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Filed:	2/8/19
180th Day:	8/8/19
Staff:	K.Huckelbridge-SF
Staff Report:	2/21/19
Hearing Date:	3/7/19

STAFF REPORT: COASTAL DEVELOPMENT PERMIT

Application No.:	**9-19-0025**
Applicant:	Southern California Edison
Location:	State waters approximately 0.5-0.8 miles offshore of the City of San Clemente, Orange County, CA (see Exhibit 1).
Project Description:	Construction of a 210-acre low-relief kelp reef in state waters offshore of the City of San Clemente in depths ranging from 38 to 49 feet. The proposed reef is an expansion of the existing 174 acre Wheeler North Reef that was required as mitigation for impacts associated with the operation of the San Onofre Nuclear Generating Station (SONGS) under Coastal Development Permit No. 6-81-330-A (Exhibit 2).
Staff Recommendation:	Approval with conditions

SUMMARY OF STAFF RECOMMENDATION

Southern California Edison (SCE) proposes to construct approximately 210 acres of low-relief, low-cover kelp reef in state waters offshore of the City of San Clemente. The proposed reef is an expansion of the existing 174 acre Wheeler North Reef (WNR) that was required as mitigation for impacts associated with the operation of the San Onofre Nuclear Generating Station (SONGS) under Coastal Development Permit No. 6-81-330-A (SONGS CDP) (Exhibits 1 and 2). The Commission has been involved in the SONGS Mitigation Program since the SONGS CDP was initially issued in the early 1970's (see Section A of the staff report for a more detailed history). The expanded reef was required by the Executive Director to bring the mitigation reef into compliance with the performance standards required by the SONGS CDP. Specifically, expanding the size of the reef is intended to address WNR's failure to meet the fish standing stock requirement of 28 tons. SCE intends to more than double the size of the existing reef by placing 175,000 tons of quarried rock in 23 new polygons north and inshore of the reef. This project

The proposed reef will create valuable rocky reef and kelp forest habitat that will support a diverse array of marine species. Construction of the reef could, however, result in impacts to coastal resources. Key Coastal Act issues raised by this project are the potential for adverse impacts to marine resources and cultural and Tribal resources. The proposed project has the potential to harm marine resources by damaging rare, sensitive or ecologically important species and habitats and degrading water quality. To minimize impacts, Commission staff recommends several conditions designed to protect marine habitats, sensitive species and water quality. These include **Special Condition 4** which incorporates several marine resource protection mitigation measures required in the Project EIR into this CDP, **Special Condition 5** requiring SCE to submit a Marine Wildlife Monitoring Plan (MWMP), **Special Condition 6** requiring an Anchoring Plan, **Special Conditions 7** and **8** requiring an audit of reef polygon construction and a final post-construction as-built survey and report, and **Special Conditions 9-11** requiring the development of plans to protect ocean water quality. Furthermore, **Special Condition 12** requires SCE to submit a Mitigation Plan for continuing impacts associated with the SONGS intake. As conditioned, the Commission staff recommends the Commission find the proposed project is consistent with Sections 30230, 30231 and 30232 of the Coastal Act.

The proposed project also has the potential to adversely affect cultural and Tribal cultural resources. Through Tribal consultation between the Acjachemen Nation of Juaneño Band of Mission Indians and State Lands Commission staff, in which Commission staff also participated, the Acjachemen Nation requested an archeological reconnaissance survey of portions of the project area to investigate the potential for tribal resources. Although this survey did not identify any physical Tribal cultural resources, the Acjachemen Nation did identify a specific area of cultural sensitivity within one of the project polygons that was determined to be a Tribal Cultural resource. In response, SCE eliminated the culturally sensitive area of concern from the Project and identified additional contingency areas where new polygons could be placed. With this project change, and with the inclusion of Mitigation Measures in the EIR and **Special Conditions 4** and **13** requiring cultural and tribal monitoring and protection of any discovered resources, Commission staff recommends that the Commission find the proposed project consistent with Section 30244 of the Coastal Act.

For the reasons summarized above, and with implementation of the Special Conditions, the Commission staff recommends that the Commission **approve** CDP application 9-19-0025, as conditioned. The standard of review is Chapter 3 of the Coastal Act. The motion to approve with conditions is on page 5.

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APPENDICES

EXHIBITS

I. MOTIONS AND RESOLUTIONS

Motion:

*I move that the Commission **approve** Coastal Development Permit No. 9-19-0025 pursuant to the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves Coastal Development Permit 9-19-0025 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

I. STANDARD CONDITIONS

This permit amendment is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittees or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation.** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittees to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. Adherence to SONGS Coastal Development Permit #6-81-330. In addition to the special conditions set forth below, the Commission's approval of this coastal development permit is subject to all applicable conditions of Coastal Development Permit No. 6-81-330-A, Conditions C and D (included herein as Exhibit 3).

2. Other Permits and Approvals: PRIOR TO THE START OF CONSTRUCTION, the applicant shall provide to the Executive Director copies of all other local, state, and federal permits required to perform project-related work. These permits and approvals include:

A. State Water Quality Control Board: final approved 401 water quality certification.
B. U.S. Army Corps of Engineers: Clean Water Act Section 404 Individual Permit.

3. Assumption of Risk, Waiver of Liability and Indemnity. By acceptance of this permit, the Permittee acknowledges and agrees (i) that the site may be subject to hazards, including but not limited to public use of navigable waters around and over the project site, as well as waves, storms, and other ocean hazards, which may worsen with future sea level rise; (ii) to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

4. Environmental Impact Report Mitigation Measures. This permit incorporates those mitigation measures identified in the Final SEIR for the Construction and Management of an Artificial Reef in the Pacific Ocean Near San Clemente, California (Wheeler North Reef Expansion Project) (State Clearinghouse No. 1998031027) concerning marine resources, biological resources, fishing, public access, cultural resources and hazards that are attached to this report as Exhibit 4**.**

5. Marine Wildlife Monitoring Plan (MWMP). AT LEAST 60 DAYS PRIOR TO THE COMMENCEMENT OF OFFSHORE ACIVITIES, the Permittee shall prepare a MWMP for review and approval by the Executive Director. The Permittee shall implement the MWMP during all marine operations (e.g., rock placement, anchoring and movement of barges). In addition to the items required under MM BIO-3 of the EIR (Exhibit 4), the MWMP shall also include the following elements:

a. Prior to the start of offshore activities, the Permittee shall provide awareness training to all Project-related personnel and vessel crew, including viewing of an applicable wildlife and fisheries training video, on the most common types of marine wildlife likely to be encountered in the Project area and the types of activities that have the most potential for affecting the animals.
b. A minimum of two National Marine Fisheries Service (NMFS)-qualified marine mammal observers shall be located on the main project vessel to conduct observations, with two observers on duty during reef construction activities. A minimum of one qualified marine mammal observer shall be present on the supply barges during transit to and from the project site. The MWMP shall identify any scenarios that require an additional observer on the barges or other Project vessels and, in these cases, make recommendations as to where they should be placed to ensure complete coverage of the surrounding marine environment.
c. Shipboard observers shall maintain a daily sighting log that shall be of sufficient detail to determine whether observable effects to marine mammals are occurring.
d. The observers shall have the authority to stop any activity that could result in harm to a marine mammal or sea turtle. For monitoring purposes, the observers shall establish a 1,640 foot (500 meter) radius avoidance zone around the Project vessels for the protection of large marine mammals (i.e., whales) and a 500-foot (152-meter) radius avoidance zone around the Project vessels for the protection of smaller marine mammals (i.e., dolphins, sea lions, seals, etc.) or sea turtles.
e. In the event that any take involving harassment or harm to a marine mammal occurs, the observer shall immediately notify the Executive Director, NMFS and any other required regulatory agency.
f. A final report summarizing the results of monitoring activities shall be submitted to the Executive Director and other appropriate agencies no more than 90 days following completion of reef construction activities. The report shall include: (a) an evaluation of the effectiveness of monitoring protocols and (b) reporting of (i) marine mammal, sea turtle, and other wildlife sightings (species and numbers); (ii) any wildlife behavioral changes; and (iii) any project delays or cessation of operations due to the presence in the project area of marine wildlife species subject to protection.

6. **Anchoring Plan.** AT LEAST 30 DAYS PRIOR TO THE COMMENCEMENT OF OFFSHORE ACTIVITIES, the Permittee shall prepare and submit an Anchoring Plan to the Executive Director for review and approval that describes how the Permittee will avoid placing anchors on sensitive ocean floor habitats and pipelines. The Plan shall include at least the following information:
a. A list of all vessels that will anchor during the Project and the number and size of anchors to be set;
b. Detailed maps showing proposed anchoring sites that are located at least 40 feet (12 meters) from rocky habitat identified in the 2017 Seafloor Characterization Study;
c. A description of the navigation equipment that would be used to ensure anchors are accurately set; and
d. Anchor handling procedures that would be followed to prevent or minimize anchor dragging, such as placing and removing all anchors vertically.

7. **Initial Construction Audit**. The Permittee shall submit to the Executive Director for approval the inspection findings for quality control audits of initial polygon construction described in the CDP Application. The Executive Director shall complete review of the inspections findings within two business days of receiving them. The Permittee shall correct or ameliorate non-conformance with any construction and/or material specifications set forth in the CDP Application.

8. **Final Post-Construction Sonar Survey and Report**. Within 30 working days following construction of the Remediation Reef, the Permittee shall complete an As-Built Construction Sonar Verification Survey of all 23 polygons. Within 60 days following construction of the Remediation Reef, the Permittee shall submit a final post-construction survey report to the Executive Director. The report shall include maps and GIS layers demonstrating:

a. The position, perimeter and area of each polygon;
b. The average topographic relief and average percentage of the seafloor covered with quarry rock within each polygon;
c. An estimate of the uniformity of rock coverage within the perimeter of each polygon as well as rock overlap; and
d. The location, perimeter, area, average relief and average percent cover of any polygon that is significantly different from the specifications set forth in the CDP Application.

