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November 25, 2014

TO: Commissioners and Interested Parties

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SUBJECT: 2014 Annual Status Report for the San Onofre Nuclear Generating Station (SONGS) Mitigation Independent Monitoring Program

SUMMARY

This staff report is a status report for 2014 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 last annual status report was provided as part of the 2014-2015 work program and budget adopted by the Commission in December 2013. **This is a status update only, no Commission action is required at this time.**

The permit conditions originally were adopted by the Commission in 1991 to mitigate the adverse impacts of the operation of SONGS Units 2 and 3 on the marine environment. The conditions require SCE and its partners to: (1) create or substantially restore a minimum of 150 acres of southern California wetlands (Condition A), (2) install fish barrier devices to reduce the biomass of fish killed inside the power plant (Condition B), and (3) construct an artificial reef large enough to sustain 150 acres of medium to high density kelp bed community together with funding for a mariculture/marine fish hatchery (Condition C). The conditions also require SCE to provide the funds necessary for technical oversight and independent monitoring of the mitigation projects, to be carried out by independent contract scientists under the direction of the Executive Director (Condition D). Implementation of the mitigation projects is the responsibility of SCE whereas the Commission is responsible for overseeing the independent monitoring and technical oversight function. The independent monitoring and oversight also includes periodic public review of the performance of the mitigation projects.

The field independent monitoring program is carried out through a contract with the University of California, Santa Barbara. Under this contract monitoring data is collected by university contract biologists under the direction of three Principal Scientists that serve as project managers for the monitoring effort (collectively known as "contract scientists"). Southern California Edison also provides funds for a science advisory panel to provide independent scientific expertise to the Commission and to the Principal Scientists.

On December 11, 2013, the Commission approved a work program and budget for the SONGS mitigation independent monitoring program for 2014 and 2015. The 2014-2015 Work Program and budget includes monitoring and technical oversight tasks for both the San Dieguito wetland restoration project and the Wheeler North reef restoration project. This report provides an update on the progress of the mitigation project.

A. SONGS PERMIT BACKGROUND

In 1974, the California Coastal Zone Conservation Commission issued a permit (No. 6-81-330-A, formerly 183-73) to Southern California Edison Company for Units 2 and 3 of the San Onofre Nuclear Generating Station (SONGS). A condition of the permit required study of the impacts of the operation of Units 2 and 3 on the marine environment offshore from San Onofre, and mitigation of any adverse impacts. As a result of the impact studies, in 1991 the Coastal Commission added new conditions to mitigate the adverse impacts of the power plant on the marine environment which require the permittee to: (1) create or substantially restore at least 150 acres of southern California wetlands (Condition A), (2) install fish barrier devices to reduce the biomass of fish killed inside the power plant (Condition B), and (3) construct a 300-acre kelp reef (Condition C). The conditions specify both physical and biological performance standards for the wetland restoration and kelp reef, and require continuing monitoring of the effectiveness of the fish barriers. The 1991 conditions also require SCE to provide the funds necessary for Commission contract scientific staff technical oversight and independent monitoring of the mitigation projects (Condition D). Monitoring, management and remediation, if needed, are required to be conducted over the "full operating life" of SONGS, defined as past and future years of operation of SONGS Units 2 and 3, including the decommissioning period to the extent that there are continuing discharges. In 1993, the Commission added a requirement for the permittee to partially fund construction of an experimental white sea bass hatchery. Due to its experimental nature, the Commission did not assign mitigation credit to the hatchery requirement.

In April 1997 the Commission approved amended conditions which: (1) reaffirm the Commission's prior decision that San Dieguito is the site that best meets the permit's standards and objectives for wetland restoration, (2) allow up to 35 acres credit for enhancement of wetland habitat at San Dieguito Lagoon by keeping the river mouth permanently open, and (3) revise the kelp mitigation requirements in Condition C. Specifically, the revised Condition C requires construction of an artificial reef large enough to sustain 150 acres of medium to high density kelp bed community (which could result in a reef larger than 150 acres) together with funding for a mariculture/marine fish hatchery as compensation for the loss of 179 acres of medium to high density kelp bed community resulting from the operation of SONGS Units 2 and 3. The artificial reef is to consist of an experimental reef of at least 16.8 acres and a larger mitigation reef to meet the 150-acre requirement. 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.
The Commission also found in April 1997 that there is continuing importance for the independent monitoring and technical oversight required in Condition D to ensure full mitigation under the permit.

B. COMMISSION OVERSIGHT AND INDEPENDENT MONITORING

Condition D of the permit establishes the administrative structure to fund the independent monitoring and technical oversight of the mitigation projects. It specifically: (1) enables the Commission to retain contract scientists and technical staff to assist the Commission in carrying out its oversight and monitoring functions, (2) provides for a scientific advisory panel to advise the Commission on the design, implementation, monitoring, and remediation of the mitigation

projects, (3) assigns financial responsibility for the Commission's oversight and monitoring functions to the permittee and sets forth associated administrative guidelines, and (4) provides for periodic public review of the performance of the mitigation projects.

