



PRADO BASIN AND REACH 9 MITIGATION MONITORING

Prado Basin contains over 465 acres of wetland habitat and is one of the largest riparian communities remaining in southern California.

Aspen has provided a variety of services to the Corps of Engineers (Corps) for the Santa Ana River Project (SARP) since 1996 and continues to play an important role in helping the Corps with environmental compliance during construction. The SARP is a major flood control project spanning 75 miles of the river and providing flood protection for millions of residents in Orange, San Bernardino, and Riverside Counties. One of the most significant components of the SARP is the raising of Prado Dam by 28 feet to increase the dam's capacity. The dam's outlet works are also being enlarged and a new intake tower is being constructed. The project is expected to be completed by 2011.

Aspen is implementing the Mitigation Monitoring Program for the project, and conducting habitat restoration planning along Reach 9 of the river, immediately downstream of the dam. Aspen is also preparing a wildlife corridor restoration plan to facilitate the wildlife movement over Prado Dam. The plan components include planting native vegetation over the western end of the dam and establishing pockets of vegetation along the new outlet channel to provide cover and refuge for wildlife.

An important issue requiring special attention is avoidance of impacts to the Santa Ana sucker, an endangered species. In coordination with fisheries subcontractors, Aspen manages a fisheries monitoring program for the

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Intake Structure

ASPEN COVERS STATE'S ENERGY NEEDS

From generation to transmission to new technologies, Aspen has electric power issues covered. We have handled controversial projects and short-term deadlines to help agencies minimize potential impacts on natural resources and keep power flowing in California.

In southern California, we recently completed the Miguel-Mission 230 kV Transmission Line EIR (San Diego County) and a Mitigated Negative Declaration on Southern California Edison's Viejo System Project (Orange County) for the California Public Utilities Commission (CPUC).

Our recent transmission experience in northern California includes the Jefferson-Martin 230 kV transmission line EIR, in suburban San Francisco for the CPUC, which won the Association of Environmental Professionals 2004 Statewide EIR Award, in part for its extensive public outreach efforts.

Our new contract with the Western Area Power Administration (see Selected New Wins on right) to evaluate impacts along 7,810 acres of existing transmission corridors will take our team into the most northern reaches of the state.

In power generation, Aspen has played a critical role helping the California Energy Commission site plants throughout the state, from Blythe to Placer County, and along the great Central Valley. Our comprehensive review of 24 coastal power plants primes us to help the new frontier of seawater desalination plants, which most likely will be sited near existing coastal plants.

Aspen is currently preparing EIRs for replacement of the steam generators at both the San Onofre and Diablo Canyon nuclear power plants for the CPUC. In addition, our review of alternative energy technologies for the Energy Commission will help keep renew-

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SELECTED NEW WINS

Western Area Power Administration

Environmental Assessment for the North Area Transmission Line Right-of-Way Maintenance

Minerals Management Service, Pacific OCS Region

Environmental Information Document (EID) for 36 currently undeveloped offshore oil and gas leases

California State Lands Commission

Monterey Accelerated Research System (MARS) Cabled Observatory EIR/EIS (see story inside)

Palmdale Water District

Littlerock Reservoir Sediment Removal EIS/EIR

Maricopa County Department of Transportation

Cotton Lane Bridge

Flood Control District of Maricopa County

- Camp Creek Tributaries Floodplain Definition Study
- Engineering Planning Environmental Services

Phoenix Sky Harbor International Airport

Aviation Consultant Services, Environmental Reviews (NEPA) for FAA

LAUSD OEHS

- So. Region Elem. School No. 1 EIR
- So. Region Span School No. 2 EIR
- Central Region Elem. School No. 16 EIR
- Maclay Elem. School Addition Project

PRADO BASIN/REACH 9, CONT.

newly restored stream segment in Reach 9 addressing macroinvertebrate and fish population sampling, substrate and bank conditions, and water quality.

The habitat restoration plan for Reach 9 will define goals, success criteria, specific restoration methodologies, and an implementation schedule. It presents the Corps with options for:

- control and removal of non-native, invasive vegetation
- supplemental planting of riparian vegetation, and
- revegetation of upland, coastal sage scrub areas.

