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Energy and Ocean Resources

Staff: JJJ, SMH—SF

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**STATUS REPORT ON SONGS MITIGATION PROGRAM**

Following is a brief status report for the mitigation projects required in Southern California Edison Company's (SCE) coastal development permit for the San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 (permit no. 6-81-330, formerly 183-73). The Commission originally adopted the conditions in 1991 to mitigate the adverse impacts of the power plant on the marine environment. The 1991 conditions (Condition D) also require SCE to provide the funds necessary for Commission technical oversight and independent monitoring of the mitigation projects, to be carried out by independent contract scientists under the direction of the Executive Director. In 1993, the Commission added a requirement for the permittee to partially fund construction of an experimental fish hatchery. The Commission has since approved amendments to the conditions in April 1997, October 1998, and October 2005.

Implementation of the mitigation projects is the responsibility of SCE whereas the Commission is responsible for implementing its independent monitoring and technical oversight function. The Commission has operated under approved work programs and budgets since 1993. In December 2005, the Commission unanimously approved the work program and budget for calendar years 2006 and 2007. Staff expects to bring a proposed work program and budget for calendar years 2008 and 2009 to the Commission in November or December 2007.

Another aspect of the Commission's monitoring and oversight is periodic public review of the performance of the mitigation projects. The staff and contract scientists last conducted a public workshop on the findings from the experimental phase of the reef mitigation project in Summer of 2005, followed by public review of the preliminary plan for the mitigation reef at the Commission's August 2006 meeting. Public review of the wetland mitigation project occurred in October 2005 at the Commission's hearing on the coastal development permit for the restoration. Additional public review also is part of the Commission's approval of the work programs and budgets.

**WETLAND RESTORATION MITIGATION***Mitigation Requirement*

Condition A of the permit requires the permittee to create or substantially restore a minimum of 150 acres of wetlands to mitigate for the reduction in the standing stocks of nearshore fishes

caused by the operation of SONGS Units 2 and 3. In April 1997, the Commission revised Condition A to allow up to 35 acres enhancement credit for permanent, continuous tidal maintenance at San Dieguito Lagoon.

### *Wetland Restoration Planning and Environmental Review*

In June 1992, following an evaluation of eight sites, the Commission approved SCE's selected restoration site, the San Dieguito River Valley. In April 1997, the Commission reaffirmed its prior decision that San Dieguito River Valley is the restoration site that meets the minimum standards and best meets the objectives set forth in Condition A.

In November 1997 the Commission approved SCE's preliminary wetland restoration plan as largely conforming with the minimum standards and objectives stated in the permit. The CEQA/NEPA environmental review incorporated the mitigation project into the overall San Dieguito River Valley Regional Open Space Park project. The lead agencies for the CEQA and NEPA environmental review were the San Dieguito River Valley Regional Open Space Park Joint Powers Authority (JPA) and the U.S. Fish and Wildlife Service, respectively.

Following the review period on the January 2000 Draft EIR/S, the Final EIR/EIS was released in September 2000. On September 15, 2000, the JPA certified the EIR/EIS after public hearing. The EIR/EIS designated the Mixed Habitat plan as the environmentally preferred alternative.

Lawsuits challenging the adequacy of the Final EIR/EIS were filed by the Del Mar Sandy Lane Association and Citizens United to Save the Beach. On July 27, 2001, the San Diego Superior Court ruled that the EIR/EIS did not comply with CEQA and remanded the EIR/EIS back to the JPA for revisions. However, on August 4, 2003, the California Court of Appeals overturned the Superior Court's ruling and upheld the adequacy of the EIR/EIS.

Following the conclusion of the litigation, the USFWS issued its final Record of Decision on the Final EIR/EIS on November 28, 2003.

### *Steps in Implementing Wetland Restoration*

Upon completion of the wetland restoration project design and engineering plans, SCE and JPA submitted their Coastal Development Permit Application (#6-04-88) in August 2004. The Commission's contract scientists and staff reviewed the application and associated documents, requesting additional information where necessary. On October 12, 2005, the Commission approved the Final Restoration Plan and CDP #6-04-88, as conditioned, for the San Dieguito Wetland Restoration Project.

