

D.3 Alternative 3 (Preliminary Preferred Alternative)—Revised General Distribution

EFH is the general distribution of a species described by life stage. General distribution is a subset of a species population and is 95 percent of the population for a particular life stage, if life history data are available for the species. Where information is insufficient and a suitable proxy cannot be inferred, EFH is not described. General distribution is used to describe EFH for all stock conditions, whether or not higher levels of information exist, because the available higher level data are not sufficiently comprehensive to account for changes in stock distribution (and thus habitat use) over time.

Alternative 3 describes EFH for FMP-managed species by life stage as general distribution using new guidance from the EFH Final Rule, such as the updated EFH Level of Information definitions. Alternative 3 uses new analytical tools and incorporates recent scientific information for each life history stage from updated scientific habitat assessment reports (see Appendix F). EFH descriptions include both text and a map, if information is available for a species' particular life stage. Alternative 3 is risk averse, supported by scientific rationale, and accounts for changing oceanographic conditions, regime shifts, and the seasonality of migrating fish stocks.

Objective

The objective of this alternative is to describe EFH for each life stage using the best available scientific information, i.e. only those waters and substrates where the species is known to associate or recruit in scientific surveys and commercial fishery catches. EFH is described as 95 percent of the population where the species' life stage has been recruited to the survey, investigated through research, officially observed, or reported in a vessel catch log.

Methodology

In addition to scientific information sources analyzed in Alternative 2, the Alternative 3 analysis focused on two significant fishery geographic information data resources: survey (Resource Assessment and Conservation Engineering Division [RACE]) and observer (NORPAC). For adult and late juvenile life stages, each data set was analyzed for 95 percent of the total accumulated population for the species using GIS. For eggs and larvae, the EFH description was based on presence/absence data from surveys (AFSC RACE Matarese 2003). EFH was identified as the areas where eggs and larvae were most commonly encountered in those surveys, which was the best available information regarding habitat use for those life stages. EFH shape files were developed based on these data sets.

For adult and late juvenile life stages of BSAI groundfish, GOA groundfish, BSAI crab, and scallop FMP species, fishery catch per unit of effort (CPUE) data from the NMFS observer database (NORPAC, 1990 to 2001), NMFS trawl survey data from RACE, 1987 to 2002, and, where appropriate, ADF&G survey data were analyzed to estimate the population distribution of each species. Where this information exists, the area described by these data is identified as EFH. The analyzed EFH data and area were further reviewed by scientific stock assessment authors for accuracy. This review ensures that any outlying areas not considered were included, and errors in the data or described EFH area were removed.

For salmon FMP species, the analysis is broken into three parts: marine, nearshore, and freshwater. Marine and nearshore salmon EFH is generally described to include all marine waters from the mean higher tide line to the limits of the EEZ since science recognizes that salmon are 1) distributed throughout all marine waters during late juvenile and adult life stages and 2) found nearshore and along coastal migration corridors as early juvenile life stages out-migrate and adult life stages return to and from freshwater areas, respectively. Freshwater areas used by egg, larvae, and returning adult salmon will be analyzed as those areas indexed in ADF&G's *Catalogue of Waters Important for the Spawning*,

Rearing, or Migration of Anadromous Fishes (ADF&G 1998a), specifically Pacific salmon species. Freshwater salmon systems are generally defined as those areas above mean higher tide to the upper limits of those freshwater systems supporting salmon and may include contiguous wetland areas, such as those areas hydrologically connected to the main water source via access channels to an adjacent river, stream, lake, pond, etc.

Rationale

Alternative 3 incorporates the same basic rationales to describe EFH as those applied in Alternative 2.

D.3.1 Description of Essential Fish Habitat for the Groundfish Resources of the BSAI Regions

D.3.1.1 EFH Information Levels for BSAI Groundfish

BSAI Species	Eggs	Larvae	Early Juvenile	Late Juvenile	Adult
Walleye pollock	1	1	x	1	1
Pacific cod	x	1	x	1	1
Yellowfin sole	x	x	x	1	1
Greenland turbot	1	1	x	1	1
Arrowtooth flounder	x	x	x	1	1
Rock sole	x	1	x	1	1
Alaska plaice	1	x	x	1	1
Rex sole	x	x	x	1	1
Dover sole	x	x	x	1	1
Flathead sole	1	1	x	1	1
Sablefish	x	1	x	1	1
Pacific ocean perch	x	1	x	1	1
Shortraker/rougheye rockfish	x	1	x	x	1
Northern rockfish	x	1	x	x	1
Thornyhead rockfish	x	1	x	1	1
Yelloweye rockfish	x	1	x	1	1
Dusky rockfish	x	1	x	x	1
Atka mackerel	x	1	x	x	1
Skates	x	x	x	x	1
Sculpins	x	x	x	1	1
Sharks	x	x	x	x	x
Forage fish complex	x	x	x	x	x
Squid	x	x	x	1	1
Octopus	x	x	x	x	x

x - No information available.

D.3.1.2 EFH Text Descriptions for BSAI Groundfish

EFH Description for BSAI Walleye Pollock

Eggs

EFH for walleye pollock eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m), upper slope (200 to 500 m), and intermediate slope (500 to 1,000 m) throughout the BSAI, as depicted in Figure D-77.

Larvae

EFH for larval walleye pollock is the general distribution area for this life stage, located in epipelagic waters along the entire shelf (0 to 200 m), upper slope (200 to 500 m), and intermediate slope (500 to 1,000 m) throughout the BSAI, as depicted in Figure D-78.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile walleye pollock is the general distribution area for this life stage, located in the lower and middle portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI, as depicted in Figure D-79. No known preference for substrates exist.

Adults

EFH for adult walleye pollock is the general distribution area for this life stage, located in the lower and middle portion of the water column along the entire shelf (0 to 200 m) and slope (200 to 1,000 m) throughout the BSAI, as depicted in Figure D-79. No known preference for substrates exist.

EFH Description for BSAI Pacific Cod**Eggs—No EFH Description Determined**

Scientific information notes the rare occurrence of Pacific cod eggs in the BSAI.

Larvae

EFH for larval Pacific cod is the general distribution area for this life stage, located in epipelagic waters along the entire shelf (0 to 200 m), upper slope (200 to 500 m), and intermediate slope (500 to 1,000 m) throughout the BSAI, as depicted in Figure D-80.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Pacific cod is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are soft substrates consisting of sand, mud, sandy mud, and muddy sand, as depicted in Figure D-81.

