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San Dieguito Lagoon restoration start near; planned for 15 years

By James Steinberg
STAFF WRITER

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DEL MAR – The San Dieguito Lagoon is scheduled for a long-delayed overhaul. The aim is to restore the faltering wetland into a thriving coastal habitat after years of encroachment by the Del Mar Fairgrounds, a shopping center, an abandoned airfield, an interstate highway and acres of tomato fields.

The lagoon anchors the western end of the San Dieguito River Park, a 55-mile open space and trail system from the beach at Del Mar to Volcan Mountain near Julian.

Although work won't start until late summer or early fall, pending a final go-ahead from the California Coastal Commission, the \$86 million wetland restoration project has been on the drawing board for more than 15 years.

Construction was scheduled to start in October and then again in February. But delays in issuing permits and the start of the nesting season for sensitive bird species will have set the project back at least one year.

By the time construction ends in 2009, workers will have moved 2 million cubic yards of earth; created more than 100 acres of tidal salt marsh; constructed one mile of berms to protect the wetland from flood-borne sediments; built four nesting sites for the endangered least tern; replaced lost sand on Del Mar's beaches; and opened the mouth of the San Dieguito River permanently, said David W. Kay, manager of environmental projects for Southern California Edison.

The utility is restoring the lagoon as mitigation for the loss of fish eggs and larvae attributed to the San Onofre Nuclear Generating Station 33 miles north.

“It's a fabulous project. It restores what was San Diego's largest estuary, which has been clogged with fill for decades,” said Craig Adams, executive director of the San Dieguito River Valley Conservancy, which owns 450 acres of the San Dieguito River Park's estimated 60,000 acres. The conservancy has also negotiated the recent purchase of about 2,000 acres of park land.

Scope of project



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Sand will be removed from this small inlet to the San Dieguito Lagoon to allow tidal waters to revitalize the wetland. Berms will ensure that sediments and silt reach the mouth of the San Dieguito River, where the north-south current will deposit it as new sand on Del Mar's beaches.

The San Dieguito Wetland Restoration Project has been “very carefully designed,” and the rejuvenated lagoon will function as a fish hatchery, a refuge for migratory waterfowl along the Pacific Flyway and as a recreational space for hikers, bicyclists and bird watchers, Adams said.

The lagoon restoration has strong support in Del Mar, said Councilman Jerry Finnell, although some residents did challenge it in court several years ago, alleging erosion at the city's beaches would increase. Their claim was rejected.

“The city has aligned itself with the (San Dieguito River Park) Joint Powers Authority that all of the (environmental impact) studies are appropriate,” said Finnell, who is chairman of the river park board.

The lagoon restoration involves 440 acres on both sides of Interstate 5. It extends from the mouth of the San Dieguito River east to the Del Mar Horse Park and El Camino Real; it is bordered by the Del Mar Fairgrounds and Via de la Valle on the north and by the Del Mar bluff on the south.

Southern California Edison customers are paying 70 percent of the \$86 million bill; San Diego Gas & Electric Co. ratepayers 20 percent; and utility users in the cities of Anaheim and Riverside 5 percent each for the power they get from San Onofre.

The facility's two nuclear reactors each use 1 billion gallons of seawater a day as coolant. Water enters through a pair of 18-foot-wide, 3,200-foot-long intake pipes. Two 18-foot-wide discharge pipes extend 6,000 feet and 8,600 feet into the ocean.



DON KOHLBAUER / Union-Tribune

A Cooper's hawk took flight at the San Dieguito Lagoon near the Del Mar Fairgrounds. The wetland habitat, San Diego's largest estuary, is set for a major overhaul.

“Scientists working for the California Coastal Commission estimated that the loss (from the intake pipes) was about 600 tons of adult fish a year,” Kay said. The utility said the figure is high but has accepted it as the basis of the mitigation settlement.

“In mitigation, it is estimated that 150 acres of new tidal wetlands will produce the equivalent amount of fish eggs and larvae,” he said.

The lagoon has only about 100 acres of remaining wetland, all of it “in various states of degradation,” Kay said. The utility will create about 115 new acres of wetland and enhance the rest by keeping the tidal inlet open.

Despite the scope of the project, there won't be more than a few dozen workers and pieces of heavy equipment on-site at any time, Kay said.

Much of the work will be done during the fall and winter months so as not to disturb the nesting birds, and to avoid the San Diego County Fair and Del Mar Thoroughbred Club race meet. There will be no night work to eliminate noise, all excavated material will stay on-site and biologists will monitor the site full time, Kay said.

“If we could work continuously, we could get this done in a year,” he said.

