East Baranof Province

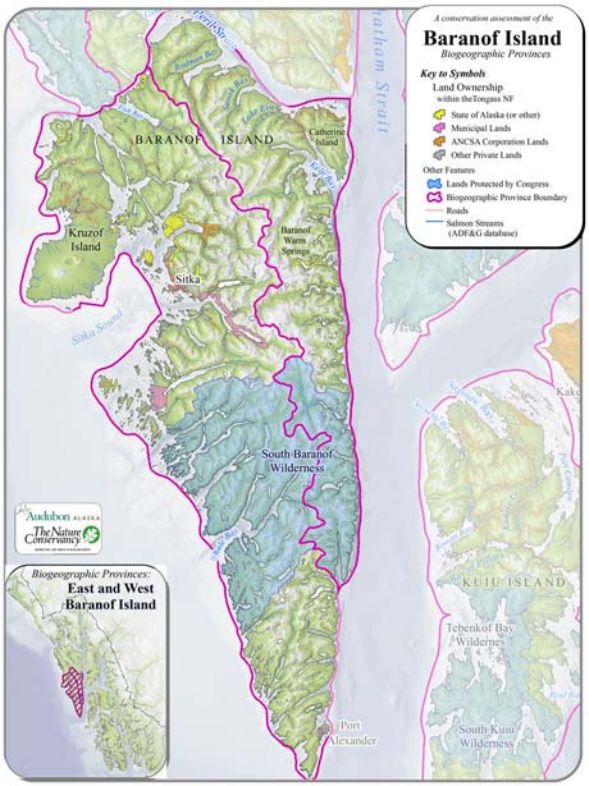

FIG 1. East Baranof Province.

During the Great Ice Age, the tall mountain massif of northern Baranof became a center from which glaciers radiated, flowing east into Chatham Strait and west to the Pacific Ocean. Today, the East Baranof Province (Fig 1), with adjacent portions of West Baranof, is the highest and most rugged of all island topography in Southeast. Ice-age glaciers carved deep U-shaped valleys with oversteepened walls that remain unvegetated to this day. Mountain elevations range from 4,600 ft (1,400 m) above Glacial River in the north, to the 4,528-ft (1,380 m) horn of Mount Ada on the south. These summits are about the same elevation as the highest peaks on Admiralty Island, but they intercept more moisture and are more heavily glaciated. They also appear more jagged, because regional ice levels were somewhat lower during the Great Ice Age, and therefore a greater proportion of their summits stood free of the rounding effects of ice. The unnamed 5,328-ft (1,625 m) mountain at the head of Baranof River is the tallest peak on any Southeast island, and overlooks an icefield of about 5 mi^2 (12 km^2), the largest such expanse on the archipelago. Catherine Island is a giant “tombolo;” only during extreme high tides is it actually separated from Baranof Island by salt water.

The largest streams and rivers draining the interior glaciated highlands are braided and aggrading where they reach the lowlands. Most deliver their silt burden into lakes before reaching the ocean. Only Glacial River, terminating in the south arm of Kelp Bay, carries glacial silt all the way into estuarine salt marshes, and is unique among all archipelago streams in this regard. The Clear River also enters these marshes, forming an instructive contrast. East Baranof Province is one of the wettest regions of Southeast. Little Port Walter on southeastern Baranof receives 221 in (561 cm) of precipitation annually.

Over most of the province, precipitous terrain precludes the growth of large expanses of hemlock-spruce forest, particularly in the southern portion of the province. Under these conditions, productive forest is primarily restricted to valley bottoms and alluvial-colluvial deposits of lower mountain slopes. The northern portion of the province lies within a geologic complex of sedimentary and volcanic rocks, with generally lower elevations and higher productivity than areas to the south. A series of watersheds flowing north into Peril Strait represent the core of biological productivity in this province, and include (north to

south) Rodman Bay, Appleton Cove, Saook Bay, Lake Eva, and Kelp Bay.

Along with the portions of West Baranof and East Chichagof Provinces that frame Peril Strait, East Baranof Province is the most intensively high-graded region for large-tree old growth in Southeast. A far higher volume of timber was removed from productive forest lands in places like northern Prince of Wales Island. But in the more rugged topography of Peril Strait, large-tree forest was predictably concentrated in valley bottoms, and much of this rare forest type has been significantly targeted by logging. Less than 1% of East Baranof originally had large-tree forest but at least 67% of that has been logged (Chapter 2, Table 6). Of the remaining large-tree forest on East Baranof, only 44% is protected in watershed-scale reserves, representing only 15% of the original distribution, while 23% remains within the timber base. Given the dramatic decline of large-tree forests on East Baranof from original conditions, further logging of this rare forest type should discouraged. While continued harvest of second-growth timber may be appropriate from watersheds with past harvest and existing infrastructure (e.g., Rodman Bay), we recommend against expansion of new logging into currently intact areas, particularly those with high-value riparian forests. Although Saook Bay has had some historical logging, it is currently the top-ranked watershed for combined ecological values in East Baranof and is within the timber base of the 1997 TLMP.

