Dall / Long Province

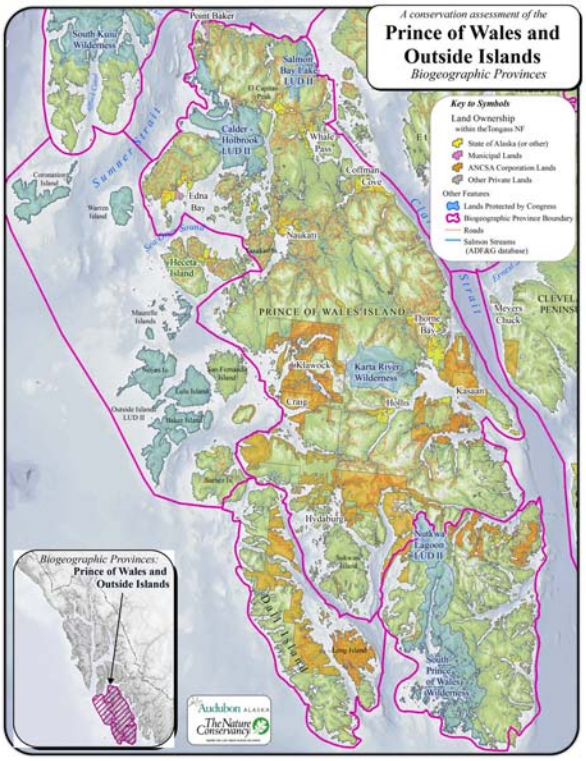


FIG 1. Dall / Long Island Province.

The Dall / Long Island Province is Southeast's smallest biogeographic province (Fig 1). This extraordinary pair of islands–and several smaller satellites–lie within the Alexander geologic terrane. Highly productive sedimentary and metamorphic rocks underlie most of the province. This includes considerable carbonate bedrock, some of extremely high quality. A quarry at View Cove exported limestone that was 94.5% pure calcium carbonate (Nowacki et al. 2001). However, little of this karst terrain–a key element of the province's biodiversity–occurs on public land. The Dall / Long Province is 42% private, with mostly Sealaska Corp. lands on Dall and Klukwan Inc. lands on Long Island. There are no legislatively protected lands in this province, but 51% of the land is administratively protected under the Tongass Land Management Plan and 49% of the province is in development status.

FIG 2. View northeast from Coning Inlet across Natoma Bay, on southern Long Island, to Prince of Wales Island. Klukwan Inc. logged most of northern Long Island in the 1980s. (John Schoen photo)

FIG 3. Historical photo of handlogging a large spruce at Natoma Point on Long Island. (US Forest Service)

The ultimate development of the giant spruce forest on karst occurs on low-elevation terrain with gently rolling hills. Southeast's greatest expanse of such terrain is on Long Island–in this province–and on Kosciusco Island–in the North Prince of Wales province. The forest that covered these two islands was the finest in Alaska.

About 20,000 years ago, when most of Southeast Alaska was covered by glaciers, much of Dall Island remained ice-free. Much of Southeast's current flora and fauna may have recolonized the archipelago from the Dall Refugium and from similar ice-free areas in the Outer Islands Province. Recent evidence suggests that yellow-cedar may have survived the Wisconsin Glaciation on the Dall Refugium (P. Hennon, forest pathologist, USFS, Juneau, personal communication, 2006). At higher elevations on karst summits, subalpine fir is a dominant tree-line conifer. This species is not commonly found elsewhere in the archipelago, and its distribution may reflect glacial refugia.

FIG 3. View east to 2,502-ft (763 m) karst summit due east from Devil Lake, Dall Island. (John Schoen photo)

Dall / Long Province has the mildest winters in Southeast. Sea-level snow is rare and quick to melt.

At this southernmost extremity of Southeast are several plant species such as Pacific yew that are not found in provinces to the north. Genetics and colonization history of these species are poorly known.

Compared to other provinces in Southeast, the fish streams in this province are few and short. Only Essoway Lake watershed is ranked in the top 100 for habitat values for all salmon combined.

Dall / Long Province has only 12 documented mammal species, but at least two of these are endemic subspecies. Forrester–Southeast's most remote island–has a unique subspecies of Keen's mouse (*Peromyscus keeni oceanicus*). Dall Island has an ermine (*Mustela erminea celenda*) shared only with Prince of Wales Island. None of the watersheds in this province are ranked in Southeast's top 100 for deer or bear habitat values, based on this conservation assessment.