Condition D requires SCE to fund the Commission's oversight of the mitigation and independent monitoring functions identified in and required by Conditions A through C. The permittee is required to provide "reasonable and necessary costs" for the Commission to retain personnel with appropriate scientific or technical training and skills, as well as reasonable funding for necessary support personnel, equipment, overhead, consultants, the retention of contractors needed to conduct identified studies, and to defray the costs of members of any scientific advisory panel convened by the Executive Director to provide advice on the design, implementation, monitoring and remediation of the mitigation projects.
Pursuant to this condition, the Commission has operated under approved work programs and budgets since 1993. The funds for the oversight and monitoring program are managed by an independent accounting firm. The Commission retains a science advisory panel and a small technical oversight team (two scientist positions and administrative support) under contract to provide the necessary scientific expertise to the Commission and to serve as project managers for the monitoring program. Contract staff biologists also are retained to conduct the monitoring. In addition, independent consultants and contractors are called upon when specific expertise or assistance is needed for specific tasks. The Commission's permanent staff also spends a portion of their time on this program, but except for direct travel reimbursements, their costs are paid by the Commission and are not included in the monitoring program budget.

In approving the work programs and budgets for the monitoring and oversight program, the Commission has authorized an implementation structure through a contract with the University of California, Santa Barbara that utilizes the existing contract scientists as project managers at no additional cost, with data collection done by university contract staff biologists under their direction. The Commission found, based on a comparison of estimated costs from UCSB, other universities, and private consultants, that this implementation structure is the most efficient, cost-effective, scientifically rigorous, and timely method of achieving the goals of the independent monitoring required by the permit. This implementation structure will continue during the two-year period of the 2014 and 2015 work program.

C. STATUS OF MITIGATION PROGRAM

1. Status of Wetland Restoration Mitigation

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 the permittee to meet its 150-acre requirement by receiving up to 35 acres enhancement credit for the permittee's permanent, continuous tidal maintenance at San Dieguito Lagoon.

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. (See Exhibits 1 and 2). Construction began in August 2006 and was completed in fall 2011, with the completion of the

inlet opening. Construction activities were monitored by the independent monitoring team to ensure that the restoration work was conducted according to approved plans.

Monitoring Plan and Adaptive Management

Condition A of the SONGS permit requires that monitoring of the wetland restoration be done for a period of time equivalent to the full operating life of SONGS Units 2 and 3. This monitoring will be done to measure compliance of the mitigation project with the performance standards specified in the SONGS permit. In accordance with Condition D (Administrative Structure) of the permit, contract scientists retained by the Executive Director developed the Monitoring Plan to guide the monitoring work and will oversee the monitoring studies outlined in the Plan. The SONGS permit provides a description of the performance standards and monitoring required for the wetland mitigation project. A Draft Monitoring Plan for the SONGS Wetland Mitigation Program was reviewed by State and Federal agencies and SCE in May 2005. A revised Monitoring Plan was part of the coastal development permit (No. 6-04-88) for the wetland restoration project considered and approved by the Commission on October 12, 2005. The Monitoring Plan has subsequently been updated in 2011 and 2013 and may continue to be refined as more information becomes available pertaining to the logistics of sampling and methods of evaluating the performance standards.

The Monitoring Plan for the SONGS Wetland Mitigation Program closely adheres to the monitoring requirements of the SONGS permit and includes a description of each performance standard and the methods that will be used to determine whether the various performance standards have been met. The performance standards that are being used to measure the success of the wetland restoration project fall into two categories. Absolute standards are evaluated only in San Dieguito Lagoon and pertain to topography, tidal prism, habitat areas, reproductive success of salt marsh plants, and exotic species. Relative standards require that the value of the variable of interest be similar to that measured in reference wetlands in the region. The relative standards pertain to water quality (i.e., oxygen concentration), biological communities (i.e., fish, invertebrates, and birds), salt marsh vegetation, *Spartina* canopy architecture, and food chain support functions. The successful achievement of the relative performance standards will be measured in comparison to three reference wetlands, which are specified in the SONGS permit to be: (1) relatively undisturbed, (2) natural tidal wetlands, and (3) within the Southern Bight. The wetlands that best met these three criteria and that were selected as reference sites are Tijuana River Estuary, Mugu Lagoon, and Carpinteria Salt Marsh.

Management issues relevant to the SONGS wetland mitigation requirement are also discussed in the Monitoring Plan. These issues include inlet maintenance, excessive changes in topography, and exotic species. Although the Commission's contract scientists are not responsible for managing the wetland restoration, their monitoring will measure several parameters that can be used in adaptive management to ensure the success of the restoration project.

