

CHAPTER 5

ENVIRONMENTAL CONSEQUENCES OF PHASE 1

COMMON ACTIONS

Phase 1 common actions would be included within each of the Phase 1 alternatives, for which environmental consequences are discussed in Chapter 4. The common actions, regardless of the alternative they are combined with, contribute to achievement of project goals and objectives. These benefits are short-term without the implementation of the other actions that make up a complete alternative. Adverse effects of the common actions are typically local, short-term and/or mitigable.

The discussions in this chapter supplement the discussions of the environmental consequences of the alternatives provided in Chapter 4. Table 5-1 provides an overview of the environmental consequences of each Phase 1 common action for all environmental resources. All substantive effects of Phase 1 common actions are discussed in more detail in text. The discussions in this chapter include a brief review of the description of each action. More complete descriptions of each action can be found in Chapter 2.

5.1 FISH HARVESTING

Boat dock facilities and a processing plant would be located at one of several locations along the shore of the Salton Sea, including the former Salton Sea Test Base or on the Torres Martinez Indian Reservation. If either alternative 2 or 3 is selected, the dock could be at the site of the abandoned Navy pier, along the diked area adjacent to the former test base encampment area. The dock would be constructed to accommodate four berths, but only two berths would be used for harvesting fish; the other two berths would accommodate shoreline and nearshore cleanup operations. Fish harvesting would involve diesel-powered boats netting tilapia to remove them from the Sea. Nets and harvesting techniques would be designed to minimize incidental catch of other species. The harvest rate would be managed to maintain a healthy tilapia population.

Surface Water Resources

Fish harvesting could satisfy several objectives. Besides being a potentially profitable commercial industry, it would reduce the fish population, which is currently at a very high density (need Reference). Reducing the density could improve the survivability of the remaining stock, possibly making the remaining fish population more hardy and less vulnerable to rapid decreases in dissolved oxygen or other water quality variables. Finally, fish harvesting has been discussed as a potential means of reducing the nutrient content of the Sea. Fish processing operations could result in significant increases in water demand and could have an impact on local water systems.

A sustainable commercial harvest of tilapia has been roughly estimated to involve about 200 kilograms of fish per hectare of Sea surface area per year at current conditions (Hurlbert pers. Com. 1999). This estimate is based on tilapia harvests in other lakes with similar densities and would be equivalent to about 20,000 metric tons of fish per year for the current surface area of the Salton Sea. Thus, processing 20,000 metric tons of tilapia per year would result in the removal of only about 0.16 grams per square meter of phosphorous per year. The annual rate of phosphorous loading to the Salton Sea is estimated to be about 1.6 grams per square meter per year. Based on these assumptions, a sustainable fish harvest would remove 10 percent of the phosphorous that enters the Sea each year (Hurlbert pers. Com. 1999).

The ratio of nitrogen to phosphorous in tilapia is estimated to be in the range of about 15:1 to 20:1, which is roughly twice the ratio of nitrogen to phosphorous in the tributaries that flow into the Salton Sea (Holdren 1999). Although the harvest of tilapia might remove a higher percentage of the nitrogen loading than phosphorous, the percentage still would be small. In addition to the annual loading of these nutrients, organic material containing nitrogen and phosphorous is accumulated in bottom sediments. These sediments represent a vast potential source of nutrients that could replenish the nutrients in the water column even if nutrients were removed from the Sea at the annual tributary loading rate. Based on this analysis, fish harvesting alone would have a limited effect on reducing the nutrient levels in the Sea. In order for the harvesting of tilapia to have a more pronounced effect on nutrient levels it must be coupled with significant reductions in the nutrient input levels into the Sea. Even then, the Sea is likely to be eutrophic for many decades.

Geology and Soils

The proposed boat dock facilities and processing plant would be subject to ground shaking and acceleration effects, as described in Section 4.3, which could damage or destroy the structures. This would be a potentially significant impact to the structures if they were not built to be earthquake-resistant. However, repairs would be made under the long-term operation and maintenance program for the Salton Sea Restoration Project, reducing the potential significance of these impacts to a less than significant level.

In addition to ground acceleration impacts, the boat docking facilities could be exposed to seismically generated waves in the Sea. Because these structures will be built to

withstand a certain amount of water turbulence, seiches are not expected to result in a significant impact to docking facilities.

The construction and operation of the processing plant near the Salton Sea shoreline would not result in significant impacts to the soils or topography. The plant will be built on relatively stable and level ground. The specific plant site would be identified in a site-specific geotechnical study prior to the plant's construction and would be sited away from steep slopes and erodible or corrosive soils that could make operations difficult and damage the plant.

Constructing boat-docking facilities for fish harvesting vessels would disturb soils and Salton Sea sediments. This would not be a significant impact. Soil and sediment disturbance would be temporary, and potential soil erosion would be minimized through standard construction-area erosion control techniques. Sediments with potentially elevated levels of metals and chemical contaminants could be disturbed during construction and dredging; however, these sediments likely would be redistributed within the Sea during dredged material discharge. These structures would be unlikely to disturb quantities of sediments in the areas of the highest observed selenium concentrations (the central portion of the Sea and near the Desert Shores Marina) (Levine Fricke 1999); therefore, the potential for remobilizing selenium into Salton Sea water for biological uptake would be low.

