ALASKA LEGISLATURE COMMITTEE FILES 1997-1998 8672
9649 SENATE RESOURCES

RED DOG MINE

Cominco Ltd.

Cominco Ltd. is an international, integrated natural resource company whose principal activities are exploration, mining, smelting and refining.

The company is the world's largest zinc concentrate producer and third largest zinc metal producer. Other concentrates include copper, molybdenum, gold and germanium. Its other metal products include lead, copper, gold, silver, ferronickel, cadmium, bismuth and indium.

Cominco has been in the mining business since 1906 and is Canada's oldest continually operating mining company. Cominco was the first mining company to establish an air service to aid in exploration efforts in Canada's unexplored north, the Yukon and northwestern Alaska.

The company's operations include three metallurgical complexes and five mines. In the United States: the Red Dog Mine in Alaska (zinc/lead) and the Glenbrook ferronickel smelter in Oregon, the only nickel smelter in the U.S. In Canada: the Sullivan mine in British Columbia (zinc/lead/silver); Polaris mine in the Northwest Territories (zinc/lead); and Highland Valley Copper Mine in British Columbia (copper/molybdenum). Its zinc refinery and lead smelting complex is in Trail, British Columbia, with an annual zinc capacity that will reach 290,000 tons in 1997. And in Chile, the Quebrada Blanca mine producing copper and the Cajamarquilla zinc refinery in Peru.

The company also supports and conducts research and development work that investigates new ideas and opportunities to provide technical assistance to existing operations in processing and environmental care.

Cominco's mission is to explore, develop and market resources in an environmentally sound fashion; to apply environmental protection measures appropriate to site specific conditions in the absence of regulation; to encourage pollution prevention, waste minimization and recycling efforts in company operations worldwide; to observe environmental laws in all company activities; and exercise environmental care in the planning, developing, operating and closure phases of all company operations.

Human health and the environment are fundamental concerns and top priorities that dictate decision-making at Cominco.

Cominco Alaska

RED DOG MINE
P.O. Box 1230 • Kotzebue, Alaska 99752
Phone (907) 426-9141 • FAX (907) 426-2177

NANA

RED DOG MINE

Cominco Partnership with AIDEA

In 1985, the Alaska Legislature authorized the Alaska Industrial Development and Export Authority (AIDEA) to provide $150 million in funding for the DeLong Mountain Regional Transportation System.

The purpose of the transportation network was to facilitate development of the Red Dog Mine. The entire system consists of the 52-mile road from the mine site to the port, and all associated port facilities, such as the concentrate storage facilities, conveyors and fuel storage tanks.

The financing arrangement require that Cominco guaranteed it would:

- Pay a yearly toll of approximately $12 million for the life of the mine
- Provide AIDEA with a 6.5 percent return on its investment
- Require other users to share operating & maintenance costs
- Require other users to pay similar fees to the state

Cominco continues to honor its agreement with the state and is entering into another venture with AIDEA that will involve $85 million in state funds and more than $100 million in Cominco financing. The latest project will expand the port facilities and increase production by 40%, helping the Red Dog project become more economic.

BRIEFING: NATIONAL PARK SERVICE

ALASKA STATE LEGISLATURE

SENATE RESOURCES COMMITTEE

Official Business

State Capitol
Juneau, AK 99801

Chairman: Senator Rick Halford
Vice Chair: Senator Lyda Green
Senator Loren Leman
Senator Bert Sharp
Senator Robin Taylor
Senator John Torgerson
Senator Georgianna Lincoln

AGENDA
3:30 to 5:00 p.m.
Friday, January 31, 1997

BRIEFING: NATIONAL PARK SERVICE

Bob Barbee	Field Director, Alaska Field Area, National Park Service
Steve Martin	Superintendent, Denali National Park and Preserve
Jim Brady	Superintendent, Glacier Bay National Park and Preserve
Judy Gottlieb	Assistant Field Director, Alaska Field Area
John Quinley	Public Affairs Officer, Alaska Field Area

I **Introduction and Overview** Bob Barbee
- NPS priorities for the coming years
- Development plans: Katmai, Wrangell-St. Elias, Kenai Fjord

II **Denali National Park** Steve Martin
- Public access and development

III **Glacier Bay National Park** Jim Brady
- Cruise ships, commercial fishing and development

BRIEFING: COMINCO ALASKA

Doug Horswell, Vice President, Environmental and Government Affairs, Cominco, Ltd
John Key, General Manager, Red Dog Mine, Cominco Alaska
Charlotte McCay, Senior Administrator, Environmental and Regulatory Affairs, Cominco Alaska
Sarah Scanlon, Vice President, Corporate Affairs, Nana Development Corporation

I **Introduction**
- Red Dog Mine
- Cominco Alaska, Ltd

- Zinc Market
- Zinc Industry

II **Discussion**
- Beginning of Red Dog Mine
- Nana - Cominco Partnership
- AIDEA Transportation System Funding
- National Park Service Road Agreement
- Cominco Commitment to Mining in Alaska

III **Background Video**

IV **Benefit to Local and State Economy**
- Native Shareholders
- State of Alaska

V **Upcoming Cominco Developments**

VI **Exploration in Alaska**

VII **State/Private Sector Cooperation**

NEXT MEETING
Monday, February 3, 1997:

ADJOURN

FEB 19 1997

United States Department of the Interior

NATIONAL PARK SERVICE
Alaska Regional Office
2525 Gambell Street, Room 107
Anchorage, Alaska 99503-2892

IN REPLY REFER TO:

FEB 14 1997

Senator Rick Halford
Chairman, Senate Resources Committee
State Capitol
Juneau, Alaska 99811

Dear Senator Halford:

Our recent briefing with the Senate and House Resource Committees was a valuable experience for us, and we came away with a better understanding of your interest in several areas. I hope that you and the committee members also found the time well spent, and left the meeting with a better familiarity of National Park Service goals and policy. As Representative Hudson suggested, we will come back more often.

I wanted to follow up in writing to briefly clarify a few points that were left in some uncertainty and to answer a couple of the committee's questions.

Access

Senator Torgerson asked about access permits for individuals with inholdings in National Park Service units. The regulations implementing Title XI of the Alaska National Interest Lands Conservation Act assure valid inholders adequate and feasible access to their property. Those inholders using motorboats, snowmachines and airplanes do not need permits to get to their inholdings.

