity CRMP).

Seven sub-basins are recognized in the Trinity WMA:

North Fork Trinity River
The North Fork Trinity River is a largely undeveloped 10,145-acre forested watershed that drains into the main Trinity River near the community of Helena. Most of this area is designated as wilderness and therefore, little timber harvesting is conducted. Some mining still takes place in the lower part of the watershed, however an assessment of the old and current mining sites on public lands needs to be conducted. Wild fires are also of concern in this subwatershed.

New River
The New River is a largely undeveloped 47,472-acre forested watershed that drains into the main Trinity River near the community of Hawkins Bar. Approximately half of the area is designated as wilderness and half as U.S. Forest Service land. The New River is designated as a wild and scenic river and is refugia for summer steelhead. Some mining takes place, however an assessment of the old and current mining sites on public lands remains to be conducted. There is a history of lightening-caused wild fires in the area. On the Forest Service land there are limited timber sales and roads that contribute to erosion and sedimentation. A burnt dump at Denny has been closed and needs to be investigated and assessed for hazardous materials and impacts on water quality.

Lower Trinity/Humboldt Section
This portion of the Trinity River is designated as a wild and scenic river. This area has experienced hydraulic mining in the past. Current mine practices consist of small placer sluicing and hard rock milling operations. An assessment of abandoned mines, and past and present mining activities need to be conducted. The Hoopa tribe has been recognized by the United States as a sovereign nation. The tribe has prepared and adopted its CWA-based water quality management plan and submitted it to US EPA for review and approval.

There are several contaminated sites in the area. The Copper Bluff Mine continues to emit toxins in the form of acid. Celtor chemical works, located on the Hoopa Valley Reservation, is a US EPA Superfund site. A remedial action plan has been implemented. Twelve sites are being investigated in the Hoopa/Willow Creek area where known releases from underground storage tanks occurred. A possible release from underground fuel tanks located at a closed gas station in Salyer needs to be investigated. There are PG&E electrical substations in Hoopa and Willow Creek. These are being investigated for historic releases of mineral oil that may have contained PCB's. Storm water discharges from these facilities are also being investigated. An unknown number of aboveground storage tanks exist in the area. There are also a number of lumber mills that have a history of using wood preservatives including pentcholorophenol that may be the source of soil and groundwater contamination. These sites need to be investigated. A burn dump at Burnt Ranch has been closed and needs to be investigated and assessed for hazardous materials and impacts on water quality.

Canyon Area
This portion of the Trinity River is designated as a wild and scenic river. The Canyon Area lies along both sides of the mainstem from Junction City west to the Trinity/Humboldt County line. Most of this area is under the jurisdiction of the U.S. Forest

Figure 2.6.1. Trinity River WMA

Service. The flow of the river keeps sediment from depositing on the streambed. Along this corridor there are homes, mills, the ranger station and Highway 299. Timber harvest is limited, but there are chronic landslides that block the highway and create the problem of soils deposition. Logging and roads create erosion hazards and potential sedimentation to the streams and the river. This area has experienced placer and hydraulic mining in the past. A burn dump at Big Bar has been closed and needs to be investigated and assessed for hazardous materials and impacts on water quality

Weaverville Area
This area extends from Junction City to the Lewiston Dam and is the area of highest human population in the Trinity WMA (Weaverville). The terrain in this area is relatively flat and as such is an area of sediment deposition. Logging operations and road building and use have caused erosion, sedimentation and elevated turbidity of streams and the river. Access roads need to be inspected for maintenance and erosion control measures of ongoing roadside and upslope slumping.

Twenty-one sites are being investigated in this area where known releases from underground storage tanks occurred resulting in significant gasoline contaminant plumes, some containing MtBE, in Weaverville. A possible release from underground fuel tanks located at a closed gas station in Weaverville needs to be investigated. There is a PG&E electrical substation located in Weaverville. This site is being investigated for historic releases of mineral oil that may have contained PCB's. Storm water discharges from this facility are also being investigated. Aboveground storage tanks need to be investigated. The possible discharge of wood treatment chemicals from the Trinity River Lumber Co. in Weaverville needs to be evaluated. The Weaverville landfill needs final closure plans developed per Chapter 15, Title 27 and assessed for release of hazardous waste to ground water as part of final closure. Old burn dumps need to be investigated and assessed for hazardous materials and impacts on water quality.