Forrester Island and adjacent Petrel, Lowrie and other islands are in the Alaska Maritime National Wildlife Refuge and lie about 20 mi (32 km) west of Dall Island. These islands provide important habitat for the largest known colonies of nesting seabirds in Southeast. Fifteen species of over a million birds nest on these islands including significant numbers of fork-tailed storm petrels, common murres, ancient murrelets (*Synthliboramphus antiquus*), rhinoceros auklets (*Cerorhinca monocerata*), and tufted puffins (West 2002). Forrester Island is also the largest Steller sea lion rookery in the world (National Marine Fisheries Service 1992).

FIG 4. View north to recent high-elevation logging on corporation land southwest of Coco Harbor, Dall Island. Logging has proceeded at a rapid pace here in the past decade and is probably Southeast's last extensive large-tree forest on karst. (John Schoen photo)

Long Island and the eastern portions of Dall Island have been extensively high-graded, primarily on private lands (refer to retrospective analysis and Fig 7 at end of section). Twenty percent of the original productive old growth has been logged which is second only to North Prince of Wales in percentage cut (Chapter 2, Table 5). In addition, most of the rare large-tree karst forest has been cut. Forty-three percent of the remaining large-tree forest occurs in watershed-scale reserves, 43% in sub-watershed reserves and 13% remains in the timber base (Chapter 2, Table 6). Unfortunately, most of the highest quality karst forest has been removed from

this province which once had the best representation of this rare forest in all of Southeast.

Eighty-five percent of the original summer habitat value for black bear remains in the Dall / Long Island Province (Chapter 2, Table 15). Watershed reserves include only 26% of bear habitat while sub-watershed reserves include 27%, and 47% of bear habitat occurs on development lands. The province retains 78% of its original winter deer habitat value (Chapter 2, Table 8). Thirty percent of the deer habitat is protected in watershed reserves, 32% in sub-watershed reserves, and 34% occurs on development lands. Dall and Long Islands have the least amount of anadromous fish streams (148 mi [237 km]) of any province in Southeast (Chapter 2, Table 11). Nineteen percent of riparian forests associated with anadromous fish have been harvested in this province and 19% occur in watershed reserves while 61% occur on development lands (Chapter 2, Table 12).

Forest types, historical logging, and roads are mapped within the Dall / Long Islands 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 5. Subalpine firs on Silurian limestone at 1,900 ft (579 m), Mount Vesta, Dall Island. (Richard Carstensen photo)

