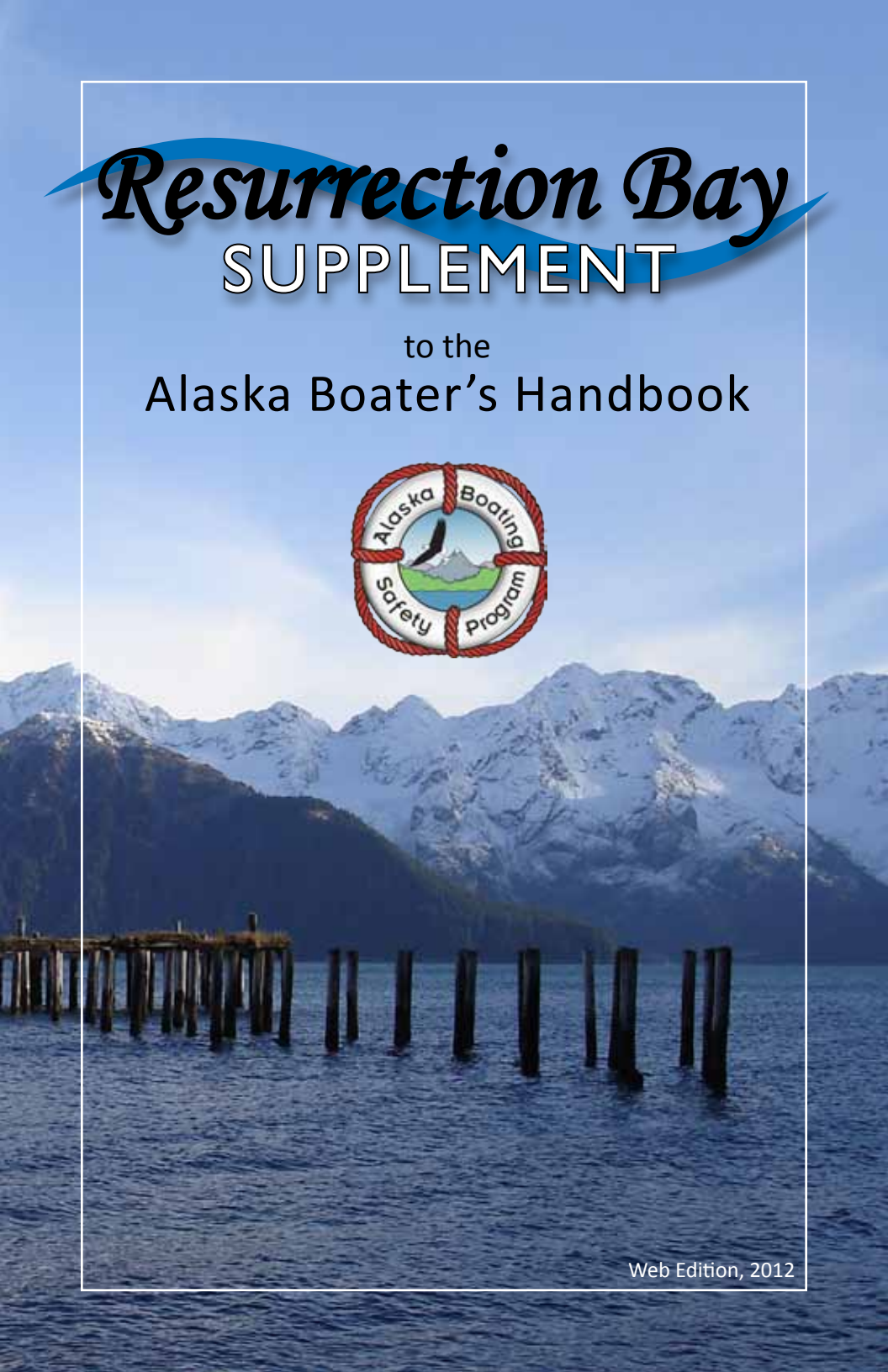
Resurrection Bay SUPPLEMENT

to the

Alaska Boater's Handbook



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DEPARTMENT OF NATURAL RESOURCES

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Dear Fellow Alaskan,

Welcome to one of Alaska's jewels, Resurrection Bay. Powerboaters, sailors, kayakers, divers, hunters, anglers, and photographers all enjoy the wonder this bay has to offer. The bay is an area of stunning natural beauty, it is rich in wildlife and marine mammals.

But Resurrection Bay – like most of coastal Alaska - also presents hazards. Experienced boaters know education and preparation are the keys to an enjoyable time in this natural paradise. Marine life, glacial hazards, weather, tides and rock formations can pose formidable challenges to the inexperienced, uninformed, or unprepared boater. Please familiarize yourself with the contents of this supplement prior to departure to ensure you have a safe experience and enjoy the bay's wonders without incident.

The Division of Parks and Outdoor Recreation, Office of Boating Safety published this supplement to inform and aid you with navigating the bay's waters. You will find useful information regarding preparation, local hazards, operating tips, cold water safety, and how to respond to emergency situations on the water.

Five out of six boating fatalities in Alaska are a result of a sudden capsize or fall overboard into cold water. Please be sure to wear a life jacket, not only could it save your life but it could also save your family from the devastating loss of a loved one.

Enjoy Resurrection Bay and have a safe, memorable adventure.

Ben Ellis
Director, Division of Parks and Outdoor Recreation

"Develop, Conserve, and Enhance Natural Resources for Present and Future Alaskans."

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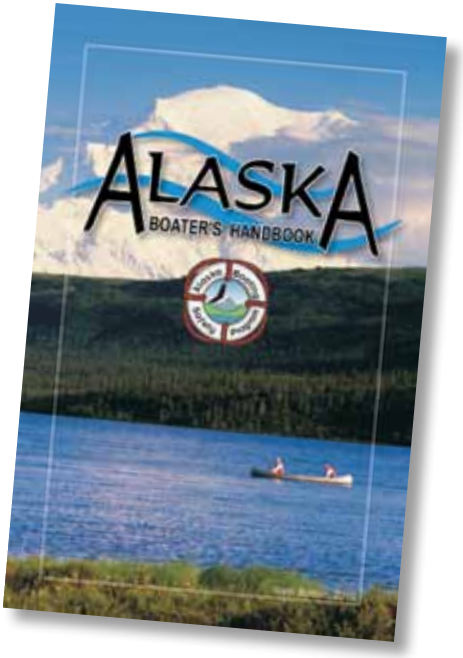
LIFE JACKETS SAVE LIVES AND FAMILIES

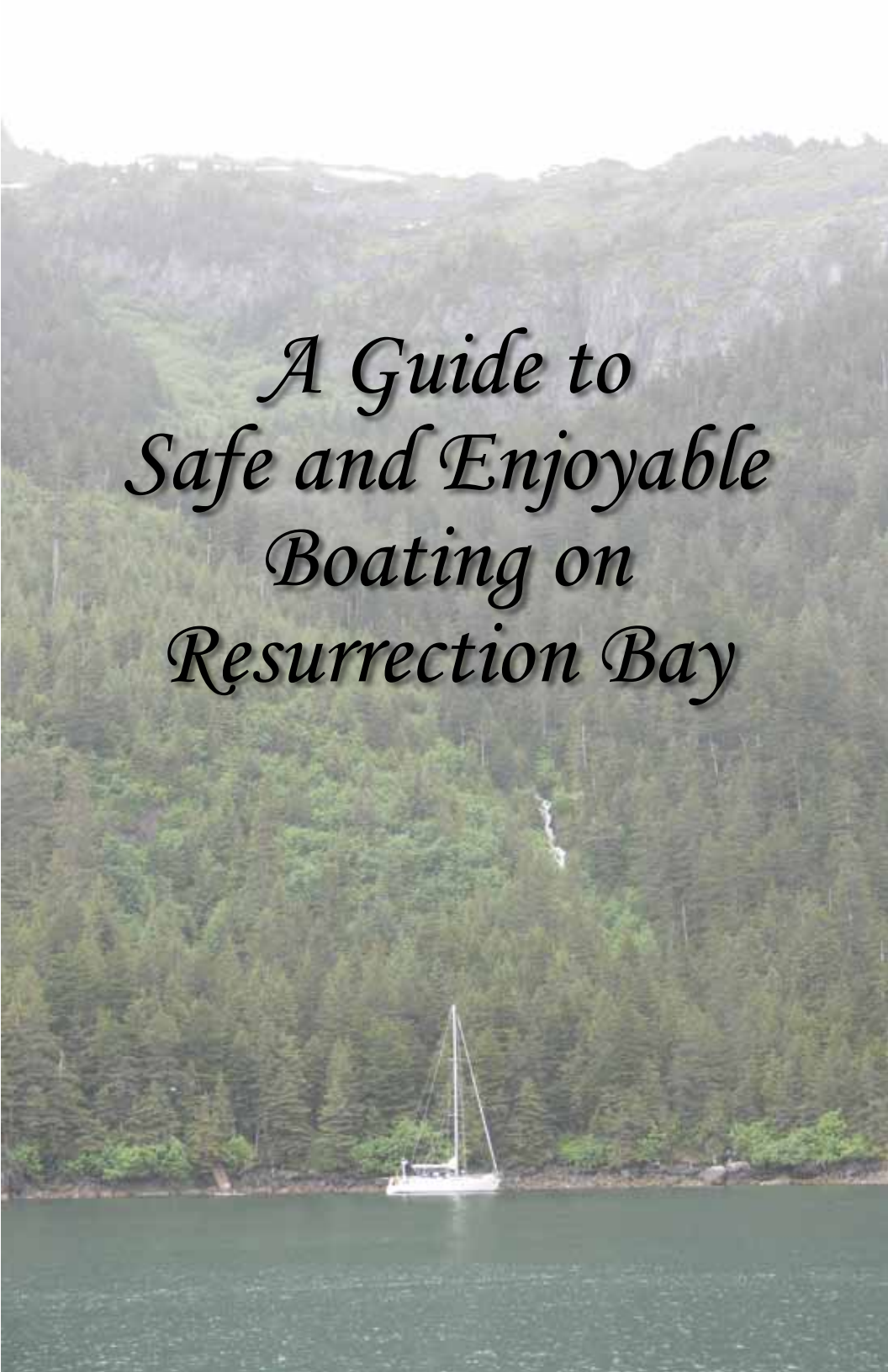
The Alaska Boating Safety Program cooperates with the U.S. Coast Guard, U.S. Coast Guard Auxiliary, and other partners to produce educational programs and publications that promote safe and enjoyable boating, including this 2012 edition of the Resurrection Bay Supplement to the Alaska Boater's Handbook.