Adults

EFH for adult Pacific cod is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are soft substrates consisting of sand, mud, sandy mud, muddy sand, and gravel, as depicted in Figure D-81.

EFH Description for BSAI Yellowfin Sole**Eggs—No EFH Description Determined**

Scientific information notes the rare occurrence of yellowfin sole eggs in the BSAI.

Larvae—No EFH Description Determined

Scientific information notes the rare occurrence of larval yellowfin sole in the BSAI.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile yellowfin sole is the general distribution area for this life stage, located in the lower portion of the water column within nearshore bays and along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are soft substrates consisting mainly of sand, as depicted in Figure D-82.

Adults

EFH for adult yellowfin sole is the general distribution area for this life stage, located in the lower portion of the water column within nearshore bays and along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are soft substrates consisting mainly of sand, as depicted in Figure D-82.

EFH Description for BSAI Greenland Turbot**Eggs**

EFH for Greenland turbot eggs is the general distribution area for this life stage, located principally in benthypelagic waters along the outer shelf (100 to 200 m) and slope (200 to 3,000 m) throughout the BSAI in the fall, as depicted in Figure D-83.

Larvae

EFH for larval Greenland turbot is the general distribution area for this life stage, located principally in benthypelagic waters along the outer shelf (100 to 200 m) and slope (200 to 3,000 m) throughout the BSAI and seasonally abundant in the spring, as depicted in Figure D-84.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Greenland turbot is the general distribution area for this life stage, located in the lower and middle portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the BSAI wherever there are softer substrates consisting of mud and sandy mud, as depicted in Figure D-85.

Adults

EFH for late adult Greenland turbot is the general distribution area for this life stage, located in the lower and middle portion of the water column along the outer shelf (100 to 200 m), upper slope (200 to 500 m), and lower slope (500 to 1,000 m) throughout the BSAI wherever there are softer substrates consisting of mud and sandy mud, as depicted in Figure D-85.

EFH Description for BSAI Arrowtooth Flounder

Eggs—No EFH Description Determined

Insufficient information is available.

Larvae—No EFH Description Determined

Scientific information notes the rare occurrence of larval arrowtooth flounder in the BSAI.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile arrowtooth flounder is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the BSAI wherever there are softer substrates consisting of gravel, sand, and mud, as depicted in Figure D-86.

Adults

EFH for adult arrowtooth flounder is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50), middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the BSAI wherever there are softer substrates consisting of gravel, sand, and mud, as depicted in Figure D-86.

EFH Description for BSAI Rock Sole

Eggs—No EFH Description Determined

Insufficient information is available.

Larvae

EFH for larval rock sole is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 1,000 m) throughout the BSAI, as depicted in Figure D-87.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile rock sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand, gravel, and cobble, as depicted in Figure D-88.

Adults

EFH for adult rock sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand, gravel, and cobble, as depicted in Figure D-88.

EFH Description for BSAI Alaska Plaice

Eggs

EFH for Alaska plaice eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the BSAI in the spring, as depicted in Figure D-89.

Larvae—No EFH Description Determined

Scientific information notes the rare occurrence of larval Alaska plaice in the BSAI.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Alaska plaice is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-90.

Adults

EFH for adult Alaska plaice is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-90.

EFH Description for BSAI Rex Sole

Eggs—No EFH Description Determined

Scientific information notes the rare occurrence of rex sole eggs in the BSAI.

Larvae—No EFH Description Determined

Scientific information notes the rare occurrence of larval rex sole in the BSAI.

Late Juveniles

EFH for juvenile rex sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are substrates consisting of gravel, sand, and mud, as depicted in Figure D-91.

Adults

EFH for adult rex sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are substrates consisting of gravel, sand, and mud, as depicted in Figure D-91.

EFH Description for BSAI Dover Sole

Eggs—No EFH Description Determined

Scientific information notes the rare occurrence of Dover sole eggs in the BSAI.

Larvae—No EFH Description Determined

Scientific information notes the rare occurrence of larval Dover sole in the BSAI.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Dover sole is the general distribution area for this life stage, located in the lower portion of the water column along the middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the BSAI wherever there are substrates consisting of sand and mud, as depicted in Figure D-92.

Adults

EFH for adult Dover sole is the general distribution area for this life stage, located in the lower portion of the water column along the middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the BSAI wherever there are substrates consisting of sand and mud, as depicted in Figure D-92.

EFH Description BSAI Flathead Sole**Eggs**

EFH for flathead sole eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the BSAI in the spring, as depicted in Figure D-93.

Larvae

EFH for larval flathead sole is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the BSAI, as depicted in Figure D-94.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for juvenile flathead sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-95.

Adults

EFH for adult flathead sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-95.

EFH Description for BSAI Sablefish**Eggs—No EFH Description Determined**

Scientific information notes the rare occurrence of sablefish eggs in the BSAI.

Larvae

EFH for larval sablefish is the general distribution area for this life stage, located in epipelagic waters along the middle shelf (50 to 100 m), outer shelf (100 to 200 m), and slope (200 to 3,000 m) throughout the BSAI, as depicted in Figure D-96.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile sablefish is the general distribution area for this life stage, located in the lower portion of the water column, varied habitats, generally softer substrates, and deep shelf gulleys along the slope (200 to 1,000 m) throughout the BSAI, as depicted in Figure D-97.

Adults

EFH for adult sablefish is the general distribution area for this life stage, located in the lower portion of the water column, varied habitats, generally softer substrates, and deep shelf gulleys along the slope (200 to 1,000 m) throughout the BSAI, as depicted in Figure D-97.

EFH Description for BSAI Pacific Ocean Perch**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae

EFH for larval Pacific ocean perch is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the BSAI, as depicted in Figure D-98, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Pacific ocean perch is the general distribution area for this life stage, located in the middle to lower portion of the water column along the inner shelf (1 to 50 m), middle shelf (50 to 100 m), outer shelf (100 to 200 m), and upper slope (200 to 500 m) throughout the BSAI wherever there are substrates consisting of cobble, gravel, mud, sandy mud, or muddy sand, as depicted in Figure D-99.