The SONGS permit requires SCE to develop and implement a plan for managing the inlet in perpetuity to ensure uninterrupted tidal flushing of the restored wetland. This plan, initially submitted to CCC staff on March 30, 2006, revised and finally accepted by the Executive Director on January 27, 2011, provides conditions that would indicate the need for additional maintenance dredging at the inlet. Commission contract scientists will measure water elevation,

tidal exchange, salinity, and dissolved oxygen concentration during water quality monitoring in the wetland. These variables change dramatically with a reduction in tidal flushing and provide a useful trigger for inlet maintenance. Commission staff recently approved SCE's proposal to dredge the San Dieguito lagoon inlet in late fall of 2014. However, due to ongoing erosion problems and anticipated remedial construction activities at the railroad bridge, dredging of the inlet has been postponed until spring 2015.

Wetland Performance Monitoring

Concurrent monitoring of physical and biological attributes of the San Dieguito Lagoon Restoration and three reference wetlands (Tijuana Estuary, Point Mugu Lagoon, and Carpinteria Salt Marsh) is conducted annually to evaluate whether the Restoration is meeting the mitigation requirements identified in Condition A. The success of the San Dieguito Restoration in meeting the mitigation requirements in any given year is based on its ability to meet five absolute performance standards and as many of the relative performance standards as met by the lowest performing reference wetland.

Construction of the wetland habitats in the San Dieguito Wetlands Restoration was completed in 2011 and annual post-construction monitoring began in January 2012. In 2013, the second year of mitigation monitoring, the San Dieguito Wetlands Restoration Project satisfied four of five of the absolute standards, including those that pertain to topography, tidal prism, plant reproductive success, and exotic species. It failed to meet the standard pertaining to habitat areas due to a 58 acre shortfall of salt marsh habitat which was about 64% lower than the planned acreage. As in 2012, the Restoration met more of the relative performance standards as the lowest performing reference wetland (Carpinteria Salt Marsh). The relative standards that were met included those that pertain to water quality, biological communities (macro-invertebrates, fish, birds), algae, and food chain support. The four relative standards that were not met pertain to vegetation cover, macro-invertebrate density in Main Channel and Tidal Creek Habitats, and macro-invertebrate species richness in Tidal Creek Habitat.

Although particular aspects of the restoration are not performing well, overall, monitoring results have been encouraging. The slow development of vegetation in portions of the restored wetland was largely responsible for the failure of the wetland to meet the vegetation standard, the primary cause of which was insufficient tidal inundation and poor drainage during outgoing tides. SCE addressed this problem by re-contouring the marsh plain and tidal creeks in a particularly problematic area in March 2013. Recent observations are encouraging in suggesting that this management action will facilitate vegetation development. The reason for the slow development of macro-invertebrates remains unknown, but may be due to a requirement for more time for macro-invertebrates to become established. Given that 2013 is the second year following completion of construction, the monitoring results are encouraging for the long-term success of the restoration project. This includes the continuing establishment of robust patches of the cordgrass, *Spartina foliosa*, throughout the restoration site. *Spartina* is an important nesting habitat for the endangered light-footed Ridgeway's rail. Conditions in the San Dieguito Wetlands that will warrant close observation during 2013 include the development of vegetation cover at high elevations and in the re-contoured portion of the wetland and macro-invertebrate density and species richness. Results from monitoring in 2013 were presented at an annual public review workshop held on May 12, 2014 in the City of Del Mar and are posted on UCSB's

SONGS mitigation monitoring website (http://marinemitigation.msi.ucsb.edu/documents/wetland/annual_monitoring_reports/2013_annualreport-SONGS_wetland_mitigation.pdf).

2. Status of Kelp Reef Mitigation

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 was to determine which combinations of substrate type and substrate coverage would be most likely to achieve the performance standards specified in the permit. The design of the mitigation reef was contingent on the results of the experimental reef.

The Coastal Commission approved the coastal development permit for the experimental reef on July 15, 1999. The final plan approved by the Coastal Commission was for a 22.4 acre experimental artificial reef located off San Clemente, California that tested eight different reef designs that varied in substrate composition (quarry rock or recycled concrete), substrate coverage (low, medium, and high), and presence of transplanted kelp. 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 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. Based on these results, the Executive Director's determined 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 range of low to high coverage on the experimental reef modules as surveyed by the contract scientists). The Commission concurred with the Executive Director's determination for the type and percent cover of hard substrate on October 12, 2005. Based on this determination, SCE developed a design that included a low-profile, single-layer reef constructed of quarried boulders and distributed in quantities similar to those of the lowest substrate coverage used for the experimental reef project. The Commission approved CDP #E-07-010 for construction and monitoring of the Phase 2 reef on February 12, 2008. (See Exhibits 3 and 4.)

Construction of the Phase 2 mitigation reef began on June 9, 2008 and was completed on September 11, 2008. The Phase 2 reef was designed as 18 polygons ranging in area from 1.35 to 38.88 acres for a total reef area of 153 acres. Approximately 126,000 tons of boulder-size quarry material was used to construct the reef. Once constructed, the Phase 2 reef included several polygons that did not meet the requirement that a minimum of 42% of the seafloor be covered in rock. However, when combined with the Phase 1 reef, the larger 175 acre reef included 152 acres that met the minimum 42% rock coverage requirement.