Please note that this is a supplement to the *Alaska Boater's Handbook*, which contains detailed information on boating in Alaska. The *Alaska Boater's Handbook* includes in-depth information on topics such as equipment requirements, registration requirements, boating laws, preventative boat maintenance, weather, tides, fueling, boat capacity, boat loading, trailering, US Aids to Navigation, navigation rules, cold water immersion, carbon monoxide risks, swamping, grounding, mechanical breakdown, shore survival, distress signals and emergency radio procedures, and much more.

To obtain a copy of the *Alaska Boater's Handbook*, or one of our other publications or videos, please contact the Department of Natural Resources Public Information Center at (907) 269-8400 or dnr.pic@alaska.gov. These are also available online at www.alaskaboatingsafety.org



A Guide to Safe and Enjoyable Boating on Resurrection Bay



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OVERVIEW

Resurrection Bay

Resurrection Bay is a deep fjord, nearly 35 miles north to south, on the southeastern coast of the Kenai Peninsula. Most of the shoreline is rugged and deeply indented, with timbered or rocky slopes rising directly from the beach. The water drops off dramatically along most of the bay's shoreline and depths exceed 160 fathoms at places in the center of the bay. Tides are moderate, with average daily range on the order of six to 12 feet. The bay remains ice-free in winter, making it easily navigable.

This body of water was named by Alexander Baranov, who on an exploratory voyage in April 1792 was forced to retreat into the bay in the face of a fierce North Pacific storm. The storm settled on Easter Sunday, and the bay and nearby Resurrection River were named in honor of the date.

The head of the bay is only two to three miles wide; south of Caines Head it opens into a series of straits, islands and expanses of open water. The Resurrection River flats dominate the very head of the bay. The City of Seward occupies the land to the west and is the only populated center on the bay. Seward is 120 highway miles south of Anchorage. Lowell Point Road runs south of the city two and a half miles to Lowell Point. A walking trail connects Lowell Point to Caines Head. Nash Road runs around the east shore five miles to a correctional facility, shipyard and a campground near Spring Creek. Otherwise the bay is essentially wilderness and is accessible only by boat or plane, as is the Gulf of Alaska coast for hundreds of miles in either direction.

Most of the western shore of the bay south of the Bear Glacier Lake and the land surrounding bays and inlets for many miles to the south of Cape Aialik are within the Kenai Fjords National Park. The Caines Head State Recreation Area and three state marine parks are situated within the bay, with two more in Day Harbor to the east. There are many landowners surrounding the bay, including state, federal and private inholdings.

A thriving recreation and tourism industry based in Seward operates in the bay during the summer season. Anglers pursue salmon, halibut and rockfish. Wildlife watchers are frequently rewarded with sightings of humpback and killer whales, harbor and Dall's porpoises, Steller sea lions, harbor seals and sea otters. Black bears and mountain goats occasionally appear on the shores or on the slopes above. Birdwatchers from around the globe flock to the bay each year for a chance to see more than a hundred species of seabirds and shorebirds, a dozen species of raptors and more than 50 species of songbirds. The breathtaking Bear Glacier reaches almost to the bay's shore and

contributes brash ice and occasional small icebergs to the sea. Several other glaciers grace the shorelines within a few dozen miles west and east of the bay's entrance.

Resurrection Bay is a popular boating destination due to its stunning scenery, excellent angling opportunities, road access and convenient proximity to Alaska's population centers of Anchorage and the Mat-Su valley. With adequate preparation and vigilance underway, boaters can safely enjoy the bay's many attractions.

Resurrection Bay Attractions

One of the bay's major attractions is its quality sport fishing areas beginning just outside the boat harbor. Even beach anglers can catch salmon and rockfish, along Lowell Point Road, at the mouth of the Resurrection River as accessed from Nash Road, and in the bay at Fourth of July Creek.

Marine wildlife viewing occurs everywhere. Sea otters are frequently seen paddling around the shoreline in town and humpback whales show up from time to time in the upper bay. Humpbacks and orcas are common in the southern reaches of the bay, and in the spring migrating gray whales also are spotted. Steller sea lions haul out at several locations, including Cape Aialik and near Cape Resurrection.

Sea lion haulout

Resurrection Bay and the surrounding waters are a kayaker's paradise, and several businesses in Seward provide the means to explore and enjoy it with guide service, instruction, boat rentals, outfitting and water taxi drop-off and pick-up service. Some kayakers paddle directly from town and head for places like Tonsina Beach and Caines Head or set out from the Spring Creek campground and paddle down the east side to Thumb Cove. Thumb Cove, and Sandspit Point and Sunny Cove, both on Fox Island, (listed on some charts as Renard Island) have suitable beaches for landing and camping. Many kayakers

take a water taxi out to more remote parts of the bay, or around the corner into Aialik Bay, Harris Bay or Northwestern Fjord. Check with water taxi operators for tips on the best and least crowded camping beaches at any given time. Use guidebooks or ask local guides and boat operators for recommendations on suitable camping sites. Be aware that calm sea conditions in the morning may often turn to a potentially hazardous chop with the afternoon's southerly sea breeze. See the section on hazards later in this supplement.

The bay's prevailing wind pattern makes it especially appealing to sailors, who often can leave town during early morning, using light northerlies to help them go out the bay, and return in the afternoon with a brisk southerly at the stern.

Other attractions include a number of lodges and rental cabins at places like Humpy Cove and Fox Island, a "drowned" forest on the spit at the northeast corner of Fox Island, Bear Glacier, the remnants of WWII gun positions at Fort McGilvray (Caines Head SRA) and Barwell Island off Cape Resurrection, and the stunning topography of Cheval Island and the islands of the Chiswells group.

Caines Head and the State Marine Parks

Caines Head State Recreation Area (SRA) is the closest and most accessible of the state-owned lands, reachable by hikers via a 4.5 mile beach trail that is submerged during the upper part of every tide. Travel on the beach past Tonsina Creek should be done only at +3 ft of tide or less to avoid being caught between the cliffs and the sea. More convenient for boat owners is to run down the west side of the bay and anchor or beach at North Beach, which is part of the Caines Head SRA. That route passes the Tonsina Point Campground, the Callisto Canyon Campground and the Derby Cove and Callisto Canyon Public Use Cabins (PUC). North Beach has picnic facilities, restrooms, campsites and a passable anchorage, although care must be taken to avoid pilings and other remains of the old pier. Trails on old roadbeds lead to the Fort McGilvray historic site at the top of a 650 foot high cliff and to South Beach.

Callisto Canyon PUC in Caines Head

Drowned forest on Fox Island

Spruce Glacier PUC in Thumb Cove

Directly across on the opposite side of Resurrection Bay from Caines Head is **Thumb Cove**, the southern shore of which is a state marine park. The state allows camping here and maintains two public use cabins. The Spruce Glacier PUC is wheelchair accessible. The Porcupine Glacier PUC is located along the coast south of the Spruce Glacier PUC. A mooring buoy is situated in front of each cabin; the buoys are for general public use, but may not be comfortable places to lay overnight. The cove is very scenic, with good glacier views, and the south side offers fair anchorage during most of the summer.

Farther down the bay is **Sandspit Point State Marine Park** on the northeast corner of Fox (Renard) Island. The beach on the south side of the half-mile-long spit is rocky and exposed to afternoon winds but the north beach is sandy and gravelly and tends to be more sheltered in summer weather. The interior of the spit is a shallow lake, surrounded by a ghost forest of dead spruce trees that were killed by saltwater infiltration resulting from the 1964 earthquake. Sandspit Point offers good camping, and it's a short run across the north end of Eldorado Narrows to Kayaker Cove.

On the west side of the south end of Fox Island is **Sunny Cove State Marine Park**. There is adequate anchorage from southerlies in the bight at the southern end of the cove, and the long curving gravel beach is suitable for kayak and skiff landings. The cove provides excellent views of Bear Glacier and the mountains to the west and has plenty of camping space.

The two other state marine parks in the area are outside Resurrection Bay proper, in Day Harbor, which is the next bay to the east. Both are still within 30 boat miles of Seward but require rounding Cape Resurrection, which can be somewhat daunting, particularly if weather is from the southeast and a strong current is running between the cape and Barwell Island.

Driftwood Bay State Marine Park is a few miles up the east side of the Resurrection Peninsula. It is the largest of the area's marine parks and a very scenic location, surrounded by steep cliffs, but anchorage is not advisable in an east or strong southeast wind. The beach is good for camping and suitable for skiff or kayak landings under normal summer conditions.

The last of the area's state marine parks is at **Safety Cove**, another 10 miles or so up Day Harbor. It's considered the best anchorage on that side of Day Harbor, although it's not reliable in strong east winds. There is a good landing beach and good camping opportunities behind the beach berm. The state park system does not maintain any facilities at either Driftwood Bay or Safety Cove, so expect primitive camping conditions.

