

**D. HUMAN RESOURCE USES**

**1. Fish Hatcheries and Associated Ocean Net Pens**

The Aleutians Subarea contains no active fish hatcheries. Russell Creek hatchery located at Cold Bay was the only fish hatchery in the Subarea, but as of 1992, the hatchery had ceased operation due to lack of funds.

If this hatchery operates in the future, hatchery-related activities most vulnerable to spill damage would include fry rearing and release, terminal harvests and egg takes. The timing of these activities varies by species so it is difficult to generalize about the periods of highest vulnerability, however spring and summer will tend to be the most critical periods. The hatchery manager should be contacted for specific information if the hatchery again becomes operational.

**2. Aquaculture Sites**

At this time there are no aquaculture sites in the Aleutian Islands or the Pribilof Islands. If any sites are opened in the future, it is important to note that aquatic farms are vulnerable to spill damage on a year-round basis since shellfish are suspended from anchored gear and are submerged continuously in the water column. Harvest takes place year round. For more information contact:

James Cochran  
Mariculture Coordinator  
Alaska Department of Fish and Game  
Juneau  
465-4160

Mike Ostasz  
Environmental Sanitarian  
Alaska Department of Environmental Conservation  
Anchorage  
269-7500

Don McKay  
Habitat Biologist  
Alaska Department of Fish and Game  
Anchorage  
267-2284

Janetta Pritchard  
Division of Lands  
Alaska Department of Natural Resources  
Anchorage  
269-8543

### 3. Cultural Resources

The Aleutians Subarea contains a multitude of known and unidentified archaeological and historic sites. Oil spills and hazardous substance releases may result in direct and/or indirect impacts to those cultural resources. On-Scene Coordinators (OSC) are responsible for ensuring that response actions take the protection of cultural resources into account and that the statutory requirements for protecting cultural resources are met. **Annex M of the Unified Plan** outlines OSC responsibilities for protecting cultural resources and provides an expedited process for compliance with Section 106 of the National Historic Preservation Act during the emergency phase of a response. Coastal sites in the Subarea listed as National Historic Landmarks are:

<u>Name</u>	<u>Location</u>
Adak Army Base and Naval Operating Base	Adak
Anangula Archeological District	Nikolski vicinity
Attu Battlefield and U.S. Army and Navy Airfields	Attu
Cape Field at Fort Glenn	Umnak Island
Chaluka Site	Umnak Island
Dutch Harbor Naval Operating Base and Ft. Mears	Unalaska
Holy Ascension Orthodox Church	Unalaska
Japanese Occupation Site	Kiska
Seal Islands Historic District	Pribilof Islands
Eareckson Air Station	Shemya Island

### 4. Subsistence and Personal Use Harvests

Subsistence-related uses of natural resources play an important role in the economy and culture of many communities in the Aleutians Subarea. A subsistence economy may be defined as follows:

...an economy in which the customary and traditional uses of fish, wildlife and plant resources contribute substantially to the social, cultural and economic welfare of families in the form of food, clothing, transportation and handicrafts. Sharing of resources, kinship-based production, small scale technology and the dissemination of information about subsistence across generational lines are additional characteristics.

Before 1990, the State of Alaska and the Alaska Boards of Fisheries and Game made all decisions regarding the management of subsistence resources and harvest rights. In 1990, however, federal government became responsible for managing subsistence resources on federal public lands and waters. The Federal Subsistence Board makes the regulations which are administered by various federal agencies on federal public lands. State regulations still apply to state and private lands. As a consequence, the number of agencies involved in managing subsistence resources and uses has increased. Therefore, in the event of a spill, extensive coordination will be required in order to address subsistence resources. Regulations regarding subsistence harvest can also be expected to undergo further modification. Current information on harvest regulations can be obtained from the Alaska Department of Fish and Game and from the U.S. Fish and Wildlife Service Office of Subsistence Management.

Subsistence uses in the area are extensive and vary by season, resource, and village (Refer to maps in Attachment One). For more information contact:

James Fall or Lisa Scarbrough  
 Subsistence Division, Alaska Department of Fish and Game  
 Anchorage, Alaska  
 267-2353

The following organizations should be contacted for specific information on the locations and seasons of subsistence harvests:

<u>Organization</u>	<u>Phone</u>	<u>FAX</u>
Aleut Corporation, Anchorage	576-4300	
Akutan Corporation, Akutan	698-2206	698-2207
Atxam Corporation, Atka	839-2237	839-2234
Belkofski Corporation, King Cove	497-2299	
Chaluka Corporation, Nilolski	576-2216	
Isanotski Corporation, False Pass	548-2217	548-2214
King Cove Corporation, King Cove	497-2312	497-2444
Nelson Lagoon Corporation, Nelson Lagoon	989-2204	989-2233
Ounalashka Corporation, Unalaska	581-1276	581-1496
Sanak Corporation, Sand Point	383-3991	383-5233
Shumagin Corporation, Sand Point	383-3525	383-3496
St. George Tanaq Corporation, St. George	859-2224	859-2230
Tanadgusix Corporation, St. Paul	546-2312	546-2366
Unga Corporation, Sand Point	383-5215	383-5233

