Kuiu Province

FIG 1. Kuiu Province.

The Kuiu Province is located in central Southeast and includes only Kuiu and a few small, adjacent islands (Fig 1). Twenty-eight percent of Kuiu is legislatively protected in the Tebenkof Bay and Kuiu wilderness areas located on west central Kuiu. Administrative protections under the Tongass Land Management Plan encompasses 35% of the province while 37% is managed in development status.

Kuiu Island falls largely within the Alexander geologic terrane, the same formation that produced the great karst forests of northern Prince of Wales. Although karst bedrock is not as extensive and monolithic on Kuiu as on Prince of Wales, it is well dispersed in smaller patches throughout the northern portion of the island. Bands of karst run throughout the province. And even the non-carbonate rocks tend to be highly productive; Kuiu's mudstones and graywackes weather to deep, well-drained loamy soils with angular rock fragments (Nowacki et al. 2001).

FIG 2. View northeast over Hiller Cove in Threemile Arm. Rocky Pass in the distance. The best coastal large-tree forest was logged here by A-frame projects in the 1960s, followed by roads and a dispersed patchwork of clearcuts in the 1990s. Soils here are generally unproductive compared to the carbonate-enriched landscape of northern Kuiu. Forests typically are scrubby, unable to intercept snow in hard winters and therefore poor deer habitat. Game trails indicate that deer concentrate in the remaining patches of big old growth on wind-protected northwest-facing slopes. These include stands proposed for further logging. (Kenyon Fields photo)

A large, hammerhead-shaped peninsula forms the easternmost extension of Kuiu, framed by Port Camden, Rocky Pass and Threemile Arm. This low-lying portion of the island is underlain by recent volcanic rocks and supports a much less productive forest (Fig 2).

Kuiu Island is deeply dissected by fiords that nearly divide the island into narrow land bridges in several places. The resulting bottlenecks pose obstacles to wildlife movements. The Bay of Pillars-to-Port Camden portage was one of four areas in Southeast identified in the Forest Plan (USFS 1997) as problematic for wildlife dispersal, and remains a priority for maintaining connectivity of high value habitats.

FIG 3. View northeast over Cool Lake (barely showing, center left). Pale grey cliffs in the distance are the Halleck Fossil Bluffs across Saginaw Bay. Dates are shown for recent and older clearcuts. High-quality Silurian carbonate rocks underlie much of this forest. In 1998, a new state record western hemlock was discovered on karst in a proposed road corridor near Cool Lake. It was 192 ft (28 m) tall and 7.3 ft (2.2 m) in diameter at breast height. (Kenyon Fields photo)

Originally, Kuiu Island had the fourth most extensive distribution of large-tree old growth in Southeast, ranking behind North Prince of Wales, Admiralty Island, and East Chichagof (Chapter 2, Table 6). Large scale timber harvest began in the late 1960's and averaged over 1,000 acres (405 hectares) per year during the 1970's and somewhat lower during the 1980's. Today, Kuiu still contains 36,331 acres (14,703 hectares) of large-tree stands. However, only 32% of these remaining large-tree stands are protected in watershed-scale reserves, while 43% are managed in the timber base (Chapter 2, Table 6). The large watersheds on the northern portion of the island are the highest ranked for both riparian and upland large-tree forests, including Saginaw Bay, Security Bay, Kadake Creek and Rowan Bay, and are largely contained within development lands. The highest value forests remaining within intact watersheds include Tebenkof Bay on the west, and Reid Bay, Alvin Bay, No Name Bay, and Seclusion Bay on east Kuiu (Chapter 2, Figure 20). While Tebenkof Bay is protected within the Tebenkof Wilderness, the east side of the island remains largely within development designations.

The southwestern shorelines of Kuiu are exposed to severe Pacific storms comparable to those that sweep the outer coasts of Baranof and Chichagof. Stunted "wind forests" are common here, including the salt-spray-tolerant Sitka spruce/Nootka reedgrass association described in the West Chichagof province description.

The watersheds that rank highest based on freshwater salmon habitat include Kadake Creek, Rowan Bay, Saginaw Bay and Security Bay. Moreover, the watersheds of Security Bay and Rowan Bay have also been estimated to have the highest habitat capability for juvenile coho of any island watersheds in Southeast (Flanders et al. 1998). Only the large mainland river systems were greater. Nearby Kadake Creek was also highly ranked for production of coho. Notably, these watersheds contain an abundance of limestone, which has been shown to produce larger densities of juvenile coho on nearby North Prince of Wales Island (Bryant et al. 1998).

