EPA Awards over $3.7 Million to Support Wetlands Restoration in the Pacific Southwest

SAN FRANCISCO (June 16, 2022) – The U.S. Environmental Protection Agency (EPA) has awarded a total of $3,745,495 to boost programs that restore habitat, protect tribal water quality and preserve wetlands across the Pacific Southwest. The funding was awarded through EPA's Wetland Program Development Grants.

"We are very pleased to support our partners in their efforts to improve water quality and restore wetlands in California, Hawaii, and Nevada," **said EPA Pacific Southwest Regional Administrator Martha Guzman** "Healthy wetlands provide numerous benefits to ecosystems and communities across the Pacific Southwest, and these grants will allow our state, local and tribal partners to make significant progress protecting these vital resources where it's needed most."

Wetland Program Development Grants assist state, tribal, and local government agencies and interstate/intertribal entities in developing or refining programs which protect, manage, and restore wetlands.

Below are the projects funded in this year's round of grants:

The Yurok Tribe's Wetland Program Plan will receive $309,718 to advance preservation and restoration of headwater wetlands in response to climate change. The project will create a Wetlands Headwaters Restoration and Prioritization Plan to inform better stewardship practices through the worsening drought.

California State Coastal Conservancy will receive $365,000 to build capacity for assessing wetland recovery efforts. The project will develop a regional monitoring program for the Southern California Wetlands Recovery Project.

Buena Vista Rancheria of Me-Wuk will receive $262,174 to continue to build on its 2019 Wetlands Program Plan and develop a tribal wetland inventory, monitoring and assessment program.

Southern California Coastal Water Resource Project will receive $443,005 to develop a Submerged Aquatic Vegetation Monitoring Program for the Southern California Bight.

Association of Bay Area Governments will receive $569,366 for the SF Bay Wetlands Regional Monitoring Program Plan Phase III: Enhancing Community Relevance. This project will plan coordinated monitoring efforts and advance work to analyze wetland status and trends.

San Francisco Bay Conservation and Development Commission will receive $379,622 to develop new sediment management policies for wetland restoration and climate change resilience in San Francisco Bay.

Aquatic Science Center will receive $436,969 to develop the Russian River Regional Monitoring Program, which includes a comprehensive base map of surface waters and riparian areas.

Hawaii Department of Land and Natural Resources will receive $264,116 to develop Hawaii's first protection and restoration strategy for the state's anchialine pools—enclosed water bodies or ponds with an underground connection to the ocean—and marshes. The project will convene a state advisory committee, develop a monitoring and assessment strategy, identify regulatory program needs, and distribute project outputs to partners to guide wetland restoration and protection efforts across the state. These activities were identified as priorities in Hawaii's Wetland Program Plan developed with support from a previous EPA Wetland Program Development Grant.

Pyramid Lake Paiute Tribe will receive $234,881 to continue building capacity to safeguard Pyramid Lake and the Truckee River, and to protect endangered cui-ui sucker fish, threatened Lahontan cutthroat trout, and the Tribe's people from water pollution and its effects.

Nevada Department of Conservation and Natural Resources, Natural Heritage Division, will receive $480,644 to revise Nevada's Wetlands Program Plan and continue the ongoing inventory, monitoring and assessment of the state's springs.

For more information, visit EPA's wetland program development grants page.

Learn more about EPA's Pacific Southwest Region. Connect with us on Facebook and on Twitter.

Past Wetland Program Development Grant (WPDG) Awards

FY 2017-2018 WPDG Awards

Hopi Tribe *(AZ)* *Hopi Reservation Wetland Inventory*	Incorporating innovative remote sensing technology, create a compendium of all wetlands on the reservation with population-scale ambient condition as a baseline for evaluating future change.
Gila River Indian Community *(AZ)* *Wetlands Program Plan and Rapid Assessment Methodology*	Using adaptable elements of CA, NM, CO and UT methods, develop a Gila River Rapid Assessment Method ("GRAM") incorporating scientific and cultural elements. Assess wetlands with GRAM and write Wetland Program Plan. Partners include FWS, AZGFD, AZ Intertribal Council, CA and NM Wetlands groups.
Pyramid Lake Paiute Tribe *(NV)* *Integrate Hydrologic and Amphibian monitoring into Wetland Program*	Conduct hydrologic and amphibian monitoring to assess current and historic population of Northern Leopard Frog, creating a plan of conservation measures for the species.
Tahoe Regional Planning Agency *(NV, CA)* *Wetland Monitoring and Restoration Plan for Lake Tahoe Basin*	Develop a Tahoe wetland restoration prioritization plan and Basin-wide monitoring plan, and quantitatively define performance metrics for wetland restoration and mitigation.
NV Dept. of Conservation *Map NV Springs and Wetlands and draft Springsnail Cons. Strategy*	Create geodatabase and detailed report on NV springs and spring-dependent species distribution and status, including an inventory of understudied springs. With TNC, map NV's groundwater-dependent wetlands. Develop and test a rapid assessment method for NV wetlands. Produce a draft Springsnail Conservation Agreement and Strategy with NDOW.

American Samoa EPA *Quantitative priority-setting Coral management framework*	Using biological and physical datasets (fish assemblages and water quality) from 30 watersheds and communities in American Samoa, develop a cooperative decision-making framework with village leaders to assess and manage local stressors threatening coral reef resilience.
CA Coastal Conservancy *Humboldt Bay salt marsh vulnerability assessment*	Assess Humboldt Bay salt marsh vulnerability and impacts of marsh retreat on carbon sequestration. Results will inform water quality and wetlands management, and support development of a long-term dredging program with beneficial reuse strategies.
CA Delta Conservancy *Aquatic Resource Inventory for Landscape Scale Evaluation*	Establish a standard regional typology for the Delta Aquatic Resource Inventory (DARI) and populate EcoAtlas for the Sacramento-San Joaquin Delta. Train GIS staff to develop the dataset. Build statewide capacity to make comparable assessments of net change in the abundance, diversity, and condition of wetlands as affected by land use.
S. CA Coastal Water Research Project *Ephemeral Stream Condition Assessment tool validation (CA, AZ)*	Validate CRAM module for episodic and ephemeral streams and adapt to Arizona. Create GIS layers of likely ephemeral streams using hydrologic models and refine ephemeral stream IBIs.
Sonoma County *(CA)* *Refining Riparian Corridor Mapping to Improve Regulatory Protection*	Use LiDAR and GIS to accurately map streams and riparian conservation areas to refine County setback zoning maps used in riparian protection regulations. Publish updated maps on Permit Sonoma website.

S. CA Coastal Water Research Project *DNA-based functional assessment*	Develop a functional assessment method for streams and wetlands using DNA barcode sequencing to directly and rapidly measure community composition and condition and improve evaluation of restoration success.
Assoc. Bay Area Governments *(CA)* *Bay Area Wetlands Regional Monitoring Program Plan*	Develop a 9-county wetland regional monitoring plan for restoration efforts. Merge regulatory agencies' basic monitoring needs and consistent regional success measures. Form steering committee, develop annual budget, long term funding plan, and information exchange.

