

Revilla / Cleveland Province

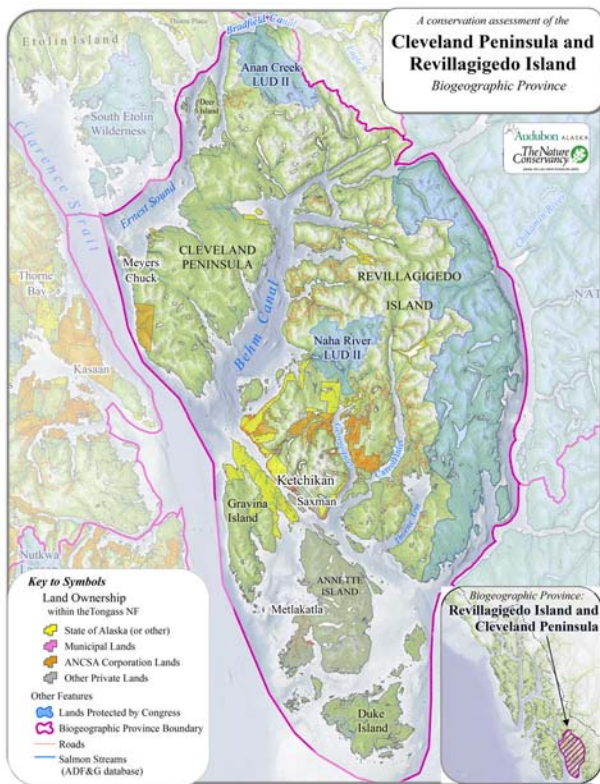


FIG 1. Revilla / Cleveland Province.

The Revilla / Cleveland Province encompasses several islands (including Revillagigedo [Revilla], Gravina, Annette, Duke, and smaller adjacent islands) and the Cleveland Peninsula on the southern mainland coast (Fig 1). Within this province, 23% of the land is legislatively protected in the Misty Fjords Wilderness and Naha and Anan Creek LUD IIs, 35% is administratively protected under the Tongass Land Management Plan, and 42% occurs in lands available for development. Annette Island is under the jurisdiction of the Annette Island Indian reservation.

Three geologic terranes transect the Revilla/Cleveland Province; from west to east they are the Wrangellia/Alexander, Gravina, and Behm terranes. Productive metamorphic and sedimentary rocks underlie the heavily logged timber lands of Revilla Island. Northernmost Revilla and the base of the Cleveland Peninsula (congressionally and administratively protected areas) are largely unproductive granite with high lake density. Volcanic bedrock underlies much of Gravina Island and the southern Cleveland Peninsula. Mt Burnett on the Cleveland Peninsula has unique ultramafic rocks, known to plane and ship pilots for its unusual reddish color and tendency to deflect compasses. Kruckeberg's holly fern (*Polystichum kruckebergii*) is a rare endemic species known only on this rock type.

The Revilla / Cleveland Province is one of the wettest regions of Southeast. Ketchikan receives 152 in (386 cm) of annual precipitation but only 36.9 in (94 cm) of snow. This province is very mild compared to northern and mainland province. The mean January and July temperatures are 33.6 deg F (0.9 deg C) and 57.7 deg F (14.3 deg C), respectively.

This province has five of the most productive watersheds for pink salmon in the region, including Anan Creek, Traitor's Cove, Carroll Creek, George Inlet, and Naha River (Flanders et al. 1998).

With 28 known mammal species, Revilla / Cleveland has the highest diversity of any of the Southeast island provinces. An endemic red-backed vole (*Clethrionomys gapperi solus*) apparently occurs only on Revillagigedo Island. The meadow jumping mouse (*Zapus hudsonius*) on Revilla may be the only island population of this species on the North Pacific coast (S. MacDonald, vertebrate taxonomist, Albuquerque, NM, personal communication, 2006). An especially deep lineage of Keen's mouse (*Peromyscus keeni*) is found on Gravina Island (Chapter 6.7). This is

intriguing because Gravina also appears to have a distinctive morphotype of rough-skinned newt (*Taricha granulosa*) (S. MacDonald, personal communication, 2006). One might expect divergent subspecies to turn up on outlying islands that served as glacial refugia; it is more difficult to explain their occurrence on “interior” islands such as Gravina. Their presence here illustrates how little is known about pre- and post-glacial dispersal histories of Southeast vertebrates.