In approving the preliminary restoration plan in 1997, the Commission acknowledged and accepted that a small amount of existing wetland would be lost in implementing the overall wetland restoration project at San Dieguito. The Commission had determined that if the Final Plan involves any loss that such loss would be mitigated and an amendment to the SONGS permit would be considered to allow the restoration project to go forward in compliance with the SONGS permit conditions. Thus, on October 12, 2005, the Commission also approved an amendment to SONGS CDP #6-81-330-A4 to revise Standard 1.3.h of Condition A to allow the minimal loss of existing wetlands as "specifically authorized by the Coastal Commission in

Coastal Development Permit No. 6-04-88 for the San Dieguito Wetland Restoration Project Final Restoration Plan.”

At the same time, the long-standing obligation of the 22<sup>nd</sup> Agricultural District to provide for Least Tern nesting habitat as a requirement of its coastal development permit No. 6-84-525 was resolved with the inclusion of four new nesting sites in the Final Restoration Plan. On October 12, 2005, the Commission approved an amendment to CDP #6-84-525 to require the provision, maintenance and monitoring of the new Least Tern nesting habitat to be constructed as part of the San Dieguito Wetland Restoration Project.

#### *Wetland Restoration Condition Compliance*

Following the Commission’s approval of CDP #6-84-88, SCE and JPA began preparing the final plans in compliance with the special conditions in CDP #6-04-88 that must be met prior to issuance of the permit, prior to commencement of construction, during construction, at the completion of construction, and on an on-going basis. Material submitted in compliance with the special conditions has been reviewed by the Executive Director and found to fulfill the requirements of certain of those conditions, as follows:

- On August 22, 2006, Commission staff issued the Notice of Acceptance for condition compliance required *prior to issuance of the permit* and issued CDP #6-04-88.
- On September 13, 2006, Commission staff issued the Notice of Acceptance for condition compliance required *prior to commencement of construction*; however, the Notice of Acceptance excluded authority to construct certain plan elements that require compliance with additional site-specific conditions (i.e., least tern nesting habitat, public trails, freshwater runoff treatment ponds, inlet dredging, use of North Beach staging area and beach restoration activities, river bend revetment, a disposal site, and a mitigation site).
- On October 2, 2006, Commission staff issued the Notice of Acceptance for condition compliance required *prior to commencement of construction of segments 1 through 3 of the Coast-to-Crest public trail* (from Jimmy Durante Boulevard along the northern edge of the river to I-5).
- On November 20, 2006, Commission staff issued the Notice of Acceptance for condition compliance required *prior to commencement of construction on disposal site DS32*.
- On November 29, 2006, Commission staff issued the Notice of Acceptance for condition compliance on a revised design and alignment for the temporary construction haul road under Interstate Highway 5.
- On January 29, 2007, Commission staff issued the Notice of Acceptance for condition compliance required *prior to commencement of construction of the Least Tern nesting sites*.
- On February 20, 2007, Commission staff issued the Notice of Acceptance for condition compliance on a revised construction haul road route to Disposal Site 36.

Commission staff is currently reviewing the mitigation plan submitted by the JPA for impacts associated with the public trail and freshwater runoff treatment ponds.

### *Wetland Restoration Construction Update*

Construction of the wetland restoration project at San Dieguito began in August 2006 and is expected to be completed in December 2009. Construction activities began with the delivery of rock and gravel material for use in constructing the haul roads and berms, installation of construction fencing to delineate project boundaries and sensitive habitat, and BMP (best management practice) fencing to contain soils within the project area during rainfall events. Construction has proceeded with the construction of haul roads to transport dredge materials to disposal sites, the importation, screening, and stockpiling of rock and sandy clay to create berms and permanent access roads, and the clearing and grubbing of vegetation and debris from project areas to the south of the San Dieguito River and west and east of Interstate 5. Upland topsoil was stripped from the disposal sites and stockpiled, and wetland base soil was removed from excavation areas and stockpiled. Construction of the large subtidal and intertidal basin (44 acres) commenced in December 2006 and will continue through 2007. In April 2007, the construction of intertidal habitat has commenced in other areas within the restoration site. Overall, the project is proceeding on schedule.