FY 2015-2016 Wetland Program Development Grants Awards

Sacramento-San Joaquin Delta Conservancy - Advancing Performance Measure Reporting for New and Continuing Landscape Restoration Projects: A Collaborative Project for the Delta Stewardship Council and Sacramento-San Joaquin Delta Conservancy

Enhance EcoAtlas so it may serve as the shared and primary point of data collection for delta restoration projects. It would actively transfer data between EcoAtlas and Delta View, which is the database used by the Delta Stewardship Council to track restoration projects in support of Proposition 1 and other programs.

State Coastal Conservancy - Assessing Sediment Supply, Sediment Contaminants, Water Quality, and Salt Marsh Sustainability in Humboldt Bay, CA

Assess sediment supply, sediment contaminants, water quality, and salt marsh sustainability in Humboldt Bay, CA, as well as impacts related to climate change. The study will provide vital information to manage existing wetlands in this estuary, prioritize and design wetland restoration projects, and determine the potential for beneficial re-use of dredge material.

Hopi Tribe - Wetland Program Development Long Term Analysis of Restoration on White Ruin Cienega

Extend current grant activities through FY2017 and create a more comprehensive and robust data set to be collected. Continued long term monitoring of the site will allow a better data set to be collected in order to determine the causes and extent of water pollution and the effects of restoration on the ecosystem and public health in this remote area.

Pyramid Lake Paiute Tribe - Integration of permaculture methodologies and techniques into the Pyramid Lake Paiute Tribe Wetlands Program

Conduct an updated survey and assessment of all inventoried wetlands within the reservation, and produce a comprehensive restoration ranking system utilizing the data collected, accounting for community perceptions and climate change impacts. Produce a Restoration Design Plan at a watershed level that integrates permaculture techniques for implementation into the PLPT Wetlands Program.

Hualapai Tribe - Refinement of the Hualapai's Wetland Program Through Development of a Wetland Restoration/Protection Prioritization Process for Southwestern Spring Wetland Ecosystems With a Consideration of Climate Change Impacts

Develop wetland criteria to enable prioritization of wetlands for restoration or protection actions in the future. Incorporate the effects of climate change and drought into the wetland ranking process, and disseminate the information to EPA, other tribes, states, and the public by conducting an instructional workshop. Evaluate the effectiveness of the prioritization process by applying the process to five wetland habitats along the Colorado River, and publish the results on the tribe's web site.

Yurok Tribe - Development of Appropriate & Practical Wetland Compensatory Mitigation Tools

Continued monitoring and assessment of wetlands and development of a regulatory framework (draft ordinance) for the protection of Yurok Reservation wetlands. Conduct research specific to the probable impacts of climate change, such as tracking water quality and accretion of sediments of the Klamath River Estuary Complex, and how they change over the long term with sea level rise. Use this information to develop Klamath River Estuary provisions into the Yurok Climate Change Adaptation Plan. Develop Water Quality Standards for wetlands. Incorporate the ordinance and the new water quality standards into the Yurok Water Quality Control Plan. Attend applicable training to build capacity on regulatory and climate change issues specific to wetlands. Finally, review and revise the Yurok Wetland Program Plan for years 2016-2020.

Ak-Chin Indian Community - Smith Wash Wetlands Demonstration Project and Development of a Wetlands Protection Plan

Monitor water quality, flora and fauna of an unprotected area of wetlands, as well as a fenced off wetland, and compare. Using this data, conduct outreach and education for Ak-Chin Governmental Departments, committes, boards, and community members. Develop a Wetland Program Plan. Facilitate training for the workgroup and volunteers on wetlands management and the benefits of wetlands to the community.

Assocation of Bay Area Governments - Ensuring that the San Francisco Bay Water Board's Bayland Wetland Protection Policies are Climate Change Ready

Collaborate with the San Francisco Bay Regional Water Board to conduct research on the ecosystem services and pollutant removal capacity of local wetland projects that utilize treated wastewater. Evaluate the regulatory and legal considerations for permitting climate adaptation projects, balancing "no net loss" policies against proposals to adapt existing wetlands. Produce a summary report on the regulatory approaches to permitting climate adaptation projects and resultant policy recommendations for the Water Board.

Aquatic Science Center - Statewide Wetland Planning and Tracking in the Watershed Context to further demonstrate and transfer technology of EcoAtlas for planning and tracking of wetland projects.

Develop capacity to track, visually link, and quantify mitigation and associated impact sites through the use of the Project Tracker database. Upload as many as 600 backlogged restoration or compensatory mitigation projects from all coastal regions into Project Tracker, and establish capacity to support regional Project Tracker user communities. Design and develop the state watershed approach to compensatory mitigation planning consistent with the USACE approach. Create a Mitigation and Restoration Site Suitability Evaluation Tool plus supporting documentation such as a user manual and explanatory online video.

Sonoma Recreation Conservation District - Demonstrating the use of Historical Hydrology to Prioritize Multi-benefit Wetland Restoration in the Petaluma River Watershed

Engage watershed partners to demonstrate the efficacy of historical hydrology in identifying and prioritizing multi-benefit wetland restoration opportunities. Synthesize a historical hydrology report with implications for management, restoration, flood control, and groundwater recharge. Prioritize restoration opportunities and do a feasibility analysis. Produce information regarding feasibility for transfer of the historical hydrology method to other watersheds.

Santa Monica Bay Restoration Authority - Evaluation and Regional Comparison of USEPA Intensive, Level-3 Monitoring: Consolidating Coastal Wetland Datasets and Programs

Consolidate independent regional datasets collected using site-intensive methods (Level 3 monitoring) with varying sampling designs and frequency, and determine the level of comparability. Contribute to a Level 3 coastal wetlands monitoring manual that can be applied throughout the region to assess and report the ambient condition of wetland resources; and develop tools to assess improvement of wetland health and functions as a result of restoration.

Humboldt Bay Harbor Recreation and Conservation District - Humboldt Bay Eelgrass Management Plan Development

Develop a multi-agency management plan, which would provide a shared vision and strategy for eelgrass management, through a collaborative process by local, state, federal, tribal, community and private partners with support from facilitators and scientists. The Project would build on work that has already been started by the Humboldt Bay Eelgrass Workgroup, which consists of representatives from local, state and federal agencies, stakeholders and the Wiyot Tribe.

American Samoa EPA - A framework to assess ridge to reef ecosystem health in American Samoa

Develop an ecosystem health index using water quality and coral reef monitoring protocols that can be used to assess the current status of streams and coral reefs, pinpoint specific sources of

degradation, and provide spatially-explicit threat models highlighting areas where these stressors occur. Main tasks include: development of a framework to assess ecosystem health, training workshops on field monitoring and analyses methods, field surveys of coral reef and watershed sites, and assessment of ecosystem health at the watershed level.