A Tour around the Bay

Departing from the Seward boat harbor along the west shore, boaters first pass the city's campground and then the Alaska SeaLife Center and Seward Marine Center and the industrial and residential shores of Lowell Point. Caines Head State Recreation Site begins near Tonsina Point Campground, and boaters should be aware of the shallow water created by Tonsina Creek extending close to 100 yards out from the beach. The next landmark is a small beach at the base of a waterfall that is popular for kayak camping. Further down the shore are Callisto Canyon Campground and Public Use Cabin, then Derby Cove Campground and Public Use Cabin, and next the beach and campground at North Beach. Pilings from the abandoned military pier mark this site. Tucked away in the forest on North Beach is the seasonally staffed Alaska State Parks Ranger Station. North Beach is seven miles by water from the harbor and is a good place for paddlers and power boaters to rest and double-check their equipment as there are few good anchorages or safe beaches to land on until further out into the bay.

The steep cliffs and rocky shoreline culminate at Caines Head, a prominent point at the top of the cliff. Parts of the Fort McGilvray site may be visible from the water. Around this point to the west are several deceptively inviting looking sandy beaches including the South Beach site, but these are exposed to afternoon south winds and seas from the open ocean and conditions can change quickly.

North Beach

Terrain is steep and wooded all along this shore and continues as such to Callisto Head, another prominent point. A turn to starboard here leads to a bay headed by a long sandy beach backed by Bear Glacier. Shoals extend some distance out from the point, making approach and landing problematic. A river empties at the far right (northeast) end of the beach.

Continuing down the beach to the southwest, the Bear Glacier valley ends in more steep mountainsides and an abrupt cliff. To the south of that lie two gravel beaches. The first, just after the cliff, is backed by a small lake and can be used by skiffs or kayaks in calm weather. The second, partially enclosed by a jagged reef on its eastern side, is a popular anchorage dubbed Bulldog Cove. It is a more reliable landing beach and has suitable camping ground on relatively flat gravel above the high water line. It also is backed by a small lake.

After Bulldog Cove, a steep and deeply indented shore continues south all the way to Aialik Cape. This coast has numerous bays but holding ground is limited at best, and most are not oriented to provide sheltered anchoring from anything but west winds. Exceptions are:

- Agnes Cove, sheltered from south and east but with a very narrow shelf shallow enough for anchoring small boats,
- Pony Cove, partially shielded by a reef on the north side of the entrance with some shallow water on the west side,
- An unnamed cove just south of Pony Cove, also with some shallow water and shelter from south and east.

Aialik Cape defines the outer southwest limit of Resurrection Bay. Beyond are the premium cruising grounds of Aialik Bay, including Pedersen Bay and Holgate Arm, the Chiswell Islands, Harris Bay and Northwestern Fjord, and the further bays and straits of the Kenai Fjords. Aialik and Northwestern can be accomplished in a day, but be prepared for a longer trip due to weather or other unforeseen circumstances.

Heading east from Aialik Cape it is about a 10-mile open water passage past No Name Island and Pilot Rock to the cliff-lined shores of Rugged Island and approximately two and one-half more miles to Cape Resurrection. To the east of the cape lies the broad open expanse of Day Harbor. See the pages that follow for more information on Day Harbor as well as Aialik Bay and Northwestern Fjord.

Proceeding north on the Resurrection side, the shoreline is rocky and backed by cliffs and timbered slopes as on the other side of the bay. At a small bight about a mile north of the cape is Sea Lion Rock, a haul-out for these magnificent creatures, and nearby is a cliff where puffins and other seabirds nest.

Hive Island

Hive Island, like Rugged Island, is steep and picturesque but has no useable beaches, and the same is true of most of the east side of Fox Island except for Sandspit Point. The west side of Fox Island, as previously noted, has anchorage,

a beach and the state marine park at Sunny Cove. Halibut Cove, north of Sunny Cove, also has a long, arching beach, bisected by a private dock, but the uplands there are dominated by a large commercial lodge and private cabins. The narrow rocky point at the southeastern tip of the island is pierced at water level, leaving a conspicuous natural tunnel through the rock, too small to navigate but big enough to be visible from a distance.

About three miles up the east side of Eldorado Narrows and a short distance from shore lays a striking formation known locally as Pillow Rock. It is a small islet of basaltic pillow lava, which is formed when molten rock is rapidly cooled by the sea. Although unnamed on the chart, it is easily recognized.

Just north of the point where Sandspit Point juts out to constrict Eldorado Narrows is a small indentation in the mainland coast known locally as Kayaker Cove. It offers a fair-weather anchorage, but is exposed to westerlies.

Eldorado Narrows

Another mile up the coast, past Hat Island, is a forked inlet called Humpy Cove. The left (northern) branch ends in a cluster of tiny islets that support private cabins and a rustic lodge. The southern branch terminates in a narrowing cove, surrounded by steep slopes and sheltered from most winds and the wakes of boat traffic.

Another two miles to the north, past the headland known as The Iron Door (named for the searchlight shelters remaining from the military presence in the bay during WWII) is Thumb Cove, site of a state marine park. The water is shallow and turns into mudflats well out from the head of the cove so anchoring is best along the south and north shore rather than at the innermost part of the cove. There is abundant space for camping, in addition to the two public use cabins.

Between Thumb Cove and Fourth of July Creek is about a five-mile straight line of relatively featureless shoreline. The Spring Creek Campground is a popular camping and salmon fishing spot and marks the end of Nash Road.

Outside Resurrection Bay

The more adventurous and properly prepared traveler can be rewarded with stunning scenery and cruising opportunities along the waters and coastlines both to the east and west. This publication does not address in any detail the hundreds of miles of coastline from Port Bainbridge to the southwest end of the Kenai Peninsula, but here are some tips about places to visit within a days travel from Resurrection Bay.

Day Harbor

This is the big bay immediately to the east of Resurrection Bay and is reached by rounding Cape Resurrection or Barwell Island. The first seven miles or so after rounding the cape is Blying Sound, and Day Harbor only narrows to about three miles wide at Fault Point. Even there, it is fully exposed to weather and seas from the south. A series of coves line the western side of the inlet (Resurrection Peninsula).

- Driftwood Bay has a fair anchorage, a state marine park, a beach suitable for landing by skiff or kayak and plenty of room for camping. Not a good anchorage in easterlies.
- Killer Bay has a short beach and minimal anchorage.
- Safety Cove is considered the best anchorage on the west side of Day Harbor and is also site of a state marine park. It has a good landing beach and camping area.
- Talus Bay is a pretty cove with a noisy stream at the head but it is completely exposed to the south. Beware of wash rocks in the most sheltered area at the head of the cove.
- Bootleg Cove is a tiny inlet, also exposed to the south, but it has a small landing beach and camping space. Behind the beach a short trail leads to a lovely tidal lagoon. Beware of trying to navigate the channel leading to the lagoon; at low water it is swift, twisty and shallow.

The head of Day Harbor is dominated by a broad, forested terminal moraine, backed at a distance of several miles by Ellsworth Glacier. A swift glacial stream rushes into the bay at the west end of the beach, while a smaller stream and tide flats appear at the east end. A few structures, possibly private cabins and moorings, are situated along the east end. The water shallows abruptly about a quarter mile out from the beach, and those shallows can be treacherous if there is wind from the south.

Bowen Anchorage provides good anchoring shelter close to the head of the bay. Terrain at the head of the anchorage is steep, and private property occupies

much of the shoreline. A couple of miles farther south lies Anchor Cove, which is the first good anchorage on entering Day Harbor from the southeast. As with Bowen Anchorage, most of the shoreline of Anchor Cove is privately owned.

East of Fault Point at the southeastern corner of Day Harbor lies more than 20 miles of highly exposed rugged shoreline without any safe harbors. The views are stunning but small boats should avoid this area in any but the best weather. Watch out for offshore rocks and wash rocks off Fault Point, Cape Mansfield, Cape Fairfield, Cape Junken and Cape Puget.

Aialik Bay

Aialik Bay, Harris Bay and the capes and inlets to the west offer great wildlife viewing and breathtaking scenery. Although the coastlines are deeply indented with numerous bays, there are few good anchorages. Water tends to be too deep right up to the shoreline to allow safe anchoring by small boats, so it is necessary to identify suitable anchorages prior to starting the trip and to ensure that it is possible to reach at least one of them by anchor-up time. Winds tend to be brisk by mid afternoon on summer days and seas confused due to the numerous headlands and swift currents through the passes.

Aialik Glacier

Anchorage can be had at Paradise Cove, Bear Cove, Tooth Cove, Coleman Bay and Abra Cove on the Aialik Peninsula side and at Verdant Cove, McMullen Cove and Quicksand Cove on the Harris Peninsula side. Keep in mind that each anchorage is suitable only for some conditions and not for others, so select destinations based on wind conditions and forecasts.

Before visiting the Aialik Bay, Holgate Arm and Pedersen Bay areas, study the NOAA chart (16682) carefully, and read one of the many available guides to the area. These guides not only provide interesting information, but could also help avoid dangerous mistakes. For example, glacier-calved ice fills the upper end of each of those bays, and calving glaciers can push up waves that can capsize a small boat. Note also that the entrance to Pedersen is shallow and swift and

should not be attempted without local knowledge and experience.

The Harbor Islands and Chiswell Islands group are enticing but offer few, if any, secure anchorages.

One of the most amazing anchorages in the area is Taz Basin, a keyhole cove on the west side of Granite Island at the entrance to Harris Bay. It is preferable to enter and exit via the narrow channel to the north (left side going in) of the mid-channel rock. The center of the basin may be too deep for the ground tackle of small boats, but the bottom comes up in the northwest side to allow comfortable anchoring there.

