

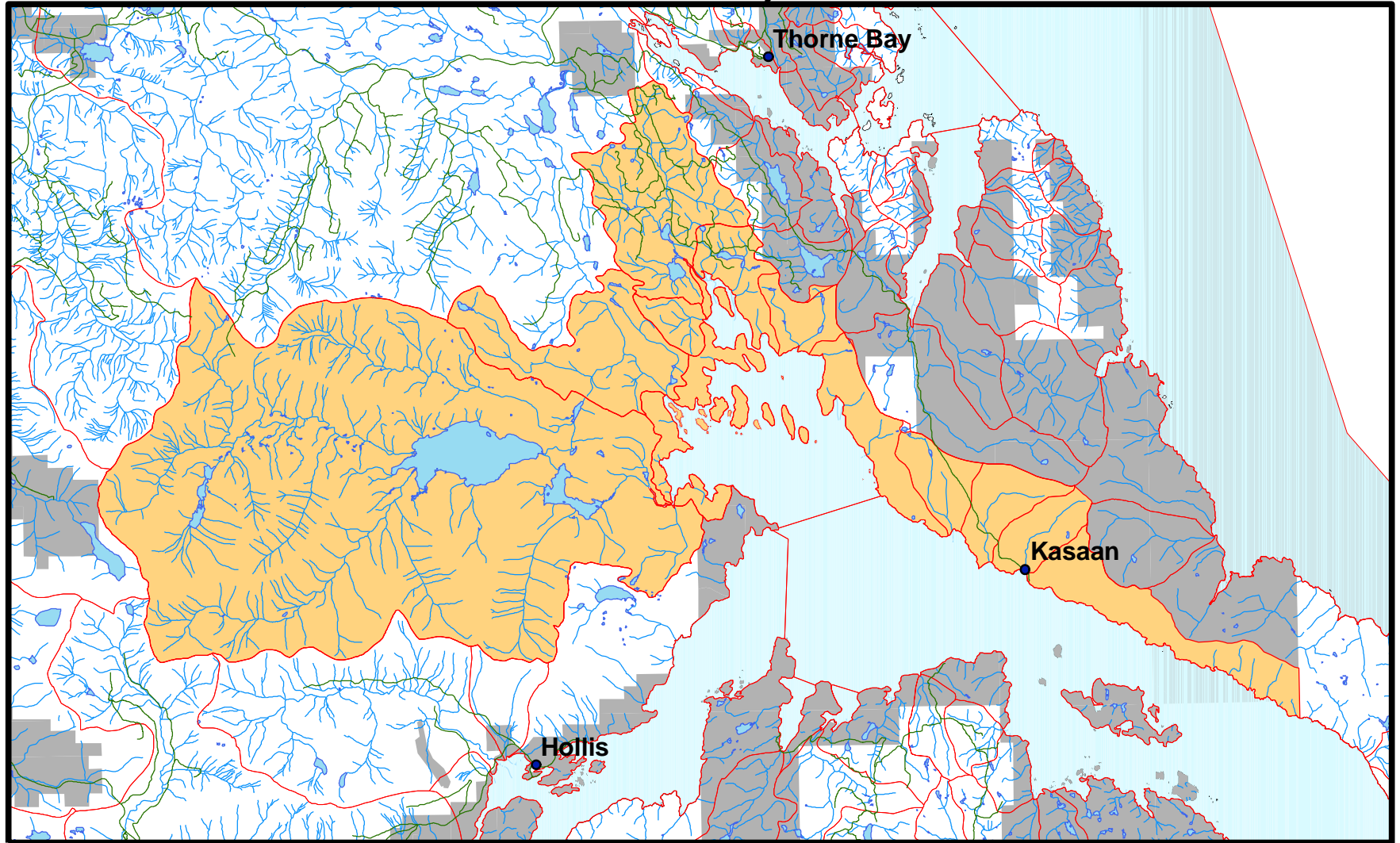
# **Kasaan Bay Watershed Management Plan**

Prepared by  
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Kasaan, AK

Prepared for  
Organized Village of Kasaan  
Department of Natural Resources

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# Kasaan Bay Watershed Council Watershed/Project Area



Project Area

Watershed (HUC) Boundary

Lakes

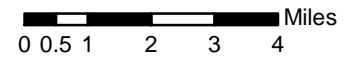


Non-National Forest Ownership

Saltwater

Streams

Roads



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### APPENDICES

- Appendix A Articles of Incorporation and By-laws of the Kasaan Bay Watershed Council
- Appendix B Excerpts from U.S. Forest Service Inventory of Abandoned Mines document
- Appendix C U.S. Forest Service Land Use Designations for Karta and Kasaan

## 1.0 Introduction

The purpose of the Kasaan Bay Watershed Management Plan is to provide a framework for the Organized Village of Kasaan and the Kasaan Bay Watershed Council to work from in order to address issues of concern with the defined boundaries (section 3.0). This plan is being prepared by the Organized Village of Kasaan, on behalf of the stakeholders of the Kasaan Bay Watershed and will be used as a starting point for stakeholders of the Kasaan Bay Watershed to address issues in their watershed. It is meant to begin prioritizing issues and guide better management practices within the watershed.

## 2.0 Kasaan Bay Watershed Council

The Kasaan Bay Watershed Council (KBWC) was developed in January of 2004, where the Organized Village of Kasaan invited stakeholders to gather and begin discussing potential issues with local waterbodies. It was decided that a formal Watershed Council would be developed, and become a not-for-profit organization. The stakeholder group, which became the Board of Directors for the KBWC includes:

Richard Peterson	Organized Village of Kasaan
Pam Kristovich	City of Kasaan
Della Coburn	Kasaan Community
Louie Thompson	Kavilco, Inc.
James Galaktainoff	Sealaska, Inc.
David Schmid	U.S. Forest Service
Clare Doig	State Mental Health
John Dunker	Department of Natural Resources
vacant	Private Landowners

The KBWC has begun applying for non-profit status, they have created by-laws and articles of incorporation (see Appendix A). These documents describe the overall structure and organizational procedure of the Council. A working committee to establish the watershed boundaries for the council was developed and the chosen boundaries were based on the historical traditional importance to the community of Kasaan. In May of 2004 the KBWC approved its working boundaries and the USFS digitized a map delineating these boundaries (see map). It was stated that these boundaries may extend in the future at the voting discretion of the KBWC.

## 3.0 Watershed Description

The Kasaan Bay Watershed is located on the east central side of Prince of Wales Island, Alaska. The boundaries start at Sandy Point (south of the mouth of the Karta River) and extend northward to include the Salt Chuck. From Salt Chuck, the boundary extends southward along the Kasaan Peninsula to Grindell Point (see map).

The Kasaan Bay Watershed includes the drainage basins of twelve creeks, three lakes, and the estuarine waters of Kasaan Bay. Waterways include the Karta River, Andersen Creek, McGilvery Creek, Flagstaff Creek, Paul Young Creek, Poorman Creek, Linkum Creek, Tinkum Creek, Son-i-hat Creek and a few un-named drainages. Lakes include Salmon Lake, Little Salmon (Karta) Lake and Lindeman Lake. Within the boundaries of the watershed is a

nationally designated Wilderness Area, the Karta River Wilderness, which is managed by the U.S. Forest Service.

### **3.1 Physical Characteristic of the Watershed**

#### *Geology/Topography:*

Most of Prince of Wales Island is characterized by steep, forested mountains (2,000-3,000 feet high) carved by glacial ice which left deep U-shaped valleys with streams, lakes, saltwater straits and bays. Within the Kasaan Bay Watershed, there are three Ecological Subsections (Nowacki, et. al., 2001): the Central Prince of Wales Volcanics Ecological Subsection (Prince of Wales Mountains Section), the Central Prince of Wales Till Lowlands Ecological Subsection (Kupreanof Lowlands Ecological Section), and the Kasaan Peninsula Volcanics Subsection.

The Central Prince of Wales Volcanics subsection has numerous small, steep valleys that coalesce to form broad U-shaped valleys along the larger drainages of Andersen and McGilvery Creeks and the Karta River. Approximately 92 percent of the Karta River Wilderness is included in the Central Prince of Wales Volcanics Ecological Subsection. Though the area consists mainly of volcanic rock, there are some outcroppings of dioritic and conglomerate rocks. Soils in higher elevations are less productive, shallow organic material. The highest peak in the wilderness is Pin Peak (3,806 feet) on the wilderness boundary. Glacial till soils of the Prince of Wales Till Lowlands dominate in lower elevations.

The Central Prince of Wales Till Lowlands subsection contains highly organic topsoil overlaying deep deposits of glacial till. Consequently, these lowland areas are poorly drained. Slopes within the Till Lowlands contain better drained mineral soils. Surrounding mountains protect the area. Approximately 8 percent of the Karta Wilderness is classified in the Central Prince of Wales Till Lowlands Ecological Subsection. Drainages of importance include the Salt Chuck, Karta River, and Paul Young Creek.

The Kasaan Peninsula Volcanics subsection consists of rounded volcanics and small, glaciated U-shaped valleys. Soils are typically organic in the higher elevations, supporting shrub and forested wetlands. In the valleys, soils are well-drained, supporting the characteristic spruce-hemlock forest of Southeast Alaska. Coastal soils are shallow with bedrock outcroppings. Drainages of importance include Poorman, Son-i-hat and Linkum Creeks.

#### *Vegetation*

Forested areas in the watershed are dominated by Sitka spruce (*Picea sitchensis*) and western hemlock (*Tsuga heterophylla*) with some western red cedar (*Thuja plicata*) and yellow cedar (*Chamaecyparis nootkatensis*), shore pine (*Pinus contorta*) and alder (*Alnus rubra*). However, only well-drained soils will support the productive spruce-hemlock forest. Poorly drained soils, like those of the Till Lowlands, support less productive forests of mixed conifer and lodgepole pine. Poorly drained soils, in the wettest areas, also support wetland vegetation of bogs and fens. Fire burned the wilderness area around the turn of the 21st century, but second-growth spruce and hemlock stand an average of 60 feet tall.

## *Climate*

Prince of Wales Island is dominated by a temperate climate heavily influenced by the Japanese Current, and most storms come from the Pacific. Precipitation is generally between 60 and 200 inches per year. Mountains and other islands adjacent to Prince of Wales protect parts of the island, modifying the weather and creating local microclimates. Temperatures range from 35 degrees in the winter to 70 degrees in the summer. Daylight changes from 15 ½ hours on the longest day of the year to about 7 hours on the shortest (Cove Connect 2005).

### **3.2 Land Use and Existing Management**

#### *Subsistence*

Defining subsistence is challenging given the natural resource and political ramifications. Historically, subsistence meant subsisting off of natural resources necessary for survival. In the early part of the eighteenth century, the Haida migrated northward from British Columbia into Southeast Alaska. A traditional subsistence lifestyle was practiced throughout the territory of Kasaan, which includes the Kasaan Bay Watershed.

In 1980 the Alaska National Interest Land Conservation Act (ANILCA) was passed and permitted “customary and traditional uses”, including the taking of resources for subsistence purposes. The following paragraphs became a legal description for subsistence uses (source: Alaska Statutes, Title 16 - Fish and Game. Chapter 05. Fish and Game Code. Sec. 16.05.940. Definitions):

“the noncommercial, customary and traditional uses of wild, renewable resources by a resident of the state for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption, and for the customary trade, barter, or sharing for personal or family consumption.”

"Customary and traditional" are defined as “the noncommercial, long-term, and consistent taking of, use of, and reliance upon fish or game in a specific area and the use patterns of that fish or game that have been established over a reasonable period of time taking into consideration the availability of the fish or game.”

Subsistence became a federally protected right and ANILCA gives preference to Native and non-Native rural subsistence users over commercial and sportfish users on federal lands. ANILCA authorizes the federal government to assume control of managing subsistence resources if the State of Alaska fails to enact and implement the subsistence priority on federal lands. Thus, subsistence is now a regulated practice in Alaska. Table 1 contains a list of subsistence species historically and currently used by the people of Kasaan (CCTHITA, 2004).

**Table1.** Species list of subsistence items used within the Kasaan Bay Watershed. Data is adapted from the “Report on Impacts of Military Activities on Subsistence Resources in Ten Southeast Alaska Communities” (CCTHITA, 2004).

Common Name	Scientific Name	Haa Aani	Subsistence Report	Community Interviews
<b>Fish</b>				
Black Cod	<i>Anoplopoma fimbria</i>	X	X	X
Flounder	<i>Plattichthys tellatus</i>			X
Halibut	<i>Hipoglossus stenolepis</i>	X	X	X
Herring	<i>Culpea harnengus</i>			X
Herring Eggs	<i>Valenciennes sp.</i>	X	X	X
Hooligan	<i>Thaleichthys pacificus</i>		X	X
Ling Cod	<i>Ophiodum elongates</i>			X
Pacific Cod	<i>Gadus macrocephalus</i>	X	X	X
Red Snapper	<i>Sebastes ruberrimus</i>	X	X	X
Salmon eggs	<i>Oncorhynchus spp.</i>			X
Salmon, Chum	<i>Oncorhynchus keta</i>	X		
Salmon, Coho	<i>Oncorhynchus kisutch</i>	X	X	X
Salmon, King	<i>Oncorhynchus tshawytscha</i>	X	X	X
Salmon, Pink	<i>Oncorhynchus gorbuscha</i>	X		X
Salmon, Sockeye	<i>Oncorhynchus nerka</i>	X	X	X
Sculpin	<i>Cottidae spp.</i>			X
Trout, Cutthroat	<i>Oncorhynchus clarkia</i>		X	X
Trout, Dolly Varden	<i>Salvelinus malma</i>		X	X
Trout, Steelhead	<i>Oncorhynchus mykiss</i>	X	X	
<b>Marine Mammals</b>				
Harbor Seal	<i>Phoca vitulina</i>			X
Sealion	<i>Eumetopias jubata</i>			X
Sea Otter	<i>Enhydra lutris</i>			X
<b>Marine Intertidal species</b>				
Abalone	<i>Haliotis kamtschatkana</i>			X
Black Seaweed	<i>Porphyra spp.</i>	X	X	X
Chitons	<i>Katherina tunicate</i>	X	X	X
Clams, Butter	<i>Saxidomus gigantea</i>	X	X	
Clams, Giant	<i>Mythic sp.</i>	X	X	X
Clams, Horse	<i>Tresus nuttallii</i>	X	X	X
Clams, Littleneck	<i>Prothaca staminea</i>	X	X	X
Clams, Razor	<i>Silqua sp.</i>	X	X	
Cockles	<i>Clinocardium nuttallii</i>	X	X	X
Crab, Box	<i>Lopholithoides spp.</i>			X
Crab, Dungeness	<i>Cancer magister</i>		X	X
Crab, King	<i>Paralithoides camtschatica</i>			X
Kelp	<i>Laminaria spp.</i>			X
Limpet	Various spp.			X
Mussels	<i>Mytilus trossolus</i>			X

Common Name	Scientific Name	Haa Aani	Subsistence Report	Community Interviews
Octopus	<i>Octopus dofleini</i>			X
Sea Cucumbers	<i>Parastichopus sp</i>			X
Sea Urchins	<i>Strongylocentrotus spp</i>			X
Shrimp	<i>Pandalus spp.</i>		X	X
Scallops	<i>Chlamys hastate</i>			X
Slippers	<i>Crepidula sp.</i>			X
<b>Land Mammals</b>				
Beaver	<i>Castor canadensis</i>	X		
Black Bear	<i>Ursus americanus</i>	X		
Brown Bear	<i>Ursus across</i>			X
Deer	<i>Odocoileus sitkensi</i>	X	X	X
Land Otter	<i>Lutra canadensis</i>	X		X
Marten	<i>Martes americana</i>			X
Mink	<i>Mustela vison</i>	X		X
Wolf	<i>Canis lupis</i>			X
<b>Birds</b>				
Canada Goose	<i>Branta canadensis</i>			X
Eggs, Gull	<i>Anas spp.</i>			X
Mallard	<i>Anas platyrhynchos</i>			X
Spruce Grouse	<i>Canachites candensis</i>			X
<b>Plants/Berries</b>				
Blueberry/Huckleberry	<i>Vaccinium spp.</i>	X	X	X
Cedar, Red	<i>Thuja plicata</i>			X
Cedar, Yellow	<i>Chamaecyparis nootkatensis</i>			X
Clover	<i>Trifolium wormskjoldii</i>			X
Cottonwood	<i>Populus balsamifera</i>			X
Crab Apples	<i>Malus fusca</i>			X
Cranberry, Highbush	<i>Biburnum edule</i>	X		
Cranberry, Lowbush	<i>Vaccinium vitus</i>			X
Currant	<i>Ribes spp.</i>	X		X
Devil's Club	<i>Oplopanax horridus</i>			X
Elderberry	<i>Sambucus racemosa</i>			X
Ferns	<i>Polypodiaceae spp.</i>			X
Fireweed	<i>Epilobium angustifolium</i>			X
Goose Tongue	<i>Triglochin maritime</i>			X
Hemlock Bark/branch	<i>Tsuga heterophylla</i>		X	X
Hudson Bay Tea	<i>Ledum palustre</i>			X
Indian Rice	<i>Fritillaria camschatcensis</i>			X
Mushrooms	Various sp.			X
Potatoes	<i>Solanum tuberosum</i>	X		
Raspberry	<i>Rubus pedatus</i>			X
Rosehips	<i>Rosa nutkana</i>			X
Rutabaga	<i>Brassica napabrassica</i>	X		
Salalberry	<i>Gaultheria shallon</i>	X		X



Common Name	Scientific Name	Haa Aani	Subsistence Report	Community Interviews
Salmonberry	<i>Rubus spectabilis</i>	X		X
Sea Asparagus	<i>Salicornia spp.</i>			X
Serviceberry	<i>Amelanchier florida</i>			X
Skunk Cabbage	<i>Lysichiton americanum</i>			X
Soapberry	<i>Shepherdia canadensis</i>			X
Spruce	<i>Picea sitchensis</i>			X
Thimbleberry	<i>Rubus parviflorus</i>			X
Wild Celery	<i>Heracleum lanatum</i>			X
Wild Rhubarb	<i>Rumex spp.</i>			X

### *Mining*

Mining was also an important part of the island's early history. Mining activity rapidly expanded and died during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, during World War II. However, many mining claims and exploratory work still exist on the island. Gold, copper, silver, palladium, lead, uranium, and zinc are important minerals found on the island.

Mining on the Kasaan peninsula began in 1867, when Charles Vincent Baranovich staked the first copper lode mine in Alaska on the eastern shores of Hetta Inlet. His claim later developed into the Copper Queen Mine on the island. Other mining operations and supply centers throughout the island soon followed. Kasaan Peninsula is still rich with copper prospects and the area behind the bay is rich in gold.

Notable historic mines located in the Kasaan Bay Watershed include the Copper Queen Mine, Salt Chuck Mine, and Flagstaff Mine. The Copper Queen Mine was built in 1892 on Kasaan Bay. The Haida people of Old Kasaan relocated their village between 1892 and 1900 to Kasaan Bay after the Copper Queen Mine was built. The Copper Queen Mine went bankrupt after four years. The Copper Queen Mine was reactivated in 1900 and worked until 1902 (Alaska Dept. of Commerce). Kasaan Peninsula is still rich with copper prospects and the area behind the bay is rich in gold.