The distribution of salmon is also affected by the steep terrain of East Baranof, which is limited to only 149 mi (238 km) of documented freshwater habitat. Nonetheless, East Baranof contains several productive runs of pink salmon, including Red Bluff Bay, with the 10th highest pink salmon escapement (113,900 fish) of all surveyed watersheds in Southeast (Flanders et al. 1998). Also outstanding is the South Kelp Bay watershed, with pink salmon escapement of 55,400 fish. Sockeye salmon only occur in four watersheds, with significant runs in both Lake Eva and Fall Lake. Steelhead populations only occur in two watersheds: Lake Eva and Gut Bay. Top ranked watersheds based on distribution of freshwater salmon habitat include Rodman Bay, Catherine Island, Red Bluff Bay, Lake Eva, and Saook Bay. Forty-one percent of riparian forests associated with anadromous fish have been cut in this province (Chapter 2, Table 12). Watershed reserves protect only 28% of this important habitat while sub-watershed buffers protect an additional 9%. Sixty-three percent of riparian forests associated with anadromous fish occur in development lands (some of these have riparian buffers).

FIG 2. The head of Lake Eva has 380 acres (154 hectare) of mapped large-tree forest, one of the last large bottomland spruce stands in East Baranof Province. Lake-head alluvial deposits offer some of the best remaining prospects for finding Landmark-quality forests because some remote lakes have not yet been roaded and logged. Comparable large-tree stands in coastal bay-heads were more accessible to logging, and few remain (Fig 4). (John Schoen photo)

As noted above, East Baranof contains the highest percent of logging within riparian forests associated with anadromous fish of any province in the region (Chapter 2, Table 12). Watershed reserves protect only 28% of this important habitat while sub-watershed buffers protect an additional 9%. Sixty-three percent of riparian forests associated with anadromous fish occur in development lands. While 48% of the remaining riparian forests within development lands are protected within riparian buffers (Chapter 2, Fig. 4 and Table 12), such stand level protections do not maintain the connectivity and function of riparian forests in the context of coastal forest ecosystems. This is particularly important for wide-ranging species such as brown bears that are responsible for dispersion of marine-derived nutrients from salmon throughout the watershed. This situation could be improved by greater representation of riparian forests (adjacent to anadromous fish streams) within the system of small and medium old growth reserves designated in the Tongass Land Management Plan.

East Baranof retains an estimated 70% of its original habitat value for brown bear during summer (Chapter 2, Table 15). However, watershed-scale reserves protect only 52% of that habitat while 15% is protected in sub-watershed reserves and 33% occurs on lands managed for development. This province also

retains 74% of its original winter deer habitat values and 32% of that habitat is protected in watershed reserves while 16% occurs in sub-watershed reserves and 37% is in development lands (Chapter 2, Table 8 2.8).

Mountain goats (*Oreamnos americanus*) were introduced to Baranof Island in 1923 and have well established populations in the highlands of northern and central Baranof. In other ranges where goats have been introduced, such as Washington's Olympic Mountains, they have had serious impacts on rare endemic alpine plants. Little is known of alpine vegetation on Baranof, but there were high elevation glacial refugia throughout the Wisconsin Glaciation, suggesting high potential for undocumented endemics.

The Tlingit Hutsnuwu Kwan used eastern Baranof all the way to the south tip of the Island. The province still offers important subsistence areas accessible from Angoon on calm days.

The East Baranof Province includes a portion of the South Baranof Wilderness area representing 23% of the province. An additional 50% is administratively protected in habitat conservation areas, old-growth reserves, and buffers under the 1997 Tongass Land Management Plan. Twenty-seven percent of the province is managed in development lands.

Forest types, historical logging, and roads are mapped within the East Baranof 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.

FIG 3. View south down the spine of eastern Baranof from over Kelp Bay. Resembling the mainland icefields, this is the most glaciated and dramatic portion of the Southeast island chain. Precipitation wrung from the clouds here creates a rainshadow at Angoon on Admiralty Island to the east. (Richard Carstensen photo)

FIG 4. Landmark-Trees crew in an old cut at Saook Bay, west of Lake Eva. The long springboard cut was made with chainsaw rather than axe, indicating fairly recent logging. The "managed stands" database gives a date of 1962 for this 610-acre (247 hectare) clearcut above Paradise Flats. Stumps like these allow researchers to reconstruct the quality of the original forest. It closely resembled the remnant forest on Indian River. An oblique view of the clearcut is in Fig 5. (Richard Carstensen photo)