Aialik Bay

Seward

Established in 1903, Seward is one of Alaska's oldest cities. It is the terminus of the Seward Highway and the Alaska Railroad, as well as a fishing, shipping and ferry port. The year-round population for the area is about 4,000 and offers a complete range of amenities. It hosts the headquarters of the Kenai Fjords National Park and also has offices of the Chugach National Forest, Alaska State Parks, Department of Fish and Game, National Marine Fisheries Service and Alaska State Troopers.

The Seward Small Boat Harbor occupies much of the northern end of the city's shoreline and offers a full range of services including 670 berths, boat launch ramps, restrooms and showers, pay phones, fish cleaning stations, potable water, electrical outlets, a 50-ton and 250-ton Travelift, pump-out facilities, used oil and antifreeze disposal, trash disposal and both short-term and long-term parking. Both permanent and transient moorage is available. Dedicated transient mooring is on the west side of X Float and along the south side of F Float but transient boats may be placed in other areas with prior approval from the harbormaster. The harbor office is open 8 a.m. to 5 p.m. year-round and monitors VHF Ch. 17.

Fuel

Trailered boats can fuel up at any of the gas stations in town. A marine fuel dock is located next to the boat ramp at the north end of the harbor, accessed by X Float Road off Port Avenue. Fuel tends to be a little less expensive at the fuel dock than at roadside gas stations.

Boat Launch and Parking

Boat launch ramps are located at the south and north end of the harbor. Both ramps have floats for temporary tie-up during the launch and retrieval process, and both have adjacent parking areas that accommodate vehicles and boat trailers. Parking information can be downloaded at **www.cityofseward.us/index.aspx?nid=867**. Current harbor and parking information is available in town by tuning your radio to AM 1500.

Beach launching is available on the borough road right-of-way at the end of Lowell Point Road, next to the Lowell Point State Recreation Site (SRS). It is not a launch ramp, just a clear area of beach, more suitable for launching kayaks than trailered boats; the slope of the beach is such that tow vehicles may have to back partway into the water to launch even a small boat. It is also exposed to the south winds common in the afternoon. Alaska State Parks honors annual day-use parking passes or charges a daily fee for parking in the SRS, which is payable via envelope to the "Iron Ranger" at the park entrance. Due to the limited room to turn a trailer around in the beach parking area, trailer parking, attached to a vehicle or not, is not allowed in the parking area by the beach. Trailer parking is available in the trailhead (upper) parking area of Lowell Point State Recreation Site.

Camping In and Near Town

Spring Creek Campground

The city maintains the Waterfront Park and Williams Park campgrounds totaling 500 sites along the shore south of the boat harbor, on both sides of Ballaine Boulevard, with tent camping on the upland side and RV camping on the water side. The city also runs the Forest Acres Campground, a woodsy and secluded site about two miles north of town, and Spring Creek Campground, five miles out Nash Road, which winds around the northeast side of the bay and ends at the Seward Ships Shipyard.

Miller's Landing, about five miles south of town on Lowell Point Road, has a private campground and also has a tractor for launching small trailer boats (single axle only). Backcountry camping is available in any of the state park units, Kenai Fjords National Park and the Chugach National Forest.

Boat Storage

There are several privately owned boat storage facilities in Seward, which can be found at **http://www.cityofseward.net/harbor/marine_services.html**. Four Seasons and Seward Ships Ace Hardware and Marine, both just north of the boat harbor, provide long-term storage and non-trailered boats can be taken to and from those facilities with the city's Travelift. Storm Chasers Marine Services on Lowell Point Road south of town stores boats and moves them with their own truck and trailer. Seward Ships on the east side of the bay stores larger commercial boats, as well as provides full shipyard services, and some other properties in and around town provide boat storage in private yards and parking lots.

Seward Boat Harbor

PREPARATION

Along with knowledge and skillful boat handling, thorough preparation is what distinguishes the best skippers and paddlers from other boaters. This is especially true when boating in Alaska's coastal areas. Boaters must be as self sufficient as possible. Adequate preparation may help resolve or prevent many common boating problems, and boaters will be better prepared to assist others in trouble. The first step is education.

Boating Courses and Other Instruction

Those new to powerboating should look for boating courses approved by the National Association of State Boating Law Administrators (NASBLA). Experienced boaters should consider taking a boating course occasionally as a refresher, because boating laws and technologies change and current courses contain updated information. All boaters should understand state and federal boating laws, know how to signal for help using a variety of methods and understand the International Navigation Rules.

In addition, Resurrection Bay boaters should be proficient in basic navigation. Even near-shore boaters can be suddenly caught in fog or quickly deteriorating weather. Boaters should know how to use a compass and read a tide table, and be able to determine their position on a chart. Consider taking basic coastal navigation courses, such as those offered by the U.S. Coast Guard Auxiliary.

Coastal paddling requires specific knowledge and skill and should not be undertaken until you have had adequate instruction and practice. Both dry-land and in-water instruction (in protected areas) are highly recommended for paddlers. A capsized boat is serious business for coastal kayakers. Besides learning efficient paddling techniques, boaters should master and maintain essential skills in re-boarding a capsized boat in open water.

Alaska Requirements Summary

ALASKA REQUIREMENTS SUMMARY				
Requirements	**Boats Under 16 Feet**	**Boats 16 feet to less than 26 feet**	**Boats 26 feet to less than 40 feet**	**Boats 40 feet to less than 65 feet**
Personal Flotation Devices (PFD)	One USCG-approved Type I, II, III or V PFD for each person on board. Must be in serviceable condition. Persons under 13 must wear a PFD when in an open boat, on the deck of a boat or when waterskiing.			
Throwable Devices (Type IV)	Recommended but not mandatory.	Except for canoes and kayaks, one USCG-approved Type IV (seat cushion or throw ring) device must be carried.		
Sound Producing Devices	Boats less than 39.4 feet (12 meters) in length must be able to make an efficient sound signal (such as that made with a whistle or horn) to signal intentions and to signal position in periods of reduced visibility.			Boats 39.4 feet (12 meters) or more in length must carry on board a whistle or horn.
Visual Distress Signals	USCG-approved night signals required between sunset and sunrise.	USCG-approved visual distress signals for both day and night time use must be carried. Exception: boats and open sailboats not equipped with mechanical propulsion and under 26 feet in length are not required to carry day signals. *Note: Pyrotechnic devices, if used to meet this requirement, must be current, serviceable and readily accessible. At the minimum, a total of three day/night combination devices or three day and three night devices must be carried.*		
Fire Extinguishers	At least one USCG-approved B-I required for boats with inboard engines, living spaces, permanent fuel tanks or enclosed storage areas or hull voids not sealed or filled with flotation material.		At least two B-I or one B-II USCG-approved fire extinguishers.	At least three B-I or one B-I and one B-II USCG-approved fire extinguishers.
Navigation Lights	Display required between sunset and sunrise and during periods of restricted visibility. International configuration required (varies with length and mode of operation). See the International Navigation Rules.			
Backfire Flame Arresters	One USCG-approved backfire control device on each carburetor of all inboard gasoline engines.			
Ventilation	Boats with permanently installed engines, closed compartments or permanent fuel tanks must have efficient natural or mechanical ventilation.			
Registration	Undocumented boats equipped with mechanical propulsion (gas, diesel or steam engines, and electric motors) and any undocumented vessel used in sport fishing charter activities must be registered with the Division of Motor Vehicles. Certificate of Number must be carried onboard. Registration numbers and validation decals must be properly displayed on hull of boat.			

Pre-Departure Checklist

Always complete a pre-departure check. A pre-departure checklist should incorporate all federal and state requirements, as well as any additional equipment and procedures specific to your type of boat, the way it is used and the current conditions. While some items need only be checked at the start of each season or periodically, others should be checked before each trip. If transporting your boat to the bay via the road system, the best time to do a pre-departure check is before leaving home.
Boat and equipment problems are better discovered in the driveway than at the launch ramp.

All Coastal Boaters

All boaters must comply with both state and federal laws. The Alaska Requirements Summary on Page 14 outlines state equipment and regulation requirements. The following are also highly recommended:

- Carry communication devices. Cell phones are appropriate in some areas, but in other places a marine VHF radio is a better choice. A marine VHF radio can be used for emergencies, but also to update float plans, communicate with other boaters, or check on the weather. Continuous marine weather is available on VHF WX-1 in Resurrection Bay, but reception fades outside of the bay
- Sound producing device attached to life jacket such as a whistle
- Compass and nautical charts for the areas you are boating in (see Page 39 for a list of nautical charts for the Resurrection Bay area)
- Tide tables (turn to the section labeled “Seward” for tables most accurate for Resurrection Bay)
- Manual bailing devices (even if you have an electric pump system)
- First aid kit
- Personal survival kits (for each person)

- Sleeping bags, small tent or tarp, and spare food (in case of an unexpected overnight stay)
- Full rain gear, with rain hat or hood
- Change of clothes (synthetic layers are best) in a waterproof bag
- Insect repellent and head net
- AM/FM radio for weather forecasts (if no marine VHF radio)
- Hat, sunglasses and sunscreen
- Food and water
- Nonslip footwear such as sneakers or rubber boots
- Warm hat and gloves
- Auxiliary propulsion (engine, oars, paddles)
- USCG-approved Type IV throwable device (seat cushion or throw ring), readily accessible with 1/4 inch (minimum) diameter floating line attached and marked with vessel name or registration number
- USCG-approved PFD for each person on board, properly sized and in serviceable condition. Worn and properly fastened when in an open boat or on an open deck, especially when boating on Alaska's cold water.

Alaskan boaters should also ALWAYS carry at least one signaling device and one communication device ON THEIR PERSON.