Commercial Fishing

Regarding the discussion of commercial fishing in Glacier Bay National Park, we should have done a better job in explaining from the outset that the commercial harvest or extraction of resources from national parks is generally prohibited. Commercial enterprises which provide visitor access and service are allowed in parks - in fact, more than 250 businesses are licensed to provide commercial visitor services in Alaska's national parks.

Commercial fishing is prohibited by the Wilderness Act of 1964 for those portions of Glacier Bay which Congress designated as wilderness in 1980. Nationwide National Park Service regulations specifically prohibit commercial fishing in park waters unless specifically authorized by Congress.

The Park Service has, obviously, chosen not to strictly enforce the prohibitions regarding commercial fishing in the marine waters of Glacier Bay. As we described to the committee, we now are on a path which we believe will be both fair to those who have fished the bay and will ultimately bring us into compliance.

Subsistence

Subsistence, as defined by Title VIII of the 1980 Lands Act, is authorized only in those units where specifically noted in the Act. Therefore, we manage subsistence uses in Yukon-Charley Rivers National Preserve, Gates of the Arctic National Park and Preserve, Noatak National Preserve, Cape Krusenstern National Monument, Kobuk Valley National Park, Bering Land Bridge National Preserve, those portions of Denali National Park and Preserve which were added to the unit in 1980, Lake Clark National Park and Preserve, Katmai National Preserve, Aniakchak National Monument and Preserve, Wrangell-St. Elias National Park and Preserve, and Glacier Bay National Preserve.

The Lands Act did not authorize Title 8 subsistence activity in any portion of Katmai National Park, Kenai Fjords National Park, Glacier Bay National Park and the original 2 million acres of Denali National Park.

Mission

For the 10 National Park Service units in Alaska established in 1980, the most succinct mission statements can be found in Title II of the Lands Act. Similar statements are also provided for the expansions of Denali, Katmai and Glacier Bay. The purposes of each monument, park or preserve was clearly outlined. For the "old" parks and the historical parks in Skagway and Sitka, the mission or purpose of each park is also outlined in their authorizing legislation. I have enclosed a copy of Title II of the Lands Act, and the 1925 proclamation establishing Glacier Bay. Each park unit is also governed by the National Park Service Organic Act and by other national laws, such as the Wilderness Act, the Mining in the Parks Act, other applicable sections of the 1980 Lands Act and the Concessions Policy Act. If the committee needs assistance locating these or other public land laws, please feel free to contact our Public Affairs Office at (907)257-2696.

Transportation

Each park general management plan includes descriptions of existing and proposed access. At this time, the state highway system in Alaska reaches only four of the 15 NPS units (Denali, Kenai Fjords, Wrangell-St. Elias and Klondike Gold Rush). Because of that reality, most access to national parks in Alaska will be by air and water for many years to come. The 1980 Lands Act anticipated that fact, and it made several special provisions because of the small

likelihood of ground transportation reaching remote parts of Alaska. With few exceptions, airplane access is allowed on all NPS lands, including wilderness. Wrangell-St. Elias, for instance, maintains more than 20 Bush airstrips inside the park for public use. Unlike most parks in the Lower 48, snowmachines and motorboats are also allowed in many areas.

As we mentioned in the briefing, we are completing a feasibility study for new northern access into Denali National Park. At this point, it appears that road or railroad access would cost between $125 million and $225 million. A final report will be presented to the Congress in March, and we will forward a copy to you when it is complete.

Additionally, we are excited about continuing the planning partnership with the State of Alaska on new access to the south side of Denali National Park. With the final plan complete, the NPS and state administration will begin moving toward implementation and look forward to working with the Legislature.

I hope this covers any outstanding questions from the committee. If not, or if you would like additional information on any NPS activity, please feel free to contact me at 257-2690.

Sincerely,

Paul R. Anderson

for Robert D. Barbee
Regional Director

Alaska

Index

Vision for a New Century

The timeless qualities of national parks in Alaska -- the almost unimaginable open space, the wildlife and profound quiet -- are an inheritance that becomes ever more valuable as the world around it becomes more congested, loud and manipulated.

Preserving those qualities will continue as the primary mission for the National Park Service in the 21st Century. But gaining a new emphasis in the Service's mission will be the accommodation of visitors and the recognition that expanded cooperative efforts with local residents and the business community are needed for us to be successful stewards of the natural and cultural resources in Alaska's parks.

This vision encompasses three broad goals:

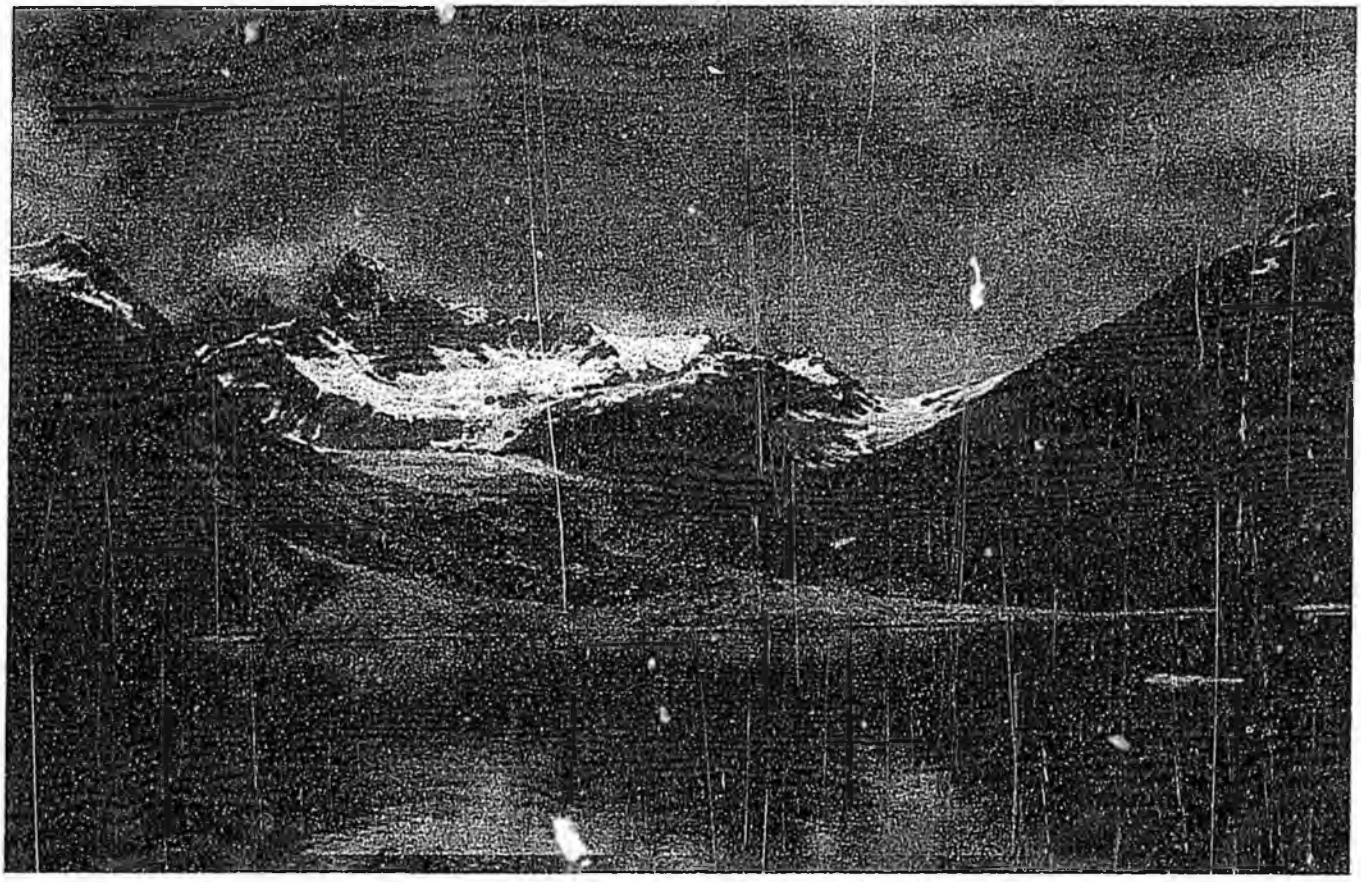
Protecting and managing park resources. Alaska's resource issues are as complex as the state is vast. Protecting the inherent resources for which these parks were established remains our highest priority. *Subsistence management, mining claims within park boundaries, Native land claim issues, and protection of archaeological sites are faced by Alaska parks on a daily basis.*

