Table ES-1. Environmental Consequences Summary

Criterion	Past and Present Trends	External Factors				Future Mgmt. Actions	EFH - Designation Alternatives						HAPC - Designation Alternatives					Alternatives to Minimize the Effects of Fishing on EFH							
		Foreign & Subsistence Fishing	Pollution	Climatic Cycles	Non-Fishing Activities		1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	5A	5B	5C	6
Habitat																									
Prey Species	Historic fishing activity may have had localized negative effects on prey species.	Historic bottom fishing may have destroyed coral and otherwise altered bottom habitats.	U	E+/E-	Many upland, riverine, estuarine, and coastal/marine development activities have a negative effect on EFH, though some effects are unknown or neutral.	E+	E-	0	E+	E+	E+	E+/E-	E-	0	E+	E+	E+	0	0	0	0	0	0	0	0
Benthic Biodiversity	Where fishing activity has been heavy, it may have destroyed coral and otherwise altered bottom habitats.		U	E+/E-		E+	E-	0	E+	E+	E+	E+/E-	E-	0	E+	E+	E+	0	0	E+	E+	E+	E+	E+	E+
Habitat Complexity	Historic and current trawl fisheries may have had a negative effect on benthic habitat complexity in some areas.		U	E+/E-		E+	E-	0	E+	E+	E+	E+/E-	E-	0	E+	E+	E+	0	0	E+	0	E+	E+	E+	E+
Target Species - Groundfish																									
Groundfish Fishing Mortality and Stock Biomass	Most of the target groundfish species in the BSAI and GOA are above MSST and considered to have stable biomass.	Very small percentage of the total fishing effort - no effect likely.	U	E+/E-	Many upland, riverine, estuarine, and coastal/marine development activities have a negative effect on EFH, though some effects are unknown or neutral.	E+	0	0	0	0	0	0	E-	0	E+	E+	E+	0/U	0/U	0/U	0/U	0/U	0/U	0/U	0/U
Groundfish Spatial/Temporal Concentration of Catch	Currently groundfish catch concentrations are stable; however, trends are unknown.		U	E+/E-		E+	E+	0	E-	E-	E-	E-	E+	0	E-	E-	E-	0/U	0/U	0/U	0/U	0/U	0/U	0/U	0/U
Groundfish Productivity (spawning/breeding)	Most species of groundfish have stable levels of spawning/breeding success. Some species are negatively affected by contact with fishing nets. Spawning and breeding success for some groups of groundfish is unknown.		U	E+/E-		E+	E-	0	E+	E+	E+	E+/E-	E-	0	E+	E+	E+	0/U	0/U	0/U	0/U	0/U	0/U	0/U	0/U
Groundfish Prey Availability (feeding)	Food resources and feeding habits for many of the target groundfish species are considered stable. Food availability and feeding habits for some groundfish species are unknown.		U	E+/E-		E+	E-	0	E+	E+	E+	E+/E-	E-	0	E+	E+	E+	0/U	0/U	0/U	0/U	0/U	0/U	0/U	0/U
Groundfish Growth to Maturity	Many of the target groundfish species are considered to have stable rates of growth to maturity. For some groups of groundfish, the trend is unknown, while others are potentially at risk due to fishing activities.		U	E+/E-		E+	E-	0	E+	E+	E+	E+/E-	E-	0	E+	E+	E+	0/U	0/U	0/U	0/U	0/U	0/U	0/U	0/U
Target Species - Crab, Scallop, Salmon																									
Crab, Scallop, and Salmon Fishing Mortality	**Salmon** that spawn in Alaska display a stable trend. **Crab** display a stable trend; some stocks are approaching over-fished status. **Scallops** are not over-fished or approaching over-fished status.	Foreign fishing outside the BSAI and GOA will continue to have a negative effect on salmon populations that migrate beyond those boundaries, and their prey. Fishing activities within the BSAI and GOA are not expected to affect salmon, crabs, or scallop populations or their prey significantly.	U	E+/E-	Many upland, riverine, estuarine, and coastal/marine development activities have a negative effect on EFH, though some effects are unknown or neutral.	E+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0/E+ /E-
Crab, Scallop, and Salmon Spatial/Temporal Concentration of Catch	Concentration of fishing effort in time and space for salmon, crab, or scallops could potentially alter the genetic diversity of populations through selective fishing.		U	E+/E-		E+	E+	0	E-	E-	E-	E-	E+	0	E-	E-	E-	0	0	0	0	0	0	0	0/E-
Crab, Scallop, and Salmon Productivity (spawning/breeding)	The majority of areas in Alaska support healthy stocks of salmon. Nearshore crab habitat may have been damaged by bottom fishing gear in the past. Scallop productivity has been relatively stable.		U	E+/E-		E+	E-	0	E+	E+	E+	E+/E-	0/E-	0	E+	E+	E+	0	0	0	0	0/E+	0/E+	0/E+	0/E-
Crab, Scallop, and Salmon Prey Availability (feeding)	Most of the prey species of salmon are stable except herring, which is currently declining. Prey for crab is very common and has not been compromised. Dredging activities can both increase and reduce prey availability for scallops.		U	E+/E-		E+	E-	0	E+	E+	E+	E+/0	E-	0	E+	E+	E+	0	0	0	0	0	0	0	0
Crab, Scallop, and Salmon Growth to Maturity	The rate of growth to maturity for salmon has remained relatively stable. Trawl fishing and dredging may have affected juvenile crabs and scallops, though not significantly overall.		U	E+/E-		E+	E-	0	E+	E+	E+	E+/E-	E-	0	E+	E+	E+	0	0	0	E+	E+	E+	E+	E+