- Signaling: whistle, signal mirror, small aerial flares, personal locator beacon
- Communication: handheld waterproof VHF radio or cell phone in waterproof bag

File a float plan, and stick to it. Remember to check the local weather again just before departure, as conditions can change. Brief all passengers. Everyone should know the trip plan (including the possibility of a late return) and the location of and how to use all safety equipment. Brief passengers on how to start, stop, and steer the boat. Make sure everyone has proper clothing and is prepared for wet, cold weather.

Boats must display proper navigation lights if operating between sunset and sunrise and during periods of low visibility. Most power boats are required to have green and red directional lights as well as a white “all around” or “masthead” light. Installed lights are the best. Hand-held spotlights, flashlights and lanterns could affect night vision and temporarily blind the operator of the oncoming vessel.

Powerboats

Shallow draft, low-sided, flat bottom boats are intended for small inland lakes and rivers, but not for large open water like Resurrection Bay. They may perform poorly in rough water conditions. Conversely, boats with deep V-hulls designed for open water do not perform well in shallow lakes and rivers. Match the boat design to the intended use. There are a lot of options out there—research boat types, work with the boat dealer, and if possible, test drive boats under similar conditions before purchasing.

The most common powerboating problems are mechanical or fuel related. Doing a thorough pre-departure check before each trip and practicing preventive maintenance per owner manuals is cheap insurance against unpleasant and potentially dangerous situations on the water.

In addition to the recommended items for all boaters, every powerboat should have on board:

- One anchor and line attached to the boat
- Tools and spare parts including spark plugs, spare propeller and a prop nut kit (or jet impeller)
- Fuel—enough for the trip plus a healthy reserve in case of deteriorating conditions, disorientation, or if it becomes necessary to loan fuel to or tow another boater. Keep in mind that the return trip, especially if against the current or wind, or in choppy conditions, may require considerably more fuel than the outbound trip. Think 1/3 out, 1/3 back, and at least 1/3 spare.
- A water/fuel separator filter installed between the fuel tank(s) and the engine is highly recommended when boating on all waters of Alaska
- Depth finder

Power boaters should also consider carrying a GPS (global positioning system) receiver.

Personal Watercraft

Safely and responsibly operated personal watercraft (PWC) can be a great way to enjoy the waters of Resurrection Bay. Start your trip off right by wearing a snug-fitting U.S. Coast Guard-approved non-inflatable impact-rated life jacket. Also review the PWC's owner manual—it provides important information such as load capacity and main and reserve fuel system operations.

PWCs are considered to be powerboats under state and federal law, and operators must meet the same boat registration and equipment requirements as other powerboats, which includes carrying a B-1 fire extinguisher. Make sure to incorporate these requirements into the pre-departure check.

PWC operators frequently end up being tossed into the water. The wrist lanyard, connected to the shut off switch, activates if the rider falls off the boat, preventing the boat from continuing on without them. The cutoff cable should be confirmed functional and the wrist lanyard attached to the rider before departure. PWC operators should be well practiced in re-boarding. Personal watercraft may be restricted or prohibited in some areas. Check with local land managers for regulations.

For more information on pre-departure preparation, please see the *Alaska Boater's Handbook* or visit the State Office of Boating Safety web page: **www.alaskaboatingsafety.org**.

Also see the USCG publication *Federal Requirements and Safety Tips for Recreational Boats* or visit **www.uscgboating.org** .

Coastal Paddlers

Coastal paddlers should be knowledgeable of the effects of cold water immersion and be in good physical condition. Choose boats designed for rough coastal waters. Sea kayaks, with their very low center of gravity, covered decks and high stability, are ideal. Canoes are not recommended unless they are completely decked and/or have flotation bags installed to displace water, and the paddler has extensive knowledge and experience in canoeing rough, open water.

In addition to legal requirements and the other items recommended for all coastal boaters, coastal paddlers should also carry:

- paddle float
- paddle leash
- towing strap
- spare paddle

Paddlers should choose clothes in consideration of both the air and water temperatures. Summer temperatures in coastal areas of Alaska average 40-70 degrees. Wear clothing in layers and choose synthetic fabrics such as fleece, polypropylene and nylon. Cotton clothing is inappropriate for coastal kayaking. Wear wet suits, dry suits or paddling jackets as an outer layer when appropriate. All persons should be prepared for cold water immersion, and that means wearing a life jacket. They should be fit tested and put on before departure.

Proper trip planning is essential. Boats should be selected for each person based on their experience and ability. Weather conditions and potential hazards on the waterway should be researched. Select trip routes suited for the least experienced/skilled participant. Group gear should be double-checked. The weather forecast should be checked, and then rechecked, just before departure. All persons should know the route, location of pullouts, float plan, location of group gear, communications plan, and all hand, paddle, and whistle signals. All persons should be prepared for an extended trip due to changing weather.

If paddling in remote areas, consider wearing a waterproof beltpack while on the water. Fill this pack with the survival essentials: signaling devices, communication devices, a way to start a fire, collect clean water and a way to build a shelter. In the event of capsizing and losing the boat, you'll be glad to have it!

UNDERWAY

Local Hazards

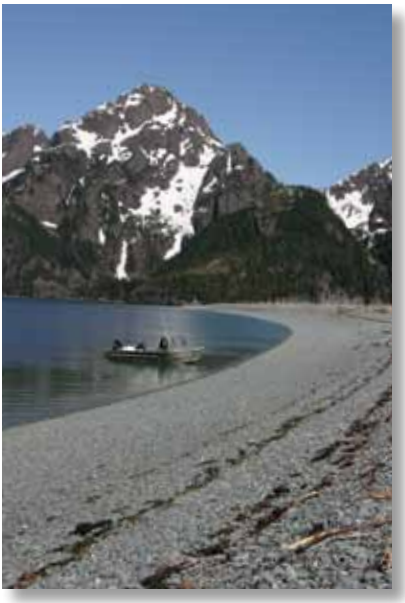
Weather and Tides

A fjord with its head in the Chugach Mountains and its mouth at the northern Gulf of Alaska, the bay funnels winds from both directions, with contributions from numerous tributary valleys.

Winds naturally produce waves, and the size and shape of waves are determined by wind speed or intensity, by the direction and speed of tidal currents, and by "fetch," the distance the waves can travel unimpeded by islands or other obstructions. A sharp 4-ft. chop is plenty to swamp or capsize a kayak or open skiff if proper care is not applied. Much bigger seas develop when winds are stronger and when the tide opposes the wind. In general, flood (incoming) tides flow up the bay and ebbs flow down, toward the south, although local variations may occur. Tidal currents in most of the bay are not swift, although kayaks and small sailboats may have difficulty overcoming their force.

The general summertime pattern is calm or gentle northerly breezes until late morning, then southerlies building to 20-25 knots in the afternoon and until late evening. The outer bay can experience strong easterlies during periods of low pressure and wet weather and westerlies during highs. But winds can come from any and all directions in the smaller bays that are influenced by air masses moving down glaciated valleys. Some of the most appealing anchorages can be hit by williwaws that swirl down from the mountains and off the Harding Icefield. Winds can come up quickly and turn a calm sea into confused chop or large breakers in a matter of minutes. Listen to daily weather forecasts for wind predictions. Even 15 knots can create an uncomfortable chop and anything over 25 knots is suitable only for experienced skippers in craft designed for offshore water. In summer, early mornings are frequently calm or may have a light chop, but as the air over land heats and rises during the day, air rushes in from the sea, frequently producing a stiff west wind locals call the day breeze, which can reach 25-30 knots even on a beautiful summer day. The day breeze creates closely spaced whitecaps on the bay and, at times,

significant surf on the bay's west-facing beaches. When this chop combines with ocean swells, often in late summer and fall, dangerous sea conditions can develop. Those who beach or anchor boats in the morning may not be able to safely leave until the seas calm down. Be prepared for, and advise your passengers of, the possibility of unexpected delays due to changing weather conditions. Be patient and wait for conditions to improve, which they eventually do. Tide differentials in the bay range from four feet to nearly 17 feet. The twice-daily cycle produces tidal currents that can be swift in constricted areas. Boaters need to refer to their tide tables and charts and closely monitor depths to avoid being grounded or trapped. Boaters have become stranded after losing a boat to the tide from an anchorage or beach. Avoid leaving a boat at anchor unattended. If beaching, place the boat above the high tide line and carefully secure it with lines.



Working alone, the bay's weather or tides can present problems for boaters, but when combined, they can quickly become deadly. When an ebb tide runs against a strong wind the combination can, in some areas, produce closely spaced standing waves called tide rips, in which waves can reach more than six feet high. Some of the areas subject to tide rips are described in the local hazards section.

Fortunately for boaters, Resurrection Bay has plenty of places to find shelter, if not for overnight anchoring at least to duck into to escape a dangerous situation. Almost any cove, point or island will provide some relief from wind and waves, but many of the areas that provide shelter from wind have deep water right up the shore and aren't suitable for anchoring by small boats. It's important to identify the best anchorages before departure in each part of the bay in the event that conditions worsen while underway.

Shallows and Bars

Despite the predominance of deep water, some parts of the bay are dangerously shallow, particularly at river mouths and off glacial moraines. Notably, the mouth of the Resurrection River at the head of the bay east of the cruise ship dock is a vast flat extending nearly a mile from shore. At times

other than low tide this flat is covered and its treachery may not be apparent. Particularly when a south wind is blowing up the bay, it is possible to drift onto that flat while approaching the port from the east, a potentially dangerous situation.

Likewise, flats and sand bars lie several hundred yards off the Bear Glacier moraine beach. The beach appears to be a tempting landing spot for skiffs and kayaks but swells from the sea can build up and break on those offshore bars.