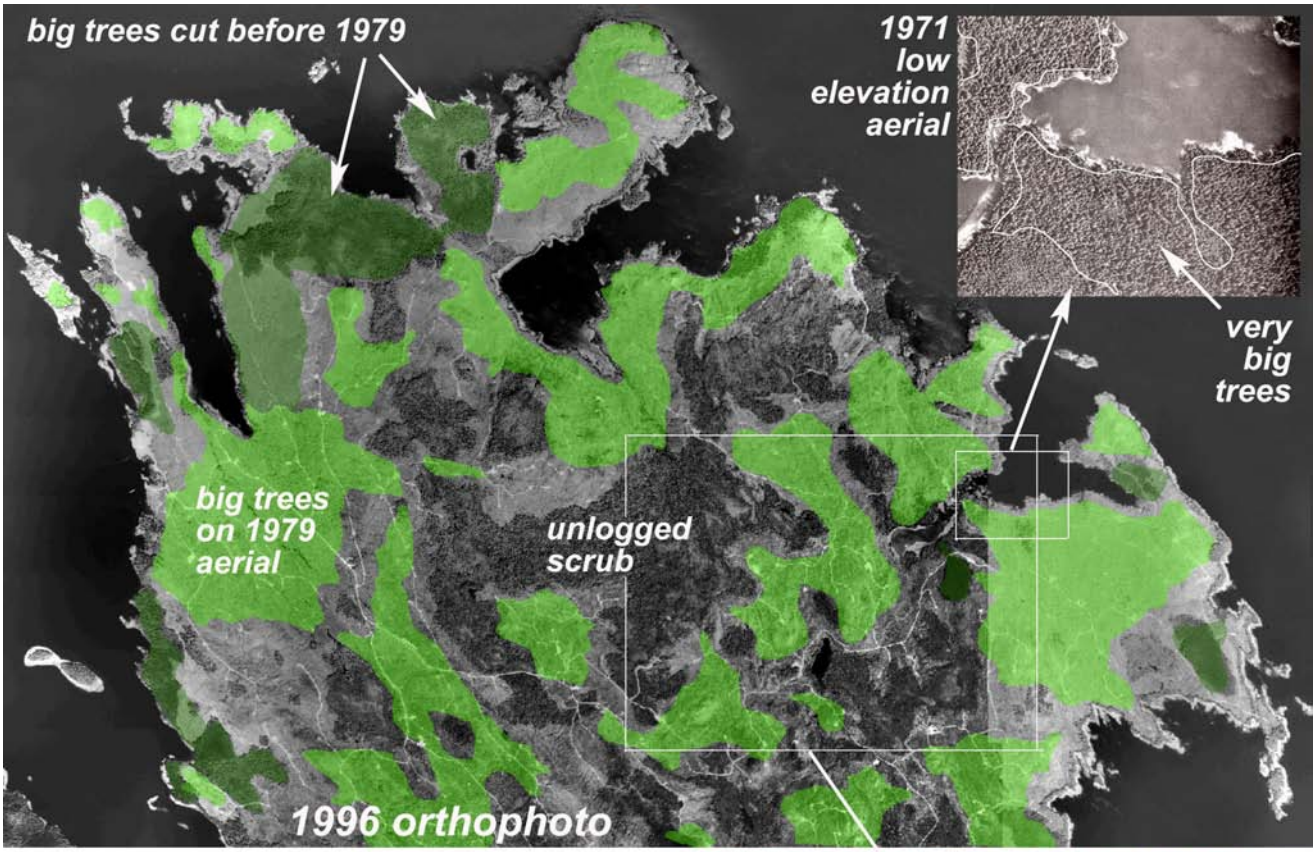
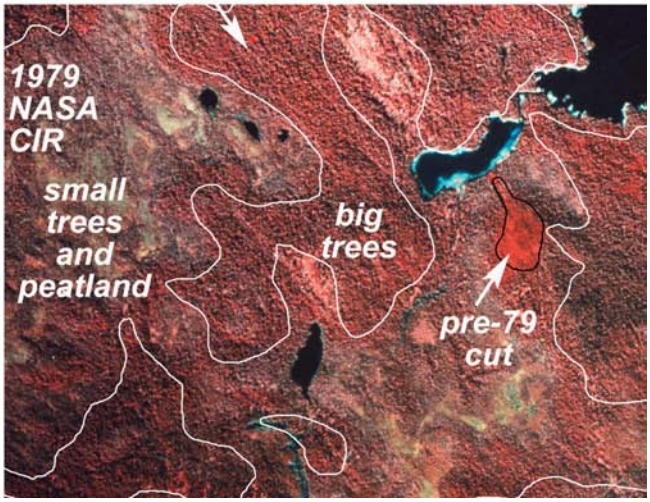


FIG 7. Maps of Long Island



RETROSPECTIVE ANALYSIS OF LOGGING ON LONG ISLAND USING GIS AND STEREO PHOTO - INTERPRETATION

In 1979, the National Aeronautics and Space Administration (NASA) shot high-elevation color-infrared photographs for all of Southeast. At that time, only Long Island and Sulzer Portage retained substantial karst large-tree forest; both were owned by Native corporations. Klukwan Inc. began to clearcut Long Island shortly after the photographs were taken.

Very detailed low-elevation black-and-white aerial photographs were also taken of the island in 1971. Viewed under a stereoscope, much of this forest was clearly equal or superior to that of the 25-acre (10-hectare) patch on southwest Kosciusko Island (N POW Province, Fig 6) that now serves as the best remaining example of Landmark-caliber karst forest. Combining information from the 1971 and 1979 photography yielded the large-tree patches mapped in green in Fig 6.

It can be conservatively assumed that at least half of the mapped large-tree forest was of a stature that today would earn it Landmark Trees (LT) designation. This assumption is substantiated by on-the-ground experience before the logging (J. Gustavson, former Habitat Biologist, ADF&G, Ketchikan, AK personal communication 2003). By these calculations, at least 3,700 acres (1,497 hectares) on northern Long Island were of LT caliber.

To put that acreage in perspective, consider that the Tongass presently supports an estimated 560,000 acres (226,629 hectares) of mapped large-tree forest (former TIMTYP VCs 6 and 7). During the past decade, LT hunters have learned that 1-acre (0.4-hectares) patches of genuine LT caliber comprise much less than 1% of the mapped large-tree forest. That forest portion should therefore amount to less than 5,600 acres (2,266 hectares). The lowland karst of northern Long Island alone held nearly as much LT-caliber forest in the 1970s (>3,700 acres [1,497 hectares]) as presently remains (<5,600 acres [2,266 hectares]) in all of Southeast.

