

9. Environmental Consequences

This section describes the overall potential impacts of each of the sanctuary alternatives on the biological, physical and human environment. Four alternatives are evaluated in this section, including a No Action Alternative (Alternative 1). Alternative 3 is the proposed action.

9.1. Methodology

Each resource analyzed in this section includes the methods used for impact analysis and a discussion of the factors used to determine the significance of direct and indirect impacts per 40 C.F.R. § 1508.8. Direct impacts are those that are caused by the alternatives and occur at the same time and place. Indirect impacts are those caused by the alternatives that occur later in time or further removed in distance, compared to the direct effects. A summary of the current conditions and threats is provided under the Affected Environment and would continue under the No Action Alternative (Alternative 1). The impact analysis for the other three alternatives occurs on three levels: (1) the set of actions proposed for each of the alternatives that impact the resources; (2) the physical, biological, and cultural resources, and human uses impacted; and (3) the specific locations where these impacts occur. The analysis separates the non-regulatory activities (i.e. management plan) common to all alternatives from the specific regulatory actions. A summary table illustrates the impacts by resource and by alternative, showing the highest level of impact for each resource (Table 40). The nature of the existing conditions in the sanctuary waters around the populated Hawaiian Islands is interpreted from available literature and summarized in the Affected Environment (Section 6). Where sufficient location-specific information is available, these data are primarily utilized. Where location-specific data is lacking, general conditions for the islands are utilized with appropriate qualifications.

9.1.1. Resources Impacted

Activities and actions proposed within or intended to improve management of the existing and proposed sanctuary boundaries used the following methodology to determine potential effects of various alternatives on the physical, biological, and human environment. The resources analyzed in this document are summarized in Table 38 and the methodology to analyze each resource is described in more detail below.

Resources Impacted			
Biophysical Environment	Human Environment	Institutional Environment	Operational Environment
Habitats Marine Species Water Quality	Economics Cultural Resources Maritime Heritage Resources Fishing Activities Offshore Development Recreation & Tourism Education Research & Monitoring Human Health & Safety	State Government Federal Government	Human Resources Infrastructure

Table 38. Resources impacted by the proposed action and alternatives.

9.1.1.1. Biophysical Environment

Habitats

Impacts to habitat occur from areas such as poor water quality (e.g. sedimentation, pathogens) and physical damage (e.g. ship groundings). The methodology used to determine how a sanctuary alternative impacts habitats includes the following: (1) identifying existing and past anthropogenic causes of habitat degradation; (2) assessing level of impact without action, and opportunity for each alternative to address the impact.

Marine Species

Marine species within the current and proposed sanctuary boundaries include marine plants, corals, benthic invertebrates, fish, mobile invertebrates, sea turtles, marine mammals and seabirds. The methodology used to determine how a sanctuary alternative would impact these marine species includes the following: (1) identifying existing and past human uses and their impacts on marine species; (2) assessing potential future impacts from a proposed new action on sanctuary resources; (3) assessing compliance of activities for which there are applicable federal and state regulations; (4) assessing level of impact without action, and opportunity for each alternative to address the impact.

Water Quality

The impacts to water quality will be addressed from both land-based sources and marine sources. The methodology to determine how a sanctuary alternative would impact water quality includes consideration of the following: (1) identifying existing and past human uses and their impacts on water quality; (2) assessing potential future impacts of human use on sanctuary resources from a proposed new action; and (3) assessing compliance of activities for which there are other applicable federal and state water quality standards, programs and policies.

9.1.1.2. Human Environment

Economics

For activities proposed within the sanctuary or intended to improve management of the sanctuary, the methodology used to determine how an alternative would impact economics and revenue generation includes the following: (1) evaluating ongoing and past activities within the sanctuary to identify potential to affect economics and revenue generation in Hawai‘i; (2) assessing whether or not each activity is consistent with federal or state laws, regulations, or policies; and (3) evaluating the potential to disproportionate effects on low-income or minority populations and the potential for increased adverse health risks to children with regards to Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*.

Maritime Heritage Resources

Maritime heritage resources within the current and proposed sanctuary boundaries include shipwreck sites, historic aircraft sites, and the remains of landings and docks. The method for assessing potential impacts to maritime heritage resources includes the following: (1) identifying maritime heritage resources within or adjacent to the existing or proposed sanctuary; (2) assessing compliance of activities for which there are applicable laws (e.g. the National Historic Preservation Act); and (3) assessing level of impact without action and opportunity for each alternative to address the impact.

