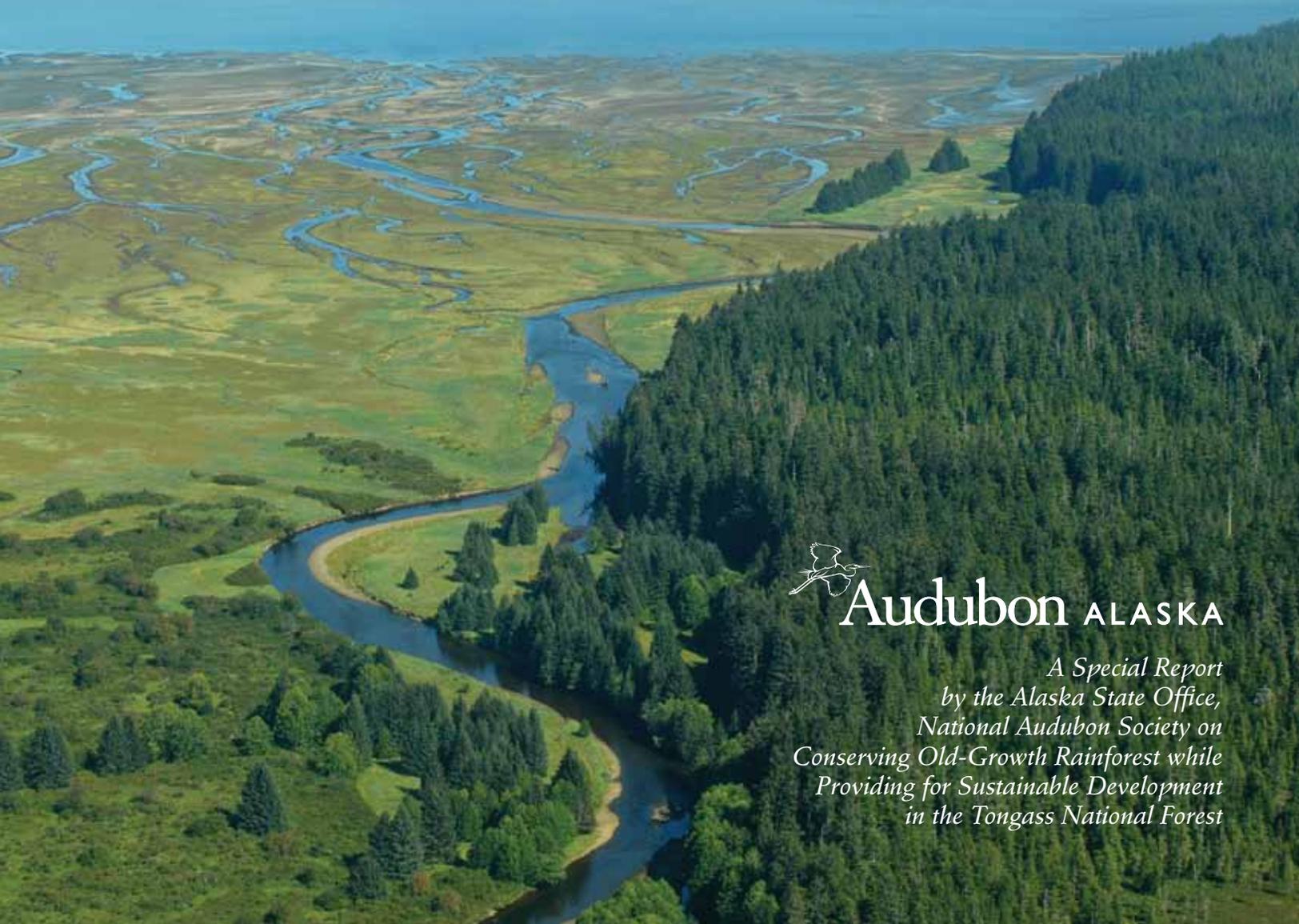


CONSERVING OLD-GROWTH ECOSYSTEMS
IN THE
Tongass National Forest



 **Audubon** ALASKA

*A Special Report
by the Alaska State Office,
National Audubon Society on
Conserving Old-Growth Rainforest while
Providing for Sustainable Development
in the Tongass National Forest*

Established by President Theodore Roosevelt in 1907, the Tongass National Forest is the largest national forest in the United States. Extending approximately 500 miles from the Canadian border to Yakutat Bay along Alaska's glacially carved southeastern panhandle, the Tongass encompasses more than 5,000 islands and more than 16,000 miles of shoreline.

