

6 RELATIONSHIP OF THE PROPOSED ACTION TO FEDERAL, STATE AND LOCAL PLANS, POLICIES AND CONTROLS

This chapter addresses the federal, state, and local environmental review programs that do, or may, apply to the proposed action (Preferred Alternative). Project facilities and activities will be implemented in accordance with applicable federal laws and regulations and with state and local laws, regulations, programs, plans, and policies as applicable. Scripps is the applicant for governmental approvals and is the coordinator of the overall program. Environmental review programs applicable to the proposed project are summarized in Chapter 1.

This section first considers applicable federal programs for incidental harassment and take authorizations under the Marine Mammal Protection Act and Endangered Species Act, interagency consultation under the Endangered Species Act, coordination under the Magnuson-Stevens Fisheries Conservation Act, federal consistency review under the Coastal Zone Management Act, and permits under the Rivers and Harbors Act. Next this section considers State of Hawaii programs for use and disposition of state seabed lands in the conservation district, review of Scripps' certification of consistency with the Hawaii Coastal Zone Management Program, and other state and local programs.

6.1 FEDERAL PROGRAMS

This section addresses federal environmental authorities and programs which have been determined to apply to the proposed project.

6.1.1 NEPA

This EIS has been prepared and provided for public review in accordance with the Council on Environmental Quality regulations implementing NEPA (40 CFR Part 1500-1508).

6.1.2 Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA, 16 U.S.C. 1361-1421h) places a moratorium on the taking of marine mammals, without authorization. The term "take" means to harass, hunt, capture or kill, or attempt to harass, hunt capture or kill any marine mammal. The statute also defines the term "harassment" to mean any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding or sheltering. (16 U.S.C. 1362) Results of the ATOC Marine Mammal Research Programs (see Sections 1.2.2 and 4.2.1.2.1) indicated only subtle effects after intensive statistical analysis. Although the suggested effects do not support a request for a LOA, ONR/Scripps, in coordination with the National Marine Fisheries Service (NMFS), have decided to pursue a letter of authorization (LOA) for incidental taking by

harassment because of: the level of controversy associated with NPAL; past history associated with the ATOC effort and Kauai ATOC EIS; and public interest in the state of Hawaii.

Section 1371(a)(5) directs the Secretary of Commerce to allow, upon request, the incidental (but not intentional) taking by harassment of small numbers of marine mammals by U.S. citizens who engage in a specified activity (exclusive of commercial fishing) if criteria are met. The taking must (1) have only a negligible impact on the species or stock(s) and (2) not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses. Before issuing a letter of authorization (LOA) for incidental harassment, the Secretary must issue regulations setting forth the permissible methods of taking and the requirements for monitoring and reporting any taking.

Following publication of the DEIS, Scripps will petition the Secretary for adoption of necessary regulations and apply for an LOA to take marine mammals incidentally through operation of the Kauai sound source.

6.1.3 Endangered Species Act

The Endangered Species Act (ESA, 16 USC §§ 1531-1543) protects wildlife species, including marine mammals and fish, which have been listed as threatened or endangered. Such species cannot be “taken” in United States waters or upon the high seas by anyone subject to United States jurisdiction unless authorization has been obtained under the ESA.

The ESA defines “take” to mean harass, harm, pursue, hunt, shoot, impound, kill, trap, capture, or collect, or attempt any such conduct. “Harass” is defined by regulation to mean an intentional or negligent act or omission which creates the likelihood of injury to wildlife, annoying it to such an extent as to significantly disrupt normal behavior patterns including, but not limited to, breeding, feeding, or sheltering. 50 CFR § 17.3.

The Kauai sound source is located in an area inhabited by species that have been listed as threatened or endangered under the ESA. Continued operation of this sound source would allow continued transmission of acoustic signals in the water column that could cause behavioral reactions by listed species. Because such reactions could come within the ESA definition of “take,” the proposed action is subject to provisions of the Act.

The ESA applies to the proposed project in two separate respects. First is the interagency consultation process of § 7 of the Act. Under § 7, federal agencies must consult with the responsible wildlife agency, U.S. Fish and Wildlife Service and/or NMFS, on actions that may affect the existence of threatened or endangered species or adversely modify their critical habitat. In this instance, through discussions with the concerned agencies, it has been learned that all potentially affected species are under the authority of NMFS, either directly or through cooperative procedures with USFWS.

In preparation for the consultation process, NMFS has been requested to provide compilations of listed, proposed, and candidate threatened and endangered species within that agency's cognizance, including their known temporal and spatial movements, and compilations of designated or proposed critical habitats of these species (see Appendix B).

This DEIS will serve as the basis for development of a Biological Assessment, which is the required foundation for § 7 consultation. Upon completion of the DEIS and the filing of notice in the Federal Register, if the project has been approved by ONR, consultation in accordance with § 7 will be requested. Following consultation, NMFS will issue its findings on the question of whether the proposed action would be likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

The ESA also applies to the proposed project through the statute's requirement for a permit for incidental taking of listed species. Such permits are authorized where any taking is incidental to, and not the purpose of, a lawful activity and adequate provision is made for minimizing and mitigating impacts. A conservation plan is required in conjunction with review of the permit application.

With respect to marine mammals, where NMFS conducts review under the previously described MMPA letter of authorization and ESA § 7 consultation processes, NMFS also carries out the ESA incidental take review. Similarly, because of overlapping jurisdiction with USFWS, NMFS carries out review of proposals involving listed sea turtles.

6.1.4 Rivers and Harbors Act § 10

The proposed action includes the utilization of an existing sound source located offshore 14.7 km (7.9 nm) north of Haena Point on the north shore of Kauai and an existing subsea power transmission cable, which connects to an existing cable approximately 1.3 km (0.7 nm) offshore Barking Sands and follows a 51.5 km (27.8 nm) course around the northwest side of the island to the source site.