Positive effect	**NA = Not Applicable**
Negative effect	**U = Unknown Effect**
Neutral/positive effect	**0 = No Effect**
Neutral/negative effect	**E- = Negative Effect**
	E+ = Positive Effect
	E- / E+ = Mixed Effect

Table ES-1. Environmental Consequences Summary (continued)

Criterion	Past and Present Trends	External Factors				Future Mgmt. Actions	EFH - Designation Alternatives						HAPC - Designation Alternatives					Alternatives to Minimize the Effects of Fishing on EFH							
		Foreign & Subsistence Fishing	Pollution	Climatic Cycles	Non-Fishing Activities		1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	5A	5B	5C	6
Federally Managed Fisheries																									
Passive Use	The trend for passive use or non-consumptive use values is unknown.	The effect of foreign and subsistence fishing on passive use values is unknown.	U	E+/E-	Many upland, riverine, estuarine, and coastal/marine development activities have a negative effect on EFH, though some effects are unknown or neutral.	E+	E-	0	E+	E+	E+	E+/E-	E-	0	E+	E+	E+	0	E+	E+	E+	E+	E+	E+	E+
Gross Revenue	The number of participating catcher vessels, processors, and motherships is declining. The longevity of inshore processing plants varies by location.	If harvest levels of Alaska groundfish fall as a result of EFH regulation, foreign fisheries could capture market share currently being served by Alaska product.	U	E+/E-		E-	U	0	U	U	U	U	0/U	0	0/U	0/U	0/U	0	0	E-	E-	E-	E-	E-	E-
Operating Costs	Operating costs have increased over time and are expected to continue to do so.	Input costs such as fuel, labor, and insurance fluctuate with world market.	U	E+/E-		E-	E+/E-	0	E-	E-	E-	E-	E+	0	E-/E+	E-/E+	E-/E+	0	E-	E-	E-	E-	E-	E-	E-
Costs to U.S. Consumers	Domestic consumption of fish product has increased.	Costs are affected by demand and trends in world markets.	U	E+/E-		E-	U	0	U	U	U	U	0	0	0	0	0	0	E-	E-	E-	E-	E-	E-	E-
Safety	Rate and severity of injury is decreasing. Search and rescue times are improving. These trends are expected to improve continuously.	NA	U	E+/E-		E-	0	0	0	0	0	0	0	0	0	0	0	0	E-	E-	E-	0	E-	E-	E-
Socioeconomic Effects on Existing Communities	The level of dependence upon fishing activities varies with location along coastal Alaska.	NA	U	E+/E-		E-	E+/E-	0	E-	E-	E-	E-	E+/E-	0	E+/E-	E+/E-	E+/E-	0	0	0	0	0/E-	0/E-	0/E-	E-
Effects on Regulatory and Enforcement Programs	Recent management actions have increased the cost of some regulatory and enforcement programs.	The primary external factor is continued monitoring and enforcement of foreign fishing.	U	E+/E-		E-	E+	0	E-	E-	E-	E-	E+	0	E-	E-	E-	0	E-	E-	E-	E-	E-	E-	E-
Other Fisheries and Fishery Resources																									
State-managed Groundfish	Cod and sablefish are considered to be declining and at depressed levels. Pollock is considered to be stable though at depressed levels. Lingcod and rockfish populations are apparently stable.	Very small percentage of the total fishing effort - no effect likely.	U	E+/E-	Many upland, riverine, estuarine, and coastal/marine development activities have a negative effect on EFH, though some effects are unknown or neutral.	E+/E-	E-	0	E+	E+	E+	E+	E-	0	E+	E+	E+	0	0	0	0	0	0	0	E-
State-managed Crab and invertebrate Species	Dungeness crab fisheries in certain locations have been closed following a collapse of these populations. King, tanner, and Korean hair crab populations are severely depressed from over-harvest. Weathervane scallop harvest is at stable levels.	Very small percentage of the total fishing effort - no effect likely.	U	E+/E-		E+/E-	E-	0	E+	E+	E+	E+	E-	0	E+	E+	E+	0	0	E+	0	E+/0	E+/0	E+/0	E-
Herring	Herring populations have fluctuated historically. Since the 1970s, populations have increased steadily.	Foreign fishing has negatively affected herring populations.	U	E+/E-		0	E-	0	E+	E+	E+	E+	E-	0	E+	E+	E+	0	0	0	0	0	0	0	0
Halibut	Halibut populations are healthy with recent catch at record levels.	There is a small amount of bycatch of halibut in foreign fisheries outside the BSAI and GOA boundaries, but not enough to impact US stocks.	U	E+/E-		0	E-	0	E+	E+	E+	E+	E-	0	E+	E+	E+	0	0	0	0	0	0	0	E-