## 5. Commercial Fishing

The following chart provides general information on the timing of major commercial fisheries in the Aleutians Subarea. All fishing seasons are subject, however, to emergency openings and closures and most seasons are only open for a portion of the time specified in the regulations. Fishing regulations and seasons can change from year to year. Information on which species are currently being harvested may be obtained from the Alaska Department of Fish and Game, Commercial Fisheries Division in Anchorage, 267-2104. The shellfish and Bering Sea groundfish fisheries are the most important commercial harvests in the region.

Maps of key commercial fishing areas are available in Alaska Department of Fish and Game publications: Alaska Habitat Management Guide Reference Maps, Southwestern Region, Vols. 1 and 2 and Alaska Habitat Management Guide, Southwestern Region Map Atlas. The following groups can be contacted for information on location and timing of fish and wildlife and local current conditions. Although the primary function of these organizations is not to provide such information, the individual members will be quite knowledgeable about conditions and are often willing to share information.

Alaska Crab Coalition  
3901 Leary Way N.W. #6  
Seattle, WA 98107  
(206)547-7560

Bering Sea Fisherman's Association  
725 Christiansen Drive  
Anchorage, AK 99501  
(907)279-6519

Alaska Draggers Assn.  
P.O. Box 991  
Kodiak, AK 99615

Deep Sea Fisherman's Union / Pacific  
5215 Ballard Ave., N.W.  
Seattle, WA 98107  
(206)783-2922

Alaska Marketing Association  
Building C-3, Room 232  
Fisherman's Terminal  
Seattle, WA 98119

Fishing Vessel Owner's Association  
West Wall Bldg., Room 232  
Fisherman's Terminal  
Seattle, WA 98119  
(206)285-3383

American Factory Trawler Assn.  
4039 21st Ave. W, Suite 400  
Seattle, WA 98199  
(206)285-3739

Peninsula Marketing Association  
P.O. Box 248  
Sand Point, AK 99661  
(907)383-3600

American High Seas Fisheries Assn.  
3040 W. Commodore Way  
Seattle, WA 98199

United Fishermen of Alaska  
211 Fourth Street, Suite 112  
Juneau, AK 99801

United Fishermen's Marketing Association  
Box 1035  
Kodiak, AK 99615

# COMMERCIAL FISHERIES TIMING

## ALEUTIAN REGION

	J	F	M	A	M	J	J	A	S	O	N	D
<b>SALMON</b>												
seine						█	█	█	█			
drift net					█	█	█	█				
set net					█	█	█	█				
<b>HERRING</b>												
sac roe					█	█	█					
bait and food	█	█					█	█	█	█	█	█
<b>CRAB</b>												
dungeness												
tanner												
king												
<b>HALIBUT</b>												
<b>GROUND FISH</b>	█	█	█	█	█	█	█	█	█	█	█	█
<b>SHRIMP</b>												
pots												
trawls												
<b>SCALLOPS</b>												

\*International Pacific  
Halibut Commission  
Times are approximate

## **6. Sport Fishing and Hunting**

TO BE DEVELOPED

This Subarea includes State Game Management Units 9D and 10.

## **7. Recreational Sites and Facilities**

At this time there are few state or federal recreational sites or facilities maintained in the Aleutians Subarea. (see also Part 4, A: Land Management Designations)

Public Anchorages and Moorings:

- Akutan Harbor, Akutan Island
- Dutch Harbor, Unalaska Island
- Nazan Bay, Atka Island
- Kuluk Bay, Adak Island
- Constantine Harbor, Amchitka Island
- Kiska Harbor, Kiska Island
- Massacre Bay, Attu Island

Public Recreation Cabins:

- Adak Island

For recreational information, contact:

- Alaska Maritime National Wildlife Refuge
- Homer, Alaska
- 235-6546

- Alaska Maritime National Wildlife Refuge, Aleutian Islands Unit
- Adak, Alaska
- 592-2406

- Izembek National Wildlife Refuge
- Cold Bay, Alaska
- 532-2445

## **8. Commercial Tourism**

TO BE FURTHER DEVELOPED

- tour boat and ferry boat routes and stops
- small boat and kayak use areas
- wildlife viewing areas
- bird watching areas

Key locations of interest: St. Paul Island  
St. George Island  
Unalaska/Dutch Harbor

The following organizations can be contacted with requests for specific information on location and timing of recreation and tourism activities. Although the primary function of these organizations is not to provide such information, the individual members will be quite knowledgeable about environmental conditions and will often be willing to share information.