If, after consultation with the Permittee, the Executive Director determines that the deviation(s) seriously compromise the value of the Remediation Reef, then the Permittee shall immediately prepare a Construction Remediation Plan that will include alterations or additions necessary to correct the deviation(s). The Permittee shall submit the Construction Remediation Plan within 90 days of the final post-construction survey report for Commission approval as an amendment to this permit and shall implement the Construction Remediation Plan as soon as is practicable following the Commission's approval.

9. **Spill Prevention and Response Plan.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit a Project-specific Spill Prevention and Response Plan to the Executive Director for review and approval. In addition to the elements required in EIR Mitigation Measures BIO-4 and HAZ-1a (Exhibit 4), the Plan shall identify the worst-case spill scenario and demonstrate that adequate spill response equipment will be available. The Plan shall also include preventative measures the Permittee will implement to avoid spills and clearly identify responsibilities of onshore and offshore contractors and the Permittee personnel and shall list and identify the location of oil spill response equipment (including booms), appropriate protocols and response times for deployment. Petroleum-fueled equipment on the main deck of all vessels shall have drip pans or other means of collecting dripped petroleum, which shall be collected and treated with onboard equipment. Response drills shall be in accordance with Federal and State requirements. Contracts with off-site spill response companies shall be in-place and shall provide additional containment and clean-up resources as needed.

10. **Critical Operations and Curtailment Plan (COCP).** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit a COCP to the Executive Director for approval. In addition to the elements required under EIR Mitigation Measure HAZ-1b, the COCP shall define the limiting conditions of sea state, wind, or any other weather conditions that exceed the safe operation of offshore vessels, equipment, or divers in the water; that hinder potential spill cleanup; or in any way pose a threat to personnel or the safety of the environment. The COCP shall provide for a minimum ongoing 5-day advance favorable weather forecast during offshore operations. The plan shall also identify the onsite person with authority to determine critical conditions and suspend work operations when needed.

11. **Marine Discharge**. There shall be no marine discharge of sewage or bilge/ballast water from vessels working on the project. A zero-discharge policy shall be adopted for all project vessels.

12. **Mitigation for Continued Intake of Ocean Water into SONGS**. WITHIN 6 MONTHS OF PROJECT COMPLETION, the Permittee shall submit to the Executive Director for review and approval a Mitigation Plan for Continued Intake of Ocean Water into SONGS. This Plan shall provide a strategy for mitigating impacts associated with entrainment and impingement from the SONGS ocean water intake starting in 2014 and continuing into the future for as long as the intake is bringing water into SONGS. The Permittee may propose a Permittee-responsible mitigation project such as a wetland or marine habitat restoration project, mitigation in the form of a mitigation fee, consistent with requirements in the California State Water Resources Control Board Once-Through Cooling Policy, or another type of mitigation that would satisfy marine resource requirements under the Coastal Act. The Permittee shall implement mitigation in conformance with the final approved Mitigation Plan. The Permittee may submit this Plan as part of the application for a CDP to authorize SONGS Decommissioning. If the Plan is not submitted as part of the CDP to authorize SONGS Decommissioning, the Permittee shall consult with the Executive Director to determine if an amendment to this CDP is required.

13. **Cultural Resource Protection**. PRIOR TO CONSTRUCTION, the Permittee shall submit to the Executive Director for review and approval the Cultural Resources Management Plan (CRMP) and the Paleontological Resources Management Plan (PRMP) required under CEQA as MM CR-1b and MM CR-2 (Exhibit 4).

14. **Liability for Costs and Attorneys' Fees.** By acceptance of this permit, the Applicant/Permittee agrees to reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys' fees -- including (1) those charged by the Office of the Attorney General, and (2) any court costs and attorneys' fees that the Coastal Commission may be required by a court to pay -- that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the Applicant/Permittee against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of this permit. The Coastal

Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission. WITHIN 45 DAYS OF COMMISSION ACTION, the Permittee shall enter into a separate written agreement with the Executive Director agreeing to reimburse the Coastal Commission for all court costs and attorney's fees, consistent with the requirements of this condition.

IV FINDINGS AND DECLARATIONS

A. BACKGROUND AND PERMIT HISTORY

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 a period of time equivalent to 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. The Commission found that this oversight and monitoring condition addresses the uncertainties associated with the use of compensatory mitigation by providing both information on the success of mitigation resources and a mechanism for "adaptive management" of the created resource.

Over the next six years, the Commission adopted several changes to the 1991 mitigation requirements. 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 to CDP 6-81-330-A which: (1) reaffirmed the Commission's prior decision that San Dieguito is the site that best meets the permit's standards and objectives for wetland restoration, (2) allowed up to 35 acres credit for enhancement of wetland habitat at San Dieguito Lagoon by keeping the river mouth permanently open, and (3) revised the kelp mitigation requirements in Condition C. Specifically, the revised Condition C required construction of an artificial reef large enough to sustain 150 acres of medium to high density kelp bed community that supported 28 tons of reef associated fish (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.

Special Condition C: Mitigation Reef

The SONGS permit, as amended, stipulates that the artificial reef was to consist of an experimental reef of at least 16.8 acres and a larger mitigation reef to meet the 150-acre kelp bed and 28 ton fish standing stock requirements (Exhibit 3). The purpose of the experimental reef was 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 was contingent on the results of the experimental reef.

Special Condition C of the SONGS permit also provides for the monitoring, management, and remediation of the reef mitigation project. The permit includes performance standards to be used in measuring the success of the mitigation reef and requires that monitoring independent of the Permittee be implemented to: (1) determine whether the performance standards of the SONGS kelp reef mitigation condition are met (i.e., whether the mitigation reef successfully compensates for the lost and damaged resources in the San Onofre Kelp (SOK) bed); (2) if necessary, determine the reasons why any performance standard has not been met; and (3) develop recommendations for appropriate remedial measures. The permit also stipulates that SCE will be responsible for fully implementing any remedial measures deemed necessary by the Executive Director.

Special Condition D: 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 (Exhibit 3). 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.

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 under contract to provide scientific expertise to the Commission, contract staff scientists to manage and operate the monitoring program and administrative support personnel to manage administrative tasks. Contract scientists from the University of California, Santa Barbara (UCSB) have managed the Independent Monitoring Program since its inception consistent with the permit's requirements. Independent monitoring is implemented in accordance with a monitoring plan for the mitigation reef written by the contract scientists and approved by the Executive Director that describes the sampling methodology, analytical techniques, and methods for measuring performance of the mitigation reef relative to the performance standards identified in Condition C of the SONGS permit. The Monitoring Plan for the SONGS' Reef Mitigation Project is a dynamic 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, most recently

updated in April 2017 to include general modifications to how the performance standards are evaluated, can be found on the UCSB SONGS Mitigation Monitoring website (http://marinemitigation.msi.ucsb.edu/documents/artificial_reef/index.html).

Construction of the Mitigation Reef

The Commission approved the CDP for the experimental reef on July 15, 1999. The approved plan was for an experimental artificial reef located off San Clemente that would test eight different reef designs varying in substrate composition (quarry rock or recycled concrete), substrate coverage (low, medium, and high), and presence of transplanted kelp. All eight reef designs were represented as individual 40 m x 40 m modules to be replicated in seven areas (i.e., blocks) for a total of 56 artificial reef modules totaling 22.4 acres. SCE completed construction of the experimental reef on September 30, 1999. Five years of post-construction monitoring of the experimental reef 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 high tendency to meet many of the performance standards established for the mitigation reef. The results indicated that a low relief concrete rubble or quarry rock reef constructed off the coast of San Clemente had 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.

The Commission approved CDP #E-07-010 for the Phase 2 mitigation reef on February 12, 2008. The plan called for the addition of 127.6 acres of low-relief reef construction to the existing 22.4 acres built in September 1999 for the Phase 1 experimental reef. The final reef design consisted of 11 polygons, varying in area from 2.4 to 37.5 acres, and was constructed of quarry rock with a mean coverage density of 42% (Exhibit 5). The final reef design achieved the following: (1) locating the Phase 2 Mitigation Reef as close as possible to the impacted San Onofre Kelp Bed but outside the influence of the SONGS discharge plume; (2) avoiding hard substrate areas; (3) avoiding areas with a thick layer of sand on the ocean floor; (4) maintaining the integrity of the Phase 1 Experimental Reef modules; (5) providing for navigation channels; and (6) avoiding areas of historical kelp growth as well as areas of special interest to local fisheries. Construction of the Phase 2 mitigation reef began on June 9, 2008 and was completed on September 11, 2008. The mitigation reef was named the Wheeler North Reef (WNR) in honor of Dr. Wheeler North, a marine ecologist who devoted much of his career to advancing our understanding of California's coastal kelp forests.

Compliance Monitoring of WNR

As described above, CDP 6-81-330-A requires independent monitoring of physical and biological attributes of WNR to evaluate whether the performance standards identified in Condition C are met. Performance standards include absolute standards, which are measured only at WNR and compared against a set value, and relative standards, which require that the value of a particular parameter be similar to values measured at reference sites. Absolute performance standards include standards for giant kelp, reef fish standing stock, and substrate and are linked to the magnitude of impacts from SONGS. Relative standards intended to ensure that the ecological structure and functions of the artificial reef are similar to those of natural reefs in the region and include fish density and species richness, fish production, food chain support, and density and cover of invertebrates and algae. As currently evaluated, SCE receives

mitigation credit for a given year if all absolute standards are met and at least as many of the relative standards as the lowest performing reference reef.

To date, Commission contract scientists have completed annual quantitative underwater surveys and analysis of WNR and the two reference reefs (San Mateo Kelp (SMK) and Barn Kelp (BK)) for 2009 -2017. Sampling is conducted at 92 monitoring locations, each defined by a fixed 50 meter by 20 meter transect, in the primary polygons at WNR, and at SMK and BK in areas known to support persistent kelp. Sampling occurs concurrently from late spring to early autumn on an annual basis, and divers access the sites using small boats. Divers measure several parameters, including the number, species and length of fish, number of adult giant kelp, large understory algae and mobile invertebrates, and percent cover of sessile invertebrates, algae and substrate, along each transect.