The top-ranked watersheds in the province based on winter habitat values for deer were Buckhorn Lake, Naha River, and Carroll Inlet on Revilla Island, and Spaceous Bay on the Cleveland Peninsula. All rank within the top 50 watersheds of Southeast for winter deer habitat. Helm Bay watershed (Fig 2) on the Cleveland Peninsula contributes an annual average of 49 deer to Ketchikan deer hunters. This is the 2nd-highest ranking watershed in the Ketchikan use area after Sweetwater Lake on Prince of Wales. The adjacent Smugglers Cove watershed is 5th-ranking, with an average kill of 29 deer. The Ketchikan watershed ranks 4th, with 30 deer. These three watersheds are largely in administratively protected Old-Growth Reserves or Municipal Watershed. The contiguous North Gravina and Bostwick watersheds southwest of the Ketchikan airport each contribute an annual average of 26 deer, ranking 5th and 6th, respectively among the roughly 300 watersheds in the Ketchikan use area. These watersheds are almost entirely timber management or non-federal lands.

The watersheds of Spaceous Bay and Vixen Inlet, both on the Cleveland Peninsula, were the top ranked for summer habitat values for brown and black bear within this province. Mountain goats are native on the Cleveland Peninsula, and were introduced in 1983 to Revilla Island by the Alaska Department of Fish and Game (MacDonald and Cook 1999).

The Revilla / Cleveland Province has the third highest amount of POG in Southeast behind Northern Prince of Wales and Admiralty provinces (Chapter 2, Table 5). While only 11% of the POG has been logged in this province, large-tree stands were substantially high-graded in logged watersheds. Of the remaining intact large-tree forest, 42% are in watershed-scale reserves, 21% are in sub-watershed reserves, and 30% are in the timber base (Chapter 2, Table 6). Although Revilla Island has had a long history of logging and extensive high-grading of the large-tree stands, the Cleveland Peninsula is still largely intact and provides

an opportunity for watershed-scale protection of many intact mainland watersheds with high ecological values (Chapter 2, Figure 13). Moreover, the Cleveland Peninsula was consistently identified as having significant biological values for large-tree forests which are rare on the mainland (Chapter 2, Figure 14) as well as winter habitat for deer (Chapter 2, Figure 15), summer habitat for bear (Chapter 2, Figure 16), freshwater salmon habitat for all species combined (Chapter 2, Figure 17 & 20), with a substantial proportion of these values currently within development designations (Chapter 2, Figure 19). As such, we recommend that this peninsula be protected