The Tongass is part of the world's largest remaining coastal temperate rainforest. This ecosystem supports abundant populations of fish and wildlife, many of which are rare or threatened in the "Lower 48" states. In addition to having one of the highest concentrations of grizzly (brown) bears on Earth, the Tongass also supports the world's highest density of nesting Bald Eagles and has some of the most productive salmon spawning habitat in the Pacific Rim.

During the past century, substantial portions of the most productive large-tree, old-growth forest in the region have been harvested. Nevertheless, the Tongass National Forest still contains significant tracts of intact landscapes with a high degree of ecological integrity.

An exceptional opportunity remains to protect and conserve high-value forest areas that support extraordinary populations of salmon, bear, wolves, deer, birds, and other wildlife, while also maintaining economic opportunities and quality of life for the residents of Southeast Alaska communities.



THE TONGASS: A LEGACY OF LOGGING

Industrial-scale logging in the Tongass began in the 1950s, when the U.S. Forest Service signed 50-year contracts with two timber companies operating pulp mills in Ketchikan and Sitka. As a result, clear-cut logging and road construction proliferated throughout much of the most productive timber land on the Tongass.



JOHN SCHOEN

Half or more of the large-tree, old-growth forest has already been logged in Southeast Alaska.

- In 1971, the Alaska Native Claims Settlement Act enabled Alaska Native corporations to select over half a million acres of prime timber lands from within the Tongass.
- In 1980, a provision in the federal Alaska National Interest Lands Conservation Act mandated a timber supply of at least 450 million board feet each year, as well as \$40 million in annual subsidies for logging.
- By the late 1980s, total harvest levels throughout Southeast Alaska had reached an all-time high, with much of the harvest coming from the most productive watersheds, targeting rare large-tree, old-growth forest.
- Although Congress repealed the mandated Tongass timber supply and subsidy with the Tongass Timber Reform Act in 1990, additional opportunity for industrial-scale logging came in 2001, when President George W. Bush exempted the Tongass from the Clinton-era Roadless Rule. This made the Tongass, which included over nine million roadless acres protected from logging, the only national forest exempted from the Roadless Rule.
- Half or more of the large-tree, old-growth forest has already been logged in Southeast Alaska. The very largest old-growth trees, individual “giants” greater than 10 feet in diameter, that once occurred in Southeast Alaska were largely extirpated in the last century.
- While some six million acres of the Tongass have been designated by Congress as off-limits to development, these protected areas primarily include less biologically productive scrub forest, rock, bog, and ice.



JACK GUSTAFSON

Over the last century, timber harvest in Southeast Alaska concentrated heavily on the most accessible and valuable large-tree, old-growth forest.

In January 2008, the Forest Service released its amended Tongass Land Management Plan (TLMP) with timber harvest to be implemented in three phases. While some important areas have been deferred from logging in Phase 1, the revised TLMP fails to provide adequate long-term protection for the remaining high-value fish and wildlife habitat areas in the Tongass.

OLD-GROWTH FOREST ECOSYSTEMS

The Tongass National Forest encompasses approximately 80 percent of Southeast Alaska and contains almost one-third of the Earth's remaining old-growth, coastal temperate rainforest. The Tongass supports the greatest expanse of intact old-growth forest in the United States.