The U.S. Army Corps of Engineers (COE) was consulted concerning permitting requirements for the initial construction and installation. These facilities required authorization under § 10 of the Rivers and Harbors Act (33 USC § 403) because they were considered by the COE to be structures and involved work in navigable waters of the U.S. Notification of use of § 10 nationwide permits #5 (installation of scientific measurement devices) and #6 (survey activities involving disturbance of the seafloor) was given on August 29, 1994.

The proposed project would not involve placement of any other structures or conduct of construction work within navigable waters. Consequently, the COE has confirmed that no additional authorization under the Rivers and Harbors Act would be required.

6.1.5 Magnuson-Stevens Fisheries Conservation and Management Act

The Magnuson-Stevens Fisheries Conservation and Management Act (FCMA, 16 USC §§ 1801-1861) addresses the sustainability of fish stocks through risk-averse management practices and habitat protection, including the designation of essential fish habitats. The FCMA is implemented by the Secretary of Commerce, acting through NMFS. Under § 1855(b) of the Act, federal agencies must coordinate with NMFS regarding any action that may adversely affect essential fish habitat (EFH) which has been formally designated in the fishery management plan for the affected region. Interim final regulations implementing EFH programs appear at 50 CFR §§ 600.805-.930.

As described in detail in Section 4.2.5, for the Hawaiian Islands area of the Western Pacific Region, NMFS has designated EFH in four categories (bottomfish, pelagic fish, crustaceans, precious coral). In essence, the EFH encompasses the water column from the shoreline to the outer limit of the exclusive economic zone (EEZ, 200 miles). Physical installations and/or removals associated with the No Action and Midway Alternatives may temporarily disrupt the seafloor; however, since the cable has a nominal diameter of 3.18 cm (1.25 in), removing it is unlikely to have an adverse effect on any identified EFH. As discussed in Section 4.2.5, transmissions from the NPAL sound source would not have direct, indirect, site specific, or habitat wide individual, cumulative, or synergistic impacts. Consequently, there is no indication that the proposed project will reduce the quality and/or quantity of EFH.

6.1.6 Coastal Zone Management Act, Federal Consistency Review

The Federal Coastal Zone Management Act (CZMA, 16 USC §§ 1451-1465) establishes a voluntary program for federal-state cooperation and coordination in matters affecting the coastal zone. Under the CZMA, each state may develop its own coastal management program and once the program is federally approved, certain federal and federally permitted activities must meet standards of consistency with the program. The requirement applies to activities within or outside the coastal zone which affect any land or water use or natural resource of the coastal zone. The state may list in its program the categories of federal approvals which will be subject to consistency review. Under § 1456(c)(3) of the CZMA and its implementing regulations (15 CFR § 930.57), an activity requiring such a federal approval must comply with and be conducted in a manner consistent with the enforceable policies of the approved state program.

The Hawaii Coastal Zone Management Program includes permits and licenses issued by NMFS under the MMPA, a category which would include the letter of authorization for incidental harassment of marine mammals, discussed in Section 6.1.2. As applicant for the authorization, Scripps has prepared a certification of the NPAL project's consistency with the Hawaii Coastal Zone Management Program. The consistency certification is supported by the information and analysis in this EIS. The consistency submittal will be reviewed by Hawaii's designated coastal zone management agency, the Office of Planning, a part of the Hawaii Department of Business, Economic Development, and Tourism. Under CZMA § 1456(c)(3), the State may concur with, or object to,

the certification of consistency. An objection would bar NMFS' issuance of authorization under the MMPA to conduct research. A state objection is subject to appeal to the Secretary of Commerce.

6.1.7 Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," directs each federal agency to incorporate environmental justice into its mission and activities.

Native Hawaiian populations, as well as low-income persons, on the north shore of Kauai practice subsistence fishing in the waters surrounding Kauai. The fish species expected in the study area, the potential for acoustic impact on those species, the potential for economic effects on fishing, and the potential for interference between the proposed source and the fish aggregating device (FAD), respectively, have been discussed (Section 3.2.4, Section 4.2.1.2.3, Section 4.3.1 and Section 6.2.4, respectively). There is unlikely to be an adverse effect on subsistence fishing and no disproportionately high or adverse effect on the human environment of minority and low-income populations.

6.1.8 Protection of Children

Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks," requires each federal agency to identify and assess environmental health and safety risks to children. "Environmental health and safety risks" are defined as "risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest." Evaluation of the proposed action has determined that the project would not disproportionately affect children because of its at-sea location as well as the lack of project impacts on human users of the sea and shoreline. See Sections 4.3 and 4.4.

6.2 REVIEW BY THE STATE OF HAWAII

This section considers Hawaii and local environmental plans, programs, and authorities that apply to the proposed project. State agency actions on the proposed project can be expected to include:

- Conservation District Use Permit Program: review and action on permit application by Hawaii Department of Land and Natural Resources;
- Hawaii Coastal Zone Management Program: review and action on Scripps' federal consistency certification by Hawaii Office of Planning, Department of Business, Economic Development and Tourism.

Beginning in April of 1999, Scripps representatives met and conferred with representatives from a number of state agencies, including Department of Land and Natural Resources, Office of Environmental Quality Control, and Department of Business, Economic Development and Tourism concerning programs and regulatory requirements applicable to the NPAL project. Discussions were also held with representatives of the Department of Health, the Office of Hawaiian Affairs, the Historic Preservation and Aquatic Resources Divisions of DLNR, and the County of Kauai. On the basis of these discussions and review of relevant authorities, Scripps has undertaken the steps called for in connection with state programs discussed in this section.

6.2.1 Conservation District Use Authorization: DLNR

Chapter 183C, Hawaii Revised Statutes (HRS), establishes a permit program within the Department of Land and Natural Resources (DLNR) for use of “state marine waters.” The statute defines that term as waters “extending from the upper reaches of the wash of the waves on shore seaward to the limit of the state's police power and management authority, including the United States territorial sea.” (HRS § 190-1.5.) The geographic extent of state marine waters has been subject to debate. State jurisdiction as recognized by the federal government extends to three nautical miles. For certain purposes of international law, the U.S. territorial sea has been extended by executive order to 12 nm. The U.S. Exclusive Economic Zone extends seaward to 200 nm. The effect of these factors on claims regarding the state jurisdiction seaward of the islands remains unresolved.

