

Kupreanof / Mitkof Province

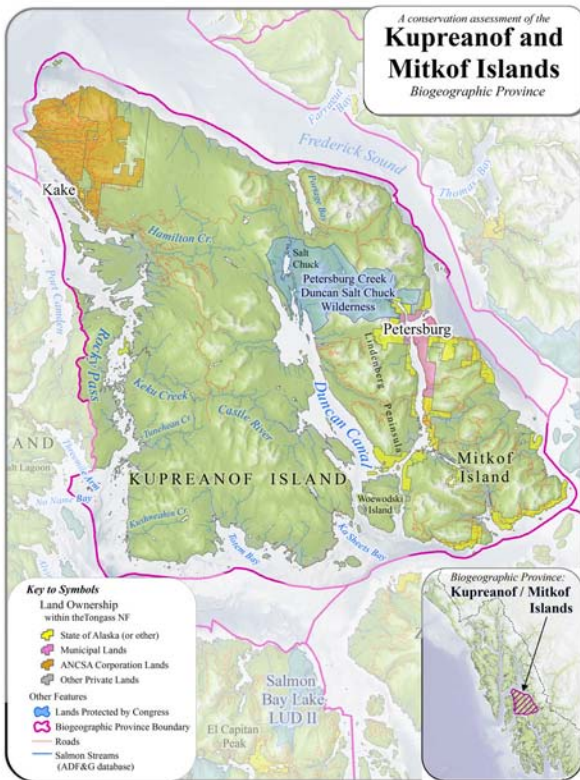


FIG 1. Kupreanof-Mitkof Province.

The biogeographic province of Kupreanof and Mitkof Islands is located in central Southeast north of the Stikine River Delta (Fig 1). This province has one of the highest proportions (65%) of development lands of any province in Southeast and only 5% of the lands are protected by congress.

The Kupreanof / Mitkof Province has the greatest expanse of low-lying, poorly drained, unproductive forest and peatland in Southeast. Two geologic terranes run through the province: Wrangellia/Alexander on the west, and to the east the Gravina Belt on Mitkof Island

and northeastern Kupreanof. In the southwestern corner fringing Rocky Pass, extensive volcanic rocks underlie a rolling, boggy plateau. Other portions of the province have greater relief, but only in the northwest corner are there highly productive parent materials that once supported extensive large-tree forest.

Mitkof Island has the northernmost redcedars on the archipelago. (A few occur to the north at Farragut Bay on the mainland.) Yellow-cedars are abundant throughout the province, yet a large proportion of cedar stands are currently experiencing a systematic die-off that is wide-spread throughout Southeast Alaska and northern British Columbia (Hennon et al. 1990, Hennon et al. 2005).

Compared to island provinces such as East Chichagof and North Prince of Wales, where deeply dissecting fiords and more rugged relief create obstacles to wildlife connectivity, Kupreanof-Mitkof Province has a low degree of natural fragmentation. This province has a high number of mammal species; collectively, Kupreanof and Mitkof host 21 known mammal species, the second largest number (after Wrangell/Etolin) for any island province (MacDonald and Cook 1999). This species richness certainly reflects proximity to the Stikine River which is a major corridor connecting wildlife from the interior with the coastal forests.

Kake and Petersburg—the province’s two mid-sized communities—are both dependent upon the surrounding marine and terrestrial environment. Kake is a primarily Alaska Native community that derives much of its food from subsistence hunting, fishing, and gathering. Petersburg is a thriving fishing community and its economic health depends on the health of both marine and freshwater aquatic habitats.

With a total of over 1,000 mi ((1,600 km) of freshwater salmon habitat, the Kupreanof-Mitkof Province ranks 4th highest in the region, following

North Prince of Wales, Yakutat, and East Chichagof, for all salmon combined (Chapter 2, Table 11). Freshwater ecosystems are characterized by relatively high proportions of flood plain and palustrine channel types and relatively larger watersheds than other islands in Southeast. Large salmon producing watersheds on Kupreanof include Hamilton Creek, Castle River, Keku Creek / Irish lakes, Big John Creek, Tunahean Creek, and Kushneahin Creek. Based on habitat characteristics and estimated productivity for juvenile coho, the top producing watersheds include Upper Hamilton Creek, Rocky Pass, Keku Creek / Irish Lakes, Bohemia Range, and Big John Bay (Flanders et al. 1998). The outstanding watersheds for pink salmon in this province are those bordering northern Wrangell Narrows, with an estimated combined escapement of 92,400 fish with adjacent Blind Slough contributing 68,200 pink salmon (Flanders et al. 1998). The Kupreanof-Mitkof province has approximately 37,822 acres (15,306 hectares) of riparian forest associated with anadromous fish, 14% of which has been logged (Chapter 2, Table 12). Significantly, only 17% percent of those riparian forests associated with anadromous fish are protected in watershed-scale reserves while 61% occur in development lands (most with riparian buffers). Conservation buffers of 100 ft (30 m), as mandated in the Alaska State Forest Practices Act, rarely protect the entire extent of floodplain over which riparian forests occur. Riparian buffers on Tongass National Forest lands, however, generally protect most of the floodplain habitat.