As required under Special Condition #12 of the reef construction permit, SCE submitted semi-annual Kelp Wrack and Rock Hazard Monitoring reports from October 2008 - September 2012. These reports indicated that rock from the artificial reef had not been observed on the beaches. In addition, data suggested that the amount of kelp wrack found on the beach appeared to be within the normal range expected for this area. After the four year period mandated by the CDP concluded, SCE continued to conduct kelp wrack and rock monitoring for an additional year as required by the State Lands Commission (SLC) permit for the Wheeler North Reef. SCE submitted a final five-year report in November 2013 that included a statistical analysis and review of the kelp wrack and rock data for 2008 through 2013. The data and conclusions presented in this report are consistent with earlier reports in finding that there is no evidence that the build-out of the Wheeler North Reef has resulted in a significant increase of kelp wrack along the 3.7 miles of beach area monitored from 2008 to 2013 in the City of San Clemente. In a letter dated May 9, 2013, staff informed SCE that Special Condition #12 had been fully satisfied and no additional monitoring was necessary.

Monitoring Plan

The SONGS permit requires the Wheeler North Reef to be monitored, managed, and, if necessary, remediated upon the completion of its construction. Monitoring by independent contract scientists working for the CCC will be done during the mitigation phase to: (1) determine whether the performance standards established for the mitigation reef are met, (2) determine, if necessary, the reasons why any performance standard has not been met, and (3) develop recommendations for appropriate remedial measures. The SONGS coastal development permit requires the CCC's contract scientists to develop a monitoring plan for the reef mitigation project that describes the sampling methodology, analytical techniques and methods for measuring performance of the mitigation reef relative to the performance standards identified in the SONGS coastal development permit. UCSB scientists working under contract for the CCC submitted a monitoring plan for the SONGS' reef mitigation project to the CCC on September 27, 2007. The monitoring plan contains: (1) a description of the process used to evaluate condition compliance, including a list of the performance standards by which the Wheeler North Reef will be judged and the general approach that will be used to judge the overall success of the mitigation project, (2) descriptions of the specific sampling methods and analyses that will be used to evaluate each of the performance standards, (3) an explanation of how project data will be managed and archived for future use, and (4) a description of how the results from the monitoring program will be disseminated to the CCC, the applicant, and all other interested parties. The Monitoring Plan for the SONGS' Reef Mitigation Project is a living document that is modified as needed to ensure and maintain rigorous monitoring and evaluation of Condition C in the most cost-effective manner possible. The reef monitoring plan was most recently updated in February 2013 to include general modifications to how the performance standards are evaluated (http://marinemitigation.msi.ucsb.edu/documents/artificial_reef/ucsb_%20mm_reports/mitigation_phase/monitoring_plan4reef-mitigation_project_rev_021113.pdf).

Reef Performance Monitoring

Concurrent monitoring of physical and biological attributes of the Wheeler North Reef and two reference reefs (San Mateo and Barn) is conducted annually to evaluate whether the Wheeler North Reef is meeting the mitigation requirements identified in Condition C. The success of the

Wheeler North Reef in meeting the mitigation requirements in any given year is based on its ability to meet four absolute performance standards and as many of the relative performance standards as met by the lower performing reference reef. To date, Commission contract scientists have completed annual quantitative underwater surveys of all three reefs for 2009 -2014. Results from the 2013 surveys were reported at the annual public review workshops held in Dana Point, CA in April 2014.

Monitoring results from 2013 show the Wheeler North Reef met three of the four absolute standards used to judge its performance and seven of the 11 relative performance standards in 2013, which was one less than it met in 2012. The seven relative performance standards met by the Wheeler North Reef matched the number of relative standards met by the lower performing reference reef; it was less than the nine relative standards met by the higher performing reference reef. Thus the Wheeler North Reef was judged successful with respect to its ability to meet the relative performance standards because it was found to be similar to a natural reef in the region that was deemed to be an acceptable measure of comparison. However, because the Wheeler North Reef met only three of the four absolute performance standards it did not earn any mitigation credit for 2013. So far the Wheeler North Reef has accumulated zero years of mitigation credit because it has never met all four absolute performance standards in a single year.

The absolute standard that the Wheeler North Reef has consistently failed to meet requires that it support a fish standing stock of at least 28 tons. 28 tons is the average reduction in the standing stock of kelp bed fish caused by the operations of SONGS Units 2 and 3 determined by the impact assessment studies conducted by the Marine Review Committee. To date the Wheeler North Reef has produced at most half of this amount, and there is no indication from the monitoring results that it is on a trajectory to meet the fish standing stock standard. Results of analyses using longer-term data collected from the reference reefs and the smaller modules constructed during the initial experimental phase indicate that the present size and configuration of the Wheeler North Reef is not sufficient to consistently support 28 tons of kelp bed fish. The conclusions drawn from these analyses are that some form of remediation will be needed for the Wheeler North Reef to consistently meet its current mitigation requirements over the long term. The CCC staff and SCE are discussing options for meeting this performance standard. More complete information on the results of monitoring the performance of the Wheeler North Reef can be found in the annual reports on kelp reef mitigation available at: http://marinemitigation.msi.ucsb.edu/documents/artificial_reef/index.html.