Adults

EFH for adult Pacific ocean perch is the general distribution area for this life stage, located in the lower portion of the water column along the outer shelf (100 to 200 m) and upper slope (200 to 500 m) throughout the BSAI wherever there are substrates consisting of cobble, gravel, mud, sandy mud, or muddy sand, as depicted in Figure D-99.

EFH Descriptions for BSAI Shortraker and Rougheye Rockfish**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae

EFH for larval shortraker and rougheye rockfish is the general distribution area for this life stage, located in epipelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the BSAI, as depicted in Figure D-98, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults

EFH for adult shortraker and rougheye rockfish is the general distribution area for this life stage, located in the lower portion of the water column along the outer shelf (100 to 200 m) and upper slope (200 to 500 m) regions throughout the BSAI wherever there are substrates consisting of mud, sand, sandy mud, muddy sand, rock, cobble, and gravel, as depicted in Figure D-100.

EFH Description for BSAI Northern Rockfish**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae

EFH for larval northern rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the BSAI, as depicted in Figure D-98, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults

EFH for adult northern rockfish is the general distribution area for this life stage, located in the middle and lower portions of the water column along the outer slope (100 to 200 m) and upper slope (200 to 500 m) throughout the BSAI wherever there are substrates of cobble and rock, as depicted in Figure D-101.

EFH Description for BSAI Thornyhead Rockfish**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae

EFH for larval thornyhead rockfish is the general distribution area for this life stage, located in epipelagic waters along the outer shelf (100 to 200 m) and slope (200 to 3,000 m) throughout the BSAI, as depicted in Figure D-98, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Thornyhead rockfish is the general distribution area for this life stage, located in the lower portion of the water column along the middle and outer shelf (50 to 200 m) and upper to lower slope (200 to 1,000 m) throughout the BSAI wherever there are substrates of mud, sand, rock, sandy mud, muddy sand, cobble, and gravel, as depicted in Figure D-102.

Adults

EFH for adult Thornyhead rockfish is the general distribution area for this life stage, located in the lower portion of the water column along the middle and outer shelf (50 to 200 m) and upper to lower slope (200 to 1,000 m) throughout the BSAI wherever there are substrates of mud, sand, rock, sandy mud, muddy sand, cobble, and gravel, as depicted in Figure D-102.

EFH Description for BSAI Yelloweye Rockfish**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae

EFH for larval yelloweye rockfish is the general distribution area for this life stage, located in the epipelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the BSAI, as depicted in Figure D-98, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile yelloweye rockfish is the general distribution area for this life stage, located in the lower portion of the water column within bays and island passages and along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the BSAI wherever there are substrates of rock and in areas of vertical relief, such as crevices, overhangs, vertical walls, coral, and larger sponges, as depicted in Figure D-103.

Adults

EFH for adult yelloweye rockfish is the general distribution area for this life stage, located in the lower portion of the water column within bays and island passages and along the inner shelf (0 to 50 m), outer shelf (100 to 100 m), and upper slope (200 to 500 m) throughout the BSAI wherever there are substrates of rock and in vegetated areas of vertical relief, such as crevices, overhangs, vertical walls, coral, and larger sponges, as depicted in Figure D-103.

EFH Description for BSAI Dusky Rockfish**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae

EFH for larval dusky rockfish is the general distribution area for this life stage, located in the pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the BSAI, as depicted in Figure D-98, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults

EFH for adult dusky rockfish is the general distribution area for this life stage, located in the middle and lower portions of the water column along the outer shelf (100 to 200 m) and upper slope (200 to 500 m) throughout the BSAI wherever there are substrates of cobble, rock, and gravel, as depicted in Figure D-104.

EFH Description for BSAI Atka Mackerel**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae

EFH for larval atka mackerel is the general distribution area for this life stage, located in epipelagic waters along the shelf (0 to 200 m), upper slope (200 to 500 m), and intermediate slope (500 to 1,000 m) throughout the BSAI, as depicted in Figure D-105.

Early Juveniles —No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults

EFH for adult Atka mackerel is the general distribution area for this life stage, located in the entire water column, from sea surface to the sea floor, along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the BSAI wherever there are substrates of gravel and rock and in vegetated areas of kelp, as depicted in Figure D-106.

EFH Description for BSAI Skates**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Adults

EFH for adult skates is the general distribution area for this life stage, located in the lower portion of the water column on the shelf (0 to 200 m) and the upper slope (200 to 500 m) throughout the BSAI wherever there are substrates of mud, sand, gravel, and rock, as depicted in Figure D-107.

EFH Description for BSAI Sculpins**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae—No EFH Description Determined

Insufficient information is available.

Juveniles

EFH for juvenile sculpins is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), outer shelf (100 to 200 m) and portions of the upper slope (200 to 500 m) throughout the BSAI wherever there are substrates of rock, sand, mud, cobble, and sandy mud, as depicted in Figure D-108.

Adults

EFH for adult sculpins is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), outer shelf (100 to 200 m) and portions of the upper slope (200 to 500 m) throughout the BSAI wherever there are substrates of rock, sand, mud, cobble, and sandy mud, as depicted in Figure D-108.

EFH Description for BSAI Sharks**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults—No EFH Description Determined

Insufficient information is available.

EFH Description for BSAI Forage Fish Complex—Eulachon, Capelin, Sand Lance, Sand Fish, Euphausiids, Myctophids, Pholids, Gonostomatids, etc.**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults—No EFH Description Determined

Insufficient information is available.

EFH Description for BSAI Squid

Eggs—No EFH Description Determined

Insufficient information is available.

Young Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for older juvenile squid is the general distribution area for this life stage, located in the entire water column, from the sea surface to sea floor, along the inner (0 to 50 m), middle (50 to 100 m), and outer (200 to 500 m) shelf and the entire slope (500 to 1,000 m) throughout the BSAI, as depicted in Figure D-109.

Adults

EFH for adult squid is the general distribution area for this life stage, located in the entire water column, from the sea surface to sea floor, along the inner (0 to 50 m), middle (50 to 100 m), and outer (200 to 500 m) shelf and the entire slope (500 to 1,000 m) throughout the BSAI, as depicted in Figure D-109.

EFH Description for BSAI Octopus

Eggs—No EFH Description Determined

Insufficient information is available.

Young Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults—No EFH Description Determined

Insufficient information is available.