Accommodation of visitors. Since passage of the Alaska National Interest Lands Conservation Act, the Service has completed management plans for every park. We have built many of the called-for developments; in some cases facilities built in the 1980s are already outgrown. *The Alaska inheritance requires major capital investments in key locations such as Denali, Wrangell-St. Elias, Glacier Bay, Katmai and Kenai Fjords if we are to carry out the Service's mission.*

Building stronger community alliances. Our goal is to forge new partnerships with local communities, local and state government and private industry. *Improving local hire options, expanding rural tourism opportunities, working with Native corporations on issues as diverse as concession opportunities and research, and cooperative planning with state agencies are key components.*

The 54.7 million acres in Alaska's national parks make up about two-thirds of all the acreage in the National Park System.

Vision for a New Century



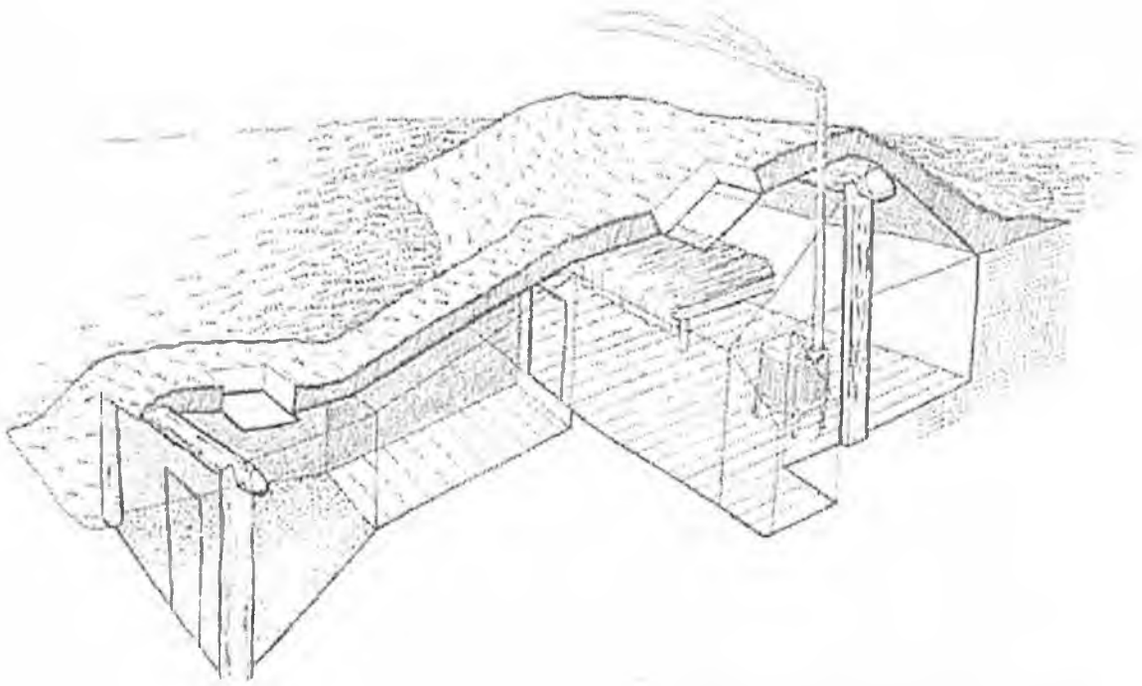
Tarr Inlet, Glacier Bay National Park and Preserve.

The document which follows describes a commitment to manage parks and pursue actions which accomplish each of the three broad goals. Meeting some of the goals will require federal construction money. In other cases, meeting the goals will require changes in legislative authority. In other instances, we need to change the way we do business in order to meet real and pressing needs.

The strategy is one that will play out over several years. By early in the 21st Century, we envision Alaska parks as valued neighbors for all Alaskans, as accessible and accommodating destinations for increasing numbers of visitors and as places where the preservation and care of natural and cultural resources remains our highest priority.