University of Hawaii - Development of Protocols to Prioritize Watersheds and Coastal Waters for Protection and Restoration in the Hawaiian Islands

Develop protocols that evaluate, rank and prioritize watersheds and coastal waters for protection and restoration in the Hawaiian Islands, and lay the groundwork for application of continuous digital mapping and interpretation of reef and watershed resources throughout Region 9 and in other EPA jurisdictions. Further develop indices of biological integrity in relation to stressors along ecological gradients of anthropomorphic disturbance. The major tasks are: (1) coral reef field surveys and data processing, (2) watershed condition modeling, (3) reef condition modeling, and (4) prioritization of watersheds and coastal reefs.

FY 2014 Wetland Program Development Grants Awards

- CA State Coastal Conservancy
  Southern CA Wetlands Recovery Project
- CA Water Resources Control Board
  Building State Capacity to Demonstrate How to Conduct Wetland Compliance Monitoring, Assessment and Tracking
- Sacramento-San Joaquin Delta Conservancy
  Visualizing and Sharing Intensive Data Assessments: A Project to Leverage Current Investments for Responsive Decision-Making in the Delta
- Wiyot Tribe
  Wetland Program Plan Development
- Manzanita Band of Mission Indians
  Wetland Program Development
- San Carlos Apache
  Development of Appropriate & Practical Wetland Compensatory Mitigation Tools
- Santa Ynez Band of Chumash Indians
  Santa Ynez Chumash Tribal Wetland Program Plan Development
- Hopi Tribe
  Demonstration and Analysis of Restoration on White Ruin Cienaga
- San Jose State University
  Development of a Bar-Built Estuary Monitoring System and Resource Management Prioritization Tool for CA State Parks

- Aquatic Science Center
  Develop Capacities in the Lahontan Region to Apply EcoAtlas to Track Projects and Summarize Map-Based, and Rapid Assessment Information at the Landscape Scale

For additional information on these and other Wetland Program Development Grants, please also see EPA's Wetland Grants Database.

CA State Coastal Conservancy - Southern CA Wetlands Recovery Project

Update the Southern California Wetlands Recovery Project's (WRP's) Regional Strategy to serve as a decision-making guidance document, and develop a WRP-wide In-Lieu Fee (ILF) program, to secure a funding source for wetlands restoration projects and obtain the greatest ecological benefits from mitigation projects.

CA Water Resources Control Board - Building State Capacity to Demonstrate How to Conduct Wetland Compliance Monitoring, Assessment and Tracking

Finalize a feasibility study for a draft Wetland Water Quality Control Plan, which will summarize the results of the policy demonstration projects. Develop a water quality assessment framework. Develop an implementation plan for wetland standards. Develop a Water Board staff policy training package. A business plan will be developed to sustain key elements of the Wetland and Riparian Area Monitoring Plan, especially the EcoAtlas information delivery system. The California Rapid Assessment Method for wetlands will be reviewed to improve its performance in a regulatory context.

Sacramento-San Joaquin Delta Conservancy - Visualizing and Sharing Intensive Data Assessments: A Project to Leverage Current Investments for Responsive Decision-Making in the Delta

Standardize, visualize, and share Level 3 data. The Delta Conservancy will work through federal and state agency partners as well as the Delta Restoration Network to (a) collect high-priority datasets with strategic value for the region, (b) visualize those datasets geospatially, (c) share those datasets via web services, and (d) implement the best available measures of planning effectiveness, including landscape-scale habitat metrics, provided by an existing project funded by CDFW, that can be used to plan restoration and mitigation projects. These resources will be integrated into EcoAtlas.

Wiyot Tribe - Wetland Program Plan Development

Personnel training in wetland delineation and CRAM, wetland monitoring and assessment including delineation and mapping, development of a Wetland Program Plan (WPP), and education and outreach for youth and larger community.

Manzanita Band of Mission Indians - Wetland Program Development

Develop a Wetland Program Plan. Build capacity to delineate and assess wetlands, inventory and assess wetlands occurring on the Reservation, increase areas classified as wetlands, and develop quality assurance, monitoring, and wetland restoration plans.

San Carlos Apache - Development of Appropriate & Practical Wetland Compensatory Mitigation Tools

Continue developing Wetland Program Plan. Conduct baseline monitoring of wetlands and aquatic resources; develop and establish strategies that provide effective minimum requirements for compensatory mitigation proposals; develop and establish strategies that provide performance standards and success criteria for compensatory mitigation; and develop methods for local and regional education/outreach on the importance of aquatic resources, identifying protected waters, and compensatory mitigation regulations.

Santa Ynez Band of Chumash Indians - Santa Ynez Chumash Tribal Wetland Program Plan Development

Using a framework comprised of GIS analysis, baseline rapid assessments, field surveys, and surface and groundwater monitoring, the Tribe will inventory the size, extent, classification, and condition of wetland areas on the reservation. Hands-on training opportunities and educational information will also be provided to community members to build the Tribe's capacity to monitor and protect wetlands on the reservation and within the watershed. Completed reports documenting the results of the assessments/surveys, delineation maps, and a database identifying all wetland areas on the reservation will be developed along with a final draft of a Tribal Wetland Program Plan.

Hopi Tribe - Demonstration and Analysis of Restoration on White Ruin Cienaga

Design a restoration project for the White Ruin Cienaga. Train staff on data management, ecology and wetland remediation monitoring. Assess the success of several methods of mitigation on a pilot restoration project. Do baseline monitoring, and monitor changes in the White Ruin Cienaga prior to and after the restoration through installation of shallow groundwater monitoring wells, comparing water quality upstream and downstream of the Cienaga, and monitoring of effects on rare and endangered species.

San Jose State University - Development of a Bar-Built Estuary Monitoring System and Resource Management Prioritization Tool for CA State Parks

Establish a wetland habitat restoration and management prioritization tool for bar built estuaries (BBEs). Create a comprehensive geo-referenced database of BBE resources managed by California State Parks. Combine these data with estuary water elevation, CRAM assessments and watershed stressor data to link watershed stress and local condition. This watershed approach will inform how watershed and/or local actions will increase habitat function within BBEs, and coupled with historical analyses will provide a valuable management prioritization framework to direct management of wetlands by State Parks.

Aquatic Science Center - Develop Capacities in the Lahontan Region to Apply EcoAtlas to Track Projects and Summarize Map-Based, and Rapid Assessment Information at the Landscape Scale

Develop capacity in the Lahontan region to apply EcoAtlas through existing local, regional, state and federal programs to track projects and summarize rapid assessment information at the watershed scale. Host several workshops that will result in the creation of a Help Desk for EcoAtlas, train a user community that will recommend additional data types and functionalities, and establish institutional relationships with agencies in the region to oversee and nurture use of EcoAtlas. Many regional partners are involved and there will be an active transfer of results to and between all of them, improving the sustainability and usefulness of EcoAtlas.