D.3.1.3 EFH Map Descriptions for BSAI Groundfish

Figures D-77 through D-109 show EFH distribution under Alternative 3 for the BSAI groundfish species as described in Section D.3.1.2.

D.3.2 Description of Essential Fish Habitat for the Groundfish Resources of the GOA Region

D.3.2.1 EFH Information Levels for GOA Groundfish

GOA Species	Eggs	Larvae	Early Juvenile	Late Juvenile	Adult
Walleye pollock	1	1	x	1	1
Pacific cod	1	1	x	1	1
Yellowfin sole	1	1	x	1	1
Arrowtooth flounder	x	1	x	1	1
Rock sole	x	1	x	1	1
Alaska plaice	1	1	x	1	1
Rex sole	1	1	x	1	1
Dover sole	1	1	x	1	1
Flathead sole	1	1	x	1	1
Sablefish	1	1	x	1	1
Pacific ocean perch	x	1	x	1	1
Shortraker/rougheye rockfish	x	1	x	x	1
Northern rockfish	x	1	x	x	1
Thornyhead rockfish	x	1	x	1	1
Yelloweye rockfish	x	1	x	1	1
Dusky rockfish	x	1	x	x	1
Atka mackerel	x	1	x	x	1
Sculpins	x	x	x	1	1
Skates	x	x	x	x	1
Sharks	x	x	x	x	x
Forage fish complex	x	x	x	x	x
Squid	x	x	x	1	1
Octopus	x	x	x	x	x

x - No information available.

D.3.2.2 EFH Text Descriptions for GOA Groundfish

EFH Description for GOA Walleye Pollock

Eggs

EFH for walleye pollock eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m), upper slope (200 to 500 m), and intermediate slope (500 to 1,000 m) throughout the GOA, as depicted in Figure D-110.

Larvae

EFH for larval walleye pollock is the general distribution area for this life stage, located in epipelagic waters along the entire shelf (0 to 200 m), upper slope (200 to 500 m), and intermediate slope (500 to 1,000 m) throughout the GOA, as depicted in Figure D-111.

Early Juveniles—No EFH Description Determined

Limited information exists to describe walleye pollock early juvenile larval general distribution; however, the data cannot be analyzed in the same manner as directed by the approach for Alternative 3.

Late Juveniles

EFH for late juvenile walleye pollock is the general distribution area for this life stage, located in the lower and middle portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf along the throughout the GOA, as depicted in Figure D-112. No known preference for substrates exist.

Adults

EFH for adult walleye pollock is the general distribution area for this life stage, located in the lower and middle portion of the water column along the entire shelf (0 to 200) and slope (200 to 1,000 m) throughout the GOA, as depicted in Figure D-112. No known preference for substrates exist.

EFH Description for GOA Pacific Cod**Eggs**

EFH for Pacific cod eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper (200 to 500 m) slope throughout the GOA wherever there are soft substrates consisting of mud and sand, as depicted in Figure D-113.

Larvae

EFH for larval Pacific cod is the general distribution area for this life stage, located in pelagic waters along the inner (0 to 50 m) and middle (50 to 100 m) shelf throughout the GOA wherever there are soft substrates consisting of mud and sand, as depicted in Figure D-114.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Pacific cod is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are soft substrates consisting of sand, mud, sandy mud, and muddy sand, as depicted in Figure D-115.

Adults

EFH for adult Pacific cod is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are soft substrates consisting of sand, mud, sandy mud, muddy sand, and gravel, as depicted in Figure D-115.

EFH Description for GOA Yellowfin Sole

Eggs

EFH for yellowfin sole eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper (200 to 500 m) slope throughout the GOA, as depicted in Figure D-116.

Larvae

EFH for larval yellowfin sole is the general distribution area for this life stage, located in pelagic waters along the shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the GOA, as depicted in Figure D-117.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile yellowfin sole is the general distribution area for this life stage, located in the lower portion of the water column within nearshore bays and along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are soft substrates consisting mainly of sand, as depicted in Figure D-118.

Adults

EFH for adult yellowfin sole is the general distribution area for this life stage, located in the lower portion of the water column within nearshore bays and along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are soft substrates consisting mainly of sand, as depicted in Figure D-118.

EFH Description for GOA Arrowtooth Flounder

Eggs—No EFH Description Determined

Insufficient information is available.

Larvae

EFH for larval arrowtooth flounder is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-119.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile arrowtooth flounder is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the GOA wherever there are softer substrates consisting of gravel, sand, and mud, as depicted in Figure D-120.

Adults

EFH for adult arrowtooth flounder is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50), middle (50 to 100 m), and outer (100 to 200 m)

shelf and upper slope (200 to 500 m) throughout the GOA wherever there are softer substrates consisting of gravel, sand, and mud, as depicted in Figure D-120.

EFH Description for GOA Rock Sole

Eggs—No EFH Description Determined

Insufficient information is available.

Larvae

EFH for larval rock sole is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 1,000 m) throughout the GOA, as depicted in Figure D-121.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile rock sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand, gravel, and cobble, as depicted in Figure D-122.

Adults

EFH for adult rock sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand, gravel, and cobble. Depicted in Figure D-122.

EFH Description for GOA Alaska Plaice

Eggs

EFH for Alaska plaice eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the GOA in the spring, as depicted in Figure D-123.

Larvae

EFH for larval Alaska plaice is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the GOA, as depicted in Figure D-124.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Alaska plaice is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-125.

Adults

EFH for adult Alaska plaice is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the BSAI wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-125.

EFH Description for GOA Rex Sole**Eggs**

EFH for rex sole eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the GOA in the spring, as depicted in Figure D-126.

Larvae

EFH for larval rex sole is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and upper slope (200 to 500 m) throughout the GOA, as depicted in Figure D-127.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for juvenile rex sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are substrates consisting of gravel, sand, and mud, as depicted in Figure D-128.

Adults

EFH for adult rex sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are substrates consisting of gravel, sand, and mud, as depicted in Figure D-128.

EFH Description for GOA Dover Sole**Eggs**

EFH for Dover sole eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-129.

Larvae

EFH for larval Dover sole is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-130.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Dover sole is the general distribution area for this life stage, located in the lower portion of the water column along the middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the GOA wherever there are substrates consisting of sand and mud, as depicted in Figure D-131.