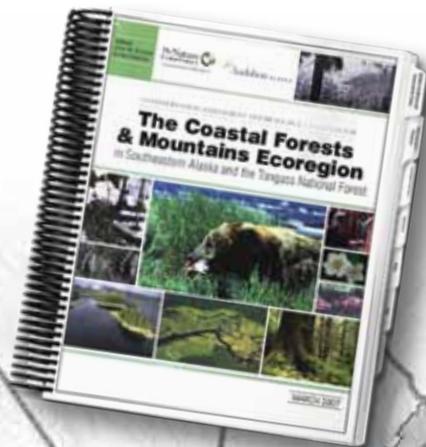
- The region's moderate climate, with cool summers and abundant rainfall, produces a diversity of vegetation types, ranging from lichens, mosses, liverworts, and ferns to large trees that can be centuries old. A few trees are more than one thousand years old.
- Old-growth forest sustains the health of watersheds and aquatic systems as it creates habitat for fish and wildlife, regulates water temperature, and moderates flooding.
- Intact, old-growth forest in the Tongass provides high-quality habitat for various fish and wildlife, including all five species of Pacific salmon, steelhead trout, brown bear, black bear, wolves, Sitka black-tailed deer, marten, and flying squirrels.
- Dozens of bird species are associated with old-growth forest habitats, including Bald Eagle, Marbled Murrelet, and Northern Goshawk, as well as many cavity-nesting birds such as Brown Creeper and various woodpeckers.
- It can take centuries to develop the biological characteristics of old-growth forest. The uneven age structure, which includes live trees, fallen trees, and snags, provides ecological diversity and contributes to nutrient cycling.
- By contrast, the second-growth forest that follows logging contains dense, even-aged trees that produce relatively sterile habitat.