Historically, developed, unincorporated areas are unsewered with onsite disposal systems in marginal soils for subsurface disposal of septic tank effluent. These areas need to be investigated and assessed for compliance with the Individual Disposal System policy.

Upstream of Weaverville (including Trinity and Lewiston Lakes)
About half of this area is designated as wilderness area. The U.S. Forest Service controls the wilderness area where some grazing is still allowed. Logging on both private and U.S. Forest Service land has and is causing erosion and subsequent sedimentation of the streams and lakes. Twelve sites are being investigated in this area where known releases from underground storage tanks occurred. The discharge of heavy metals, fuels and wood treatment chemicals from an abandoned mill site near Douglas City is currently under investigation. Trinity and Lewiston Lakes are heavily used for recreational boating and personal watercraft. An investigation concerning releases of fuels and fuel oxygenates, especially MtBE, needs to be conducted. Septic tank systems need to be investigated and assessed for compliance and appropriate enforcement. Old burnt dumps at Carrville, Lewiston and Trinity Center also need to be investigated and assessed for hazardous materials and impacts on water quality.

Aboveground storage tanks in the area need to be investigated. The Trinity River Diversion not only decreases the amount of water in the system by sending water to the Sacramento Valley and the Central Valley Project, but also creates a temperature

elevation problem in the remaining water in the river and disrupts physical cues for migration and spawning of salmon. The Trinity River Fish Hatchery was constructed at the base of Lewiston Dam to help mitigate the loss of fisheries habitat resulting from the project, but the hatchery has not been effective in sustaining fish populations.

South Fork Trinity

The South Fork Trinity has not been dammed and is a Key Watershed in the U.S. Forest Service's Northwest Forest Plan. The South Fork Trinity is primarily mountainous, forested land, with two broad agricultural valleys occupied by the towns of Hayfork and Hyampton. Elevations in the basin range from more than 7,800 feet above sea level in the headwater areas, to less than 400 feet at the confluence with the Trinity River. This 604,000-acre area that is a mix of private and U.S. Forest Service administered public land, has experienced extensive timber harvesting in the past that has caused erosion and sedimentation of streams and the river. In addition, the area is susceptible to naturally occurring landslides and other mass-wasting events because of steep terrain, loosely consolidated soils (decomposed granite) and heavy precipitation. A sediment source analysis determined that sediment delivery to the stream averaged 1,053 tons/mi2/yr over the period 1944-1990. Sixty-four percent of that sediment was from mass wasting. There is a history of wild fires and the subsequent erosion and salvage logging issues. The South Fork Trinity CRMP is very active in this watershed.

Hayfork Creek is the largest tributary to the South Fork and historically has been the spawning area for steelhead and spring and fall chinook salmon. For example, in the South Fork Trinity spring chinook salmon populations have decline by 90 percent. This area, as in the past, has abandoned mines and small placer sluicing and hard rock milling operations that need to be investigated and assessed for release of toxic pollutants. The Kelly Mine on McCovey Gulch in Hayfork has drainage discharges containing chromium and arsenic affecting domestic diversions downstream. The Trinity County Health Department has posted the creek for metals contamination and notified homeowners not to drink the water.

Fourteen sites where known releases from underground storage tanks occurred are being investigated in this area. In the Hyampom area, several domestic wells were contaminated with MtBE from an underground fuel tank release. There are PG&E electrical substations in Hyampom and Wildwood that are being investigated for historic releases of mineral oil that may have contained PCB's. Storm water discharges from these facilities are also being investigated. Aboveground storage tanks need to be investigated. Several former mill sites remain open in the area, and need to be investigated to verify that any threat to water quality has been abated. Old burnt dumps need to be investigated and assessed for hazardous materials and impacts on water quality. In the Hayfork area the landfill needs final closure plans developed per Chapter 15, Title 27 and assessed for release of hazardous waste to ground water as part of final closure.