Adults

EFH for adult Dover sole is the general distribution area for this life stage, located in the lower portion of the water column along the middle (50 to 100 m), and outer (100 to 200 m) shelf and upper slope (200 to 500 m) throughout the GOA wherever there are substrates consisting of sand and mud, as depicted in Figure D-131.

EFH Description GOA Flathead Sole**Eggs**

EFH for flathead sole eggs is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-132.

Larvae

EFH for larval flathead sole is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-133.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for juvenile flathead sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-134.

Adults

EFH for adult flathead sole is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), and outer (100 to 200 m) shelf throughout the GOA wherever there are softer substrates consisting of sand and mud, as depicted in Figure D-134.

EFH Description for GOA Sablefish**Eggs**

EFH for sablefish eggs is the general distribution area for this life stage, located in deeper waters along the slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-135.

Larvae

EFH for larval sablefish is the general distribution area for this life stage, located in epipelagic waters along the middle shelf (50 to 100 m), outer shelf (100 to 200 m), and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-136.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile sablefish is the general distribution area for this life stage, located in the lower portion of the water column, varied habitats, generally softer substrates, and deep shelf gulleys along the slope (200 to 1,000 m) throughout the GOA, as depicted in Figure D-137.

Adults

EFH for adult sablefish is the general distribution area for this life stage, located in the lower portion of the water column, varied habitats, generally softer substrates, and deep shelf gulleys along the slope (200 to 1,000 m) throughout the GOA, as depicted in Figure D-137.

EFH Description for GOA Pacific Ocean Perch**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae

EFH for larval Pacific ocean perch is the general distribution area for this life stage, located in the middle to lower portion of the water column along the inner shelf (0 to 50 m), middle shelf (50 to 100 m), outer shelf (100 to 200 m), and upper slope (200 to 500 m) throughout the GOA as depicted in Figure D-138.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Pacific ocean perch is the general distribution area for this life stage, located in the middle to lower portion of the water column along the inner shelf (0 to 50 m), middle shelf (50 to 100 m), outer shelf (100 to 200 m), and upper slope (200 to 500 m) throughout the GOA wherever there are substrates consisting of cobble, gravel, mud, sandy mud, or muddy sand, as depicted in Figure D-139.

Adults

EFH for adult Pacific ocean perch is the general distribution area for this life stage, located in the lower portion of the water column along the outer shelf (100 to 200 m) and upper slope (200 to 500 m) throughout the GOA wherever there are substrates consisting of cobble, gravel, mud, sandy mud, or muddy sand, as depicted in Figure D-139.

EFH Descriptions for GOA Shortraker and Rougheye Rockfish**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae

EFH for larval shortraker and rougheye rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-138, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults

EFH for adult shorttraker and rougheye rockfish is the general distribution area for this life stage, located in the lower portion of the water column along the outer shelf (100 to 200 m) and upper slope (200 to 500 m) regions throughout the GOA wherever there are substrates consisting of mud, sand, sandy mud, muddy sand, rock, cobble, and gravel, as depicted in Figure D-140.

EFH Description for GOA Northern Rockfish

Eggs—No EFH Description Determined

Insufficient information is available.

Larvae

EFH for larval northern rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-138, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults

EFH for adult northern rockfish is the general distribution area for this life stage, located in the middle and lower portions of the water column along the outer slope (100 to 200 m) and upper slope (200 to 500 m) throughout the GOA wherever there are substrates of cobble and rock, as depicted in Figure D-141.

EFH Description for GOA Thornyhead Rockfish

Eggs—No EFH Description Determined

Insufficient information is available.

Larvae

EFH for larval thornyhead rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-138, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Thornyhead rockfish is the general distribution area for this life stage, located in the lower portion of the water column along the middle and outer shelf (50 to 200 m) and upper to lower slope (200 to 1,000 m) throughout the GOA wherever there are substrates of mud, sand, rock, sandy mud, muddy sand, cobble, and gravel, as depicted in Figure D-142.

Adults

EFH for adult Thornyhead rockfish is the general distribution area for this life stage, located in the lower portion of the water column along the middle and outer shelf (50 to 200 m) and upper to lower slope (200 to 1,000 m) throughout the GOA wherever there are substrates of mud, sand, rock, sandy mud, muddy sand, cobble, and gravel, as depicted in Figure D-142.

EFH Definition for GOA Yelloweye Rockfish

Eggs—No EFH Description Determined

Insufficient information is available.

Larvae

EFH for larval yelloweye rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-138, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Yelloweye rockfish is the general distribution area for this life stage, located in the lower portion of the water column within bays and island passages and along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the GOA wherever there are substrates of rock and in areas of vertical relief, such as crevices, overhangs, vertical walls, coral, and larger sponges, as depicted in Figure D-143.

Adults

EFH for adult Yelloweye rockfish is the general distribution area for this life stage, located in the lower portion of the water column within bays and island passages and along the inner shelf (0 to 50 m), middle shelf (50 to 100 m), outer shelf (100 to 200 m) and upper slope (200 to 500 m) throughout the GOA wherever there are substrates of rock and in areas of vertical relief, such as crevices, overhangs, vertical walls, coral, and larger sponges, as depicted in Figure D-143.

EFH Description for GOA Dusky Rockfish

Eggs—No EFH Description Determined

Insufficient information is available.

Larvae

EFH for larval dusky rockfish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure D-138, General Distribution of Rockfish Larvae.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults

EFH for adult Dusky rockfish is the general distribution area for this life stage, located in the middle and lower portions of the water column along the outer shelf (100 to 200 m) and upper slope (200 to 500 m) throughout the GOA wherever there are substrates of cobble, rock, and gravel, as depicted in Figure D-144.

EFH Description for GOA Atka Mackerel**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae

EFH for larval atka mackerel is the general distribution area for this life stage, located in epipelagic waters along the shelf (0 to 200 m), upper slope (200 to 500 m), and intermediate slope (500 to 1,000 m) throughout the GOA, as depicted in Figure D-145.

Early Juveniles —No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults

EFH for adult Atka mackerel is the general distribution area for this life stage, located in the entire water column, from sea surface to the sea floor, along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the GOA wherever there are substrates of gravel and rock and in vegetated areas of kelp, as depicted in Figure D-146.

EFH Description for GOA Sculpins**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae—No EFH Description Determined

Insufficient information is available.