In the 1900s a number of copper mines were developed around the Salt Chuck and Karta Bay areas. The Salt Chuck Mine became the first copper concentrating operation in Southeast Alaska. In addition to copper, the mill also collected palladium and platinum using floatation. The Salt Chuck Mine was the largest producer of palladium in the United States during its peak in the 1920s. The Salt Chuck Mine remained active until the 1940s.

The Flagstaff Mine, located in what is now the Karta River Wilderness area, produced silver and gold in the 1920s (U.S. Dept. of Agriculture). The area was staked prior to 1905, but there was little work on the property until 1935. The Flagstaff Mine had a total production of 257 ounces of gold, 1980 ounces of silver, 2684 pounds of copper, and 5926 pounds of lead from 873 tons of ore (Grybeck, 2004).

Mineral exploration and mining occurred in the Karta River Wilderness throughout the early 1900s. Many of the mining remnants still exist in the wilderness area, providing a historical attraction for the area's visitors. However, the wilderness is closed to mining, prospecting, and exploration beyond those areas that are already have a valid claim or are patented (Grybeck, 2004). Table 2 contains a list of historical mining operations within the Kasaan Bay Watershed.

**Table 2.** Summary of mine operations found with the KBWC. Information was taken from the “History of Mines and Prospects, Ketchikan District, Prior to 1952” (Bufvers, 1967), “Inventory of Abandoned and Inactive Mines, 1995/1996 Results, Chatham, Stikine and Ketchikan Areas” (U.S. Forest Service, 1997) and U.S. Geological Survey, Alaska Resource Data File, Craig Quadrangle, Open File Report No. 2004-1384 (Grybeck, 2004).

Claim Name	Latitude	Longitude	Claim Type	Alias	Dates of Operation	Minerals Mined
Salt Chuck*+	55.6339	132.5602	Mine	Joker, Goodro	1906-1941	Au, Cu, Pd, Ag, Pt
Copper Center	55.6180	132.5063	Prospect		1907-1915	Gold, Copper
Brown and Metzendorf	55.5882	132.4814	Mine	Shepperd Copper	1908-1915	Gold, Cu, Fe, Mo
Rush and Brown*	55.6256	132.5880	Mine		1904-1923	Ag, Au, Cu, Fe
Haida	55.6053	132.4921	Mine	Mammoth	1905-1908	Ag, Au, Cu, Fe
It++	55.5778	132.4648	Mine	Reed	1907-1918	Ag, Au, Cu
Poorman++	55.5582	132.4379	Mine	Copper King, Morning Star	1946	Cu, Fe, Ag, Au
Copper Queen++	55.5388	132.3839	Mine		1867-1906	Cu, Fe
Uncle Sam++	55.5327	132.3752	Mine	White Eagle, Elm City	1899-1907	Cu, Fe, Au
Rich Hill++	55.5254	132.3457	Mine		1917-1928	Cu, Fe, Ag, Au
Pelaska	55.5351	132.3032	Prospect	Venus, Hilma	1908	Cu

<b>Claim Name</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Claim Type</b>	<b>Alias</b>	<b>Dates of Operation</b>	<b>Minerals Mined</b>
Mount Andrew++	55.5167	132.3021	Mine		1906-1914	<b>Cu, Fe, Ag, Au</b>
Maime++	55.5191	132.2839	Mine		1902-1908; 1913-1918	<b>Cu, Fe, Ag, Au</b>
Stevenstown++	55.5173	132.2882	Mine		1906-1908	<b>Cu, Fe, Ag, Au</b>
Flagstaff*+	55.5355	132.6627	Mine	Last Chance	1920s-1941	<b>Cu, Fe, Ag, Au, Zn</b>
McGilvery+	55.5453	132.8385	Prospect	Independent	1903	<b>Au, Pb, Zn</b>
Lucky Jim+	55.5220	132.6737	Prospect		1908	<b>Ag, Au, Pb</b>
Dew Drop+	55.5198	132.8054	Prospect	Rose	1905	<b>Ag, Au, Cu, Pb, Zn</b>
Lucky Find+	55.5284	132.6828	Prospect		1908	<b>Cu, Au</b>
Clipper+	55.5304	132.6737	Prospect	Cutter, Bendingo	1908	<b>Ag, Au, Cu, Pb</b>
Buckhorn+	55.5336	132.6769	Prospect		1908	<b>Ag, Cu, Pb</b>
Juneau+	55.5498	132.6851	Prospect	Go-by	1908	<b>Au, Cu, Pb</b>
Lone Jack+	55.5634	132.6789	Prospect		1938	<b>Ag, Au, Cu</b>
Unnamed+	55.5746	132.6423	Occurrence	(outlet of Salmon Lake)	1961	<b>Cu, Pb, W</b>
Unnamed	55.6048	132.6007	Occurrence	(near Paul Young Creek)	1919	<b>Cu</b>

Claim Name	Latitude	Longitude	Claim Type	Alias	Dates of Operation	Minerals Mined
Venus	55.6094	132.5868	Prospect		1904	Ag, Au, Cu, Fe, Zn
Stevens	55.6200	132.5396	Prospect			Cu
Charles	55.5929	132.4761	Prospect		1907	Cu, Fe, Ag, Au
Alarm++	55.5820	132.4671	Mine		?-1919	Cu, Fe
Unnamed++	55.5721	132.4445	Occurrence	(head of Poorman Creek)		Cu, Fe, Ag, Au
Iron King++	55.5452	132.4248	Prospect			Au, Cu, Fe
Unnamed++	55.5428	132.3612	Prospect	(near Kasaan Mountain)	1915	Ag, Au, Pb, Ba
Tacoma++	52.5212	132.3366	Prospect	Peacock	1906	Cu, Fe

\* Mines listed as an abandoned mine inventoried in U.S. Forest Service Service, 1997

+ Claims within the Karta River Wilderness, which is closed to prospecting and mining (Grybeck, 2004)

++ Claims on or surrounded by land whose subsurface rights are held by Sealaska Corporation, or claims which Sealaska Corporation purchased the patent (Grybeck, 2004)

### *Logging*

The logging industry supported the island's economy after the mining activity came to an end. Timber harvest has affected the island landscape since the 1500s, with harvesting activity peaking in the 1960s and 70s. The Ketchikan Pulp Mill, during its operation from the 1950s to the 1990s, provided much of the island's employment. Much of the timber is managed by the Native Corporations of Prince of Wales Island.

Timber harvest has occurred in the Karta River Wilderness since the 1950s and has been the dominant human activity affecting the land. Before large scale logging, timber (especially cedar) was traditionally harvested to build houses, totem poles, make daily utensils, storage and cooking boxes, canoes, ceremonial objects, labrets (worn by high status women), and even clothes. Cedar was also important in weaving baskets that were used for cooking, storage, and for holding clams, berries, seaweed and water.

In 1979 Kivilco Corporation sold their timber rights to ITT Rayonier. Logging activities were sporadic, due to the economy and value of timber, through the 1980's. The company logged within the Linkum Creek watershed (Kasaan's drinking water source) and voluntarily left a 100 foot buffer zone along the stream. However, this logging activity may have contributed to landslides that contaminated the Kasaan water supply in 1998.

*Fishing*

There are 26 anadromous fish streams within the Kasaan Bay Watershed, producing large stocks of pink and chum salmon which contribute to the commercial fishery (see Table 3). Coho and sockeye salmon are also produced and commercially fished in the area, with the Karta River being the largest producer of sockeye salmon. Subsistence fishing by local residents is an important part of the community. Within the Kasaan Bay Watershed, the Karta River produces sockeye salmon and steelhead which are the primary subsistence fishing resource. The Karta River also hosts excellent sport fishing opportunities with world-class steelhead fishing. The first salmon cannery in Kasaan was built in 1901. The cannery was rebuilt three times, in 1907, 1910 and 1911, each time following fire. The cannery operated inconsistently until it was closed for good in 1953. In 1974, Kivilco, Inc. bought the cannery buildings and completely removed them in 1980.

**Table 3.** List of classified anadromous streams within the boundaries of the Kasaan Bay Watershed. Information was collected from the Alaska Department of Fish and Game Anadromous Fish Catalog.

<i>Catalog number</i>	<i>Stream name</i>	<i>Species present</i>	<i>Habitat type</i>
102-60-10866	Unnamed	Pink	Spawning
102-60-10867	Unnamed	Pink	Spawning
102-60-10869	Karta River tributary	Coho, Steelhead, Dolly Varden, Cutthroat	Present
102-60-10870	Karta River	Sockeye, Coho, Pink, Chum, Steelhead, Dolly Varden, Cutthroat	Present
102-60-10870-2004	Karta River tributary	Coho, Dolly Varden	Present
102-60-10870-0010	Karta Lake	Sockeye, Coho, Pink, Steelhead, Dolly Varden, Cutthroat	Present
102-60-10870-2007	Karta Lake tributary	Steelhead, Dolly Varden	Present
102-60-10870-2012	Piggyback Creek	Coho, Steelhead, Dolly Varden, Cutthroat	Present
102-60-10870-2012	Salmon Lake	Coho, Steelhead, Dolly Varden, Cutthroat	Present
102-60-10870-2015	Salmon Lake tributary – south shore	Coho, Steelhead, Dolly Varden, Cutthroat	Present
102-60-10870-2020	Salmon Lake tributary – north shore	Coho, Steelhead, Dolly Varden, Cutthroat	Present
102-60-10870-2022	Anderson Creek	Sockeye, Coho, Steelhead	Present
102-60-10870-2021	McGilvery Creek	Sockeye, Coho, Steelhead	Present
102-60-10930	Paul Young Creek	Coho, Pink, Chum, Steelhead, Cutthroat	Present

<i>Catalog number</i>	<i>Stream name</i>	<i>Species present</i>	<i>Habitat type</i>
102-60-10930-2006	Paul Young Creek tributary	Coho, Cutthroat	Present
102-60-10950	Salt Chuck Creek	Coho, Pink, Chum, Steelhead, Dolly Varden, Cutthroat	Present
102-60-10950-2003	Salt Chuck Creek tributary to Lake Ellen	Coho, Cutthroat	
102-60-10950-0010	Lake Number 3	Coho, Steelhead, Dolly Varden, Cutthroat	Present
102-60-10950-2006	Salt Chuck Creek tributary	Coho	Rearing
102-60-10960	Lindeman Creek	Dolly Varden	Present
102-60-10970	Poorman Creek	Coho, Pink, Dolly Varden, Cutthroat	Present
102-60-10970-2008	Poorman Creek (Label Creek)	Coho, Cutthroat	Present
102-60-10980	Son-i-hat Creek	Coho, Pink	Present
102-60-10987	Unnamed Creek	Pink	Present
102-60-10990	Linkum Creek	Pink	Present
102-60-10992	Unnamed Creek (Tinkum)	Pink	Present

### *Aquaculture*

There are no current aquaculture sites within Kasaan Bay. However, the Organized Village of Kasaan has been actively pursuing aquaculture opportunities at defined aquaculture sites within the bay to provide economic development, employ tribal members, and generate income for OVK.

### *Land Use and Management*

Land use within the Kasaan Bay Watershed has been diverse in the past. Resource extraction in the form of logging and mining has been heavy, as well as use of the fisheries (commercial, sportfishing and subsistence). Within the boundaries of the watershed there is also a federally designated wilderness area and many identified cultural resource sites. Within the boundaries of the watershed, the land is managed by several entities including the U.S. Forest Service, the State of Alaska, Native Corporations, Mental Health, and municipalities.

The U.S. Forest Service manages 83 percent of the land on Prince of Wales Island, including the Karta River Wilderness and the South Prince of Wales National Forest (which is not located in the Kasaan Bay Watershed Boundaries) as a part of the 16.8 million acre Tongass National Forest. The Karta River Wilderness Area is located 10 miles northeast of Craig and consists of 39,889 acres of land. This area is included in the 55,527 acres of roadless area managed by the U.S. Forest Service. In addition, the U.S. Forest Service manages 1,280 acres of land on the Kasaan Peninsula. The land managed by the U.S. Forest Service is approximately 61.7 percent of the Kasaan Bay Watershed.

Native Corporations also own large tracts of land on the island. Land owned by the Native Corporations is classified as private land. Two corporations, Sealaska Corporation and Kivilco, Inc., own land within the Kasaan Bay Watershed boundaries. There is an estimated total of 8,640 acres of land managed by both corporations within the Kasaan Bay Watershed Boundaries, located on the Kasaan Peninsula and in the Karta Bay area. Approximately 2,471 acres are managed by Sealaska, and 6,169 acres by Kivilco, Inc.

Other land holdings include the State of Alaska (an estimated 7,680 acres), Mental Health Land (an estimated 3,840 acres), municipalities (an estimated 960 acres), and other private lands (an estimated 6,400 acres). Land areas were mathematically estimated from maps provided in the Prince of Wales Island Area Plan (DNR 1998).

Land Use Designations (LUD) for federal lands includes the Karta LUD (510) and the Kasaan LUD (520), and designations were determined by the U.S. Forest Service (USFS 2003). The Karta Roadless Area (510) includes area within the Kasaan Bay Watershed boundaries, but also into adjacent watersheds for a total of 55,527 acres of land. This area was allocated seven land use designations including: timber production, modified landscape, experimental forest, scenic view shed, old-growth habitat, semi-remote recreation and municipal watershed. The Kasaan Roadless Area (520) is 7,602 acres and is located on the southern tip of the Kasaan Peninsula. This area was allocated three land use designations including: transportation and utility system, old-growth habitat and semi-remote recreation. The individual roadless area descriptions for the Karta and Kasaan LUD may be found in Appendices B and C respectively (USFS, 2003)

Current land use designations for state lands within the Kasaan Bay Watershed are outlined in the Prince of Wales Island Area Plan (1998) which was prepared by the Alaska Department of Natural Resources (DNR). The plan covers state uplands, tidelands and submerged lands and does not include federal, municipal, university, mental health, Native or other private lands. Units 11 and 12 outlined in the plan, cover the Kasaan Bay Watershed boundaries. Table 4 outlines the designations by sub-unit (DNR 1998).

Local land use plans are documented in the City of Kasaan's Code of Ordinances. Chapter 6.07 describes general watershed provisions for Linkum Creek Watershed, which includes Linkum Creek and the Linkum Creek Buffer Strip. Chapter 6.08 defines Watershed – Use Permit and Chapter 6.09 defines Watershed – Use. Table 5 denotes the uses (allowable and prohibited) for the Kasaan Watershed.

**Table 4.** Land use designations for State owned lands within the Kasaan Bay Watershed. Information was extracted from the “Prince of Wales Island Area Plan” (Alaska Department of Natural Resources, 1998

Management Designation	Karta Bay Subunit 11b	Kasaan Bay Subunit 12c
Aquatic Farming	Not allowed in Karta Bay.	Not allowed within 1 mile of Grindell Island.
Cultural Resources	There are 11 identified sites in the subunit. All development activities should avoid cultural sites to protect the resource.	There are 7 identified sites in the subunit. All development activities should avoid cultural sites to protect the resource.
Fish and Wildlife	Karta Bay and Salt Chuck have high fish and wildlife habitat and harvest values. Lands designated for fish and wildlife habitat should be managed to avoid impacts to habitat and traditional harvest activities. There is crucial habitat, intensive community use and intensive sport harvest designations identified within the subunit.	Lands designated for fish and wildlife habitat and harvest should be managed to avoid impacts to habitats and traditional harvest activities. There is crucial habitat, prime habitat, intensive commercial harvest, intensive community use and intensive sport harvest designations identified within the subunit
Floathomes	Not allowed in Karta Bay	Not allowed within 1 mile of Grindell Island
Forestry	State tidelands and submerged lands designated for forestry practices should be managed for either an upland transfer site or floating A-frame logging, consistent with other co-primary activities. Sealaska Corporation will be encouraged to use the same long transfer site as Kavalco, south of Kavalco lands.	State tidelands and submerged lands designated for forestry practices should be managed to support timber harvest consistent with other co-primary activities.



Minerals	State tidelands and submerged lands designated for minerals should be managed for access to upland mineral resources and be consistent with other co-primary activities. Any resource transfer facility in the Salt Chuck area should demonstrate it is not feasible to locate facilities out of the upper bay. Mineral entry is closed at the mouths of Paul Young Creek and an anadromous fish stream draining into upper Salt Chuck.	State tidelands and submerged lands designated for minerals should be managed for access to upland mineral resources and be consistent with other co-primary activities. Mineral entry is closed to ands on Grindell Island.
Recreation	There are 4 USFS public cabins, an anchorage, and intensive recreation designations in the subunit. State tidelands and submerged lands that are access points for upland recreation should be managed to preserve or improve recreational activities and values.	There are 9 anchorages, 2 potential marine parks and a public cabin designation in the subunit. State tidelands and submerged lands should be managed to maintain anchorage use and avoid impacts to the sea lion haulout on Grindell Island. Grindell Island will be managed for recreation by the Division of Parks and Outdoor Recreation. State tidelands and submerged lands that are access points for upland recreation should be managed to preserve or improve recreational activities and values.
Settlement	There is no settlement activities proposed in this subunit.	The long term management intent for state selection at Kasaan Bay is for land disposal for a small community and the use of upland resources, including timber harvest. The selection should be managed for general use and retain suitability for a prospective community. Residential land disposals are not planned during the next 20 years. Commercial and industrial activities should be allowed consistent with the guidelines of the land use plan

**Table 5.** Land use designations from the City of Kasaan’s Code of Ordinances for the Kasaan Watershed (does not extrapolate to the entire Kasaan Bay Watershed boundaries).

Uses	Prohibited Uses	Permitted Uses	Uses Subject to Conditions
<ul style="list-style-type: none"> <li>• Traditional and customary food harvest</li> <li>• Trapping</li> <li>• Preliminary mineral exploration</li> <li>• Road maintenance</li> <li>• Access to and maintenance of Municipal Water System</li> <li>• Reforestation and Silvicultural Management Activities</li> </ul>	<ul style="list-style-type: none"> <li>• Residential development</li> <li>• Recreational improvements</li> <li>• Off road recreational vehicles</li> <li>• Fish passes providing access to anadromous fish above water intake facility</li> </ul>	<ul style="list-style-type: none"> <li>• Commercial, industrial and other uses not prohibited, provided a watershed use permit or forest practices notification be attained.</li> </ul>	<ul style="list-style-type: none"> <li>• Timber harvest</li> <li>• Advanced mineral exploration, development and production</li> <li>• Developing roads and logging roads and maintenance of these road</li> </ul>

*Wilderness area*

The Karta River Wilderness is ten miles northeast of Craig, located at about the middle of Prince of Wales Island. Access is by boat, float plane and/or on foot. This wilderness area encompasses



Pictured: The U.S. Forest Service cabin on Salmon Lake

39,889-acres, and is part of the 106 million acre National Wilderness Preservation System. The Karta River Wilderness also encompasses many of the drainages of concern to the Kasaan Bay Watershed such as those of Andersen, McGilvery, Flagstaff, and Piggyback Creeks and Salmon and Little Salmon Lakes. The Karta River system directly drains into the Karta Bay, a western extension off the head of Kasaan Bay.