Kuiu Island has has one of the highest density black bear populations in North America, estimated at 3.9 bears/mi^2 (1.5/km^2) (Peacock 2004). Kadake Creek was the top ranked watershed on Kuiu for summer black bear habitat. Other high ranking watersheds for black bear habitat on Kuiu Island include Elena Bay, Port Beauclerc, and Petrof Bay. High bear density combined with the extensive road system has made Kuiu a major bear hunting destination. Between 1985 and 1994, 108 black bears were reported killed in Security Bay, the highest number from any watershed in Southeast (Flanders et al. 1998). Bay of Pillars was 4th in Southeast (84 bears). Saginaw Bay, Port Camden, Threemile Arm, Rocky Pass Rowan Bay, and Kadake Creek watersheds were also heavily hunted areas. Unlike brown bear hunting, non-resident black bear hunters are not required to hire a guide. Black bears may be hunted from roads, whereas brown bear hunting is primarily boat-based. Northern Kuiu offers six major bays with secure anchorages, plus extensive access into the island interior on the network of logging roads.

Deer populations on Kuiu declined in the late 1960's and early 1970's as a result of a series of severe winters, combined with wolf predation and human harvest (Firman and Bosworth 1990). Today deer on

Kuiu Island continue to occur at relatively low densities, and deer hunting on both Kuiu and Kupreanof Islands has been closed since 1973. While natural cycles and environmental variability are inevitable, effective management for multiple-uses requires the mitigation of these risks by investment in habitat protection during periods of stress or declining populations. In retrospect, this was not the case on Kuiu Island. As deer populations declined, harvest of timber increased, reaching a peak of >1,600 acres cut in 1979. While winter weather and other factors may have been primarily responsible for the decline in deer numbers, it is reasonable to conclude that timber harvest, and the consequent reduction of high-quality winter habitat has not helped the situation, and may have contributed to the lack of recovery of this population over the past 30 years. Thus, a prudent management strategy for Kuiu Island would include investment in restoration measures that improve the quality of winter habitat, as well as a moratorium on further logging until recovery of the deer population is achieved. This course of action is likely to yield several benefits. In addition to meeting the multiple-use mandate and providing high-quality subsistence resources for the people of Southeast, managing for the stability of prey systems that support the Alexander Archipelago wolf will also serve to avoid future constraints related to a potential listing of that species under the Endangered Species Act. To that end, the highest-value watersheds as winter habitat for deer on Kuiu Island include Bay of Pillars, Tebenkof Bay, Port Camden and Kadake Creek, with Rowan Bay, Saginaw Bay, and Security Bay as likely candidates for restoration investments.

Although Kuiu Island only has 16 documented mammal species, it holds distinctive lineages of black bear and marten. The recently described species of marten, *Martes caurina*, occurs only on Admiralty and Kuiu Islands. Small mammal populations exist at very low densities on Kuiu Island, which has implications for further logging in this highly fragmented landscape.

This island is named for the Kuiu Kwan Tlingit people whose principle village was in Tebenkof Bay (Goldschmidt and Haas 1948-1998). Almost the entire village was wiped out by small pox; survivors dispersed to Kake and northern Prince of Wales.

Forest types, historical logging, and roads are mapped within the Kuiu 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 4. Exposed karst at Cornwallis Point on the northern tip of Kuiu Island. Note the pocketed, “swiss-cheesy” appearance, caused by the action of salt water on soluble rock. (Richard Carstensen photo)