Restrictions given in the Adopted Findings and Conditions of the CDP for implementation of the San Dieguito Wetland Restoration Plan provide that construction activities shall not occur in areas where breeding is occurring by migratory birds. Breeding migratory birds were found within project boundaries during this reporting period and accommodated following guidelines provided in the CDP in consultation with US Fish and Wildlife and California Department of Fish and Game. The nest of an Anna's Hummingbird was found on March 13, 2007 within the project area by SCE-retained bird monitors. The nest was located in a mulefat tree approximately 15 feet from the ground and adjacent to north side of the Interstate 5 and the haul road running underneath the freeway. A perimeter 15-20 feet from the nest was delineated with stakes and the impact of movement and noise from construction vehicles passing within 100 feet of the nest on the nesting bird was monitored by bird monitors. Vehicles running at full speed had no obvious effect on nesting activity. The eggs were hatched by April 6 and young were large and healthy on April 19, 2007 and fledged by early May. Construction personnel found a nesting Killdeer on April 30, 2007. The area around the nest within 200 feet was closed off to construction activity with orange fencing. Four house finch nests were also found during the dismantling of a strawberry stand structure on April 25, 2007. Two of the nests were confirmed to be in use; work on dismantling the structure was halted and "sensitive habitat" signs were posted. On May 11 SCE monitors found an active Belding Savannah Sparrow nest located in non-active construction area. The area was immediately staked and USFWS and DFG were notified. SCE's monitors estimate that it will be two to three weeks before the young have left the nest.

### *Wetland Restoration Monitoring*

The SONGS permit establishes physical and biological performance standards that must be met by the restored wetland. As part of the Commission's technical oversight, monitoring and management responsibilities, the contract scientists conducted pre-restoration monitoring in San Dieguito Lagoon and in other southern California wetlands, including those that will be used as

reference sites in post-restoration monitoring. Pre-restoration monitoring included the collection of physical and biological data on the wetland attributes to be monitored during post-restoration monitoring. These data were needed to develop sampling designs that can effectively determine whether the various performance standards have been met. The results of the pre-restoration monitoring studies are incorporated into the CCC Monitoring Plan for the SONGS Wetland Mitigation Program, approved as part of the Commission's approval of the coastal development permit for the wetland restoration project. An important goal of pre-restoration monitoring was to develop sampling designs that are cost-effective and minimize adverse impacts to wetland resources. Upon the completion of the wetland construction, restoration monitoring will be conducted for the full operating life of SONGS.

### *Wetland Construction Monitoring*

The SONGS permit also requires independent monitoring by Commission contract scientists to ensure that the restoration work is conducted according to approved plans. To accomplish this task, CCC contract scientists have established good communication with SCE and its partners involved with implementation of the Final Plan and a frequent on-site presence at the restoration site. CCC contract scientists are conducting routine monitoring of planned construction activities through attendance at briefings and field inspections of work in progress. CCC contract scientists have also been involved in monitoring the impacts of unplanned construction activities. Unplanned construction changes have involved impacts to existing habitat through changes in the alignment of a haul road, and unforeseen impacts of a disposal site and berm on wetland habitat. Staff administers these changes through condition compliance, where appropriate, and permit amendments as needed. CCC contract scientists have also worked cooperatively with SCE consultants in the assessment of the suitability of seasonal wetland habitat for mitigation of project permanent impacts to seasonal wetland. SCE and its construction team have been very responsive to the requirements of the permit.

## **KELP REEF MITIGATION**

### *Mitigation Requirement*

Condition C of the permit requires construction of an artificial reef that consists of an experimental reef and a larger mitigation reef. The experimental reef must be a minimum of 16.8 acres and the mitigation reef must be of sufficient size to sustain 150 acres of medium to high density kelp bed community. The purpose of the experimental reef is to determine which combinations of substrate type and substrate coverage will most likely achieve the performance standards specified in the permit. The design of the mitigation reef will be contingent on the results of the experimental reef.

In April 1997, the Commission added the requirement for a payment of \$3.6 million to the State's Ocean Resource Enhancement and Hatchery Program (OREHP) to fund a mariculture / marine fish hatchery to provide compensation for resources not replaced by the artificial mitigation reef. SCE has fully satisfied this requirement.

### *Planning and Construction of Experimental Reef*

Following the Commission's approval of the SONGS permit amendment in April 1997, SCE submitted a preliminary conceptual plan for the experimental reef in June 1997, which was approved by the Executive Director and forwarded to state and federal agencies for review. As lead agency, the State Lands Commission (SLC) determined that under the requirements of CEQA a Program Environmental Impact Report (PEIR) should be prepared to evaluate both the experimental reef and the subsequent full mitigation reef. SLC began the environmental review process in March 1998, and certified the final PEIR and issued the offshore lease for the experimental reef on June 14, 1999.