FY 2013 Wetland Program Development Grants Awards

- Aquatic Science Center
  Integrate CA monitoring data for 404 permits, 401 certifications and HCPs/NCCPs
- Bishop Paiute Tribe
  Wetland Program Plan Development and Achieve Core Elements
- East Merced Resource Conservation District
  Assessment of Past Achievements and Future Directions for Vernal Pool Conservation and Mitigation
- Federated Indians of Graton Rancheria
  Wetland Program Plan Development

- Pala Tribe
  Wetland Program Plan Development
- Pinoleville Pomo Nation
  Wetland Program Plan Development
- Sacramento-San Joaquin Delta Conservancy
  Enhancing Regional Capacity for Wetland Project Tracking, Assessment and Reporting
- San Jose University
  Validation of Three CRAM Modules
- White Mountain Apache Tribe
  Wetland Program Plan Development
- Yurok Tribe
  Wetlands Program Development

For additional information on these and other Wetland Program Development Grants, please also see EPA's Wetland Grants Database.

Aquatic Science Center – Integrate CA monitoring data for 404 permits, 401 certifications and HCPs/NCCPs

The Aquatic Science Center will integrate wildlife and aquatic resource monitoring and tracking data for 404 permits, 401 certifications and HCPs/NCCPs. They will improve the ability to track wetland impacts and health throughout California, through combining information from both types of actions.

Bishop Paiute Tribe – Wetland Program Plan Development and Achieve Core Elements

The Bishop Paiute Tribe will continue Wetland Program Plan development. They will prioritize wetland restoration locations, identify optimum wetland restoration techniques, and insert wetlands into the Tribe's water quality standards.

East Merced Resource Conservation District – Assessment of Past Achievements and Future Directions for Vernal Pool Conservation and Mitigation

East Merced Resource Conservation District will review vernal pool condition throughout California to determine how effective current restoration and mitigation practices are. They will develop a strategy to improve these practices.

Federated Indians of Graton Rancheria – Wetland Program Plan Development

The Federated Indians of Graton Rancheria will develop a Wetland Program Plan. They will work with tribal members to determine what should go into their wetland program plan. They will include Traditional Ecological Knowledge (TEK) in the discussions and provide training to tribal members and others on how to accomplish citizen science for wetlands monitoring.

Pala Tribe – Wetland Program Plan Development

The Pala Tribe will develop a Wetland Program Plan. For wetland monitoring, they will develop a Quality Assurance Plan and a Monitoring Plan. They will carry out baseline wetlands monitoring to inform program development.

Pinoleville Pomo Nation – Wetland Program Plan Development

The Pinoleville Pomo Nation will develop a Wetland Program Plan. They will produce a Wetland Monitoring Plan and complete baseline and increase the Tribe's capacity for monitoring wetlands. They will focus on the potential impacts of increased use of aquifer water on the Tribe's isolated wetlands.

Sacramento-San Joaquin Delta Conservancy – Enhancing Regional Capacity for Wetland Project Tracking, Assessment and Reporting

The Sacramento-San Joaquin Delta Conservancy will revise the California Wetlands Eco-Atlas that is used for wetland project tracking. They will design it so that it can accept data from both the Central Valley Joint Venture and the San Francisco Bay Joint venture.

San Jose University – Validation of Three CRAM Modules

San Jose University will validate three CRAM modules (slope wetlands, depressional wetlands, and vernal pools). They will improve the technical robustness of the California wetlands Rapid Assessment Methodology which is a keystone of the California Wetlands Protection Program.

White Mountain Apache Tribe – Wetland Program Plan Development

The White Mountain Apache Tribe will develop a Wetland Program Plan through input from the Tribe's community. They will review previous wetland data, create new data, and train community members, including high school and college-aged youth, on the methods for data collection.

Yurok Tribe – Wetlands Program Development

The Yurok tribe will analyze wetland water quality condition to determine how to best add wetlands to the Tribe's water quality control plan. They will initiate climate change assessment and impact modeling for the Klamath River Estuary to determine how wetlands may be impacted.

FY 2012 Wetland Program Development Grants Awards

- Pyramid Lake Paiute Tribe
  Increasing Wetland Biodiversity and Wetland Program Planning
- San Jose State University
  Development of Tools to Assess Riparian Extent and Condition
- Southern California Coastal Water Research Project
  California Wetland Status and Trends: Assessing Net Change
- Washoe Tribe of Nevada and California
  Wetland Program Plan Development

- Bishop Paiute Tribe
  Wetland Program Plan Development
- Blue Lake Tribe
  Wetland Program Plan Development
- California Department of Water Resources
  Integrative Floodplain Design
- Goshute Tribe
  Building Tribal Wetland Protection Program
- Hopi Tribe
  Wetland Program Plan Development and Monitoring
- Pima County Flood Control District
  Charting the Wetland Health of the Lower Santa Cruz River

For additional information on these and other Wetland Program Development Grants, please also see EPA's Wetland Grants Database.

Bishop Paiute Tribe – Wetland Program Plan Development

The Bishop Paiute Tribe will develop a Wetland Program Plan. They will monitor and assess 25 acres of wetlands that is desert pupfish habitat. They will review the feasibility of including wetlands protection in their water quality program.

Blue Lake Tribe – Wetland Program Plan Development

The Blue Lake Tribe will train their staff on wetland assessment (possibly CRAM), identify wetlands, and develop a Wetland Program Plan. They will provide information on the importance of wetlands to Tribe members and the surrounding community, as well as to other Tribes.

California Department of Water Resources – Integrative Floodplain Design

The California Department of Water Resources will develop and present a class for engineers and ecologists on the appropriate use and placement of riparian vegetation in floodplain restoration projects. The class is based on previous field research and will cover the combination of hydraulic modeling for flood assessment, as well as floodplain ecological concepts and management strategies.

Goshute Tribe – Building Tribal Wetland Protection Program

The Goshute Tribe will draw on their existing Wetland Program Plan to reach out to the Tribe's community for support on wetland protection, and setting specific goals for wetland protection and restoration. They will incorporate wetlands into the Tribe's water quality standards.

Hopi Tribe – Wetland Program Plan Development and Monitoring

The Hopi Tribe will develop a Wetland Program Plan and increase the Tribe's capacity for monitoring wetlands. They will focus on the potential impacts of increased use of aquifer water on the Tribe's isolated wetlands.

Pima County Flood Control District – Charting the Wetland Health of the Lower Santa Cruz River

Pima County will develop a monitoring strategy, select indicators, determine baseline conditions and assess the effect of effluent upgrades on wetland health.

Pyramid Lake Paiute Tribe – Increasing Wetland Biodiversity and Wetland Program Planning

The Pyramid Lake Paiute Tribe will review their current wetland goals and strategies, and add a vegetation protocol to their wetland monitoring program. They will improve and standardize reporting on changes in wetland functioning for wetland restoration projects.

San Jose State University – Development of Tools to Assess Riparian Extent and Condition

SJSU will pilot the California Wetland and Riparian Area Monitoring Plan (WRAMP). They will map all riparian resources on the Central Coast and improve the mapping tool to allow the integration of aerial imagery and tracking of riparian habitat temporal change.

Southern California Coastal Water Research Project – California Wetland Status and Trends: Assessing Net Change

SCCWRP will continue to develop California's probability-based wetland mapping program, to enable the assessment of a change in California wetland extent and distribution over time (i.e.; status and trends).