Not only does the Karta River Wilderness provide recreational activities such as hiking, backpacking, climbing, kayaking, canoeing, rafting, horse packing, bird watching, and stargazing, but is also important habitat

for Prince of Wales wildlife. Karta River Wilderness is best known for large salmon runs, and other wildlife including black bears, black-tailed deer, beavers, otters, minks, martens, weasels, and Trumpeter swans are commonly seen on the river. Due to the rich resources, the Haida historically lived around the Karta Bay.

The United States Congress designated the Karta River Wilderness in 1990. As a wilderness area, motorized equipment and equipment used for mechanical transport is generally prohibited in the Karta River watershed. This includes the use of motor vehicles, motorized equipment, bicycles, hang gliders, wagons, carts, and portage wheels unless provided for in specific legislation. In Alaska, wilderness areas do allow for the use of motor boats and the landing of aircraft. The Forest Service maintains four cabins for recreational use in the Wilderness area. Two of these cabins are located on the Karta River. Fishing and hunting are allowed during the regulated seasons.

The Forest Service encourages visitors to follow the requirements and prohibitions outlined by their agency and use Leave No Trace techniques when visiting the Karta River Wilderness to ensure the protection of the area. All general prohibitions have been implemented for all national forest wildernesses in order to implement the provisions of The Wilderness Act of 1964.

### 3.3 Waterbody Descriptions

Andersen Creek: Shallow lakes (made by beaver dams) and precipitation supply Andersen Creek with water. Andersen Creek is about 7.6 miles long. A springtime discharge measurement was taken at Anderson Creek with a result of 100.3 cfs. Andersen Creek's channel is, on average, 65 feet in width and 14 inches in depth. The channel has approximately 33,551 square miles of spawning habitat (Larson and Down 1974). Andersen Creek runs through stands of Sitka spruce and western hemlock forest. Other trees include western red and yellow cedar, alder, and shore pine. Andersen Creek, as a part of the wilderness area, is used for recreation and fishing during the regulated seasons for sockeye and coho salmon.



Pictured: Andersen Creek

Flagstaff Creek: Flagstaff creek empties into Salmon Lake on the southern shoreline. The creek hosted the Flagstaff mine, which produced gold, silver, copper and lead. Elevated levels of silver, mercury and zinc have been found in the creek (US. Forest Service, 1997) and it is assumed that the contamination is coming from the abandoned mine site. Flagstaff Creek runs through stands of Sitka spruce and western hemlock forest. Other trees include western red and yellow cedar, alder, and shore pine.

Karta River: The Karta River system is located in the Karta River Wilderness area. Large creeks including McGilvery, Anderson, Flagstaff and Piggyback supply water to Salmon Lake. The Salmon Lake outlet is the Karta River, which also passes through Little Salmon Lake (aka Karta Lake). Salmon Lake is located approximately 3,800 feet above sea level and the Karta River has an average annual stream flow of 458 cfs. Data on the Karta River flow regime is available from USGS. The Karta River channel is, on average, 80 feet in width and 20 feet in depth. The channel has approximately 35,317 square miles of spawning habitat (Short and Behr 1973).

The Karta River runs through stands of Sitka spruce and western hemlock forest. There is also a significant population of western red and yellow cedar. Within the wilderness area, there is approximately 402 acres of muskeg. The Karta River, as a part of the wilderness area, is used for recreation and fishing during the regulated seasons for sockeye, chum, pink, and coho salmon. Other species include Dolly Varden char, steelhead, and cutthroat trout. Nearshore area adjacent to the mouth of the Karta has been designated as crucial habitat under the Prince of Wales Island Area Plan (DNR 1998).

Lindeman Creek: During a reference search for this plan, no information for Lindeman Creek was found.

Linkum Creek: Linkum Creek is located near Kasaan. The soils in the valleys are typically well-drained. In higher elevations within the drainage, the soils more organic, supporting shrub and forested wetlands. The well-drained soils of the valleys on the Kasaan Peninsula support the productive stands of Sitka spruce and western hemlock forest. Other trees include western red and yellow cedar, alder, and shore pine. Linkum Creek once flowed through such a forest on a steep slope dominated by glacial silt (blue clay).

However, extensive logging has recently occurred in the Linkum Creek watershed by ITT Rayonier after the company purchased the timber rights from Kavilco Corporation. Since Linkum Creek is used as the drinking source for the village of Kasaan, many residents were concerned about the effects of logging on their water supply. Water from the creek is treated and piped to all homes. The timber company, due to the concerns of citizens, voluntarily left a 100 foot buffer along the stream



Pictured: Linkum Creek

after clear-cutting much of the watershed. However, in November 1998, a blow-down along the buffer zone created siltation problem in the creek and the drinking supply of the town.



Pictured: McGilvery Creek

McGilvery Creek: McGilvery Creek is approximately six miles long and drains 5.9 square miles of land. McGilvery Creek drains into Salmon Lake, which is designated as crucial habitats (DNR 1998), on the west end. The McGilvery Creek channel is, on average, 65 feet in width and 14 inches in depth. The channel has approximately 51,504 square miles of spawning habitat (Short and Behr 1973<sub>b</sub>). McGilvery Creek runs through stands of Sitka spruce and western hemlock forest. Other trees include western red and yellow cedar, alder, and shore pine. McGilvery Creek, as a part of the wilderness area, is used for recreation and fishing during the regulated seasons for coho and sockeye salmon.

Paul Young Creek: The source of Paul Young Creek is springs and run-off. Paul Young Creek is approximately eight miles long and drains 20 square miles of land. Paul Young Creek hosts three unnamed lakes. These lakes are located at elevations of 100, 200, and 1,350 feet and consist of 15, 20, and 40 acres of water respectively. The Till Lowlands has a high percentage of floodplain and Palustrine channel types. The channel of Paul Young Creek has approximately 7,358 square miles of spawning habitat (Novak and Do—ey 1974). Paul Young Creek runs through stands of Sitka spruce and western hemlock forest. Other trees include western red and yellow cedar, alder, and shore pine. Paul Young Creek supports pink, chum, and coho salmon.



Pictured: Paul Young Creek

Piggyback Creek: During a reference search for this plan, no information for Piggyback Creek was found.



Pictured: Poorman Creek

Poorman Creek: The source of Poorman Creek is a spring and a small, unnamed lake. Poorman Creek is approximately one and one half miles long and drains two square miles of land. The creek's source lake rests at 350 feet above sea level and consists of ten acres of water. The channel of Poorman Creek has approximately 13 square miles of spawning habitat (Novak 1974). Poorman Creek runs through stands of Sitka spruce and western hemlock forest. Other trees include western red and yellow cedar, alder, and shore pine. Fish species include Pink, chum, and coho salmon along with Dolly Varden Char. The nearshore waters at the mouth of Poorman Creek have been designated as crucial habitat (DNR 1998).

Salt Chuck: The Till Lowlands through which the Salt Chuck runs has such a smooth topography that it allows for meandering, slow-moving rivers. The area consists mostly of organic soils that overlay deep deposits of glacial till. The Salt Chuck runs through the low productive forests of mixed conifer and shore pines typical of the poorly drained till soils. The more productive stands of Sitka spruce and western hemlock forest grow along the better drained soils of the stream cut banks. Other trees include western red and yellow cedar, alder, and shore pine. Salt Chuck supports Coho, pink, chum, steelhead, Dolly Varden and cutthroat trout. The nearshore area surrounding the mouth of the Salt Chuck has been identified as crucial habitat and is an important area for community harvest/subsistence. In addition, Lake Ellen and Lake Nu on the Salt Chuck system are identified as crucial habitat (DNR 1998).

Son-i-hat Creek: The channel has approximately 2,354 square miles of spawning habitat (Novak, unpublished data). Son-i-hat Creek runs through stands of Sitka spruce and western hemlock forest. Other trees include western red and yellow cedar, alder, and shore pine.

Unnamed Creeks: There are several unnamed creeks within the boundaries of the Kasaan Bay watershed. Those catalogued as anadromous fish streams are references in Table 3. During a records search, there was no other information available for these drainages.

### 3.4 Economic Base

Based on the Alaska Department of Commerce-Alaska Economic Information System (ADOC-AEIS), the economy on Prince of Wales Island is largely sustained by commercial fishing, logging operations, and tourism. Tourism on the island includes hiking and caving on Forest Service Land, guided fishing and hunting trips, camping, flight seeing, boat and kayak rentals,

and wildlife viewing. The largest government employer on the island is the U.S. Forest Service. During the summer season, the population of the island’s communities can easily double with the influx of seasonal workers as well as the tourists.

While tourism has increased in the past decade, commercial fishing and logging opportunities have decreased from what was considered booming industries. In 1994, local fisherman earned \$6.4 million from salmon. This dropped to \$3.3 million by 1997. Hatcheries around the island have created jobs to help the fishing economy for the island. Logging does still occur on the island and offers some short term job opportunities. The logging economy is also supported by Sealaska Corporation’s log storage facility and sort yard as well as long shoring near Hydaburg.

In Kasaan, residents are employed by the city, the Tribal office, the school, and the sawmill. The median income for a household in the city is \$43,500, and the median income for a family is \$42,500. There are a couple of private enterprises as well, including a local café and a sportfishing lodge. An additional economic factor for Kasaan is the subsistence lifestyle that all residents partake in. Subsistence fishing and hunting help offset economic depression when commercial timber, mining and fishing industries have declined (ADOC-AEIS).

In 2003 the Organized Village of Kasaan had a feasibility study conducted for an ecotourism lodge that will be located within the City of Kasaan. It was determined that the venture would be feasible for the community and will most likely give Kasaan an economic boost by providing additional jobs and the potential of establishing other support services to the community.

### 3.5 Population Demographics

The population of Prince of Wales Island by community is depicted in Table 6. The City of Kasaan is the only organized community within the Kasaan Bay Watershed. Thorne Bay and Hollis are near the watershed and these communities also rely on the resources provided within the boundaries of the Kasaan Bay Watershed.

**Table 6:** Summary of information on Prince of Wales Island communities including population, percent of population that is Native (2003 State Demographer est.), population density, and road accessibility of each community.

Community	Population	Percent Native	Road access
Craig	1,174	30.9%	Yes
Klawock	857	58.1%	Yes
Thorne Bay	475	4.8%	Yes
Hydaburg	370	89.5%	Yes
Hollis	178	9.4%	Yes
Coffman Cove	165	6.0%	Yes
Naukati	109	9.6%	Yes
Whale Pass	67	3.4%	Yes
Port Protection	60	11.1%	No
Kasaan	55	48.7%	Yes
Edna Bay	45	4.1%	No
Point Baker	33	8.6%	No

### **3.6 Government**

The Organized Village of Kasaan (OVK) is a federally recognized Tribal government pursuant to the Indian Reorganization Act (IRA) of 1936 as amended, and the Tribal Council is the governing body of OVK as authorized by its Constitution and By-laws. The OVK Tribe is located in Kasaan on Prince of Wales Island in Alaska. OVK provides Tribal members with services in areas such as Tribal wellness, roads, and environmental protection. Some of the recent accomplishments of OVK include: initiating the development of the KBWC, establishing the Prince of Wales Tribal Enterprise Consortium, and providing Tribes with technical training opportunities. In addition, OVK has experience in managing federal grants. For example, OVK has managed an Environmental Protection Agency Indian General Assistance Program since 1999.

City of Kasaan was incorporated in 1976 as a second class city. The city owns approximately 6 acres within the Kasaan Bay Watershed. The City Council is the decision making body for the City of Kasaan and consists of 7 council members including the mayor who is elected by said council. The City of Kasaan provides garbage, water, sewer, fuel, mail and election services to the residents of Kasaan.

The State of Alaska These holdings include the State of Alaska (an estimated 7,680 acres) and State Mental Health Land (an estimated 3,840 acres). In addition to land holdings within the watershed, the State of Alaska has jurisdiction over all lands designated as private lands.

The U.S. Forest Service was established in 1905 as an agency of the U.S. Department of Agriculture. The U.S. Forest Service has jurisdiction over federal lands, which include the Tongass National Forest. In the Kasaan Bay Watershed, the 56,807 acres of land, including the Karta River Wilderness (approximately 61.7 percent of the watershed), is managed by the U.S. Forest Service.

### **3.7 Private Ownership**

Kavilco Inc. is the local village corporation located in Kasaan. Kavilco was formed under the Alaska Native Claims Settlement Act of 1971, which authorized the creation of for-profit corporations for each of the native villages in Alaska. This village corporation is governed by a 10 person Board of Directors and there are approximately 120 shareholders. Kavilco Inc. received approximately 23,055 acres of land under ANCSA in 1979. After shareholders were disbursed a total of 194 acres in 1.4 acre plots, Kavilco retained surface rights of the remaining 22,861 acres (Kavilco 2005). Of this total, approximately 6,169 acres are within the Kasaan Bay Watershed. Much of this acreage is located on the Kasaan Peninsula. Kavilco Inc.'s land has been divided among several Land Use Classifications including resource development, multiple use, real estate, historical and cultural land, community services, and the Skowl Arm Timber Sale.

Sealaska Corporation is a regional corporation formed under the Alaska Native Claims Settlement Act of 1971 (ANCSA). Corporation assets are derived from the aboriginal lands of Tlingit and Haida Indians of Southeast Alaska. Sealaska's philosophy is to protect and grow



corporate assets to provide economic, cultural and social benefits to current and future generations of shareholders. Sealaska owns approximately 2,471 acres of land within the Kasaan Bay Watershed, although the entirety of the corporation's land extends beyond the watershed boundaries.

### **3.8 Fish and Wildlife**

One of the most important subsistence resources is salmon. There are five species: King (*Oncorhynchus tshawytschwa*), coho (*O. kisutch*), sockeye (*O. nerka*), chum (*O. keta*), pink (*O. gorbuscha*). Steelhead, herring, herring eggs, and ooligans (eulachon) were also caught and eaten. The major historical and current salmon resource in the Kasaan Bay Watershed is the Karta River system, which includes Salmon and Karta Lakes and Andersen, Flagstaff and McGilvery Creeks. The Karta River system supports Pink, Sockeye, Coho, and Chum salmon, as well as Dolly Varden, Cutthroat, Rainbow, and Steelhead. The Karta River system has a high value steelhead which also contributes to the sport fishery and the Karta sockeye run contributes to the commercial fishery. In total, the Kasaan Bay Watershed hosts 26 anadromous fish streams, which include: Paul Young Creek, Poorman Creek, Linkum Creek, and Son-i-hat Creek.

The Karta River Wilderness provides excellent fishing for steelhead, Cutthroat trout, Dolly Varden, pink, chum, coho and sockeye salmon. The Karta River provides spawning and rearing habitat for pink, coho, sockeye, chum, dolly varden, cutthroat, steelhead, and rainbow trout. Andersen and McGilvery Creeks provide spawning and rearing habitat for coho and sockeye. Poorman Creek provides spawning and rearing habitat for pink, coho, chum, and Dolly Varden. Paul Young provides spawning and rearing habitat for pink salmon mostly, but also supports small populations of chum and coho.

In a 1996 estimated community harvest, fish totaled 277 pounds annually per Kasaan resident. Of this total, salmon comprised of 93 pounds and other (non-salmon) fish comprised of 184 pounds (Paige 2002). For salmon harvest in 1987, the nearshore waters directly adjacent to Kasaan and Karta Bay were more intensely fished than other areas. For non-salmon fish harvest, the nearshore waters in front of Kasaan and surrounding Kasaan Island were more intensely used than other areas. The waters near Kasaan were fish mainly for halibut, cod, and rockfish (Paige 2002). Table 1 lists fish species used for subsistence purposes in Kasaan.

Residents reported that fish harvest, both for salmon and non salmon species, has been declining in some areas. Depleted resource areas reported include: Kena Cove, formerly a productive sockeye harvest area; Skowl Arm and Twelvemile Arm, for halibut harvest; and the perimeter of Kasaan Bay for cod and snapper harvest (Paige 2002). However, with the exception of the Kasaan Bay perimeter, many of these areas are not included within the Kasaan Bay Watershed boundaries.

The Kasaan Bay Watershed provides habitat for all the common wildlife on the island. Terrestrial animals include black bears, black-tailed deer, beavers, otters, minks, martens, weasels, and wolves. Traditionally, animal fur, mountain goat wool, and tanned skins provided materials for clothing. In addition, the Karta River Wilderness is known to host four Forest

Service Region 10 Sensitive Species: the trumpeter swan, osprey, Peale's peregrine falcon, and the Queen Charlotte goshawk (U.S. Dept. of Agriculture 2003).

In a 1996 estimated community harvest, land mammals totaled 70 pounds annually per Kasaan resident (Paige 2002). Deer is an important subsistence resource to Prince of Wales Island residents. For example, 85.7% of Kasaan residents used deer (Paige 2002). The deer density is influenced by the amount of available winter habitat (Kirchoff and Shoen 1987, Schoen and Kirchoff 1990, Wallmo and Schoen 1980) and annually assessed by harvest reporting and scat counts along two transects. There are fluctuations in densities between and within the sites. However, the scat counts tend to lie near the 14 year average (Porter 2001). Table 1 lists land mammals used for subsistence in Kasaan.

Marine mammals in the area include orcas, humpback whales, porpoise, Steller's sea lion, seals, and sea otters. Many of these species are utilized as subsistence resources, though not as intensely as other species. In the 1996 estimated community harvest, marine mammals totaled 25 pounds annually per Kasaan resident (Paige 2002). Kasaan residents use sea lions, harbor seals, and sea otters for subsistence (see Table 1).

Nearshore estuarine areas are productive and contribute to the subsistence lifestyle of local residents. Seaweed, shellfish and other marine invertebrates, and herring roe are harvested from the intertidal areas and, according to the 1998 Kasaan harvest composition, total nearly 18 percent of the annual harvest. Clams and cockles, herring roe (on hemlock branches), black chitons ("gumboots"), and black seaweed were among the top 14 resources used in Kasaan households (Paige 2002). Table 1 provides a complete list of intertidal subsistence resources used in Kasaan. Nearshore areas along the mouth of the Karta, Salt Chuck, Poorman and Linkum Creeks have been designated as crucial habitat under the Prince of Wales Island Area Plan (DNR 1998). Grindell Island and the Karta nearshore areas are also designated as important for community harvest (DNR 1998). Both Poorman and Paul Young Creeks support a limited clam population.

### **3.9 Cultural Resources**

Cultural resources in Kasaan include a totem park and a Whale House. The Whale House was built in the 1930s by Chief Son-i-hat. The Whale House is a traditional long house, and it has become the focus of the totem park. The totems were relocated to the park are from the old village site in 1938. On June 11, 2002 Chief Son-i-hat's Whale House and Totem Park was listed on the National Register of Historic Places.

Within the Kasaan Bay Watershed boundaries, there are 18 cultural resources sites listed in the Prince of Wales Island Area Plan. These sites range from old mining sites, historical sites and sites important to the history and culture of the Haida. Site details are not available due to cultural sensitivity.