Air Quality

A fish harvesting program would have several associated sources of emissions—boat dock construction, boat operations, fishmeal grading and storing, processing plant construction, and processing plant operations. Although emissions associated with constructing a boat dock and associated facilities would be minor, a fish processing plant would generate more significant construction emissions. Boat operations also could have significant emissions, although exact emission quantities would depend on the size and number of hours the fishing boats operate.

Mitigation Measures. Mitigation for construction emission impacts would require developing and implementing a dust control plan for construction sites, including haul roads and construction equipment staging areas. In addition, the fish processing plant would require air quality permits from the relevant air pollution control district. As part of this process, a more detailed air quality analysis would be performed and specific equipment and operating rules would be developed to minimize air quality impacts.

Fisheries and Aquatic Ecosystems

Fish harvesting may reduce the magnitude of die-offs rather than the occurrence of die-offs by reducing density of fish and thus competition for limited habitat with oxygen within the water column during periods when much of the Sea goes anoxic due to temperature. It would also provide a healthier environment for the other species in the fishery, while also potentially improving the health of the remaining tilapia population (Costa-Pierce, personal communication 1999). There would be an adverse effect on individual tilapia because they would be targeted in the harvesting. However, the net

effect on the tilapia fishery could be neutral or positive if harvesting results in smaller but healthier population. Nets will be used and sized accordingly to minimize the potential for entrainment by the endangered desert pupfish. There may be an initial reduction in prey items for scavenger-feeding bird species and diving birds, associated with the reduction of tilapia in the Sea. There also would be incidental take of corvina, bairdiella, and sargo. The significance of these losses would depend on the location and method of harvesting. A pilot project is currently under development to determine the appropriate methods to avoid these impacts. The pilot project will be subject to additional environmental review prior to implementation.

Mitigation Measures. Mitigation would include sizing the nets to reduce incidental capture of other species and other methods to manage and focus the harvest on tilapia.

Socioeconomics

Fish harvesting could help improve water quality by slightly reducing nutrient loading, with consequent reduction of eutrophication problems, which have been identified as a major cause of Sea odor and wildlife mortality. Harvesting would employ workers to collect the fish and process them for sale as fishmeal. Resulting employment would be a positive benefit to the area. Revenues from sale would partially offset the costs of this operation. If eutrophication is reduced, this action would likely result in long-term economic benefits by improving development opportunities.

Land Use and Planning

Fish harvesting activities would have a less than significant impact on land use. Although actual fish harvesting only would affect the in-Sea area, a small land area would be required for constructing a fish meal plant. The plant would be constructed on either the former Salton Sea Test Base or Torres Martinez Indian Reservation in a manner that is compatible with existing land use patterns.

Recreational Resources

Fish harvesting may reduce the likelihood of fish die-offs, which could reduce an existing significant negative impact on recreation due to the aesthetics and odor. Much of the present angling at the Sea for human consumption is focused on tilapia. This common action would be designed to balance harvesting with retaining an ample tilapia population to serve avian and angler recreation needs.

Public Health and Environmental Hazards

Harvesting fish from the Salton Sea likely would have no effects on public health. Processing the harvested fish into the end products likely would be sufficient to destroy all biological pathogens. While the fertilizer and fishmeal produced from harvested fish may contain selenium and other chemicals present in the fish, these products would not be consumed or ingested. The potential for human health effects to result from handling these end products is negligible. To ensure that the chemical concentrations in the fish are below levels of concern, the end products could be sampled prior to distribution; contaminated lots would not be released for distribution. Fish harvesters and processors with open wounds could be exposed to *Vibrio* bacteria while handling

the fish. Use of proper protective clothing, such as gloves, during fish harvesting and processing would ensure that workers are not exposed to *Vibrio* bacteria. Additionally, sampling and sorting could be conducted prior to processing to remove infected fish from the processing stream.

Utilities and Public Services

The largest increase in demand for utilities for all common actions is related to the operation of the fish processing plant. Fish processing operations could result in significant increases in water demand and have an impact on local water systems. Because there are no sanitary sewer facilities near either potential site, wastewater from the fish processing plant would be disposed of in a septic system constructed in conjunction with the fish processing plant. Therefore, no local sanitary sewer systems would be affected. The waste byproducts generated by the fish processing operation may affect the capacity of solid waste disposal facilities. When the environmental assessment is completed for the Fish Harvesting Pilot Project, the potential impacts on utilities will be better understood. Demands on other public services related to constructing and operating all other common actions are anticipated to be minor and not significant.

Archaeological and Architectural Resources

After the location of the fish harvesting facility has been determined, the area of potential effect (APE) would be identified and inventoried for cultural resources. Procedures to determine the significance of identified resources, potential impacts to them, and how such impacts might be mitigated would be implemented as specified in the Programmatic Agreement (PA) among Reclamation, the Authority, the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP), Native American tribal groups that have indicated they would like to continue involvement with the project, other land managing agencies, and other interested parties following consultation with the parties of the PA. The PA will address treatment of specific types of resources, as well as possible measures to identify submerged resources within project areas. These measures could include identifying and recording sites by archaeologists using diving equipment, identifying sites by examining core samples of the Sea bottom, and monitoring dredged materials. There is a high potential for archaeological resources to exist within the submerged portion of the APE.