The Coastal Commission approved the coastal development permit for the experimental reef on July 15, 1999 (CDP #E-97-10). The final plan approved by the Coastal Commission was for an experimental artificial reef located off San Clemente, California that tested eight different reef designs that vary in substrate composition (quarry rock or recycled concrete), substrate coverage (17%, 34%, and 67%), and presence of transplanted kelp. All eight reef designs were represented as individual 40 m x 40 m modules that were replicated in seven areas (i.e., blocks) for a total of 56 artificial reef modules totaling 22.4 acres. The Army Corps of Engineers issued its permit on August 13, 1999, and SCE completed construction of the experimental reef on September 30, 1999.

### *Monitoring of Experimental Reef*

The Commission's contract scientists produced a proposed monitoring plan for the experimental reef that was reviewed by SCE, various resource agencies and other technical specialists, and also was included in the draft PEIR for general public review. The Commission approved the proposed monitoring plan for the experimental reef on July 15, 1999.

Five years of post-construction monitoring were completed in December 2004. Results from the five-year experimental phase of the artificial reef mitigation project were quite promising in that all six artificial reef designs and all seven locations (i.e., blocks) tested showed a near equally high tendency to meet the performance standards established for the mitigation reef. It was concluded from these findings that a low relief concrete rubble or quarry rock reef constructed off the coast of San Clemente, California has a good chance of providing adequate in-kind compensation for the loss of kelp forest biota caused by the operation of SONGS Units 2 and 3.

A final report on all the findings and recommendations gleaned from the experimental phase of the artificial reef project was prepared by contract scientists and submitted to the Executive Director on August 1, 2005. These findings and recommendations formed the basis of the Executive Director's determination that (1) the mitigation reef shall be built of quarry rock or rubble concrete having dimensions and specific gravities that are within the range of the rock and concrete boulders used to construct the SONGS experimental artificial reef and (2) the percent of the bottom covered by quarry rock or rubble concrete on the mitigation reef should average at least 42%, but no more than 86%. The Commission concurred with the Executive Director's determination for the type and percent cover of hard substrate on October 12, 2005.

### *Summary of 2006-07 Reef Monitoring*

Reef monitoring for 2006-2007 focused on (1) developing the mitigation reef monitoring plan, and (2) collecting information needed to evaluate sea fan population trajectories and investigate potential methods for their management.

#### *1. Development of the mitigation reef monitoring plan:*

Contract scientists are preparing a monitoring plan for the mitigation reef that will provide an overall framework to guide the monitoring work. The plan will describe the sampling methodology, analytical techniques, and methods that will be used to determine whether the mitigation reef is in compliance with the performance standards identified in the SONGS permit. Two critical issues that reside at the core of this determination are: (1) the level and duration of performance by the mitigation projects that is needed to achieve compliance with specific conditions of the SONGS coastal development permit and (2) a methodological approach to determining whether the mitigation projects are performing similarly to naturally undisturbed reference sites.

A first step in developing the mitigation reef monitoring plan was to produce a document whose purpose was to provide SCE with: (1) clear and consistent interpretations of key terms in the SONGS coastal development permit which provide the basis for determining the level and duration of post construction monitoring that will be used by the CCC to assess compliance of the reef mitigation projects, and (2) a description of the methodological approach that the CCC will use to determine whether the reef mitigation project is performing similarly to naturally undisturbed reference sites. Because these two issues apply equally to the wetland mitigation requirement the document prepared for SCE was written to include both the wetland and reef mitigation projects. This document was sent to SCE for internal review on March 30, 2007 and contract scientists and CCC staff met with SCE in San Francisco on April 23, 2007 to discuss the implications of this document for monitoring of the SONGS mitigation projects. CCC contract scientists and staff will continue to consult with SCE in their development of a cost effective monitoring plan.

Contract scientists have been working with experts in ichthyology at California State University of Northridge to develop methods and gather data that can be used to design the sampling necessary to evaluate the performance standard pertaining to fish reproductive rates. Five key indicator species have been identified and all relevant information on their reproductive biology has been assimilated. The objective for field work planned for summer 2007 is to collect information that will fill in critical gaps in knowledge with a goal of establishing size-fecundity relationships for each species that can be used to assess the performance standard on the mitigation reef.