Juveniles

EFH for juvenile sculpins is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), outer shelf (100 to 200 m) and portions of the upper slope (200 to 500 m) throughout the GOA wherever there are substrates of rock, sand, mud, cobble, and sandy mud, as depicted in Figure D-147.

Adults

EFH for adult sculpins is the general distribution area for this life stage, located in the lower portion of the water column along the inner (0 to 50 m), middle (50 to 100 m), outer shelf (100 to 200 m) and portions of the upper slope (200 to 500 m) throughout the GOA wherever there are substrates of rock, sand, mud, cobble, and sandy mud, as depicted in Figure D-147.

EFH Description for GOA Skates**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults

EFH for adult skates is the general distribution area for this life stage, located in the lower portion of the water column on the shelf (0 to 200 m) and the upper slope (200 to 500 m) throughout the GOA wherever there are of substrates of mud, sand, gravel, and rock, as depicted in Figure D-148.

EFH Description for GOA Sharks**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults—No EFH Description Determined

Insufficient information is available.

EFH Description for GOA Forage Fish Complex—Eulachon, Capelin, Sand Lance, Sand Fish, Euphausiids, Myctophids, Pholids, Gonostomatids, etc.**Eggs—No EFH Description Determined**

Insufficient information is available.

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults. No EFH Description Determined

Insufficient information is available.

EFH Description for GOA Squid

Eggs—No EFH Description Determined

Insufficient information is available.

Young Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for older juvenile squid is the general distribution area for this life stage, located in the entire water column, from the sea surface to sea floor, along the inner (0 to 50 m), middle (50 to 100 m), and outer (200 to 500 m) shelf and the entire slope (500 to 1,000 m) throughout the GOA, as depicted in Figure D-149.

Adults

EFH for adult squid is the general distribution area for this life stage, located in the entire water column, from the sea surface to sea floor, along the inner (0 to 50 m), middle (50 to 100 m), and outer (200 to 500 m) shelf and the entire slope (500 to 1,000 m) throughout the GOA, as depicted in Figure D-149.

EFH Description for GOA Octopus

Eggs—No EFH Description Determined

Insufficient information is available.

Young Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles—No EFH Description Determined

Insufficient information is available.

Adults. No EFH Description Determined

Insufficient information is available.

D.3.2.3 EFH Map Descriptions for GOA Groundfish

Figures D-110 through D-149 show EFH distribution under Alternative 3 for the GOA groundfish species as described in Section D.3.2.2.

D.3.3 Description of Essential Fish Habitat for BSAI King and Tanner Crab

D.3.3.1 EFH Information Levels for BSAI Crab

BSAI Crab Species	Egg	Larvae	Early Juvenile	Late Juvenile	Adult
Red king crab	inferred	x	x	1	1
Blue king crab	inferred	x	x	1	1
Golden king crab	inferred	x	x	1	1
Tanner crab	inferred	x	x	1	1
Snow crab	inferred	x	x	1	1

x - No information available.

D.3.3.2 EFH Text Descriptions for BSAI Crab

EFH Description for BSAI Red King Crab

Eggs

Essential fish habitat of the red king crab eggs is inferred from the general distribution of egg-bearing female crab (see also Adults).

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile red king crab is the general distribution area for this life stage, located in bottom habitats along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the BSAI wherever there are substrates consisting of rock, cobble, and gravel and biogenic structures such as boltenia, bryozoans, ascidians, and shell hash, as depicted in Figure D-150.

Adults

EFH for adult red king crab is the general distribution area for this life stage, located in bottom habitats along the nearshore (spawning aggregations) and the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the BSAI wherever there are substrates consisting of sand, mud, cobble, and gravel, as depicted in Figure D-150.

EFH Description for BSAI Blue King Crab

Eggs

Essential fish habitat of the blue king crab eggs is inferred from the general distribution of egg-bearing female crab (see also Adults).

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile blue king crab is the general distribution area for this life stage, located in bottom habitats along the nearshore where there are rocky areas with shell hash and the inner (0 to 50), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the BSAI wherever there are substrates consisting of rock, cobble, and gravel, as depicted in Figure D-151.

Adults

EFH for adult blue king crab is the general distribution area for this life stage, located in bottom habitats along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the BSAI wherever there are substrates consisting of sand and mud adjacent to rockier areas and areas of shell hash, as depicted in Figure D-151.

EFH Description for BSAI Golden King Crab**Eggs**

Essential fish habitat of golden king crab eggs is inferred from the general distribution of egg-bearing female crab (see also Adults).

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile golden king crab is the general distribution area for this life stage, located in bottom habitats along the along the upper slope (200 to 500 m), intermediate slope (500 to 1,000 m), lower slope (1,000 to 3,000 m), and basins (more than 3,000 m) of the BSAI where there are high-relief living habitats, such as coral, and vertical substrates, such as boulders, vertical walls, ledges, and deep water pinnacles, as depicted in Figure D-152.

Adults

EFH for adult golden king crab is the general distribution area for this life stage, located in bottom habitats along the along the outer shelf (100 to 200 m), upper slope (200 to 500 m), intermediate slope (500 to 1,000 m), lower slope (1,000 to 3,000 m), and basins (more than 3,000 m) of the BSAI where there are high relief living habitats, such as coral, and vertical substrates such as boulders, vertical walls, ledges, and deep water pinnacles, as depicted in Figure D-152.

EFH Description for BSAI Tanner Crab**Eggs**

Essential fish habitat of Tanner crab eggs is inferred form the general distribution of egg-bearing female crab (see also Adults).

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile Tanner crab is the general distribution area for this life stage, located in bottom habitats along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the BSAI wherever there are substrates consisting mainly of mud, as depicted in Figure D-153.

Adults

EFH for adult Tanner crab is the general distribution area for this life stage, located in bottom habitats along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the BSAI wherever there are substrates consisting mainly of mud, as depicted in Figure D-153.

EFH Description for BSAI Snow Crab**Eggs**

Essential fish habitat of snow crab eggs is inferred from the general distribution of egg-bearing female crab (see also Adults).

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile snow crab is the general distribution area for this life stage, located in bottom habitats along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the BSAI wherever there are substrates consisting mainly of mud, as depicted in Figure D-154.

Adults

EFH for adult snow crab is the general distribution area for this life stage, located in bottom habitats along the inner (0 to 50 m), middle (50 to 100 m), and outer shelf (100 to 200 m) throughout the BSAI wherever there are substrates consisting mainly of mud, as depicted in Figure D-154.