While Value Comparison Units (VCU) tend to provide an adequate representation of hydrologic flow at an island scale, Kupreanof Island is a notable exception. On this island, few of the most important drainages are completely contained within a single VCU (e.g., Castle River and Duncan Salt Chuck) while many VCUs span several large drainages (e.g., Rocky Pass and Irish Lakes). This is not simply a convenience for the purposes of accounting. The province of Kupreanof and Mitkof Islands ranks among the lowest based on the representation of habitat values within protected areas that encompass entire watersheds. For this province, we recommend that VCUs be redesigned to better reflect hydrologic patterns, and consideration be made for greater representation of habitat values at a watershed scale.

The Rocky Pass area has “staircase” landforms resulting from basalt flows less than one million years old. The “risers” support the only productive forest,

while the “treads” are covered in scrub forest and peatlands. Only the steep slopes have economically valuable timber, but these areas often erode badly after canopy removal. Even uncut forests have actively gullied slopes that send high bedload sediment into streams (Nowacki et al. 2001). Perhaps this helps to explain the high frequency and relatively large size of estuaries in this province, as noted below (Fig 2).



FIG 2. View south down Rocky Pass from over the entry to Big John Bay. The low plateau is composed of mudstones and conglomerates formed during the Age of Mammals, some of the youngest sedimentary rock in Southeast. The rocks bear imprints of deciduous leaves from a time when the land was covered by a forest similar to that of the Appalachians today. This flat country, and the similarly low-lying volcanic landscape to the south on either side of Rocky Pass, generally has little large-tree forest and has not been heavily impacted by logging. One positive consequence of the convoluted shorelines and low relief—which extends into the bathymetry—is extensive salt marsh and mudflat formation. Of the 25 largest estuaries in Southeast, five are within a short skiff ride of Kake. This is remarkable considering that none of them were created by large rivers. (John Schoen photo)

The Kupreanof / Mitkof Province has the fourth highest amount of POG in Southeast but the amount of large-tree old growth is in the mid- to low-range (Chapter 2, Table 5). This province has been intensively high-graded, on both federal and private lands.

Unlike the early logging on Chichagof and Baranof, where valley-bottom forests were removed first, the primary targets on Mitkof and eastern Kupreanof have been even-aged “wind forests” on exposed upland, southerly slopes (Fig 3). Logging of the wind forest may have had less environmental impact per acre than did logging of alluvial bottomlands in provinces like

East Chichagof and Baranof. But it has likely contributed to reduced winter carrying capacity for deer. Although only 16% of the original POG has been logged a conservative estimate indicates that nearly half of the large-tree forest has been logged in this province (Chapter 2, Table 5). Only 15% of the remaining large-tree old growth occurs in watershed-scale reserves and 45% occurs in the timber base.



FIG 3. Highly productive 200-year-old “wind forest” on exposed south-facing slope above Bear Creek, Mitkof Island. Even-sized trees indicate a mature but not old-growth forest, recovering from a stand-replacing disturbance. On Mitkof, such forests have produced some of the highest timber volume measured on the Tongass—much higher than the best large-tree alluvial Landmark Tree stands that appear to “plateau” at about 140,000 board feet per acre. Mitkof never had much large-tree bottomland forest, and timber harvest here has targeted primarily these south-slope wind forests. (Richard Carstensen photo)

Summer black bear habitat value is estimated at 67% of its original value for this province (Chapter 2, Table 15). Only 17% of summer black bear habitat occurs in watershed-scale reserves while 60% occurs on development lands. Winter deer habitat in this province is estimated to be 78% of its original value. A winter telemetry study on Mitkof showed that deer favored south-facing slopes at low elevations with moderately fine-textured (i.e. mature even-aged) canopy (Doerr et al. 2005). These are the primary forest types that have been logged in this province. Only 18% of deer habitat is in watershed-scale reserves while another 21% occurs in sub-watershed reserves (Chapter 2, Table 8). Fifty-one percent of winter deer habitat occurs on lands managed for development.

Conservation of winter habitat for deer on Kupreanof and Mitkof Islands remains a priority for conservation as discussed with regard to Kuiu Island. Based on this assessment, the top ranking watersheds

within the province for winter deer habitat were Rocky Pass, Irish Lakes, Cathedral Falls, Big John Bay, and Woewodski Island. These watersheds all rank within the top 35 throughout Southeast.

Kupreanof-Mitkof Province has notably high estuary values. The abundance and broad expanse of estuaries in this province is interesting in light of the fact that large mainland rivers deliver far more sediment to their mouths. Estuary size has as much to do with topographic complexity and shallow bathymetry as with amount of sediment delivery. Rocky Pass is the 9th ranked estuary in Southeast and 3rd ranked island estuary (Fig 2).