Another performance standard by which the mitigation reef will be judged pertains to fish production. Obtaining accurate estimates of fish production on artificial reefs is of much interest to resource managers and fisheries biologists alike as there is a need for artificial reefs

constructed for mitigation to produce new fish rather than attract existing fish from nearby areas. Despite the widespread interest in obtaining accurate estimates of fish production on artificial reefs there are no generally accepted state-of-the-art methods for doing so. Most of the methods that have been used are very labor intensive and relatively expensive to implement. With this in mind, contract scientists convened a workshop during the 2004-2005 work period to explore the most cost effective means of evaluating the SONGS performance standards pertaining to fish production. One of the recommendations made at this workshop was to determine whether data collected for the purpose of assessing other performance standards (total abundance and species richness) are sufficient for evaluating the performance standard for fish production. Contract scientists then began working with population biologists at the University of California, Santa Cruz to determine whether demographic models that incorporated data fish density, size structure, species composition, and reproduction (which will be collected to evaluate other fish performance standards) could be used to evaluate the performance standard on fish production. The conclusions from this effort were that demographic models could be used make projections on fish production that could be used to assess the fish production performance standard, but that the data collected by contract scientists thus far were inadequate for these types of models. In particular, greater sampling frequency is needed to obtain the precision in estimates of fish density and size structure required for the models. Contract scientists are currently working on developing more precise methods for sampling fish density and size for inclusion in the reef monitoring plan.

## *2. Sea fan population trajectories and management:*

One of the more notable invasive species on shallow reefs in southern California is the sea fan *Muricea* spp. It is known to form high densities on artificial and natural reefs and to exclude kelp, understory algae and other sessile invertebrates. Of particular concern to the SONGS artificial reef mitigation project is the ability of *Muricea* to withstand disturbance and ultimately displace giant kelp. This appears to have happened at nearby Pendleton and Torrey Pines artificial reefs. The concern about the potential for *Muricea* domination on SCAR was heightened in winter 2002 when large numbers of small recruits (i.e., 1 cm tall) of *Muricea californica* (and fewer numbers of *M. fruticosa* recruits) were observed on the artificial reef modules. By summer 2002, the mean density of *Muricea* recruits was near or above 10 m<sup>-2</sup> on all artificial reef designs. Contract scientists have continued to collect and analyze data from experimental artificial reef and nearby reference reefs to determine population projections for sea fans in the vicinity of the project site and to evaluate methods for the cost effective management. Results show that sea fan density on the artificial reef modules has been relatively constant at ~12/m<sup>-2</sup> since 2002, while the percent of space occupied by *Muricea* on the artificial reef has steadily increased since 2002 reaching ~4% in 2006. Sea fan densities appear to be maintained by annual recruitment of new individuals coupled with relatively high annual survivorship (~70-80%). The major unknowns at this time are: (1) how long it will take for sea fan coverage to reach a level that is dense enough to inhibit kelp and other reef biota, and (2) to what extent will disturbance reduce sea fan density and prevent it from out-competing other reef biota for space.

Contract staff will continue to follow sea fan populations on the experimental reef modules to obtain much needed insight into these unknowns.

In summer 2006 contract scientists began investigating methods for managing sea fan populations in the event that sea fans begin to inhibit the development of other reef biota. Results to date indicate that *Muricea* can be selectively reduced with no adverse long-term effects on other biota. The effort required to reduce *Muricea* densities on a 150 acre reef would be substantial, but because of its relatively slow growth rates such reductions, if deemed necessary, would only be needed every 10 to 20 years.

### *Steps in Implementing Mitigation Reef*

In May 2006, SCE submitted its Preliminary Plan for the construction of Phase 2 of the SONGS mitigation reef. The plan calls for the addition of 127.6 acres of reef construction to the existing 22.4 acres built in September 1999 for the Phase 1 experimental reef. The project area is located offshore of San Clemente, California. (In April 2006 the State Lands Commission adopted a resolution declaring the SONGS mitigation reef to be named in honor of Dr. Wheeler North.)

The preliminary design calls for a 127.6-acre, low-profile, single-layer reef (< 1 m) constructed of quarried boulders and distributed on the benthos in quantities similar to those of the lowest substrate coverage used for the experimental reef project. The design consists of 11 polygons which vary in area from 2.4 to 37.5 acres. Four contingency polygons (22.4 acres total) also are designed as potential alternative reef construction areas.