Protecting Park Resources

Resources in Alaska



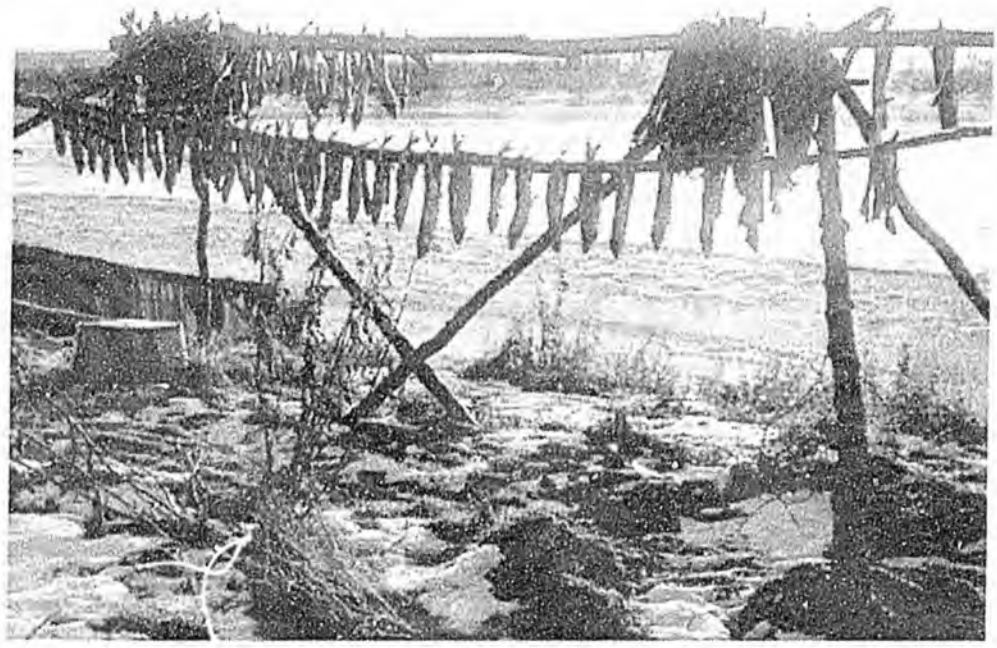
Drawing of a home in an abandoned Native village on the Bering Strait coast.

The arctic was the last area occupied by humans in the Old World, but in the New World, it was the first environment migrating people encountered and made their home. Alaska , because it once formed the eastern flank of the Beringian core region, in all probability represents the area of longest, continuous human occupation in the New World.

Despite Alaska's image as a recently transformed pristine wilderness, it is here that humans and the natural environment have had the longest association in the New World. The identification of those links have practical application for resource management, in part because of the continued subsistence harvests of fish and wildlife from within park boundaries. These uses, unprecedented in Lower 48 parks, as well as the opportunity to study natural and cultural resources in vast, virtually undeveloped areas, call for a continued strong program of natural, cultural and social science.

The Park Service mission in Alaska, as elsewhere, is to preserve unimpaired the resources under its stewardship so they may continue to be enjoyed by present and future generations. Despite the vast size of Alaska park areas, they are vulnerable to air pollution, oil spills, commercial fishing, wildlife poaching and archaeological looting.

Subsistence



Fish drying on the Kobuk River.

Since 1990, the federal government has managed subsistence harvests on federal public lands in Alaska, including seven parks and 10 preserves. Most fish and wildlife species migrate across management boundaries, leading to management conflicts between federal and neighboring state or private lands. This highly political and culturally sensitive issue continue to require extensive staff time. The NPS spends about $2.5 million per year on subsistence management.

In late 1996 the NPS successfully co-sponsored, with the Seward Peninsula Regional Advisory Council, emergency regulation changes for muskoxen hunting on the Seward Peninsula.

• **Federal Subsistence Board:** The NPS continues as an active member of the Federal Subsistence Board, the group of land management officials that set seasons, bag limits and other rules for the subsistence harvest of fish and wildlife on federal lands. Depending on the outcome of several court cases and possible legislative action, the federal role in subsistence fish management could expand dramatically in the next two years.

• **Working with communities:** In managing subsistence, the NPS works closely with citizen advisory councils. The NPS is continuing to seek comments on its review of subsistence laws and NPS regulations. The document has been reviewed at 17 meetings around the state, and further review at state-wide meetings is planned through March of 1997.

Mining Claim Acquisition

Kennecott is a 2,800-acre mining claim within Wrangell-St. Elias and is proposed for acquisition (see Appendix) in FY -98 Land and Water Conservation Fund spending.

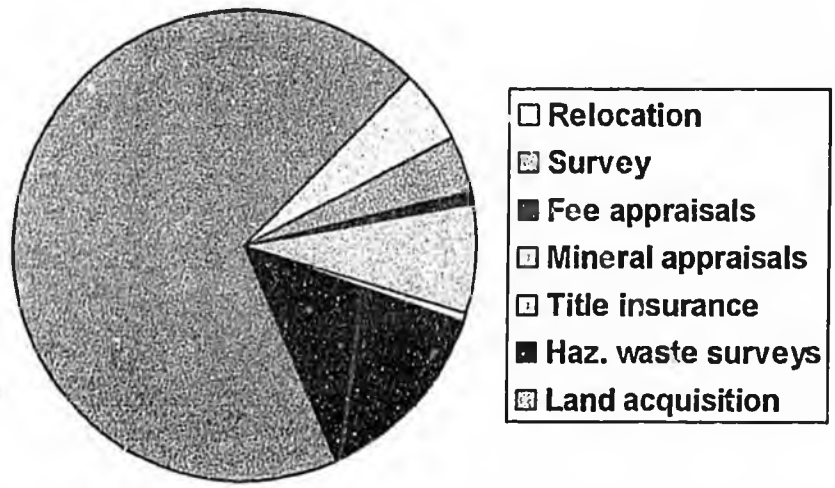
Wrangell-St. Elias N.P. has approved two Plans of Operation for mining in the park and is reviewing two additional plans.

Denali National Park: In the past 14 months, more than 300 acres of mining claims have been acquired in the Kantishna area of Denali National Park and Preserve.

- Of the remaining 36 unacquired mining claim tracts in Kantishna, 13 are patented and 23 are unpatented. The NPS is actively pursuing the acquisition of six patented tracts; negotiations for the unpatented tracts have reached an impasse because of the great disparity between the fair market appraisals and the convictions of value held by the claimants.
- To complete the Denali acquisition program, a $1.5 million to $2 million appropriation from the Land and Water Conservation Fund for each of the next three years is necessary.
- Failure to carry out purchases in a timely manner could result in further inverse condemnation actions by claim owners.

Other parks:

- Wrangell-St. Elias has 686 mining claims that need preacquisition assessment.
- Yukon-Charley Rivers has 129 unpatented mining claims needing validity and pre-acquisition assessment.
- Bering land Bridge has 15 unpatented claims possibly available for acquisition.