The sound source and portions of the power supply cable lie seaward of the three-mile sea. Apart from considerations concerning geographic jurisdiction, and in recognition of the State of Hawaii’s interest in the full range of the project’s activities, the application for a conservation district use permit (CDUP) has included information on the entire complement of facilities proposed to be used.

Scripps’ CDUP application seeks DLNR approval for continued use of the power supply cable for the five-year duration of the NPAL research. The application also requests authorization to leave the cable in place at the conclusion of the NPAL research.

Approximately 37 km (20 nm) of the cable lie within the three-mile sea and within the Resource Subzone of the Conservation District. Under DLNR regulations, the Resource Subzone objective is “to develop, with proper management, areas to ensure sustained use of the natural resources of those areas...” Hawaii Administrative Rules (HAR) § 13-5-13. Under HAR §§ 13-5-22 - 24, relevant identified land uses in the subzone are:

- Data collection, research, education, and resource evaluation which does not involve a land use, which involves a land use with incidental disturbance from installation of equipment (e.g., rain gauges or meteorological towers), or involves a land use causing ground disturbances (e.g., exploratory wells)
- Aquaculture

- Artificial reefs
- Astronomy facilities
- Marine construction, dredging, filling on submerged lands
- Mining and extraction
- Moorings and aids to navigation
- Public purpose uses by the State of Hawaii or the counties to fulfill a mandated governmental function, activity, or service for public benefit and in accordance with public policy and the purpose of the conservation district
- Transportation systems, public utility transmission facilities, and other such land uses undertaken by non-governmental entities which benefit the public and are consistent with the purpose of the conservation district
- Sanctuaries
- Demolition, removal, alteration of existing structures, facilities, equipment
- Operations, repair, maintenance, or renovation of existing facilities or equipment which are different from the original permit

Decision on the application will be made by the Board of Land and Natural Resources (Board). To approve the application, the Board must find the project consistent with the criteria noted in the Administrative Rules 13-5-30C.

Several of the identified land uses provide the Board with the foundation for a finding of consistency. The proposed project involves data collection, research, education, and resource evaluation and is designed to serve important public purposes through advancement of research on global climate change, underwater acoustics, and marine mammals. Given its sponsorship by a federal agency and participation by representatives of the University of Hawaii, this project may also qualify as a “public purpose” use. The proposal would use the seabed lands to transmit electric power for a use beneficial to the public. Further, the proposal is to use an existing facility, the cable, for a proposed project different from the project covered by the earlier CDUP.

For approval of the application, the Board must also find that: (1) the applicant has the capacity to carry out the entire project, and (2) the proposed project is clearly in the public interest upon consideration of the overall economic, social, and environmental impacts. Applicant Scripps is a part of the University of California. Scripps has demonstrated its capacity to carry out the NPAL project through successful completion of the previous ATOC research projects in California and Hawaii as well as numerous other research projects in locations around the world. Grant funding for this project is provided by ONR. The public interest values of the NPAL research objectives have been discussed previously (See Chapter 4). No economic or social impacts have been identified from the continued use of state seabed lands for the sound source power cable. Approximately five years of MMRP studies in connection with the California and Hawaii ATOC projects has shown no adverse impacts on marine mammals. Environmental impacts directly attributable to the cable would be diminished if the cable were abandoned in place, as requested, rather than removed from the seafloor. (See Section 4.1.1.1.) For these reasons, the Board could find, upon consideration of the overall economic, social, and environmental impacts of the proposed project, that it is in the public interest.

This EIS and supplementary information provided to DLNR in conjunction with the permit application provide the foundation for substantive evaluation of the project by DLNR staff and the Board. Permit application review and action by the Board will bring together input from other state and local agencies with authority relevant to the project. A public hearing on the application will provide a forum for the Board to consider additional testimony by interested public participants before taking action on the application.

In conjunction with the CDUP application, Scripps has also requested Board approval of an appropriate disposition of the seabed lands underlying the cable to enable abandonment of the cable after completion of the NPAL research. HRS Chapter 171 makes provision for disposition of public lands through lease, license, easement, permit, or sale.

Applying provisions of Chapter 171 in connection with several recently approved CDUPs for permanent installation of cables on state subterranean and seabed lands in the Resource Subzone, the Board has authorized the following dispositions: (i) a perpetual, non-exclusive easement for use of 9.1 acres of land at, and offshore of Spencer Beach Park, Hawaii (CDUP HA-2903, transpacific submarine fiber optic telecommunications system [Southern Cross Cable Network], GTE Hawaiian Telephone International); (ii) an easement and a construction right-of-entry for installation on lands at, and offshore of Kahe Beach, Oahu (CDUP OA 2949, Southern Cross Cable Network, GTE.) In another recent similar decision, on CDUP OA-2938 for AT&T Corporation's Japan-U.S. Cable Network, the Board approved installation of cable at, and offshore of Makaha Beach Park, Oahu, using existing easements for telecommunications cables. In that case, the DLNR staff reported that after investigation it had confirmed that issuance of direct, non-exclusive easements for cable systems on public lands is the most efficient and economically productive land disposition. In contrast, the issuance of leases for public lands requires prior approval from the Governor and the Legislature, and in some cases, a public auction is required.

If the NPAL project application is approved by the Board, the approval will also include the Board's determination as to the appropriate disposition of the seabed lands.

6.2.2 Coastal Zone Management Program: Federal Consistency Review

Hawaii's Coastal Zone Management Program (CZMP) has been approved by the Secretary of Commerce under the Federal Coastal Zone Management Act of 1972. The State thus has authority under the Act, as described in Section 1.3.7, to review federal permit activities conducted within or outside the state's designated coastal zone which affect land or water use or natural resources of the coastal zone. State review of consistency submittals is carried out by Hawaii's designated coastal management agency, the State Office of Planning, within the Department of Business, Economic Development, and Tourism.