Washoe Tribe of Nevada and California – Wetland Program Plan Development

The Washoe Tribe of Nevada and California will develop a Wetland Program Plan. They will gather ideas from, and provide outreach to, the four different Washoe communities in Nevada and California regarding wetland issues.

FY 2011 Wetland Program Development Grants Awards

- Santa Monica Bay Restoration Authority – Application and Assessment of USEPA Three-Tiered Monitoring Strategy to Southern
- Southern California Coastal Water Research Project – Improving Assessment tools for Episodic and Non-Perennial Streams in California
- University of Hawaii – Use of Coral Reef Monitoring and Biocriteria as Tools for Environmental Assessment in Hawaii
- Yurok Tribe – Bioassessments and Expansion of Wetland Inventory

- Aquatic Science Center – Science and Policy Development Support for the California Wetland Area Protection Policy
- Nevada Department of Conservation and Natural Resources – Finalizing a Nevada Wetland Program Plan and Assessing Biotic Integrity of the State's Priority Wetlands: Isolated Great Basin and Mojave Desert Springs
- Pyramid Lake Paiute Tribe – Refining methods for Improving Wetland Protection Efforts at Pyramid Lake
- Robinson Rancheria – Wetland Assessment and Wetland Program Plan Development

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For additional information on these and other Wetland Program Development Grants, please also see EPA's Wetland Grants Database.

Aquatic Science Center – Science and Policy Development Support for the California Wetland Area Protection Policy

The Aquatic Science Center will provide science and policy support to the development of the Wetland Area Protection Policy for California, through technical assistance to the State for: establishing statewide beneficial uses to protect wetland-related functions, developing a stream definition for regulatory use, and coordinating between regional and statewide policy development.

Nevada Department of Conservation and Natural Resources – Finalizing a Nevada Wetland Program Plan and Assessing Biotic Integrity of the State's Priority Wetlands: Isolated Great Basin and Mojave Desert Springs

The Nevada Department of Conservation and Natural Resources will assess springs in arid settings for water quality and biological factors. Data will be used to build a model, understand reference conditions, and determine the usefulness of a standard method for monitoring spring ecosystems. The applicant will use this information to develop a Wetland Program Plan for the Nevada Natural Heritage Program.

Pyramid Lake Paiute Tribe - Refining methods for Improving Wetland Protection Efforts at Pyramid Lake

The Pyramid Lake Paiute Tribe will refine wetland macroinvertebrate monitoring procedures, evaluate and refine the rest of the wetland monitoring protocols and improve integration with watershed planning on the Pyramid Lake Reservation.

Robinson Rancheria – Wetland Assessment and Wetland Program Plan Development

The Robinson Rancheria will monitor wetland plant and macroinvertebrates to increase their understanding of the biological condition of their wetlands. Using this information, the applicant will produce a Wetland Program Plan to outline the future development of their wetland protection program.

Santa Monica Bay Restoration Authority - Application and Assessment of USEPA Three-Tiered Monitoring Strategy to Southern

The Santa Monica Bay Restoration Authority will develop standard protocols for Level 3 wetlands monitoring (intensive monitoring), especially for restoration projects at southern California coastal wetlands. The results will be used to improve wetland planning and restoration methods and improve wetland ecosystem function and health.

Southern California Coastal Water Research Project - Improving Assessment tools for Episodic and Non-Perennial Streams in California

The Southern California Coastal Water Research Project will develop an assessment framework for episodic and non-perennial streams in California. This will be used to further develop the California wetland program, as there is presently a lack of appropriate assessment tools for monitoring these streams that do not have constant flow.

University of Hawaii - Use of Coral Reef Monitoring and Biocriteria as Tools for Environmental Assessment in Hawaii

The University of Hawaii will evaluate and refine the Coral Reef Health and Watershed Health Index of Biological Indicators (IBI) in conjunction with an update of the Hawaii Coral Reef Assessment and Monitoring Program (CRAMP) data.

Yurok Tribe - Bioassessments and Expansion of Wetland Inventory

The Yurok Tribe will begin macroinvertebrate bioassessments for the Klamath River Estuary, where wetlands were previously assessed using California Rapid Assessment Methodology. In addition, the Yurok Tribe will extend wetland assessments beyond the estuary to cover all of the Yurok Reservation lands. The information will be used to develop the Yurok Tribe's wetland program.

2010 Wetlands Development Grants Awards Projects

On this page:

For additional information on these and other Wetland Program Development Grants, please also see EPA's Wetland Grants Database and click on the "public access" button.

Aquatic Science Center – Performance Curves and Watershed Profiles: Tools for Mitigation and Restoration Planning in the Watershed Context

The ASC will work with partners (i.e., Southern California Coastal Waters Research Program, and Bay Area Regional Water Quality Control Board) to develop performance curves for estuarine and coastal riverine systems, using the California Rapid Assessment Methodology (CRAM) for waters of the US. Performance curves will forecast how beneficial uses and functional capacity of projects will increase over time. The project will result in new tools for automating watershed profiles: assessing the distribution, abundance, and size frequency of wetlands and riparian buffers, including associated CRAM scores. The project will support mitigation and restoration permitting, in the watershed context.

Aquatic Science Center – Comprehensive Strategy to Protect and Monitor California Wetlands

The ASC will propose the expansion of the wetland rules' scope to other activities with beneficial use designations and water quality objectives, extend protection to riparian buffers, and relate wetland conditions to water quality objectives. The applicant will partner with the California State Water Resources Control Board, the North Bay and Bay Area Regional Water Quality Control Boards, and will work closely with a broad technical advisory team

Aquatic Science Center – Sierra Nevada Test of California Wetland and Riparian Area Monitoring Program

The ASC will work with partners to test the efficacy of the California Wetland and Riparian Area Monitoring Program in the Sierra Nevada ecoregion, and determine how well it depicts the Lake Tahoe watershed's

Stream Environment Zones (SEZs). The applicant will partner closely with the Lahontan Regional Water Quality Control Board and the Tahoe Regional Planning Agency, and will also work with the Tahoe Conservancy, the Tahoe Science Consortium, and the US Forest Service.

Fallon Paiute-Shoshone Tribe - Fallon Paiute-Shoshone Tribe Wetland Development Plan

The Fallon Paiute-Shoshone Tribe will modify its wetland protection program to allow more effective coordination internally and with the BIA and US FWS, as the TJ Drain is de-commissioned.
They will increase wetland monitoring through adding parameters to their monitoring program; and will measure mercury, methyl mercury, and oxidation/reduction potential in order to better understand the level of pollution from upstream sources.

Pyramid Lake Paiute Tribe - Pyramid Lake Wetlands Program: Improving Wetland Protection Efforts

The Pyramid Lake Paiute Tribe will review and verify the existing wetland monitoring program. They will train their staff in wetland monitoring and assessment methods, develop a Wetland Program Plan, and begin the development of a management plan for the Numana Wetlands.

Salt River Pima Maricopa Indian Community - Salt River Pima Maricopa Indian Community's FY10 Development of Comprehensive Wetland Program

The applicant will write a Wetland Program Plan to guide effective outreach about wetlands, develop a process for baseline "Level 3" wetland assessment, develop a wetland restoration plan, and consider wetland-specific water quality standards.