Excavation, elevation

Initially, about 2 million cubic yards of earth will be excavated to create tidal salt marshes on both sides of I-5. The excavation includes the site of a former World War II U.S. Navy dirigible landing field near the Grand Avenue Bridge.

At high tide, the new wetland will be knee-deep in salt water, support a population of snails, crabs, small mammals and birds and provide fish with a place to spawn and grow.

All the excavated material will be used to elevate areas of coastal grassland, home to birds, reptiles, amphibians and small mammals.

A series of berms will control sediment from filling the wetland during floods. A 2,500-foot-long section that's 8 feet to 12 feet high will be built on the north side of the San Dieguito River east of the freeway, along with a 500-foot section on the south bank. A 2,000-foot berm will be constructed on the south side of the river west of the freeway.

“They will be just high enough so that a 100-year flood won't go over the top. Even a catastrophic El Niño shouldn't do any damage to the project,” Kay said.

The berms will ensure that sediments and silt reach the mouth of the San Dieguito River, where the prevailing north-south current will deposit it as new sand on Del Mar's beaches, Kay said.

The sand that closes the river mouth about every year will be dredged down to the natural bottom, where “geometric boxes” will be excavated to intercept beach sand as the tide pushes it in.

The project also includes construction of four nesting sites, two east and two west of the freeway, for the endangered least tern, and for refurbishing an existing nesting site west of the freeway.

The sites will be monitored and maintained by the 22nd District Agricultural Association in mitigation for construction and improvements at the Del Mar Fairgrounds.

About two years of revegetation will follow the end of construction, probably in 2009. The soil will be amended with clay and plant cuttings and seeded with native salt marsh plants.

Then, in about 2010, “the clock starts ticking” for Southern California Edison, Kay said.

“We are obligated to maintain a functioning wetland to 2050,” based on the 40-year operating license of the San Onofre Nuclear Generating Station. The plant's two working reactors have been in operation for about 23 years, and the utility's obligation will be shortened if San Onofre is decommissioned ahead of schedule.



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The San Dieguito Wetland Restoration Project will cost \$86 million, and its expected launch date is late summer or early fall. It should take about three years to complete. The project involves 440 acres on both sides of I-5.



DON KOHLBAUER / Union-Tribune
A jellyfish floated near the shore in the San Dieguito Lagoon. Southern California Edison is restoring the lagoon as mitigation for the loss of fish eggs and larvae attributed to the San Onofre Nuclear Generating Station.

Southern California Edison is obligated to keep the San Dieguito River mouth open in perpetuity, however. But at some point, it will turn the job over to the San Dieguito River Park Joint Powers Authority, along with an endowment sufficient to ensure that there will always be enough money to get the job done, Kay said. The utility will also provide money for monitoring and maintaining the lagoon wetlands, he said.

“If all of our assumptions are correct and we turn everything over to the JPA (the river park authority) in 2025, we think it should be about \$1.7 million,” Kay said. Southern California Edison put an initial \$500,000 into the endowment last year, he said.

New visitor center

The San Dieguito River Park, which has an on-site temporary visitor and wildlife interpretive center, plans to replace it with a permanent facility once it has the funds, said Susan Carter, the park's deputy director. The center is on the south side of Via de la Valle off San Andres Drive, across from the Albertsons shopping center.

The park authority will also construct two miles of pedestrian-bicycle trail through the wetland area along the north side of the San Dieguito River, beginning at Jimmy Durante Boulevard and heading east under I-5 to San Andres Drive.

Twenty-two of the 55 miles of planned “coast-to-crest” trail from Del Mar to Julian are already in place, she said. Three more miles are about to be built west of the Lake Hodges Dam in the Del Dios Gorge.

Design and environmental review of the restoration project began in 1991, Kay said. Construction permits had to be secured from, among others, the California Coastal Commission, the U.S. Army Corps of Engineers, the California Department of Fish and Game, the California Water Quality Control Board, the California State Lands Commission, the California Department of Transportation and the cities of Del Mar and San Diego.

“From the very beginning of the design process, three criteria had to be met,” Kay said. The project would not cause flood water to reach higher “than existing conditions,” including the so-called 100-year flood; the river would not scour or erode any structures in the lagoon, including I-5, Jimmy Durante Boulevard, El Camino Real and railroad bridges; and it would not cause erosion along the beach.

When completed, the tidal flow out of the lagoon will counter the tidal flow carrying sand into the lagoon, Kay said. That sand will be trapped in the “boxes” at the river mouth and each year, about 25,000 cubic yards will be put back on Del Mar's beaches, he said.

■James Steinberg: (619) 542-4569; jim.steinberg@uniontrib.com

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