Alaska Wilderness Recreation and Tourism Association  
Juneau, Alaska  
463-3038 Email: AWARTA@AOL.COM

## 9. Marinas and Ports

(See the Resources Section of the Subarea Contingency Plan)

## 10. Fish Processing

The companies listed below are canneries and major processors with permits issued by the State of Alaska.

Alyeska Seafoods, Inc. Unalaska, 581-1211	Sans Souci Seafoods Dutch Harbor, 581-1533
Garden Cove Seafoods, Inc. St. George Island, (206) 851-2700	Trident Seafoods Corp. Sand Point, 383-4848
Queen Fisheries Inc. Dutch Harbor, 581-1225	Trident Seafoods Corp. Akutan, 698-2211
Trident Seafoods Corp. St. Paul Island, 546-2377	Westward Seafoods, Inc. Dutch Harbor, 581-1660
Unisea, Inc. Dutch Harbor, 581-1258	East Point Seafood Co. Dutch Harbor, (206) 284-7571
Icicle Seafoods, Inc. Dutch Harbor, (206) 282-0988	Peter Pan Seafoods, Inc. King Cove, (206) 728-6000
Seatech Corp. Akutan, (206) 782-6007	Snopac Products, Inc. St. George Island, (206) 764-9230
Adak Seafoods Adak Island, 279-5900	Icicle Seafoods, Inc. St. Paul, 546-2405
Unisea, Inc. St. Paul, 546-2530	



## **E. WIND, ICE AND CURRENT CONDITIONS**

The following information gives an overview of wind, tide and current conditions in the southern Bering Sea. Much of the available data is general in nature and should be supplemented by area-specific updates and information from local residents. Included in this section are maps of net surface currents. In addition, if the user obtains a current edition of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration tide current tables for the Pacific Coast of North America, it will be possible to predict the times of ebb and flood tides for several points within the Bering Sea.

### **1. Current Data**

North Aleutian Shelf The primary flow of water into the Bering Sea originates at Unimak Pass. The source of this flow is the Alaskan Coastal Current, from south of the Aleutians. Typically, this current flows to the northeast into Bristol Bay in the direction of the prevailing wind. At times, the north Aleutian coastal current will undergo a reversal in direction due to changes in the large scale and mesoscale wind direction.

Central Bering West and northwest of the North Aleutian Basin and Yukon Delta lies St. George Basin, the Central Bering Sea, and still further west, the Navarin Basin. Circulation in these regions is not as well understood as in the coastal basins. Data is site-specific and sporadic over decades. No consistent flow patterns have emerged as representative of the regional circulation.

Aleutian Islands The accompanying current diagrams show the Alaska coastal current which joins the Alaska stream in flowing west along the southern boundary of the Aleutian Islands. Most of the exchange of water through the Aleutian passes is from the North Pacific ocean to the Bering Sea during both summer and winter, although local reversals are known to occur.

### **2. Tidal Current**

Although tidally induced currents are factors in determining net surface currents, tidal currents are not usually important in long distance transport since they are oscillatory in nature. Wind and freshwater runoff are additional variables which must be taken into account when estimating spill trajectories. In some cases, tidal currents will be counteracted by these variables and will not be the deciding factor in spill transport.

### **3. Spill Trajectory**

The trajectory of a spill is the result of the interaction of these several forces. This interaction is often complex and difficult to predict. NOAA is capable of generating sophisticated spill trajectory models and has had considerable experience in this area. Requests for this service should be directed to:

John Whitney, Scientific Support Coordinator  
National Oceanic and Atmospheric Administration, Ocean Assessments Division  
510 L Street, Suite 100, Anchorage, AK 99501  
working hours: 271-3593      fax: 271-3139  
after hours: 346-1634      beeper: 275-3134  
email: whitney@hazmat.noaa.gov

#### **4. Ice**

In the Bering sea, the sea ice generally begins as fast ice formation along the shores of the Seward and Chukotsk peninsulas in October. As the season progresses and waters in the more open portions of the Bering Sea cool, the pack ice generally begins its seasonal southward formation in November. An estimated 97% of the ice in the Bering Sea is formed within the Bering Sea; very little is transported south through the Bering Strait. During periods of increasing ice and prevailing northerly winds, the ice apparently is generated and moves southward with the wind at as much as 1 knot before melting at its southern limit. During periods of southerly winds, ice coverage generally decreases in the Bering Sea, causing a wide variation in ice cover from month to month and from year to year. No seasonal ice develops along the Aleutian Islands, and there is a 25% probability that the Bering Sea ice edge may extend south to the Pribilof Islands during the months of February through April.

