319(h) PROJECTS

Grant Years 1999-2005

Region-Grant Yr	Project Title	Contracting Agency	Contract Number	Amount Awarded	Term	Project Description and Outcomes
1-01	Mattole River Restoration	Mattole Restoration Council	1-102-251-0	$129,800	11/15/01-05/15/04	This project is to improve and protect aquatic habitat for salmonids in the Mattole River Watershed through remediation of sediment from roads and road upgrades. For further information, please contact Chris Larson at 707/629-3514.
						Mattole River Restoration Project Outcome **3/2005 Update:** Some 55 sites were successfully upgraded along roads and the Mattole River tributary streams (Thompson Creek and the lower Mill Creek watershed) banks to decrease erosion and sedimentation; particularly for downstream salmonid spawning beds. The project included earlier erosion & sedimentation monitoring to get a pre-project 'snapshot'. Following successful execution of this grant project, significantly less erosion and sedimentation is expected to be indicated downstream of the road upgrade sites when repeat watershed monitoring occurs in another three years. Some additional project funds were reprogrammed to achieve related improvements in coastal watersheds.
2-99	Characterization, Monitoring, and BMPs in Pescadero Watershed	San Mateo County Resource Conservation District (RCD)	9-084-252-0	$229,340	12/1/99-4/30/03	This project will include an initial watershed characterization followed by water quality monitoring. A selected sediment reduction solution will be implemented and monitored for effectiveness. For further information, please contact Christina Fischer at 650/726-4660.

						Pescadero Watershed Restoration Plan Project Outcome **4/2005 Update:** The Pescadero Watershed restoration plan (Pescadero-Butano Watershed Assessment) identifies those sub-watersheds where good quality salmonid habitat could most readily be improved to excellent quality habitat using known and relatively inexpensive restoration methods. These methods are evaluated, and include placement of log structures or boulders in stream channels to improve salmonid habitat, revegetating banks, upgrading old logging roads, installing culverts to reduce gulley formation, and continuing existing & successful to date requirements and encouragements for these and other land use management changes on private lands to further decrease sedimentation and erosion, particularly in those watersheds most easily improvable for salmonids. Some original project funds were reprogrammed to related California Department of Fish & Game projects; and U.S. EPA reprogrammed some other funds.
2-00	Sediment Reduction and Habitat Enhancement	Alameda County Public Works	0-131-252-0	$350,000	03/01/01-10/31/02	This project will work to decrease erosion in the San Lorenzo Creek Watershed to improve riparian habitat as well as habitat for fish and wildlife. For further information, please contact Carla Schultheis at 510/670-5576.
						Project Outcome **4/2005 Update:** Three project sites were selected with rural/urban habitat improvements needs, including erosion reduction and native riparian plant restoration. At Palomares Elementary School, community members and students assisted in re-establishing native plant communities, using plants from the school garden and bioengineering methods such as root wads, live cribwalls, a vegetated geogrid & stone toe protections. Severe erosion was curbed significantly, and wildlife habitat dramatically

						improved at the site.
2-01	Sediment and Stewardship in the Napa River Watershed	Napa County RCD	1-100-252-0	$200,000	01/14/02-06/30/05	This project will evaluate the effectiveness of erosion control practices used on hillside vineyards to prevent and control sediment delivery to the Napa River Watershed. For further information, please contact Robert Zlomke at 707/252-4188.
						Project Outcome **4 /2005 Update:** Project is on schedule with innovative field monitoring of sediment loads in the Napa River tributaries, along with integrate educational outreach to farmers and the general public. An additional year of field monitoring has been added without reducing the educational side of the project. The project developed excellent storm sediment load estimates for winter 2004-2005, appreciated by the project technical advisory team.
2-01	Mercury Load Reductions in Guadalupe River Watershed	Santa Clara Valley Water District	2-121-252-0	$348,782	02/15/03-12/31/05	The goal of this project is to implement demonstration projects to evaluate the costs and benefits of specific projects that remediate methyl mercury sources and mercury deposits within the Guadalupe River Watershed. For further information, please contact David Drury at 408/265-2600 x2721
						Project Outcome **5/2005 Update:** The project demonstrated that mercury removal and load reduction projects could be conducted in a manner that addresses multiple objectives of habitat restoration, flood protection, and pollutant reduction. It demonstrates that projects conducted with a multiple objective approach can be economical. However, there was no economy in attempting to conduct multiple individual projects in areas of private creek ownership.