Mitigation Measures. Measures to mitigate impacts to submerged resources and to known significant resources will be developed and implemented in accordance with procedures specified in the PA.

Native American Resources

The Torres Martinez Indians have raised concerns about submerged village sites within the Salton Sea and sensitive archaeological sites on the former Salton Sea Test Base. Therefore, any activities that may affect the Sea floor or the former test base may have an impact on Native American resources. Once definite locations are chosen for the proposed boat dock and fish meal plant for this common action, specific consultation efforts with the Torres Martinez Indians and other groups who traditionally used the

Salton Sea region would be required to assess impacts and to develop mitigation measures. Because the value of particular Native American resources is determined by the specific group to whom the resource is important, significance of impacts can be determined only through tribal consultation.

Indian Trust Assets

Implementing this action is expected to have beneficial impacts on Indian Trust Assets of the Torres Martinez Tribe. Direct benefits will result if boat dock and processing facilities are constructed on the Torres Martinez Indian Reservation. Other direct benefits include jobs related to construction and the fish harvesting industry. Indirect benefits will result from the improved environment and fishery and a resulting rise in tourism and recreational use. Significant but mitigable impacts may occur, however, if the required construction and industrial activities disturbs wetlands or mineral, cultural or other resources considered Indian Trust Assets by the Torres Martinez Tribe.

5.2 IMPROVED RECREATIONAL FACILITIES

The numerous public boat ramps around the Salton Sea will be repaired to improve safety and usability. Major boat ramp rehabilitation will involve dredging approximately 10,000 cubic yards of material within about three acres within the Sea per ramp, with a temporary surface disturbance of approximately three acres. Minor boat ramp rehabilitation will involve dredging approximately 5,000 cubic yards of material within about two acres of the Sea per ramp; temporary surface disturbance would involve approximately two acres. Boat ramp access roads also will be repaired.

Surface Water Resources

Potential adverse water quality impacts could result from increased motorized boat traffic and associated fuel use with the improvement of recreational facilities.

Geology and Soils

Improving recreational facilities would have soil and sediment disturbance impacts similar to those described for creating boat-docking facilities for fish harvesting (see Section 5.1).

Fisheries and Aquatic Ecosystems

Improving recreational facilities could encourage increased visitor use, which in turn could result in a potential increase in the take of sport fish species from the Sea. However, the take would continue to be managed by the State to maintain a healthy population.

Socioeconomics

Repairing public boat ramps and dredging to improve water access would have a slight, positive short-term effect on the local economy. This effect would be the result of employment and spending during the construction phase. Until water quality is improved, the demand for these facilities is expected to be similar to existing conditions; therefore, only negligible to minor beneficial impacts are expected within the next 10 years. The long-term effect depends on changes in Sea elevation and

shoreline composition and future demand for the facilities. Assuming that the facilities would be designed to accommodate the current elevation and forecasted changes, they would retain the potential for providing long-term economic benefits. Given that the recreational use of the Sea has been declining due to deteriorating water quality, there is limited existing demand for the facilities. The future demand for the facilities would depend on the success of the project in improving water quality.

Land Use and Planning

Improving recreational facilities would have a less than significant impact on land use. Land disturbance would be temporary or would occur in previously developed areas. Indirect land use impacts could occur if improved recreational opportunities encourage further development in the surrounding area. It is assumed that any resulting land use changes would be implemented in a manner that is compatible with existing land uses and would be consistent with land use planning in the area. Therefore, these impacts would be less than significant.

Recreational Resources

Proposed activities associated with this common action are designed to improve access from boat ramps. The physical improvement of water-based recreation facilities at the Salton Sea would have a beneficial impact on recreation uses and facilities around the Sea. However, the most fundamental requirement for boating and water access facilities related to improvements and new facilities is Sea elevation control. If the elevation is not stabilized, the proposed improvements may be only temporary. Therefore, this common action would be most effective in combination with those alternatives and inflow conditions which provide the most stable water surface elevation.

Construction traffic and activities for all water recreation facilities and infrastructure improvements would result in temporary closures, detours, and the need for temporary facilities until work is completed.

Public Health and Environmental Hazards

Dredging, as part of boat ramp rehabilitation would disturb bottom sediments, resulting in the possible dispersion of hazardous substances accumulated on the Sea floor. This dispersion could increase the ambient concentration of chemical contaminants in the Sea and, through the food chain, could create potential health hazards for fish and duck consumers. To minimize these effects, sediment samples should be collected at the proposed dredging locations, and the analytical results should be evaluated to determine the potential for contaminant dispersion. If disturbance of these sediments could cause adverse health effects, then engineering controls should be designed and implemented to minimize the dispersion of the sediments.

The use of dredging equipment would increase the potential for accidental spills of petroleum products, primarily fuels and oils. The volume of any accidental spills compared to the volume of the Sea likely would be minimal. Therefore, the potential for adverse health effects from exposure to petroleum products in Sea water is low.

The preparation and implementation of spill prevention and spill response plans would further minimize these effects.

Improved recreational facilities may increase the use of motorized watercraft at the Sea, which would increase the amount of petroleum fuels and oils released into the Sea. The volume of these releases compared to the volume of the Sea likely would be minimal. Therefore, the potential for adverse health effects from exposure to petroleum products in Sea water is low. Developing motorized watercraft restrictions designed to reduce overall contaminant releases could minimize these effects.