Allocation of $8.7 million spent on acquisitions to date.

Cultural Resources

Archaeologists at Klondike Gold Rush NHP.

Cultural resources in Alaska's parks range from sites dating back to the earliest North Americans to World War II defense sites. The major program goals are to:

- Acquire and maintain accurate park information bases.
- Identify and evaluate the full range of cultural resources in parks.
- Develop effective strategies for treating, protecting and interpreting the resources.
- Develop sensitive approaches to cultural and natural resource management.
- Employ social science as a basis for informed human-use resource management decisions.

The Gulf of Alaska Coastal Archaeology Survey is an interdisciplinary project focused on building a model of prehistoric settlement patterns in relation to sea level changes. The work has been completed in Glacier Bay and in Katmai. The Katmai investigations found that after heavy Pleistocene glaciation, the rebounding land rose faster than sea level. The result is that sites dating to 7,000 years ago are found four to 10 meters above sea level.

Subsistence research is under way, many in cooperation with the state of Alaska and universities. The NPS is examining traditional uses of resources such as fish, wildlife and timber, harvest levels, and use of cabins.

In the Noatak National Preserve, a multi-year reconnaissance survey has focused on the upper Noatak River and on the upper Anisak River. More than 450 sites representing 10,000 years of human occupation have been located.

Natural Resources

Establishing a vegetation plot in a heavily used camping area.

The field area's natural resource goals are to:

- Identify and quantify the natural resources at risk.
- Examine and understand basic ecological processes and interactions.
- Determine and evaluate influences from human activities.
- Detect and measure the results of natural and human causes of change.

In Denali, there are nearly 100 studies and projects underway every year. Several studies are directed at resolving specific resource issues. These have included wildlife responses to vehicle and visitor use of the road, effects of road dust, wolf management and reclamation of streams altered by mining.

University of Alaska Fairbanks botanists located rare plants in Yukon-Charley National Preserve, and plans are in place to monitor and protect their locations. Botanists also found healthy and widespread populations of another rare plant, leading to a recommendation that it be dropped from C-2 status.

Wrangell-St. Elias staff has monitored all-terrain vehicle use and tested types of trail hardening techniques in order to accommodate ATV traffic on certain trails while preventing a web of new trails around wet areas.

As part of the Partners in Flight/Aves de las Americas program, Northwest Alaska Areas staff banded 1,105 birds representing 29 species; seven of the species winter south of the Mexican border. The banding stations will remain active for at least another three years.

Aleutian WWII N.H.S.

A magazine entrance on Ulatka Head.

The newest National Park Service affiliated area in Alaska is the Aleutian World War II National Historic Site, an 81-acre site at Ulatkc Head on Unalaska Island.

Built as a defense post, the site contains a multi-tiered concrete battery command station, Panama gun and searchlight mounts, a plotting room, and the remains of one of the last intact World War II military defense landscapes including building ruins, roads, communications stations, anti-aircraft positions and ammunition magazines.

The local Alaska Native corporation, the Ounalashka Corporation, will administer, manage and operate the historic area with NPS technical assistance. This assistance will include historic preservation planning, mapping and documentation, recommendations by historic architects and engineers, assistance and in the development of an interpretive program.

The enabling legislation was sponsored in the 104th Congress by Alaska Senators Frank Murkowski and Ted Stevens.

Unalaska Island's Dutch Harbor military facilities were bombed by Japanese aircraft in 1942. Military action in the Aleutians, including the Japanese capture of Attu and Kiska islands, led to the internment of more than 800 Native Aleuts for the duration of World War II. Nearly 80 percent of the Aleut leaders and elders died in the American camps.

Kenai Fjords/Coastal Lands

The first priority restoration action for the NPS is acquisition of English Bay Native Corporation lands within Kenai Fjords National Park.

The English Bay and Port Graham village corporations have had about 78,000 acres of lands within the park boundary conveyed to them under the terms o the Alaska Native Claims Settlement Act. Ownership of the subsurface estate is held by Chugach Alaska Corporation, a Native regional corporation. The lands -- close to the coast and relatively flat -- have very high resource and park values; they are truly the ecological core of the park.

Funding for the acquisition would come from the Exxon Valdez oil spill settlement funds. The park's coast was hit with significant quantities of oil after the 1989 tanker accident.

- English Bay wishes to sell all of its conveyed land to the National park Service. Port Graham would like to retain some parcels, but is generally willing to sell others. The Chugach Alaska Corporation has also indicated a willingness to sell.

- Appraisals are complete for the lands of both corporations.

- Negotiations are on-going with English Bay. The corporation is asking for higher than appraised value for its lands. The corporation has also indicated an interest in retaining subsistence rights on some parcels and in establishing a cultural endowment fund to support long-term archaeological research and protection in the fjords.

- The acquisition enjoys strong support locally and nationally.

Lake Clark

Rafting in Lake Clark National Park and Preserve.

Lake Clark is a 4-million-acre national park and preserve about 120 southwest of Anchorage. The park had about 12,500 visitors in 1996. More than 95 percent of them came to the park with the help of commercial operators and spent an average of three to five days in the park. When visiting the park with a hunting or fishing guide or through a lodge, the typical expense is about $3,500 per week per person.