### 3.10 Habitat and Special Ecosystems

Much of the habitat within the Kasaan Bay Watershed can be considered high value. Within the boundaries there is a federally designated wilderness and two designated roadless areas. There are 19,863 acres of productive old growth forest mapped within the Karta Roadless Area and 3,082 acres mapped within the Kasaan Roadless Area (U.S. Dept. of Agriculture 2003). The forest composition typical of Prince of Wales Island is Sitka spruce and Western hemlock with a large component of cedar. However, productive old growth forests are defined by a particular age structure.

In the coastal temperate rain forest of the Pacific Northwest, old growth forests have trees ranging from 400 to over 1000 years old, 90 to 300 centimeters in diameter, and 30 to 80 meters in height (Pojar and MacKinnon 1994). However, the age and size of old growth trees depends on the species. Table 7 has the age and size structure for the trees species expected in the Kasaan Bay Watershed old growth forests. In addition, due to relatively slow decomposition rates, more than half of the biomass within old growth forests is derived from snags and fallen, dead trees (Pojar and MacKinnon 1994). Old growth forest habitat supports game animals and plants used in subsistence.

**Table 7:** Age and size structure for tree species expected in the old growth forests of the Kasaan Bay Watershed. Information modified from Pojar and MacKinnon 1994.

Species	Age (years)	Diameter (cm)	Height (m)
Yellow Cedar	>1000	100-150	30-40
Western Red Cedar	>1000	150-300	40-50
Sitka Spruce	>500	180-230	60-75
Western Hemlock	>500	90-120	50-65

As previously mention, land mammals totaled 70 pounds annually per Kasaan resident with deer being especially important. Berries, such as salmonberries and blueberries, were among the top used resources in Kasaan households (Paige 2002). Other important plants include hemlock, cedar, devil’s club, fireweed, and Hudson Bay tea (for a complete list see Table 1). Some plants, like devil’s club, are highly important for their medicinal properties. Subsistence activities on plant harvest are not regulated.

However, characteristics of old growth forest can be found in younger forests, especially in second-growth areas where logging activities were insufficient in removing all of the live trees, snags, and logs (Pojar and MacKinnon 1994). This may occur within some second-growth areas of the Kasaan Bay Watershed, since logging was a major activity.

There are 26 anadromous fish streams producing salmon and trout species (see Table 3). Many of these streams, including the Karta, Piggyback, and the Salt Chuck, have lakes and ponds along the system that been previously designated as crucial habitat in the Prince of Wales Island Area Plan (DNR 1998). Streams and lakes are important in reproduction and juvenile rearing for salmon and other anadromous fish.

Nearshore areas along the mouth of the Karta, Salt Chuck, Poorman and Linkum Creeks have also been designated as crucial habitat under the Prince of Wales Island Area Plan (DNR 1998). Nearshore habitat is utilized by anadromous fish, like salmon, for rearing and growth, protection, and to physiologically adjust to the saltwater transition. Time spent in the estuarine and nearshore habitats varies depending on species. Pink and chum fry will migrate almost immediately from freshwater, though pink salmon will move out along the shoreline in more open water while chum will remain in intertidal wetlands and grass flats (ADFG 1998). Salmon comprises nearly 21 percent of the total annual harvest for Kasaan residents (Paige 2002).

In addition to fish, nearshore and estuarine areas provide habitats for shellfish and other marine invertebrates, seaweed, and marine mammals, making these areas abundant subsistence resources. Notable subsistence harvest areas include the Karta and Salt Chuck areas. The nearshore areas located at the Karta and Grindell Island are designated as important for community harvest under the Prince of Wales Island Area Plan (DNR 1998). There is a sea lion haul-out and an important traditional seaweed harvest area located on Grindell Island.

#### **4.0 Potential Problems in Watershed**

During initial meetings, participants of the KBWC identified concerns and potential issues within the watershed that were a priority for the community to begin addressing. A number of issues were identified, with the two highest priorities being: drinking water and the potential decline of the Karta River sockeye population.

##### **4.1 Drinking Water**

The residents of Kasaan receive their drinking water from Linkum Creek. The water system is operated by gravity flow, where water from the creek enters the water system through two perforated pipes at 273 feet above sea level. One hundred and twenty feet below the intake is a treatment building where water is filtered and chlorine and fluorine are added. A 150,000 gallon storage tank is adjacent to the treatment building and stores treated water. Water mains distribute water through out the town.

In October, 2003 there was a landslide that damaged the road to the water treatment plant, and exposed pipes. This action placed the City of Kasaan on a boil water notice, because of sediment in the drinking water. In January, 2004 the State of Alaska declared it a natural disaster and allocated funds to have the problem fixed. The system was repaired, however the constraints of the funding limited the construction to the damaged area only, and did not lend towards stabilizing banks in the upper watershed. It is generally believed that given the nature of the watershed that there is a high potential that landslides will continue, thus putting the water treatment plant future risk. Currently, there is no back-up water system to the City of Kasaan, should the current drinking water system fail.

##### **4.2 Declining Sockeye Populations**

The Karta River is a primary sockeye subsistence system for the residents of Kasaan. In recent years, there has been a concern in Kasaan that the sockeye returning to the Karta River have been

declining. However, there is a lack of escapement data for the fishery in order to make any determination about the population. In January 2004 during the KBWC meeting, members were asked to identify issues within the watershed that would be important for addressing. Declining subsistence resources was identified as a top priority, with the potential decline of sockeye salmon in the Karta River being the major issue. In October of 2004, the Organized Village of Kasaan was awarded a U.S. Fish and Wildlife Tribal Wildlife Grant to begin gathering escapement data and subsistence harvest survey information. This project is a cooperative project between the Organized Village of Kasaan, the Alaska Department of Fish and Game and the U.S. Forest Service. The gathering of escapement data will help these organizations make determinations regarding the health of the sockeye salmon stock at the Karta River.

### 4.3 Contamination to Subsistence Resources

#### 4.3.1 Salt Chuck Mine



Pictured: The remains of the Salt Chuck Mine

The Salt Chuck Mine was the largest producer of palladium in the United States during peak operations in the 1920s, and it was the only hard-rock mine which produced palladium in its time. This gives the mine much historical significance, and it is frequently visited because it is accessible by the Prince of Wales road system.

The Salt Chuck Mine is listed in the Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database as a non-priority

listing, because it is a federal facility scheduled for clean-up by the U.S. Forest Service. In 1997, the U.S. Forest Service published an inventory report (see Appendix B) and water samples taken on site exceeded the State of Alaska Water Quality Standards for copper (0.0049 ppm). Copper concentrations in tailings from the site were found in values up to 3,880 ppm. This report does not address whether copper may be leaching into the nearshore marine environment, and it recommends further testing (U.S. Forest Service, 1997). In 2002, a phase I engineering evaluation cost analysis (ECA) was completed for the Salt Chuck Mine (Maas, personal communication). The results suggested that copper is stable in place and is not leaching into the nearshore marine environment. A phase II ECA was recommended for Salt Chuck Mine and will be performed once funding is secured.

There are also many physical hazards identified with the Salt Chuck Mine site (U.S. Forest Service, 1997). A massive debris pile still exists and may pose a danger to visitors to the site. In addition, numerous open shafts drop down at least 100 feet and pose a risk.

### **4.3.2 Wastewater Impacts**

In 1979, the U.S. Public Health Service installed septic tank drain fields in Kasaan. The new homes that have been built since that time have their own individual septic systems. The only treatment is the settling within the septic tanks themselves. Currently, 26 residential homes, the city building, the tribal building and the school building are all hooked up to one sewage outfall. The Kavilco building has its own septic tank and outfall. All outfalls go directly to the beach and into Kasaan Bay. There is a concern among some residents that septic outfall along the beach in Kasaan may be contaminating subsistence resources that are gathered nearby (i.e. clams, shrimp, crabs, fish, seaweed) (City of Kasaan 2003).

A feasibility study for water and sewer service to 121-lot subdivision was funded by the Alaska Native Tribal Health Consortium (ANTHC) is in process.

### **4.4 Loss of Fish and Wildlife (Populations and Habitat)**

Fish and wildlife are important resources for the community of Kasaan. As shown in Table 1 many species are used for subsistence and traditional use. In meetings of the KBWC, loss of fish populations and impacts to fish and wildlife habitat are a concern within the watershed boundaries. While section 4.2 addresses the potential of Karta River sockeye decline, there are 25 other anadromous fish streams which host several species of salmon important to the community.

As previously mentioned, residents reported that fish harvest, both for salmon and non salmon species, has been declining in Kena Cove, formerly a productive sockeye harvest area; Skowl Arm and Twelvemile Arm, for halibut harvest; and the perimeter of Kasaan Bay for cod and snapper harvest (Paige 2002). However, with the exception of the Kasaan Bay perimeter, many of these areas are not included within the Kasaan Bay Watershed boundaries.

There is a general concern that past logging activities within the watershed has and will continue to impact fish habitat. Timber harvest and the roads associated with timber harvest can change hydrology, water quality, sediment processes and channel processes within a water basin (Chamerlin et al. 1991). In turn, these changes independently and cumulatively can adversely affect fish habitat and populations.

There is also a concern for the potential affect on subsistence and fish populations due to sea lion predation. While Alaska says that sea lions are declining, the KBWC feels their populations are flourishing in S.E. Alaska and are thus impacting fish populations. There have been no formal studies or inquires of this phenomenon, other than discussions that have occurred at KBWC meetings.

### **4.5 Point Source Pollution**

Point source pollution is defined as pollution discharged directly from a specific and identifiable site. Within the Kasaan Bay Watershed, potential sources of point source pollution could come from the waste water system, log transfer facilities and other industrial facilities. These facilities

require a discharge permit, which is regulated by the Alaska Department of Environmental Conservation.

Within the City of Kasaan, the waste water system may contribute point source pollution. There are two outfall pipes; one which serves the Kavalco, Inc. building and the other pipe serves the rest of the community. The wastewater outfall is regulated by a State of Alaska National Pollutant Discharge Elimination System (NPDES) permit. This permit allows for waste water disposal of up to 1,000,000 gallons per day into marine waters by communities exempted from secondary treatment standards by the U.S. Environmental Protection Agency.

A records search also produced NPDES discharge permits for the Sandy Point Log Transfer Facility, Linne Bay Log Storage Area, and Little Goose Bay Log Storage Area. All permits allow for the discharge of bark and wood debris into the marine environment. However, it is uncertain if all permits are still active.

#### **4.6 Non-point Source Pollution**

Non-point source pollution is defined as pollution discharged over a wide area and may come from a wide variety of sources. The source of pollution is not easily identifiable. Within the Kasaan Bay Watershed, potential sources of non-point source pollution could come from: solid waste handling, logging activities and associated road network, road and storm water runoff, past military sites, and old mining sites.

Currently the city of Kasaan hauls their solid waste to the Thorne Bay Landfill, which is located outside of the Kasaan Bay Watershed boundaries. Historically, the community of Kasaan operated an open dump located directly behind the city of Kasaan. In 2002, the land fill was closed in accordance to the Alaska Department of Environmental Conservation. While there have been problems with pollution run-off to date, periodic monitoring of the site is recommended for the Thorne Bay watershed.

Logging activities by Kavalco, Sealaska and USFS in watershed may be causing some fisheries habitat degradation (also refer to section 4.4). Associated roads, if not maintained, may be increasing the sediment load into streams which can have adverse affects on fish (decrease habitat available, change temperature of stream, change stream channel). Furthermore, road construction is more often associated with barriers to fish migration, such as insufficient culverts, than actual harvesting activities. Effects from logging can be lasting and cumulative, and the success of restoration efforts depends on the degree to which stream processes have been perturbed (Chamberlin et al 1991).

Department of Defense formerly used defense sites (FUDS) are also frequent contributors toward non-point source pollution in Southeast Alaska. A records search revealed there are no FUDS within the watershed boundaries.

Salt Chuck (described in section 4.3.1 above) may also contribute towards non-point source pollution in the watershed. There is a community concern that tailings from past mining activities may be impacting nearshore marine environments. In addition to the Salt Chuck mine,

two other abandoned mines were assessed by the U.S. Forest Service in their “Inventory of abandoned and inactive mines” report in 1997 (see appendix B). Rush and Brown mine has copper, arsenic and physical hazards and Flagstaff mine has silver, mercury, zinc and physical hazards.

While not documented, there may be other mines within the watershed boundaries that could be contributing to non-point source potential.

## 5.0 Management Strategies

The KBWC has set forth recommendations on behalf of the Council for each of the issues outlined in section 5.0. These recommendations represent a general consensus of the KBWC Board of Directors interest for action items to address the potential problems in the Kasaan Bay Watershed.

### 5.1 Drinking Water



Pictured: Linkum Creek Water Storage Tank

Linkum Creek is the sole drinking water source of the community of Kasaan. While the system is currently functioning for the residents of Kasaan, there is still an underlying concern that erosion in the basin could compromise the drinking water system again. In addition, the system does not allow for the expansion of the community. Given these concerns with Linkum Creek, the KBWC came up with the following action items:

#### Public meeting in Kasaan

The Board of Directors for the KBWC would like to invite the Alaska Native Tribal Health Consortium (ANTHC) to Kasaan for a public meeting regarding drinking water and wastewater issues. ANTHC is currently responsible for developing a feasibility study for rural sanitation, which will include the increase of housing currently planned in the new sub-division. By holding a public meeting in Kasaan, it will give the community the opportunity to voice all of their concerns regarding potential impacts to the drinking water system.

It is also important to identify alternatives for drinking water and determine the costs associated with changes in drinking water source versus the cost of upgrading and maintaining the current drinking water system. If the ANTHC feasibility study does not address these, then a separate study will need to be funded to do so.

#### Upslope stabilization Project

The drinking water restoration project on Linkum Creek was finished in the fall of 2004. The project was funded through the State of Alaska disaster relief funds, which only allowed for the restoration of the immediately impacted area. The KBWC is concerned that additional slides in



the upper watershed could impact the drinking water system during future storm events. Therefore, the KBWC would like to recommend that an upslope stabilization project be developed. Funding for the project needs to be acquired, an engineering firm needs to be procured and the community needs to be involved in the investigation and restoration planning.

#### First Response Plan

Because it is expected that landslides will continue to occur in the Linkum Creek basin and that any of these events have the potential of damaging the drinking water system, the KBWC is interesting in having a first response plan written for the community. This plan would outline the step-by-step process of how the community would respond to landslide events that impact the drinking water structure (i.e. who to call, how to assess, when to post boil water notice)

### **5.2 Declining Fish Populations**

The concern for the potential declining fish populations was identified specifically for sockeye salmon on the Karta River. While the Council has prioritized this issue, it has not identified any action items to be included in this report because of the on-going work by the Organized Village of Kasaan (OVK). OVK is currently conducting a Karta River Sockeye Assessment project, to address the communities concern with the potential decline of sockeye populations. The KBWC does offer full support of OVK efforts on this project. Restoration opportunities will not be identified until it is determined if populations of sockeye are declining.

### **5.3 Contamination to Subsistence Resources**

#### **5.3.1 Salt Chuck Mine**

The KBWC has listed contamination to subsistence resources as another concern. The highest priority was given to contamination of resources in the Salt Chuck area from past mining activities. The U.S. Forest Service is conducting an assessment; however the KBWC made note that there has been very little in the way of involvement with the community of Kasaan. The KBWC has outlined the following action items:

#### Liason and formal relationship with the U.S. Forest Service

The KBWC would like to appoint a Kasaan representative to be put on a list to receive information for all Phase II Assessment work being conducted in the Salt Chuck area. This representative would be responsible for tracking current work at Salt Chuck and reporting information back to the KBWC on a regular basis.

The OVK and U.S. Forest Service currently have a Memorandum of Understanding (MOU) to work together on issues that affect and are important to the community of Kasaan. The KBWC will soon gain its own non-profit status as a community advocacy group and will not be under the auspices of the Tribe. In this capacity, the KBWC would like to formalize a relationship with the U.S. Forest Service. In the MOU, public involvement on Salt Chuck issues will be defined.

#### Invite U.S. Forest Service to KBWC meeting

The KBWC would like to invite U.S. Forest Service employees who are directly involved with assessment work on the Salt Chuck Mine to Kasaan for a community information sharing meeting. The meeting would cover the assessment work conducted to date, and any future assessment plans.

### **5.3.2 Wastewater Impacts**

The Kasaan community is concerned with the potential impacts from wastewater on marine subsistence resources adjacent to Kasaan. Wastewater undergoes primary treatment and then is discharged near Kasaan and their marine resources. The KBWC has outlined the following action items.

#### Develop an education plan

During KBWC meetings it has been discussed that some people within the community still dispose of household hazardous wastes through home drain pipes. In addition some residents may still be harvesting marine subsistence resources near Kasaan, which is not far removed from the sewage outfalls. The KBWC would like to seek funding to develop a community education plan regarding these practices.

#### Support OVK study

OVK is currently seeking funding to study the potential effects of wastewater outfall on subsistence resources near Kasaan. The KBWC will support the project and provide letters of support for proposals that the Tribe turns in.

### **5.4 Loss of Fish and Wildlife (Populations and Habitat)**

The KBWC has identified the potential loss of fish and wildlife habitat as an important issue. For fish, there is a concern that habitat may be declining because of problems associated with past logging activities. Other reasons for fish habitat loss could be urbanization, pollution, and degraded water quality. The KBWC identified the following action items:

#### Collect baseline data

There has not been comprehensive assessment work conducted on waterbodies within the Kasaan Bay Watershed boundaries. Gathering scientific data and traditional knowledge for each water body would be helpful in understanding which waterbodies may have issues with fish and wildlife, either populations or habitat degradation. The KBWC recommends that funds be sought to ADFG protocols.

#### Assess potential impacts of Sea Lions on fisheries

While the State of Alaska management agencies generally believe that sea lion populations are on the decline in Southeast Alaska, the KBWC has discussed that sea lion populations are flourishing in Kasaan Bay. In turn, they may be impacting fish populations that travel into Kasaan Bay to feed on herring. The KBWC recommends that funds be sought to develop and implement a study to assess the impacts of the sea lion population at Grindell Point. The study should also investigate if this population may be impacting fisheries resources.

### Assess impacts to fish from sport fishing and charter fishing.

In more recent years, charter fishing and sport fishing have grown in the Kasaan area. The KBWC recommends that funds be sought to develop and implement a study to assess determine the harvest of fish in the Kasaan Bay area due to charter and sport fishing. The information collected could then be used by resource management agencies.

## **5.5 Point Source Pollution**

The KBWC did not identify any actions for point source pollution.

## **5.6 Non-point Source Pollution**

### Inventory mine sites

In 1999 the U.S. Forest Service inventoried abandoned mine sites on Forest Service land. In that assessment document, they covered Salt Chuck, Rush and Brown and Flagstaff mines. Some sampling was conducted, as well as a general overview of on-site conditions. Within the Kasaan Bay Watershed boundaries there are 33 old mine sites and prospects (Table 2). The KBWC is recommending that an inventory of all mine sites within their working boundaries be conducted. If funding should become available, contaminant testing at mine sites which have a higher potential of effecting subsistence resources should be conducted.