Construction activities may create depressions in the ground surface that could collect water, creating isolated pockets of standing water. If these pockets are left standing long enough for vegetation to develop, they could provide breeding habitat for the encephalitis mosquito. Applying insect growth regulators to the water pockets or destroying them could minimize this effect.

Archaeological and Architectural Resources

After the locations of the recreational facilities have been determined, the APEs would be identified and inventoried for cultural resources. Procedures to determine the significance of identified resources, potential impacts to them, and how such impacts might be mitigated would be implemented as specified in the PA, following consultation with the parties of the PA. The PA will address treatment of specific types of resources, as well as possible measures to identify submerged resources within project areas. These measures could include identifying and recording sites by archaeologists using diving equipment, identifying sites by examining core samples of the Sea bottom, and monitoring dredged materials. There is a high potential for archaeological resources to exist within the submerged portion of the APE.

Mitigation Measures. Measures to mitigate impacts to submerged resources and to known significant resources will be developed and implemented in accordance with procedures specified in the PA.

Native American Resources

The Torres Martinez Indians have raised concerns about submerged village sites within the Salton Sea and sensitive archaeological sites on the former Salton Sea Test Base. Therefore, any activities that may affect the Sea floor or the former test base may have an impact on Native American resources. Prior to implementing this action, specific consultation efforts with the Torres Martinez Indians and other tribal groups who traditionally used the Salton Sea region would be required to determine impacts to Native American resources. These groups would be consulted to identify potential Native American resource on any lands to be affected by this common action, including inundated lands, construction staging areas, borrow areas, and riprap sources. Because the value of a particular Native American resource is determined by the specific group to whom the resource is important, significance of impacts to these resources can be determined only through tribal consultation.

Indian Trust Assets

Implementing this action is expected to have indirect beneficial impacts on Indian Trust Assets of the Torres Martinez Tribe due to increased tourism and development precipitated by improved recreational facilities. Construction activities also may have indirect beneficial impacts if the Torres Martinez Indians provide workforce or materials. Significant impacts may occur, however, if these facilities prevent using or developing recreational facilities on Torres Martinez tribal land, including fee-required boat launching facilities. Significant but mitigable impacts also may occur if the required construction activities disturb wetlands, mineral, cultural, or other resources considered Indian Trust Assets by the Torres Martinez Indians.

5.3 SHORELINE CLEANUP

A shoreline cleanup program would consist of removing dead fish on the water surface and on the shoreline. The in-sea cleanup operation would use a minimum of two trash skimmer barges to retrieve fish floating on the water surface. The beach cleaning equipment would involve a conveyor system that rakes the beach. Since similar facilities would be required for shoreline cleanup and fish harvesting activities, shared facilities would be constructed. In addition, an incinerator and holding bins would be constructed to support cleanup activities. Shoreline cleanup would be conducted at public access locations, including but not limited to the Salton Sea Recreational Area, Sonny Bono National Wildlife Refuge, Bombay Beach, Desert Beach, Salton Sea Beach, Mecca Beach, Desert Shores, Salton City, and the Niland Marina.

Geology and Soils

Constructing a boat pier would have the same types of impacts as those described for the boat docking facilities to be used for fish harvesting (see Section 5.1).

Raking sediments along the shoreline as part of the shoreline cleanup program would increase the susceptibility of the shoreline to wind and water erosion and could cause a minor temporary increase in local sedimentation in the Sea. This is not expected to have a significant impact because only a thin surface layer would be disturbed and these areas are already disturbed by foot traffic.

Air Quality

Skimmer barges and beach tractors would be additional emission sources in the Salton Sea Air Basin. In addition, constructing and operating an incinerator would require air quality permits from the appropriate air pollution control district.

Fisheries and Aquatic Ecosystems

Shoreline cleanup programs would have potential beneficial impacts as dead fish are cleared away. This would slightly improve water quality and would reduce nutrient input in that removing fish would prevent their turnover into a nutrient supply source because normally they would decay along or on the Sea shore.

Socioeconomics

Maintaining the Salton Sea shore has been deferred in the past, due to a lack of funding and multiple land ownership. Any employment associated with the cleanup program would have a minor beneficial effect on the local economy. Because this action contributes to reducing eutrophic conditions (as biomass and other detritus is removed), there would be a long-term indirect beneficial effect as development opportunities and property values increase. Cleanup of the shoreline would also benefit the local area by improving aesthetics and quality of life.

Recreational Resources

This common action would have positive impacts on recreation at the Sea. The potential to eliminate fish carcasses and their odors from the shore would give visitors a more aesthetically pleasing and positive experience. The schedule and frequency of activities conducted by this action could cause temporary moderate impacts to anglers within the Sea and along the shore.

Public Health and Environmental Hazards

Incinerating dead fish may produce emissions that could affect public health. Wind patterns and the emissions created by this operation should be further studied to determine the potential for public exposure. If potential risks to public health would result, measures to minimize exposure should be researched and implemented.

Archaeological and Architectural Resources

Less than five percent of the area within a quarter-mile buffer around the Salton Sea shoreline has been previously surveyed for cultural resources. Most of the studies conducted within this buffer area are more than ten years old. By California Office of Historic Preservation (COHP) standards, these previously surveyed areas would need to be resurveyed at a reconnaissance or sample level if they were to be directly affected by shoreline cleanup activities.