San Jose State University - Standardization of the CRAM Update Process, Manual and Training Materials through the California Wetlands Monitoring Workgroup

SJSU will improve the developing California Rapid Assessment Methodology Program through developing standard program procedures and guidelines. They will work with their partners to standardize the CRAM update process, CRAM criteria, manuals, training materials and classes. They will develop a Quality Assurance process for CRAM. The project partners include the CA SWRCB, SCCWRP, ASC/SFEI and Humboldt Bay Harbor District.

Washoe Tribe of Nevada and California - The Washoe Tribal Wetland Development and Assessment Program

The Washoe Tribe of Nevada and California will develop a baseline wetland assessment and monitoring database, monitor water quality and wetland health of their largest wetlands, evaluate the effects of land use practices and climate change on wetland health, and develop a draft Wetland Assessment and Monitoring Strategy.

2009 Wetlands Development Grants Awards Projects

On this page:

- San Jose State University
- Southern California Coastal Water Research Project
- University of California Davis
- Yurok Tribe

- Arizona Department of Environmental Quality
- California Natural Resources Agency
- Commonwealth of Northern Mariana Islands
- Hualapai Tribe
- Pyramid Lake Paiute Tribe

For additional information on these and other Wetland Program Development Grants, please also see EPA's Wetland Grants Database and click on the "public access" button.

Arizona Department of Environmental Quality – Wetland Monitoring and Assessment Strategy

ADEQ will develop a strategy to monitor and assess wetlands, including an update of the National Wetland Inventory. Water chemistry data will be collected for selected wetlands and rapid assessment techniques (e.g., California Rapid Assessment Methodology) will be investigated for use with Arizona wetlands.

California Natural Resources Agency – Wetland Status and Trends Assessment

CNRA will prepare for the National Wetland Condition Assessment Intensification Study (2011) in concert with the California Wetland Monitoring Workgroup. They will develop a probability-based design and standard operating procedures, and will train regional partners in the procedures.

Commonwealth of Northern Mariana Islands – Sea Grass Biological Criteria Development

The Commonwealth of Northern Mariana Islands will monitor the sea grass ecosystem in the Saipan Lagoon and develop sea grass biocriteria regulations. This work will increase the understanding of natural sea grass-macroalgae seasonal cycles, impacts of disturbance, and impacts of land-based pollution on the sea grass ecosystem; and will move towards better protection of the valued sea grass ecosystem.

Hualapai Tribe – Seep-Spring Monitoring Program Development and Technology Transfer

Hualapai Tribe will refine and further test their seep-spring wetland protocols and will monitor nine additional wetlands. Frequency of wetland monitoring will be tested to determine the appropriate frequency for ongoing monitoring. They will test methods for sampling nocturnal macroinvertebrates at springs. They will host a workshop for southwest tribes and others to demonstrate monitoring techniques and data analysis methods.

Pyramid Lake Paiute Tribe – Isolated Wetland Inventory and Monitoring

PLPT will map and identify isolated wetlands, monitor previously assessed wetlands to determine trends, and report on the functions and values of wetlands throughout Pyramid Lake Paiute Tribal lands.

San Jose State University-Moss Landing Marine Laboratory – Seasonal Estuary Assessment Method Development

Moss Landing Marine Laboratory at San Jose State University will expand the California Rapid Assessment will expand the California Rapid Assessment Methodology (CRAM) to coastal lagoons and small coastal stream mouths along California's coast.

Southern California Coastal Water Research Project – Integrated Measures of Ecosystem Condition for Biological Objectives for Riverine Wetlands

SCCWRP will develop an approach for the multi-indicator assessment of the condition of riverine and riparian wetland ecosystems in California. The index will assess the streambed, adjacent wetlands and associated riparian habitats together.

University of California at Davis, Plant Sciences Department – Ecological Standards for Vernal Pool Compensatory Mitigation

UC Davis will establish a standardized method to evaluate the performance of vernal pool compensatory mitigation projects in California. They will establish a reference network of natural vernal pools across the range of variability in California, develop a tool to quantify performance for mitigation pools; and identify the attributes that best predict mitigation performance.

Yurok Tribe – Klamath River Estuary Wetlands Restoration Planning

Yurok Tribe will assess wetlands, monitor wetland water quality and refine their prioritization of wetlands for protection. They will fill data gaps regarding the importance of the Klamath River's estuary habitat quality in salmon restoration. A restoration plan will be developed.

2008 Wetlands Development Grants Awards Projects

- Aquatic Science Center
- California State Water Resources Control Board
- Southern California Coastal Water Research Partnership
- University of California at Davis, plant Sciences Departmen

- Ak-Chin Indian Community
- Navajo Nation
- Fallon – Paiute Shoshone Tribe
- Moapa Band of Paiutes
- Pyramid Lake Paiute Tribe
- Association of Bay Area Governments

Ak-Chin Indian Community - Development of Wetland Protection Program

Land development pressures are mounting in and around the Ak-Chin Indian community. The grantee will use the funds to produce a wetland protection program by creating wetland protection ordinances. This will help them consider the importance of wetlands more thoroughly when reviewing land development proposals.

Navajo Nation - Wetlands Monitoring, Assessment and Mapping

Navajo is interested in increasing their knowledge of wetlands on tribal lands in order to set appropriate tribal wetland priorities. The grantee will use the funds to assess and map approximately 40 wetlands. They will use the information to develop a wetland conservation plan.

Fallon Paiute-Shoshone Tribe - Wetlands Protection Project

The grantee will use the funds to monitor and asses their wetlands in order to establish a baseline of information. Later the baseline can be used to track changes in wetland condition and water quality, which will help the Fallon Paiute Shoshone Tribe refine their approach to wetlands protection.

Moapa Band of Paiutes - Tribal Wetland Program Development

The Moapa Band of Paiutes will use the funds to map and delineate wetlands, conduct vegetation and wildlife surveys and monitor groundwater. The grantee will use this baseline information to develop an effective wetland protection program.

Pyramid Lake Paiute Tribe - Wetlands Program: Refining and Strengthening of Tribal Wetlands Program Components

Pyramid Lake Paiute Tribe will use the funds to refine their wetland monitoring and assessment methods. They will use the updated methods to assess changes in the wetland condition. This information will be used to improve their ability to protect their wetlands.

Association of Bay Area Governments - Stream and Wetlands System Protection Policy

The Association of Bay Area Governments will use the funds to move the Stream and Wetlands Policy towards adoption by two of the California Regional Water Quality Control Boards and the California State Water Resources Control Board. They will also develop local planning tools for stream ordinances and permit checklists.

Aquatic Science Center - Developing California's Capacity to Assess the Performance of Wetland Protection Policies, Programs and Projects in the Watershed Context

The Aquatic Science Center will refine the Wetlands Tracker so that it can become the common data management system to document wetland projects and related activities for the regions encompassed by California Regional Water Quality Control Boards 2 and 4.