Monitoring results have been mixed, with WNR consistently meeting many of its objectives, but failing to meet others. Notably, the biological community on the WNR has consistently met as many or more of the relative performance standards pertaining to the kelp forest community as the reference reefs. This result implies that WNR is behaving like a natural reef. WNR has also met the giant kelp absolute standard in seven of the past nine years. However, WNR has consistently failed to meet the absolute standard that requires it to support a fish standing stock of at least 28 tons. Since monitoring commenced in 2009, WNR has failed to meet this requirement, and thus has not earned any mitigation credit for compensating the kelp forest resources lost due to SONGS operations.

As required by the permit, the UCSB contract scientists, in consultation with Commission staff and the SAP, conducted additional analyses to determine why WNR was not meeting the fish standing stock standard and what remediation was necessary to bring the reef into compliance. Appendix B includes a white paper written by the UCSB contract scientist, titled, "Report on the causes of low fish standing stock at WNR and possible solutions for remediation." This report includes a detailed analysis of the causes of low standing stock on the reef. In summary, the results of this study indicate that at the current coverage of rock (an average of 48%), the reef is too small to support the required 28 tons of fish. Based on these results, on May 24, 2016, the Commission's Executive Director informed SCE that to comply with the requirements of CDP 6-81-330-A, SCE would be required to remediate WNR by building new reef acreage that meets minimum size, relief and cover requirements (Exhibit 6). Appendix B also includes a detailed methodology and estimate for the minimum new reef acreage (for difference amounts of rock cover) required to consistently meet the fish standing stock requirement. Based on the results presented in Exhibit 6, at a low cover of rock (~41%), SCE would need to construct an additional 200 acres, or essentially double the size of the reef, to consistently achieve compliance with the permit.

Over the past two and a half years, Commission staff, UCSB contract scientists and the SAP have worked with SCE and other state and federal agencies to develop a remediation project that is sufficient to consistently meet all the requirements of the SONGS permit. The proposed project, described below, is the result of these efforts.

B. PROJECT DESCRIPTION

SCE proposes to expand WNR by approximately 210 acres to satisfy the requirements of CDP 6-81-330-A (Exhibit 2). The proposed project, described in the remainder of this report as Phase 3 of the WNR Mitigation Reef, would expand the existing 174-acre reef by creating up to 210.6 additional acres of low-relief kelp reef using up to 175,000 tons of quarried rock in 23 new polygons. Quarry rock would be placed at water depths ranging from 28 to 49 feet to achieve low rock coverage (42 percent at 790 tons per acres) and low relief (approximately 3 feet in height) (Exhibit 7). Polygons were sited to avoid existing hard substrate and known areas of kelp forest including maintaining a minimum distance of 23 feet from existing reef areas. Sand thickness in each of the polygons would be less than 2.3 feet (±20 percent), to minimize the potential that newly placed rock will sink into the ocean floor. All rock used for the reef expansion would meet the CDFW Material Specification Guidelines for artificial reefs, which include specifications for the physical and chemical properties of the reef material.

Construction methods for the expanded reef would be similar to the methods used for the construction of Phase 2 of WNR. Quarry rock would be transported to the site by supply barges. A derrick barge would be anchored at the site for the duration of the construction period and would be positioned using Global Positioning System (GPS) systems and software to ensure proper placement of the rock (Exhibits 8 and 9). When a supply barge arrives, it would anchor to the derrick barge and then a front-end loader would be used to push the quarry rock off the supply barge into the ocean. Rock would be supplied by a combination of Pebbly Beach and Empire Landing quarries on Santa Catalina Island and Le Piedra Quarry in Ensenada, Mexico. SCE estimates the proposed project will require 36 barge trips from the Santa Catalina Island quarries (116 miles round trip including a stopover at the Port of Long Beach) and 8 trips from the Ensenada quarry (278 miles roundtrip with a stopover at the Port of Long Beach). Construction is expected to take approximately 5 months and is scheduled to occur between May 1 and October 1, 2019 to avoid the lobster-fishing season.

After construction of the Phase 3 mitigation reef, monitoring to determine compliance of the reef with the SONGS permit will continue. A more detailed description of this modeling effort is described in Section D.

C. OTHER AGENCY APPROVALS

California State Lands Commission (CSLC)

The CSLC is the lead agency under the California Environmental Quality Act (CEQA) for the proposed project. On February 4, 2019, the CSLC certified the final EIR for the project. The CSLC also approved an amendment to the lease issued for WNR Phases 1 and 2 to accommodate the expanded reef footprint.

State Water Resources Control Board (SWRCB)

SCE submitted an application to the SWRCB for a CWA Section 401 Water Quality Certification on July 20, 2018. A decision is expected in April 2019.

U.S. Army Corps of Engineers (USACE)

SCE submitted an application to the USACE for a Clean Water Act Section 404 Individual Permit in May of 2017. Issuance of the 404 permit is dependent on issuance of the 401 permit by the SWRCB and the CDP to satisfy Coastal Zone Management consistency requirements. If these approvals are granted, the USACE is expected to issue the 404 permit in April 2019.

D. MARINE RESOURCES AND WATER QUALITY

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Coastal Act Section 30232 states:

> *Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.*

The Project area is located within the Southern California Bight, an ecologically rich area that serves as the transition zone between the cool-temperate habitats north of Point Conception fed by the California Current and the warm-temperate habitats south of the U.S./Mexican border fed by the Southern California Countercurrent. This offshore area consists primarily of soft sediment habitats containing mostly sand but also shell hash and mud. There are, however, several naturally occurring rocky substrate habitats with persistent stands of giant kelp located within the larger sandy habitat. These include the San Mateo Kelp Bed (SMK), San Onofre Kelp Bed (SOK), and Barn Kelp Bed (BK), all located less than 10 miles from the project site (Exhibit 10). The nearest Marine Protected Areas (MPA) to the project site are the Dana Point State Marine Conservation Area (SMCA) located 2.9 miles up-coast and the Batiquitos Lagoon

SMCA, located approximately 28 miles down-coast. In addition, several species of sea turtles, seabirds, and marine mammals frequent offshore waters in the vicinity of the proposed project.

Each of these two subtidal habitat types – soft sediment and hard substrate – support a different variety of marine flora and fauna. Soft sediment habitats, the predominant substrate type through the Southern California Bight, supports a large array of infauna and several flatfish species, such as speckled sanddab (*Citharichthys stigmaeus*), diamond turbot (*Pleuronichthys guttulatus*), and California halibut (*Paralichthys californicus*). Impingement data from SONGS indicate that other species, such as queenfish (*Seriphus politus*), northern anchovy (*Engraulis mordax*) and Pacific sardine (*Sardinops sagax*),deep-body anchovy (*Anchoa compressa*), white seaperch (*Phanerodon furcatus*), topsmelt (*Atherinops affinis*), white croaker (*Genyonemus lineatus*), and yellowfin croaker (*Umbrina roncador*), are also common in the soft sediment habitat areas in the Project vicinity.

Hard substrate is exposed rocky seafloor area that provides habitat for a diverse group of plants and animals. Common epifaunal invertebrates occurring in the hard substrate areas vary based on depth and substrate relief height. Along much of the California coast, there is a strong positive association between the types of communities and the depths and substrate types in which they occur. Hard substrates, including rocky bottoms, rock outcrops, and rock crevices, provide habitat and shelter for numerous sessile organisms, demersal fishes, and mobile invertebrates such as lobsters and crabs. In shallow waters (less than 200 meters or 656 feet), algae, including giant kelp, eelgrass and anemones such as *Corynactis californica* are present. At these depths (and deeper), depending on favorable high relief substrate, current speeds and sedimentation rates, branching hard and soft corals have also been reported.

Sections 30230 and 30231 of the Coastal Act mandate that marine resources and coastal water quality be maintained and where feasible restored, that protection be given to areas and species of special significance, and that uses of the marine environment are carried out in a manner that will sustain biological productivity of coastal waters. The overall purpose of the proposed project is to create new marine kelp reef habitat that will support a wide variety of marine species, including rare and special-status species. However, the proposed project could also result in adverse impacts to marine resources and the quality of coastal water by damaging rare, sensitive or ecologically important species populations as a result of (1) converting critical sandy habitats to rocky reef; (2) damaging existing biota during construction; or (3) adversely affecting water quality through introduction of foreign materials and during construction.

Habitat Conversion

As part of an extensive siting process, the Permittee conducted biological surveys of the areas of sand bottom that geophysical surveys identified as appropriate for reef construction. These surveys were conducted in 2006 before construction of Phases 1 and 2, and again in 2017 in preparation for this application. Both studies found that the subtidal sand bottom community at the project site is characterized by low densities of common invertebrates, including sea stars, sea pansies, sea pens snails, and tube worms and did not include sensitive or rare biotic communities.

The proposed project will alter or replace the sand-bottom community over a 200 acre area. This represents a very small proportion of the total soft-bottom habitat present in the project vicinity. The net effect of the project will be to replace a low-diversity, low-density community of sand-bottom organisms, which are common throughout the region, with a high diversity, much less common, rocky reef community (coastal waters off of San Diego County are characterized by a significantly higher percentage of sand bottom compared to hard substrate). Furthermore, according to the Project EIR, "While soft-bottom habitat supports several federally managed fish species, fishery stocks for these species are highly unlikely to be affected by the loss of a small proportion of this regionally extensive habitat. Therefore, the effect of removing this soft sediment habitat is considered a less-than-significant impact." Thus, the Phase 3 Mitigation Reef will therefore result in the enhancement of marine resources and biological productivity as required by sections 30230 and 30231 of the Coastal Act.

Construction-related impacts to existing biota

Project-related construction activities could result in adverse impacts to existing marine species and habitats through: (1) the introduction of non-native species, (2) disturbance or injury to marine mammals and sea turtles, (3) damage to existing rocky substrate habitat and species from ship anchors and rock placement.