Seven archaeological sites known to contain cultural materials have been identified within a quarter mile of the shoreline. Two of these sites are aboriginal trail segments, three are lithic reduction areas, one is a boulder covered with petroglyphs, and one is a post-contact wagon road. There is a high potential for additional archaeological sites within the unsurveyed portions of the area of potential effect. All unsurveyed areas would be surveyed prior to any ground-disturbing activities. Identified resources would be evaluated for eligibility to the NRHP. Impacts to any NRHP-eligible resources would be considered significant but mitigable. In archaeologically sensitive areas, methods other than the rake for cleaning the beach should be considered, since the rake would pick up objects as small as one-half inch in diameter and cannot discriminate between trash and archaeological materials.

In addition to archaeological sites known to contain cultural materials, five sites consisting of water sources or geological formations have been recorded within a quarter mile of the shoreline. These sites were originally noted by H.S. Washburn of the US General Land Office during a survey of the Salton Sink in 1856. Two of them are

saltwater sources, one is a freshwater source, and two are mud cones. Typically, sites of this nature would not be granted SHPO archaeological site designators unless they were known to contain cultural artifacts or to hold cultural value to the native group or groups who use them. At this stage of impact analysis, because the SHPO has designated these as archaeological sites, they are assumed to contain cultural resources or to have cultural value. Therefore, before any construction activities occur at or in the vicinity of these five locations, an archaeological field check should be conducted to determine the presence and sensitivity of cultural resources.

Native American Resources

No Native American resources have yet been identified on the Salton Sea shoreline; however, several tribal groups with historical ties to the area are being consulted, and they may identify sensitive resources, given the potential for use of the area in precontact times. Because of this potential, any disturbance at or near the shoreline may cause significant impacts to Native American resources. Identifying specific impacts is pending additional consultation with tribal groups in the area.

Indian Trust Assets

Some shoreline cleanup activities would occur on reservation lands of the Torres Martinez Tribe. The Torres Martinez Indians have expressed concerns over archaeological sites on their land that they consider to be Indian Trust Assets. Additional consultation with this group is ongoing to identify specific resources of concern that may be affected. Beneficial indirect impacts are likely to occur due to increased levels of recreational use precipitated by an improved environment.

5.4 INTEGRATED WILDLIFE DISEASE PROGRAM

While the integrated wildlife disease control program is limited in focus, it would allow restoration managers to adapt restoration solutions to future changes in ecological conditions. This program would be beneficial to the environmental resources in the Salton Sea study area. No adverse environmental impacts have been identified.

The integrated wildlife disease control program would be implemented to minimize losses from the various causes of bird mortality. It would focus on several factors, including early detection of outbreaks, timely and accurate diagnosis of the disease agents involved, appropriate response actions, and monitoring during the course of events to determine if adjustments to response actions are needed. The program would be a multi-agency effort involving the National Wildlife Health Center of the USGS, the USFWS, the Salton Sea Authority, and the CDFG. This program is expected to be beneficial to the biological resources of the area.

5.5 LONG-TERM SCIENCE PROGRAM

The long-term science program is a comprehensive life-of-the-project effort that would also allow restoration managers to adapt restoration solutions to future changes in ecological conditions. This program would be beneficial to the environmental resources in the Salton Sea study area. No adverse environmental impacts have been identified.

The long-term science program would include several components: conceptual modeling, long-term monitoring, quantitative modeling, focused investigations, technical assistance, and data management. The conceptual modeling would guide both long-term monitoring and focused studies toward goals and objectives identified for the project. Monitoring would be implemented to evaluate the success of restoration actions and to collect long-term data from which quantitative models could be validated. Quantitative modeling would be used to generate hypotheses about these processes and ecosystem functions that focused investigations then would explore. Focused investigations would fill in key information gaps, would support monitoring by identifying important measures that were not initially recognized, and would help in validating quantitative models. Technical assistance would involve time-responsive short-term needs, such as consultations, data synthesis and evaluations, and other scientific evaluations to guide management response and actions. The data management program that would facilitate integration of data among monitoring, focused investigations, modeling, and management is also an essential component of the science effort. This program is expected to be environmentally beneficial in that it would allow managers to adapt restoration actions to future ecological needs.

Table 5-1
Summary of Potential Environmental Consequences of Phase 1 Common Actions