Forest types, historical logging, and roads are mapped within the Admiralty Province in Figure 6. Refer to the Arc Reader GIS database in Appendix C of this report to review detailed mapped information on location of large-tree stands, past timber harvest, roads, forest reserves, protected areas, and regions of core ecological values

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FIG 4. View northwest at Blind Slough, Mitkof Island. Productive south-facing wind forest on colluvial toeslopes was logged in the 1960s. (John Schoen photo)



FIG 5. Landmark Tree on Castle River. It was 8.2 ft (2.5 m) in diameter at 10 ft (3 m) above the ground. This tree and a neighbor were roughly equal in size to the official state record spruce on Prince of Wales Island. (Richard Carstensen photo)

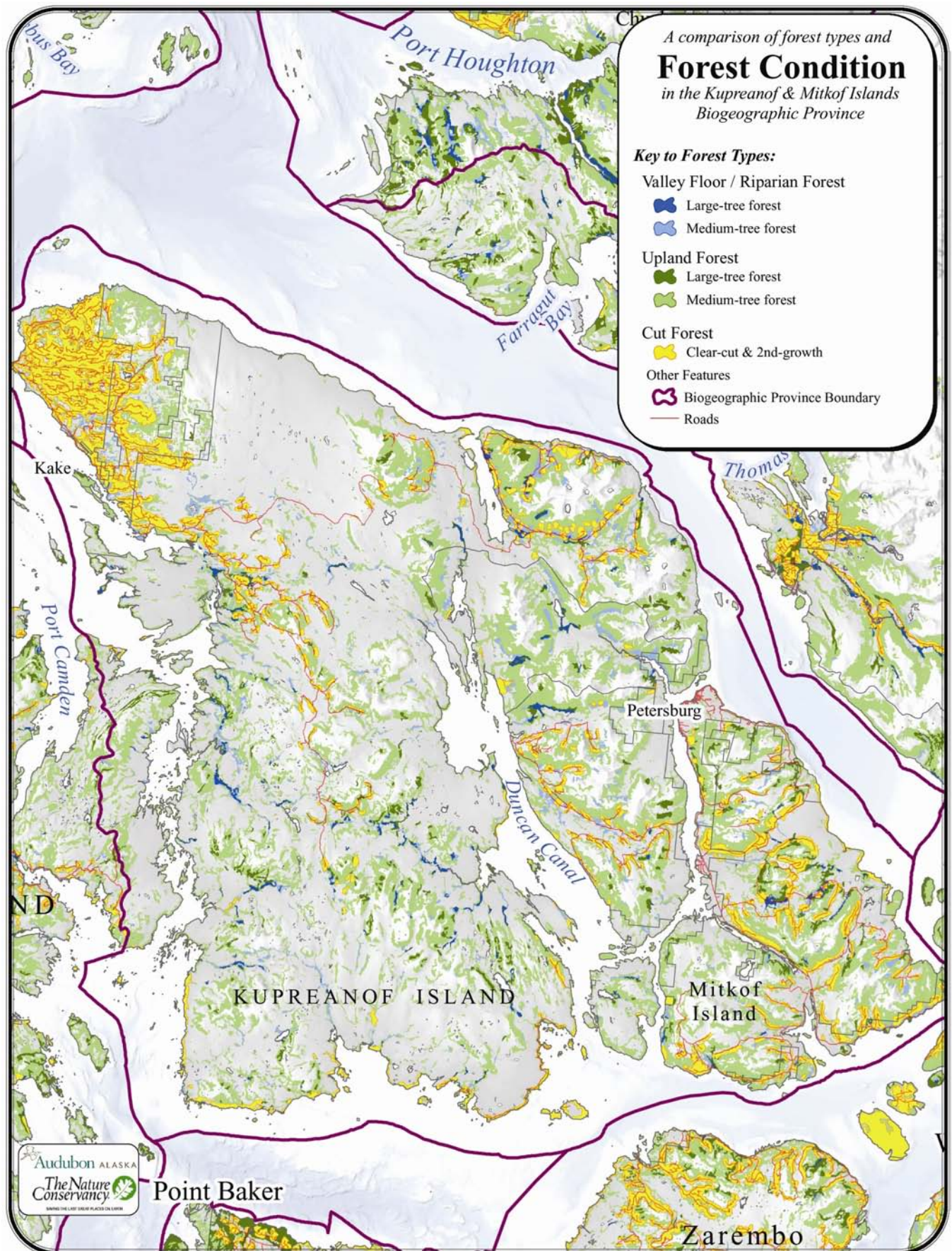


FIG 6. A comparison of forest type and condition in the Kupreanof / Mitkof Province of southeastern Alaska.