California State Water Resources Control Board – Development of a Policy to Protect Wetlands and Riparian Areas

The California State Water Resources Control Board will use the funds to develop guidelines for the assessment of wetlands data and a state wetland definition. They will also create assessment guidelines for local agencies to adopt, and will move a state wetlands protection policy towards adoption.

Southern California Coastal Water Research Partnership – Development of a Statewide Network of Reference Wetlands

The Southern California Coastal Water Research Partnership will use the funds to establish a statewide network of wetland reference sites for the inland areas of California. Specifically, they will train field teams and conduct calibration at 95 sites.

University of California at Davis, Plant Sciences Department – Improving Conservation and Compensatory Mitigation of Vernal Pools

The Plant Sciences Department at UC Davis will use the funds to complete California vernal pool surveys and refine a vernal pool classification scheme. The results will be used to strengthen the ability of California to protect vernal pool wetlands.

2007 Wetlands Development Grants Awards Projects

- University of Hawaii
- Association of Bay Area Governments
- San Jose State University
- Moapa Band of Paiutes

- Hoopa Valley Tribal Council
- Southern California Coastal Water Research Project
- Navajo Nation
- Yurok Tribe
- California State Coastal Conservancy

Hoopa Valley Tribal Council – Hoopa Tribal Environmental Protection Agency FY 07-08 Wetlands Program Development.

The goal of this project is to initiate protection of wetlands by establishing general baseline condition and reference conditions by conducting a wetlands inventory, performing rapid assessments, conducting wetland classification and carrying out intensive site assessments. Results from this project which will be completed over two years will build capacity to reach the long term goal of developing water quality standards and protecting their associated beneficial uses.

Southern California Coastal Water Research Project – Demonstration of the Effectiveness of a Multi-Species Fish Gene Microarray as a Rapid Water Quality Indicator in Wetlands.

The State's ability to measure and manage wetland condition is limited by the inability to rapidly assess for contaminant effects. The goal of this project is to demonstrate the effectiveness of a multi-species gene microarray as a rapid assessment tool for wetland monitoring. The microarray will be applied to fish collected at three different wetlands. The results will be compared to the California Rapid Assessment Method (CRAM) assessments and to intensive assessment indicators.

Navajo Nation – Navajo Nation Wetlands Program Capacity Building Project.

The proposed project will accomplish wetland protection and enhancement through further wetland monitoring and assessment utilizing wetland mapping and GIS, refinement of wetland regulations, distribution of project results to interested parties, and educational outreach. It will create a Navajo Nation Wetland Information System (NNWIS) and GIS clearinghouse to provide a consistent and maintainable structure for wetland data for Navajo lands using draft standards utilized by U.S. Fish and Wildlife Service for National Wetlands Inventory.

Yurok Tribe – Yurok Tribe Wetlands Compensatory Mitigation Enhancement Program.

This project will develop an innovative method for prioritizing sites for comprehensive and hazard mitigation to improve wetlands area and/or function within the Lower Klamath River. The targeted results are a Restoration Plan, to include prioritized project areas and language for Clean Water Act permits to protect and enhance wetlands within the Reservation. Intermediate targets include improved QA documents, assessment methods, and architecture for baseline/ongoing monitoring of wetlands area/functionality, to be shared with interested parties.

California State Coastal Conservancy – Ormond Beach Wetlands Restoration Monitoring.

The project will collect and analyze pre-restoration data and develop a long-term ecological monitoring program for an approximate 1000-acre coastal wetlands complex to be restored and enhanced in Ventura County, southern California. Monitoring metrics will represent wetland functions and ecological health, especially to track long-term changes if/when wetlands expand inland with a sea level rise that can be accommodated readily at this shallowly sloped site. The project will collaborate with researchers at the nearby State University and others with Southern California Wetlands Recovery Project, a partnership founded by EPA and other agencies.

University of Hawaii – Development of Coral Reef Biocriteria for Hawaii.

This project will develop coral reef biological criteria for Hawaii in concert with the emerging national EPA program "Development of Assessment Tools for Coral Reef Biocriteria". It will result in a description of ecological condition of coral reef communities along strong environmental gradients on impacted shorelines to develop and promote use of biocriteria in protecting Hawaiian coral reefs.

Association of Bay Area Governments – Development of Stream and Wetlands Protection Policy.

This project will continue development of the North Coast and San Francisco Bay Regional Water Quality Control Boards Stream and Wetlands System Protection Policy and begin extending its application statewide by contributing key policy elements to a State Water Resources Control Board wetland protection policy. The overall goal of the project is to protect and restore vulnerable stream and wetland systems (including perennial, intermittent, and ephemeral streams, connected and isolated wetlands, riparian areas, floodplains, and estuaries) in the two regions and throughout the State, as a way to improve water quality and support beneficial uses. The project will provide a model that other Regional Water Boards, federal, state, and local agencies, and Tribes can use to develop stream and wetland protections and management strategies within their jurisdictions.

San Jose State University – Support of the Central Coast Wetland Working Group Program Objectives.

Unlike Northern and Southern California, the Central Coast has not yet developed a common framework for the assessment and public reporting of wetland resources. This project will address four priority objectives: 1) support the Central Coast Wetland Working Group) as a representative to the State Wetland Monitoring program; 2) advance the science of wetland restoration and management, 3) provide regional perspective for restoration objectives and policy, and 4) build capacity for long-term wetland management.

Moapa Band of Paiutes – Moapa Band of Paiutes Wetland Monitoring and Assessment Program.

This project will develop a comprehensive Wetlands Assessment and Monitoring Program. It will provide a baseline for future monitoring and subsequent assessments of anticipated net gains in acreage and enhanced functions and values of wetland resources. Final products produced under this grant include mapping of inventoried wetlands on the Reservation and the development of a Wetlands Conservation Plan which includes monitoring and an assessment of all mapped wetlands.

2006 Wetlands Development Grants Awards Projects

- Nevada Department of Natural Resources
- Fallon Paiute-Shoshone Tribe
- CA Department of Water Resources
- Los Coyotes Indians
- University of Arizona

- California Coastal Conservancy
- San Carlos Apache Tribe
- Robinson Rancheria
- CNMI-DEQ
- Pyramid Lake Paiute Tribe
- University of Hawaii

California Coastal Conservancy – Parsons Slough Wetland Restoration Plan.

This funding will help address the serious loss of tidal wetlands in this estuary. Elkhorn Slough, containing California's second largest tract of salt marsh, is currently facing unprecedented rates of tidal marsh loss and tidal creek, mudflat, and channel habitat degradation. Fifty percent of the tidal salt marsh in Elkhorn Slough has been lost in the past 70 years and will continue in the near future if no management actions are taken. The collaborative effort that coastal decision-makers, resource managers, scientists, engineers, and stakeholders have been working on to conserve, enhance, and restore tidal wetlands in the Elkhorn Slough watershed, initiated with funding from the National Oceanic and Atmospheric Administration to DFG, has made great strides in the past few years. The ability to make sound management decisions about different restoration alternatives has been limited by a lack of scientific-based information. This project would provide the resources to obtain additional information for a sound restoration plan that can guide restoration efforts in the greater Elkhorn Slough watershed.