Non-Native Species

During construction, barge trips to and from ports and harbors in Los Angeles and Mexico will increase slightly. Non-native species attached to these vessels could be introduced to marine waters in the vicinity of WNR and the surrounding natural reefs. Depending on the species, impacts to the native reef community could be significant. In particular, *Muricea*, a native sea fan, has adapted to artificial reef habitat and could outcompete the native giant kelp species. To address this problem, harbors have adopted strict controls on ballast water discharge and recharge, making ballast water an unlikely source of contamination. In addition, vessels associated with the proposed project are not likely to remain in port long enough to allow for the establishment of non-native species on the vessel. To further minimize the likelihood of transferring non-native species through project-related vessels, the EIR required Mitigation Measure BIO-2, included in the CDP under **Special Condition 4**, which limits the vessels to large harbors, limits the amount of time they can remain at port, and includes requirements for treatment of ship hulls with antifouling coatings and inspection of ship hulls prior to departing for the project area. In addition, **Special Condition 11** requires that all vessels adopt a zero-discharge policy for the duration of the project. With these conditions in place, the biological productivity and the quality of coastal waters will be protected by minimizing the rick of introducing non-native species to offshore waters in the project vicinity.

Impacts to Marine Mammals and Sea Turtles

Sea turtles and marine mammals, including harbor seals, California sea lions, bottlenose dolphins and whales such as blue whales, humpback whales and gray whales have the potential to be in the project vicinity. Proposed project construction has the potential to result in disturbance or injury to these species. Specifically, potential impacts include: (1) Injury or death from falling rocks during reef construction, (2) Ship strikes from project-related vessels, and (3) disturbance related to noise from construction activities. Most marine mammals would be expected to avoid the project area during construction, or would not normally be present during the construction

period (June through September). However, pinnipeds and sea turtles could be at risk for injury from fallen rocks due to their curiosity in construction activities and use of seafloor habitats, respectively. Ship strikes from barges and their towing vessels are also a concern, although the vessels will be traveling at speeds less than or equal to 8 nm per hour (knots), which is less than the 10-knot recommendation that NOAA outlines for vessel speed reduction protocols to protect whales. Underwater noise associated with construction activities could also result in behavioral changes and disturbance to marine mammals. However, according to the EIR, construction activities are not likely to produce noise levels that exceed the Level B harassment thresholds beyond a 164 foot zone around the barge. To further ensure that marine mammals and sea turtles are protected from harm during project activities, the EIR includes MM BIO-3, included in the CDP under **Special Condition 4**, requiring SCE to develop a Marine Wildlife Monitoring Plan that includes:

- Determination of the exclusion zone for eliminating the risk of crushing as a result of rockfall.
- Procedures for monitoring marine mammals and sea turtles and specifications for Marine Wildlife Observers (MWO) within the rockfall exclusion zone.
- Methods for communicating with contractors to stop work if there is a risk that any marine mammals or sea turtles active in the area may move closer to the construction site and inside a designated exclusion zone.
- Procedures for MWO monitoring of barge transport, if necessary.
- Methods for communicating with the ship's captain if there is a risk of collision with a marine mammal or sea turtle.
- Limitations that work occur only during daylight hours when visual monitoring of marine mammals and sea turtles can be conducted.

Although this mitigation measure includes many important components to protect marine mammals and sea turtles, to adequately ensure protection of these species under the Coastal Act, the Commission is adding **Special Condition 5**. This condition adds requirements to provide awareness training to all project-related personnel and vessel crew, a minimum of two MWOs during rock placement activities and barge transit, notification to the Executive Director if any effects to marine wildlife are observed, and a final report summarizing daily sightings and any other monitoring results. With these conditions in place, impacts to marine mammals and sea turtles will be minimized.

Impacts to Existing Hard Bottom Substrate

Hard substrate and its associated biota provide valuable nursery grounds, food sources and shelter for a diverse assemblage of fish, invertebrates and other biota. The primary purpose of the proposed project is to create additional hard bottom substrate to provide additional reef habitat areas to support marine species. However, construction activities could result in adverse impacts to existing rocky habitat. Potentially significant impacts to hard substrate and biota could occur if rock or anchors are placed directly on existing hard bottom. Impacts from anchors would be temporary, and would be removed as soon as the vessel has completed its work**.** However, studies have shown that hard bottom ecosystems are slow to recover from direct impacts, indicating the likelihood that areas impacted by project anchors could take many years

to recover. Thus, to further reduce the potential for impacts to hard substrate from project anchors, **Special Condition 6** requires SCE to submit for Executive Director review and approval an anchoring plan demonstrating that hard bottom substrate areas are avoided and listing equipment and procedures to be used to ensure anchors are accurately placed.

Potential impacts could also occur from placement of rock on existing hard substrate areas. As described in Section B, the new reef areas will be constructed near, and in some cases immediately adjacent to, the existing WNR reef polygons. When developing the proposed reef remediation project, SCE used data from sonar and diver surveys to design the new polygons to avoid existing areas of hard substrate (i.e., areas with greater than 30% rock coverage) (Exhibit 11). Furthermore, polygons were designed to maintain a minimum distance of 23 feet between existing rocky substrate and new rocky substrate to avoid impacts to existing habitat during placement of new rock. To ensure that the proposed reef is constructed to minimize impacts to existing hard substrate, the Permittee would conduct quality assurance and control activities as the proposed reef polygons are constructed. To ensure that the derrick barge is positioned correctly, in addition to the GPS equipment on the derrick barge, the Permittee would verify its location from land using accurate survey equipment (total station). The Permittee has also committed to preparing a daily report recording: (a) equipment used (in list format), (b) personnel, (c) meteorological and oceanographic (e.g., swell height and period) conditions, (d) summary of completed work, (e) quarry material inventory, (f) polygon completion update, and (g) general and specific Permittee comments. In addition and specific to boulder deposition, a spreadsheet and plan view drawing will be part of the daily report that will document the quantity of quarry material deposited and the acreage covered within the reef polygon under construction. The daily report will be sent by email to Permittee staff, consultants, Commission staff, and Commission-contracted scientists.

In addition, SCE will implement an initial construction audit to ensure that construction methods are accurate and effective. According to the Engineering Specifications Report provided by SCE as part of the CDP application, the audit will be conducted as follows:

> *The Contractor shall construct two polygons and provide sufficient schedule time (5 working days) for the implementation of the QC audits. The selection of the other construction site (polygon) shall be at a suitable distance from the completed polygon module so as not to interfere with the implementation of the audit. SCE and/or its designee shall perform the audits of the completed polygon modules and inform the contractor of the inspection findings. Non-conformance with any construction and/or material specifications shall be ameliorated at the Contractor's expense and to the satisfaction of SCE or its designee. SCE and/or its designee shall issue engineering change notices, as needed, for documentation of all nonconformance audit findings.*
>
> *Upon completion and acceptance of the two audit polygons, the Contractor shall complete construction of the additional 21 polygons. At this juncture, SCE or its designee will complete an audit of the 21 completed polygon modules. It is estimated that the post construction audits will require approximately 45 days.*

Special Condition 7 requires SCE to submit the results of the audit for the first two polygons to the Executive Director for review and approval. The Executive Director will review the results of the audit within two business days. This condition also requires SCE to submit the final audit to the Executive Director for review and approval and immediately correct any issues identified in the audit.

To further ensure that the reef is constructed as designed, **Special Condition 8** requires SCE to conduct a post-construction sonar survey to verify the as-built condition of the reef and submit a final post-construction report that documents the as-built condition of the proposed reef, and includes a map and GIS data layers showing the position and perimeter of each polygon and verified estimates of relief and rock coverage within each polygon. **Special Condition 1** also implements a requirement of Special Condition C of the SONGS permit, Kelp Reef Mitigation, section 2.3, Mitigation Reef Construction (Exhibit 3) that states: "The Permittee shall complete a post-construction survey to demonstrate that the reef was built to specifications. If the Executive Director determines that the reef was not built to specifications, the Permittee shall modify the reef to meet the approved specifications within 90 days of the post-construction survey."

Even with these protections in place, it is possible that a small amount existing rocky substrate could be crushed or covered with new rock during the construction of the proposed reef. However, this area would be small and the affected habitat would be replaced with similar rocky habitat that, in time, would develop the same biotic community. In addition, the proposed project will add a significant acreage of low-relief, low cover hard substrate to the immediate vicinity, resulting in a significant expansion of rocky habitat available to marine organisms in the region. Thus, even if impacts to existing hard bottom areas do occur as the result of construction-related impacts, these impacts would be temporary and minor.

Water Quality

The principal potential impacts on marine water quality due to the proposed project are impacts due to increased turbidity during construction and the potential the release of fuel, hazardous material, sewage or bilge/ballast water from project vessels. Increases in turbidity can degrade water quality by reducing light penetration, discoloring the ocean surface, or interfering with filter-feeding benthic organisms sensitive to increased turbidity. According to the project EIR:

> *Turbidity levels could increase during the deposition of rocks to create the reef structures. Placement could result in significant seabed disturbance because the rock material used to construct the reef would likely contain some fine materials, which would become suspended in the water column when the rocks are pushed off the barge. The increase in turbidity could affect organisms living in SMK, the closest natural kelp reef to the Project area, as well as organisms on the existing Wheeler North Reef.*

The 1999 Program EIR found that impacts to existing kelp reef and other marine habitats associated with increased turbidity from construction of new reef areas would be less than significant because increases would be minor and localized and would last less than a day. This conclusion was supported by monitoring results at WNR, SOK and BK subsequent to construction of Phase 2 that did not find indicators of long-term effects of increased turbidity on

any of the reefs. Furthermore, most of the proposed polygons are located north of the existing WNR and are therefore farther away from SOK and BK, thus decreasing the likelihood that localized increases in turbidity in the project area will have any effect on the reference reefs. Thus, because the construction methods for the proposed project are similar to those employed for Phase 2 and project activities would be generally farther away from existing reefs, effects associated with turbidity will be similarly short-lived, minor and localized.