Positive effect	NA = Not Applicable
Negative effect	U = Unknown Effect
Neutral/positive effect	0 = No Effect
Neutral/negative effect	E- = Negative Effect
	E+ = Positive Effect
	E- / E+ = Mixed Effect

Table ES-1. Environmental Consequences Summary (continued)

Criterion	Past and Present Trends	External Factors				Future Mgmt. Actions	EFH - Designation Alternatives						HAPC - Designation Alternatives					Alternatives to Minimize the Effects of Fishing on EFH							
		Foreign & Subsistence Fishing	Pollution	Climatic Cycles	Non-Fishing Activities		1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	5A	5B	5C	6
Protected Resources																									
ESA Mammals	The whale populations have been depleted by commercial whaling, though some species are slowly recovering. The Steller sea lion population has increased steadily since 1979.	Native Alaska hunters are allowed a harvest quota that is below the potential biological removal of this population. Impacts due to foreign fisheries are considered negligible.	U	E+/E-	Many upland, riverine, estuarine, and coastal/marine development activities have a negative effect on EFH, though some effects are unknown or neutral.	E+	E-	0	E+	E+	E+	E+	E-	0	E+	E+	E+	0	0	0	0	0	E-	E-	0/E-/U
Other Mammals	Trends for the 18 protected mammals are unavailable.	Historic foreign fisheries have had lasting negative effects on large marine mammals. Several species of marine mammals are harvested during subsistence hunts.	U	E+/E-		E+	E-	0	E+	E+	E+	E+	E-	0	E+	E+	E+	0	0	0	0	0	0	0	0
ESA Salmon	Overharvesting and declining spawning habitat are the most likely causes for the federal ESA listing of 12 salmonid stocks likely to range in Alaska waters.	Directed catch and bycatch by foreign/JV fisheries have had a negative effect on listed salmon and steelhead, which, to a lesser extent, continues today. Subsistence harvest is likely restricted to unlisted salmonids originating in Alaska.	U	E+/E-		E+	E-	0	E+	E+	E+	E+	E-	0	E+	E+	E+	0	0	0	0	0	0	0	0
ESA Seabirds	The short tailed albatross population has declined historically, though current trends show a steady increase. In contrast, Steller's eider has dramatically declined and continues to do so.	Some fishing activities impact seabird populations negatively through direct or indirectly caused fatalities.	E-	E+/E-		E+	E-	0	E+	E+	E+	E+	E-	0	E+	E+	E+	0	0	0	0	0	0	0	0
Other Seabirds	Some populations of seabirds are increasing (northern fulmar and gulls), while others continue to decline (albatross, kittiwake, eiders). Murre populations are stable.		E-	E+/E-		E+	E-	0	E+	E+	E+	E+	E-	0	E+	E+	E+	0	0	0	0	0	0	0	0
Ecosystems																									
Predator-Prey Relationships	Trophic levels of the BSAI and GOA are considered stable over the last 40 years.	NA	U	E+/E-	Many upland, riverine, estuarine, and coastal/marine development activities have a negative effect on EFH, though some effects are unknown or neutral.	0/E+	U	0	U	U	U	U	E-	0	E+	E+	E+	0	0	0	0	0	0	0	0
Energy Flow and Balance	Energy flow and balance are not significantly affected by fishing activities.	NA	U	E+/E-		0/E+	0	0	0	0	0	0	E-	0	E+	E+	E+	0	0	0	0	0	0	0	0
Biodiversity	Biodiversity trends are unknown, though declines resulting from fishing are possible.	Subsistence fishing could slightly increase risk to diversity on the ecosystem level.	U	E+/E-		0/E+	0	0	0	0	0	0	E-	0	E+	E+	E+	0	0	E+	E+	E+	E+	E+	E+
Non-fishing Activities																									
Costs to Federal and State Agencies	Costs are generally increasing.	Increased regulation of foreign or subsistence fishing would likely increase costs to federal and state agencies.	U	E+/E-	U		E+	0	E-	E-	E-	E+/E-	E+	0	E-	E-	E-	0	0	0	0	0	0	0	0
Costs to Non-fishing Industries and Other Proponents of Affected Activities	Costs are generally increasing.	NA	U	E+/E-	U		E+	0	E-	E-	E-	E+/E-	E+	0	E-	E-	E-	0	0	0	0	0	0	0	0