Other flats and bars extend seaward from shore at Tonsina Creek, Callisto Beach, North Beach, Fourth of July Creek, the head of Thumb Cove and several other coves around the bay. It is important to use a depth sounder and marine chart to locate submerged bars and avoid stranding on them.

Floating Debris

Fallen trees become floating hazards on the bay especially after storms and high tides. Over time they become water soaked, partially submerged and difficult to spot. Debris accumulated on beaches can also refloat during high tides. Scan the surface of the water when underway and be particularly vigilant during high tide cycles.

Submerged and Wash Rocks

Much of the bay's shoreline is studded with rocks, reefs and pinnacles, most within a short distance from the beach and visible under normal conditions. In general, it is necessary to remain at least 50 yards off shore except in those areas where bars and tidal flats extend much farther out from the beach. However, there are also many barely submerged rocks and wash rocks that break the surface at a certain stage of the tide.

Most notorious is Mary's Rock, which lies about 500 yards off the Resurrection Peninsula about a mile and a quarter NNW of Cape Resurrection at about 59 degrees 53.3 min N. It is above the surface at about plus three feet of tide and lower. Mary's Rock is easily avoided by staying farther off the beach and more toward the middle of the channel when approaching Eldorado Narrows from the south.

Look for other wash rocks and reefs at the tip of Caines Head and about a half mile off South Beach, along the shore from South Beach to Callisto Head, at the

southern tip of Fox Island, off the northwest corner of Thumb Cove, along the Aialik Peninsula shore between Bulldog cove and Agnes Cove, and along the Resurrection Peninsula shore from Kayaker Cove to Cape Resurrection. In general these hazards can be avoided by staying a hundred yards or so off the beach.

Boat Traffic and Wakes

Resurrection Bay is heavily traveled by all manner of vessels from kayaks to cruise ships, and including U.S. Coast Guard vessels, freighters, large fish tenders, and many high speed sport and charter boats. Some charter boats, in particular, put up large, steep wakes that can swamp or capsize a skiff or kayak. Even when anchored in a sheltered cove, boats are susceptible to abrupt and violent rocking from the wakes of boats that have passed far offshore.

A stream of fast charter and tour boats pour out of the boat harbor early each morning, putting up a maelstrom of wakes. Mid-to late afternoon those same vessels return to port, though not all at once.

Other Boaters

Local hazards include other boats. Constant vigilance and a working knowledge and proper application of the International Navigation “Rules of the Road” are necessary. When encountering other vessels take early action to indicate your intention. Display your navigation lights during periods of restricted visibility.

Be watchful for ships and other large vessels. Cargo ships, passenger ferries, tugs and barges, cruise ships, and tour and charter fishing boats also ply the waters of the bay, some with surprising speed. Most large vessels maneuver poorly, need miles to stop and may not even see a small boat directly ahead. Stay well clear of large vessels. Cross behind, never in front of them. If you encounter large wakes, slow down and turn into them at an angle.

Collisions are rare but the potential for tragedy remains. Particularly in choppy water or when bright sunlight can impair the vision of the helmsman, it is incumbent upon the operators of small boats to maintain a safe distance from larger or faster vessels that may have a hard time seeing them.

Stay clear of fishing vessels with gear deployed or in the act of setting gear. A purse seiner "sets" its net in a big circle, with the opposite end attached to a small skiff and sometimes to a "lead" or "tie-off" on the beach. Be careful not to get inside the set. Gillnets may be very difficult to see in choppy water; look for the buoy at the far end of the net and a row of white corks between it and the boat. Boaters are financially liable for any damage they cause to fishing nets and gear.

Operating Tips

Power Boaters

- When underway, always maintain a proper lookout. Scan the water back and forth constantly for hazards, especially when facing into the sun, in fog or restricted visibility, on rough water, and when rounding points or navigating narrow winding passages.
- Anchorages may be used by several boats, so be considerate and give others room. Allow plenty of "swing room" in case the wind shifts. If you are the first in an anchorage, position your boat so that others also may anchor safely. Calculate the tidal range in the anchorage so that you are not stranded on a rocky shore at low tide.
- Watch your wake, especially when passing paddlers or other small craft, or when near drifting, trolling or anchored boats.
- Limit your use of public docks and mooring buoys to the time actually necessary for your stay. Be prepared to share them with other boaters.

Coastal Paddlers

- Sea kayaks can be very difficult to see under conditions with limited visibility, rough water, and/or strong backlighting from the sun, and they don't appear on radar. In these situations, it helps to stay in a "pod" instead of in a string of boats. Wave paddles, if necessary, to attract the attention of the operators of approaching boats. Strive for high visibility. Wear bright clothing that can be seen easily by other boaters at a distance.
- Whenever possible, keep out of busy powerboat traffic lanes
- Avoid paddling alone. In the event of a capsize, self-rescue is difficult if you are alone

- When on the beach, move your boat well above the high tide line and tie it securely. Many a paddler has returned to the boat only to discover that it floated away on a high tide or was swamped by a large boat wake breaking on the beach
- Never try to outrun a bad weather forecast
- Keep a lookout for large boat wakes or wave rebound off the shoreline, rocks and coastal cliff faces
- Keep close to the shoreline and cross open water where the distance is the shortest. If bad weather suddenly appears, you can become dangerously exposed in open water with no way out
- Avoid paddling in strong winds, fast tidal current or chop over one foot. These conditions will significantly increase your workload and decrease your speed
- Use your paddle leash
- Avoid overloading

Responsible Boating

For all its rugged beauty, Resurrection Bay is a delicate habitat. Even unintentional acts can pollute the water, mar the land or disturb fish and wildlife. Stress can cause unwanted interruptions to wildlife's essential activities, which can include reproductive failure. Responsible boaters should always be aware of ways to avoid harming the land, water, or wildlife of Resurrection Bay. Treating the bay and its resources responsibly will help ensure that it will continue to be enjoyed by the generations that follow.

Don't Pollute

- Powerboats should use oil absorbent pads in the bilge and consider an oil-sensitive pump switch to keep oil from going into the water.
- Take care when fueling. Keep oil absorbent pads handy to clean up any fuel spills.
- Federal law prohibits dumping sewage from holding tanks into the water. Garbage, including food scraps, can choke seabirds and attract predators to the nesting areas of shore birds. Bring all garbage back to town for proper disposal in dumpsters.
- Collect all discarded fishing line. It can entangle and kill birds and other marine animals.
- Don't dump anything overboard!

Tread Lightly

- Camp only in designated areas
- Use developed trails when possible. Avoid walking on muskeg and other sensitive soils so trees and plants are not damaged.
- Use a gas stove for cooking instead of a fire. If a fire is necessary, use a metal fire ring or build it only on bare gravel or rock, use only dead wood, and erase all traces of the fire afterward.
- "Naturalize" campsites after use by dispersing any natural materials used, brushing over tracks, etc.
- Wash at least 200 feet away from water sources. Use biodegradable soap
- Leave all plants, rocks, antlers, fossils, and all cultural artifacts in place
- Dispose of fish waste in deep fast moving water
- Keep food in airtight (preferably bear-proof) containers, and never cook, eat, or store food in a tent or sleeping area

Wildlife and Habitat

General Guidelines

All marine wildlife is susceptible to disturbance. Animals have been forced away from feeding grounds, deprived of rest, or wounded or killed by collisions with speeding boats and their propellers. Following are guidelines for wildlife safety:

- Remain a respectful distance from animals and birds in or on the water, rocks or cliffs. Rather than observing at close range, view with binoculars or spotting scope. If your presence causes a change in behavior, you are too close
- Don't chase or try to corner wildlife to get a photo
- Never feed wildlife
- Keep pets under physical control at all times
- Respect and avoid nests, dens and resting places
- Never handle, touch or approach young birds or animals. Most likely they are not abandoned but only left in place while the mother seeks food.
- Nesting bald eagles (May through August) are sensitive to noise and may abandon an active nest if disturbed.

- Nesting shorebirds may withdraw from nests if humans come near, leaving eggs or chicks vulnerable to weather and predators. Shorebirds are often shy or inconspicuous, and people may be unaware of the presence of nesting territories. Squawking overhead or feigned “broken wing” behavior often indicates a concealed nest is nearby.

Marine Mammal Protection Act

This protection act prohibits harassment of all marine mammals and defines harassment to include any disturbance or disruption of behavior including breeding, migrating, and feeding. Anything a person does that causes a marine mammal to enter the water, flee, change its position on the beach, or even alter its breathing rhythm can be considered a disturbance. If animals show signs of disturbance, immediately but quietly leave the area. With seals and sea lions, signs of disturbance could include behavior such as herd movement toward or into the water, increased vocalization, simultaneous head-raising, or increased interaction with other animals. Even if no obvious disturbance is detected, approach marine mammals in the water no closer than 100 yards. Limit the time spent observing any particular animal(s) to 30 minutes or less. Avoid excessive speed, or abrupt changes in speed or course when around animals in the water.

Notes on Viewing Marine Wildlife

Resurrection Bay and surrounding waters comprise an excellent area for watching marine wildlife, including cetaceans (whales, dolphins and porpoises), pinnipeds (seals and sea lions), fissipeds (sea otters), as well as seabirds, shorebirds, raptors such as eagles, and even terrestrial animals like bears and mountain goats, all at relatively close range.

All kinds of marine wildlife are vulnerable to disturbance and some, such as nesting seabirds and shorebirds, can suffer loss of the year’s reproductive potential if careless boaters or viewers disturb nests or flush adult birds, exposing them to predation or hypothermia. Animals resting at haul-outs or floating in leisure on the surface are conserving vital energy, and prolonged or repeated disturbance may cause them to abandon the location.