D.3.3.3 EFH Map Descriptions for BSAI Crab

Figures D-150 through D-154 show EFH distribution under Alternative 3 for the BSAI crab species as described in Section D.3.4.2.

D.3.4 Description of Essential Fish Habitat for Alaska Scallops

D.3.4.1 EFH Information Levels for Alaska Scallops

Scallop Species	Eggs	Larvae	Early Juvenile	Late Juvenile	Adult
Weathervane scallop	x	x	x	1	1

x - No information available.

D.3.4.2 EFH Text Descriptions for Alaska Scallops

EFH Description for Weathervane Scallops

Eggs—No EFH Description Determined

Insufficient information is available.

Larvae—No EFH Description Determined

Insufficient information is available.

Early Juveniles—No EFH Description Determined

Insufficient information is available.

Late Juveniles

EFH for late juvenile weathervane scallops is the general distribution area for this life stage, located in the sea floor along the middle (50 to 100 m), and outer (100 to 200 m) shelf in concentrated areas of the GOA and BSAI where there are substrates of clay, mud, sand, and gravel that are generally elongated in the direction of current flow, as depicted in Figure D-155.

Adults

EFH for adult weathervane scallops is the general distribution area for this life stage, located in the sea floor along the middle (50 to 100 m) and outer (100 to 200 m) shelf in concentrated areas of the GOA and BSAI where there are substrates of clay, mud, sand, and gravel that are generally elongated in the direction of current flow, as depicted in Figure D-155.

EFH Description for Other Species of Scallops

Information is insufficient or lacking to describe EFH for any life stage of pink, spiny, and rock scallops.

D.3.4.3 EFH Map Descriptions for Weathervane Scallops

Figure D-155 shows EFH distribution under Alternative 3 for weathervane scallops.

D.3.5 Description of Essential Fish Habitat for Alaska Stocks of Pacific Salmon

D.3.5.1 EFH Information Levels for Alaska Stocks of Pacific Salmon

Salmon Species	Freshwater Eggs	Freshwater Larvae and Juveniles	Estuarine Juveniles	Marine Juveniles	Marine Immature and Maturing Adults	Freshwater Adults
Pink	1	1	1	1	1	1
Chum	1	1	1	1	1	1
Sockeye	1	1	1	1	1	1
Chinook	1	1	1	1	1	1
Coho	1	1	1	1	1	1

D.3.5.2 EFH Text Descriptions for Alaska Stocks of Pacific Salmon

EFH Description for Pink Salmon

Freshwater Eggs

EFH for pink salmon eggs is the general distribution area for this life stage, located in gravel substrates in those waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a), as depicted in Figures D-156 through D-161.

Freshwater Larvae and Juveniles

EFH for larval and juvenile pink salmon is the general distribution area for this life stage, located in those waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) and contiguous rearing areas within the boundaries of ordinary high water during the spring, generally migrate in darkness in the upper water column. Fry leave streams in within 15 days and the duration of migration from a stream towards sea may last 2 months, as depicted in Figures D-156 through D-161.

Estuarine Juveniles

Estuarine EFH for juvenile pink salmon is the general distribution area for this life stage, located in estuarine areas, as identified by the salinity transition zone (ecotone) and the mean higher tide line, within nearshore waters and generally present from late April through June, as depicted in Figures D-156 through D-161.

Marine Juveniles

Marine EFH for juvenile pink salmon is the general distribution area for this life stage, located in all marine waters off the coast of Alaska from the mean higher tide line to the 200-nautical mile (nm) limit of the U.S. EEZ, including the GOA, EBS, Chukchi Sea, and Arctic Ocean, as depicted in Figure D-162.

Marine Immature and Maturing Adults

EFH for immature and maturing adult pink salmon is the general distribution area for this life stage, located in marine waters off the coast of Alaska to depths of 200 m and range from the mean higher tide line to the 200-nm limit of the U.S. EEZ, including the GOA, EBS, Chukchi Sea, and Arctic Ocean.

Mature adult pink salmon frequently spawn in intertidal areas and are known to associate with smaller coastal streams, as depicted in Figure D-162.

Freshwater Adults

EFH for pink salmon is the general distribution area for this life stage, located in freshwaters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) and wherever there are spawning substrates consisting of medium to coarse gravel containing less than 15 percent fine sediment (less than 2-mm diameter), 15 to 50 cm in depth from June through September, as depicted in Figures D-156 through D-161.

EFH Description for Chum Salmon

Freshwater Eggs

EFH for chum salmon eggs is the general distribution area for this life stage, located in gravel substrates in those waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a), as depicted in Figures D-163 through D-168.

Freshwater Larvae and Juveniles

EFH for larval and juvenile chum salmon is the general distribution area for this life stage, located in those waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) and contiguous rearing areas within the boundaries of ordinary high water and contiguous rearing areas within the boundaries of ordinary high water during the spring, generally migrate in darkness in the upper water column. Fry leave streams in within 15 days and the duration of migration from a stream towards sea may last 2 months, as depicted in Figures D-163 through D-168.

Estuarine Juveniles

Estuarine EFH for juvenile chum salmon is the general distribution area for this life stage, located in estuarine areas, as identified by the salinity transition zone (ecotone) and the mean higher tide line, within nearshore waters from late April through June, as depicted in Figures D-163 through D-168.

Marine Juveniles

Marine EFH for juvenile chum salmon is the general distribution area for this life stage, located in all marine waters off the coast of Alaska to approximately 50 m in depth from the mean higher tide line to the 200-nm limit of the EEZ, including the GOA, EBS, Chukchi Sea, and Arctic Ocean, as depicted in Figure D-169.

Marine Immature and Maturing Adults

EFH for immature and maturing adult chum salmon is the general distribution area for this life stage, located in marine waters off the coast of Alaska to depths of 200 m and ranging from the mean higher tide line to the 200-nm limit of the EEZ, including the GOA, EBS, Chukchi Sea, and Arctic Ocean, as depicted in Figure D-169.

Freshwater Adults

EFH for chum salmon is the general distribution area for this life stage, located in freshwaters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) and wherever there are spawning substrates consisting of medium to coarse gravel containing less than 15 percent fine sediment (less than 2-mm diameter) and finer substrates can be used in upwelling areas of streams and sloughs from June through January, as depicted in Figures D-163 through D-168.