CCC contract scientists reviewed SCE's Preliminary Plan for the construction of Phase 2 of the SONGS mitigation reef and determined that the proposed low-lying artificial reef constructed of Catalina quarry rock off the coast of San Clemente, California is consistent with the Commission staff's recommendations for the substrate type, coverage, bottom relief, and location for the Phase 2 Mitigation Reef. Contract scientists identified several specific issues in the preliminary plan that will need clarification and resolution prior to approval of the Final Plan and coastal development permit for the Mitigation Reef. These issues are of two types: (1) documentation of the reef studies done by SCE in support of the proposed design, and (2) questions and concerns regarding construction methods and schedule. CCC staff has worked with SCE to resolve these issues.

On August 8, 2006, the Commission concurred with the Executive Director's determination that the Preliminary Reef Plan meets the requirements of the SONGS permit. SCE is currently completing the environmental analyses and final plan for the mitigation reef and expects to submit its coastal development permit application to the Commission in July 2007. The Commission will hold a public hearing (probably in October or November 2007) to consider the final plan and coastal development permit application for the construction of the full-scale mitigation reef. The mitigation reef construction period is estimated at 100 working days.

## **FISH BEHAVIORAL MITIGATION**

### *Mitigation Requirement*

Condition B of the SONGS permit requires SCE to install and maintain behavioral barrier devices at SONGS Units 2 and 3 to reduce fish impingement losses.

### *Fish Behavioral Mitigation Compliance*

The impact studies for the operation of SONGS Units 2 and 3 conducted between 1983 and 1991 found that annual losses of juvenile and adult fish in the cooling water systems under normal operations averaged about 20 metric tons. Although the SONGS permit does not specify any criteria for evaluating the effectiveness of these devices, the Commission accepted the studies' recommendation that "the techniques" (behavioral barrier devices) "be tested on an experimental basis, and implemented if they reduce impingement by at least 2 metric tons (MT) per year", which is equivalent to at least 10% of the average loss due to impingement. (Section IV—Proposed Findings and Declarations in the SONGS 1991 permit)

SCE conducted a number of laboratory and in-plant experiments testing the behavioral response of fish to lights and sound devices from 1992 through 1999. None of the experiments showed evidence that these devices would reduce fish impingement losses as required by Condition B. At the same time, SCE continued its modified heat cleaning treatments of the cooling water intake systems of Units 2 and 3 (called the Fish Chase procedure), which result in a considerable reduction in fish impingement.

In October 2000, the Commission reviewed the results of the experiments and concluded that no further testing of alternative behavioral barriers should be required at this time, provided that (1) SCE continues to adhere to the operating, monitoring, and reporting procedures for the modified heat cleaning treatments and (2) SCE makes every effort to test and install, if feasible, future technologies or techniques for fish protection if such techniques become accepted industry standards or are required by the Commission in other power plant regulatory actions.

The contract scientists and staff review the annual data and analyses on the fish chase procedure at SONGS. The reports indicate that the fish chase procedure generally has been consistent with the Commission's requirements. However, the Fish Chase Procedure effectiveness relative to impingement dropped below the 10% target value in both 2004 (4.82%) and 2005 (7.6%). In 2004 the mortality rates associated with the fish chase also failed to meet the standards.

SCE submitted follow-up analyses to the 2005 report in April 2006, which indicated that there had been no changes in the procedures or operation of the fish return system or heat treatments during 2004 to explain increases in fish impingement. SCE noted that the increases in fish impingement were associated entirely with increases in the entrainment of Pacific sardines. Following the staff's review of the data for the year 2005 (contained in SCE's July 2006 report), on October 23, 2006 staff requested SCE provide additional data and analyses in order to assess the importance of the continuing sub-standard performance of the Fish Chase Procedure. Staff also indicated the need to initiate discussions with SCE on the possibility of implementing new