The Hawaii CZMP lists permits and licenses under the MMPA as a category of authorization likely to affect the coastal zone and subject to consistency review. Consequently, in connection with its application to NMFS for incidental harassment authorization under the MMPA, Scripps has prepared and will submit to the state Office of Planning a certification of the consistency of the proposed project (Preferred Alternative) with the Hawaii CZMP.

In connection with the original ATOC study, a consistency certification was submitted by Scripps and reviewed by the State. The State's concurrence in that certification anticipated that all ATOC facilities would be removed at the end of the experiment. The current project proposes leaving the cable and possibly the sound source on the seabed. State Office of Planning concurrence with the new consistency certification, in effect, would modify the State's previous consistency action.

Scripps' certification of consistency for the NPAL project (Preferred Alternative) is supported by the information and analysis provided in this draft EIS. The draft EIS contains a detailed description of the proposed project, as well as information and analysis on impacts, mitigation measures incorporated into the project, and project alternatives. The EIS also contains information on the results of the original ATOC feasibility study and the Marine Mammal Research Program which was carried out in conjunction with the ATOC project.

Scripps has prepared and plans to submit a certification of the project's consistency with the Hawaii Coastal Zone Management Plan to the Hawaii Office of Planning, Department of Business Economic Development and Tourism. This certification is supported primarily by the information and analysis contained in this DEIS. The objectives and policies of the Hawaii CZMP are stated at HRS section 205A-2. In addition, the CZMP incorporates the Hawaii Ocean Resources Management Plan, which provides a policy framework for State management of ocean and coastal uses and resources. Relevant portions of the Hawaii CZMP and related information and analysis appear below.

Hawaii Coastal Zone Management Program Discussion and Analysis

Introduction

The NPAL project would involve use of low frequency sound transmissions to carry out research on long-range underwater sound transmission as well as further feasibility research on acoustic thermometry of ocean climate. Detailed descriptions are provided in Chapters 1 and 2. Under the Preferred Alternative, the research would utilize the existing sound source on the seabed approximately 14.8 km (8nm) north of Haena Point, Kauai, and the existing cable connecting the sound source with a power supply at Pacific Missile Range Facility. The project would span five years and would utilize the same general transmission parameters as were used in the original ATOC feasibility study conducted during 1997-1999. The project would include a program for monitoring and study of any effects on marine mammals.

Discussion and Analysis

The objectives and policies of the Hawaii CZMP are stated at HRS § 205A-2. Each of these program elements has been considered in evaluating the consistency of the proposed federal action with the CZMP, as summarized below. In addition, Scripps has considered the relationship of the proposed project to the Hawaii Ocean Resources Management Plan. Developed in 1991 by a broad-based group representing commercial, recreational, environmental, research, and governmental interests, the Plan states a policy framework for State management of ocean and coastal uses and resources. In 1995, the Hawaii Legislature assigned to the CZMP agency the responsibility for coordinating implementation of the Plan, and it has since been incorporated into the Hawaii CZMP.

Recreational Resources

Objective: Provide coastal recreational opportunities accessible to the public.

Relevant policies implementing this objective focus on coordination of coastal recreation planning and management, and providing coastal recreational opportunities by protecting coastal resources important to recreation, including shoreline parks, water quality, and use of waters suitable for recreation. As discussed below, the project is consistent with these provisions.

At least three whale-watching boats operate off Kauai where some humpback whales wintering in Hawaiian waters may be seen close to shore between December and April. As discussed in Chapter 4, the proposed project is not expected to have any negative effects on recreational viewing or photographing of humpback whales.

During the project, humpback whales would be closely monitored for any potential effect of the sound transmissions on their distribution and abundance. Monitoring activities would include visual

surveys by air. Results from the Marine Mammal Monitoring Studies would be provided annually to NMFS for review. Thus, no negative impacts on recreational whale-watching are expected to occur.

The proposed action is not expected to have any negative impacts on recreational divers since the source is located 14.8 km (8 nm) off the coast of Kauai in 807 m (2650 ft) of water. By extrapolation of available human underwater hearing threshold data (Hamilton, 1957; Smith, 1965; Hollien et al., 1967) down to 75 Hz, the minimum audibility level of 108 dB is derived - a level that would seldom be exceeded at local diving locations, which are mainly close to shore. In a recent study on the effects of LF sound on recreational divers, Cudahy et al. (1999) determined the maximum safe exposure to underwater sounds between 100 and 500 Hz to be 145 dB re 1 μ Pa at 1 m. With the sound source at 807 m (2650 ft), the sound pressure level of 145 dB would be at a depth of approximately 500 m (1640 ft), which is well below reasonable dive depths. Therefore, it is expected that few, if any, divers would even hear, much less be affected by, the source transmissions.

The acoustic source, associated cable, and the transmission of underwater signals would all occur approximately 14.8 km (8 nm) off the north coast of Kauai and along the offshore cable route, and would not be near or interfere with any State or County park, dedicated public right-of-way, perennial stream, sandy beach, or swimming or surfing area, and would not affect the shoreline.

Scientific data obtained from the project has the potential to provide valuable information to assist with management decisions needed to implement measures to protect coastal parks and beaches. The proposed research would be expected to contribute to understanding of ocean climate changes, which may assist in shoreline management decisions designed to protect recreational beaches. The loss of island beaches due to erosion was documented in a 1992 study prepared for the Hawaii Coastal Zone Management Program, Beach Management Plan with Beach Management Districts (Hwang and Fletcher, 1992). Sea level rise, which may be linked to ocean climate change, was identified as a possible cause. This is discussed further under "Coastal Hazards," below.

Historic Resources

Objective: Protect, preserve, and where desirable, restore, those natural and man-made historic and pre-historic resources in the CZM area that are important in Hawaiian and American history and culture.

The proposed project site is not located within a historic/cultural district, nor does it include any historic property listed on, or nominated to the Hawaii or National Register of historic places. The proposed project will not be within or near a Hawaiian fishpond or historic settlement area. Although shipwrecks are thought to be present along the northern Kauai shore, a side-scan sonar survey for the location of the cable and sound source did not reveal the presence of any shipwrecks or other historic or archeological resources on the ocean floor. See further discussion at Section 3.3.6.