Our environmental monitors (EMs) document the Corps contractors' compliance with requirements, plans, and permit conditions. This includes conducting surveys for California gnatcatcher, southwestern willow flycatcher, least Bell's vireo, burrowing owl, raptors, and other special status species prior to clearing and during nesting seasons. During construction monitoring, Aspen biologists identified several new nesting pairs of least Bell's vireo and have monitored the nests throughout construction. The Corps also consults with Aspen to define sound wall requirements and identify access roadway alignments to minimize impacts to sensitive species. EMs monitor noise in the areas of nesting species and monitor water quality to assess the project's effect on the turbidity levels in the river. EMs also train contractor personnel using a Worker Training Program developed by Aspen, map habitat losses, and document conditions before, during, and after construction with photos.

Aspen has assisted the Corps with the SARP in a variety of other ways over the past eight years, with projects spanning the length of the river from the Seven Oaks Dam in the San Bernardino Mountains to the river mouth. For instance, Aspen prepared the project's Final Supplemental EIS/R, Biological Assessments, and vegetation maps; conducted endangered species surveys, General Conformity analyses, and sediment sampling and testing; and monitored the success of revegetation efforts.

ENERGY NEEDS, CONT.

ables in the energy mix.

Aspen's experience also covers the fuels that run the power plants. We recently helped the Energy Commission define the future supply and demand for natural gas and prepared a comprehensive safety overview of controversial Liquefied Natural Gas (LNG) projects.

Our experience ranges from helping agencies define where and how to get fuel to power plants to analyzing those plants and the transmission systems that distribute power. In summary, Aspen provides the resources and expertise to assist agencies in protecting natural resources, comply with state and federal legislation, and ensure the delivery of electricity to a waiting public.

HORIZONTAL DIRECTIONAL DRILLING EXPERTISE

Environmental monitors and technical staff at Aspen have developed specialized knowledge about the horizontal directional drilling (HDD) process as well as an array of other project types and settings as a result of our involvement with numerous linear projects.

HDD technology emerged from the traditional vertical drilling industry to reduce potential impacts to natural resources, which increase costs and the time required to cross obstacles or avoid sensitive resources during the construction of linear facilities such as pipelines and fiber optic lines. Although HDD can be an ideal method to avoid sensitive resources such as waterways, sensitive species habitat, or cultural sites, there are still risks to consider.



Directional Drilling

The primary adverse impact from directional drilling is an inadvertent release of drilling muds to the surface. The drilling mud (bentonite) serves three main purposes in the drilling operation:

- it keeps the drill head cool
- it suspends the cuttings from the drilling and transports them back to the drill rig for disposal where the bentonite is recycled
- it forms a filter-cake on the perimeter of the hole that keeps the drill path from collapsing.

To accomplish these tasks, bentonite is pumped into the hole through the drill head at pressure. If the bentonite mix is not properly matched to the soil conditions or is overpressurized, it can be forced up to the surface through fractures in the stratigraphy, a failure known as a frac-out.

Aspen's Environmental Monitoring staff has extensive experience monitoring HDD and frac-out clean-up, and are HDD Inspector Certified.

Although not considered toxic or hazardous, inadvertent releases of bentonite to the surface can have serious impacts to both terrestrial and aquatic habitats by causing severe turbidity in water and creating a smothering effect. It can smother plant life and fill the annular spaces in andranous fish spawning beds that provide oxygen to the eggs.

In many cases, the impacts associated with cleaning the bentonite from land or water can be as great or greater than the impacts from the bentonite alone. It has become clear that proper use of HDD technology (i.e., proper design of

WATER RESOURCES

Aspen provides support to some of the largest water agencies in California. For instance, we are currently preparing an EIR for the Simulation of Natural Flows in Middle Piru Creek under our on-call environmental services contract with the **California Department of Water Resources**. The EIR addresses a proposal to **change the current water release schedule of Pyramid Dam into middle Piru Creek** to simulate the creek's natural hydrology to the extent operationally feasible and consistent with safety considerations. Middle Piru Creek is located between Pyramid Lake and Lake Piru in northwestern Los Angeles County and eastern Ventura County. The primary purpose of the project is to avoid the incidental take of the arroyo toad (*Bufo californicus*), a federally endangered species. The EIR's emphasis is on water resources, biological resources, cultural and paleontological resources, and recreation. The Draft EIR is scheduled to be published in November 2004.

We also continue to provide environmental and regulatory assistance to the **Metropolitan Water District of Southern California**, a key regional water provider including biological survey and permitting-related services for:

- Robert A. Skinner Water Filtration Plant Upgrade
- Eagle Rock Lateral Replacement Project
- Diemer Plant Spillway Maintenance Project , and
- Palos Verdes Reservoir Spillway Maintenance Project.