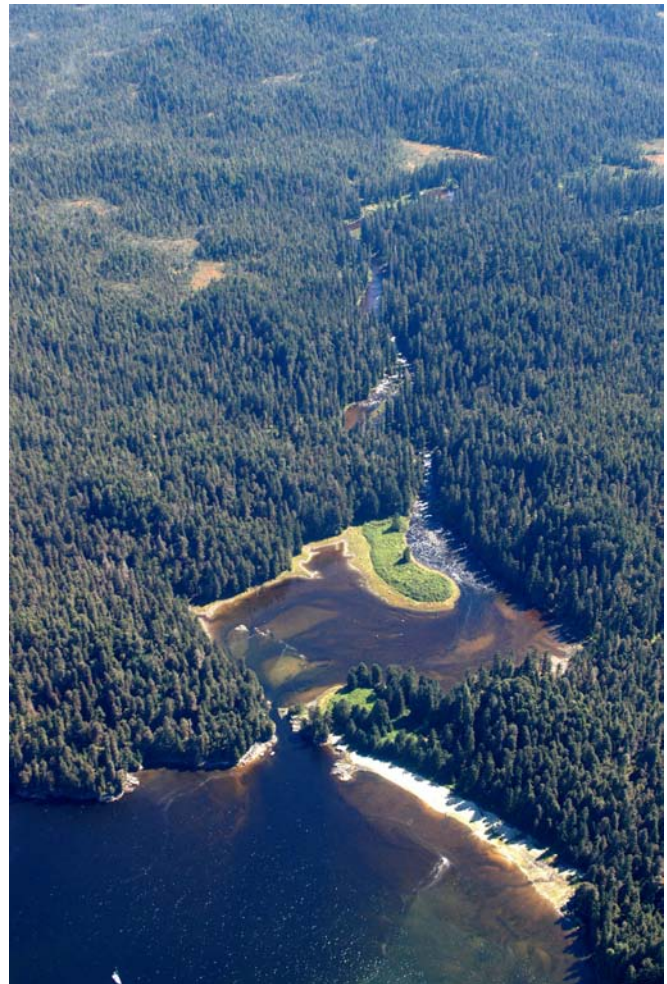


FIG 5 Anan Creek estuarine lagoon. Falls in center distance concentrate salmon at the bear observation platform. This is a designated bear viewing site (for both black and brown bears) managed by the Forest Service. (John Schoen photo)

for its unique ecological values and the opportunity for maintaining full representation of all forest types including the rare large-tree stands that have been high-graded substantially elsewhere in this region.

The Cleveland Peninsula has populations of both brown and black bears and both species can be observed at the bear viewing site at Anan Creek which is managed as a congressionally protected LUD II reserve. Elsewhere in the province, only black bears occur on the islands. The province maintains an estimated 73% of its original summer bear habitat value (Chapter 2, Table 15). Forty-five percent of bear habitat in this province is protected in watershed-scale reserves, 13% in sub-watershed reserves, and 42% slated for development (Chapter 2, Table 15). The Revilla / Cleveland Province is estimated to have the second highest winter deer habitat values in Southeast behind North Prince of Wales and is nearly equivalent to Admiralty Island (Chapter 2, Table 8). Forty-three percent of winter deer habitat occurs in watershed-scale reserves, 15% in sub-watershed reserves, and 34% occurs on lands managed for development (Chapter 2, Table 8). This province is estimated to have the highest marbled murrelets nesting habitat values of any province in Southeast (Chapter 2, Table 10) and 49% of murrelets habitat is managed in watershed reserves, 15% in sub-watershed reserves, and 33% occur on development lands. This province also has high fish values, ranking sixth in Southeast for freshwater distribution of salmon and steelhead with 740 mi (1,184 km) of anadromous fish stream habitat (Chapter 2, Table 11). Only 13% of riparian forests associated with anadromous fish have been logged in this province but only 30% occur in watershed-scale reserves while 54% occur in watershed managed for development (Chapter 2, Table 12). The conservation of ecological values in this province will largely be determined by forest management decisions regarding the Cleveland Peninsula and secondarily Gravina Island. Both areas have substantial ecological values that could be diminished by future timber harvesting and road development.

Forest types, historical logging, and roads are mapped within the Revilla / Cleveland Province in Figure 4. 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 2. View southeast over Helm Bay to Betton Island at the north end of the Ketchikan road system. Although this scene appears pristine, 183 acres (74 hectares) were logged on steep southwest-facing slopes between 1919 and 1927. Orthophotos show that these forests have largely failed to regenerate due to mass wasting. The Cleveland Peninsula remains the best example of largely unroaded, moderately productive forest on the Southeast mainland. (John Schoen photo)



FIG 3. The caption on this 1940 photo from the Forestry Sciences Lab archives reads:
 "Mud Bay, Ketchikan. Average hemlock 22 inches dbh. Average spruce 36 inches dbh. 75,000 board feet per acre. Age 200 years."

Such densely stocked, highly productive even-aged "wind-forests" were once common on southerly, storm exposed slopes. Those with a high percentage of spruce were logged first, including this stand in Mud Bay. Other less productive hemlock-dominated wind forests still remain in many provinces.