Structural icing of ships and port facilities due mostly to freezing ocean spray during the winter can cause problems.

#### **5. Data Sources**

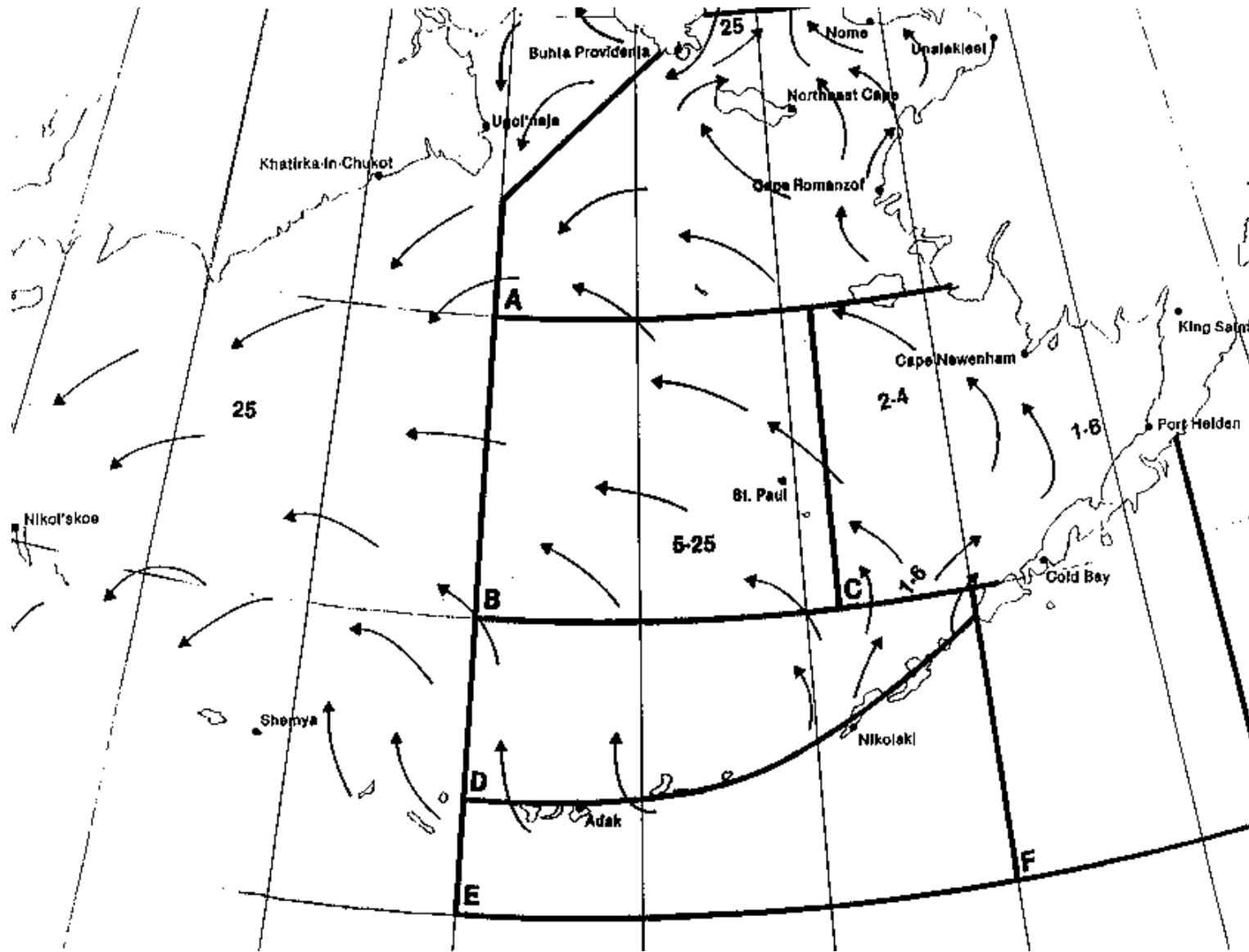
Hood and Zimmerman (eds). Gulf of Alaska: Physical Environment and Biological Resource.

LaBelle, J.C. and J.L. Wise. 1983. Alaska Marine Ice Atlas.

National Climatic Data Center (NDC) and Arctic Environmental Information and Data Center (AEIDC). 1988. Climatic Atlas, Volume II: Bering Sea. (wind roses, tidal range data and map)

U.S. Department of Commerce (NOAA). 1989. Tide Current Tables 1990: Pacific Coast of North America and Asia. (tidal current data and information).

# Bering Sea Currents - Winter



# Bering Sea Currents - Summer