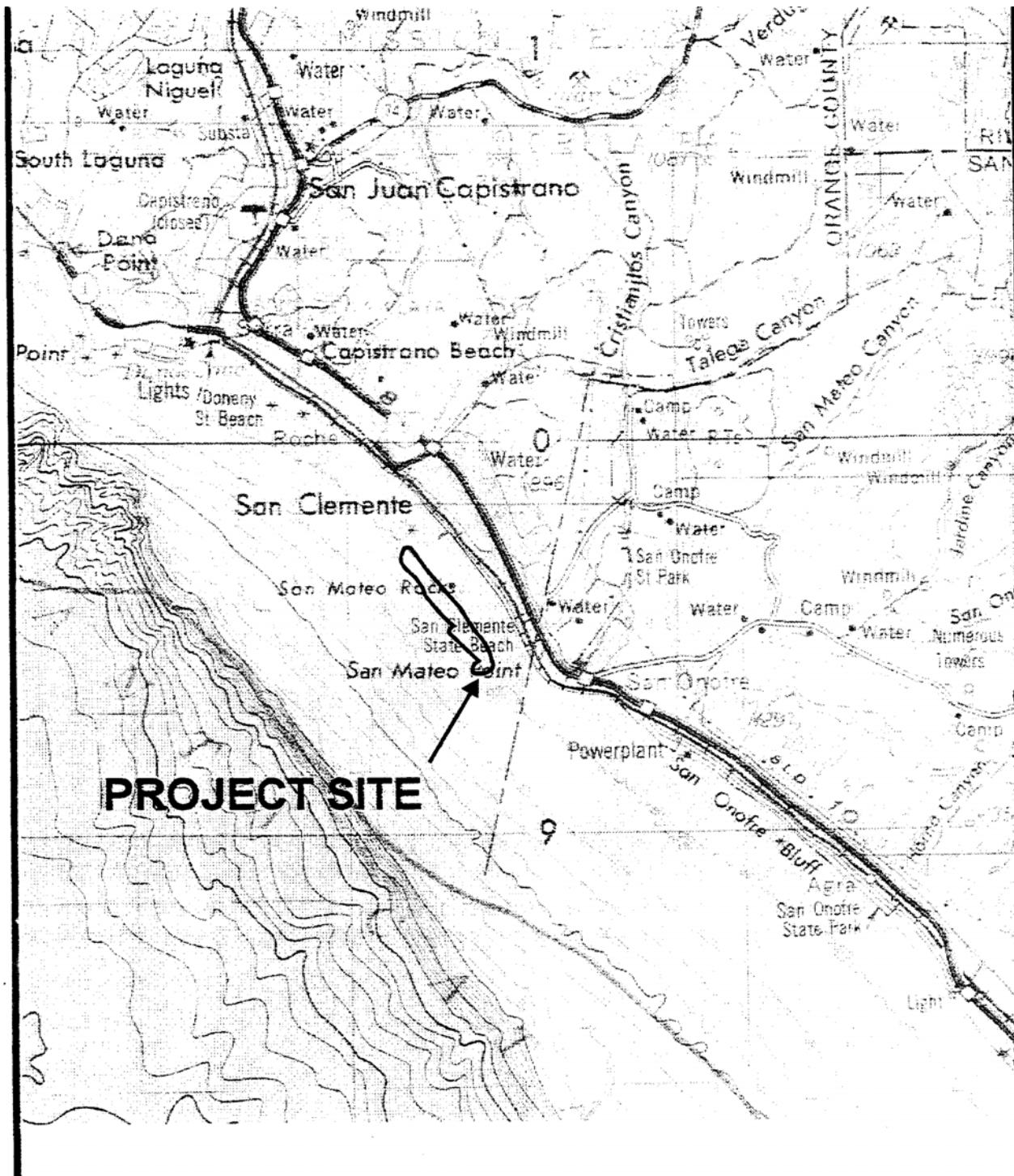
technologies that could significantly reduce losses due to heat treatments and normal impingement.

Staff met with SCE on April 23, 2007 to discuss: (1) the current status of impingement levels at SONGS, (2) the need for additional monitoring to more accurately assess impingement levels, and (3) implementation of new technologies that could significantly reduce fish losses.