3-99	Erosion and Nutrient Management in Lower Salinas & Pajaro Valleys	Resource Conservation District (RCD) of Monterey County	0-147-253-0	$311,000	02/01/01-02/28/03	This project will involve the Conservation District of Monterey County working with landowners, growers and natural resource agency personnel to improve water quality in the Lower Salinas and Lower Pajaro Valleys through direct technical assistance and training. For further information, please contact Melanie Bojanowski at 831/424-1036.	
						Project Outcome **6/2005 Update:** One hundred and thirty growers were contacted directly and received technical assistance which resulted in erosion control, improvement in nitrate, pest, and/or irrigation management practices on 62 different properties. Additional technical and cross training opportunities were provided for nutrient management & implementation of on-farm conservation practices. Fact sheets & technical brochures were compiled into a Technical Tool-kit & Handbook of Agricultural Conservation Practices which were widely distributed throughout the central California coast.	
3-99	Morro Bay Volunteer Monitoring Program	Friends of the Estuary of Morro Bay	0-124-253-0	$240,000	01/15/01-12/31/03	The goal of this project is to measure progress of the Morro Bay National Estuary Program at addressing its water quality goals, by building a long-term, regionally integrated volunteer monitoring program. For further information, please contact Richard Watkins at 805/995-1822.	
						Project Outcome **6/2005 Update:** This grant provided the Morro Bay Volunteer Monitoring Program sufficient funding to support staff, purchase equipment, and conduct laboratory analyses to support measuring the effectiveness of Best Management Practices (BMPs), Total Maximum Daily Load (TMDL) water pollution reduction requirements, and other nonpoint source (NPS) controls and restoration efforts. Annually, 150 volunteers contribute over 2,500 hours to these vital & ongoing natural resource stewardship efforts.	

3-00	Instream & Riparian Habitat Enhancement	Cachuma Operation & Maintenance Board	0-120-253-0	$48,339	12/15/00-04/30/02	The purpose of this project is to conduct two public workshops and three small demonstration projects that will increase water quality and instream fish habitat on the Salsipuedes and El Jaro Creeks. For further information, please contact Kate Rees at 805/569-1391.
						Project Outcome **8/2005 Update:** A perched culvert, which was actively eroding a 300 foot section of the ephemeral channel, was removed from the Isaacson Ranch. Approximately 400 linear feet of stream bank was stabilized directly in this project, with an additional few miles downstream benefiting from decreased sedimentation from the prior eroding bank upstream. In the El Jaro Creek Floodplain Enhancement Project, approximately 220 feet of bank was directly stabilized with about 50 1-2 ton boulders (which were backfilled with native soil and successfully willow planted). Sedimentation was again reduced for miles downstream of this extensive bank stabilization project.
3-00	Public Outreach & Education in Salinas Valley	Monterey County Water Resource Agency	0-148-253-0	$288,000	02/01/01-08/31/02	This project will include actions to reduce the existing nitrate loading to the ground water basin through public outreach and education and increase the level of understanding of current on-farm practices and basin-wide distribution of nitrate contamination. For further information, please contact Kathleen Thomasberg at 831/755-4860.
						Project Outcome **7/2005 Update:** The existing groundwater monitoring network was enhanced & data reported back to agricultural well operators. Long lasting partnerships built between local, county, regional, and state agencies, as well as central CA coast growers and the public. Technical Advisory Committee of above agencies generated a realistic nitrate management plan for Monterey County being implemented by the Monterey County Water Resources Agency.
4-99	Septic Tank Nutrient	Ventura Regional	0-047-254-0	$129,703	08/01/00-06/15/01	This project will be a side-by-side demonstration of the individual disposal system nutrient and pathogen removal processes of