San Carlos Apache Tribe – Strengthening the Assessment and Protection of Tribal Wetlands.

The proposed wetland project is designed to meet three national priorities (strengthened wetland program, developed comprehensive wetland monitoring and assessment, and refined protection of vulnerable wetlands) and a regional tribal priority (partnerships with others to protect vulnerable wetlands). The proposed wetland project will target the San Carlos River Watershed as a demonstration of the San Carlos Apache Tribe's commitment to preserving, increasing acreage, and protecting our valuable wetland resources. The San Carlos River watershed contains the San Carlos River, the Blue River, Talkalai Lake, Cassadore Springs, Warm Springs, extensive riparian and lacustrine wetlands, the town of San Carlos, and the greatest population of Tribal residents. Seven steps are proposed to meet the national strategic goal and associated objectives of increasing wetlands and ensuring protection of these valuable resources.

Robinson Rancheria – Robinson Rancheria Wetland Program Development Project.

The Robinson Rancheria Comprehensive Wetland Program Development Project objectives will be to increase understanding of the role of wetland areas to protect surface and groundwater quality, protect current wetlands from degradation and increase the amount of functioning wetlands on the Reservation. To achieve these goals, the Environmental Department will improve assessment of wetlands within the Rancheria, improve methods of wetland restoration including improved use of culturally significant plants, assess current nonpoint pollution prevention activities to protect wetlands, and integrate wetland protection and expansion activities with current and proposed Tribal Environmental programs. The outcome will be improved and expanded wetlands, improved methods of wetland maintenance, more dependable sources of currently scarce culturally significant plants, better integration of wetland use and protection in Rancheria land planning and other Tribal and non-Tribal programs and improved public awareness of wetlands.

CNMI-DEQ – Development of Biological Criteria for the Nearshore Marine Ecosystems of the CNMI.

The CNMI will enhance coral reef monitoring and biocriteria development efforts through: 1) completing regional characterizations of the different coral reef and lagoon habitats that exist; 2) gaining a spatial perspective of these habitats using satellite imagery and remote sensing; 3) testing the applicability of our newly created bio-criteria for use in non-monitoring locations; 4) comparing and contrasting different biocriteria, and 5) establishing biological criteria language in CNMI's water quality standards. This work

would compliment ongoing, interagency coral monitoring efforts funded by NOAA and EPA and disseminate information through the submission of a manuscript to a peer-reviewed scientific journal.

Pyramid Lake Paiute Tribe – Wetland Monitoring, Assessment, and Tracking within the Exterior Boundaries of the Pyramid Lake Indian Reservations.

Research and development of the monitoring, assessment, and tracking system and writing a Quality Assurance Project Plan will be done before any sampling is done through this project. The monitoring and assessment system will collect a variety of data sets. Water quality readings and samples will be taken and Proper Functioning Condition and a vegetation surveys done on at least 90% of the wetlands within the reservation. All samples taken will be processed and analyzed by the PLPT. As part of the tracking system, permanent photo-points will be selected for and GPS coordinates of wetland area will be taken at each site monitored. The GPS coordinates will be used to make polygons to be compared to past PLPT wetland inventory data to record the net gain or loss of wetland acreage.

University of Hawaii – Restored and Created Wetlands of the Hawaiian Islands.

The project will monitor and assess water quality and habitat functions of restored (RW), created (CW), and natural wetlands (NWs) of the Hawaiian Islands. This will involve sampling the water quality, soils, vegetation, and fish communities of a random selection of RW, CW, and NW on Hawaii's, Kauai's, Maui, Molokai's, and O'ahu in 2007. Data collected from NWs will help us form biocriteria that will be used to assess functionality of RWs and CWs. We will also establish a volunteer network to sample seasonal variability in water quality and vegetation at permanent sampling points within a subset of these wetlands from 2007-2009.

Nevada Department of Natural Resources – Nevada Wetland Information System & GIS Program and Springs Habitat Conservation Plan Development.

The project will put the Nevada Wetland Information System and GIS (NvWETIS) into full-scale operation, establish a wetland data clearinghouse/data delivery procedure, and support preparation of a habitat conservation plan for priority spring wetlands identified in the Nevada Wetland Priority Conservation Plan (NvWP) and Nevada Natural Heritage Program 2006 Scorecard of Highest Priority Conservation Sites. Project activities will be: inventory priority wetland sites; archive site characterization data in (NvWETIS); develop and implement a process to fulfill database requests from public and private entities; and, provide data and analyses for development of a habitat conservation plan for isolated spring wetlands with vulnerable and sensitive biological resources.

Fallon Paiute-Shoshone Tribe – Regional IX Wetland Program Development.

The Fallon Paiute-Shoshone Tribe (FPST) is located within the Carson Desert Watershed in west central Nevada and encompasses 8,120 acres of which 600 acres is prime wetlands. These wetlands enhance the area's water quality and provide valuable habitat for hundreds of plant, aquatic and wildlife species and have been utilized historically by tribal membership for cultural and sustenance practices. The FPST faces several environmental challenges including non-point source pollution, riparian vegetation loss and extensive tribal cattle grazing practices. The FPST will address concerns quantitatively and qualitatively in two stages by fulfilling wetland characterization research and assessment needs, promoting coordination

and partnerships with local affected partners, building valuable tribal infrastructure, providing a platform for community education and outreach and ultimately developing a holistic tribal strategy reflecting preservation and restoration objectives.

CA Department of Water Resources – Study of the Roughness Characteristics of Native Plant Species in CA Floodplain Wetlands.

Floodways in California have been managed to limit vegetation. This has led to a loss of seasonal wetlands and riparian habitat and has increased erosion. To restore vegetation to floodways requires that channel conveyance capacity not be diminished by the vegetation. This in turn requires knowledge of the hydraulic roughness of the plant communities. This project proposes to determine hydraulic roughness for key native plants so that floodways can be restored to native plant communities and, thereby, reduce pollution and increase wetlands.

Los Coyotes Indians – Joint Tribal Wetlands Program: Los Coyotes Band of Mission Indians and La Jolla Band of Luiseno Indians.

The Los Coyotes Indian Reservation and the La Jolla Band of Luiseño Indians jointly will initiate a watershed-based dual tribal Wetlands Program for the Upper San Luis Rey River, which will build on existing capacity for environmental management and study in the La Jolla Tribal Water and Environmental Resources Office. This program will characterize the wetlands of Los Coyotes Indian Reservation and study nutrient flow in the upper San Luis Rey River that may be impairing wetlands function.

University of Arizona – Characterization of Microclimate and Vegetation Structure within the Riparian Areas along Urbanized and Non-urbanized Ephemeral Streams.

The ecological functions of riparian areas along ephemeral streams are not well known. In Arizona these functions might be very important since many perennial and intermittent streams are becoming ephemeral stream because of human alterations. Comparisons of microclimatic and vegetative data from riparian areas along urban ephemeral streams and nonurban ephemeral streams will provide a better idea of what the ecological functions of these riparian areas are and how urbanization impacts them.