Resource	Fish Harvesting	Improved Recreational Facilities	Shoreline Cleanup	Integrated Wildlife Disease Program	Long-term Science Programs
Surface Water Resources					
➤ Surface Water Hydrology	No change in surface water hydrology.	No change in surface water hydrology.	No change in surface water hydrology.	No change in surface water hydrology.	No impact.
➤ Salton Sea Circulation	No changes in Sea circulation.	No changes in large-scale Sea circulation. Some minor local non-significant changes could occur in the vicinity of affected facilities.	No changes in Sea circulation.	No changes in Sea circulation.	No impact.
➤ Water Quality and Salinity	Potential beneficial long term reduction in nutrient levels. However, preliminary results of ongoing studies suggest that reduction in nutrient levels in Sea water will be negligible.	No changes to water quality or salinity.	Minor long-term beneficial impacts to water quality as a result of cleanup of decaying organic matter along shorelines.	Possible beneficial effect on water quality resulting from actions undertaken to control wildlife disease (such as waterborne pathogens).	Possible beneficial effect on water quality resulting from actions undertaken to control long-term science programs.
➤ Water Use and Management	Little or no change in agricultural or urban water use or management. However, future water management decisions may be affected by participation of fish harvesting industry stakeholders.	No change in agricultural or urban water use or management.	No change in agricultural or urban water use or management.	No change in agricultural or urban water use or management.	No impact.
Ground Water Resources					
➤ Ground Water Hydrology	No effect on ground water hydrology.	No effect on ground water hydrology.	No effect on ground water hydrology.	No effect on ground water hydrology.	No impact.
➤ Ground Water Quality	No effect on ground water quality.	No effect on ground water quality.	No effect on ground water quality.	No effect on ground water quality.	No impact.
➤ Ground Water Use and Management	No effect on ground water use and management.	No effect on ground water use and management.	No effect on ground water use and management.	No effect on ground water use and management.	No impact.
Geology and Soils					
➤ Soils and Sediments	No significant effect on soils and sediments. There would be some reworking of soils and sediments at facility sites. Standard construction practices would be used to minimize erosion.	There would be some reworking of soils and sediments at facility sites with no significant adverse effects. Standard construction practices would be used to minimize erosion.	Periodic reworking of beach materials to remove debris with some minor local cloudiness likely in Salton Sea water and increased shoreline susceptibility to wind and water erosion during beach cleaning events. There would be some reworking of soils and sediments at the boat pier with no significant adverse effects.	No impact.	These monitoring and modeling programs would not disturb geologic resources. Long-term operation and maintenance would be in place to repair any local erosion problems that may occur as a result of the Restoration Project.

Table 5-1
Summary of Potential Environmental Consequences of Phase 1 Common Actions *(continued)*

Resource	Fish Harvesting	Improved Recreational Facilities	Shoreline Cleanup	Integrated Wildlife Disease Program	Long-term Science Programs
➤ Geologic Hazards	No significant effects due to any geologic hazards. Earthquakes could damage facilities, but repairs would be made under long-term operation and maintenance program for the Salton Sea Restoration Project.	No significant effects due to any geologic hazards. Earthquakes could damage facilities, but repairs would be made under long-term operation and maintenance program for the Salton Sea Restoration Project.	No significant effects due to any geologic hazards. Earthquakes could damage the boat pier, but repairs would be made under long-term operation and maintenance program for the Salton Sea Restoration Project.	No impact.	Monitoring and modeling programs would not disturb geologic resources.
Air Quality					
➤ Air Quality Conditions	Construction emissions would be minor and temporary. Boat operations could have significant levels of emissions, depending on the size and hours of boat operations. Operating the fish processing plant would have limited emissions, but may produce odors.	Dock construction or repair, road repairs, and dredging would be a minor source of emissions. Increased boating activities would be an indirect source of additional emissions in the Salton Sea Air Basin.	Operating skimmer barges and beach tractors would be additional sources of emissions in the Air Basin.	No effect on air quality conditions.	No impact.
➤ Air Quality Planning	Fish processing plant would probably require air quality permits from relevant air pollution control district.	No effect on air quality planning.	Constructing and operating an incinerator would require air quality permits from the appropriate air pollution control district.	No effect on air quality planning.	No impact.
Noise					
➤ Noise Effects	Minor infrequent local noise from fish harvesting activities.	Minor short-term local construction noise. Increased operational vehicular noise in the vicinity recreational facilities; increased boat noise; consistent with boat noise effects on large recreational lakes.	Minor localized noise during cleanup activities.	No effects on noise.	No impact.
Fisheries and Aquatic Ecosystems					
➤ Lower Trophic Levels	Beneficial impact due to a decrease in predation.	Beneficial impact due to a decrease in predation.	Potential minor beneficial impact as a result of clearing out of dead fish. This would improve water quality and reduce nutrient input (i.e., fish removal would prevent their turnover into a nutrient supply as they decay on the Sea shore).	No impact.	No impact.

Table 5-1
Summary of Potential Environmental Consequences of Phase 1 Common Actions *(continued)*