Therefore, the proposed project would have no foreseeable impact on historic or pre-historic cultural resources.

Scenic and Open Space Resources

Objective: Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

The proposed project would not alter any visual or scenic resources or public views along the shoreline.

The project consists of the continued use of a sound source and a power cable on the ocean floor, none of which is visible above water. No construction would occur onshore or in or on waters seaward of the shoreline. Accordingly, no component of the proposed action would abut a scenic landmark or be adjacent to an undeveloped parcel, nor would it be visible between the nearest coastal roadway and the shoreline.

Monitoring activities would involve a slight temporary increase in airplane traffic, which would be visually indistinguishable from the current uses of the project area.

Coastal Ecosystems

Objective: Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.

This CZMP objective and the relevant implementing policies call for preserving coastal ecosystems, promoting water quality planning and management, and improving the technical basis for natural resource management. The proposed project does not involve any earthwork, dredge, fill, or any discharge into coastal waters and would not affect water quality. No portion of the project would be located within the Shoreline Setback Area or any Marine Life Conservation District or Natural Area Reserve.

The transmission of low frequency sound through coastal waters has previously raised concern about possible degradation of the marine ecosystem and, most specifically, about adverse effects on those marine mammals capable of hearing sound at the frequencies to be used in the research. As more fully discussed in Chapter 4, the Kauai and California MMRP research found no basis for these concerns. During approximately five years of close monitoring, no adverse effects were detected. The current project would continue transmissions within the same general parameters used during the MMRP studies. Marine mammal monitoring would continue, with the emphasis shifting from intensive observations of individual animal behavior to monitoring of longer-term factors such as distribution and abundance.

The proposed project would provide data on ocean climate, which affects coastal ecosystems. These data would be available to resource management agencies, as well as educational and scientific institutions and the public. The information obtained by this project has the potential to improve the technical basis for resource management decisions.

Economic Uses

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

This CZMP objective and its implementing policies focus on concentration of coastal-dependent development in areas designated for such use when feasible or, when not feasible and when the development is important to the state's economy, allowing location in other areas, provided that adverse environmental effects are minimized.

The proposed action is for the continued use of an existing seabed power cable and sound source. By using existing facilities, the proposed project would avoid the need to install additional equipment. The existing facilities are located on submerged lands designated as a Conservation District, Resource Subzone, and the proposed uses are consistent with objectives and specifically allowed uses of those areas.

To the extent that the CZMP calls for examination of the project's importance to the state economy and the minimization of adverse effects on the environment, the following considerations are relevant.

The direct economic effect of the project would occur primarily through employment of Hawaiian personnel and purchases of supplies and services during the course of the monitoring studies. From 5 to 10 scientists, most from the Hawaii marine science community, would be involved in aerial surveys as part of the monitoring activities.

The project's longer-term economic importance to Hawaii lies in its furtherance of the State's policy of fostering research and education based upon Hawaii's natural ocean laboratory. The project could attract other ocean research and education activities to Hawaii, but any such effect is uncertain and cannot be quantified at this time.

Coastal Hazards

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, and subsidence.

This objective and the implementing relevant policies focus on reducing coastal hazards by developing and communicating information on ocean climate-related factors, including flood, erosion,

and subsidence hazards, which jeopardize development along Hawaii's coasts. Other policies concern avoidance of locating development in hazardous areas.

If warming of the earth's climate is underway, rising sea level can be expected, resulting in flooding and erosion in coastal areas. However, the question of whether global warming is underway is complex and controversial. Computer models of global warming have had to rely on assumptions, rather than actual measurement, of ocean temperatures on a basin scale. The models and their projections have thus been subject to criticism and have not provided a compelling basis for formulation of policy for dealing with global climate change issues.

Acoustic thermometry of ocean basins would provide the precise temperature measurements needed for effective computer modeling of global climate change. As further discussed in Chapter 1, the Kauai project would test the feasibility of this concept for larger-scale, longer-term application. The project would thus be consistent with the CZMP policy concerning development of information on ocean climate-related hazards.

Given that the project's sound source and cables are offshore and all operations will be conducted offshore, the project would present no conflict with policies concerning location of development away from areas prone to coastal hazards.

Managing Development

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

This objective and its implementing policies focus on the development review process, seeking to utilize law in managing coastal zone development, to facilitate timely processing, and to understandably communicate development impacts to the public.

The consistency review process is being carried out concurrently with other environmental review processes applicable to the project. These are the LOA application review by NMFS under the MMPA, ESA § 7 consultation by NMFS, and CDUP review by the Hawaii DLNR. The key environmental information and analysis for these processes are contained in this EIS. The EIS also serves as the basis for the federal consistency certification. Accordingly, the requirements of the other relevant environmental laws are integrated into the analysis under the state and federal coastal zone management authorities.

Other aspects of the regulatory review process began in the early stages of project planning. ONR and Scripps representatives first consulted with NMFS concerning this project in April, 1999. Over the next few months, informal consultation with concerned state and federal agencies was carried out. The Notice of Intent (NOI) to prepare an EIS was published in the Federal Register on June 15, 1999. Public hearings on the proposed project were held at Hanalei, Kauai (June 29, 1999); Lihue,

Kauai (June 30, 1999); and Honolulu (July 1, 1999). After submission of a permit application to DLNR, an EIS Preparation Notice was published in the Hawaii OEQC Bulletin of August 8, 1999. Comments from the public received by mail and at the hearings are reviewed and addressed in this draft EIS.

Through these means, timely and understandable information has been provided to the public about possible project impacts, consistent with these provisions of the CZMP.

Public Participation

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies related to this objective focus on providing information to the public on coastal management issues and engaging the public in dialogue and advising on these issues.

These policies are implemented, in part, through the EIS process, including the various public notices, public scoping meetings, public hearing, and public comment and response on coastal management issues associated with the proposed project. The results of the NPAL research would be published and therefore available to local teachers, students, and interested community members.

Beach Protection

Objective: Protect beaches for public use and recreation.