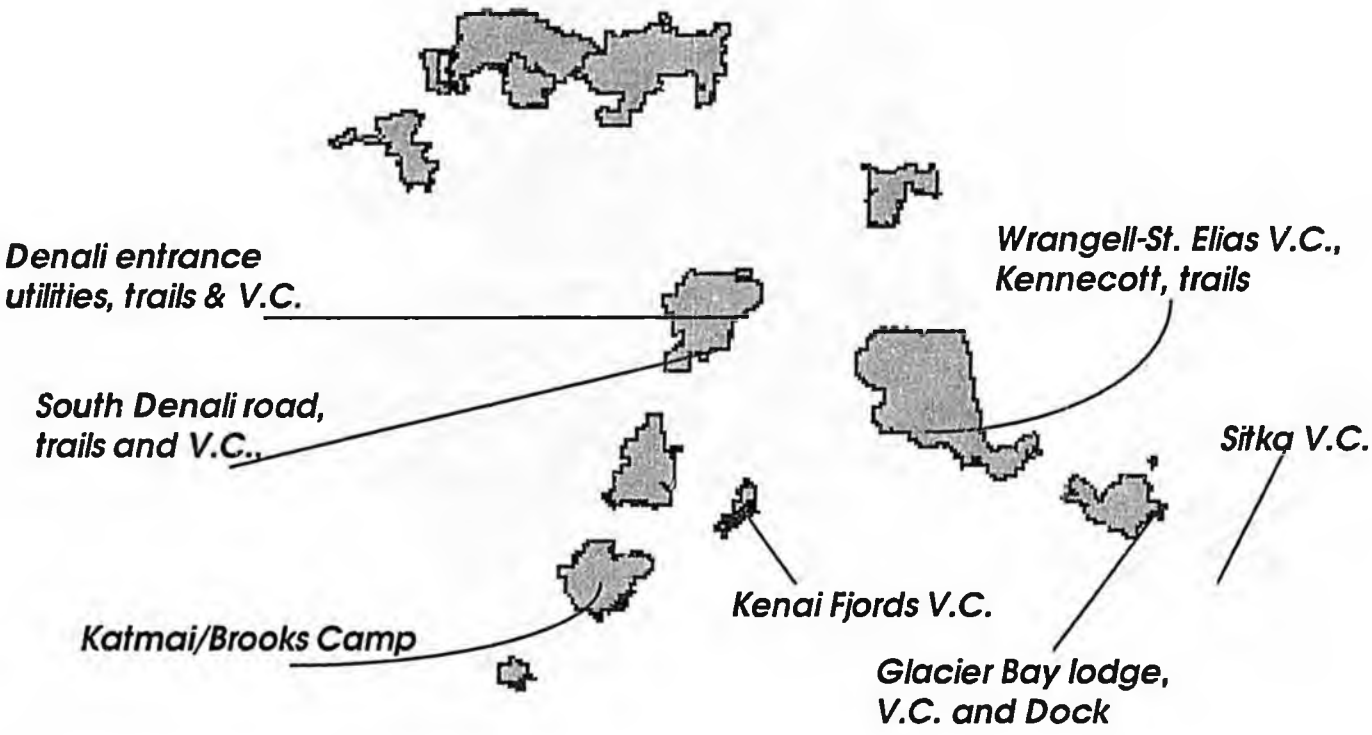
• **Increasing visitation:** This has become a concern in parts of the park with float trips, fishing parties and hunting parties impacting streams and coastline resources. For example, 30 to 60 people a day use the Silver Salmon Creek on the coast during the salmon runs.

• **Bear management:** Bear incidents have become a bigger concern because of visitation increases; five bears were killed in Port Alsworth this fall. Brown bears have begun eating garbage at Silver Salmon Creek. Joint action with the state was taken to correct the problems caused by campers, fishermen and inholders.

• **Native land assertions:** Cook Inlet Region Inc., the Alaska Native corporation for southcentral Alaska, owns a large inholding near the coast on which it plans to develop a gold mine. The park is working with the corporation to locate a road access route to the coast. The corporation has also sought other park lands along the coast. The NPS and Department have maintained that the corporation has no legal right to the approximately 30,000 acres of coastal property. The issue has been the subject of proposed legislation, but has not been litigated.

Accommodating Visitors

Between Now and 2007



Key NPS construction priorities for 1997 to 2007

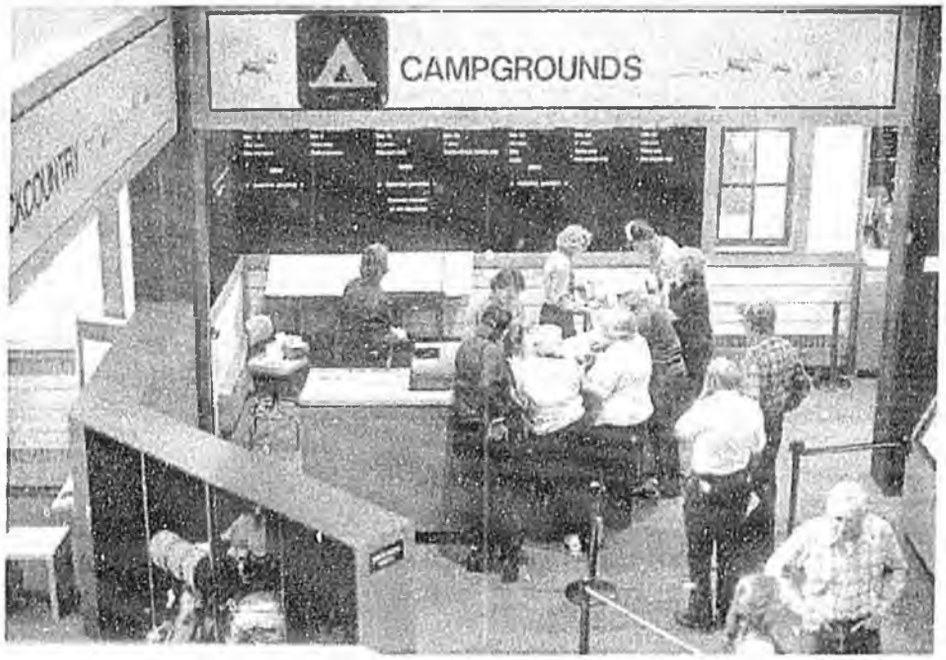
The timing of NPS construction projects depends on congressional appropriation levels and their rank among the Service's nationwide list of needs. Additional Alaska projects will be ranked by the NPS early this year. Work planned for this summer, and currently ranked high on the NPS construction priority list for 1998 and 1999 includes:

- **1997** Restoration begins on the Pantheon Saloon and Goldberg's Cigar Store at Klondike Gold Rush. These are the last of 13 historic structures restored in downtown Skagway. Also, the NPS will make emergency repairs to the Glacier Bay dock, repair the Katmai road to the Valley of 10,000 Smokes, construct electrical upgrades at Denali, and replace two trailer houses at Glacier Bay.

- **1998** Denali entrance area water and sewer improvements.

- **1999** Wrangell-St. Elias visitor center construction.
  Remodeling of the Sitka visitor center, Old School, and Priest's Quarters.
  Glacier Bay utility improvements.

Denali/Front Country



Inside the Denali Visitor Access Center.

Improved visitor access and resource protection, including increased travel for visitors on the park road, make up the broad goals of the nearly complete development concept plan for the Denali Front Country. The plan envisions a more complete park experience along the first 15 miles of the park road, allowing visitors to view Mount McKinley and wildlife, hike on trails, picnic and camp, and use a visitor center. Significantly improved access and experience for independent travelers will be provided.