- Large-tree, old-growth forest has always been relatively rare in the Tongass, and what remains today makes up only about three percent of the land base.



Old-growth vs. second-growth: In old-growth dominated forest with uneven aged trees, a broken, patchy canopy permits sunlight to penetrate and support a healthy plant community on the forest floor. After logging, dense even-aged stands inhibit sunlight and understory growth, resulting in relatively sterile habitat for many species.

JOHN SCHOEN

THE TONGASS CONSERVATION ASSESSMENT



Starting in 2005, scientists from Audubon Alaska (Audubon) and The Nature Conservancy (TNC) undertook a scientific review and synthesis of available natural resource data to identify high-value areas at a watershed scale in each of 22 geographical provinces across Southeast Alaska.

Published in March 2007, the *Conservation Assessment* is based upon an analysis of ecological systems and focal species, including: old-growth forest types; estuaries and freshwater ecosystems; spawning/rearing habitat for all five species of Pacific salmon and steelhead trout; brown and black bear summer habitat; Sitka black-tailed deer winter habitat; and Marbled Murrelet nesting habitat.

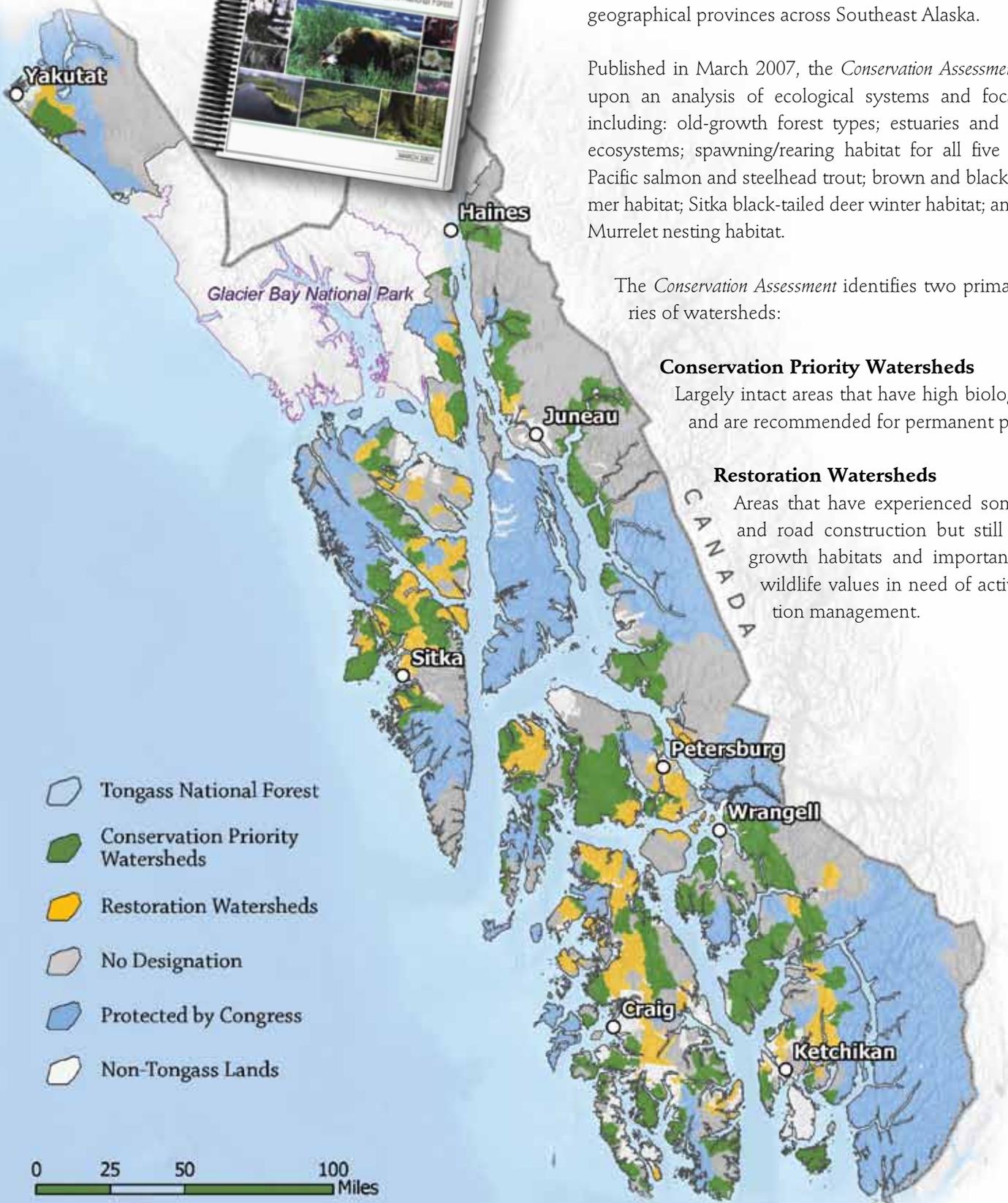
The *Conservation Assessment* identifies two primary categories of watersheds:

Conservation Priority Watersheds

Largely intact areas that have high biological value and are recommended for permanent protection.

Restoration Watersheds

Areas that have experienced some logging and road construction but still have old-growth habitats and important fish and wildlife values in need of active restoration management.



-  Tongass National Forest
-  Conservation Priority Watersheds
-  Restoration Watersheds
-  No Designation
-  Protected by Congress
-  Non-Tongass Lands

0 25 50 100 Miles

SUPPORTING HEALTHY ECOSYSTEMS AND SUSTAINABLE ECONOMIC DEVELOPMENT

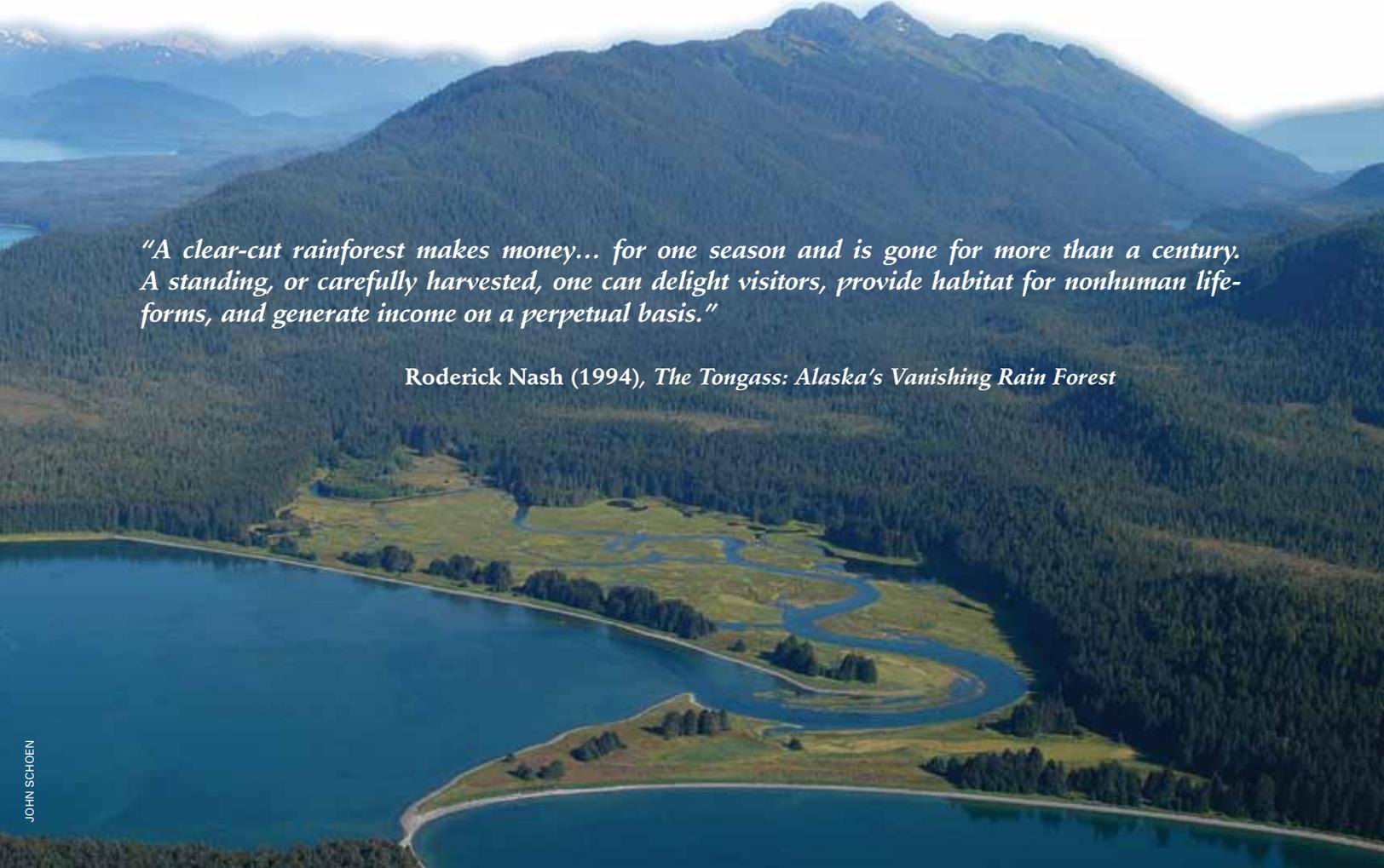
Audubon seeks to secure the ecological integrity and biological diversity of the Tongass, in order to ensure sustainable uses of the forest and its resources, such as for subsistence, recreation, and timber (on an appropriate scale), as well as other commercial purposes. To this end, Audubon is working with state and federal resource agencies, business interests, Southeast Alaska communities, Alaska Native tribes and organizations, and other conservation organizations to develop and implement an approach that will provide a balanced and lasting solution to the issues that have been so divisive in the Tongass for the last century.

Audubon believes that conservation at the watershed scale (i.e., from ridge-top to ridge-top and headwaters to estuaries) is necessary to maintain the natural diversity of habitats and fish and wildlife populations, minimize habitat fragmentation and road impacts, and ensure that the ecological functions of the coastal temperate rainforest ecosystem are maintained. Audubon's *Conservation Assessment* is a dynamic analytical and mapping tool that identifies the ecological value of individual

watersheds throughout the Tongass in order to objectively establish conservation and restoration priorities.

The *Conservation Assessment* provides the ability to identify the highest-value habitats on the Tongass, as well as potential timber harvest volumes, in order to:

- focus conservation attention on remaining intact watersheds with the highest ecological values;
- establish restoration priorities in high-value, impacted watersheds;
- concentrate future timber production efficiently on the forest land base, requiring the fewest miles of roads and resulting in the fewest cumulative impacts; and
- facilitate the rapid transition from old-growth to second-growth timber harvest that can be sustained over the long term.



"A clear-cut rainforest makes money... for one season and is gone for more than a century. A standing, or carefully harvested, one can delight visitors, provide habitat for nonhuman life-forms, and generate income on a perpetual basis."