The proposed project requires the use of several different marine vessels and equipment to support the construction of the Phase 3 of the WNR. It is possible that marine vessels could discharge fuel or other hazardous fluids, sewage water, bilge water, debris, or ballast water into the marine environment. Depending on the size and contents of the release, impacts to marine organisms could be significant. Although the likelihood of a spill occurring is low, the EIR includes several mitigation measures to further reduce the risk of a spill from a project vessel. MM BIO-4 requires SCE to develop a Spill and Grounding Contingency Plan and MM HAZ-1a requires SCE to prepare a Spill Prevention and Response Plan. These measures are incorporated into this CDP under **Special Condition 4**. In addition, **Special Condition 9** requires SCE to submit a project-specific Spill Prevention and Response Plan to the Executive Director for review and approval. In addition to the requirements of MM BIO-4 and MM HAZ-1a, the Plan must identify the worst-case spill scenario and demonstrate that adequate spill response equipment is available. In addition, the Plan must clearly identify responsibilities, list and identify the location of oil spill response equipment, and include a plan for conducting training and response drills. Further, **Special Condition 10** requires SCE to implement an Executive Director-approved Critical Operations and Curtailment Plan (COCP). The COCP defines the limiting conditions of sea state, wind, or any other weather conditions that would hinder safe operation of vessels and equipment or a potential spill cleanup. Finally, consistent with previous marine projects approved by the Commission, **Special Condition 11** requires implementation of a zero discharge policy for all project vessels.

Post-remediation Compliance and Monitoring of WNR

As described in detail in Section A, construction of WNR Phase 3 was required by the Executive Director to ensure that the mitigation reef consistently meets the performance standards required by the SONGS permit. Specifically, the size and coverage of the remediation reef necessary to support the required fish standing stock of 28 tons was determined using monitoring data for WNR Phase 1 and 2 (see Appendix B). Although the remediation estimates presented in Appendix C carry a high degree of confidence that the current configuration of WNR (Phase 1 + 2), with the addition of remediation acreage (Phase 3) will eventually produce a standing stock of at least 28 tons, a significant source of uncertainty is how long it will take the remediated reef (i.e., Phases 1, 2 and 3) to meet this requirement. To address this uncertainty, the UCSB contract scientists, SAP and CCC staff developed an alternate approach to assessing compliance with the SONGS permit. This approach is laid out in detail in the white paper included as Appendix C and excerpts are included below.

The alternate approach to assessing compliance would affect how absolute standards are evaluated. Currently, the 28-ton fish standing stock requirement and the other absolute standards are evaluated independently each year. To satisfy the mitigation requirement, WNR must meet all absolute standards each year (as well as meeting as many relative standards as the lowest-

performing reference reef) for a time period equivalent to the operating life of SONGS Units 2 and 3. An alternative approach would be to evaluate the absolute standards for fish standing stock and kelp area on a cumulative basis. The rationale behind this approach is that full compensation would be based on mitigation for total losses rather than for annualized losses. For example, assuming a total SONGS operating life of 30 years, the loss of fish standing stock would be 28 tons x 30 years or 840 ton-years in which case full compensation would be reached when the remediated reef supported 840 fish ton-years. Each year fish biomass would be measured and the annual total would be added to the cumulative total of previous years. Once a cumulative total of 840 tons is reached, the requirement for mitigation of losses in fish standing stock would be satisfied. Using this same rationale, the cumulative approach would also be applied to the area of giant kelp (150 acres x 30 years or 4500 kelp acre-years). Furthermore, to provide consistency in our evaluation of compliance with the permit, this approach would be retroactively applied to the beginning of the monitoring period for WNR. Thus, the annual fish standing stock and kelp area values from 2000 -present would be applied towards the cumulative total.

This approach, although different from the existing compliance approach, is consistent with the intent and letter of the SONGS permit and would not require a permit amendment. This change can be considered because existing data provide a high level of confidence that SCE will consistently meet the fish biomass standard if they remediate WNR by adding additional reef as proposed. Modeling analyses using existing monitoring data predict that if SCE constructs a low relief, low cover remediation reef, and this reef behaves as the existing reef behaves, performance standards for both fish standing stock and kelp area would be met in about 19 years following the construction of Phase 3 using the cumulative approach. This represents an 11-year reduction from the 32 years estimated for the same remediation designs using the existing approach. Implementing a remediation option that aims to minimize the time required for full compensation (i.e., construction of an appropriate sized Phase 3 remediation reef coupled with use of the cumulative approach) is consistent with the goals and intent of the SONGS permit and ensures that marine resources that have been impacted for the entire operating life of SONGS are replaced as quickly as possible.

Under this approach, evaluation of compliance with relative standards would not change. Compliance would be determined on an annual basis and would continue until the relative standards are met for a period of time equivalent to the operating life of SONGS. Consistent with the approach for absolute standards, mitigation credit for the relative performance standards would be evaluated and retroactively applied if appropriate, dating back to the first year of mitigation monitoring. Monitoring for the relative performance standards would continue at the current level of effort, which entails collecting data from 82 transects at WNR (distributed across Phase 1 and 2 reefs) and the two reference reefs (San Mateo and Barn). However, the SONGS permit allows for a reduction in monitoring to annual site inspections after WNR has met the performance standards for three successive years following at least 10 years of independent monitoring. Although WNR has yet to meet the fish standing stock requirement of 28 tons, it has consistently met as many of the relative performance standards as the lowest performing reference reef for the past 10 years, the criterion for demonstrating that the mitigation reef functions like a natural reef. Thus, after the Phase 3 remediation reef is installed and full-scale monitoring for a three year period indicates that WNR Phases 1 and 2 reefs continue to perform

similar to natural reefs and have not sustained negative impacts from construction of the Phase 3 reef, it would be consistent with the SONGS permit to reduce monitoring to annual site inspections for the evaluation of the relative standards and the absolute standards for hard substrate and invasive species.

Annual site inspections are intended to represent a significant reduction in effort compared to current sampling protocols. Commission staff, the UCSB monitoring team and the SAP have developed a sampling design for annual site inspections based on the variability observed in the monitoring data collected thus far (see Appendix D). This approach is based on the existing requirements for statistical power and confidence interval, but with a much reduced ability to detect moderate to small effect sizes. The rationale for this approach is to create a sampling design that is only capable of detecting large differences in the performance of WNR relative to the reference reefs. As with the existing full scale monitoring, performance evaluation using annual site inspections will require WNR Phase 1 and 2 to meet as many relative standards as the lowest performing reference reef in a given year for that year to count towards mitigation credit. Full scale monitoring would be restarted in the event that the performance of WNR falls below that of the lowest performing reference reef for two consecutive years, and would continue until the relative performance standards are met for three successive years, at which time monitoring would revert to annual site inspections. Before this approach is implemented, the Monitoring Plan for SONGS Reef Mitigation would be updated to include the specific methods for annual site inspections and the performance triggers that lead to its implementation or a reversion to full scale monitoring.

Operating Life of SONGS

SONGS permit Special Condition C (Section 2.4) requires that the SONGS mitigation reef be monitored "for a period equivalent to the operating life of SONGS (Exhibit 3)." "Full operating life" is defined by the permit to include "past and future years of operation of SONGS Units 2 and 3, including the decommissioning period to the extent that there are continuing discharges." Operation of Units 2 and 3 began in 1982 and 1983, respectively. Both reactors were shut down in January 2012 due to excessive wear in the cooling tubes of the steam generators, and permanently retired in June 2013. Although Units 2 and 3 have been permanently shut down, SONGS still circulates ocean water within the plant to cool the spent fuel, and thus continues to discharge cooling water. The cooling water flow, however, is a small fraction of the total flow used by SONGS during operation of the reactors. At normal operations, SONGS used over 1250 MGD within the plant. After Units 2 and 3 were shut down, the flow was reduced to approximately 41 MGD, a reduction of approximately 97% (Exhibit 12). The level of discharge associated with this flow would also be reduced by 97%, resulting in a significantly reduced turbidity plume extending from the discharge pipes. This turbidity plume was the source of impacts to SOK as determined by the Marine Review Committee in the initial SONGS impact studies. The magnitude of the reduction in discharge make it is unlikely that this level of flow would continue to contribute to significant adverse ecological impacts to giant kelp and associated biota on the SOK Reef. Thus, based on the definition provided in the permit coupled with the reduced impacts to marine resources related to the discharge, it is appropriate to define the end of the operating life of SONGS as the end of 2013. Thus, based on the compliance approach described above, WNR Phases 1 and 2 must demonstrate compliance with the relative

standards of the SONGS permit for a total of 32 years (based on the commencement of Unit 2 in 1982 through the end of 2013) to satisfy the requirements of the SONGS permit.

It should be noted that SONGS continues to draw in a significant volume of water through its intake to support decommissioning activities. Although this intake volume represents a significant decrease from the volume drawn into the plant during full operation (~97% decrease from full operation), impacts associated with entrainment and impingement of marine organisms continue, albeit at a reduced rate. The Commission has required mitigation for similar intake rates associated with other types of projects, such as desalination. Thus, since the operating life, which is tied to the discharge, will be cut off at 2013 (for a total of 32 years), and thus continuing impacts from the intake will not be mitigated by the SONGS mitigation wetland, alternate mitigation must be identified to ensure that impacts from SONGS continue to be fully mitigated. **Special Condition 12** requires SCE to submit a Mitigation Plan to the Commission with a strategy for mitigating impacts to marine resources associated with the post-shutdown intake of ocean water for SONGS decommissioning and other activities. SCE will be required to implement the final approved plan, and may be required to submit an amendment to this CDP or may incorporate the mitigation plan into the CDP for SONGS decommissioning. Appropriate mitigation may include a restoration project similar to the San Dieguito wetland (although on a smaller scale) or a mitigation fee as outlined in the State Water Resources Control Board Once-Through Colling Policy[1]. With this condition in place, marine resources will be maintained and enhanced and the biological productivity of coastal waters surrounding SONGS will be maintained.

For the reasons discussed above, the Commission finds that the proposed project, as conditioned by **Special Conditions 4-12**, will be carried out in a manner that maintains marine resources and sustains the biological productivity and quality of coastal waters and protects against the spillage of hazardous substances into the marine environment and is therefore consistent with Coastal Act Sections 30230, 30231 and 30232.

E. DREDGE AND FILL OF MARINE WATERS

Coastal Act Section 30233(a) states:

> *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*

[1] See https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/policy.html for details on the OTC Policy.