Many boater behaviors can cause disturbance, including excessive speed, loud engines or voices, even camera flashes. Most common, however, is approaching too closely. Federal guidelines specify remaining at least 100 yards from whales, and the same is appropriate for approach to otters in the water and seals or sea lions on haul-outs. But actual critical approach distances may be much greater, so watch for signs of disturbance and withdraw to a greater distance if they start to occur.

EMERGENCIES

Surviving Cold Water

Cold water is defined as water below 68 degrees Fahrenheit. Please keep in mind that the effects described in this section may not apply in all situations or to all persons.

Preparation and Prevention of Cold Water Immersion

It is important to be prepared for a cold water immersion event. Take these simple steps to help ensure the best possible outcome if you should find yourself in cold water.

- Always wear a PFD when in an open boat or on an open deck. Trying to put your PFD on in the water is extremely difficult (if not impossible) and costs precious time and energy.
- Equip PFDs in advance. Reflective tape and a light secured high on the PFD make you more visible. A whistle helps draw the attention of passing boats or rescue personnel. A sheathed knife is an essential item to have should you become entangled in a line.
- Carry visual distress signals, communication devices and survival items on your person. Some boaters carry an EPIRB, personal locator beacon and/or a small hand held VHF radio. Depending on the area, carry a cell phone in a waterproof bag.
- Make sure the boat is either equipped with a reboarding ladder, rope ladder, foot sling, swim platform or designed such that a person in the water can easily get back into the boat. Practice using these devices.
- Carry and practice donning survival suits and make sure they are readily accessible.
- Practice emergency procedures such as recovering a person overboard unassisted and cold-water survival techniques. Drills are fun and build skill and confidence.

In Alaska, swamping and/or capsizing and falls overboard are the first and second leading causes of cold water immersion. Swamping and/or capsizing are most often caused by:

- Overloading
- Poorly secured or shifting loads
- Improper boat handling in rough water
- Loss of power or steerage
- Anchoring from the stern
- Wrapping a line around a drive unit
- Taking a wave over the transom after a sudden stop

Falls overboard are usually due to slipping or loss of balance when standing or moving around the boat or reaching for objects in the water. Most of these events happen quickly, often when you least expect it.

Another common cause of cold water drowning in Alaska is leaving a place of safety to swim for a boat. Watching a loose boat drift away from shore produces an almost irresistible impulse to swim for it. Ignore this impulse and seek help from fellow boaters.

The Effects of Cold Water Immersion

Most of Alaska's boating fatalities involve cold water immersion that, according to research, kills in several ways:

1. **INITIAL REACTION—"COLD SHOCK RESPONSE"**
   - Occurs in the first few minutes
   - Gasping, hyperventilation and muscle spasms can result in water inhalation and drowning
   - Significant changes in heart rate or rhythm and blood pressure can also occur resulting in cardiac problems with or without drowning
   - Wearing a life jacket helps prevent drowning!

2. **SHORT TERM IMMERSION—"SWIM FAILURE"**
   - Occurs within the first 30 minutes
   - Localized cooling affects muscles and nerves
   - Hands lose grip strength and sensation. Victims have trouble grasping or holding on to a PFD, rescue device or overturned boat

- Even good swimmers may be unable to swim for more than a few minutes in very cold water
- Wearing a life jacket helps prevent drowning!

3. LONG TERM IMMERSION—"IMMERSION HYPOTHERMIA"

- After at least 30 minutes of immersion
- Cooling of the body's core temperature
- Cold water transfers heat from your body much faster than air of the same temperature
- A body immersed in water will eventually cool to the temperature of the water at a rate dependent upon many factors, such as water temperature, amount of clothing worn, amount of body fat, state of physical fitness, last time food was consumed and body posture while in the water
- Hypothermia symptoms can range from mild to severe. As the body core temperature falls, humans eventually lapse into unconsciousness. Death occurs by drowning or cardiac arrest
- Wearing a life jacket helps prevent drowning!

The 1-10-1 Principle

REMEMBERING THIS RULE MAY HELP SAVE YOUR LIFE

1-10-1

1 minute to get breathing under control

10 minutes for meaningful activity such as self rescue or signaling

1 hour or more before loss of useful consciousness

Surviving cold water immersion depends on adequate flotation for breath control and timely rescue by yourself or by others. Many other factors such as; type of flotation worn, the ability to swim, a controlled entry into the water, age, body size and type, clothing, water temperature and surface conditions, amount of time in the water, associated injuries or medical conditions, and alcohol use, can all influence the outcome.

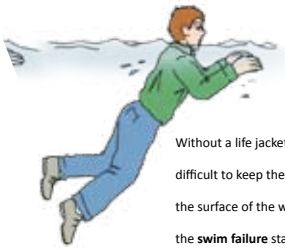
1 Minute

Initial gasping reaction usually passes within 1-3 minutes. The focus during that time is to get your breathing under control.

Without a life jacket, it is very difficult to keep the airway clear during the **cold shock response** stage which could result in drowning.

10 Minutes

Once breathing is under control, people often have at least 10 minutes for performing actions necessary for self rescue or obtaining rescue before physical function becomes impaired or lost. Arms and legs will turn stiff and unresponsive, and it will be very hard to swim, re-board a boat, use a radio or signal, or hold onto a rescue device. Don't waste time removing shoes or clothing. Even small amounts of air trapped in clothing will provide some buoyancy and thermal protection.



Without a life jacket, it is very difficult to keep the head above the surface of the water during the **swim failure** stage, which could result in drowning.

Account for all members of your party, checking around and under the boat and try to get out of the water.

If the boat isn't capsized, use the boat's reboarding devices and appropriate and practiced techniques to get back in. If the boat is capsized but small enough, you might be able to turn it back over, then get back in and bail it out.

If the boat is capsized and large enough, get as much of your body out of the water as possible by climbing onto the hull or transom. If separated from the boat, locate and use other floating objects to get as much of your body out of the water as you can.

Activate Emergency Communication Devices. Deploy EPIRB, personal locator beacon, VHF marine radio, or cellular phone.

Personal Locator Beacon

Marine VHF Radio

Cell phone in waterproof bag

Prepare signaling devices. Be ready to use signaling devices at the appropriate time.

Make a plan. Assess the situation. Assess the circumstances and make some decisions. If you can't get back into or on top of the boat, a person must make the decision whether to stay with the boat or to swim for safety. If the event was witnessed or someone knows you are in trouble, staying with or near the boat is usually the best thing to do in open water. Even if capsized or swamped, a boat can offer supplemental flotation and is far easier for potential rescuers to see than a person in the water. In other cases, it may be best to swim to safety.

CONSIDER SWIMMING IF:

- Wearing a PFD
- Very close to a place of safety (less than 800 yards away or 45 minutes swimming time based on fitness level and swimming ability)
- Likelihood of rescue is low (event was not witnessed and there are no means of signaling or communicating for rescue)
- Not able to climb on top of boat or other object to get out of the water
- In calm water or moving water (such as a river)

Keep in mind, swimming in cold water can reduce in-water survival time, and the average person will lose 30% more heat by swimming than by remaining still. Distances are very deceiving when on the water and safety often looks closer than it really is.

IF YOU DECIDE TO SWIM:

- Keep as much of your head and neck up and out of the water as possible
- Swim on your back, keeping your upper arms and elbows close to the sides of your chest, using just your forearms. Keep upper legs close together and knees bent, and use lower legs to "flipper kick"
- Move slowly and conserve your energy. If in the huddle position one person may be able to propel the entire group, taking turns
- Use floating objects to help you

If in moving water, point feet downstream and keep knees bent, feet up, with heels slightly lower than buttocks (to avoid foot entrapment). Your body position should be at a 45-degree angle to the current, with your back angled to the bank of choice. Use a modified backstroke. The force of the current on the upstream side of your body will help to "ferry" you toward the bank. Use your arms and legs to fend off rocks and other objects. Be prepared to quickly flip onto your stomach and travel head-first downstream—this position enables you to scramble over "strainers" or other obstacles, keeping you from becoming pinned against them by the current.

CONSIDER NOT SWIMMING IF:

- NOT wearing a PFD
- NOT close to a place of safety (more than 800 yards away or 45 minutes swimming time based on fitness level and swimming ability)
- Likelihood of rescue is high (event witnessed or others know your situation and position via a MAYDAY call or other communication)
- You are able to climb onto the boat or other object to get out of the water or if you would be leaving a place of safety to go after a boat or object in the water
- The water is rough and turbulent or wind and wave action would make swimming difficult.

1 HOUR (or more)

Eventually, self-rescue will become impossible. At this point, the priority becomes slowing heat loss to extend consciousness and survival time.

H.E.L.P." and "Huddle" Survival Positions

It is very important to slow heat loss while in cold water by remaining still and protecting areas of high heat loss, such as the head, neck, armpits, groin and

the sides of the torso.

The “Heat Escape Lessening Position” (HELP) can be useful when in open water, but is only possible when wearing a personal flotation device.

Hold the inner side of your arms tightly against the sides of your chest and grasp the shoulders of your PFD. Press your thighs together, cross your feet and raise your knees as close to your chest as possible while still maintaining position. Keep as still as you can.

Small groups can form a tight “huddle” by intertwining arms so that bodies work together to protect high heat loss areas. Small children and injured or unconscious persons can be placed in the center of the huddle, to be supported by the group. Huddling groups should tie themselves together to keep from drifting apart.

Huddle Position

Treating Hypothermia

The general goals for treating immersion hypothermia patients are:

- Gentle handling. Severely hypothermic patients must be treated gently because cold heart muscle is “irritable,” and cardiac problems can result from either physical exertion, jarring the patient or moving them from a horizontal to vertical position too quickly during rescue.
- Prevent further heat loss - remove wet clothing, dry off, put them in dry clothes and a sleeping bag.
- Provide medical care to your level of training.
- Transport moderate to severely hypothermic patients to the hospital.