## **5.7 Other Recommendations**

### Assess potential impacts from recreation

Although a lower priority, the KBWC is interested in looking at the impacts within the watershed related to recreation. There are numerous areas within the watershed with recreation as a land use designation. These designations allow for a broad spectrum of activities, including but not limited to: sportfishing, hunting, cabin stays, building/maintaining hiking trails, backpacking, and eco-tours. It is expected that as tourism increases, the amount of recreational activities will increase. KBWC recommends that funds be sought to assess the current use of the watershed for recreational purposes. Establishing this baseline of information can help determine if future studies regarding impacts needs to occur.

### Impact of hemlock trees in creeks

At a KBWC meeting, there was a voiced concern that downed hemlock trees in streams may adversely affect water quality. A record search regarding this topic did not reveal any studies or agency concerns regarding this phenomenon. No recommended actions are outlined at this time.

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## 7.0 Acknowledgements

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**Bureau of Indian Affairs, Water Resources Department:** Keith Kahklen

**The Kasaan Bay Watershed Council Board of Directors:**

Richard Peterson representing the Organized Village of Kasaan  
Pam Kristovich representing the City of Kasaan  
Louis Thompson representing Kavalco, Inc.  
James Galaktainoff representing Sealaska Corporation  
John Dunker representing the State of Alaska Department of Natural Resources  
Clare Doig representing State Mental Health Trust  
Della Coburn representing the community of Kasaan at-large  
Audrey Escoffon, Water Resources Technician and Program Coordinator

**The Community of Kasaan** (in alphabetical order and not including those on the Board of Directors for the Kasaan Bay Watershed Council):

Edwin and Valerie Braz, Marty Ensley, Walter Young, Skip Escoffon, Paula Peterson, Leo Peterson, Marty Ensley, Dennis Pollock, and Russ Zeman

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**Alaska Department of Natural Resources:** Valerie Blajeski

**National Resource Conservation Service:** Paul Coffey and Samia Savell

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Ha'waa  
(Thank you)

# **Appendices**

# **Appendix A**



Alaska Entity #: 92443

State of Alaska  
Department of Commerce, Community, and  
Economic Development  
Corporations, Business and Professional Licensing

CERTIFICATE  
OF  
INCORPORATION  
Nonprofit Corporation

THE UNDERSIGNED, as Commissioner of Commerce, Community, and Economic Development of the State of Alaska, hereby certifies that Articles of Incorporation duly signed and verified pursuant to the provisions of Alaska Statutes has been received in this office and have been found to conform to law.

ACCORDINGLY, the undersigned, as Commissioner of Commerce, Community and Economic Development, and by virtue of the authority vested in me by law, hereby issues this certificate to

**The Kasaan Bay Watershed Council**

and attaches hereto the original copy of the Articles of Incorporations for such certificate.



IN TESTIMONY WHEREOF, I execute this certificate and affix the Great Seal of the State of Alaska on **February 25, 2005.**

*Edgar Blatchford*

Edgar Blatchford  
Commissioner

## ARTICLES OF INCORPORATION OF THE KASAAN BAY WATERSHED COUNCIL

The undersigned, natural persons of age nineteen (19) years or more, acting as incorporators of a corporation (hereinafter referred to as Kasaan Bay Watershed Council) under the provisions of the Alaska Nonprofit Corporation Act (AS 10.20), adopt the following Articles of Incorporation:

### ARTICLE I: NAME

The name of the Corporation shall be the Kasaan Bay Watershed Council (also referred to as KBWC).

### ARTICLE II: DURATION

The KBWC shall come into existence upon approval by the Commissioner of Commerce, and its existence shall be perpetual.

### ARTICLE III: PURPOSE

The KBWC was created for the following purposes: to restore, preserve and protect the Watershed located and designated by the Board of Directors. The initial boundaries of the Kasaan Bay Watershed, as defined by the KBWC, start at Sandy Point (south point of the mouth of the Karta River Wilderness Area) and extend northward to include the Salt Chuck. From Salt Chuck the border extends southward along the Kasaan Peninsula to Grindall Point. The boundary encompasses all drainages which empty into Northern Kasaan Bay, including: the entire Karta River Wilderness Area, Paul Young Creek, Salt Chuck, Lindeman Creek, Poorman Creek, Sonihat Creek, Linkum Creek, and several un-named creeks. The KBWC is organized exclusively for charitable and educational purposes with the meaning of section 501 (c) (3) of the Internal Revenue Code. The KBWC will focus on actions that promote the following within the area described above.

- Address issues associated with the Kasaan Drinking Water Source.
- The maintenance or enhancement of subsistence use, fishing, outdoor recreation and natural history education opportunities.
- The maintenance or improvement of water quality and fish and wildlife habitat.
- The protection or enhancement of property values by addressing erosion, flooding, aesthetics and other property issues.
- The use of a balanced and diverse citizen's forum to discuss and work together on watershed issues.
- Public education about the watershed.
- Developing partnerships between individuals, businesses, schools, agencies and others to achieve the purposes of the KBWC.



## ARTICLE IV: INTERNAL AFFAIRS

**Section 1.** The Board of Directors shall manage the affairs of the KBWC. The Board of Directors shall consist of appointed representatives from the nine organizations outlined in Article VI of these Articles of Incorporation.

**Section 2.** Any individual, business, corporation, organization or government agency may become a member of the KBWC, by declaring their intention to be a member and provide contact information in order to receive meeting announcements, agendas, minutes and other information from the KBWC.

**Section 3.** The KBWC may be dissolved only upon affirmative vote of at least two-thirds of the members of the Board of Directors. Dissolution shall be in accordance of the Dissolution article outlined in the By-laws of the KBWC.

**Section 4.** No part of the net earnings of the KBWC shall inure benefit or be distributable to its Board of Directors, officers, members, other private persons. Except, the KBWC shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purpose set forth above.

**Section 5.** No substantial part of the activities of the KBWC shall be the carrying on of propaganda, or otherwise attempting to influence legislation, and the KBWC shall not participate in, or intervene in any political campaign on behalf of or in opposition to any candidate for public office.

**Section 6.** Notwithstanding any other provision of these articles, the KBWC shall not carry on any other activities not permitted to be carried on by a non-profit exempt from federal income tax under section 501(c)(3) of the Internal Revenue Code.

**Section 7.** All other internal affairs of the KBWC shall be regulated by the KBWC's Bylaws.

## ARTICLE V: ADDRESS

The physical mailing address of the initial registered office is:

3<sup>rd</sup> and Jones Street  
Kasaan, AK 99950-0340

The mailing address of the initial registered office is:

P.O. Box 26 – Kasaan  
Ketchikan, AK 99950-0340

The name of the initial registered agent at the registered office is: Richard Peterson

**ARTICLE VI: BOARD OF DIRECTORS**

**Section 1.** The number of directors constituting the original board of directors of this corporation will be nine (9).

**Section 2.** The names and addresses of those persons, each of whom shall serve as a director until his or her successor is appointed and qualified, are as follows:

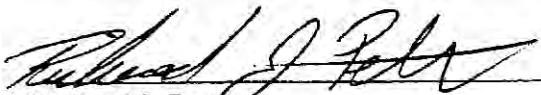
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Pam McCamy	City of Kasaan	P.O. Box KXA-Kasaan	Ketchikan, AK 99950-0340
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Louie Thompson	Kavilco, Inc.	P.O. Box KXA-Kasaan	Ketchikan, AK 99950-0340
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David Schmid	U.S. Forest Service	P.O. Box 19001	Thorne Bay, AK 99919
Doug Campbell	Alaska Mental Health Trust Land Office	718 L. St. - #202	Anchorage, Alaska 99501
"unfilled"	Department of Natural Resources		
"unfilled"	Private Landowners	P.O. Box KXA-Kasaan	Ketchikan, AK 99950-0340

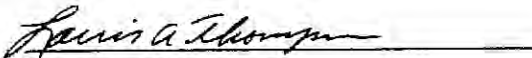
**ARTICLE VII: INCORPORATORS**


The name and address of each incorporator is:

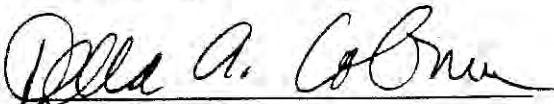
Richard J. Peterson	P.O. Box 26 – Kasaan	Ketchikan, AK 99950-0340
Louis A. Thompson	P.O. Box KXA-Kasaan	Ketchikan, AK 99950-0340
Pam McCamy	P.O. Box KXA-Kasaan	Ketchikan, AK 99950-0340
Della A. Coburn	P.O. Box KXA-Kasaan	Ketchikan, AK 99950-0340

We, the incorporators sign our names this 22nd day of Feb, 2005.

  
Richard J. Peterson

  
Louis A. Thompson

  
Pam McCamy

  
Della A. Coburn

**BYLAWS  
OF THE  
KAASAN BAY WATERSHED COUNCIL**

**PART I**

**IDENTIFICATION**

**Section 1.** The name of this nonprofit Corporation shall be known as the Kasaan Bay Watershed Council (herein after referred to as "KBWC").

**Section 2.** The principal office of the KBWC will be located at Kasaan, Alaska or at such other location as may be determined by the Board of Directors.

**PART II**

**STATEMENT OF PURPOSE**

The KBWC was created for the following purposes: to restore, preserve and protect the Watershed located and designated by the Board of Directors. The initial boundaries of the Kasaan Bay watershed, as defined by the KBWC, start at Sandy Point (south point of the mouth of the Karta River Wilderness Area) and extend northward to include the Salt Chuck. From Salt Chuck the border extends southward along the Kasaan Peninsula to Grindall Point. The boundary encompasses all drainages which empty into Northern Kasaan Bay, including: the entire Karta River Wilderness Area, Paul Young Creek, Salt Chuck, Lindeman Creek, Poorman Creek, Sonihat Creek, Linkum Creek, and several un-named creeks. The KBWC is organized exclusively for charitable and educational purposes with the meaning of section 501 (c) (3) of the Internal Revenue Code. The KBWC will focus on actions that promote:

- Address issues associated with the Kasaan Drinking Water Source.
- The maintenance or enhancement of subsistence use, fishing, outdoor recreation and natural history education opportunities.
- The maintenance or improvement of water quality and fish and wildlife habitat.
- The protection or enhancement of property values by addressing erosion, flooding, aesthetics and other property issues.
- The use of a balanced and diverse citizen's forum to discuss and work together on watershed issues.
- Public education about the watershed.
- Developing partnerships between individuals, businesses, schools, agencies and others to achieve the purposes of the KBWC.

### **PART III**

#### **MEMBERSHIP**

**Section 1.** Individuals, organizations, businesses, government agencies, and local governments who support the purposes of the KBWC may be a member of the KBWC.

**Section 2.** Initial membership of the KBWC must declare their intention to be a member and provide contact information in order to receive meeting announcements, agendas, minutes and other information from the KBWC.

**Section 3.** Members can participate at all KBWC meetings and activities, except for Executive Council Meetings. Discussion of ideas and issues are encouraged, to assist the Board of Directors in the decision making of the organization.

**Section 4.** Membership of the KBWC will be a non-voting membership.

### **PART IV**

#### **BOARD OF DIRECTORS**

**Section 1.** The Board of Directors shall consist of nine (9) representatives, one for each of the following organizations:

- City of Kasaan
- Organized Village of Kasaan
- Kasaan Community Member-at-large
- Kivilco, Inc
- Sealaska, Inc
- U.S. Forest Service
- State Mental Health
- State of Alaska, Department of Natural Resources
- Private Landowner Member-at-large

**Section 2.** The above mentioned organizations will each appoint one individual to represent the organization on the KBWC.

**Section 3.** Terms of the appointed Board will be two years. The Board of Directors shall determine the initial staggering of terms. Vacancies shall be filled by the organization of which a vacancy has occurred.

**Section 4.** Meetings of the Board of Directors shall occur at least quarterly. Meetings shall be called by the Chair of the Board or by at least four members of the Board. Meetings will be open to the membership, unless the Board has called an Executive Board Meeting which will consist of the Board of Directors only.

**Section 5.** Duties of the Board of Directors shall include decision making for the organization, financial management, budget preparation and review, supervision of staff, election of officers, strategic planning and day to day management of the KBWC.

## PART V

### OFFICERS

**Section 1.** The officers of the KBWC will be a chair, vice-chair, secretary, and treasurer. All officers will be on the Board of Directors and will be elected annually by the Board of Directors.

**Section 2.** A vacancy in any office may be filled by a majority vote of the Board of Directors for the unexpired portion of the term.

**Section 3.** The chair will be the chief executive of the KBWC. It will be the duty of the chair to preside at all meetings and to have general supervision of the affairs of the KBWC. He/She will execute on behalf of the KBWC all contracts, deeds, conveyances, and other instrument in writing for the proper and necessary transaction of the business of the KBWC.

**Section 4.** It will be the duty of the vice-chair to act in the absence or disability of the chair and to perform such other duties as may be assigned to him/her by the chair or the Board of Directors. In the absence of the chair, the execution by the vice-chair on behalf of the KBWC of any instrument will have the same force and effect as if it were executed on behalf of the KBWC by the chair.

**Section 5.** The secretary shall attend all meetings and keep true and complete records of the proceedings of such meetings. The secretary will be the custodian of all books, correspondence, and paper related to the business of the KBWC, except those of the treasurer. He/she will give or cause to be given all notices of meetings of the members and all other notices required by law or by these bylaws. The secretary shall oversee voting at the meetings. The Secretary shall act as such when the laws of the State require the action of a corporate secretary.

**Section 6.** The Treasurer shall keep or cause to be kept, the books of the KBWC. When necessary and proper, the treasurer will endorse on behalf of the KBWC all checks, drafts, notes, and other obligations and evidences of the payment of money to the KBWC or coming into his/her possession. He/she will keep full and accurate account of all receipts and disbursements

of the KBWC in books belonging to the KBWC, which will be open at all times to the inspection of the Board of Directors. All expenditures will require at least two signatures from the Board of Directors, where officers will be named on the account for the KBWC. The treasurer shall ensure that a financial statement is prepared prior to each quarterly meeting. He/she will provide an annual budget and will provide for an annual independent financial review (or audit if required by a grant source.) The Treasurer shall perform other duties as these Bylaws provide or the Board of Directors prescribes.

**Section 7.** Any officer of the KBWC, in addition to the powers conferred upon him or her by these bylaws will have such addition powers and perform such additional duties as may be prescribed from time to time by the Board of Directors.

## **PART VI**

### **COMMITTEES**

**Section 1.** Any Board of Director or member of the KBWC may recommend the formation of a committee to further the purposes set forth in these bylaws. Each committee must be approved by a majority vote of the Board of Directors. The existing committees at the time of formation include a Committee to define watershed boundaries, and a Committee to define business structure. The committees are not perpetual.

**Section 2.** Committee chairs shall be KBWC members in good standing. The committee will select the committee chairs, to be approved by the Board of Directors.

## **PART VII**

### **DISSOLUTION**

Upon dissolution of the KBWC after paying of making provision for the payments of all liabilities of the KBWC, shall dispose of the assets in the following manner. Assets shall be distributed for one or more exempt purposes within the meaning of section 501(c) (3) of the Internal Revenue Code, or corresponding section of any future federal tax code, or shall be distributed to the federal government, or to a state or local government, for public purpose. Any such assets not so disposed of shall be disposed of by a Court of Competent Jurisdiction of the state in which the principle office of the KBWC is then located, exclusively for such purposes of the said organization or organizations, as said court shall determine, which are organized and operated exclusively for such purposes.



**PART VIII  
AMENDMENTS**

The Board of Directors may amend these bylaws to include or omit any provision that it could lawfully include or omit at the time the amendment is made. Upon written notice of at least 30 days, any number of amendments or an entire revision of the bylaws may be submitted and voted upon at a single meeting of the Board of Directors and will be adapted at such meeting upon receiving a majority vote.

**CERTIFICATION**

APPROVED, PASSED AND ADOPTED by a duly constituted quorum of the Kasaan Bay Watershed Council on this 12<sup>th</sup> day of May 2005

\_\_\_\_\_ Richard Peterson OVK  
\_\_\_\_\_ Louis Thompson KAVILCO. Inc  
\_\_\_\_\_ James Galaktainoff SEALASKA. Inc.  
\_\_\_\_\_ Susan Howell US Forest Service  
\_\_\_\_\_ Pam Kristovich City of Kasaan  
\_\_\_\_\_ Della Coburn Kasaan Community  
\_\_\_\_\_ Doug Campbell AK Mental Health Land Trust Office  
\_\_\_\_\_ Valerie Blajeski ADNR  
\_\_\_\_\_ Private Land Owner( unfilled )

\_\_\_\_\_  
Richard Peterson, Chairman

\_\_\_\_\_  
Attested by: Audrey L. Escoffon  
Watershed Technician/Secretary

# **Appendix B**

**Appendix B**  
**Excerpts from the “Inventory of Abandoned and Inactive Mines, 1995/1996**  
**Results, Chatham, Stikine, and Ketchikan Areas”**  
**U.S. Forest Service, 1997**

KT03 Salt Chuck Mine

The Salt Chuck Mine is located at the north end of Karta Bay on central Prince of Wales Island, about 12 miles from Thorne Bay. The site is accessible via the Prince of Wales Road system and is regularly visited. The Salt Chuck Mine contains the widest array of mine-related artifacts found on U.S. Forest Service land in the Tongass. The site has historical significance in that it was the only hard-rock mine producing palladium in the U.S. in its time. All of the artifact should be evaluated by a team of archaeologists and mining historians prior to remediation efforts. The site has merit and could be restored and made into an interpretive site of the many visitors to Prince of Wales Island. Warning signs should be placed around the site in the interim.

There are many physical hazards present including dangerous mine openings, unstable waste rock dumps, over 25 structures in various stages of disrepair, and scattered metal parts, equipment and debris. The portal of W1 is partially caved and water is pooled to 3 feet deep. This working should be sealed or gated. W2 is a large glory hole with steep-sided walls over 100 feet high. Signs should be strategically placed around the glory hole to alert the public to the potential danger. A reinforced fence could be placed around the perimeter. W3 is a tunnel leading directly into the glory hole and about a 75-foot fall. This end of W3 should be barricaded with a fence or gate. W4 and W5 are open shafts located less than 60 feet from the east edge of the glory hole. W5 descends several hundred feet before it connects with the 100 level in W1. W5 should be sealed or covered with logs and rock debris.

The majority of structures at the site are in poor to bad shape and are found lying in a heap of boards, planks, tarpaper, etc. The millsite is in especially bad condition and is the epitome of an attractive nuisance. A fence should be erected around the millsite until a final determination of its fate can be made. The garbage and rusty equipment with no historical value should be removed from the site.