- Utility improvements for the front country are in the NPS construction plan for 1998.
- Fee demonstration project money will fund trail construction and interpretive displays starting in 1998.
- Proposals for a new visitor center, rest areas at Savage and Toklat, campground expansions, parking and other improvements will compete in the NPS national construction priority setting. The park also is exploring possible partnership funding.
- The Natural History Tour offered by the concessioner could double its capacity to 120,000 riders.
- Travel on the park road beyond Mile 15 would be increased by at least an additional 15,000 people through the reallocation of current road permits.

About 262,000 people rode buses into the interior of Denali in 1996.

Denali/South Side

The south side of Mount McKinley.

The South Side of Denali has long been seen as an exceptional opportunity for visitors to see the grandeur of the Alaska Range and to sample the wild character of the park and surrounding lands. After several unsuccessful federal and state planning efforts, a cooperative planning effort began in 1995. The resulting development concept plan and EIS proposes a joint private-state-federal approach to protecting the natural resources and community values while at the same time opening portions of the area to increased recreational use and tourism.

A cooperative effort has resulted in a conceptual 20-year plan for the south side of Denali.

Implementation will be through a team approach, with funding consisting of a mix of federal highway money, state and federal appropriations.

- Proposed developments would be mostly on state land in or near Denali State Park. The visitor center site, just beyond the end of the Petersville Road, has expansive views of Mount McKinley, and would serve as the start of a trail into the national park.

- The proposal includes significant road upgrades, a small visitor center, trails and camping. The DCP estimates a total cost of about $40 million, most of which is for road construction and upgrades.

- The plan envisions a second visitor center along the George Parks Highway, new trails in the state park and in the Dunkle Hills, and campgrounds.

- The NPS portions of the project have not been ranked in the national construction priority list.

Glacier Bay/Construction

Bartlett Cove is the primary access point to Glacier Bay National Park & Preserve. A landing strip in the nearby community of Gustavus (pop. 600) allows jet service during the summer season, and year-round small plane access. The park's facilities are in considerable need of renovation or expansion. The improvement plans include the following elements:

• **Utility Upgrade:** Sewage treatment facilities are operating under an interim authorization from the state Department of Environmental Conservation with the requirement that they be brought into compliance by 1998. Electrical service, water treatment and fuel storage are inadequate to meet projected demand. The upgrade is planned in the NPS 1999 construction program.

• **Dock Project:** Two docks built in 1956 serve visitor, concessioner and management needs at Bartlett Cove. Both have significant structural and safety needs. Emergency repairs will occur in 1997; full rehabilitation and expansion is also recommended in the future.

• **Road Project:** Access to visitor facilities and park headquarters is via a 10-mile road. The road outside the park is paved. The park portion is a narrow, dirt road. Federal highway funding has been requested in 2000 for reconstruction, realignment and rehabilitation.

More than 200 cruise ships come into Glacier Bay every summer. The largest carry more than 2,000 passengers each.

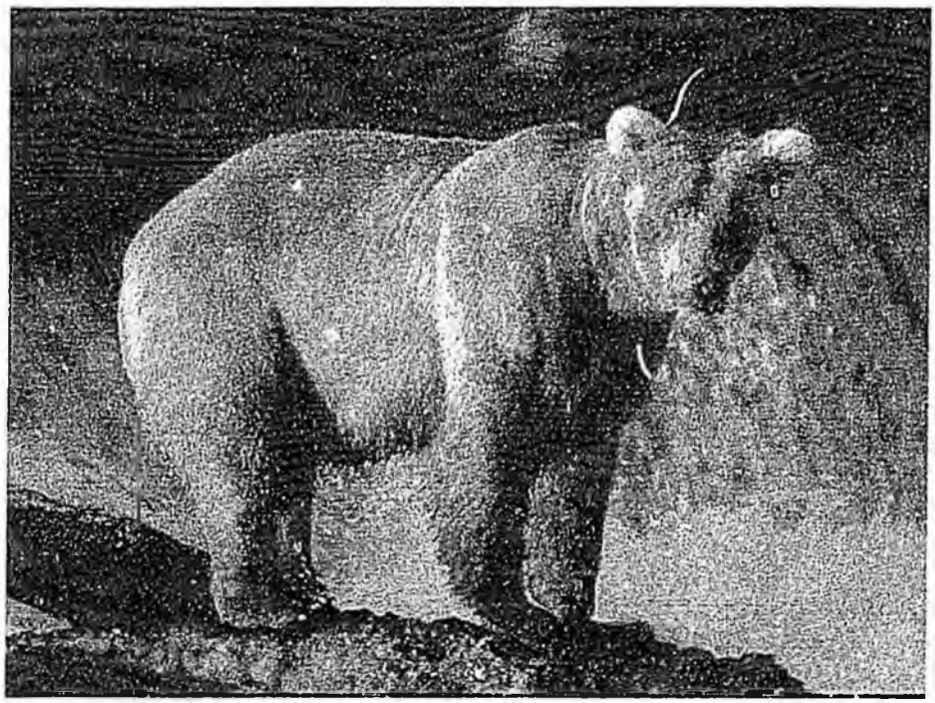
Glacier Bay/...Construction

Trailers continue to house some administrative and maintenance operations.

• **Lodge Improvements:** The 1986 General Management Plan approved enlargement of the 56-cabin lodge at Bartlett Cove. The proposed development includes additional visitor cabins, a low-cost hotel unit, improvements to the restaurant and other visitor use areas. The primary area for interpretive activities is in a loft area above the lodge dining room. This area is inadequate to meet visitor needs, and a separate facility is proposed in the on-going development concept plan. Discussions also are underway with the concessioner on possible private funding strategies.

• **Cultural Center:** The Native Tlingit Indians, who originally occupied the Glacier Bay area, hope to build a Cultural Center/Spirit House before 2000 which would help integrate the cultural history of Glacier Bay into the overall interpretive program. It would also help improve Native involvement in park operations. It is under consideration in the development concept plan.

•**Trailer Replacement:** There are six aged trailers serving as employee housing. Construction of replacement housing (a single-family unit and a multi-family unit) will occur this summer.



A brown bear at Brooks Falls.