Primary water quality issues in the Trinity River WMA

- Sedimentation of streams
- High water temperatures
- Mercury contamination in fish
- Historic wood treatment facility contamination

WATER QUALITY GOALS AND ACTIONS

The Regional Water Board prioritized goals and actions to address issues associated with the goals. The broad goals for the WMA include improving the anadromous fishery through sediment reductions and habitat enhancements, and maintaining the other high beneficial uses of both surface and ground water. The three goals for the Trinity River are related through the beneficial uses they address:

- **GOAL 1: Protect and enhance salmonid resources (COLD, MIGR, SPWN, RARE)**
- **GOAL 2: Protect and enhance ground water resources and attendant beneficial uses**
- **GOAL 3: Protect all other surface water uses**

GOAL 1: Protect and enhance salmonid resources (COLD, MIGR, SPWN, RARE)
Upslope erosion controls are needed to reduce sediment delivery to waterways in the Trinity WMA. The Regional Water Board must promote and develop considerations for the stability of stream channels and maintenance of channel form consistent with a functioning hydrologic channel. The riparian and instream habitats must be enhanced. Instream temperatures for cold-water habitat and adequate stream flows to protect and enhance salmonid resources and COLD will be managed.

GOAL 2: Protect and enhance ground water resources and attendant beneficial uses
The underground storage tanks and toxics remediation programs are aimed at addressing the issues associated with this goal. While pollution/contamination issues are site specific and localized, ground water in those areas is an important resource and supports beneficial uses.

GOAL 3: Protect all other surface water uses
The actions above for GOAL 1 largely serve to protect all other uses, however additional issues with regard to beneficial use impairment may arise in the future. If issues do arise, they will be addressed through this process.

IMPLEMENTATION STRATEGY

Congress created the Trinity River Task Force (TRTF) in 1971. Its mandate is to formulate and implement a management program to restore fish and wildlife populations in the Trinity River Basin. The TRTF seeks to achieve temperature objectives that meet the life cycle needs of the fish. Congress has also funded numerous water-resource and fishery studies and directed that US Secretary of Interior (SOI) require actions by the relevant federal agencies to restore the river's fisheries.

The federal government (Secretary of Interior) approved an EIR for which the preferred alternative for below the dam is 1) introduction of gravel, 2) removal or flushing of sediment, 3) decreased flow to the Central Valley, and 4) increase flows to the mainstem of the Trinity River. The increased flows are based on five water-year types (flow into the Trinity Reservoir before April) and could be 255,000 acre-feet per year. The final EIR was approved in November 2000, with the federal Record of Decision at the end of 2000. Trinity County is the lead agency for CEQA and certified the EIR in the summer of 2000. The Regional Water Board will issue 401 water quality certifications for restoration projects and Waste Discharge Requirements for the bank feathering projects. Trinity County may be asking the State Water Board to modify the water right permits held by the Bureau of Reclamation to validate the increased flows and attempt to meet the temperature objectives in the Basin Plan. In addition, four bridges along the river will have to be raised to accommodate the increased flows, but funding for the bridge work has not been appropriated by any agency.

Restoration and habitat enhancement projects in the watershed need to be reviewed for implementation of best management practices (BMPs); and regulated in conformance with these permits to protect water quality objectives and beneficial uses. Those activities that pose a significant threat to water quality will necessitate prescription of waste discharge requirements (Non-Chapter 15 WDR) for protection of water quality objectives and compliance with Basin Plan Waste Discharge Prohibitions. Finally, these types of projects will require staff to investigate and assess the management practices and controls that are being followed to minimize adverse effects to waters from the activities.

Both the Trinity River (mainstem) and the South Fork of the Trinity River have been declared as impaired by sediment and placed on the Clean Water Act section 303(d) list for impaired waters. The USEPA developed and adopted a TMDL for sediment in the South Fork Trinity River in 1998. Implementation of that TMDL is dependent on funding at the Regional Water Board level. Regional Water Board staff is proposing a new Total Maximum Daily Load (TMDL) Implementation Policy for Sediment Impaired Receiving Waters in the North Coast Region, which is applicable to all sediment impaired watersheds in the Region. Also under development is a Regional Sediment Amendment to the Basin Plan with prohibitions and an Action Plan, which will provide more enforcement tools to the TMDL Implementation Policy for controlling sediment. See Section 3, Regional Activities for more information on these efforts.