Positive effect	NA = Not Applicable
Negative effect	U = Unknown Effect
Neutral/positive effect	0 = No Effect
Neutral/negative effect	E- = Negative Effect
	E+ = Positive Effect
	E- / E+ = Mixed Effect

Table ES-2. Comparative Summary of Effects of EFH Description Alternatives

Category of Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6
Habitat						
Prey species	E-	Ø	E+	E+	E+	E+/E-
Benthic biodiversity	E-	Ø	E+	E+	E+	E+/E-
Habitat complexity	E-	Ø	E+	E+	E+	E+/E-
Target Species						
Fishing mortality	Ø	Ø	Ø	Ø	Ø	Ø
Spatial/temporal concentration of catch	E+	Ø	E-	E-	E-	E-
Productivity	E-	Ø	E+	E+	E+	E+/E-
Prey availability	E-	Ø	E+	E+	E+	E+/E-
Growth to maturity	E-	Ø	E+	E+	E+	E+/E-
Economic and Socioeconomic Aspects of Federally Managed Fisheries						
Passive use	E-	Ø	E+	E+	E+	E+/E-
Gross revenue	U	Ø	U	U	U	U
Operating costs	E+/E-	Ø	E-	E-	E-	E-
Costs to consumers	U	Ø	U	U	U	U
Safety	Ø	Ø	Ø	Ø	Ø	Ø
Socioeconomic effects on fishing communities	E+/E-	Ø	E-	E-	E-	E-
Effects on regulatory and enforcement programs	E+	Ø	E-	E-	E-	E-
Other Fisheries and Fishery Resources						
Halibut, state-managed groundfish, state-managed crab, herring, salmon, forage fish, and other species	E-	Ø	E+	E+	E+	E+
Protected Resources						
ESA-listed salmon, marine mammals, and seabirds; other marine mammals; and other seabirds	E-	Ø	E+	E+	E+	E+
Ecosystems and Biodiversity						
Predator-prey relationships	U	Ø	U	U	U	U
Energy flow and balance	Ø	Ø	Ø	Ø	Ø	Ø
Biodiversity	Ø	Ø	Ø	Ø	Ø	Ø
Non-fishing Activities						
Costs to federal and state agencies	E+	Ø	E-	E-	E-	E+/E-
Costs to non-fishing industries or other proponents of affected activities	E+	Ø	E-	E-	E-	E+/E-