An unconfined oil-sludge spill was identified at the millsite that has possibly spread toward, but not into the intertidal zone. The extent of this spill should be determined. Downstream water samples contained 4.0 µg/l copper, a concentration that exceeds the Alaska Freshwater Criteria for this metal. This copper originated from water leaving W1. Copper concentrations up to 3,880 ppm were found in soil samples taken from tailing in the intertidal zone. Metals may be leaching into the marine environment. Leach tests have been performed in the laboratory, but these tests are not designed for the marine environment. Biological testing of benthic organisms is recommended to determine if bioaccumulations is taking place in this portion of Karta Bay.

KT08 Flagstaff

The Flagstaff Mine is located along Flagstaff Creek in the Karta Wilderness Area, on Prince of Wales Island, about 4 miles from Hollis. The site is not easily accessible. The site consists of at

least eight adits, several trenches, an aerial tramway and a mill site. The main production adit (W8) is open and includes several hazardous raises, a winze, stopes, and choked ore chutes. The portal should be gated to prevent access to these hazards. Adits W1-W3 and W5-W7 pose less significant hazard. Three of the six adits are collapsed (W3, W5, W7), and adits W1 and W2 are partly collapsed and are relatively short in length. W1 and W2 should be completely sealed. Adit W6 is partly collapsed near its portal, but the rest of the working is in relatively good condition. The portal should be sealed or gated to eliminate any further hazard. The mill site and camp consists of 11 buildings in various stages of dilapidation. The mill (M1) is a 50 foot by 50 foot building. This dilapidated wood frame structure still houses various milling equipment, but in a precarious manner. Sharp and rusty equipment and debris, rotten lumber and protruding nails, and broken glass are common and should be collected and removed from the site. The collapsed wooden structures and piles of lumber and timbers make for uneven footing and a danger of trips and falls. Most of these structures should be incinerated and the scrap and junk removed from the site. Cultural and historical resources should be assessed prior to any mitigation of these building and equipment.

Water samples taken from several locations around and within the Flagstaff site did not reveal metal concentrations that exceeded the Alaska Freshwater Criteria. Zinc was detected in low quantities in one sample taken above the mill. An oily residue was found in the soil below the ball mill in M5. The extent of this contamination should be determined. Elevated levels of silver (11.6 ppm) and mercury (10.1 ppm) were detected in a sample of mill tailings taken adjacent to Flagstaff Creek (SO01). As the downstream water sample contained neither of these metals, the tailings may be inert in their present state and no remediation is required. If resources allow, however, the tailings could be removed. An unidentified white powdery substance was found in a glass quart jar and scattered on the floor in the main adit (W8). The jar could be removed from the adit. One to five gallons of viscous fluid (oil?) were discovered in a 55-gallon drum near the upper tram terminal (M7). The container is in a wooded area and should be moved to an open area and burned.

### KT12 Rush and Brown

The Rush and Brown Mine is located about one mile inland from the head of Kasaan Bay, on Prince of Wales Island, about 45 miles west of Ketchikan. The site is moderately accessible from the Prince of Wales road system. Two shafts and a large glory hole are located close together at the upper workings at 300 foot elevation, and the Sawmill adit is located 0.25 miles to the east at an elevation of 100 feet. The main shaft area (W1) is inclined and actually includes four openings to the surface that are included within a trench about 150 feet long and 10 to 25 feet wide and has an extremely steep and deep high wall. Warning signs should be placed around the perimeter of W2 as thick vegetation obscures this working. Erecting a fence around the glory hole would also mitigate this hazard. A 200-foot-deep vertical shaft (W3) adjacent to this glory hole was used to bring ore to the surface. A concrete plug or similar seal should be placed in this shaft. The Sawmill adit (W4) is in relatively good condition, however a one-third-full case of dynamite is present near the face of the working. These explosives should be destroyed.

Several cabin structures (C1-C5) should be demolished to prevent people from walking over rotten wood and possibly slipping and impaling themselves on nails and spikes or cutting

themselves on rusty metal. Abundant garbage and debris found at the site should be collected and dumped into the glory hole. The structural remains from M2 should be moved to the nearby muskeg and incinerated. About 25 gallons of oil was found in a leaking, 55-gallon drum, just outside the Sawmill adit. This oil should be incinerated or otherwise removed.

Copper concentrations of 2.8 µg/l were detected in a downstream water sample (WA04) and this value exceeds Alaska Freshwater Criteria. This water is tainted by the influx of contaminated water emanating from the Sawmill adit. A sample of water issuing from the Sawmill adit (WA03) contained 34 µg/l copper, and 2.1µg/l arsenic. This water needs to be treated or diverted into the muskeg where natural processes may remove the metals from the water. A water sample should be taken upstream from the end of D7 to determine copper concentrations in the creek before mixing occurs with water from the Sawmill adit. This sample will help determine whether the copper found in the downstream water sample is directly attributable to the site.

# **Appendix C**

## Appendix C

### INDIVIDUAL ROADLESS AREA DESCRIPTION

**ROADLESS AREA NAME:** Karta (510)

**ACRES (NFS):** 56,816

**BIOGEOGRAPHIC PROVINCE:** North Central Prince of Wales Island

**2002 WILDERNESS ATTRIBUTE RATING:** 19

#### **I. Overview and Description**

(1) **Location and Access:** The Karta Roadless Area is located in the center of Prince of Wales Island and at the west end of Kasaan Bay. It consists of several unconnected roadless sections surrounding the Karta River Wilderness. These sections are separated by roads and harvested areas or by the wilderness. The roadless area begins less than a mile north of Hollis, a stop on the Alaska Marine Highway. Ketchikan, the closest larger town, is approximately 40 miles southeast. Access to the roadless area is by boat or floatplane along Twelvemile Arm and Karta Bay, by floatplane to Control Lake and Black Bear Lake, and by roads to the north, west, and south boundaries. There are no places suitable for landing wheeled airplanes. Access away from roads and water is by foot or helicopter. There are two trails near the boundaries but these do not access the interior. There are Forest Service public use cabins located on Control Lake (near the edge of the roadless area) and Black Bear Lake.

(2) **History:** The roadless area drainage has a rich aboriginal cultural history. There are prehistoric village sites, rock art, and other physical indications of aboriginal occupancy of sites within the area. In more recent times, the roadless area has seen considerable mineral exploration and active mining. The Flagstaff Mine produced silver and gold during the 1920s. Trapping was a common activity from the late 1800's to the 1950's. Areas along the shore were beach logged, generally in the 1950s and 1960s. The center of the roadless area was designated a wilderness in 1990.

(3) **Geography and Topography:** The roadless area includes steep, rugged mountains, rising to over 3,000 feet in the south and west, and relatively flat areas near the western end of Kasaan Bay and in the north. The highest point is the 3,806-foot-high Pin Peak on the wilderness boundary. There are approximately 598 acres of lakes in this area, the largest of which is Black Bear Lake. There are 2,510 acres of alpine, 4,481 acres of rock, and 402 acres of muskeg. Shoreline on saltwater totals 27 miles, and small islands make up 480 acres of the roadless area.

(4) **Ecosystem:**

(a) **Classification:** The area is in the North Central Prince of Wales Island Province. All of the forest plant associations in Southeast Alaska except those that are found only on the mainland occur in this province. This area typically has high precipitation. This roadless area has more rugged topography than is typical for the province.

(b) **Soils:** Soils are generally highly organic with low clay content and are formed over bedrock. Soil depth is typically about 40 inches. Generally, steeper areas have better-drained soils, and flat areas are poorly drained.

(c) **Vegetation:** Vegetation is typical Southeast Alaska coastal temperate rain forest. The forest is primarily western hemlock and Sitka spruce with large components of cedar. Approximately 402 acres of muskeg have been mapped for the area; however, due to their small size and association with forested sites, accurate acreage estimates are difficult.

There are approximately 46,134 acres mapped as forest land of which 20,611 acres or 45 percent are mapped as productive old-growth forest. Of the productive old growth, 10,844 acres or 53 percent are mapped as high volume old-growth forest. There are 956 acres of second growth associated with older beach logging primarily along the eastern coastline.

(d) **Fish Resources:** The primary fish-bearing waters in this area are Control Lake and Streams, Steelhead Creek, Rio Roberts Creek, Paul Young Creek, and Maybeso Creek. These waters provide habitat for coho, pink, chum, and sockeye salmon as well as for steelhead and cutthroat trout.

(e) **Wildlife Resources:** This area has large populations of Sitka black-tailed deer, black bear, wolves, otter, marten, mink, loon, and common waterfowl. Moose are known to inhabit Prince of Wales Island. Brown bear and mountain goats do not inhabit this area (MacDonald and Cook, 1999). Bald eagle, marbled murrelet, Queen Charlotte goshawk, harlequin duck, Peale's peregrine falcon, osprey, and trumpeter swan may occur in the area.

(5) **Management Direction and Current Uses:** This roadless area was allocated to seven Land Use Designations (LUDs) under the 1997 Tongass Land and Resource Management Plan. These seven LUDs are Timber Production, Modified Landscape, Experimental Forest, Scenic Viewshed, Old-Growth Habitat, Semi-Remote Recreation, and Municipal Watershed.

LUD	Acres
Timber Production	28,372
Modified Landscape	7,195
Experimental Forest	6,270
Scenic Viewshed	2,627
Old-Growth Habitat	11,593
Semi-Remote Recreation	391
Municipal Watershed	368

Most of this roadless area, approximately 79 percent, was allocated to a development LUD, which allows timber harvest and the associated road construction (Timber Production, Modified Landscape, Experimental Forest, and Scenic Viewshed). Approximately 50 percent of the roadless area was allocated to the Timber Production LUD. The Modified Landscape LUD was assigned to approximately 13 percent of the roadless area. Approximately 11 percent of the roadless area makes up the Maybeso Experimental Forest south of the Karta River Wilderness Area, which was allocated to the Experimental Forest LUD. The Scenic Viewshed LUD was assigned to approximately 5 percent of the roadless area.

Approximately 21 percent of the roadless area was allocated to a non-development LUD (Old-Growth Habitat, Semi-Remote Recreation, and Municipal Watershed). The Old-Growth Habitat LUD was assigned to approximately 20 percent of the roadless area. Islands in Karta Bay were allocated to the Semi-Remote Recreation LUD, which accounts for approximately 1 percent of the roadless area. Approximately 1 percent of the roadless area around Three Mile Creek was allocated to the Municipal Watershed LUD to service the Klawock community.



## Appendix C

There are two hiking trails near the boundaries of the roadless area. There is a public recreation cabin at Black Bear Lake and another near the boundary of the roadless area at Control Lake. The Karta Roadless Area surrounds the Karta River Wilderness Area, which contains four public recreation cabins and hiking trails (approximately 5 miles). The roadless area is important for subsistence hunting and gathering to the communities of Hydaburg, Klawock, Thorne Bay, and Craig. Ketchikan residents use the area primarily for deer hunting. A small portion of VCU 576 is included in the roadless area. This VCU is rated among the VCUs with the highest community fish and wildlife values. None of the other VCUs in the roadless area are rated among the highest VCUs. No outfitter/guide permits were issued for the roadless area in 2,000. There are a trail and a fish ladder on Rio Roberts Creek just outside the roadless area. There are hydroelectric facilities at Black Bear Lake on the edge of the roadless area, and a new hydroelectric facility has been proposed for Wolf Lake within the southeastern portion of the area.

**(6) Appearance (Apparent Naturalness):** The roadless area is unmodified; however, the boundaries of the outer roadless area are dictated by timber harvest activities. The area is not contiguous. It consists of several unconnected roadless sections surrounding the Karta River Wilderness. These sections are separated by roads and harvested areas or by the wilderness. Adjacent harvest units have the potential to affect the apparent naturalness of portions of the roadless area, especially areas that are seen from the roadless area. The interior of the roadless area would take on naturalness the closer it comes to the exterior boundaries of the wilderness area.

**(7) Surroundings (External Influences):** Extensive private lands managed primarily for timber production to the west of the roadless area have been developed. National Forest System land to the north and south have also been developed. Major mountain ridges physically isolate some of the developed areas from portions of the roadless area. To the east is Kasaan Bay, the main ferry and water access route to Prince of Wales Island. It is this easy access route to the Karta River, along with the excellent fishing, that results in heavy public use of the Karta River Wilderness. One of the main reasons it gets a lot of use is that it is close to Ketchikan. Many people, especially out of state visitors, arrive by float plane. Ketchikan and Prince of Wales visitors get there by boat, skiff, or foot. This area has received lots of fishing/hunting use over the years and consequently has been developed with trails and cabins to support this use.

**(8) Attractions and Features of Special Interest:** The natural features of the area include the reflective qualities of the lakes with the backdrop of alpine reflections. The interconnected alpine/forest/stream/lake/river/estuary/saltwater nature of Karta Wilderness is a draw. The historic cabin on Salmon Lake is a one-of-a-kind structure on the National Historic Register. The trail system is of interest for the following three reasons: 1) it is a cross-island route (Kasaan Bay to Big Salt); 2) it led to an Alaska Native fish camp; and 3) it was an old mining road that turned into the current trail. The burn area along the Karta river (now not noticeable) may be the largest on Prince of Wales Island. The scenery, opportunity to fish and hunt wildlife, and the Karta Wilderness are all attractions. The roadless area includes a portion of the Maybeso Experimental Forest, one of only two Experimental Forests on the Tongass National Forest. The area contains 17 inventoried recreation places, which cover 37,122 acres, or 65 percent of the roadless area.

**(9) Differences between the 1989 and 2002 Roadless Area Boundary:** The boundaries of the roadless area changed in several ways between 1989 and 2002. First, 39,889 acres were designated as Karta River Wilderness Area in 1989 in the Tongass Timber Reform Act and are no longer included in the roadless area. This change fragmented the roadless area. Second, the 2002 roadless area boundary does not include land just northwest of Karta River Wilderness area because of ongoing development. Third, areas along the shore that were beach-logged decades ago but not roaded have been added to the roadless area. Trees have regrown in these areas, and they no longer appear modified. Also, more accurate mapping has resulted in changes to the boundary.

## II. Capability for Management as Wilderness

(1) **Natural Integrity and Apparent Naturalness:** Lands within the roadless area appear natural and include a scenic backdrop of high mountain peaks. The evidence of early day mining is no longer a significant influence on the area's apparent naturalness. However, the extensive timber harvest activities and roading that nearly surround most of the roadless area potentially influence the outer portions of the area's natural integrity (especially activities that are viewed from the roadless area) and apparent naturalness. This surrounding activity makes this area, as a whole, less suitable for wilderness designation except as potential additions to the Karta River Wilderness.

(2) **Opportunity for Solitude and Serenity, Self-reliance, Adventure, Challenging Experiences, and Primitive Recreation:** The alpine ridges that rim the Karta River basin generally provide relatively high opportunities for solitude and primitive recreation; however, during the peak season there is daily floatplane traffic transporting visitors in and out of the wilderness area, and this affects solitude in the Karta Roadless Area. Visitor use may spillover into the roadless area between June and September, due to the popularity of the adjacent Karta River Wilderness area. Also, traffic near the outer boundaries and ongoing management activities may disturb visitors at times. Primitive recreation opportunities that present challenging and adventurous experiences are abundant, especially along the steep, mountainous ridges that surround the Karta River Wilderness and Black Bear Lake.

As with all backcountry areas on the Tongass, the opportunity for challenge and risk in this area is high. The climate, the rugged terrain, the isolation, the distance from population centers with medical facilities, the barriers to communication, and the presence of large wild animals all contribute to the need for good preparation and knowledge of backcountry survival skills for anyone using this area. Hypothermia and bear encounters are just two examples of the many risks that must be considered before traveling in the backcountry of Southeast Alaska.

The area provides primarily semi-primitive recreation opportunities. The table below lists the acreage and percent of the various Recreation Opportunity Spectrum (ROS) classes that have been inventoried in the roadless area.

ROS Class	Acres	Percent of Total ROS
Primitive (P)	1,178	2%
Semi-Primitive Non-Motorized (SPNM)	32,805	58%
Semi-Primitive Motorized (SPM)	2,426	4%
Roaded Natural (RN)	457	1%
Roaded Modified (RM)	19,955	35%

The area contains 17 inventoried recreation places, which cover 37,122 acres, or 65 percent of the roadless area.

ROS Class	# of Rec. Places	Total Acres
P	1	1,178
SPNM	4	25,746
SPM	1	2,030
RN	4	457
RM	7	7,712

There are two hiking trails near the boundaries of the roadless area. There is a public recreation cabin at Black Bear Lake and another near the boundary of the roadless area at Control Lake.

## Appendix C

**(3) Wilderness Attribute Rating System:** In 1977, the Forest Service, along with public interest groups, developed the Wilderness Attribute Rating System (WARS), which was used to inventory the wilderness characteristics of roadless areas during the second Roadless Area Review and Evaluation (RARE II) process. The purpose of WARS was to provide a measure of the area's wilderness quality, based on the key attributes of wilderness as defined in the Wilderness Act. It is largely based on the attributes described above in items 1 and 2 of this section (natural integrity, apparent naturalness, outstanding opportunity for solitude, and primitive recreation opportunities).

In 1979, during the RARE II process, the Tongass National Forest applied WARS for the first time and rated each unroaded VCU on the Tongass. In 1989, the inventoried roadless areas (which generally include more than one VCU) were rated according to this system for the Analysis of the Management Situation (AMS) developed in support of the Forest Plan Revision. This original version of the AMS included both the individual VCU ratings done in 1979 and the composite rating that was done for each roadless area in 1989. The 1989 rating for the Karta Roadless Area was 21 out of 28 possible points. The 1989 rating was re-evaluated in 2002 for this updated version of the AMS. Based on this reevaluation, the area was given a rating of 19. The difference in rating reflects designation of the core of this earlier roadless area to the Karta River Wilderness and the influences of developments on remaining areas in the current roadless area.

**(4) Ecologic and Geologic Values:** The roadless area provides excellent fish and wildlife habitat. The roadless area nearly surrounds the Karta River Wilderness, making it a part of a larger unroaded area. Developed private and National Forest System lands separate the Karta Roadless Area and Karta River Wilderness from other inventoried roadless areas.

**(a) Fish Resources:** The Tongass Fish and Wildlife Resource Assessment (ADF&G, 1998) listed four of the eight VCUs (595, 596, 597.2, and 622) as primary salmon and sportfish producers. In addition, VCUs 609 and 610 were listed as primary sportfish producers (ADF&G 1998).

The primary fish-bearing waters in the roadless area are Control Lake and Streams, Steelhead Creek, Rio Roberts Creek, Paul Young Creek, upper Maybeso Creek, and upper Harris River. These waters provide habitat for coho, pink, chum, and sockeye salmon as well as steelhead and cutthroat trout. Control Lake has a resident population of cutthroat and Dolly Varden (Recreation Cabin Website, 2001). Control Lake and Black Bear Creek contain steelhead trout and sockeye salmon. Resident rainbow trout have been introduced into Black Bear Lake (USFS, 1998). Steelhead Creek has an estimated peak escapement of 91,200 pink salmon and very good coho salmon production. Maybeso Creek receives an estimated 30,600 pink salmon, while also providing habitat for coho and chum salmon as well as steelhead trout (ADF&G 1998, 2000). Portions of Harris River within this roadless area have very good coho salmon production (ADF&G, 1998).