In 1981 the State Water Resources Control Board (SWRCB) established a Management Agency Agreement with the U.S. Forest Service. The SWRCB certified the plan entitled “Water Quality Management for National Forest System Lands in California”(this is essentially the USFS 208 plan), designated USFS as the management agency, and executed the MAA with USFS. This Water Quality Management (WQM) plan sets forth process standards as BMPs and addresses timber management, road and building site construction, mining, recreation, vegetative manipulation, fire suppression and fuels management, watershed management, and range management. USEPA approved all these actions. Under this agreement the Regional Board waives direct regulation on Forest Service-maintained land except under special conditions. The Regional Board maintains the responsibility of oversight for implementation of the WQM plan. The Forest Service evaluates and monitors BMP implementation.

The Trinity WMA is subject to superior powers: The federal Secretary of Interior, the Central Valley Project, the Tribal Trust powers, the State of California's appropriative water rights via the SWRCB and the Hoopa Tribe's sovereign status. Their authorities should be exercised in concert with Regional Water Board's authority.

Assessment and Monitoring
Assessment of existing information was used in the development of the TMDL strategy. The TRTF has been funding assessment and monitoring activities and will likely continue to do so in the future. Focussed monitoring in the long term will be associated with determining the effectiveness of management practices to reduce erosion and sedimentation and lower temperatures, and determining trends towards the desired future condition. In-stream monitoring will be necessary to keep track of cross-section changes, thalwag profiles, embededness, turbidity, dissolved oxygen, gravel quality, riparian function, and fish productivity. Water quality characteristics will be monitored at two permanent stations under the SWAMP: Trinity River at Lewiston and Weitchpec. The intensive survey in FY 2003-04 provided significantly more information on the WMA. The RCD and CRMP collect new data that is not being collected by others. Also, both the U.S. Forest Service and Bureau of Land Management have local expertise in assessment and monitoring that should be utilized in cooperative efforts. The Toxic Substance Monitoring program documented mercury contamination in fish and the Office of Environmental Health and Hazard Assessment will publish health advisories. Timber companies are also collecting new data. See http://www.krisweb.com/ for information and data.

Education and Outreach
The TMDL process will enhance public and agency participation. The intent is to improve the recognition of land use impacts on the aquatic environment from nonpoint sources and to foster adaptive management for overall watershed health.

Watershed Coordination
The Regional Water Board currently coordinates with local agencies, CRMPs and watershed groups, and State and federal agencies on an as-needed basis. Improved coordination is sought as part of the TMDL implementation process, especially with the Division of Water Rights. More coordination with the Trinity River Task Force and the South Fork Trinity CRMP for the TMDL process is needed.

Core Regulatory
The current level of point source regulation (inspection, monitoring, and enforcement) on traditional dischargers is anticipated and covers above ground tanks, underground tanks, Department of Defense sites, waste discharge requirements, NPDES, storm water pollution control, landfills, as well as construction related pollution, gravel management, and placer mining.

Water Quality Certification
The Clean Water Act section 404 permitting and associated section 401 Water Quality Certification required of the Regional Water Board have been streamlined significantly and follow the California Department of Fish and Game's California Salmonid Stream Habitat Restoration Manual. Adequate staff funding is needed to completely implement the 404/401 programs. Staff continues to pursue innovative approaches to assure appropriate review and certification of all projects. High priority projects (those with a potential for adverse impacts) will continue to receive a complete review.

Ground water
Ground water issues center on petroleum contamination and will continue to receive the current level of activity. Groundwater and surface water contamination is suspected at former and existing mill sites that historically used wood treatment chemicals. Discharges of pentachlorophenol, polychlorodibenzodioxins, and polychlorodibenzofurans likely occurred with poor containment typically used in historical wood treatment applications. Additional investigation, sampling and monitoring, and enforcement actions are warranted, but insufficient resources exist to address this historical toxic chemical problem.

Nonpoint Source
Continued involvement in forestry, grazing, and county road issues is necessary to ensure protection of aquatic resources. The Regional Water Board continues implementation of the MAA with U.S. Forest Service for non-timber nonpoint source issues on a very limited basis due to a lack of staff resources. The listing of coho salmon as threatened under the federal Endangered Species Act has put the spotlight on all land use activities that may increase sedimentation or otherwise affect habitat. The TMDL process will increase work with local agencies and groups regarding land use effects on water quality, following the State's Nonpoint Source Enforcement Policy (see Appendix B) to reduce nonpoint source pollution. An outreach program will enhance the effectiveness of the program.