	Removal	Sanitation District				several manufacturers. The project will demonstrate advanced individual disposal system effluent quality for several treatment processes. For further information, please contact Mark Capron at 805/658-4606.	
						Project Outcome **8/2005 Update**: The tested systems provide treatment comparable to a Publicly Owned Treatment Works (POTW). All systems removed more than 67% of Biochemical Oxygen Demand (BOD) and more than 80% of Total Suspended Solids (TSS). Four systems consistently exceeded the BOD and TSS goals of less than 30 mg/L. All systems reduced total nitrogen. The most effective system put out a mean TN concentration of 11.4 mg/L.	
4-00	Los Angeles Volunteer Monitoring & Education	Southern California Marine Institute	0-123-254-0	$95,000	01/01/01/-04/01/03	This project will create an illustrated field guide for sampling and analysis performed by volunteer citizens. In addition, the project will assist in coordination of regional volunteer monitoring efforts, as well as increasing public awareness in the Los Angeles Region about water resources. For further information, please contact Crystol Brandt at 310/519-3181.	
						Project Outcome **7/2005 Update:** An illustrated field guide for volunteer monitors was developed, the Freshwater & Marine Team Field Guide, for both sampling and analysis. Specific quantifiable grant results include: 11,044 valid data points were taken, 171 water chemistry and 131 bacterial sites were monitored, 20 parameters were tested, 18 volunteer & high school groups helped in this water quality monitoring, 10 snapshot events were coordinated to increase monitoring frequency, testing equipment was updated with more accurate & easier use models, 5 training & 5 quality assurance sessions were held, as well as field consultations with monitoring groups to assess the training sessions' effectiveness, & a consolidated database was developed that includes data collected since June 1998.	
5-99	Reduction of	Placer County	9-075-255-0	$250,000	11/15/99-	This project will reduce stream sedimentation and pollution	

	Stream Sedimentation and Pollution	(Resource Conservation District) RCD			6/30/02	through citizen volunteer watershed education and stewardship. For further information please contact Rich Gresham at 530/885-3046.	
						Project Outcome **7/2005 Update:** A total of six 'Streams in Motion' workshops reached 69 people, a GIS map was developed locating some 51 watershed groups in the Lower Sacramento River Watershed, two 3-day Rapid Bioassessment Procedures classes were conducted reaching 19 people, 1,000 feet of eroding stream banks were re-vegetated and maintained with natives grown at a newly developed public nursery, volunteer field work and water quality monitoring for 80 hours total (22 people), and an additional 36 volunteer water quality monitors trained in the Upper Putah Creek Watershed, Urban Watershed Planning workshop developed & associated reference collections of macroinvertebrates for a number of areas.	
5-00	Conservation Easements for Ag Lands	Ducks Unlimited	0-056-255-0	$130,000	09/01/00-02/28/02	The purpose of this project if to provide information to local communities on how key habitat areas such as wetlands and riparian systems can assist them in dealing with water management issues, both water quality control and flood management, and urban growth issues. For further information, please contact Olen Zirkle at 916/852-2000.	
						Project Outcome **9/2005 Update:** 5,000 water quality improvement brochures covering both wetlands & riparian (river & stream) systems were distributed to interested people, and outflow from wetlands habitat was monitored, documenting in measurable improvements in water quality. This very large and successful demonstration project was developed on Broken Box Ranch in Williams, Colusa County.	
5-01	Upper Pit River Watershed Enhancement and Protection	Central Modoc RCD	1-050-255-0	$130,000	10/01/01-05/30/05	The Central Modoc Resource Conservation District (RCD) will develop a River Center to provide a focal point for the district's watershed education program and complement ongoing stream bank restoration and improvement projects. The center will	