3. Status of Fish Behavioral Mitigation

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. 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). 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 can 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 that time, provided that: (1) SCE continues to adhere to the operating, monitoring, and reporting procedures for the 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. (See staff report entitled *Executive Director's Determination that Fish Behavioral Barriers Tested at SONGS are Ineffective,* dated September 22, 2000.)

The contract scientists and staff review the annual data and analyses on the fish chase procedure at SONGS against two key standards discussed in the staff report:

(1) The **Fish Return Standard**: This standard is a measure of the effectiveness of the Fish Chase procedure used during heat treatments. This procedure can lead to a reduction in impingement by causing fish that would be impinged to be returned to the ocean by means of the fish return system. The standard is that the return should be at least 10% of the overall impingement biomass for the year.

(2) The **Mortality Standard**: There should not be higher than normal mortality. Higher than normal mortality is defined as: (1) a sequence of three or more heat treatments where the mortality rate exceeds 50%, (2) more than 50% of heat treatments in a given year have more than a 50% mortality rate, or (3) mortality rate for the year exceeds 50%.

Between 2000 and 2011, the fish chase Procedure effectiveness relative to impingement (Fish Return Standard) has been 10% or greater in only 7 of the last 12 years, and the Mortality Standard has been met in only 5 of those years (2000-2011). There have been only 4 years in which both standards were met.

In January 2012, SONGS Units 2 and 3 were both shut down, one unit due to routine maintenance, the other due to the discovery of a leak inside its steam generator. With the units shutdown and thus, not generating heat, SCE was unable to implement the fish chase procedure. However, shutting down Units 2 and 3 also reduced the intake volume of seawater drawn into the plant by about 94% and reduced the intake velocity also by about 94%. As a result, fish impingement was also significantly reduced. In June of 2013, SCE announced that SONGS would be permanently decommissioned. Although formal decommissioning has not yet commenced, it is anticipated that SCE will continue to draw seawater at significantly reduced levels. Staff will continue to work with SCE to evaluate impingement from the SONGS intakes and make any necessary adjustments to permit requirements related to behavioral barriers.