(2) Maintaining existing, or restoring previously dredged depths on existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(6) Restoration purposes.

(7) Nature study, aquaculture, or similar resource dependent activities.

As discussed in Section B above, the proposed project involves the placement of fill (clean quarry rock) within coastal waters to form a 200 acre reef. Coastal Act Section 30233(a) imposes three tests on a project that includes dredging and/or fill of open coastal waters. The first test requires that the proposed activity must fit into one of the seven categories of enumerated uses. The second test requires that there be no feasible less environmentally damaging alternative. The third test requires that feasible mitigation measures be provided to minimize the project's adverse environmental effects.

Allowable Use Test

The first test set forth above is that any proposed filling, diking, or dredging in wetlands must be for an allowable purpose as specified under Section 30233 of the Coastal Act. Coastal Act section 30233(a)(7) allows fill in open coastal waters for nature study, aquaculture, or similar resource-dependent activities. The proposed artificial reef project consists of the deposition of clean quarry rock on existing sandy ocean bottom. The resultant hard substrate habitat will replace a soft substrate characterized by less diverse and abundant populations of marine plants and animals. The reef is intended to enhance both the production of living marine resources and recreational fishing potential. Therefore, as the Commission found when it approved Phases 1 and 2 of the mitigation reef, the Commission finds that the proposed mitigation reef project is a resource dependent activity similar to aquaculture and is in conformance with Coastal Act section 30233(a)(7).

Alternatives

The second test set forth by the Commission's diking/dredging/filling policies is that the proposed diking/dredging/filling project must have no feasible less environmentally damaging alternative. As part of the CEQA process, several alternatives were identified and evaluated for environmental impacts. These alternatives include: (1) the "no project" alternative (2) low-relief, medium or high coverage reef alternative; and (3) compound reef design alternative.

"No-Project" Alternative
Under this alternative, the existing Phase 1 and Phase 2 mitigation reef would remain as is and would not be expanded beyond the 174 acres that currently exist. Compliance with the SONGS permit conditions would continue to be assessed as it is now, and the existing Phase 1 and Phase 2 mitigation reef would likely continue to fail to meet the fish standing stock performance standard, and thus SCE would not receive mitigation credit for the reef. Impacts associated with construction of the new reef would not occur, but the benefits expected from the expanded kelp reef ecosystem would also not occur. Furthermore, the "no-project" alternative would result in SCE continuing to be out of compliance with its SONGS permit, and in violation of the Executive Director's requirement that SCE remediate the reef, as required by the permit. For these reasons, this alternative is not a feasible, less environmentally damaging alternative to the proposed project.

Low-relief, medium or high coverage reef alternatives
Under this alternative, SCE would construct either a 125 acre medium coverage low relief reef, or a 105 acre high coverage, low-relief reef. Based on the modeling conducted by the UCSB monitoring team, both of these reef designs are equivalent to the proposed design in terms of expected fish standing stock. In other words, both designs, like the proposed design, would result in a high confidence that the full mitigation reef (i.e., WNR Phases 1, 2 and 3) would meet the performance standards included in the SONGS permit. However construction of either one of these designs would require an increased amount of rock. According to the EIR, the medium cover reef would require approximately 29 percent more rock and thus, approximately 12 more barge trips would be required in 2019 to complete the reef, as compared to the proposed project. The high relief reef would require approximately 93 percent more rock and 41 additional barge trips. Additional rock would need to be brought by barge from Ensenada, as the amount of rock needed is expected to exceed the capacity of the Santa Catalina Island quarry. Under both these scenarios, air emissions of criteria pollutants and greenhouse gases would increase as compared to the proposed project. Thus, although both of these alternatives would achieve the required remediation objectives, environmental impacts would increase. Thus, these alternatives are not feasible, less environmentally damaging alternatives to the proposed project.

Compound Reef Alternative
Under this alternative, SCE would construct a compound reef, with both high-relief and low-relief areas, within the same proposed lease area or within a different lease areas. In general, compound reefs support increased densities of invertebrates and decreased concentrations of kelp than a reef that includes only low relief. In addition, some studies have indicated that densities and biomass of fish is greater on compound reefs as compared to low-relief reefs.

However, as described in the EIR, this alternative was eliminated for several reasons. The EIR states:

> *This alternative was eliminated from further consideration for several reasons:*
> - *The Project is intended to satisfy CDP requirements to mitigate for impacts to San Onofre kelp reef, a low-relief reef. Although one of the key objectives of the Project is to increase the fish standing stock, the new reef area must meet the requirements of CDP Condition C for an "artificial*

reef that develops and maintains a kelp bed community, and has a physical structure as similar as practicable to San Onofre kelp bed (SOK)" (SONGS CDP, p. 77). A compound reef would include a different physical structure than the low-relief San Onofre kelp reef and would thus be inconsistent with the requirements of the CDP.

- *During the permitting process that led to the CDP, the CCC worked closely with the Applicant to develop an experimental reef design. That reef design was limited to low-relief reef because that was the structure of the impacted San Onofre kelp reef. The results of the experimental reef monitoring informed the design of the Phase 2 reef. This alternative was not a design tested through the experimental Phase 1 reef and would potentially require a new experimental reef to be constructed and monitored before constructing the mitigation reef.*
- *CDP Condition C requires that mitigation reef include medium- to high-density kelp bed community. Areas of high-relief reef would not support this density of kelp, based on research conducted on other reefs (e.g., Patton et al. 1994, Deysher et 20 al. 2002).*
- *Studies conducted on other reefs within the bight indicate that high-relief reefs are more subject to colonization by non-native invasive sea fans (Muricea spp.) (Deysher et al. 2002) and encrusting organisms that encourage fish to graze on kelp (Patton et al. 1994). Therefore, a reef design with high-relief could conflict with the following performance standard in the CDP: "The important functions of the reef shall not be impaired by undesirable or invasive benthic species…." Since detailed studies of high-relief reefs have not been performed, the potential impact a new high-relief reef may have on the existing reef is unknown. The existing Phase 1 and 2 reef currently meets the CDP performance standard for invasive species, so the high-relief reef could jeopardize the compliance of the existing reef by introducing or increasing invasive species.*

In addition to these key rationales, a compound reef design would require much more quarry rock than the Project, which would substantially increase impacts to air quality and greenhouse gases (GHGs). For reference, approximately 7,000 tons per acre would be needed to construct a high-relief reef. This is up to 10 times the amount of rock needed for the Project (low-relief reef ranges from 760 to 2,750 tons per acre depending on coverage). For example, a 200-acre low-relief, low-coverage reef would require approximately 152,000 tons of rocks, while a 30-acre high-relief reef would require 210,000 tons. This amount of rock would also substantially increase the costs to construct the reef, and could extend the duration of construction activities into an additional year. A high-relief reef design would also have an increased potential for impacts to wave propagation toward the shoreline, and could interfere with recreational activities such as surfing.

The Commission agrees that, for the reasons described above, this alternative is not a feasible, less environmentally damaging alternative to the proposed project.

Accordingly, for the reasons described above, the Commission finds that the proposed project is the least environmentally damaging feasible alternative and therefore meets the second test of Coastal Act Section 30233(a).

Mitigation

The final test set forth by the above-cited policies is whether feasible mitigation measures have been provided to minimize adverse environmental effects. The proposed project incorporates a number of mitigation measures to minimize adverse environmental effects including location of the Phase 2 Mitigation Reef off of San Clemente in water 30 to 50 feet in depth, placement of quarry rock on sandy ocean bottom that does not exceed more than 30% hard substrate and that avoids any sensitive biological resources, and limiting construction to avoid commercial lobster fishing season. Furthermore, **Special Conditions 4-12** ensure the protection and enhancement of marine resources (see Section D for additional details). With these conditions incorporated, the proposed project provides feasible mitigation for impacts related to fill of coastal waters, and thus, the Commission finds that the third test of Coastal Act section 30233(a) has been met.

For the reasons described above, the Commission finds the project, as conditioned, consistent with Coastal Act Section 30233(a).

F. CULTURAL AND TRIBAL RESOURCES

Coastal Act Section 30244 states:

> *Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

Coastal Act Section 30244 states that reasonable mitigation measures shall be required where development would adversely impact archaeological resources. These resources may include sacred lands, traditional cultural places and resources, and archaeological sites, including places or objects that possess historical, cultural, archaeological or paleontological significance and include sites, structures, or objects significantly associated with, or representative of earlier people, cultures and human activities and events. As described in the Commission's Tribal Consultation Policy, adopted on August 8, 2018, tribal cultural resources are not confined to the boundaries of archaeological sites, but instead can encompass landscapes that are significant to Native American tribal groups because of habitation or use for cultural practices.

Project-related activities have the potential to disturb or damage Native American artifacts and shipwrecks of potential cultural resources value. In the offshore environment, project-related activities have the potential to disturb, disrupt or degrade prehistoric sites, watercraft and historic shipwrecks and tribal cultural resources found on or within ocean sediments. Impacts from placement of new rock on the seafloor have the potential to bury or destroy elements of these resources that could result in the loss of important information about the historical, cultural or tribal context of the resource.

Cultural and Historic Resources

The offshore project area has the potential to contain historic shipwrecks, archeological or paleontological resources. Preliminary records searches indicate a total of 6 shipwrecks within the project vicinity, including 2 within 0.5 miles of the proposed reef. There are no other recorded archeological or prehistoric artifacts near the project areas. Furthermore, dive surveys and side-scan sonar testing surveys of the project site have not identified cultural resources in the area. Paleontological resource assessments of the region have identified the Capistrano Formation, the bedrock layer that underlies the project area, as having a high potential for paleontological resources. However, this bedrock layer is covered by more recent sand deposits that average approximate 2.5 feet thick. This marine sand layer has a low potential to contain paleontological resources.

The EIR assessed the potential for impacts to cultural resources and determined that, given the high-energy dynamic environment surrounding the project site, the presence of intact prehistoric cultural deposits is unlikely. If resources are present, it is likely they were deposited there by waves or currents. There are two shipwrecks in the vicinity of the proposed project; however the precise location, condition and extent of these resources is unknown. However, several sonar surveys of the project area have not detected any cultural historic resources in the area.