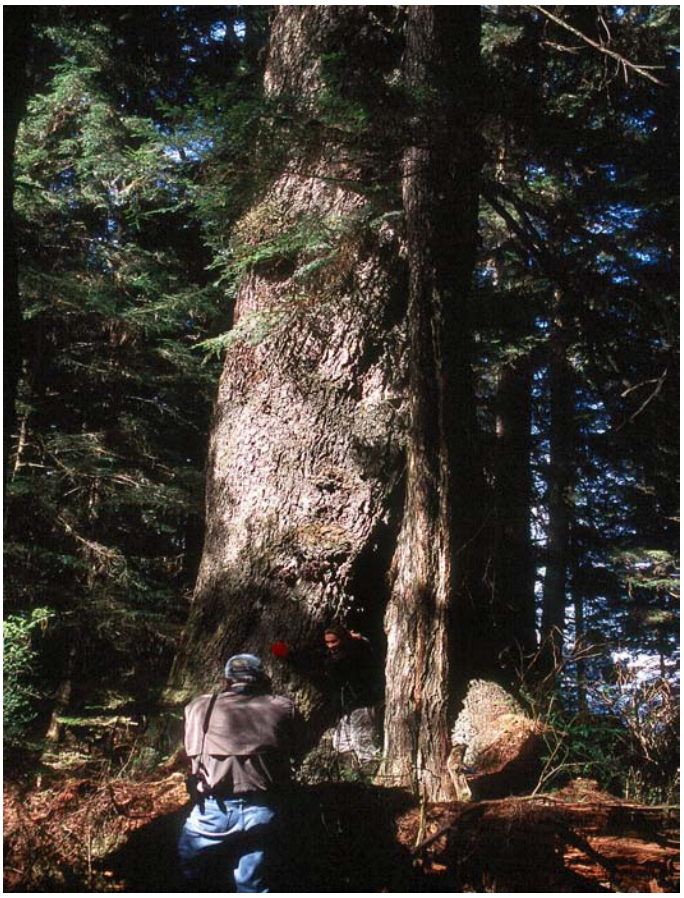

FIG 5. The 2 largest known trees in Alaska occur near one another on Karst in the Kuiu Province. One is 225 ft (69 m) tall and 10.9 ft (3.3 m) in diameter. (John Schoen photo)

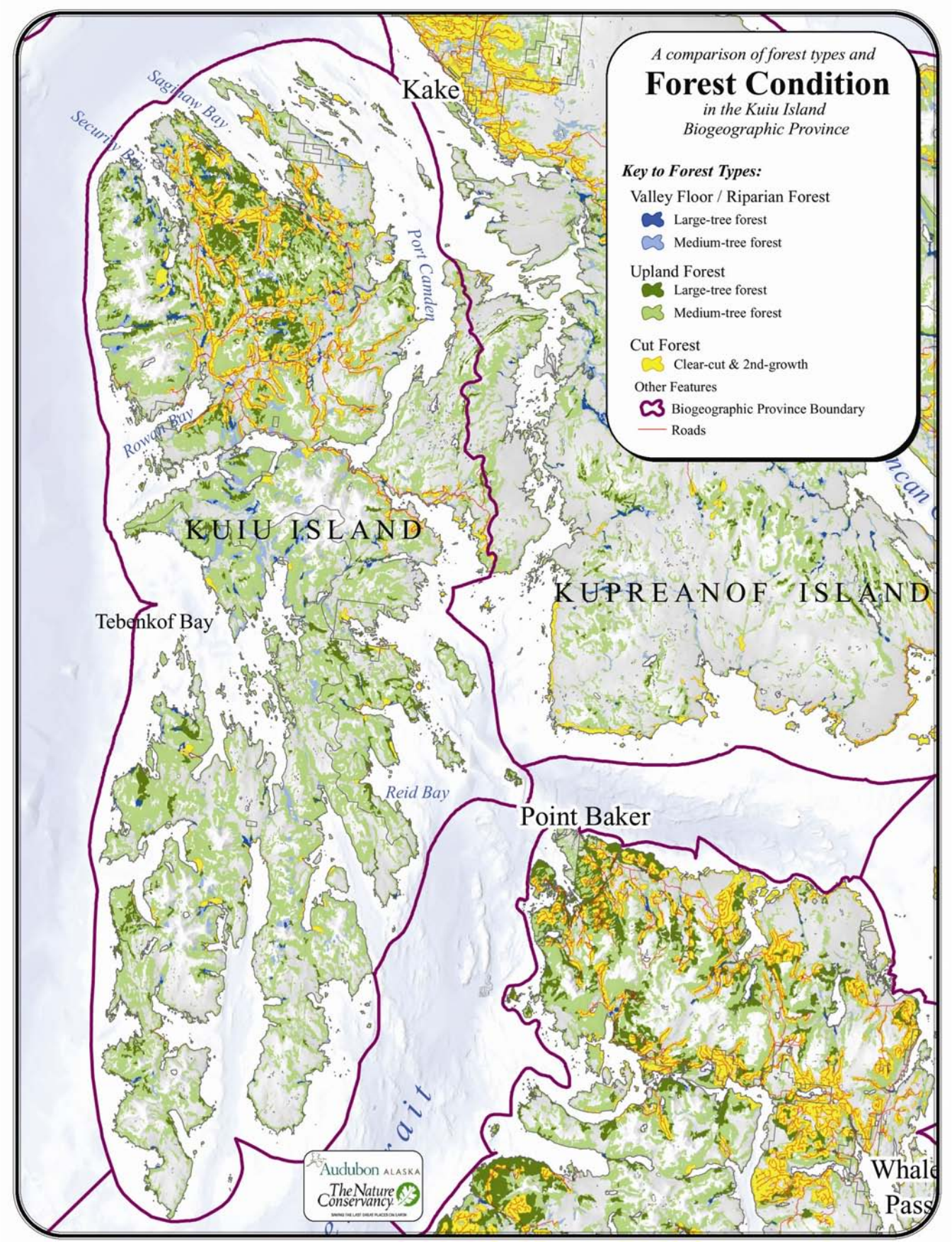

FIG 6. A comparison of forest type and condition in the Kuiu Province of southeastern Alaska.