Results of GIS analysis:

Total land area on 1996 orthophoto of northern Long Island: **16,883 acres (6,832 hectares);**

Percentage logged: **85%;**

Original area in large trees: **7,412 acres (3,000 hectares)** or 44% of landscape;

Half estimated Landmark Tree caliber: 3,700 acres (1,497 hectares);

None remain.

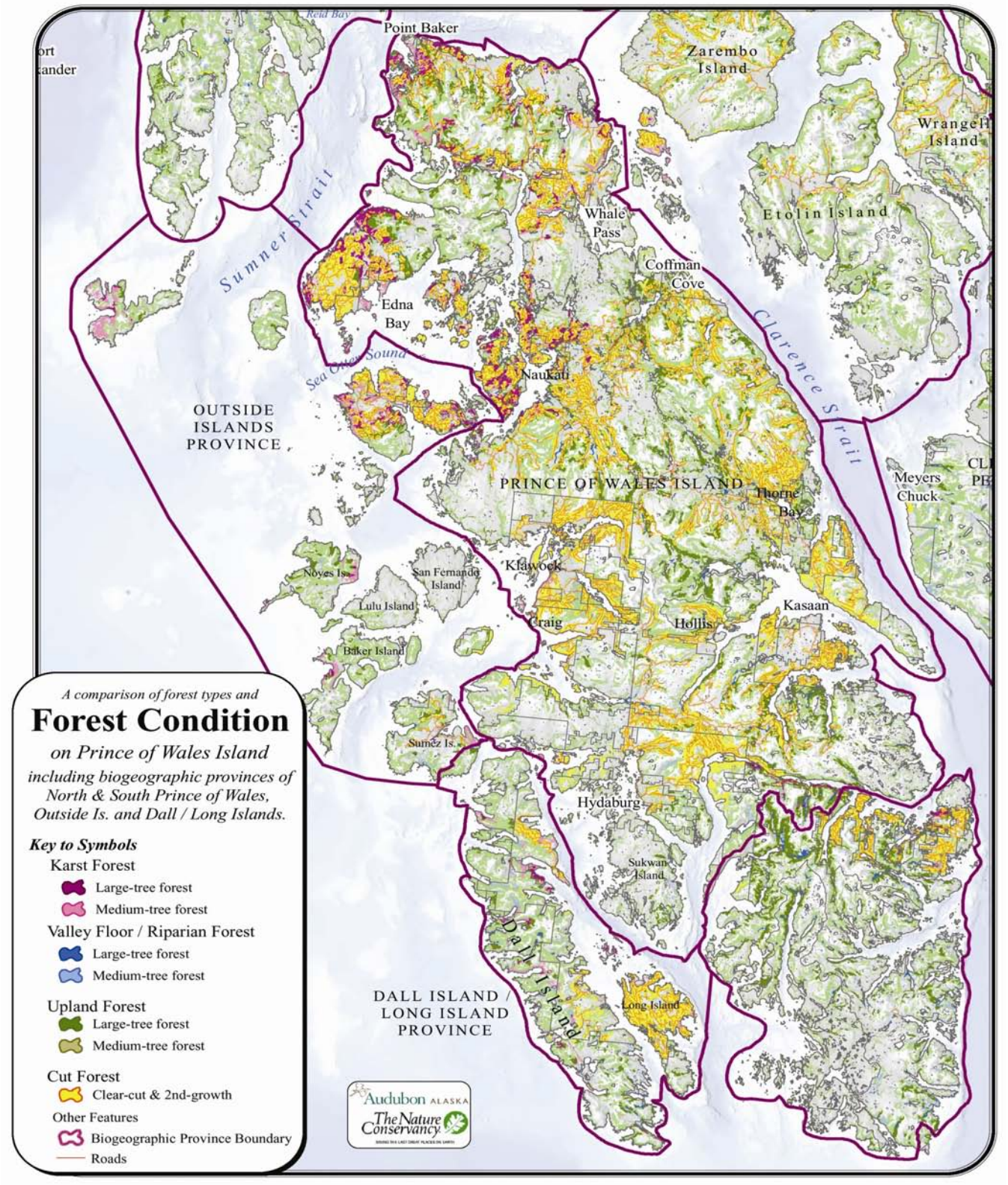


FIG 6. A comparison of forest type and condition in the Dall / Long Islands Province of southeastern Alaska.