E- = Effect negative, Ø = No effect, E+ = Effect positive, U = Unknown

Table ES-3. Comparison of EFH Description Alternatives

Summary Factor	Alternative 1: No Action (no EFH description)	Alternative 2: Status Quo/ General Distribution	Alternative 3: Revised General Distribution	Alternative 4: Presumed Known Concentration	Alternative 5: Ecoregion Strategy	Alternative 6: EEZ Only
Relative size of EFH areas	No EFH descriptions at all.	Existing EFH relatively broad.	Somewhat smaller EFH for many species, representing the areas that comprise approximately 95% of the population.	Smaller EFH for most species, representing the areas that comprise approximately 75% of the population.	Broadest EFH of all the alternatives.	Smallest EFH description of all the alternatives.
Consistency with the Magnuson-Stevens Act and the EFH regulations (50 CFR 600.815(a)(1))	Not consistent; fails to describe and identify EFH.	Not consistent; relatively broad and risk averse approach, but does not use the most recent scientific information available.	Consistent; relatively broad and risk averse approach; includes more recent information than Alternative 2.	Consistent; narrower approach that more rigorously distinguishes habitat areas with the highest relative abundance of managed species.	Consistent; describes EFH based on assemblages of species that use similar habitat complexes.	Not consistent; fails to describe EFH in nearshore waters and rivers that are necessary for critical life stages of managed species.
Overall efficacy and relative merits	Not responsive to statutory and regulatory requirements.	Retains existing EFH; no change from the status quo.	Very similar to Alternative 2; applies more recent information and better mapping, resulting in geographically smaller EFH descriptions for some species; any actions to conserve EFH could focus on these smaller areas.	Similar to Alternatives 2 and 3 but uses a narrower interpretation of the available scientific information, resulting in smaller EFH for many species; any actions to conserve EFH could focus on these smaller areas.	Similar to the effects of Alternatives 2, 3, and 4, but uses a very different approach and results in broader EFH, making it harder to distinguish EFH from all potential habitats.	Identical to Alternative 3 for offshore waters; fails to describe EFH in nearshore waters and rivers, so not responsive to statutory and regulatory requirements.

Table ES-4. Comparative Summary of Effects for HAPC Identification Alternatives

Category of Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Habitat Prey species Benthic biodiversity Habitat complexity	E-	Ø	E+	E+	E+
Target Species Fishing mortality Spatial/temporal concentration of catch Productivity Prey availability Growth to maturity	E-	Ø	E+	E+	E+
Economic and Socioeconomic Aspects of Federally Managed Fisheries Passive use Gross revenue Operating costs Costs to consumers Safety Socioeconomic effects on fishing communities Effects on regulatory and enforcement programs	E+/E-	Ø	E+/E-	E+/E-	E+/E-
Other Fisheries and Fishery Resources Halibut, state-managed groundfish, state-managed crab, herring, salmon, forage fish, and other species	E-	Ø	E+	E+	E+
Protected Resources ESA-listed salmon, marine mammals, and seabirds; other marine mammals; and other seabirds	E-	Ø	E+	E+	E+
Ecosystems and Biodiversity Predator-prey relationships Energy flow and balance Biodiversity	E-	Ø	E+	E+	E+
Non-Fishing Activities Costs to federal and state agencies Costs to non-fishing industries or other proponents of affected activities	E+	Ø	E-	E-	E-

E- = Effect negative, Ø = No effect, E+ = Effect positive, U = Unknown

Table ES-5. Comparison of Alternative Approaches for Identifying HAPCs

Summary Factor	Alternative 1: No Action (no HAPC identified)	Alternative 2: Status Quo HAPC Designations	Alternative 3: Site-based Concept	Alternative 4: Type/Site-based Concept	Alternative 5: Species Core Area
Relative size of HAPC	No HAPC identification at all.	Quite broad: living substrates in shallow waters, living substrates in deep waters, and freshwater areas that support anadromous salmon.	Size depends upon future Council action.	Size depends upon future Council action.	Size depends upon future Council action.
Consistency with the EFH regulations (50 CFR 600.815(a)(8))	Consistent; does not lead to HAPC identification, but HAPCs are not a required component of FMPs.	Consistent; regulations allow identification of specific types of habitat within EFH as HAPCs.	Consistent; regulations allow identification of specific areas of habitat within EFH as HAPCs.	Consistent; regulations allow identification of specific areas of habitat within EFH as HAPCs.	Consistent; regulations allow identification of specific areas of habitat within EFH as HAPCs.
Overall efficacy and relative merits	Fails to take advantage of a tool available to the Council to highlight particularly valuable and/or vulnerable habitats within EFH.	Retains existing approach to HAPC identification; however, the broad and general nature of the existing HAPCs may limit their efficacy.	Limits approach to HAPC identification to specific sites, rather than permitting HAPC designations for general types of habitat wherever they may be found; could be more effective than Alternative 2 by virtue of being more focused.	May offer more potential benefits for target species than the other alternatives because the stepwise process of selecting habitat types and then specific sites could yield a more rational and structured effort to ensure that HAPCs focus on the habitats within EFH that are most valuable and/or vulnerable.	Limits HAPC identification to specific sites supporting habitat functions for individual target species; has the potential to benefit target species more directly than the other alternatives, although the paucity of scientific information about habitat requirements of individual species could limit the effectiveness of this approach.