These policies focus on locating shoreline development to preserve open space, minimize damage to structures, and prohibit or minimize shoreline erosion protective structures. These provisions were recently added to the CZMP and reflect the increasingly serious problem of beach erosion on all Hawaiian Islands. In recent DLNR workshops on this subject, information was presented showing that over the past 70 years, about 25 percent of Oahu's beaches have been narrowed or lost to erosion. On Maui, the loss is nearly 30 percent.

The proposed project would not involve any shoreline structures. However, a central goal of the acoustic thermometry research component of the project is to gain information on global climate change which, in turn, will assist in constructing more accurate climate change models. These are necessary for development of effective strategies for addressing climate-related phenomena such as beach erosion.

Marine Resources

Objective: Implement the State's Ocean Resources Management Plan.

The policies in this CZMP sector reflect the substantive scope of the Hawaii Ocean Resources

Management Plan (HORM Plan), calling for stewardship in the protection, use, and development of marine and coastal resources, research and study to increase understanding of the ocean, research and development of new ocean technologies, and partnership with federal agencies in sound management of ocean resources within the United States exclusive economic zone (EEZ, which extends 200 miles from shore).

The HORM Plan was the outgrowth of 1988 legislation which mandated the drafting of a plan for coordinating a consistent ocean policy framework for the various state and local agencies with responsibility for ocean and coastal resources. In addition to recommending a new governance structure for ocean management decisions in the State, the Plan identifies ten issue areas and states objectives, policies, and implementing actions for each which are to guide agency ocean management decisions. While the Plan has no direct regulatory effect, it provides assistance in the implementation of applicable regulatory programs and, as previously noted, is a component of the Hawaii CZMP. Provisions of the HORM Plan which have particular relevance to the NPAL project are noted below.

Ocean Research and Education

The drafters of the HORM Plan emphasized the importance of ocean research and education, adopting policies to strengthen Hawaii's national and international competitiveness in attracting funds in these fields, to mitigate user conflicts between research and non-compatible uses so that research projects are not jeopardized, and to foster stewardship attitudes. The drafters identified ocean research and education as major determinants of the Plan's long-term success.

The proposed project furthers several of these objectives, particularly those focused on attracting ocean research programs and increasing public awareness. Hawaii's stature as a natural laboratory for ocean research is strengthened by the selection of Kauai over California as the site of the second phase of the acoustic thermometry feasibility studies as well as ONR's underwater sound transmission studies. Results of the thermometry research would be written up in national and international scientific journals, as occurred with the first ATOC feasibility study. Results of the research would also be made available to Hawaiian educational and scientific institutions, as well as to the general public. During humpback whales' seasonal presence in Hawaiian waters, as part of the proposed project, from 5 to 10 University of Hawaii scientists would conduct aerial surveys to monitor the animals' distribution and abundance around the Island of Kauai. This information, too, would be made available for educational and scientific use. Both the public review of the project prior to implementation, and the publication of results after completion would increase public awareness of Hawaii's ocean resources.

Marine Ecosystem Protection

The HORM Plan lays a foundation for agency management decisions which are protective of marine and coastal ecosystems, and which protect and enhance marine species and areas of exceptional resource value. As discussed above, in connection with the marine ecosystems policies of the CZMP, the NPAL project would not degrade potentially affected ecosystems. Findings of the MMRP showed that concerns about possible adverse effects on marine mammals and fish were unfounded. See Chapter 4.

Fisheries

The HORM Plan provides the policy foundation for State management of fisheries on a sustainable fisheries basis and avoidance of user conflicts. Implementation of the NPAL project is not expected to have effects inconsistent with these policies. Fishery resources in the project area are discussed in Section 3.2.4, and potential effects on these resources are discussed beginning in Section 4.2.4.

These potential effects are identified as minor and limited to a small zone around the sound source (at approximately 807-m [2650-ft] depth). Habitat for stocks targeted by commercial, subsistence, and recreational fishing is at substantially less depth. The absence of user conflicts associated with this project is discussed in Sections 4.3.1 and 4.4. The issue of possible effects on the behavior of fish around the FAD located north of Hanalei is discussed in Section 6.2.4.

Beaches and Coastal Erosion

In furtherance of the objective of a State management system to prevent beach loss and protect shoreline property, Policy J of the HORM Plan is to “plan for climate change, sea level rise, and emerging issues.” The proposed acoustic thermometry research has the potential to provide essential information on ocean variability, which on longer time scales reflects changes in ocean temperature and the potential for global climate change. This information would be made available to the scientific and regulatory communities, and therefore could aid in the implementation of Policy J. This is discussed further in Section 6.2.1 on Coastal Hazards.

The proposed project would have no impact on any of the HORM Plan’s objectives, policies, or implementing actions of the Harbors, Waste Management, Fisheries, Aquaculture, Energy, and Marine Minerals sectors.

6.2.3 Historic Resources Preservation

The State's historic resources preservation program is carried out by the Division of Historic Resources Preservation within DLNR. The Division has advised that it has no record of shipwrecks or other possible historic resources in marine waters around the islands. In connection with the ATOC project, program officials advised that they had no knowledge of historic resources in the vicinity of the proposed action. The Division gave notice that no field check was required because

the Division believed that the ATOC project would have no effect on significant historic resources due to its offshore location (14.7 km [8 nm] offshore). In connection with the current proposal, the Division has been queried and has advised that no new information has been developed regarding possible historic resources in the area of the proposed project.

ONR and Scripps have also considered the effect of regulations implementing the National Historic Preservation Act, which were revised recently to increase protections for historic properties of traditional cultural or religious importance to Native Hawaiians. 36 CFR §§ 800.1-800.16. These procedures apply to federal undertakings which may cause effects on historic “properties” which meet specified criteria for inclusion in the National Register of Historic Places. The effects in question must be ones that alter the property's characteristics that qualify it for National Register eligibility. The procedures do not address broad, general areas or practices not connected with a specific historic property.