Resource	Fish Harvesting	Improved Recreational Facilities	Shoreline Cleanup	Integrated Wildlife Disease Program	Long-term Science Programs
➤ Fish	No impact to fish populations provided methods used minimizes by-catch and harvest is monitored to ensure sustainable population levels.	Minor adverse impact due to increased take as a result of increased recreational fishing.	Potential minor beneficial impact as a result of clearing out of dead fish. This would improve water quality, and reduce nutrient input (i.e., the removal of fish would prevent their turnover into a nutrient supply as they decay on the Sea shore).	No impact.	Beneficial impacts would result from introducing programs which would most likely decrease large scale die-offs and reduce disease.
➤ Special Status Species	Potential significant adverse impact. It would depend on harvesting methodology. Nets will be sized to minimize potential entrainment by the endangered desert pupfish.	No impact. There are no proposed facilities in pupfish habitat.	Potential minor beneficial impact as a result of clearing out of dead fish. This would improve water quality, and reduce nutrient input (i.e., fish removal would prevent their turnover into a nutrient supply as they decay on the Sea shore).	Beneficial impacts would result from introducing programs which would most likely prevent large scale die-offs and disease reduction.	Beneficial impacts would result from introducing programs which would most likely decrease large scale die-offs and reduce disease.
➤ Sport Fisheries	Minor adverse impact on tilapia fishery. Beneficial impact to other species due to reduction in tilapia densities. Potential adverse impacts to sport fishery due to by-catch.	Improving recreational facilities could encourage increased visitor use, which in turn could result in a potential increase in the take of sport fish species from the Sea. However, the take would continue to be managed by the State to maintain a healthy population.	Potential beneficial impact as a result of clearing out of dead fish. This would improve water quality, and reduce nutrient input (i.e., fish removal would prevent their turnover into a nutrient supply as they decay on the Sea shore).	Beneficial impacts would result from introducing programs which would most likely prevent large scale die-offs and disease reduction.	Beneficial impacts would result from introducing programs which would most likely prevent large scale die-offs and disease reduction.
Avian Resources					
➤ Bird Species	Potential adverse effect to those species that are opportunistic feeders (scavenger species) due to reduction in available food.	Minor to negligible effects to avian habitat, foraging, and nesting. Indirect effect of increased recreation may reduce available area for foraging. Minor effect due to loss of near shore habitat for feeding.	Potential adverse effect to those species that are opportunistic feeders (scavenger species) due to reduction in available food.	Beneficial impacts would result from introducing programs which would most likely prevent large scale die-offs and disease reduction.	Beneficial impacts would result from introducing programs which would most likely prevent large scale die-offs and disease reduction.
➤ Special Status Species	No impact to sensitive species.	No impact to sensitive species.	No impact to sensitive species.	Beneficial impacts would result from introducing programs which would most likely prevent large scale die-offs and disease reduction.	Beneficial impacts would result from introducing programs which would most likely prevent large scale die-offs and disease reduction.
➤ Vegetation and Wildlife	Minor adverse impact to vegetation and wildlife due to construction of on shore facilities.	Minor adverse impact to vegetation and wildlife due to construction of on shore facilities.	Minor adverse impacts to vegetation and wildlife from clean-up activities.	No impact.	No impact.
➤ Plant Communities	Minor adverse impact to near-shore habitat from clean-up activities.	Minor to negligible effects due to constructing upland recreational facilities.	Minor negative impact to near-shore habitat from clean-up activities.	No impact.	No impact.

Table 5-1
Summary of Potential Environmental Consequences of Phase 1 Common Actions *(continued)*

Resource	Fish Harvesting	Improved Recreational Facilities	Shoreline Cleanup	Integrated Wildlife Disease Program	Long-term Science Programs
➤ Special Status Species	No impact.	No impact.	No impact.	No impact.	No impact.
➤ Sensitive Habitats	No impact.	No impact.	No impact.	No impact.	No impact.
➤ Sensitive Plants	No impact.	No impact.	No impact.	No impact.	No impact.
Socioeconomics					
➤ Regional Economics	Potential beneficial effect on employment at fish processing plant. If eutrophication is reduced, potential for long-term economic benefits through improved development opportunities.	Short-term beneficial effect on local economy through increased employment and spending during construction. Potential for long-term economic benefits, depending on success of restoration project.	Minor beneficial economic effects from any increase in employment. Potential long-term indirect beneficial effect from increased development opportunities and property values.	Positive employment effects to the local area. Potential net economic benefits by improving quality of fishing/boating and bird watching.	No impact.
➤ Demographics and Housing	No effects on demographics and housing.	No effects on demographics and housing.	No effects on demographics and housing.	No effects on demographics and housing.	No effects on demographics and housing.
Land Use and Planning					
➤ Urban Land Use	No effects on urban land use.	No effects on urban land use.	No effects on urban land use.	No effects on urban land use.	No effects on urban land use.
➤ Commercial and Industrial Land Use	No effects on urban land use.	No effects on urban land use.	No effects on urban land use.	No effects on urban land use.	No effects on urban land use.
➤ Public Land Use	No adverse effects on public land use.	No adverse effects on public land use.	No adverse effects on public land use.	No adverse effects on public land use.	No adverse effects on public land use.
➤ Local Land Use Plans and Policies	No conflicts with local land use plans and policies.	No conflicts with local land use plans and policies.	No conflicts with local land use plans and policies.	No conflicts with local land use plans and policies.	No conflicts with local land use plans and policies.
Agricultural Land Resources					
➤ Agricultural Land Use	No effects on agricultural land use.	No effects on agricultural land use.	No effects on agricultural land use.	No effects on agricultural land use.	No effects on agricultural land use.
➤ Agricultural Economics	Some possible benefit from use of fish in livestock food or fertilizer products.	No effects on agricultural economics.	No effects on agricultural economics.	No effects on agricultural economics.	No effects on agricultural economics.
Recreational Resources					
➤ Recreation Use	Potential impacts to sport fishing with possible removal of desirable sport fish and quantity of tilapia for consumption by local anglers. Possible benefit if courtesy dock is available on fish harvesting operations pier.	Improvements will be a positive impact if elevation is stabilized. If elevation is not stabilized, improvements will only be temporary.	Positive impact on recreation opportunities.	Potentially long-term benefits to ecotourism, public relations component with interpretation highly recommended.	Potentially long-term benefits to ecotourism, public relations component with interpretation highly recommended.