Tribal Resources and Consultation

As part of the CEQA process, SLC, as lead agency, reached out to the California Native American Heritage Commission (NAHC) in January of 2018 to obtain information about known cultural and Tribal cultural resources and to request a list of Native American tribal members who have indicated an affiliation with the Project area. Based on the list provided by the NAHC, the SLC contacted 29 tribal members included on the NAHC contact list (see page 4.5-3 of the EIR for a list of Tribes contacted). The NAHC response also noted that the Acjachemen Nation of Juaneño Band of Mission Indians should be contacted for more information about potential sites within the project area.

SLC staff reached out to the Acjachemen Nation to further discuss its concerns. The Acjachemen Nation informed the SLC that their oral history and Tribal files contain references to village sites within the Project area that had been inundated thousands of years ago due to post-glacial sea level rise. To address their concerns, the Acjachemen Nation requested an archeological reconnaissance survey of portions of the project area. Working with the SLC marine archeology contractor and SCE contractors, Tribal representatives used side-scan sonar images to identify ten project polygons that could hold Tribal cultural resources. SLC, in consultation with other agencies, including Commission staff, agreed to perform the surveys.

Diver surveys of the ten project polygons were performed in summer 2018 but did not reveal any Tribal cultural resources. According to the EIR, the diver surveys identified, “five glass bottles which were not of historic age, one .50 caliber cartridge casing which is likely of historic age, and one California cone snail shell with a hole consistent with that created by a predatory gastropod.” No physical Tribal cultural resources were identified. However, the Acjachemen Nation did identify an area of cultural sensitivity within one of the project polygons based on its confidential internal records. The Acjachemen Nation also requested that the applicant place rock in areas of greater sand depth, to the extent feasible, to minimize the risk of damaging

buried Tribal cultural resources. SLC staff, in consultation with Commission staff, determined that the culturally sensitive area identified by the Acjachemen Nation should be considered part of a cultural landscape and thus, a Tribal cultural resource. Once this resource was identified, an impact analysis concluded that project activities could result in significant adverse impacts to these resources. In response, as described in the EIR:

> *…the applicant eliminated the culturally sensitive area of concern from the Project and identified additional "contingency" areas seaward of existing polygons. These "contingency" polygons would allow the applicant to expand the reef by the originally proposed approximately 210.6 acres, while avoiding areas identified by the Acjachemen Nation as being of concern for Tribal cultural resources. In addition, through this consultation all parties came to agreement that the size of rock being used, the depth of sand in the proposed reef locations, and the method of placement (as described in Section 2, Project Description) would sufficiently protect undiscovered resources from damage.*

Commission staff was involved and consulted with SLC staff throughout the SLC Tribal consultation. Given Commission staff's participation in the SLC Tribal consultation and the short amount of time between the conclusion of this consultation and approval of the EIR (February 2019) and the Commission hearing to consider this CDP, Commission staff did not conduct additional Tribal consultation.

To further reduce the potential for adverse impacts to cultural and tribal resources, the EIR included MM CR-1a, MM CR-1b, MM CR-2 and MM-CR-3 included in the CDP under **Special Condition 4**. MM CR-1a requires that a tribal monitor culturally affiliated with the area be present to monitor rock placement activities. After the first week of the rock placement, SCE is required to make arrangements so that the monitor can, if desired, dive the areas where rock was placed to assess the area for impacts. Furthermore, SCE is required to conduct a post-reef construction dive with interested tribes. MM CR-1b requires SCE to prepare a Cultural Resources Management Plan (CRMP) that addresses the process and procedures SCE will follow in the event that unanticipated cultural or tribal resources are discovered. Similarly, MM CR-2 requires SCE to prepare a Paleontological Resources Management Plan (PRMP) that describes the process and procedure SCE will follow in the event that unanticipated paleontological resources are discovered. Finally MM-CR-3 describes that process SCE must follow if human remains are discovered during project construction. To ensure that cultural and tribal resources are also protected under the Coastal Act, **Special Condition 13** requires SCE to submit the CRMP and PRMP required under CEQA to the Executive Director for review and approval.

The Commission finds that with changes to the Project description to avoid Tribal cultural resources and measures in place to address previously unknown cultural resources that may be encountered during onshore construction, the project will not adversely impact archaeological or paleontological resources, and is therefore, as conditioned, consistent with Section 30244 of the Coastal Act.

G. PUBLIC ACCESS AND RECREATION

Section 30210 of the Coastal Act states:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Section 30220 of the Coastal Act states:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

The site of the proposed project is located offshore from important recreational beaches including the San Clemente State Beach. Although these beaches would not be directly affected by the proposed project, it is possible that during large wave events, kelp may be torn from the substrate or boulders dislodged and carried onto the beach. To address this concern when the Phase 2 reef was installed, CDP E-07-010 authorizing construction of the Phase 2 reef, included Special Condition 12 (Kelp Wrack and Rock Hazard Monitoring) which required SCE to conduct four years of monitoring along the beach adjacent to the project site to quantify kelp wrack and/or artificial reef substrate on the beach within 48 hours following a large storm or swell event. This monitoring effort found that the Phase 1 and 2 reef had not resulted in a significant increase in kelp wrack as compared to reference beaches. Based on these results, the Phase 3 mitigation reef is not likely to result in an increase kelp wrack or rocks on the beach as compared to nearby beaches. Thus, impacts to public access and recreation on adjacent beaches will not be adversely affected by construction of the proposed project.

Another potential concern would be adverse impacts to surfing conditions due to the construction of the proposed Phase 3 mitigation reef. However, the construction of the low-relief, low cover reef in more than 40 feet of water is not expected to affect wave or surfing conditions. According to the EIR:

> *As detailed in the 1999 Program EIR, studies carried out by Elwany et al. (1998b) concluded that the experimental and mitigation reefs, and the resulting kelp forests, would create no measurable attenuation of height or energy of long-period swell waves, and would not affect the propagation or direction of swell waves. Studies also concluded that the experimental and mitigation reefs would not substantially affect the distribution and transport of sediment in the littoral zone, nor would it substantially affect the width of the beach. Similar effects to waves are anticipated for the Project artificial reef. Potential effects are of concern with respect to maintaining the characteristics of the existing waves for surfing and other recreation. Elwany et al. (1998b) concluded that the presence of a kelp forest would have a damping effect on high-frequency sea waves. These waves are generated by local onshore winds and are characterized as surface*

> *chop or roughness. High-frequency sea waves generated by local onshore winds generally do not result in surfable waves. Waves that are surfed are typically longer-period swell waves generated by winds or storms outside of the region. Local onshore-wind-generated seas commonly degrade surfing conditions; surfing conditions are considered optimal during glassy conditions, when there is no local wind or surface roughness. Therefore, any reduction in high-frequency sea waves would likely have a beneficial effect on surfing conditions. As with the experimental and mitigation reefs evaluated in the 1999 Program EIR, the Project reef would have a less-than-significant impact on waves and wave-related recreation.*

Furthermore, since construction was completed on the existing Phase 1 and Phase 2 mitigation reefs, no impacts to swell waves have been observed. Thus, construction of the Phase 3 mitigation reef is not expected to have an effect on surfing in the project vicinity.

Therefore, for the reasons described above, the proposed project will not have a substantial negative effect on the public's ability to access and enjoy the coast, and the project is consistent with the public access and recreation policies of the Coastal Act.

H. COMMERCIAL AND RECREATIONAL FISHING

Coastal Act section 30234.5 states:

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

Currently the subtidal sand bottom community at the project site is characterized by low densities of common invertebrates and bottom dwelling fish. The proposed project will alter or replace the sand-bottom community over a 200 acre area. The net effect of the project will be to replace a low-diversity, low-density community of sand-bottom organisms, which are common throughout the region, with a high diversity, much less common, rocky reef community that will support numerous recreationally and commercially valuable invertebrate and fish species.

Within the general project area, both commercial and recreational fishing are important cultural and economic activities. The project area is located within commercial fishing block 756. Data collected by the California Department of Fish and Wildlife for this and the surrounding fishing blocks indicate that the top-ranked fisheries by catch value are Market squid (Dorytheuthis opalescence), Red sea urchin (*Mesocentrotus franciscanus),* Shortspine thornyhead *(Sebastolobus alascanus),* and California spiny lobster (Panulirus interruptus). In addition, the project area is likely to include several marine species included in a Fishery Management Plan (FMP), developed to support Essential Fish Habitat of federally managed species. There are four FMPs, Coastal Pelagic Species (CPS) FMP, Pacific Coast Groundfish (PCG) FMP, Pacific Coast Salmon (PCS) FMP, and Highly Migratory Species (HMS) FMP, that include species that could be present in the project area. These species include Rockfishes, Lingcod (*Ophiodon elongates*), several species of sole, smelts (*Osmeridae*), Leopard shark (*Triakis semifasciata*), Great white shark (*Carcharodon carcharias*) and Pacific sardine (*Sardinops sagax*). According to the EIR, "Greater than 80 percent of the subtidal benthic habitat that dominates the immediate Project

area is soft sediment. Nine taxa listed in the PCG FMP are associated predominantly with soft sediment habitat, and eight of these are assessed as highly likely to occur. All nine groups are either flatfishes or skates." This and other EFH identified in the project area are generally widespread throughout the local and regional area and are thus not considered habitat areas of particular concern.

Recreational fishing is also common in the project area. According to the EIR, the primary recreational fishing activity is likely comprised of rod-and-reel fishing from small boats, the San Clemente Pier, and the beach. In addition, the rocky areas are important to local commercial lobster fishermen. Based on data from the Recreational Fisheries Information Network (RecFIN) maintained by the Pacific States Marine Fisheries Commission (PSMFC), the most abundant fish caught on average by recreational fisherman between 2012 and 2016 (representing approximately 45 percent of the catch) was kelp bass (*Paralabrax clathratus*), followed by barred surfperch (*Amphistichus argenteus*) and Pacific mackerel (*Scomber japonicas*). While surfperch and mackerel are generally caught in shallow waters from man-made structures such as piers, jetties, and break walls, or from the beach, kelp bass are generally caught in deeper waters from boats. In addition, several invertebrate species, including the California spiny lobster (*Panulirus interruptus*), are pursued by recreational fishermen using hoop nets, breath hold, and SCUBA diving techniques.