EFH Description for Sockeye Salmon

Freshwater Eggs

EFH for sockeye salmon eggs is the general distribution area for this life stage, located in gravel substrates in those waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a), as depicted in Figures D-170 through D-175.

Freshwater Larvae and Juveniles

EFH for larval and juvenile sockeye salmon is the general distribution area for this life stage, located in those waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) and contiguous rearing areas within the boundaries of ordinary high water. Juvenile sockeye salmon require year-round rearing habitat. Fry generally migrate downstream to a lake or, in systems lacking a freshwater lake, to estuarine and riverine rearing areas for up to 2 years. Fry out migration occurs from approximately April to November and smolts generally migrate during the spring and summer, as depicted in Figures D-170 through D-175.

Estuarine Juveniles

Estuarine EFH for juvenile sockeye salmon is the general distribution area for this life stage, located in estuarine areas, as identified by the salinity transition zone (ecotone) and the mean higher tide line, within nearshore waters. Under-yearling, yearling, and older smolts occupy estuaries from March through early August, as depicted in Figures D-170 through D-175.

Marine Juveniles

Marine EFH for juvenile sockeye salmon is the general distribution area for this life stage, located in all marine waters off the coast of Alaska to depths of 50 m and range from the mean higher tide line to the 200-nm limit of the U.S. EEZ, including the GOA, EBS, Chukchi Sea, and Arctic Ocean from mid-summer until December of their first year at sea, as depicted in Figure D-176.

Marine Immature and Maturing Adults

EFH for immature and maturing adult sockeye salmon is the general distribution area for this life stage, located in marine waters off the coast of Alaska to depths of 200 m and range from the mean higher tide line to the 200-nm limit of the U.S. EEZ, including the GOA, EBS, Chukchi Sea, and Arctic Ocean, as depicted in Figure D-176.

Freshwater Adults

EFH for sockeye salmon is the general distribution area for this life stage, located in freshwaters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) and wherever there are spawning substrates consisting of medium to coarse gravel containing less than 15 percent fine sediment (less than 2-mm diam.) and finer substrates can be used in upwelling areas of streams and sloughs from June through September. Sockeye often spawn in lake substrates, as well as in streams, as depicted in Figures D-170 through D-175.

EFH Description for Chinook Salmon

Freshwater Eggs

EFH for Chinook salmon eggs is the general distribution for this life stage, located in gravel substrates in those waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) (see Figures D-177 through D-182).

Freshwater Larvae and Juveniles

EFH for larval and juvenile Chinook salmon is the general distribution area for this life stage, located in those waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) and contiguous rearing areas within the boundaries of ordinary high water. Juvenile Chinook salmon out-migrate from freshwater areas in April toward the sea and may spend up to a year in a major tributaries or rivers, such as the Kenai, Yukon, Taku, and Copper Rivers (see Figures D-177 through D-182).

Estuarine Juveniles

Estuarine EFH for juvenile Chinook salmon is the general distribution area for this life stage, located in estuarine areas, as identified by the salinity transition zone (ecotone) and the mean higher tide line, within nearshore waters. Chinook salmon smolts and post-smolt juveniles may be present in these estuarine habitats from April through September (see Figures D-177 through D-182).

Marine Juveniles

Marine EFH for juvenile Chinook salmon is the general distribution area for this life stage, located in all marine waters off the coast of Alaska from the mean higher tide line to the 200-nm limit of the EEZ, including the GOA, EBS, Chukchi Sea, and Arctic Ocean. Juvenile marine Chinook salmon are at this life stage from April until annulus formation in January or February during their first winter at sea (see Figure D-183).

Marine Immature and Maturing Adults

EFH for immature and maturing adult Chinook salmon is the general distribution area for this life stage, located in marine waters off the coast of Alaska and ranging from the mean higher tide line to the 200-nm limit of the U.S. EEZ, including the GOA, EBS, Chukchi Sea, and Arctic Ocean (see Figure D-183).

Freshwater Adults

EFH for adult Chinook salmon is the general distribution area for this life stage, located in fresh waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) wherever there are spawning substrates consisting of gravels from April through September (see Figures D-177 through D-182).

EFH Description for Coho Salmon

Freshwater Eggs

EFH for coho salmon eggs is the general distribution area for this life stage, located in gravel substrates in those waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a), as depicted in Figures D-184 through D-189.

Freshwater Larvae and Juveniles

EFH for larval and juvenile coho salmon is the general distribution area for this life stage, located in those waters identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) and contiguous rearing areas within the boundaries of ordinary high water. Fry generally migrate to a lake, slough, or estuary and rear in these areas for up to 2 years, as depicted in Figures D-184 through D-189.

Estuarine Juveniles

Estuarine EFH for juvenile coho salmon is the general distribution area for this life stage, located in estuarine areas, as identified by the salinity transition zone (ecotone) and the mean higher tide line,

within nearshore waters. Juvenile coho salmon require year-round rearing habitat and also migration habitat from April to November to provide access to and from the estuary.

Marine Juveniles

Marine EFH for juvenile coho salmon is the general distribution area for this life stage, located in all marine waters off the coast of Alaska from the mean higher tide line to the 200-nm limit of the U.S. EEZ, including the GOA, EBS, Chukchi Sea, and Arctic Ocean, as depicted in Figure D-190.

Marine Immature and Maturing Adults

EFH for immature and maturing adult coho salmon is the general distribution area for this life stage, located in marine waters off the coast of Alaska to 200 m in depth and range from the mean higher tide line to the 200-nm limit of the U.S. EEZ, including the GOA, EBS, Chukchi Sea, and Arctic Ocean, as depicted in Figure D-190.

Freshwater Adults

EFH for coho salmon is the general distribution area for this life stage, located in freshwaters as identified in ADF&G's *Catalogue of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (ADF&G 1998a) and wherever there are spawning substrates consisting mainly of gravel containing less than 15 percent fine sediment (less than 2-mm diameter) from July to December, as depicted in Figures D-184 through D-189.

D.3.5.3 EFH Map Descriptions for Alaska Stocks of Pacific Salmon

Figures D-155 through D-190 show EFH distribution under Alternative 3 by region for the Alaska stocks of Pacific salmon as described in Section D.3.5.2.