Table 5-1
Summary of Potential Environmental Consequences of Phase 1 Common Actions *(continued)*

Resource	Fish Harvesting	Improved Recreational Facilities	Shoreline Cleanup	Integrated Wildlife Disease Program	Long-term Science Programs
Aesthetics					
➤ Visual Resources	Minor changes in visual environment along shoreline associated with constructing or rehabilitating docks and constructing a fish processing plant.	Improvement of boat launch facilities expected to result in slight improvement in visual character of shoreline.	Visual quality of the shoreline should be improved by shoreline cleanup efforts.	Visual quality of the shoreline should be improved by long-term program to reduce wildlife diseases.	No impact.
➤ Odors	Operating the fish processing plant may produce odors. Long-term improvement in odors expected through reduction of biomass in the Sea.	No significant effect on odors.	Odor problems along shoreline should be improved by shoreline cleanup efforts. Operating an incinerator could be a localized source of odors.	Odor problems along shoreline should be improved by long-term program to reduce wildlife diseases.	No impact.
Public Health and Environmental Hazards					
➤ Biological Pathogens	No effect on biological pathogens.	Could increase the level of biological pathogens in the Sea and would increase the number of people exposed to pathogens present in the Sea.	No effect on biological pathogens.	No effect on biological pathogens.	Science program may lead to actions that reduce the potential health hazards from biological pathogens at the Sea.
➤ Mosquito-borne Diseases	No effect on mosquito-borne diseases.	Would increase the number of people potentially exposed to mosquito-borne diseases.	No effect on mosquito-borne diseases.	No effect on mosquito-borne diseases.	No effect on mosquito-borne diseases.
➤ Chemical Hazards	May increase releases of petroleum products from motorized watercraft used for harvesting fish.	Would likely increase the number of people consuming fish that contain selenium. Could disturb contaminants in the bottom sediment during dredging operations. May increase releases of petroleum products from motorized watercraft.	May increase releases of petroleum products from motorized vehicles used for the cleanup.	No effect on chemical hazards.	Science program may lead to actions that reduce the potential health hazards from chemical hazards the Sea.
Utilities and Public Services					
➤ Utilities (Water Service, Wastewater Service, Electricity, and Solid Waste Disposal Facilities)	Operation of the fish processing plant could result in a significant demand on local water and wastewater systems. No significant effect on all other local utilities.	Some increased demand for local utilities; not expected to result in a significant adverse effect on local utility suppliers.	No significant effect on local utilities.	No significant effect on local utilities.	No significant effect on local utilities.
➤ Public Services (Traffic, Education, Police Service, and Fire Service)	No significant effect on public services.	Local increases in traffic near recreational facilities; expected to be within the capacity of roads that operated at high traffic volumes in the past.	No significant effect on public services.	No significant effect on public services.	No impact.

Table 5-1
Summary of Potential Environmental Consequences of Phase 1 Common Actions *(continued)*

Resource	Fish Harvesting	Improved Recreational Facilities	Shoreline Cleanup	Integrated Wildlife Disease Program	Long-term Science Programs
Cultural Resources					
➤ Archaeological and Architectural Resources	Significant impacts to archaeological resources are possible if resources are disturbed during construction activities related to fish harvesting or processing facilities. Submerged archaeological resources may be affected by dredging activities.	Significant impacts to archaeological resources are possible if resources are disturbed during construction activities related to the improvement of recreational facilities. Submerged archaeological resources may be affected by dredging activities.	Significant impacts are expected due to the density of archaeological sites recorded along the shoreline. Construction activities may also create significant impacts.	No significant effects on cultural resources are expected unless ground-disturbing activities are deemed necessary at a later date.	No impact.
➤ Native American Resources	Significant impacts are possible if construction disturbs submerged village sites that are considered sensitive by the Torres Martinez. Potential benefits to Torres Martinez through participation in fish harvesting programs.	Significant impacts are possible if construction disturbs submerged village sites that are considered sensitive by the Torres Martinez. Some potential benefit to Torres Martinez from increased recreational uses of the Sea.	No significant impacts to Native American resources have been identified.	No significant impacts to Native American resources are expected.	No impact.
➤ Paleontological Resources	Significant effects are not likely unless construction activities disturb paleontologically sensitive sediments.	Significant effects are not likely unless construction activities disturb paleontologically sensitive sediments.	No impacts on paleontological resources are expected.	No impacts on paleontological resources are expected.	No impact.
Indian Trust Assets					
➤ Indian Trust Assets	Some potential benefit to tribal assets through participation in fish harvesting programs. Significant but mitigable impacts may occur if construction or industrial activities disturb wetland, mineral, cultural or other resources considered Indian Trust Assets.	Some potential economic benefit to tribal assets from increased recreational uses of the Sea. Significant but mitigable impacts may occur if construction or industrial activities disturb wetland, mineral, cultural or other resources considered Indian Trust Assets.	Significant impacts may occur if activities disturb cultural resources considered Indian Trust Assets. Some potential benefit to the quality of the shoreline at the Torres Martinez Reservation is expected, as well as economic benefits from increased recreational use or the region.	Indirect benefits on the Torres Martinez due to increased recreational activities in conjunction with improved environmental conditions.	No impact.
Environmental Justice					
➤ Environmental Justice	No environmental justice issues.	No environmental justice issues.	No environmental justice issues.	No environmental justice issues.	No impact.