The proposed project could result in impacts to commercial and recreational fishing through the loss of fishing ground or EFH and construction-related impacts. With respect to the loss of fishing grounds, the EIR states:

> *Soft sediment habitat will be lost due to the construction of the artificial reef. Soft sediment habitat is also the dominant nearshore habitat throughout California. Coastal Environments (2016) completed a comprehensive geophysical survey of the area to determine soft- and hard-sediment habitat extent. The area surveyed encompassed the existing Wheeler North Reef (Phases 1 and 2) and the area intended for expansion of the reef (Phase 3), encompassing a total survey area of approximately 3,200 acres. Within this surveyed area, soft sediment habitat constituted greater than 80 percent of the seabed (2,584 acres). The loss of soft sediment habitat due to the expansion of Wheeler North Reef is anticipated to cause the loss of just 200 acres of habitat, which constitutes 7.7 percent of the soft sediment habitat that exists within the survey area. In turn, this is a very small proportion of the soft sediment habitat available to commercial fishermen who are likely to use the area. Because alternative fishing areas exist, this effect is not anticipated to cause loss of fishing grounds for commercial fishermen.*

Thus, as described above, the proposed project will not result in the loss of fishing ground for commercial fisherman. Similarly, significant loss of EFH is not anticipated due to the proposed project. Furthermore, the addition of rocky reef habitat and medium-to high-density kelp forest will provide additional habitat for several important commercial and recreational species including kelp bass, spiny lobster, Pacific mackerel, sandbass, and bonito, thus resulting in an improvement to several fisheries.

The proposed project could, however, have a negative impact on fishing activities during the construction period. Specifically, construction-related adverse impacts could result from: (1) causing fish and motile invertebrates to avoid the project area in response to noise and physical disturbance; (2) excluding fishermen from the construction area; and (3) damaging fishing gear, such as traps. Each of these impacts is discussed in more detail below.

Behavioral Avoidance
During placement of reef materials, it is likely that fish and perhaps crabs and lobsters will avoid the area of physical disturbance. However, this disturbance will take place for only a few days in any given area. Most fishes are highly mobile and will simply avoid the construction areas. Lobster and sea urchins will be little affected in any event since their rocky habitat will not be directly affected. These temporary changes in movement and local abundance will not cause a significant impact.

Excluding Fisherman from the Construction Area
The Phase 3 Mitigation Reef is estimated to require about five months of construction activities. Reef construction would be limited to the period between May 1 to September 30 to avoid conflict with the lobster fishing season. During construction the quarry rock barge will be moved from place to place to construct the 23 mitigation reef polygons. Therefore, within any given construction area, fishing will be restricted for about four days. According to the EIR, this may affect the mainland crab, Kellet's whelk and sea urchin fisheries which operate year-round. However, given the small share of the fishery at the Project site represented by these fisheries, and the likelihood that additional fishing opportunities exist nearby, a temporary closure of this small area will not have a substantial effect.

Furthermore, to ensure that impacts to recreational and commercial fisherman would be minimized, SCE committed to submit a Local Notice to Mariners for publication with the U.S. Coast Guard to ensure that vessels in the area are advised of the locations of project vessels and the approximate dates and duration of project construction. Notice will also be posted in several locations within the Dana Point Harbor and the San Clemente Pier. This will allow fishermen and other mariners that conduct operations in the area to select alternative fishing or recreation sites during construction activities. The temporary loss of anchorages and fishing operations will not significantly impact commercial or recreational fishing.

Lost or Damaged Fishing Gear
During construction activities, fishing equipment on the ocean floor could be damaged or destroyed. The Permittee will provide notification of project-related activities to fishermen and other mariners that conduct operations in the area when they notify the U.S. Coast Guard of construction activities at least two weeks ahead of the start date. This will allow the fishermen to select alternative fishing sites and to remove any fishing equipment from the project area prior to construction.

With implementation of the above measures, the Commission finds the project consistent with section 30234.5 of the Coastal Act.

I. AIR QUALITY

Coastal Act section 30253 states:

> *New development shall be consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.*

Proposed project activities will take place primarily in the South Coast Air Basin (SCAB), which is managed by the South Coast Air Quality Management District (SCAQMD). Some project-related activities (i.e., barge trips from Ensenada, Mexico) will also occur within the San Diego Air Basin (SDAB), which is managed by the San Diego Air Pollution Control District (SDAQCD). These agencies are responsible for implementing federal and state air quality standards in the proposed project area. The 1999 Program EIR for construction of the Phase 1 and 2 reef concluded that the project would result in unavoidable and significant emissions of nitrous oxide (NO_x) and fine (<10 micron) particulate material (PM^{10}). The 1999 Program EIR required a mitigation plan that included the purchase of emission offset credits to mitigate for emission of NO_x associated with the project.

Similarly, for the proposed project, the EIR identifies project-related emissions of NO_x as a potentially significant impact. Calculation of estimated maximum daily construction criteria air pollutant emissions for the proposed project, included in the EIR, found that project-generated construction emissions would exceed the SCAQMD NOx threshold but was under the threshold for all other criteria air pollutants (i.e., VOC, CA, SO_x, PM_{10} and $PM_{2.5}$). To reduce emissions of NO_x within the SCAB and to ensure consistency with the SCAQMD 2016 Air Quality Management Plan, MM AQ-1a and MM AQ-1b, included in this CDP under **Special Condition 4**, require SCE use vessels with low NO_x emissions and to purchase NO_x offset credits for emissions of NO_x above the SCAQMD's construction threshold. Specifically, MM AQ-1a requires SCE to provide evidence to the SLC staff that tugboats used during construction meet or exceed the Tier 3 emissions standards, or, in the event that Tier 3 compliant tugboats are not available, Tier 2 compliant tugboats may be used and the difference in NO_x emissions offset through credit purchases. MM AQ-1b requires that prior to the start of construction, SCE purchase NO_x emission offset credits in compliance with SCAQMD regulations and based on projected emissions calculated in the EIR. Once the construction season closes, SCE will calculate actual emissions and then reconcile the amount of credits purchased with actual emissions.

The EIR also included calculations of the estimated annual construction emissions of greenhouse gases. The SLC estimated that construction of the Phase 3 mitigation reef will result in the emission of approximately 1690 Metric Tons (MT) of Carbon Dioxide Equivalent (CO_2e). It is standard practice to amortize construction emissions over the life of the project. Assuming a 30-year life for the reef, the project will result in annual amortized emissions of approximately 56 MT CO_2e. This is below the SCAQMD GHG threshold of 3,000 MT CO_2e per year and the GHG threshold of 900 MT CO_2e per year applied to Project emissions that would occur within the SDAB. Thus, based on the thresholds developed by the local air pollution control districts, emissions of GHGs from project construction would be less than significant.

Thus, with the inclusion of **Special Condition 4**, the proposed project is consistent with the requirements of the applicable air pollution control districts. Thus, the Commission finds the proposed project consistent with Coastal Act Policy 30253.

J. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096 of the Commission's administrative regulations requires Commission approval of coastal development permit applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits approval of a proposed development if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant impacts that the activity may have on the environment.

The California State Lands Commission, acting as lead CEQA agency, certified an Environmental Impact Report for the proposed project on February 4, 2019.

The proposed development has been conditioned to be found consistent with the Chapter 3 policies of the Coastal Act. Mitigation measures, including conditions addressing marine resources, water quality, air quality and cultural and Tribal resources, will ensure that the project does not result in any unmitigated significant adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project is the least environmentally-damaging feasible alternative and is consistent with the requirements of the Coastal Act to conform to CEQA.

Appendix A: Substantive File Documents

Ainsworth, John, Susan Hansch, Alison Dettmer and Kate Huckelbridge. "Review of and Possible Commission Action on 2018 and 2019 Two-Year Work Program and Budget for the San Onofre Nuclear Generating Station (SONGS) Mitigation Independent Monitoring Program." Staff Report for Coastal Commission Hearing Item W16a, October 20, 2017.

California Coastal Commission. "Adopted Findings and Conditions for Permit Amendment 6-81-330-A." Approved May 14, 1997.

California Coastal Commission. "Adopted Findings and Conditions for CDP E-07-010." Approved February 6, 2008.

California State Lands Commission. "Final Subsequent Environmental Impact Report for the Construction and Management of an Artificial Reef in the Pacific Ocean Near San Clemente, California (Wheeler North Reef Expansion Project)," State Clearinghouse No. 1998031027. January 2019.

Engel, Jonna. "Notice of Acceptance – Condition Compliance for Special Condition 12 of California Coastal Commission (CCC) Coastal Development Permit No. E-07-010 — Kelp Wrack and Rock Hazard Monitoring Requirement," Memo to Kim Anthony, Southern California Edison. May 9, 2013.

Reed, Daniel, Stephen Schroeter, Mark Page. "Annual Monitoring Reports for the SONGS Kelp Reef Mitigation," (2016, 2017).

Reed, Daniel, Stephen Schroeter, Mark Page. "2018 Annual Review Workshop Performance of the Wheeler North Reef." Presentation given on April 9, 2018.

Reed, Daniel, Stephen Schroeter, Mark Page and Mark Steele. "Monitoring Plan for the SONGS Reef Mitigation Project." Updated April 2017. http://marinemitigation.msi.ucsb.edu/documents/artificial_reef/ucsb_%20mm_reports/mitigation_phase/monitoring_plan4reef-mitigation_project_rev_apr2017.pdf

Southern California Edison, "Application for Coastal Development Permit 9-19-0025", dated January 14, 2019.

Email Correspondence from SONGS Mitigation Monitoring Team and Science Advisory Panel on 5/23/16.

Email Correspondence from Southern California Edison on 10/19/18, 1/7/19, 2/14/19 and 2/26/19.