Table ES-6. Comparative Summary of Alternatives to Minimize the Adverse Effects of Fishing on EFH

Category of Effect	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5A	Alt. 5B	Alt. 5C	Alt. 6
Habitat								
Prey species	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Benthic biodiversity	Ø	Ø	E+	E+	E+	E+	E+	E+
Habitat complexity	Ø	Ø	E+	Ø	E+	E+	E+	E+
Target Species								
Groundfish	Ø/U	Ø/U	Ø/U	Ø/U	Ø/U	Ø/U	Ø/U	Ø/U
Salmon	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Crabs	Ø	Ø	Ø	Ø/E+	Ø/E+	Ø/E+	Ø/E+	Ø/E-/E+
Scallops	Ø/U	Ø	Ø	Ø	Ø	Ø	Ø	Ø/E-
Economic and Socioeconomic Aspects of Federally Managed Fisheries								
Passive use	Ø	E+	E+	E+	E+	E+	E+	E+
Gross revenue	Ø	Ø	E-	E-	E-	E-	E-	E-
Operating costs	Ø	E-	E-	E-	E-	E-	E-	E-
Cost to consumers	Ø	E-	E-	E-	E-	E-	E-	E-
Safety	Ø	E-	E-	E-	Ø	E-	E-	E-
Related fisheries	Ø	Ø	E-	Ø	E-	E-	E-	E-
Shoreside industries	Ø	Ø	Ø	Ø	Ø	Ø/E-	Ø/E-	E-
Communities	Ø	Ø	Ø	Ø	Ø/E-	Ø/E-	Ø/E-	E-
Management and enforcement	Ø	E-	E-	E-	E-	E-	E-	E-
Other Fisheries								
State-managed groundfish	Ø	Ø	Ø	Ø	Ø	Ø	Ø	E-
State-managed crab	Ø	Ø	E+	Ø	Ø/ E+	Ø/ E+	Ø/ E+	E-
Herring	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Halibut	Ø	Ø	Ø	Ø	Ø	Ø	Ø	E-
Protected Species								
ESA-listed mammals	Ø	Ø	Ø	Ø	Ø	E-	E-	Ø/E-/U
Other mammals	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
ESA-listed salmon	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
ESA-listed seabirds	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Other seabirds	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Ecosystems								
Predator-prey relationships	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Energy flow and balance	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Diversity	Ø	Ø	E+	E+	E+	E+	E+	E+

E- = Effect negative, Ø = No effect, E+ = Effect positive, U = Unknown

Table ES-7. Summary Comparison of Environmental Effects of the Alternatives to Minimize the Adverse Effects of Fishing on EFH

Category of Effect	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5A	Alternative 5B	Alternative 5C	Alternative 6
Habitat	No substantial adverse effects would be anticipated. Fishing activities would not affect EFH in a manner that is more than minimal and temporary in nature.	Small trawl closures to rockfish on GOA slope would have no substantial effects on habitat.	Closure of GOA slope to rockfish trawling would have positive effects on epibenthic structures and coral on GOA slope.	Bottom trawl closures would have positive effects on protection of coral in the AI area. Gear modifications may have a positive effect on epibenthic structures in BS. Small trawl closures on GOA slope to rockfish fishing would have no substantial effects on habitat.	Bottom trawl closures would have positive effects on epibenthic structure and coral in GOA; substantially improved protection of coral in the AI would occur. Gear modifications may have a positive effect on epibenthic structures in BS.	Same effects as Alternative 5A in GOA and BS would occur. The substantially larger closures in AI would provide more protection of coral and epibenthic structures. The closures would be largest under Option 2, slightly smaller under Option 1, and smaller yet under Option 3. In Option 2, closures to all bottom contact gear in six coral gardens in the AI would protect those areas.	New measures would have effects similar to Alternative 5B, Option 2, in the GOA and AI. Bottom trawl closures in ten GOA slope areas and a substantial portion of the AI area would have positive effects on epibenthic structure and corals. Closures to all bottom contact gear in six coral gardens in the AI would protect those areas.	Closures to bottom tending gear would have moderately positive effects on epibenthic structures in all areas and positive effects on the protection of coral on the AI and GOA slope areas.
Target Species	No substantial effects would be anticipated.	No substantial effects would be anticipated.	No substantial effects would be anticipated.	No substantial effects would be anticipated. Bering Sea closures may benefit growth of snow crabs.	Same effects as Alternative 4 would occur.	Same effects as Alternative 4 would occur.	No substantial effects would be anticipated.	For most species, no substantial effects wold be anticipated. Negative effects would be anticipated for scallops and some crabs.