Roderick Nash (1994), *The Tongass: Alaska's Vanishing Rain Forest*

A NEW CONSERVATION STRATEGY FOR THE TONGASS NATIONAL FOREST

The Audubon-TNC *Conservation Assessment* was the subject of a field-based peer review by a group of prominent conservation biologists and forest ecologists. Excerpts from the Consensus Summary of Findings (May 2008) prepared by the reviewers:

- **Disproportionate Harvest of Old-Growth:** “Rates of human-related change, especially since World War II, have been many times greater than rates of natural disturbance.... Age-class distribution has changed, and there has been a disproportionate harvest of old-growth, especially non-random removal of the biggest trees in highly productive, high-volume stands.”
- **Alternatives to Clearcutting:** “Because clearcutting fundamentally and durably alters the structure and composition of forest stands, we would like to see greater emphasis on alternatives to clearcutting.... Timber harvest plans should be designed to mimic natural disturbance patterns in terms of frequency, intensity, spatial scale, and location.”
- **Need for Restoration:** “The plan should incorporate riparian and upland restoration work that helps restore the composition, structure, and function of the original old-growth habitat. Riparian and in-stream restoration should receive particular priority.”
- **The Audubon-TNC Conservation Assessment:** “It is by far the best integrated planning tool for Southeast Alaska.”

Professor Paul Alaback
University of Montana

Research Ecologist Andy McKinnon
Ministry of Forests British Columbia

Professor Barry Noon
Colorado State University

Adjunct Professor David Secord
University of Washington

Professor Joe Cook
University of New Mexico

Professor Martin Nie
University of Montana

Professor Emeritus Gordon Orians
University of Washington

The Wildlife Society, the scientific society for professional wildlife biologists, has formally recognized the need for balanced old-growth forest management:

- “[T]ypically centuries are needed before the regenerating forest acquires the composition, structure, and function of old growth... Watersheds with significant old-growth forest should have the highest priority for conservation.”
- “Landscape analyses in portions of Southeast Alaska show that while only 10–50% of the commercial forestland in some areas was logged, that acreage often included a high percentage of the big-tree old growth... This pattern of timber harvest, a form of ‘high-grading,’ reduces forest structural diversity and disproportionately impacts wildlife, recreation, and esthetic values associated with those forest types.”
- “Rare forest types should be preserved, especially those that are most vulnerable.”

The Wildlife Society (2007)
*Conservation and Management of Old-growth Forest
On the Pacific Coast of North America*



THE FUTURE OF THE TONGASS

Significant portions of the Tongass National Forest have been heavily logged over the past century. The remaining large-tree, old-growth forest, which provides important habitat for many fish and wildlife species, makes up only three percent of the forest land base.

Audubon is working to ensure balanced management in the Tongass. This includes protection of remaining intact watersheds with high ecological value, as well as restoration of previously logged watersheds with important fish and wildlife habitat.

A new, comprehensive conservation strategy for the Tongass is needed to protect remaining high-value habitats, while also providing for sustainable economic development.



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SELECTED REFERENCES

- Cook, J.A., Dawson, N.G., and MacDonald, S.O. (2006). Conservation of highly fragmented systems: The north temperate Alexander Archipelago. *Biological Conservation* 133:1-15.
- DellaSala, D.A. (Ed.) (in press). *Temperate and Lesser Known Rainforests of the World: Ecology and Conservation*. Washington, DC: Island Press.
- Lindenmayer, D. and Franklin, J. (2002). *Conserving Forest Biodiversity: A Comprehensive Multiscaled Approach*. Washington, DC: Island Press.
- Schoen, J. and Dovichin, E. (Eds.) (2007). *The Coastal Forests and Mountains Ecoregion of Southeastern Alaska and the Tongass National Forest*. Anchorage, AK: Audubon Alaska and The Nature Conservancy. Available at: <http://conserveonline.org/workspaces/akcfm>.
- The Wildlife Society (2007). *Position Statement on the Conservation and Management of Old-growth Forest on the Pacific Coast of North America*. Available at: www.wildlife.org
- USDA Forest Service (2008). *Tongass Land and Resource Management Plan, Final Environmental Impact Statement and Record of Decision*. R10-MB-603A. Juneau, AK: USDA Forest Service, Alaska Region.

For more information or copies of this special report, please contact:

Audubon Alaska
441 West Fifth Avenue – Suite 300
Anchorage, Alaska 99501
www.audubonalaska.org

Photos by John Schoen, Jack Gustafson and Nick Jans