A fishpass was completed on Rio Roberts Creek in 1989. Large woody debris structures have been installed in Control Lake (USDA Forest Service, 1998).

**(b) Wildlife Resources:** This area has large populations of Sitka black-tailed deer, black bear, wolves, otter, marten, mink, loon, and common waterfowl. Alpine areas are excellent ptarmigan habitat. Moose are known to inhabit Prince of Wales Island. Brown bear and mountain goats do not inhabit this area (MacDonald and Cook, 1999). Based on data compiled from 1985 to 1994, VCUs 609 and 622 in the center of the area are listed among the top 25 percent of VCUs for black bear harvest (ADF&G 1998).

Bald eagle nest sites have been located along the coastline and inland along Rio Roberts Creek. Marbled murrelet, Queen Charlotte goshawk, and harlequin duck may occur in the area. Peale's peregrine falcon, osprey, and trumpeter swans also occur on the island. A goshawk nest was found in the lower Rio Roberts drainage in 1995. An active Peale's peregrine falcon nest was recently discovered in the Steelhead Creek drainage (USDA Forest Service, 1998). Major concentrations of wintering trumpeter swans can be found at Control Lake.

**(c) Threatened, Endangered, and Sensitive Species:** The only federally listed threatened and endangered species likely to occur within or adjacent to the roadless area are the humpback whale (endangered) and the Steller sea lion (threatened). Both of these species are found in adjacent marine waters. Four Forest Service Region 10 Sensitive Species are suspected or known to occur within the area: the trumpeter swan, osprey, Peale's peregrine falcon, and the Queen Charlotte goshawk. Trumpeter swans nest in the lowlands on small lakes and along major rivers and winter in ice-free areas throughout the Tongass. Major concentrations of wintering trumpeter swans can be found at Control Lake. Present from April through September, ospreys are rare in Southeast Alaska where they reach the northern extent of their nesting range. Feeding almost exclusively on fish, ospreys typically nest in large snags near lakes or the coast where fish are abundant. Peale's peregrine falcons nest on cliff faces and islands and feed primarily on seabirds. An active Peale's peregrine falcon nest was recently discovered in the Steelhead Creek drainage (USFS, 1998). Inhabitants of late seral forests, Queen Charlotte goshawks are closely associated with productive old growth. A goshawk nest was found in the lower Rio Roberts drainage in 1995. In addition, nine sensitive plant species are known or suspected to occur in the Thorne Bay Ranger District.

**(d) Karst, Cave, and Other Geologic Resources:** There are no known karst or cave resources in this roadless area. There are no glaciers or unique geologic features known in this area.

**(5) Scientific and Educational Values:** There are opportunities to study fish, wildlife, forests, and geologic processes within the roadless area. The roadless area includes the Maybeso Experimental Forest, one of only two experimental forests on the Tongass National Forest. The experimental forest contains permanent research plots designed to study hillslope erosion, movement of large woody debris in and through streams, forest regeneration, and response to thinning. The community of Hollis is 1 mile southeast of this area and is the closest town with school-age children. The closest larger city is Ketchikan, 30 miles east on the Alaska Marine Highway route.

**(6) Scenic Values:** This roadless area is part of the Coastal Hills character type which is characterized by moderately steep landforms, predominantly rounded summits, elevations ranging up to 4,500 feet, and flat-floored U-shaped valleys. Numerous island groups are also common in this character type. This area is, for the most part, quite representative of the Coastal Hills character type except for the very rugged and scenic terrain near the south and west boundaries that make up part of the Klawock Mountains. The reflective quality of the lakes is astounding with the backdrop of alpine reflections. The water on the lakes can be mirror-like at times and has been a destination for landscape photographers. The interconnected alpine/forest/stream/lake/river/estuary/saltwater nature of Karta Wilderness is a draw. Snow-capped peaks are often visible until July.

When viewing the roadless area from the priority routes listed in the Forest Plan, an unmodified landscape dominates. Once in the roadless area, visitors may see a landscape dominated by timber harvest and roads or an untouched scenic landscape, depending on the visitor's location. Significant landforms in this area include the Klawock Mountains and Pin Peak.

## Appendix C

Visual Priority Routes and Use Areas identified by the Forest Plan that are within or adjacent to the roadless area include the Klawock-Control Lake and Control Lake to Thorne Bay highways; the Control Lake and Black Bear public recreation cabins; Karta Bay and Warm Chuck Inlet saltwater use areas; Kasaan Bay to Hollis, a part of the Alaska Marine Highway; and the community of Hollis.

About 7 percent of the area is inventoried as Variety Class A, which has a level of landscape diversity and scenic quality that is distinctive relative to the character type in which it is located. The very rugged rock forms of the Klawock Mountains are an example of the outstanding scenic features that make up the Variety Class A landscapes. There are also prominent waterforms including the variety of lakes and river and stream features. The remaining 93 percent is rated as Variety Class B, which possesses landscape characteristics common for the character type.

About 73 percent of the area has a Type I Existing Visual Condition (EVC); the natural landscape has remained unaltered by human activity. About 4 percent of the area has a Type III EVC; changes do not divert attention when noticed. The rest of the area has been moderately to heavily modified due to the logging and roading activity along the northern and southern boundaries. Sixteen percent of the area has a Type IV EVC, indicating changes in the landscape are easily noticed by the average visitor, and may attract some attention. Places where changes to the landscape are obvious to the average visitor and appear to be major disturbances (EVC V) are present in 6 percent of this area.

**(7) Social, Cultural, and Historical Values:** The roadless area has a rich aboriginal cultural history. There are prehistoric village sites, rock art, and other physical indications of aboriginal occupancy of sites within the area. In more recent times, the roadless area has seen considerable mineral exploration and active mining. The Flagstaff Mine produced silver and gold during the 1920's. Trapping was a common activity from the late 1800's to the 1950's. Areas along the coast have been beached logged. There are two hiking trails near the boundaries of the roadless area. There is a public recreation cabin at Black Bear Lake and another near the boundary of the roadless area at Control Lake. The Karta Roadless Area surrounds the Karta River Wilderness Area, which contains four public recreation cabins and extensive hiking trails.

The roadless area is important for subsistence hunting and gathering to Alaska Native communities in Hydaburg, Klawock, and Craig. Other residents use the area primarily for deer hunting, fishing and winter sports (snow machining, snow boarding, and cross country skiing in the Klawock Mountains). Two VCUs in the western part of the area (VCUs 595 and 596) were listed in the third most important group of VCUs for high community use values. Most of the VCUs in this area (six of eight: VCUs 595, 598, 609, 610, 611, and 622) were listed among the VCUs with the highest sensitivity to disturbance of subsistence use areas (ADF&G 1998). No outfitter/guide permits were issued for the roadless area in 2000. There is a fish ladder on Rio Roberts Creek. There are hydroelectric facilities at Black Bear Lake Hydro, and a new hydroelectric facility has been proposed for Wolf Lake.

**(8) Manageability as Wilderness and Boundary Conditions/Changes:** The boundary with the wilderness and the area along the eastern shore are based on topographic features. Other areas are based on private land boundaries or associated with developments rather than on topographic features. When Congress designated the Karta River watershed as wilderness in 1990, it selected the portion of the roadless area with boundaries based on well-defined topographic features. This is the area most easily managed as a wilderness. Adding the remaining roadless area to the wilderness would create more poorly defined boundaries.

### III. Availability for Management as Wilderness (including effects of wilderness designation on adjacent areas)

- (1) **Recreation, including Tourism Potential:** Tourism has been increasing in Southeast Alaska and is expected to continue to increase. Wildlife viewing, camping, hiking, sea kayaking, fishing, hunting, and exploring have the potential to increase as tourism and recreation increase throughout Alaska. Tourism potential is a major part of Alaska's economy. The industry attracts over 1.1 million visitors annually. There has been a growing recognition that tourism depends on scenic quality, wildlife, and wilderness (Behnke, 1999). The roadless area is linked by road to Hollis, a stop on the Alaska Marine Highway. Easy access and the popularity of the nearby Karta River Wilderness is likely to draw tourists to the roadless area. There is a potential to construct an additional trail along Karta River Trail to Anderson Creek and beyond as well as trails from Rush Peak Road, Control Lake, Black Bear Lake and Rio Roberts Trail. There are also opportunities for alpine trails along the ridges within the Klawock Mountains and along Harris Ridge from the Hollis-Klawock Highway.
- (2) **Subsistence Uses:** The existing patterns of subsistence activities in the area would not be affected by wilderness designation.
- (3) **Fish Resources:** No fish habitat enhancement projects are planned within the roadless area.
- (4) **Wildlife Resources:** No wildlife habitat enhancement projects are planned within the roadless area.
- (5) **Timber Resources:** There are 20,611 acres inventoried as productive old-growth forest and 956 acres of second-growth forest in the roadless area. Of this, approximately 15,664 acres are categorized as tentatively suitable for timber harvest. Based on the Forest Plan LUDs assigned to this area (and estimated falldown and scheduling reduction factors), 6,398 acres, or 11 percent of this roadless area, are estimated to be suitable for timber production.

Managing timber in most of the roadless area would require extending the existing road system into the roadless area. There are several harvest units and road segments in the north half of the roadless area that were approved by the Control Lake Timber Sales ROD.

- (6) **Fire, Insects, and Disease:** The area has no significant fire history. Endemic tree diseases common to Southeast Alaska are present.
- (7) **Minerals:** This area contains 3,809 acres of land identified as a mineral activity tract having a high potential for experiencing mineral exploration or development of locatable minerals (Coldwell, 1990; USDA Forest Service, 1991). In addition, this area contains 52,319 acres of undiscovered locatable mineral resources (Brew et al., 1990; USDA Forest Service, 1991); 1,816 of these acres are considered to have high potential for development.

The Salt Chuck and Brown and Rush Mines were active operations until the 1940s. Prince of Wales Island produced copper, gold, silver, and marble in economic quantities. It is not unrealistic that, with an improvement in mining economics, the Flagstaff Mine would reopen or other old claims would become viable mines. The USGS Mineral Resources Data website indicates that there are several prospects in the area for gold, copper, silver, lead, and zinc.

## Appendix C

(8) **Transportation and Utilities:** There are no transportation corridors proposed in this roadless area. An existing State road corridor is located to the north, west, and south of this area. A new hydroelectric facility has been proposed for Wolf Lake. Designation as a wilderness could conflict with plans to develop and manage hydroelectric projects.

(9) **Water Availability and Use:** There are two public recreation cabins that create a water demand from the roadless area. About 368 acres of this roadless area are dedicated to Municipal Watershed LUD. This LUD is managed to preserve the water quality for the community of Klawock. There is a hydroelectric plant at Black Bear Lake, and one is in the planning and permitting stages for Wolf Lake.

(10) **Areas of Scientific Interest:** There are opportunities to study fish, wildlife, forests, and geologic processes within the roadless area. The roadless area includes the Maybeso Experimental Forest, one of only two experimental forests on the Tongass National Forest. The experimental forest contains permanent research plots designed to study hillslope erosion, movement of large woody debris in and through streams, forest regeneration, and response to thinning. Designation of the experimental forest as a wilderness may not be compatible with some types of research, such as thinning or anti-erosion measures.

(11) **Land Use Authorizations:** There is a hydroelectric plant at Black Bear Lake, and one is in the planning and permitting stages for Wolf Lake.

(12) **Land Status:** The roadless area is all National Forest System lands. Two areas with encumbrances are within this roadless area; one is a large tract situated between land owned by the Sealaska Corporation and the Klawock-Heenga Village Corporation.

### IV. Wilderness Evaluation

#### (1) **Public and Congressional Interest:**

(a) **Interest Expressed by Local Users and Residents:** There is substantial local interest in protecting subsistence and recreation resources.

(b) **Congressional Interest:** In 1989, U.S. House of Representatives Bill HR 987 proposed to designate 23 areas as wilderness on the Tongass National Forest. The Karta River portion of the roadless area was one of these areas. It was designated wilderness in 1991. In 2001, HR 2908 proposed managing all the portions of the roadless area as LUD II in an unroaded condition.

(c) **Public Input During Forest Plan Revision and Appeals:** Many commenters recommended against additional roading and harvesting to protect watersheds, domestic water quality, subsistence, recreation, fish and wildlife habitat values, deer population, and/or scenic quality. Many other commenters recommended managing the area for timber. They were concerned about the local economy. Some commenters wanted the roads to remain open. The Alaska Forest Association, the Alaska Miners Association, and the Alaska Visitors Association recommended that no new wilderness be designated on the Tongass National Forest. Others stated that all unroaded areas should be designated wilderness.

(d) **Public Input During Roadless Area Conservation Rule and Road Management Policy Review:** This area was not specifically identified in the public comments received during the Roadless Area Conservation Rule or Road Management Policy Review. However, some commenters wanted all unroaded lands on the Tongass to be protected from development.

**(e) Public Input Expressed for Project-level EISs and Other Input:** The Southeast Alaska Conservation Council, the Control Lake Citizen's Coalition, Prince of Wales Conservation League, the Forest Service Employees for Environmental Ethics, Southeast Alaska Federal Subsistence Regional Advisory Council, and others stated that the area should be managed to protect its outstanding wildlife, fisheries, hunting, subsistence, recreation, and tourism values. They recommended less roading and harvest but did not oppose all harvest. Others, including residents working in the timber industry, recommended more intensive harvest to support the local economy.

**(f) Public Input Expressed During Supplemental EIS Process:** This section is to be completed during the preparation of the Final SEIS.

**(2) Nearby Roadless and Wilderness Areas and Uses:** This roadless area is approximately 1 to 2 miles northwest of the Soda Bay Roadless Area (505), 2 miles north of the Twelvemile Roadless Area (534), and 1 mile south of the Thorne River Roadless Area (511). It is separated from these roadless areas by developed areas. The closest wilderness is the Karta Wilderness, which is nearly surrounded by the roadless area. Recreation and subsistence are the major uses for these areas. Use levels for the Karta River Wilderness are high in the summer. Use levels for other roadless areas are generally low.

**(3) Distance From Population Centers (Accessibility):** Approximate distances from population centers are as follows:

<b>Community</b>	<b>Air Miles</b>	<b>Water Miles</b>
Ketchikan (Pop. 14,070)	40	45
Wrangell (Pop. 2,308)	60	110
Petersburg (Pop. 3,324)	75	130
Juneau (Pop. 30,711)	190	250

Hollis, located on the Prince of Wales Island, is the nearest stop on the Alaska Marine Highway.

**(4) Relative Contribution to the National Wilderness Preservation System:** The Karta Roadless Area is located in the center of Prince of Wales Island and at the west end of Kasaan Bay. It consists of several unconnected roadless sections surrounding the Karta River Wilderness. These sections are separated by roads and harvested areas or by the wilderness. The roadless area ranges from steep, rugged mountains, rising to over 3,000 feet in the south and west, to relatively flat areas near the western end of Kasaan Bay and in the north. There are several small lakes, the largest of which is Black Bear Lake.

The Karta Roadless Area appears natural and unmodified, especially near the wilderness, but is often influenced by developments adjacent to most of the other boundaries. The area has moderate natural integrity and apparent naturalness. The opportunity for solitude is high, and the opportunity for primitive recreation is very high.

Approximately 7 percent of the landscape is considered distinctive for the character type from a scenery standpoint. The roadless area has sites with high cultural and historic values. The water from Black Bear Lake is used for hydroelectric generation for communities on Prince of Wales Island. A new hydroelectric facility is proposed for Wolf Lake near Hollis. A portion of the Maybeso Experimental Forest is located in the roadless area.



## Appendix C

The Karta Roadless Area is classified as being in the North Central Prince of Wales Island Biogeographic Province and makes up about 5 percent of the province. It is one of 17 inventoried roadless areas found within the province, which make up about 56 percent of the province. The Karta River Wilderness makes up about 3 percent of the province, and three designated LUD II areas (Mt. Calder-Mt. Holbrook, Pt. Baker-Port Protection, and Salmon Bay) make up about 6 percent of the province.

The Karta Roadless Area was rated 19 out of a possible 28 points under WARS. As such, its WARS rating is ranked 69th from the highest (along with 14 other roadless areas) among the 115 Tongass inventoried roadless areas.

There is both local and national support for managing the roadless area in an unroaded condition, but there is little support for designating the area as a wilderness. Designation would create a wilderness that adds area to the various boundaries of the Karta River Wilderness. The Karta River Wilderness was designed to have logical and relatively easy boundaries to manage, and the Karta Roadless Area includes the unroaded portions around the core that were not included in the wilderness. The wilderness additions would include areas heavily influenced by ongoing management and related activities including hydroelectric generation, experimental forest projects, and various sites with cultural and historic importance. Overall, the factors identified here indicate that the relative contribution of this area to the National Wilderness Preservation System would be low.

### **V. Environmental Consequences**

The Karta Roadless Area would be managed under the existing Forest Plan if Alternatives 1, 2, 3, 4, 5, or 7 are implemented. Approximately 33 percent of the roadless area would be managed under non-development LUDs. Timber harvest and road development could occur within the remaining 67 percent of the roadless area. The land in the development LUDs includes an estimated 6,398 acres that are suitable and available for timber production (5 percent of the suitable and available acres on the Craig and Thorne Bay Ranger Districts). Ongoing timber sales authorized by the Control Lake FEIS would continue. This area contains 3,809 acres of land identified as a mineral activity tract having a high potential for experiencing mineral exploration or development of locatable minerals (Coldwell, 1990; USDA Forest Service, 1991). In addition, this area contains an estimated 52,331 acres of undiscovered locatable mineral resources (Brew et al., 1990; USDA Forest Service, 1991); 1,816 of these acres are considered to have high potential for development. The hydroelectric, experimental forest projects, timber sale projects, recreation, minerals, and special uses would continue.

Under Alternative 6, all of the Enacted Municipal Watershed, Old-Growth Habitat, Semi-Remote Recreation, Experimental Forest, Scenic Viewshed, Modified Landscape, and Timber Production LUDs would be converted to the Recommended LUD II. The ongoing hydroelectric projects, experimental forest projects, timber sale projects, recreational use, special uses, and mineral management that occur within the designated LUD II area could be restricted. Mineral prospecting would be allowed in the Recommended Wilderness LUD up to the time that the area is actually designated as wilderness by Congress.

With Alternative 8, the entire roadless area would be converted to Recommended Wilderness. Timber sale projects would not be allowed, and the potential for other development, including recreation, mineral, and hydroelectric, would be significantly restricted. Mineral prospecting and development would be allowed up to the time that the area is actually designated as wilderness by Congress.