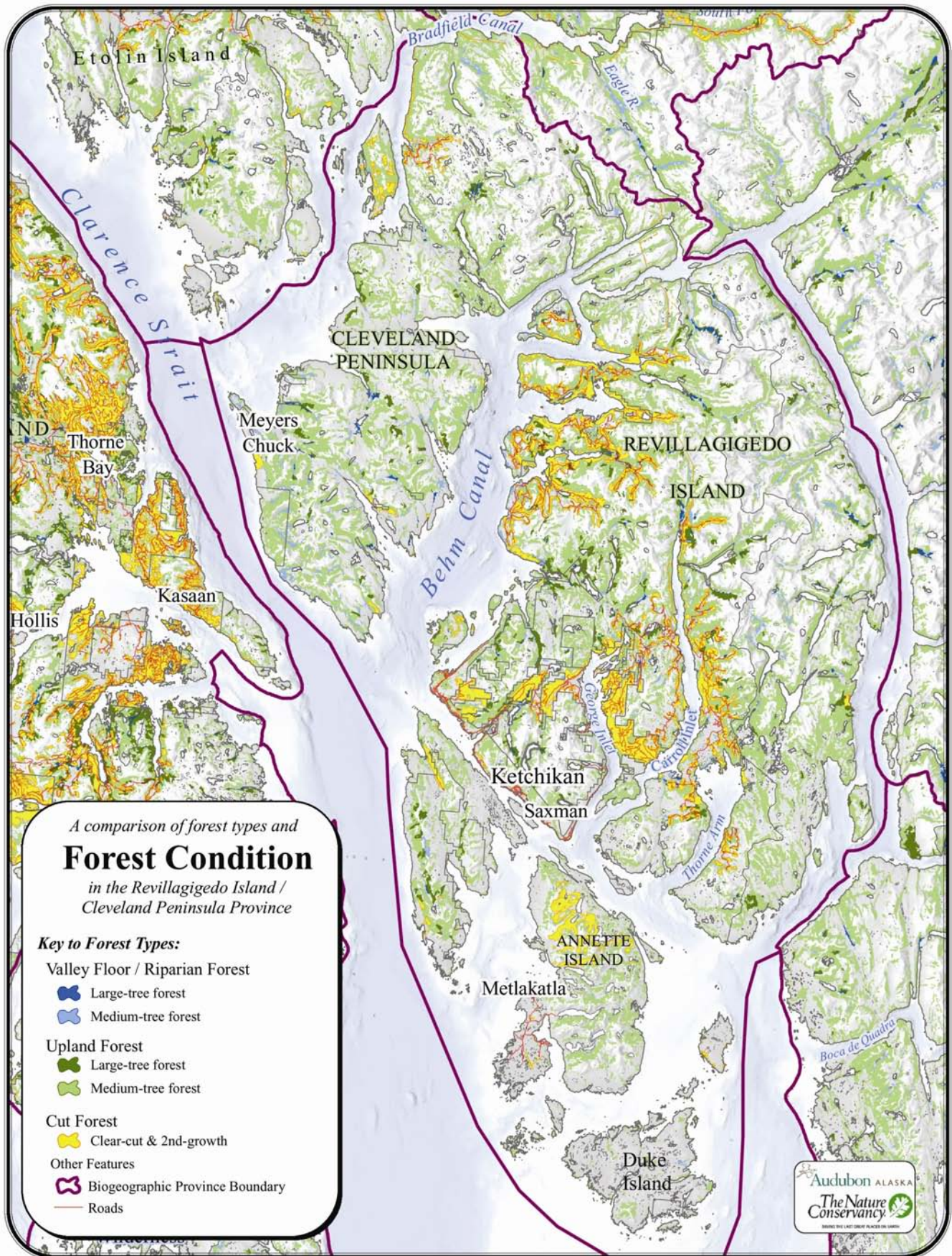


FIG 4. A comparison of forest type and condition in the Revilla / Cleveland Province of southeastern Alaska.