In considering these standards together with the nature of the proposed project, its impacts as discussed in this EIS, and its location in the open ocean nearly 8 nm north of Kauai, ONR and Scripps have determined that the proposed project does not have the potential to cause effects on any historic property. Nevertheless, opportunity has been provided for potentially interested Native Hawaiian groups to comment on the proposed project in the context of well publicized public scoping meetings in Hanalei and Lihue, Kauai, and in Honolulu. The Office of Hawaiian Affairs (OHA) was invited to comment early in the EIS preparation process and advised that it would reserve comments for the draft EIS. Copies of the draft EIS are being provided to OHA (Honolulu and Kauai offices) and the Hawaiian Civic Club of Kauai.

6.2.4 Division of Aquatic Resources, DLNR

Responsibility for management of state fisheries aquatic resources lies with the Aquatic Resource Division of DLNR. The Division has no permit requirement that affects this project. During the previous project review, the Division’s comments expressed support for research leading to greater knowledge of the ocean and its marine life, but questioned why additional ocean thermal data is needed. The Division also commented that its fish aggregating device (FAD) north of Kauai was sufficiently distant from the proposed sound source site (approximately 16 km [8.6 nm]) to avoid any interference with FAD anchors and cables. The Division stated that it was unknown how the sound pulses might affect the behavior of fish around the FAD, because little was known about the potential effects of low frequency sound on fish. See discussion of fish resources and potential effects at Sections 3.2.4 and 4.2.1.2.3. The Division was notified of the currently proposed project and the intended preparation of an EIS but has not provided comment. Because the project would utilize the same equipment and facilities, the previous comments are assumed to remain in effect.

6.2.5 Division of Land Management, DLNR

During review of the ATOC project, DLNR's Division of Land Management concluded that the Division had no objections to the project because the proposal did not affect present or future Land Management programs. The Division was notified of the currently proposed project but has not provided comment.

6.2.6 Hawaii Department of Transportation

The Hawaii Department of Transportation (DOT) has jurisdiction over state submerged lands and must give approval for activities and installations which might interfere with navigation. Under HRS, Chapter 266, this review occurs within the context of the DLNR permit review process. Given the depth at which the project equipment is located, it had no effect previously on navigation and should be expected to have no effect on navigation during the proposed project. For the previous project, DOT notified DLNR that the project did not appear to have any discernible impact on the State's commercial harbor facilities or operations. DOT was notified of the currently proposed project but has not yet commented.

6.2.7 Water Quality And Noise Regulation: Department Of Health

Hawaii Department of Health (DOH) has authority in relation to aquatic resources under HRS Chapter 342D, 11 HAR Chapter 54 (water quality standards), and other state authorities. Under Chapter 342F, DOH regulates certain noise pollution, not including noise in State marine waters. These statutes and rules are part of the State's Coastal Zone Management Program authorities network, and the DOH can participate in implementation of these authorities through the federal consistency review process. Similarly, DOH can implement the aquatic resource policies and standards through recommendations to DLNR on CDUP applications.

The DOH is also the state agency which implements water quality certification under § 401 of the Clean Water Act, applying the state water quality certification standards. The authority for § 401 review arises in connection with any federal permit for discharge into navigable waters of the United States (defined by § 502(8) of the Clean Water Act to extend three miles seaward from the shore).

Because no federal discharge permit was required for the previous project, the State gave notice that § 401 certification was not needed. In connection with the current proposal, DOH representatives advised during early informal consultation that the previous agency determinations would remain in effect.

During review of the previous project, DOH indicated that, given the uncertainty at that time about potential effects of low frequency sound on aquatic life and the availability of findings on this issue at the conclusion of the MMRP, it was premature for DOH to make a determination regarding possible applicability of other water and noise-related authorities of DOH. DOH was provided with

copies of MMRP reports and findings and has raised no further concerns about potential effects of low frequency sound on aquatic life.

The state water quality standards of 11 HAR Chapter 54, establish classifications for marine waters and marine bottom ecosystems and define compatible uses and criteria. All portions of the cable fall within the areas classified as “Open Coastal Waters” (shore to 183 m [600 ft]) or “Oceanic [deeper] Waters” (§ 11-54-07). The cable route begins at a depth of 24 m (79 ft) offshore from Barking Sands, runs seaward around the northwest side of the island at depths of 73 to 108 m (240 to 354 ft), and terminates at the source site at approximately 807 m (2650 ft).

Approximately three-fourths of the cable route lies offshore between Hikimoe Valley and Makahoa Point, and is therefore in an area designated as Class AA Open Coastal Waters. The regulatory objective is to maintain such areas in their natural, pristine state as nearly as possible, with an absolute minimum of pollution or alteration of water quality. The project cable, involving no pollution or alteration of water quality, is compatible with this objective. Among the uses protected in Class AA waters is oceanographic research. Use of the cable to transmit power is part of the proposed oceanographic research activities.

Less stringent standards apply in the deep Oceanic Waters, which are in the Class A Open Coastal Waters. The Cable between Barking Sands and Hikimoe Valley, as well as the cable’s northern terminus and the source are in Class A waters. In such waters, any use is allowed as long as it is compatible with protection and propagation of fish, shellfish, and wildlife, and with recreational uses.

Of the marine bottom types addressed by the water quality standards, only soft bottom community (defined as occurring at 2 to 40 m [6.6 to 131 ft]) occurs along the immediate cable route. The point of connection with the existing cable offshore from Barking Sands is at 24-m (79-ft) depth, in an area of sandy and coral rubble bottom. Abandonment of the cable in place would be considered to be of negligible impact on the seafloor, since it was laid in place during October 1993, and it is assumed that the greatest portion of it is now buried by sand. Abandonment of the source would also be of negligible impact on the seafloor since it was installed in July 1997 and is at such a deep depth.

From the point of connection offshore from Barking Sands, the cable route moves into deeper water, passing along sandy surge channels that transect the outer reef. At 45 to 67 m (148 to 220 ft), this reef is too deep to be included in the marine bottom types addressed by state water quality standards. Even so, the cable route avoids the coral, because it is important to run the cable over stable and relatively flat seabed, minimizing cable suspensions that could cause stress and breakage.