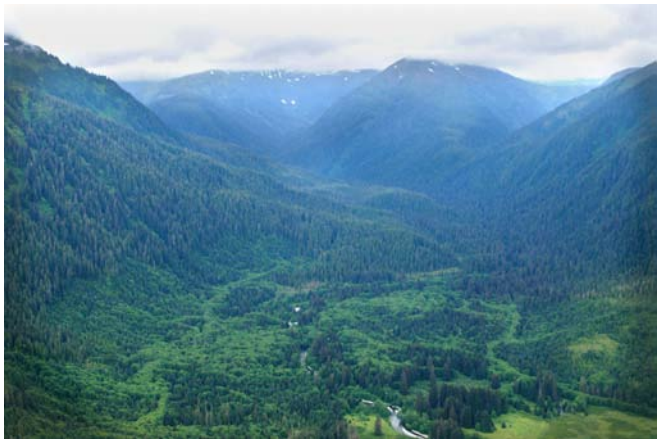

FIG 5. Flood-plain and colluvial toe-slope logging in Saook Bay, northern Baranof. Valley-bottom large-tree removal was the norm for both East and West Baranof provinces. Although this cut is 44 years old, conifer regeneration has been delayed by “alder capture.” This happens when tractor-yarding disturbs the soil, allowing heavy seed reproduction by red alder. The resulting mixed conifer/deciduous forests are much better summer habitat than are young pure conifer stands. But the stream is now exposed to summer over-heating, and will lack large woody debris for centuries until the forest regrows. (John Schoen photo)

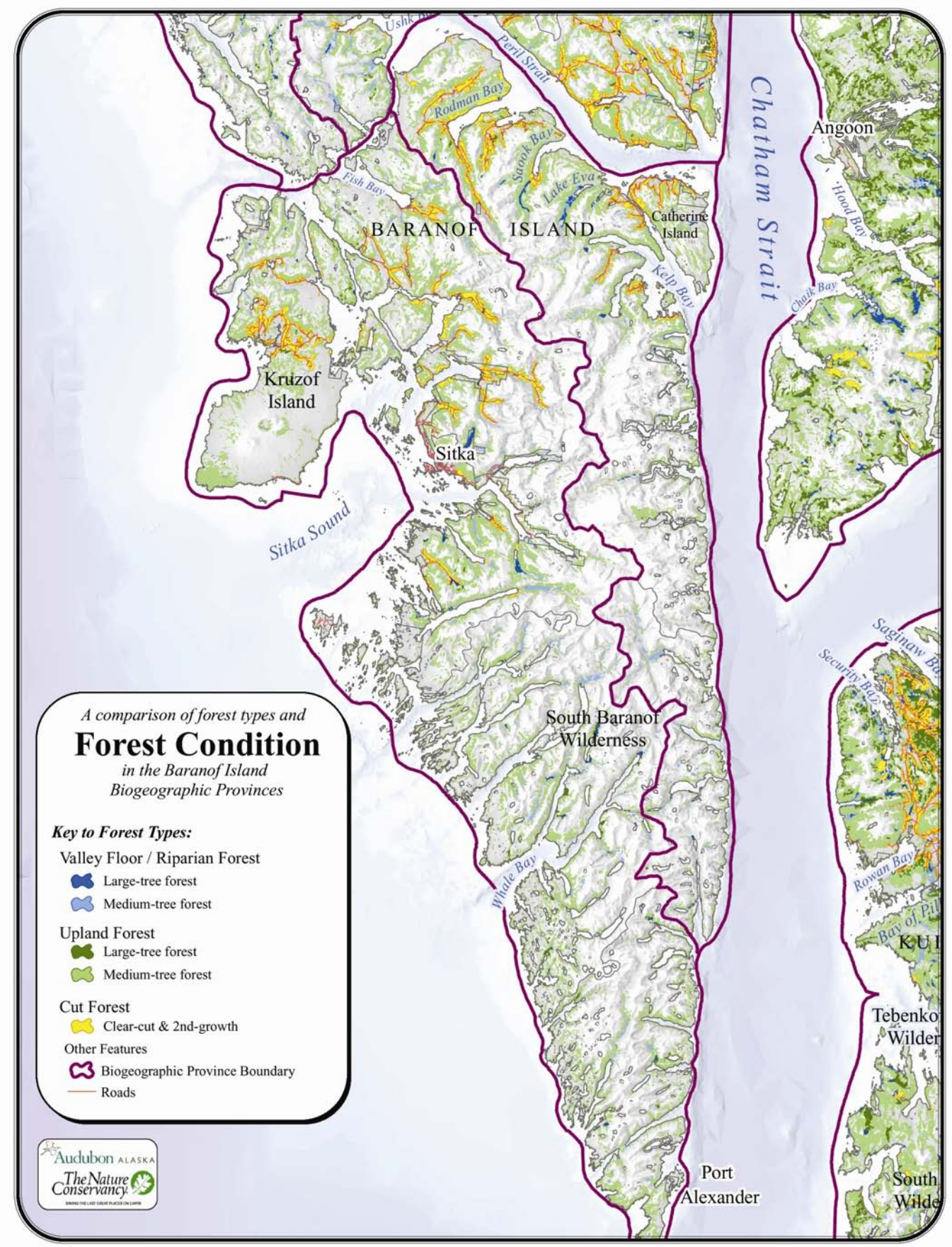

FIG 4. A comparison of forest type and condition in the East Baranof Province of southeastern Alaska.