Timber Harvest
The Regional Water Board has an extensive timber harvest program where staff review and inspect timber harvest plans on private lands for implementation of the Forest Practice Rules and compliance with recently adopted General Waste Discharge Requirements (WDRs) or a Categorical Waiver. Additionally, staff reviews U.S. Forest Service timber sales for implementation of best management practices and compliance with a recently adopted Categorical Waiver to ensure protection of water quality and beneficial uses.

Regional Water Board staff continues to work in concert with the California Department of Forestry and Fire Protection during the review and approval of proposed timber harvesting activities on private lands. The SWRCB and CDF/BOF entered into a Management Agency Agreement, which some water quality protection responsibilities to the CDF/BOF associated with timber harvest regulation. The Regional Water Board has not given up any authority to regulate timber if violations of the Basin Plan occur or threaten to occur. More recently however, the Regional Water Board adopted General WDRs and a Categorical Waiver of WDRs for discharges related to timber harvesting on private timberlands. Regional Water Board staff continues to review timber harvest plans (THPs) and non-industrial timber management plans (NTMPs) and provide recommendations to CDF during the Review Team process. In addition, Regional Water Board staff must review THPs and NTMPs for compliance with the recently adopted General WDRs or waivers of WDRs.

The Regional Water Board currently has resources to oversee timber sale activities associated with USFS lands pursuant to the USFS MAA. Regional Water Board staff continues to review USFS timber harvesting activities for compliance with the recently adopted Categorical Waiver of WDRs and implementation of best management practices. Review of non-timber nonpoint source activities on USFS land is not well

funded. Regional Water Board staff is unable to implement this portion of the USFS MAA except for responding to complaint issues on a case-by-case basis. This is a significant issue for future oversight by the Regional Water Board for these activities.

Local Contacts/Agreements
The Regional Water Board continues active involvement in the Clean Water Act section 319(h) grant program, as well as Water Bond grant programs, and promoting other programs like the California Department of Fish and Game programs.

Water Quality Planning
The Basin Plan review process feeds into the activities to the extent issues were identified in the Triennial Review and applicable to the Trinity WMA. The top priority issues are:

- Review the Nonpoint Source Control Measures
- Adopt an implementation plan for sediment reduction

Additionally, the TMDL strategy will be incorporated into the Basin Plan at some future date.

Evaluation and Feedback
The Regional Water Board plans to evaluate the overall effectiveness of the process on a yearly basis, adjusting the activities as appropriate. The final evaluation once the Trinity River TMDL is completed will feed future assessment and problem identification.

Appendix 2.6-A
Stakeholders

Partial list of agencies and groups with jurisdiction and/or interest in water quality in the Trinity River WMA:

United States
Trinity River Basin Fisheries Task Force
Bureau of Reclamation
Forest Service
Bureau of Land Management
Environmental Protection Agency, Regions IX & X
Army Corps of Engineers
Geological Survey
National Biological Service
Fish and Wildlife Service
National Marine Fisheries Service (NOAA Fisheries)
Natural Resources Conservation Service

Native American
Hoopa Tribe
Yurok Tribe
Karuk Tribe

California State
Department of Fish and Game

Department of Health Services
Department of Pesticide Regulation
Office of Environmental Health and Hazard Assessment
Department of Toxic Substance Control
Department of Water Resources
California Coastal Conservancy
UC Agricultural Extension
Department of Parks and Recreation

County and Local Agencies
Trinity County Resource Conservation District
County Agricultural Commissioners
city planning departments
city public works departments

Companies, Organizations, and Public Interest Groups
American Fisheries Society, Humboldt Chapter
Timberland owners
Farm Bureaus
South Fork Trinity River CRMP
Friends of Trinity River
Simpson Timber Company
Sierra Pacific Lumber Company
Trinity River Group CRMP

Surface Water Monitoring Program

SWAMP has established both permanent and rotating stations in the WMA. For FY 04-05 two permanent and one rotating will be sampled. Monitoring parameters include filed parameters (dissolved oxygen, pH, turbidity, water temperature), general nutrients, general metals, trace metals, total organic carbon (TOC), chlorophyll-a, organic compounds (pesticides and PBCs), triazine herbicides, glyphosate and herbicide surfactants. Selected sites from this WMA will also be screened for estorgenic endocrine disrupting compounds.