Land Use Designation Allocations by Alternative for Roadless Area 510								
Land Use Designation	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7	Alt 8
Recommended Wilderness								56,816
Wilderness								
Recommended Wilderness Nat. Mon.								
Wilderness National Monument								
Non-wilderness National Monument								
Research Natural Area								
Special Interest Area								
Remote Recreation								
Enacted Municipal Watershed	368	368	368	368	368		368	
Old-Growth Habitat	11,593	11,593	11,593	11,593	11,593		11,593	
Semi-remote Recreation	391	391	391	391	391		391	
Recommended LUD II						56,816		
LUD II								
Wild, Scenic, Recreational River								
Experimental Forest	6,270	6,270	6,270	6,270	6,270		6,270	
Scenic Viewshed	2,627	2,627	2,627	2,627	2,627		2,627	
Modified Landscape	7,195	7,195	7,195	7,195	7,195		7,195	
Timber production	28,372	28,372	28,372	28,372	28,372		28,372	
<b>TOTAL</b>	<b>56,816</b>	<b>56,816</b>	<b>56,816</b>	<b>56,816</b>	<b>56,816</b>	<b>56,816</b>	<b>56,816</b>	<b>56,816</b>

## Appendix C

### INDIVIDUAL ROADLESS AREA DESCRIPTION

**ROADLESS AREA NAME:** Kasaan (520)

**ACRES (NFS):** 7,602

**BIOGEOGRAPHIC PROVINCE:** North Central Prince of Wales Island

**2002 WILDERNESS ATTRIBUTE RATING:** 18

#### **I. Overview and Description**

**(1) Location and Access:** This roadless area is located on the southern tip of Kasaan Peninsula on Prince of Wales Island. The area is bordered to the south and west by non-National Forest System lands. Clarence Strait borders the area to the north and east. Kasaan Bay borders the area to the southwest.

Access is by boat or floatplane. Ketchikan, located approximately 25 air miles southeast of the area, is the closest large community. Access into the interior is by foot or helicopter. There are no places suitable for landing wheeled airplanes.

**(2) History:** Goldschmidt and Haas (1946) indicated that this area was historically Kasaan territory. They identified a number of uses in the immediate vicinity of the area including hunting/trapping and fishing for shellfish, as well as a number of commercial fish traps located along the northeast shore of the roadless area.

**(3) Geography and Topography:** This roadless area is characterized by rugged mountains and coastline. The area consists of a long, rounded ridge with very steep slopes close to 2,000 feet in elevation. The area includes 15 miles of shoreline on saltwater, 16 acres of rock, and 7 acres of small islands.

**(4) Ecosystem:**

**(a) Classification:** The area is in the North Central Prince of Wales Island Biogeographic Province. This province is characterized by rolling, gentle landforms with localized rugged topography. Limestone is common and overall forest productivity is high. Karst topography and caves are present. Precipitation is relatively low due to interception by lands to the south and southwest.

**(b) Soils:** The highly organic, low clay content soils found in this area are generally formed over bedrock and are typically about 40 inches deep.

**(c) Vegetation:** The vegetation in this area is typical Southeast Alaska coastal temperate rain forest. The forest is primarily western hemlock and Sitka spruce with large components of cedar.

There are approximately 7,545 acres mapped as forest land, of which 3,082 acres (41 percent) are mapped as productive old-growth forest. Of the productive old growth, 1314 acres (43 percent) are mapped as high volume old-growth forest. There is no second growth in this area.

**(d) Fish Resources:** There are six unnamed fish-bearing streams in this area. These streams provide habitat for coho and pink salmon.

**(e) Wildlife Resources:** This area has high populations of Sitka black-tailed deer, black bear, wolves, otter, marten, mink, loon, and common waterfowl. Alpine areas are excellent ptarmigan habitat. Moose inhabit Prince of Wales Island, but brown bear and mountain goat do not (MacDonald and Cook, 1999).

**(5) Management Direction and Current Uses:** This roadless area was allocated three Land Use Designations (LUD) in the 1997 Tongass Land and Resource Management Plan. These three LUDs are Transportation and Utility System (TUS), Old-Growth Habitat, and Semi-Remote Recreation. The TUS LUD is a secondary LUD that overlays the other land uses.

LUD	Acres
Transportation and Utility System	NA
Old-Growth Habitat	7,598
Semi-Remote Recreation	3

This roadless area was allocated to one development LUD overlay, Transportation and Utility System. A potential State road corridor running the length of the area to the southern tip of the peninsula was assigned to the Transportation and Utility System LUD overlay. A potential power transmission corridor running along the northeast shore was also assigned to the Transportation and Utility System LUD overlay. No roads or transmission facilities currently exist, but this LUD allows planning for their development in this area.

All of the roadless area was allocated to a non-development LUD (Old-Growth Habitat and Semi-Remote Recreation). Approximately 100 percent of the roadless area was allocated to the Old-Growth Habitat LUD. Less than 1 percent of the roadless area was allocated to the Semi-Remote Recreation LUD, located on a couple small islands off the coast.

This roadless area receives little use. The Tongass Fish and Wildlife Resource Assessment (Alaska Department of Fish and Game [ADF&G], 1998) indicated that the VCUs that comprise this area are subsistence use areas with a moderate sensitivity to disturbance.

**(6) Appearance (Apparent Naturalness):** The Kasaan Roadless Area is unmodified and in a natural condition, and appears that way when viewed from nearby Visual Priority Routes and Use Areas.

**(7) Surroundings (External Influences):** The area is bordered by Native Corporation and State-owned land to the west and south, respectively. Clarence Strait and Kasaan Bay make up the rest of the roadless area boundary. The adjoining private lands have been developed for timber production. The entire area is in close proximity to, or overlooks, the shipping and marine channels of Clarence Strait and Kasaan Bay. The near constant noise of boats can be heard over most of the area. Low-flying aircraft may frequently be noticed by visitors to the area.

**(8) Attractions and Features of Special Interest:** The natural features of the area, the scenery, the opportunity to see wildlife, and the opportunity to study the processes that formed this country may all be attractions. The area contains one inventoried recreation place, which covers 630 acres (1 percent) of the roadless area.

## Appendix C

**(9) Differences between the 1989 and 2002 Roadless Area Boundary:** The 1989 Kasaan Roadless Area included Grindall Point and Grindall Island. These areas have been conveyed to the State and are no longer National Forest System lands or part of the Kasaan Roadless Area.

### II. Capability for Management as Wilderness

**(1) Natural Integrity and Apparent Naturalness:** This roadless area has high natural integrity and apparent naturalness when viewed from nearby locations and from within the area itself. The area is, however, physically separated from other parts of the National Forest System by the private lands that border the area to the west. Grindall Point and Grindall Island formerly the key features of this area are now owned by the State of Alaska.

**(2) Opportunity for Solitude and Serenity, Self-reliance, Adventure, Challenging Experiences, and Primitive Recreation:** The area provides low opportunity for solitude and primitive recreation because the entire area is in close proximity to, or overlooks, the shipping and marine channels of Clarence Strait and Kasaan Bay. The near constant noise of boats can be heard over most of the area. Low-flying aircraft may occasionally be noticed by visitors to the area. Activities on adjacent private lands can distract visitors as well.

The area provides primarily primitive recreation opportunities. The table below lists the acreage and percent of the various Recreation Opportunity Spectrum (ROS) classes that have been inventoried in the roadless area.

<u>ROS Class</u>	<u>Acres</u>	<u>Percent of Total ROS</u>
Primitive (P)	5,765	76%
Semi-Primitive Motorized (SPM)	1,836	24%

The area contains one inventoried recreation place, which covers 630 acres (1 percent) of the roadless area.

<u>ROS Class</u>	<u># of Rec. Places</u>	<u>Total Acres</u>
P	1	630
SPM	0	0

**(3) Wilderness Attribute Rating System:** In 1977, the Forest Service, along with public interest groups, developed the Wilderness Attribute Rating System (WARS), which was used to inventory the wilderness characteristics of roadless areas during the second Roadless Area Review and Evaluation process (referred to as RARE II). The purpose of WARS was to provide a measure of the area's wilderness quality, based on the key attributes of wilderness as defined in the Wilderness Act. It is largely based on the attributes described above in items 1 and 2 of this section (natural integrity, apparent naturalness, outstanding opportunity for solitude, and primitive recreation opportunities).

The inventoried roadless areas of the Tongass National Forest were rated according to this system in 1989 for the Analysis of the Management Situation developed in support of the Forest Plan Revision. At that time, the Kasaan Roadless Area was given a rating of 15 out of 28 possible points. The rating was re-evaluated in 2002 for this updated version of the Analysis of the Management Situation. Based on this re-evaluation, the area was given a rating of 18. This rating reflects the relatively high natural integrity and apparent naturalness of the area.

**(4) Ecologic and Geologic Values:** The Kasaan Roadless Area is not part of a larger unroaded area. It is physically separated from other National Forest System lands by the private Native Corporation lands that border the area to the west.

**(a) Fish Resources:** The Tongass Fish and Wildlife Resource Assessment (ADF&G, 1998) did not identify these VCUs as primary salmon or sport fish producers.

There are six unnamed fish-bearing streams in this area. These streams provide habitat for coho and pink salmon.

**(b) Wildlife Resources:** This area has high populations of Sitka black-tailed deer, black bear, wolves, otter, marten, mink, loon, and common waterfowl. Alpine areas are excellent ptarmigan habitat. Moose inhabit Prince of Wales Island, but brown bear and mountain goat do not (MacDonald and Cook, 1999).

**(c) Threatened, Endangered, and Sensitive Species:** The only federally listed threatened and endangered species likely to occur within or adjacent to the roadless area are the humpback whale (endangered) and the Steller sea lion (threatened). Both of these species are found in adjacent marine waters. Four Forest Service Region 10 Sensitive Species are suspected or known to occur within the area: the trumpeter swan, osprey, Peale's peregrine falcon, and the Queen Charlotte goshawk. Trumpeter swans nest in the lowlands on small lakes and along major rivers and winter in ice-free areas throughout the Tongass. Present from April through September, ospreys are rare in southeast Alaska where they reach the northern extent of their nesting range. Feeding almost exclusively on fish, ospreys typically nest in large snags near lakes or the coast where fish are abundant. Peale's peregrine falcons nest on cliff faces and islands and feed primarily on seabirds. Inhabitants of late seral forests, Queen Charlotte goshawks are closely associated with productive old growth. In addition, nine sensitive plant species are known or suspected to occur in the Thorne Bay Ranger District.

**(d) Karst, Cave, and Other Geologic Resources:** There are no known karst or cave resources in this roadless area. There are no glaciers or unique geologic features in the area.

**(5) Scientific and Educational Values:** There are no known unique scientific or educational values identified in this roadless area.

**(6) Scenic Values:** The Kasaan Roadless Area is part of the Coastal Hill character type, which is characterized by moderately steep landforms, predominantly rounded summits, elevations up to 4,500 feet, and flat-floored, U-shaped valleys. A variety of island groups are also common. The landscape of the Kasaan Roadless Area is very representative of this character type.

The area displays natural characteristics when viewed from major and minor water travel routes and from inside the area itself. Visual Priority Routes and Use Areas identified by the Forest Plan within or adjacent to the area include Clarence Strait (Alaska Marine Highway) and Grindall Island (State Marine Park).

All of the area is inventoried as Variety Class B (possessing landscape diversity and features that are common to the character type). The Existing Visual Condition (EVC) for the entire area is Type I, where the natural landscape has remained unaltered by human activity.

**(7) Social, Cultural, and Historical Values:** Goldschmidt and Haas (1946) indicated that this area was historically Kasaan territory. They identified a number of uses in the immediate vicinity of the area

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including hunting/trapping and fishing for shellfish, as well as a number of commercial fish traps located along the northeast shore of the roadless area.

This roadless area receives little use. The Tongass Fish and Wildlife Resource Assessment does not list any of the VCUs in this area among the VCUs with the highest sensitivity to disturbance of subsistence use areas. These VCUs were not listed among the highest community use value areas (ADF&G, 1998).

**(8) Manageability as Wilderness and Boundary Conditions/Changes:** The boundaries of this area are for the most part easily identified and would not be difficult to manage if the area were designated wilderness.

### **III. Availability for Management as Wilderness (including effects of wilderness designation on adjacent areas)**

**(1) Recreation, including Tourism Potential:** The recreation potential of this area is very low because access to the area is difficult due to the rugged terrain and limited coastal access. The State land selections, which included Grindall Point and Grindall Island, included all land areas most suitable for some type of recreation purpose.

**(2) Subsistence Uses:** The existing patterns of subsistence activities in the area would not be affected by wilderness designation.

**(3) Fish Resources:** No fish habitat enhancement projects are currently planned for this roadless area.

**(4) Wildlife Resources:** No wildlife habitat enhancement projects are currently planned for this roadless area.

**(5) Timber Resources:** There are 3,082 acres mapped as productive old growth in the roadless area and no second growth. Of these acres, 2,528 acres are categorized as tentatively suitable for timber production. Based on the Forest Plan LUDs assigned to this area (and estimated falldown and scheduling reduction factors), no acres of this roadless area is estimated to be suitable for timber production.

**(6) Fire, Insects, and Disease:** The area has no significant fire history. Endemic tree diseases common to Southeast Alaska are present. There are no known epidemic disease occurrences.

**(7) Minerals:** This area contains an estimated 5,745 acres of undiscovered locatable mineral resources (Brew et al., 1990; USDA Forest Service, 1991). All of these acres are considered to have high potential for development. The USGS Mineral Resources Data website indicates that there are two prospects in this area for copper, gold, and silver.

**(8) Transportation and Utilities:** A potential State road corridor running the length of the area to the southern tip of the peninsula was assigned to the Transportation and Utility System LUD. A potential power transmission corridor running along the northeast shore was also assigned to the Transportation and Utility System LUD. No roads or transmission facilities currently exist, but this LUD allows planning for their development in this area. Until a specific project is initiated, the lands affected by these potential corridors are managed in accordance with the underlying LUD.

**(9) Water Availability and Use:** There are no developed recreation sites or other facilities located in this roadless area that would create a demand for domestic water use. There are no existing or planned hydroelectric or domestic water projects.

(10) **Areas of Scientific Interest:** The area has not been identified as a candidate Research Natural Areas or for any other scientific purpose.

(11) **Land Use Authorizations:** There are no land use authorizations in the area.

(12) **Land Status:** The area consists entirely of National Forest System lands.

#### **IV. Wilderness Evaluation**

##### **(1) Public and Congressional Interest:**

(a) **Interest Expressed by Local Users and Residents:** This roadless area receives little use.

(b) **Congressional Interest:** In 1989, U.S. House of Representatives Bill HR 987 proposed to designate 23 areas as wilderness on the Tongass National Forest. This bill did not include the Kasaan Roadless Area. In 2001, HR 2908 proposed that this roadless area be managed as LUD II in an unroaded condition.

(c) **Public Input During Forest Plan Revision and Appeals:** This area was not specifically identified in public input during the Forest Plan revision and appeals. The majority of people and organizations commenting on Prince of Wales Island mentioned specific areas other than the Kasaan Roadless Area. In general, some commenters wanted logging to continue on Prince of Wales Island at present levels, while others felt that too much logging had already occurred.

(d) **Public Input During Roadless Area Conservation Rule and Road Management Policy Review:** This area was not specifically identified in the public comments received during the Roadless Area Conservation Rule or Road Management Policy Review. However, some commenters wanted all unroaded lands on the Tongass to be protected from development.

(e) **Public Input Expressed for Project-level EISs and Other Input:** The Kasaan Roadless Area is not within the project area of any recently completed project-level EISs.

(f) **Public Input Expressed During Supplemental EIS Process:** This section is to be completed during preparation of the Final SEIS.

(2) **Nearby Roadless and Wilderness Areas and Uses:** There are no roadless areas adjacent to the Kasaan Roadless Area. Relatively nearby roadless areas include Kasaan Bay (536) and McKenzie (519) located west and southwest across Kasaan Bay, respectively. The Cleveland Roadless Area (528) is located east across Clarence Strait from the area.

The Karta River Wilderness, located approximately 10 miles west of the area, is the closest wilderness.



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(3) **Distance From Population Centers (accessibility):** Approximate distances from population centers are as follows:

<b>Community</b>	<b>Air Miles</b>	<b>Water Miles</b>
Ketchikan (Pop. 14,070)	25	25
Wrangell (Pop. 2,308)	65	80
Petersburg (Pop. 3,324)	95	105
Juneau (Pop. 30,711)	210	225

Hollis, located on Prince of Wales Island, currently is the nearest stop on the Alaska Marine Highway.

(4) **Relative Contribution to the National Wilderness Preservation System:** The Kasaan Roadless Area is located on the southern tip of Kasaan Peninsula on Prince of Wales Island. The area is bordered to the south and west by non-National Forest System lands. Clarence Strait borders the area to the north and east. Kasaan Bay borders the area to the southwest. The Kasaan Roadless Area is characterized by rugged mountains and coastline. The area consists of a long, rounded ridge with very steep slopes close to 2,000 feet in elevation.

The area is unmodified and in a natural condition. The area has very high natural integrity and apparent naturalness. The opportunity for solitude and primitive recreation is low.

The Kasaan Roadless Area has moderate scenic quality; none of the landscape is classified as distinctive from a scenery standpoint. There are no known features of ecologic, geologic, scientific, or cultural significance in this area.

The Kasaan Roadless Area is classified as being in the North Central Prince of Wales Island Biogeographic Province and makes up about less than 1 percent of the province. It is one of 18 inventoried roadless areas found within the province, which make up about 56 percent of the province. The Karta River Wilderness makes up about 3 percent of the province, and three designated LUD II areas (Mt. Calder-Mt. Holbrook, Pt. Baker-Port Protection, and Salmon Bay) make up about 6 percent of the province.

The Kasaan Roadless Area was rated 18 out of a possible 28 points under the Wilderness Attribute Rating System (WARS). As such, its WARS rating is ranked 84th from the highest (along with 8 other roadless areas) among the 115 Tongass inventoried roadless areas.

There is some local and national support for managing the roadless area in an unroaded condition, but there is very little support for designating the area wilderness. Designation would create a small wilderness with no known features of ecologic, geologic, scientific, or cultural significance in this area. Overall, the factors identified here indicate that the relative contribution of this area to the National Wilderness Preservation System would be low.

### **V. Environmental Consequences**

The Kasaan Roadless Area would be managed under the existing Forest Plan if Alternatives 1, 2, 3, 4, 5, or 7 are implemented. All of the roadless area would be managed under non-development LUDs. This area contains an estimated 5,748 acres of undiscovered locatable mineral resources (Brew et al 1990; USDA Forest Service, 1991); all of these acres are considered to have high potential for development.

Under Alternative 6, the entire area would be converted to Recommended LUD II.

Under Alternative 8, the entire roadless area would be converted to Recommended Wilderness.

Land Use Designation Allocations by Alternative for Roadless Area 520								
Land Use Designation	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7	Alt 8
Recommended Wilderness								7,602
Wilderness								
Recommended Wilderness Nat. Mon.								
Wilderness National Monument								
Non-wilderness National Monument								
Research Natural Area								
Special Interest Area								
Remote Recreation								
Enacted Municipal Watershed								
Old-Growth Habitat	7,602	7,602	7,602	7,602	7,602		7,602	
Semi-remote Recreation								
Recommended LUD II						7,602		
LUD II								
Wild, Scenic, Recreational River								
Experimental Forest								
Scenic Viewshed								
Modified Landscape								
Timber production								
<b>TOTAL</b>	<b>7,602</b>	<b>7,602</b>	<b>7,602</b>	<b>7,602</b>	<b>7,602</b>	<b>7,602</b>	<b>7,602</b>	<b>7,602</b>