Table ES-7. Summary Comparison of Environmental Effects of the Alternatives to Minimize the Adverse Effects of Fishing on EFH (continued)

Category of Effect	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5A	Alternative 5B	Alternative 5C	Alternative 6
Economic and Socioeconomic Aspects of Federally Managed Fisheries	No substantial effects would be anticipated.	Gross revenue at risk would be <$1 million. Slight increases in costs (operating, consumer, management, enforcement) expected. No effects on communities would be expected.	Gross revenue at risk would be $2.6 million. More increases in costs and reduction in safety would be expected. No effects on communities would be expected.	Gross revenue at risk would be $3.5 million. Even more increases in costs and reduction in safety would be expected. No effects on communities would be expected.	Gross revenue at risk would be $7.9 million. Even more increases in costs and reduction in safety would be expected. Negative effects on western GOA communities would be expected.	Gross revenue at risk would be $28.1 million under Option 1, $13.0 million under Option 2, and $7.5 million under Option 3, including TAC reduction values of $15.2 million under Option 1 and $3.8 million under Option 2. Option 2 AI coral garden area closures would place an additional $234,000 of groundfish revenue at risk, up to 4.4% of AI halibut catch at risk, and 0.3% of AI king and Tanner crab pot catch at risk. Even more increases in costs and reduction in safety would be expected. In particular, monitoring and enforcement costs would increase greatly. Negative effects on Western GOA communities would be expected.	Gross revenue at risk would be $2.4 million. The AI coral garden area closure to bottom contact gear would place an additional $234,000 of groundfish revenue at risk, up to 4.4% of AI halibut catch at risk, and 0.3% of AI king and Tanner crab pot catch at risk. Even more increases in costs and reduction in safety would be expected. In particular, monitoring and enforcement costs would increase greatly.	Gross revenue at risk would be $236 million. Increases in costs and a reduction in safety of smaller fixed-gear vessels would be expected. Negative effects on Alaska coastal communities dependent on fishing would be expected.

Table ES-7. Summary Comparison of Environmental Effects of the Alternatives to Minimize the Adverse Effects of Fishing on EFH (continued)

Category of Effect	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5A	Alternative 5B	Alternative 5C	Alternative 6
Other Fisheries	No substantial effects would be anticipated.	Some slight positive effects to GOA deepwater Tanner crabs and golden king crabs would be expected.	Would be the same as Alternative 2, but slightly more benefits would be expected.	Would be the same as Alternative 2.	Would be the same as Alternative 3.	Would be the same as Alternative 3.	This would be similar to Alternative 2 in the GOA and Alternative 5B, Option 2, in the AI.	Would reduce revenue of halibut and state groundfish and crab fisheries.
Protected Species	No substantial effects would be anticipated.	No substantial effects would be anticipated.	No substantial effects would be anticipated.	No substantial effects would be anticipated.	No substantial effects would be anticipated.	Steller sea lion foraging success in AI may be impacted by spatial and temporal concentrations of fishing effort in nearshore areas.	Steller sea lion foraging success in the AI may be impacted by spatial and temporal concentrations of fishing effort in nearshore areas.	Steller sea lion foraging success in AI may be impacted by spatial and temporal concentrations of fishing effort in nearshore areas.
Ecosystems	No substantial effects would be anticipated.	No substantial effects would be anticipated.	Trawl closure areas may have a positive effect on diversity in GOA.	Positive effects on diversity are expected in GOA, BS, and AI areas.	Alternative 5A would have slightly more benefits to diversity than Alternative 4 due to larger closure areas.	Would be similar to Alternative 5A, but slightly more benefits would occur in the AI area.	This would be similar to Alternative 5B, Option 2, except that slightly fewer benefits would occur in the GOA, and no benefits would occur in the BS.	Closures to bottom tending gear would have positive effects in GOA, BS, and AI areas.