Additionally, Aspen is supporting the **Los Angeles Department of Water and Power (LADWP)** by preparing an EIR for a 13.3-mile underground pipeline. The River Supply Conduit project would be located in public rights-of-way, LADWP property, and utility easements in the North Hollywood, Silver Lake, and Los Feliz communities (including Griffith Park) within the Cities of Los Angeles and Burbank. It involves the construction of steel welded pipeline that ranges from 44- to 96-inches in diameter. Key environmental issues are traffic, air quality, and noise impacts during construction. The Notice of Preparation and Initial Study were released August 2004.

FORESTRY

As demonstrated by local wildfires in October 2003, over 100 years of fire suppression has resulted in unnaturally dense vegetation stands at greater risk of drought, insects, and catastrophic fire. Under our Natural Resources Professional Services on-call contract with the **U.S. Forest Service, Region 5**, Aspen is working with the Angeles National Forest (ANF) to analyze environmental effects of proposed hazardous fuels reduction and forest health projects in the San Gabriel Mountains. We are conducting comprehensive biological surveys of nearly 115 sites across the ANF and archaeological surveys at selected sites. Although there is an urgent need to protect local communities from high-intensity fires, the ANF is also committed to addressing the needs of threatened, endangered, pro-

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FORESTRY, CONT.

posed, and sensitive (TEPS) species occurring within treatment areas. As we identify these sensitive resources, Aspen will work with the ANF to define site-specific treatment methods (including physical fuels reduction or prescribed fire), achieving project goals while protecting TEPS species, cultural resources, and air quality. We also recently began a soil survey for a portion of the Mendocino National Forest and are preparing a report on baseline conditions which will ultimately include recommended mitigation measures to minimize the effects of the Forest's proposed vegetation management activities.

ASPEN WORKS ON MARS: SCIENTIFIC TEST BED

The **Monterey Accelerated Research System (MARS) Cabled Observatory** is an advanced undersea cabled observatory in Monterey Bay that will provide researchers with long-term, real-time data access to deep-sea benthic communities and ocean processes. The MARS project, proposed by the Monterey Bay Aquarium Research Institute, would consist of a science node located on the sea floor 51 km off the coast of Monterey Bay. The node would be connected to shore by a cable that would provide electricity to



Plow used for cable laying operations

power undersea experiments and a fiber optic cable to transmit data to shore. **The proposed project is designed as a test bed for the larger NEPTUNE cabled observatory project** planned for the deep sea in the Pacific Northwest. Aspen is preparing an EIR/EIS for the MARS project for the California State Lands Commission and the Monterey Bay National Marine Sanctuary.

DIRECTIONAL DRILLING, CONT.

HDD depth and entry/exit locations based on resources and stratigraphy present) can reduce, but not eliminate, the potential for inadvertent releases of bentonite. Therefore, it is essential that as part of permitting, specific mitigation measures be included that address the unique clean-up and resource agency coordination issues related to the problems encountered with HDD. Aspen's environmental monitoring staff has extensive experience monitoring HDD and frac-out clean-up, and are HDD Inspector Certified.



Members of Aspen at a 2004 Retreat held in Santa Barbara at Fess Parker's Doubletree Inn. We meet annually to share project information, train in new technical areas, and review our updated strategic plan together.

NEW LEAVES ON THE ASPEN TREE

Leigh Hagan - Sacramento

- Environmental Planner
- MA, Environmental Science and Management
- Bren School at UCSB

Current work - proposed Diablo Canyon Steam Generator Replacement Project, LNG Action Plan for CEC.

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Heather Stiles - Sacramento

- Environmental Scientist
- BA, Ecology
- San Diego State University

Current work - Diablo Canyon Steam Generator Replacement Project, LNG Action Plan for CEC. Botanical and wildlife surveys in the Angeles National Forest for the Forest Service Fuels Management Program.

Denny Grigg - Aspen Consulting Engineers

- Project Manager
- MA, Civil Engineering
- Senior civil/structural engineer
- Four decades of professional experience .

He specializes in transportation/highway engineering, primarily for bridges, major structures, and urban freeway systems and is presently on full-time assignment at the Maricopa County Department of Transportation providing oversight for the half-mile long Cotton Lane Bridge project, a four-lane river bridge, using state-of-the-art design criteria.

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