	Project					highlight the Pit River and its tributaries, focusing on watershed issues with special emphasis on management and restoration for landowners/managers and basic watershed principles for students and other outreach populations. For further information, please contact Paula Fields at 530/233-5085.
						Project Outcome **9/2005 Update:** This project developed the highly successful Central Modoc River Center, which educates 700 students per year, hosts a 'Kid's Discovery Day', produces a regular newsletter, coordinates a stream and river mileage adoption project in the Pit River Watershed, and coordinates area youth participation in a conservation education program which includes actual restoration projects, cleanups, and the planting and maintenance of native riparian vegetation.
6-99	Tahoe Regional Planning Agency Watershed Management	Tahoe Regional Planning Agency	9-131-256-0	$240,000	4/15/00-4/15-03	This project focuses on implementation of a comprehensive Best Management Practices (BMP) retrofit program to achieve specific water quality goals by reducing the nonpoint source pollution from private properties. For further information, please contact Matthew Graham at 775/588-4547x217.
						Project Outcome **10/2005 Update:** Specific grant successes have included creating an educational Best Management Practices (BMPs) campaign to explain the link between BMP's and environmental water quality to the public, including 98 community presentations reaching over 800 people, developing neighborhood BMP implementation strategies, conducting 11 workshops for private property owners reaching over 500 people, evaluating the BMP needs for over 500 properties, facilitating BMP installation for over 100 properties, creating a publicly accessible & GIS mapping linked on-line database to track BMP status of all Tahoe Basin properties, writing 6 residential & 22 commercial BMP permits, & inspecting 140 properties after BMP installation.
7-00	Erosion in the Salton Sea Watershed	UC Cooperative Extension	0-139-257-0	$113,605	12/01/00-12/31/03	This project will demonstrate the use of irrigation strategies that reduce soil erosion and minimize the losses of sediments, fertilizers, and pesticides from irrigated fields in the Imperial and

						Coachella Valleys. This project will demonstrate the use of surge irrigation and polymers to minimize soil erosion from agricultural fields in the Salton Sea Watershed area. For further information, please contact Khaled M. Bali at 760/352-9474.
						Project Outcome **10/2005 Update:** The use of polyacrylamide (PAM) in irrigation water on lettuce fields produced significant improvements in water quality. Silt (sediment) loads in runoff water were reduced by up to 90% compared to continuously irrigated fields. Concentration of soluable phosphorus (which tends to produce algal blooms in streams) was also reduced in runoff water. Costs of implementing the above (PAM use & surge irrigation) practices ranged from $5-$25/acre, which represents only 0.5%-2.5% of total alfalfa production costs, & only 0.1%-0.5% of total lettuce production cost.
7-00	Irrigation Management (for) Reduced Tailwater, or Agricultural Drainage	UC Cooperative Extension	0-082-257-0	$264,902	11/01/00-12/13/03	This project will include field demonstration using surge irrigation and polymer application Best Management Practices (BMPs) for alfalfa growers in the Imperial Valley. In addition, monitoring and reporting will be done on the effectiveness of the improved irrigation methods. For further information , please contact Juan Guerrero at 760/352-9474.
						Project Outcome **10/2005 Update:** This project demonstrated consistently over three years an increase in water use efficiency of nearly 20%; in alfalfa fields producing the same yield as those adjacent lands using substantially more water. The latter fields had the typical 17-19% tailwater or agricultural drainage off the fields, while project surge irrigation fields produced less than 5% tailwater. This extremely successful result has been Peer Reviewed, presented & published; presented at the spring 2005 Third International Conference on Irrigation & Drainage held in San Diego; and published by the U.S. Committee on Irrigation and Drainage. Authors of the published paper include Dr. Khaled M. Bali, Dr. Juan Guerrero, Dr. Ian C. Tod, & Dr. Mark E. Grismur.

8-01	Santa Ana Watershed Volunteer Monitoring and Public Outreach Program	Orange County Coastkeeper	1-056-258-0	$201,875	12/15/01-01/15/05	This project will conduct community outreach and education to increase public awareness of the general sources and ways NPS pollution can be prevented. The project will provide monitoring data to assist the Santa Ana Regional Water Quality Control Board target nonpoint sources (NPSs) of urban runoff. For further information, please contact Ray Hiemstra at 949/723-5424.
						Project Outcome **9/2005 Update:** For 2 ½ years, 300 fully trained volunteers monitored 27 sites on seven streams across 3 counties for over 5,000 volunteer hours. There were just under 2,000 monitoring events where information on flow, dissolved oxygen, pH, conductivity, bacteria, nutrients, and metals was collected. Bioassessments were also done at each site. Ten schools participated, resulting in hundreds of additional students participating to some degree, along with other volunteers who also did not stay for the full training.
9-99	Roberts Ranch Watershed Restoration	USDA Cleveland National Forest	9-130-259-0	$27,000	4/15/00-6/30/03	The purpose of this project is to restore degraded riparian and meadow areas within the Roberts Ranch Watershed. For further information, please contact Ron Wright at 760/788-0250.
						Project Outcome **10/2005 Update:** The initial project stage has been long completed & is still working reasonably well. However, the State Water Board managed funds (the $27,000) were deprogrammed & not used in this project. Plans are now under way for some further successful expansion of the project over the next few years with Cal Trans to control increasing drainage off Interstate 8 near the initial project site.
9-01	Santa Margarita	Mission	1-116-259-0	$54,302	02/15/02-	The goals of this project are to implement a citizen-based