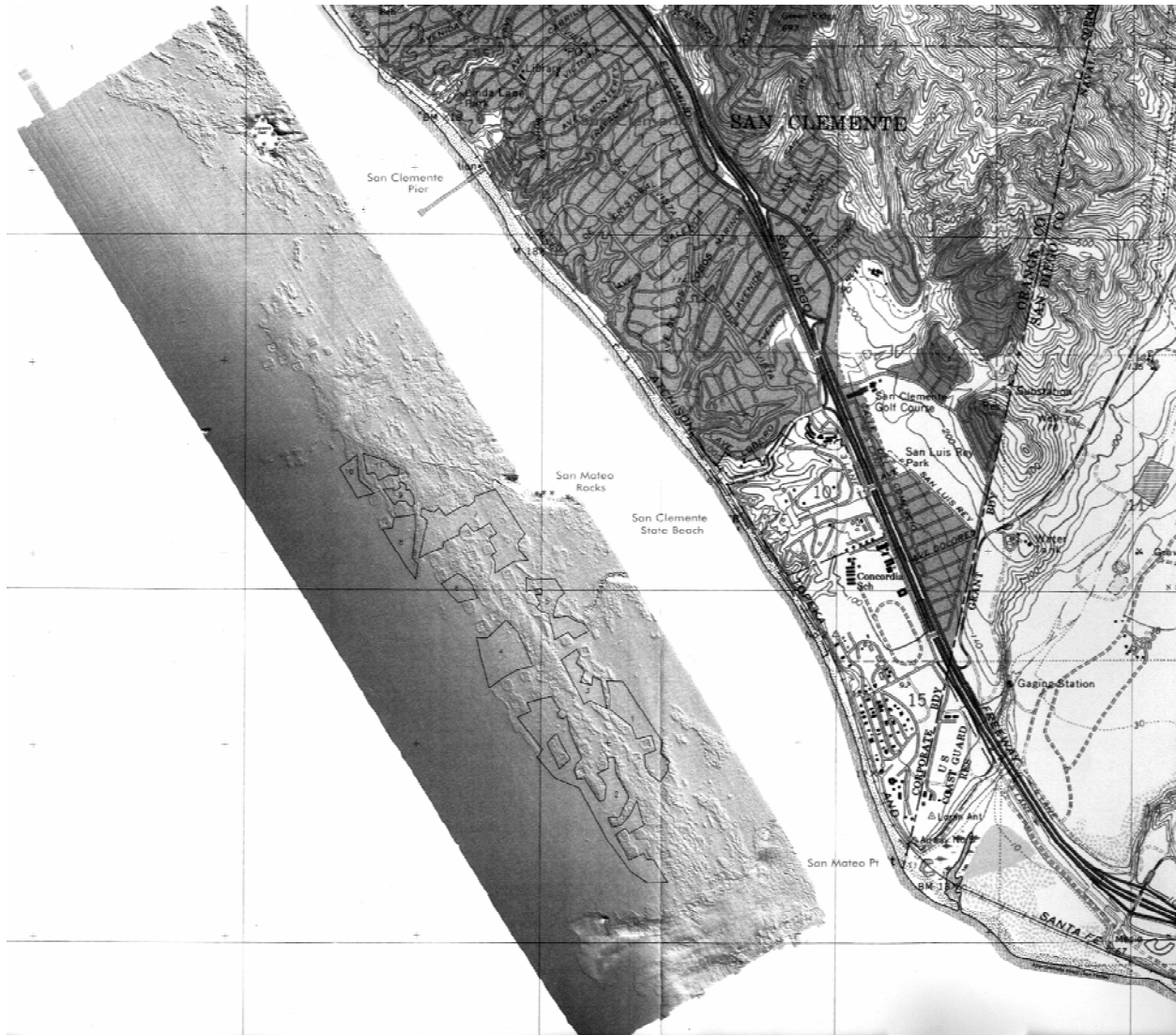
SCE will submit to the Commission in August 2007 its 2006 annual report on SONGS impingement and fish return data. SCE contends that preliminary data indicate fish impingement losses at SONGS during 2006 were significantly reduced. SCE attributes this reduction to a shift in the local fish assemblage to species that are less inclined to be impinged by SONGS. Commission staff will review the full data to be presented in the 2006 annual report. Contract scientists also will work with SCE to evaluate the adequacy of SCE's current quarterly sampling program in providing reliable estimates of annual fish impingement losses. Prior to 1999 impingement sampling at SONGS was done monthly. The accuracy and precision of the annual estimates obtained from the data collected monthly prior to 1999 will be compared to that of more recent years to determine whether quarterly sampling is sufficient for estimating annual fish impingement losses.

SCE is currently waiting for a federal ruling on water quality that effectively sets the level of fish losses allowed for cooling systems of power plants. Once that ruling has been finalized, SCE will actively work to develop new technologies at SONGS for meeting the more strict standards currently proposed by the federal government.

## Mitigation Reef Project Location Map

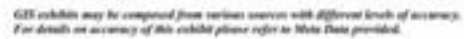


**Layout of the proposed Mitigation Reef off San Clemente, CA. Polygons in the offshore inset indicate the locations of the quarry rock modules.**





San Dieguito Wetland Restoration Project Regional Location Map



## San Dieguito Wetland Restoration Project