Cold Water Near-Drowning

A person found unconscious in cold water (even with bluish skin color, no detectable breathing, no detectable pulse and dilated pupils) may not yet be dead and may have a chance for survival. If the victim was submerged for an hour or less, or the time of submersion is unknown, providing basic life support to your level of training and obtaining medical help quickly could possibly save a life. “A cold water immersion victim isn’t dead until they are warm and dead.”

Person Overboard Response

If someone falls overboard:

Designate a lookout person

1. Powerboats should swing the stern of the boat away from the person to reduce propeller danger.
2. Throw a lifesaving device or other floating object to the victim immediately, even if the person is a good swimmer. Any additional objects in the water with the person will make them easier to see.
3. Do not lose sight of the victim. If possible, have another person act as a lookout. At night, direct the best possible light on the victim.
4. All rescuers don life jackets.
5. Choose the rescue method that is least risky. In order of preference:
   - **REACH** for the person with an oar, paddle or anything you can extend to the person in the water. Pull them to the boat.
   - **THROW** a Type IV device with a line attached and tow the person back to the boat.
   - **ROW** or motor closer to the victim, then reach or throw to bring the person closer to the boat. Always try to approach the victim from downwind or downstream to reduce propeller danger. The rescuer should consider water conditions, the victim's physical capabilities, boat maneuvering room and how readily available additional assistance is (other people in boat or other boats close by) when approaching a person overboard with a vessel.
   - **DON'T GO** in the water unless it is a last resort. Swimming rescues are by far the most dangerous due to panicked and/or combative victims.
6. Assist the person in reboarding the boat or otherwise getting out of the water. It is often difficult to climb into a boat from the water, and the individual who is hurt or cold may not be capable of getting on board without help. The best procedure for getting back in a small boat is over the stern or bow, depending on the boat's construction. If pulling a victim in over the stern, all engines should be stopped.
7. Treat the victim to your level of medical training.

If You Need Assistance

Cellular Phone

Where there is cell phone coverage, it is possible to call the Coast Guard directly by dialing *CG (*24). Alaska is the only state where *CG is still operational however the call must be placed from an Alaskan cellular phone provider. Also, cell phone coverage fades south of Caines Head so don't plan to rely on it further out in the bay. As is elsewhere in Alaska, the Coast Guard can also be reached by HF/SSB on 4125 MHz.

Emergency Cellular Procedures

1. First give your phone number in case you are disconnected.
2. Give your name and a boat description.
3. Give your position/location.
4. Explain the nature of your problem.
5. Give the number of people on board.
6. REPEAT your cell phone number before ending your call.
7. Keep as calm as possible and speak slowly and clearly so you can be understood.

Single Side Band (SSB)

The U.S. Coast Guard can be reached by HF/SSB radio on 4125 MHz.

VHF Radio

EMERGENCY RADIO CALL PROCEDURES

1. MAKE SURE RADIO IS ON
2. SELECT CHANNEL 16
3. PRESS & HOLD TRANSMIT BUTTON
4. CLEARLY SAY: ***MAYDAY, MAYDAY, MAYDAY***
5. ALSO GIVE:
   - **VESSEL NAME & DESCRIPTION**
   - **POSITION/LOCATION**
   - **NATURE OF EMERGENCY**
   - **NUMBER OF PEOPLE ON BOARD**
6. RELEASE TRANSMIT BUTTON
7. WAIT 10 SECONDS — IF NO RESPONSE, REPEAT
8. Activate EPIRB or DSC button if radio is equipped.

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VHF-FM

CONFIRM ALL PERSONS WEARING LIFE JACKETS!

www.alaskaboatingsafety.org

In general, the fastest and most direct way to obtain emergency assistance on the water is to **call the Coast Guard on VHF Channel 16**. A series of mountaintop repeater stations relay signals to the Coast Guard base in Kodiak or to the nearest Coast Guard facility. A "High Level Site" at Rugged Island in lower Resurrection Bay provides excellent coverage to the area described in this publication. But remember that the VHF-FM signal is technically line-of-sight, and coverage may not be complete.

The Rescue 21 Digital Selective Calling Emergency Contact System is not yet operational in Alaska. For more information on when it will be operational, contact the U.S. Coast Guard.

Other Sources of Assistance:

- Coast Guard Marine Safety Anchorage: (907) 271-6700
- Pollution Reporting: (800) 424-8802
- Coast Guard Auxiliary: VHF Ch. 16 and CB Ch. 9
- Alaska State Troopers: CB Ch. 9, 9-1-1, (907) 288-3346 or Soldotna Dispatch (907)262-4453
- State Parks Seward Ranger Office: (907) 224-3434
- Caines Head State Recreation Area Ranger (seasonal): VHF Ch. 16
- Seward Fire Department: (907) 224-3445 (9-1-1 in an emergency)
- Seward Police Department: (907) 224-3338 (9-1-1 in an emergency)
- Seward Harbormaster: CB Ch. 9, VHF Ch. 16, 17, (907) 224-3138

For information on other common boating emergencies (fire, grounding, carbon monoxide, etc.) please obtain a copy of the Alaska Boater's Handbook visit www.alaskaboatingsafety.org

RESOURCES

Quick Reference

AK Dept. of Environmental Conservation (Oil Spill Reporting): (907) 269-3063, www.dec.state.ak.us/spar/spillreport.htm

AK Dept. of Fish and Game Soldotna Office: (907) 262-9368
www.adfg.alaska.gov

AK Maritime National Wildlife Refuge: (907) 235-6546
http://alaskamaritime.fws.gov

City of Seward regarding camping: (907) 224-4055
www.cityofseward.us

Kenai Fjords National Park: (907) 422-0500
www.nps.gov/kefj

NOAA Marine Weather: (800) 472-0391
www.arh.noaa.gov/textforecasts.php?type=marine

Seward Chamber of Commerce: (907) 224-8051
http://seward.com

Seward Harbormaster: (907) 224-3138 or VHF Ch 17
www.cityofseward.net/harbor

Charts

NOAA National Ocean Service, United States Coast Pilot 9, Pacific and Arctic Coasts of Alaska: Cape Spencer to the Beaufort Sea

NOAA Chart 16680 Point Erlington to East Chugach Island

NOAA Chart 16681 Seal Rocks to Gore Point

NOAA Chart 16682 Cape Resurrection to Two Arm Bay

NOAA Chart 16683 Point Erlington to Cape Resurrection

Print-at-Home Chart Booklets
www.nauticalcharts.noaa.gov

Boating Education

Alaska Boating Safety Program
www.alaskaboatingsafety.org

Alaska Kayak School
www.alaskakayakschool.com

American Canoe Association
www.americancanoe.org

Alaska Marine Safety Education Association
www.amsea.org

Knik Canoers & Kayakers
www.kck.org

National Association of State Boating Law Administrators
www.nasbla.org

National Safe Boating Council
www.safeboatingcouncil.org

National Water Safety Congress
www.watersafetycongress.org

United States Coast Guard Auxiliary
www.cgaux.org

Weather and Tides

National Weather Service, marine weather
http://pafc.arh.noaa.gov/marfcst.php

Tide Table websites
www.dnr.state.ak.us/parks/boating/tides.htm

Register Your Boat

Alaska Boat Registration, Department of Motor Vehicles
http://doa.alaska.gov/dmv/reg/boat.htm

Suggested Readings

Pfeiffenberger, Jim. *The Complete Guide to Kenai Fjords National Park*. Greatland Graphics, Anchorage, 1995.

Miller, David Wm. *Exploring Alaska's Kenai Fjords.* Wilderness Images Publishing, Seward, 2004.

Alaska Department of Fish and Game. *Kenai Peninsula Recreational Fishing Series – Seward Area.*

Alaska Park Science: Scientific Studies in Kenai Fjords National Park. National Park Service Vol. 3 No. 1.

Great Pacific Recreation & Trail Maps. *Alaska's Kenai Peninsula all-season recreation map.*

Harbor Business Association, Seward. *Directory of Marine Service Providers, Seward, Alaska.*

Seward Chamber of Commerce. *Destination Guide.*

Information pages from Miller's Landing www.millerslandingak.com and Kayak Adventures Worldwide www.kayakak.com.

Information pages at Kenai Fjords National Park. www.kenai.fjords.national-park.com.

Alaska Sea Kayaking *Resource Guide.*

Information pages from Alaska Division of Parks and Outdoor Recreation at www.dnr.state.ak.us/parks/units.

A Boater's Guide to the Federal Requirements for Recreational Boats, U.S. Government Printing Office.

Organizations

AK Dept. of Fish and Game, Soldotna Office
43961 Kalifornsky Beach Road, Ste. B
Soldotna, AK 99669
(907) 262-9368
www.adfg.alaska.gov

Alaska Office of Boating Safety
550 West 7th Avenue, Suite 1380
Anchorage, AK 99501
(907) 269-8706
www.alaskaboatingsafety.org

Alaska State Parks, Kenai Peninsula
PO Box 1247
Soldotna, AK 99669
(907) 262-5581
Lowell Point Office: (907) 224-3434
www.dnr.state.ak.us/parks

Chugach National Forest
Seward Ranger District
334 4th Avenue
Seward, AK 99664
(907) 224-3374
http://www.fs.usda.gov/chugach

City of Seward
410 Adam St.
Seward, AK 99664
(907) 224-3331
www.cityofseward.us

Kenai Peninsula Borough
144 North Binkley St.
Soldotna, AK 99669
(907) 262-4441
www.borough.kenai.ak.us

Seward Yacht Club
PO Box 90341
Anchorage, AK 99509
www.whsyc.org

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