Table ES-8. Synopsis of Habitat Benefits and Economic Costs of Alternatives to Minimize the Adverse Effects of Fishing on EFH

	Percentage of Fishable Waters Closed[1] (in addition to existing closures)			Relative Sensitivity of Protected Habitats (Based on LEI Scores)					Annual Revenue At Risk (in millions)					
Alt.	**GOA**	**BS**	**AI**	**GOA**	**BS**	**AI**	**Other Habitat Measures[2]**	**TOTAL ADDED BENEFITS[3]**	**GOA Ground-fish**	**BSAI Ground-fish**	**Crab**	**Scallop**	**Halibut**	**TOTAL COSTS[4]**
1	0%	0%	0%	–	–	–	–	**–**	$0	$0	$0	$0	$0	**$0**
2	3.6%	0%	0%	High	–	–	–	**very low**	$1	$0	$0	$0	$0	**$1**
3	10.4%	0%	0%	High	–	–	–	**low**	$2.7	$0	$0	$0	$0	**$2.7**
4	3.6%	6.0%	19.7%	High	Low	High	gear	**medium**	$0.9	$2.6	$0	$0	$0	**$3.5**
5A	11.4%	8.0%	30.6%	High	Low	High	gear	**med/high**	$3.6	$4.3	$0	$0	$0	**$7.9**
5B Option 1	11.4%	8.0%	71.1%	High	Low	High	gear, TAC, bycatch	**highest**	$3.6	$24.5	$0	$0	$0	**$28.1**
5B Option 2	11.4%	8.0%	77.9%	High	Low	High	gear, TAC, bycatch	**highest**	$3.6	$9.4[5]	$0[5]	$0	$0[5]	**$13.0**
5B Option 3	11.4%	8.0%	61.8%	High	Low	High	gear	**high**	$3.6	$3.9	$0	$0	$0	**$7.5**
5C	2.6%	0%	59.2%[6]	High	–	High	–	**high**	$1.2	$1.2[5]	$0[5]	$0	$0[5]	**$2.4**
6	17.4%	17.0%	19.7%	L/M/H[7]	L/M/H	L/M/H	–	**medium**	$163.8	[8]	$34.1	$1	$38.3	**$237.2**

NOTES:
1. Fishable waters are defined as those waters < 1000 m within the historic effort distribution. Closures are for bottom trawling, except for Alternative 6, which closes areas to all bottom tending gear (dredges, bottom trawls, pelagic trawls that contact the bottom, longlines, dinglebars, and pots).
2. In addition to closure areas, Alternatives 4, 5A, and 5B include restrictions on configuration of bottom trawl sweeps and footropes. Alternative 5B Options 1 and 2 also include TAC reductions for AI Atka mackerel and rockfish, as well as bycatch limits for bryozoans/corals and sponges. Alternative 5B Option 1 also includes a TAC reduction for AI Pacific cod.
3. Alternatives were ranked qualitatively relative to the status quo and the alternative with the highest benefits to EFH.
4. Total costs (direct loss and at-risk loss to gross revenue) reflect the long- and short-term costs to assist in assessing practicability, but do not include any long-term benefits of increased catches that might be attributable to habitat protection, because sufficient information does not exist to estimate any such benefits.
5. AI coral garden area closures to bottom contact gear under Alternatives 5B, Option 2, and 5C would place an additional $234,000 of groundfish revenue at risk, up to 4.4% of AI halibut catch at risk, and 0.3% of AI king and Tanner crab pot catch at risk.
6. Spatial analysis for Alternative 5C used slightly different bathymetry data to calculate the total fishable area in the AI, so the percentage of fishable waters closed appears to be smaller for Alternative 5C than for Alternative 5B, Option 3, even though the area closed to fishing under Alternative 5C would be 2,237 km^2 larger.
7. L/M/H: L = low; M = medium; H = high
8. BSAI groundfish revenue at risk included with GOA.