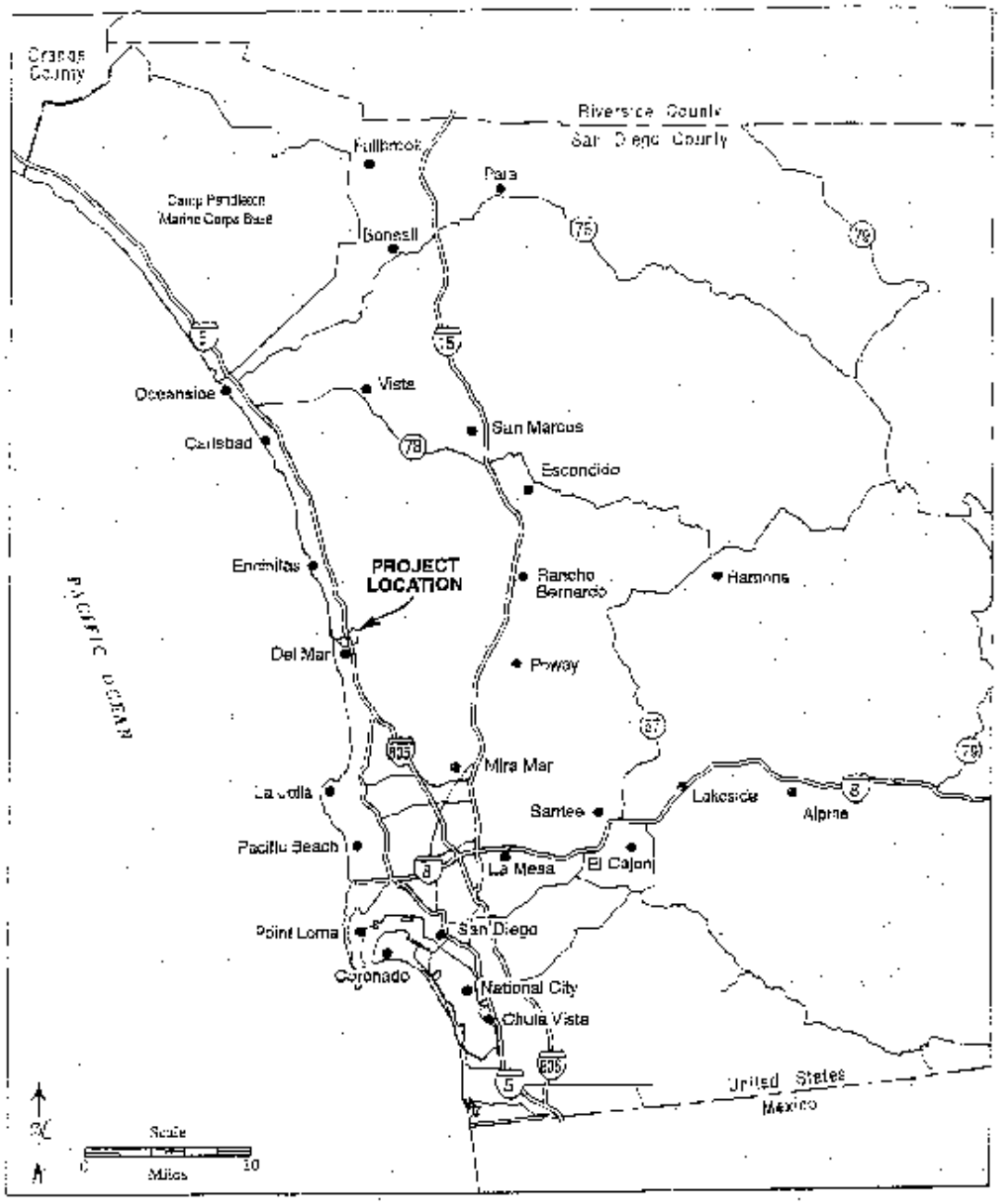
4. Status of Hatchery Program

In two separate permit actions in 1993 and 1997, the Coastal Commission required the permittee to contribute to the California Department of Fish and Wildlife's (formerly, Dept. Fish & Game) Ocean Resources Enhancement and Hatchery Program (OREHP) for a total required mitigation fee of $4.8 million to be used toward the construction of an experimental white seabass fish hatchery and an evaluation program to determine if the hatchery is effective at increasing the

stock of white seabass. SCE has fulfilled all of its obligations for funding the fish hatchery requirements of the SONGS permit. Permanent Commission staff provides oversight of the Department of Fish and Wildlife's continuing fish hatchery program.

The marine fish hatchery program is operated by Hubbs Sea World Research Institute and the State of California through the Ocean Resources Enhancement and Hatchery Program (OREHP), which is administered by the California Department of Fish and Wildlife. Although the SONGS' mitigation funds were exhausted at the end of the 2004-2005 fiscal year, the OREHP program is ongoing and funded primarily through the sale of recreational fishing licenses in southern California. White seabass are spawned at a hatchery in Carlsbad operated by the Hubbs-Sea World Research Institute and then tagged and transferred to grow-out facilities operated jointly by the California Department of Fish and Wildlife and volunteer fishermen. After the fish attain a minimum length, they are released. The OREHP is currently authorized to release up to 350,000 fish annually, based on the active broodstock population at the hatchery. The OREHP operates under the terms and conditions of numerous state, local, and federal permits and authorizations. These include a Memorandum of Agreement among the California Department of Fish and Wildlife, Coastal Commission, and OREHP's Scientific Advisory Panel.

Review of the hatchery program is conducted by permanent Coastal Commission staff thus, there are no tasks funded through the SONGS work program.