	Home to Ocean- A Citizen's Water Quality Monitoring Program	Resource Conservation District (RCD)			03/15/04	volunteer water quality monitoring program and to increase public awareness of Santa Margarita watershed issues. For further information please contact Judy Mitchell at 760/728-1332.
						Project Outcome **10/2005 Update:** A Quality Assurance Project Plan (QAPP) was completed, a group of technical advisors was created & functioned also to interpret water quality (WQ) analyses, over 70 people attending volunteer outreach & training events before water quality monitoring commenced. During WQ monitoring, over 40 people were trained in WQ & bioassessment sampling and results analyses techniques, samples were analysed from 29 sites, and 4 macroinvertebrate (visible aquatic insects, and other aquatic invertebrates large enough to be seen & identified without magnification) bioassessments to determine stream WQ by analyzing aquatic insect & other visible aquatic invertebrates population characteristics were completed.
9-01	STAR: Simple Technology Against Runoff	The Nature Institute	1-120-259-0	$42,000	02/15/02-08/30-05	This project will demonstrate the use of simplified catchment basin and weir design to augment wetland function in mitigating NPS pollution discharged into waterways during dry weather. For further information, please contact Dr. Robert LaRosa at 619/229-1092.
						Project Outcome **10/2005 Update:** Three catchment basins and weirs have been constructed & are already operating successfully. These basins will fill in with vegetation this spring in 2006. Soil filtration of dry weather urban runoff is currently removing essentially all of the sediment and converting almost all of the toxic compounds in urban dry weather run off to either biologically inert forms or to less toxic forms. These three catchment basins drain three differently sized and variously built up urban areas; and treat approximately 10,000 gallons/year dry weather runoff; 30,000

						gallons/year; and 500 gallons/day dry weather runoff respectively. The resulting runoff water after extensive plant roots develop in these treatment areas in spring, adding natural plant adsorption and absorption processes to the existing soil microbe toxics reduction, is expected to result in no or almost no measurable toxic runoff to any receiving waters. In other words, the expected result of these systems is no remaining toxic urban runoff after this spring's plant growth or almost none.
DWQ-00	Rangeland Water Quality Management	Regents of UC, Davis	0-118-250-0	$236,910	01/01/01-01/31/04	This project will educate rangeland owners, ranch operators and other interested persons about protecting rangeland water quality through improved grazing practices. For further information, please contact Mel George at 530/752-1720
						Project Outcome **9/2005 Update:** There were 777 participants in the short course for Best Management Practices (BMPs) for range management plans, of which over half installed one or more BMPs on their rangelands (5,000 acre average size); including erosion prevention, & reduced nutrient runoff. Continued high demand for course materials, and latest range management research results to be published in September 2005 in world's leading range management technical journal 'Rangeland Ecology & Management'.
DWQ-01	Snapshot day	Monterey Bay Sanctuary Foundation	2-078-250-0	$150,693	08/01/02-01/31/04	The objective of this project is to produce "Snapshot Day," a one day, multiple location water quality monitoring event. For further information, please contact Erick Burres at 213/576-6788.
						Project Outcome **9/2005 Update:** For 'Snapshot Day' 2003, 155 people monitored 155 sites within the Monterey Bay National Marine Sanctuary. In field measurements in these diverse urban drainages, brackish sloughs, and major river systems included dissolved oxygen, pH, conductivity, temperature, and turbidity (transparency). Water samples were also collected for lab analysis of nitrate, orthophosphate, and bacteria at most of these 155 sites. The majority of sites met the objectives for cold water fish habitat,

						although dissolved oxygen was too low in about 10% of the sites, Watsonville Slough and scattered streams. Coliform bacteria exceeded water quality objectives at 27% of sites; and orthophosphate at 23% of sites. Overall, there were 14 'Areas of Concern' (based on water quality limitations) identified in 2003; compared to 11 in 2002.	