Cultural Resources

Cultural resources within the current and proposed sanctuary boundaries include fishponds, surfing sites, and traditional navigation and voyaging sites. The method for assessing potential impacts to cultural resources includes the following: (1) identifying sensitive cultural resources within the sanctuary boundaries; (2) identifying project activities that could affect those resources; and (3) determining the type and magnitude of potential direct and indirect impacts on those resources from a proposed new activity.

Fishing Activities

The potential impacts to fishing activity are dependent on the details of a given fishery. The methodology used to determine how a sanctuary alternative would impact fishing activity includes the following: (1) evaluating current trends in fishing methods, effort, and reported landings; (2) assessing level of impact without action and opportunity for each alternative to address the impact; and (3) assessing existing regulations to determine the impact of the proposed action, (4) determining impacts on fishery from existing regulations and authority under which this activity may already be managed.

Offshore Development

Offshore development in Hawai‘i includes offshore energy production and aquaculture. The method for assessing potential impacts to offshore development includes the following: (1) identifying existing and proposed offshore development projects that could impact sanctuary resources; (2) assessing level of impact without action and opportunity for each alternative to address the impact; and (3) assessing existing regulations to determine the impact of the proposed action.

Recreation & Tourism

The methodology for assessing potential impacts to recreation and tourism is dependent on the extent and scope of existing non-consumptive recreation and tourism uses. The method for assessing potential impacts to recreation and tourism includes the following: (1) identifying the historic and current level of tourism and recreation and existing infrastructure and organization to support these human uses; (2) assessing existing access to sanctuary current and proposed sanctuary areas; (3) assessing plans and policies proposed by the Hawai‘i Tourism Authority; and (4) assessing level of impact without action and opportunity for each alternative to address the impact.

Education

The methodology for assessing potential impacts to education relates to how the sanctuary can impact or enhance existing educational opportunities within and adjacent to the sanctuary. The methodology used to determine how an alternative would impact education activities includes the following: (1) assessing the types of potential education activities that can occur; and (2) assessing the ongoing activities within and around the proposed sanctuary units that may interfere with various education activities.

Research & Monitoring

The methodology for assessing impacts to research and monitoring relates specifically to how the sanctuary could provide for future research activities. The methodology used to determine how an alternative would impact research and monitoring activities includes the following: (1) assessing the types of potential research activities that can occur; and (2) assessing the ongoing activities within and around the proposed sanctuary units that may interfere with various research activities.

Human Health & Safety

The impact analysis evaluates the degree to which people within proposed sanctuary waters are protected from dangerous activities and hazardous materials. Where relevant, analysis of human health and safety is included in other human uses (e.g. fishing activity; recreation and tourism). The methodology used to determine how an alternative would impact human health and safety includes the following: (1) evaluating existing activities in the sanctuary to identify their potential to use or generate hazardous material or waste; and (2) assess compliance levels of these activities with applicable federal or location-specific hazardous and non-hazardous waste regulations, guidelines, management plans, spill response and contingency plans, and pollution prevention plans.

9.1.2. Significance of Impacts

To determine whether an impact is significant, Council on Environmental Quality (CEQ) regulations require the consideration of context and intensity of potential impacts (40 C.F.R. § 1508.27). Context normally refers to the setting, whether local or regional, and intensity refers to the severity of the impact. Also CEQ regulations require a discussion of the possible conflicts between the proposed sanctuary alternatives and the objectives of federal, regional, state, and local land use plans and policies for the area concerned (40 C.F.R. § 1502.16(c)).

Impacts are defined in the following categories:

- Significant beneficial impact;
- Less than significant beneficial impact;
- No impact;
- Less than significant adverse impact;
- Significant adverse impact.

9.2. Alternative 1: No Action

The no action alternative would not result in any additional adverse impact on the physical, biological, or human environment within the existing sanctuary. However, taking no action would forgo the beneficial effects associated with the other alternatives (discussed below). Taking no action would result in no change of the current management of the sanctuary under the 2002 Management Plan/Environmental Assessment. Additionally, no new regulations would be proposed for the sanctuary and the boundaries would remain the same. To the extent that future decisions would be made under the existing single-species management of humpback whales, these decisions would either be conducted and reviewed for the NEPA compliance under this EIS, or would be reviewed under a separate NEPA analysis before a decision is made. The no action alternative does not fulfill the purpose and need described in this document (see Section