San Dieguito Wetland Restoration Project Regional Location Map

EXHIBIT 1: Wetland Restoration Project Location

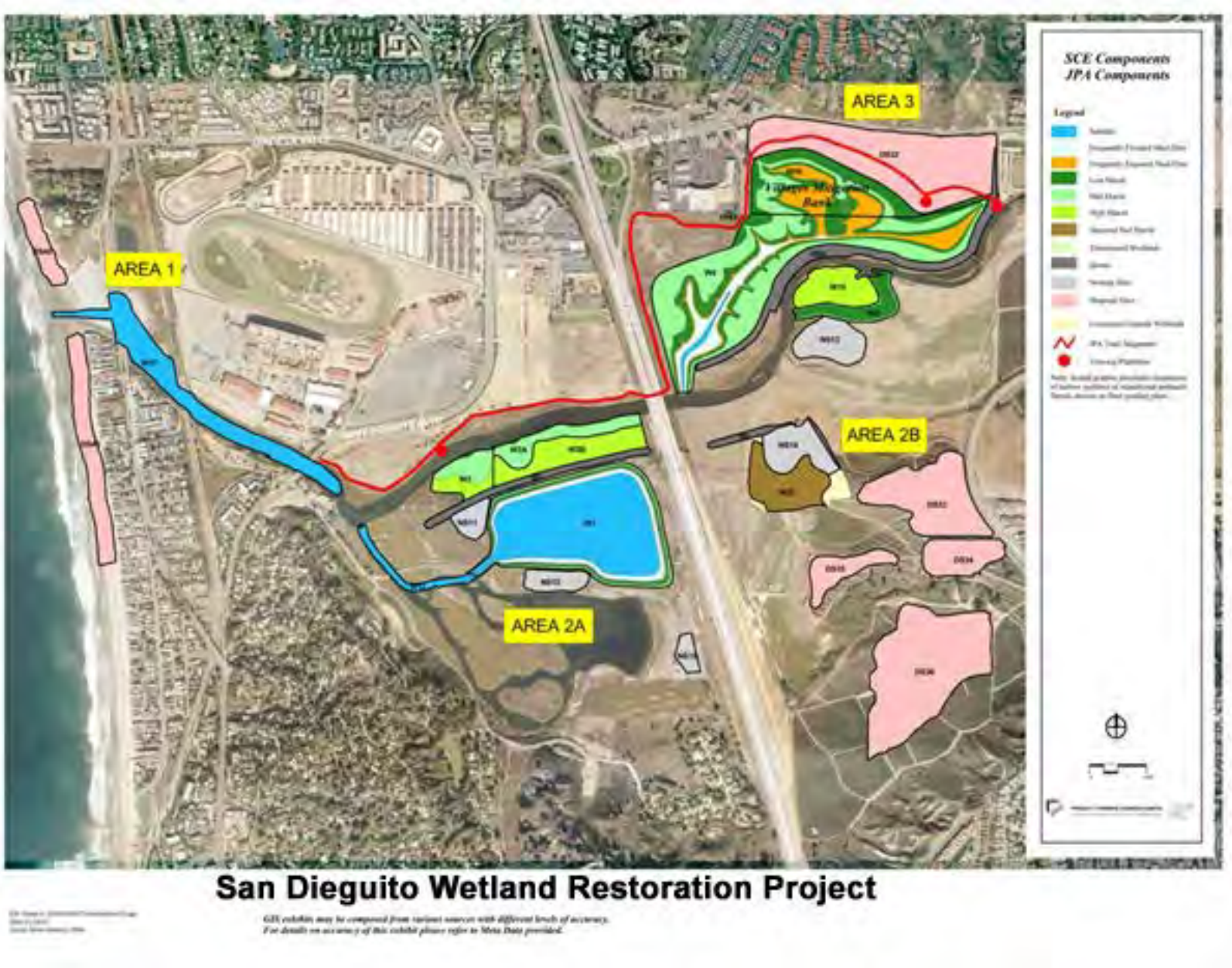


EXHIBIT 2: San Dieguito Wetland Restoration Plan

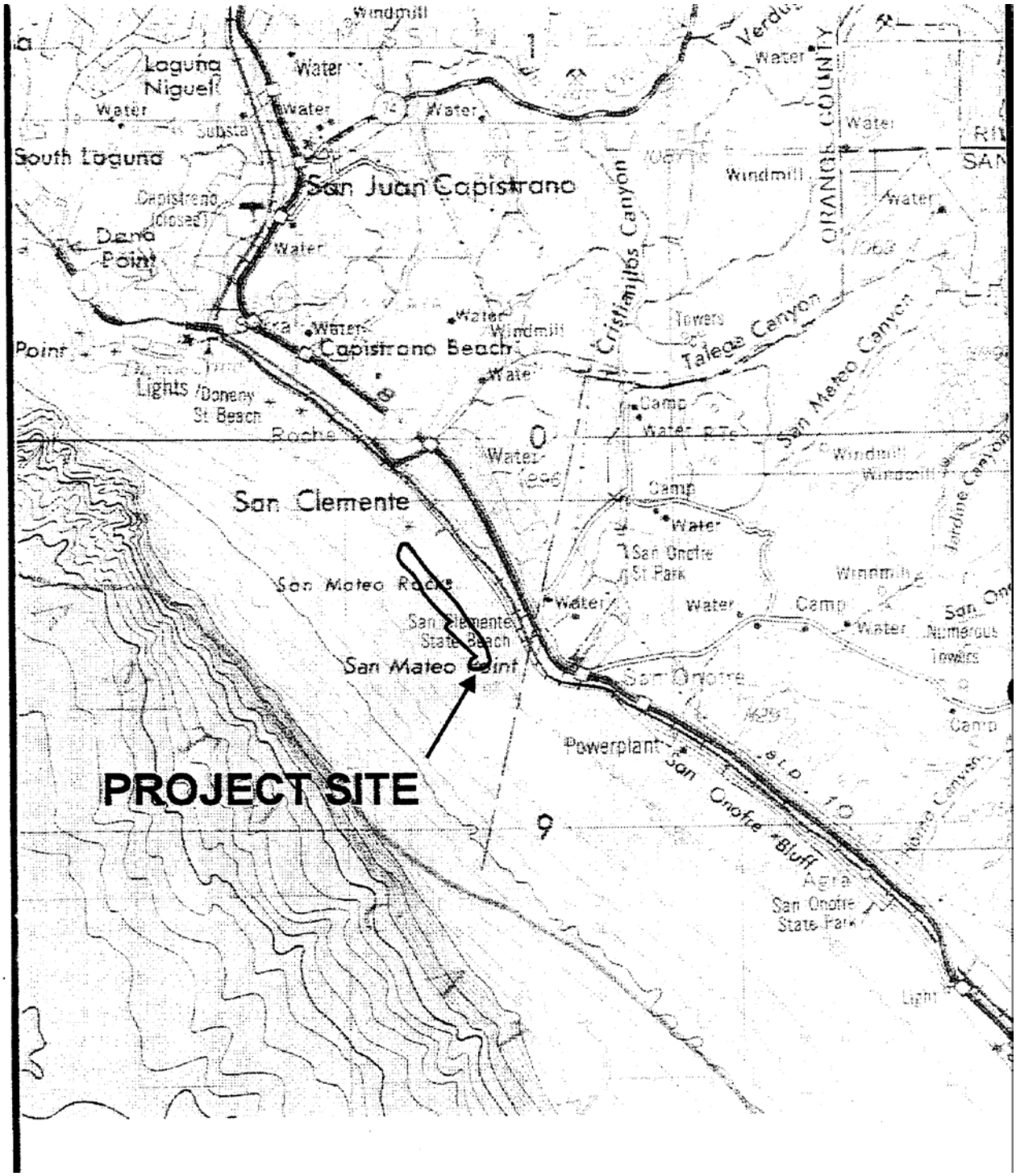
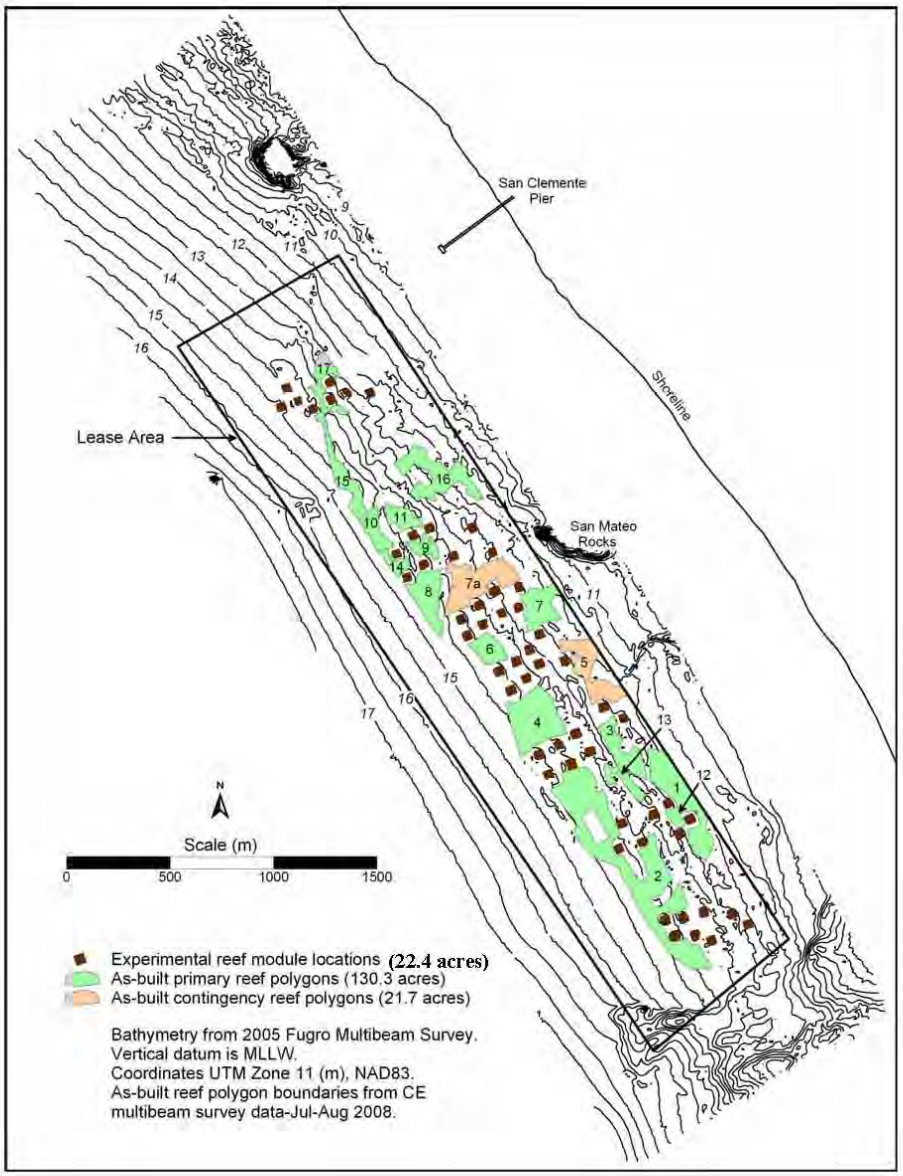


EXHIBIT 3: Mitigation Reef Project Location Map



Phase 1 and 2 Mitigation Reef (WNR), consisting of the experimental modules (dark brown) and primary polygons (green) that combined equal 152.7 acres, approved by the CCC Executive Director as meeting the requirements of SONGS CDP #'s 6-81-330-A and E-07-010.

EXHIBIT 4: Mitigation Reef