Potential effects of the sound transmissions upon the aquatic environment are discussed in Chapter 4. The program for mitigating potential adverse effects upon aquatic life is described in Chapters 2 and 5 of this EIS. With these mitigation measures, the project is not expected to have any adverse

effects in relation to State goals for protection of aquatic resources, as reflected in HRS Chapters 342D and 344.

6.2.8 County Of Kauai: Special Management Area Requirements Under the Shoreline Protection Act; County General Plan and Development Plans

In connection with the previous Kauai ATOC project, the County of Kauai provided written notice that, because the project would be located seaward of the County's Special Management Area (SMA), a special management area permit under HRS 205A would not be required. The County exercised no other authority in relation to the project. In connection with the currently proposed project, the County has again provided written notice that, due to the location of the project seaward of the Special Management Area, no Special Management Area permit would be required.

6.3 HUMPBACK WHALE RECOVERY PLAN

In 1991, NMFS approved a Recovery Plan for the endangered humpback whale. Under provisions of the ESA, recovery plans are prepared to foster and guide the recovery of species listed as endangered. The Recovery Plan is not a regulatory or management program. Instead, it recommends goals for recovery efforts and provides background information for decision-making affecting humpback whales.

The Recovery Plan recommends goals and actions for: (1) maintaining and enhancing the habitats of humpback whales; (2) identifying and reducing death, injury, or disturbance to the whales caused by humans; (3) performing research to evaluate progress toward recovery goals; and (4) implementing the Recovery Plan through improved administration and coordination.

The proposed project's consistency with these goals can be evaluated, in part, in light of the findings of the Marine Mammal Research Programs (MMRPs), which were conducted in connection with the previous California and Hawaii ATOC research projects. The MMRPs showed no incompatibility between the low frequency acoustic transmissions as used in the ATOC research and Recovery Plan objectives of reducing death, injury, and disturbance to humpback whales. MMRP monitoring showed no overt, short-term changes in the behavior of individual whales nor in the species' abundance or distribution. (See further discussion of MMRP findings at Sections 4.2.1.2.1 and of humpback whales at Section 3.2.)

The Marine Mammal Monitoring Studies proposed in connection with the current project would augment the MMRP information on humpback whales with a continued program of aerial surveys and data analysis. Principal objectives would be to monitor species distribution and abundance in areas potentially affected by the acoustic transmissions. The resulting information can be expected to further the Recovery Plan objective of research to evaluate progress toward recovery. Particularly relevant is Goal 3.5, calling for information on habitat use to determine management actions.

Several of the goals of the Recovery Plan require more information on the current acoustic regime of the humpback habitat. Goal 1.14 calls for detailed descriptions of physical and biological characteristics of current habitats, including “acoustic characteristics.” Goal 1.3111 focuses on the need to reduce “noise disturbance” in Hawaiian waters; although it is hesitant about recommending additional noise research because of the expense and possible ambiguous results and, therefore, emphasizes reduction of human-produced underwater noise as more direct and cost-effective than additional research.

The proposed project would involve short-term increase in underwater sound in the area. The change would be closely similar to the increase in underwater sound associated with the previous ATOC research and studied by the MMRP. Intensive statistical analyses through the MMRP revealed some subtle changes in the behavior of humpback whales in response to ATOC sound transmissions. The study results showed that the distance and time between successive whale surfacings increased slightly with increasing sound levels. (See Section 4.2.1.2.1.) Whether this subtle effect may constitute a “noise disturbance” within the contemplation of the Recovery Plan Goal 1.3111 would appropriately be weighed in light of what is known about the potential effects of low frequency sound on humpbacks as well as the value of the Marine Mammal Monitoring research in providing information to assess more accurately the potential for impacts of noise and implement Goal 1.3111 to reduce noise disturbance in Hawaii. Consideration of this issue may also encompass comparative sound levels of noise-producing sources in the north Kauai area, including whale-watching vessels, recreational and commercial fishing power boats, thrillcraft, and low-flying aircraft.

The Recovery Plan also encourages public education about humpback whales and international cooperation in conserving the whale and its habitat. Goals include mutual exchange of information between nations (Goal 1.73), effective communications with groups interested in marine affairs (Goal 4.3), and increased public education (Goal 4.9). The Marine Mammal Monitoring Studies planned as part of the NPAL project further these goals by gathering and sharing of humpback distribution and abundance data.

6.4 HAWAIIAN ISLANDS HUMPBACK WHALE NATIONAL MARINE SANCTUARY

The Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS) was established in 1992 as part of the national system of marine sanctuaries. The primary purpose of the designation is to protect the humpback whale and its habitat. A management plan adopted in 1997, and amended in 1999, established sanctuary boundaries and management procedures for the sanctuary. 15 CFR §§. 922.180-922.187.

In the Kauai area, the HIHWNMS includes the submerged lands and waters from the Kilauea Point National Wildlife Refuge (Kailiu Point) out to the 100-fathom (fm) (183-m) isobath, eastward to Mokolea Point. A small section of the cable lies within the sanctuary boundaries. No changes in location or use of this cable are proposed in connection with the project. At the project's conclusion

the cable would be abandoned in place, avoiding the seafloor disturbance that could be associated with removal of the cable.

Based on measurements made during the Kauai ATOC MMRP, the sound field at the sanctuary boundary is about 110 dB. Thus some increase in ambient noise levels <115 dB could be expected in a portion of the sanctuary during sound transmissions.

The humpback whale and its habitat are the only resources included for protection and management under the HIHWNMS management plan. The plan relies on existing regulation under federal and state law to carry out the protections and management measures. Additionally, federal agencies must consult with the Secretary of Commerce or designee on any actions, internal or external to a National Marine Sanctuary (including private activities authorized by licenses, leases, or permits), that is “likely to destroy, cause the loss of, or injure, any sanctuary resource.” 16 USC § 1434(d). In connection with the proposed action, there is no expectation of any destruction, loss or injury of any sanctuary resource, within, or outside of the sanctuary.

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