Enhancing visitor experiences and improving facilities

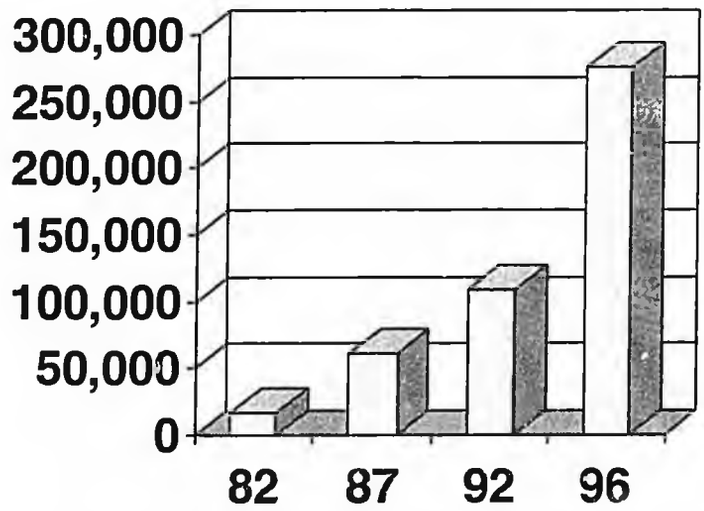
Significant changes in the visitor experience will occur at the Brooks River area of Katmai National Park and Preserve under a recently approved development concept plan. The Brooks River area is the most-visited part of Katmai. Facilities there, however, are outdated and are located in an area used extensively by brown bears. Katmai is the country's largest brown bear sanctuary. The site is also rich in archaeological sites at least 4,000 years old. The $9.3 million plan calls for removing all facilities on the north side of the Brooks River and relocating them about three-quarters of a mile south of the river.

• Day use visitation has tripled from 2,079 people in 1986 to 6,391 in 1996. The Brooks area is most heavily used in July, when many days see more than 100 day-use visitors in addition to the campers and lodge guests.

• The new lodge and campground will be the same size – 60 people each per night. The number of day users will be limited to 85 per day beginning in 1998. This will provide a better quality and safer visitor experience.

• A reservation system for day use begins this year. A user fee is charged to campers, lodge guests and day use visitors at the Brooks River. Campers will pay a $10 per site campground fee. A portion of the fees remains with the reservation company; the balance comes to the park.

Kenai Fjords/Visitor Center



Recreational visits to the park have nearly quadrupled in six years.

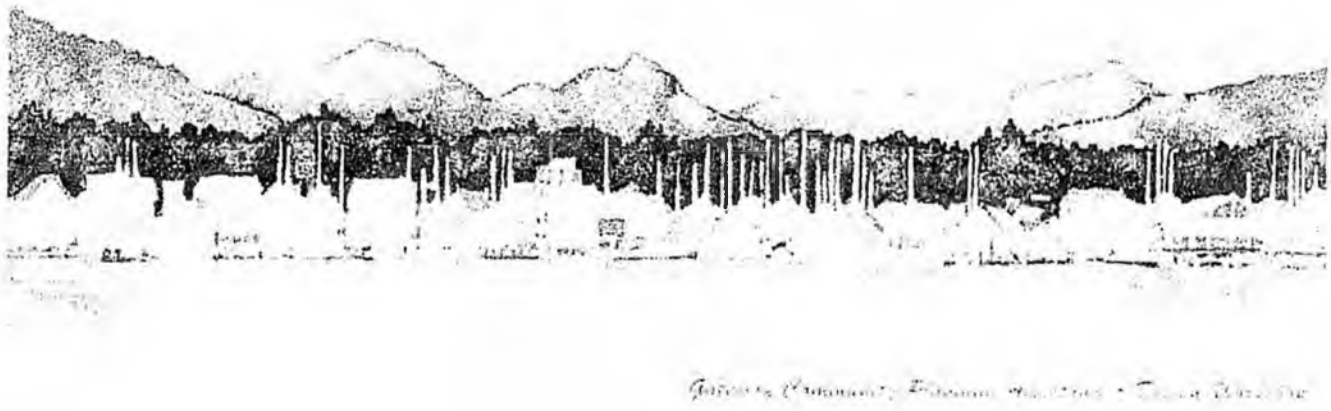
The 2,000-square-foot Seward Visitor Center and the easily accessible visitor facilities at Exit Glacier are overused. This threatens resources, visitor experiences and employee efficiency, safety, and morale. In 1994, the park began a planning effort to determine visitor and resource needs through 2015. A facility incorporating the needs of the Forest Service, Alaska State Parks, the City of Seward and others was proposed in the Development Concept Plan completed in 1996.

In May 1996, the NPS, City of Seward, Seward Downtown Merchants Association, Seward Chamber of Commerce, Forest Service and state parks signed a memorandum of agreement. Key points include:

- The City of Seward set aside land for the project and provided the first $50,000 for a conceptual design and budget.
- The Forest Service has approved the project contingent on co-location with the NPS.
- State Parks has set aside an initial $40,000 for exhibits in the new facility.
- The shared facility will save the NPS almost $1 million.
- The project has broad community support.

The Harding Icefield at Kenai Fjords receives up to 65 feet of snow every year, feeding the glaciers which spill into the lowlands and the namesake fjords.

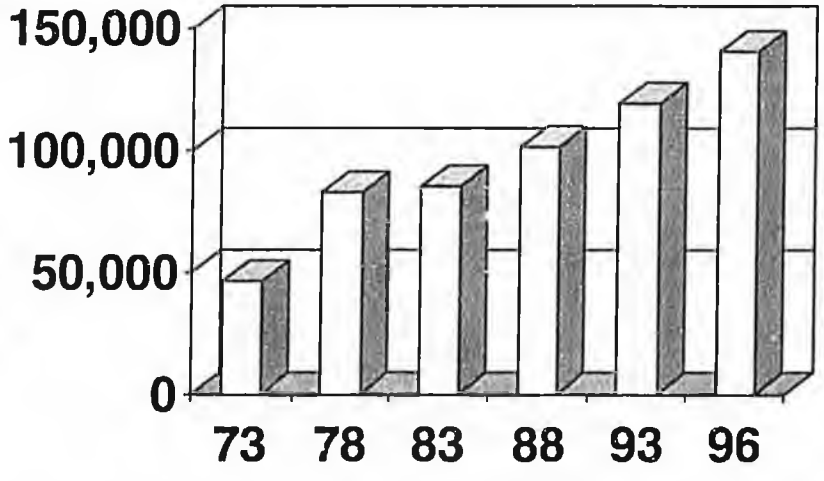
Sitka/Visitor Center



The Sitka waterfront.

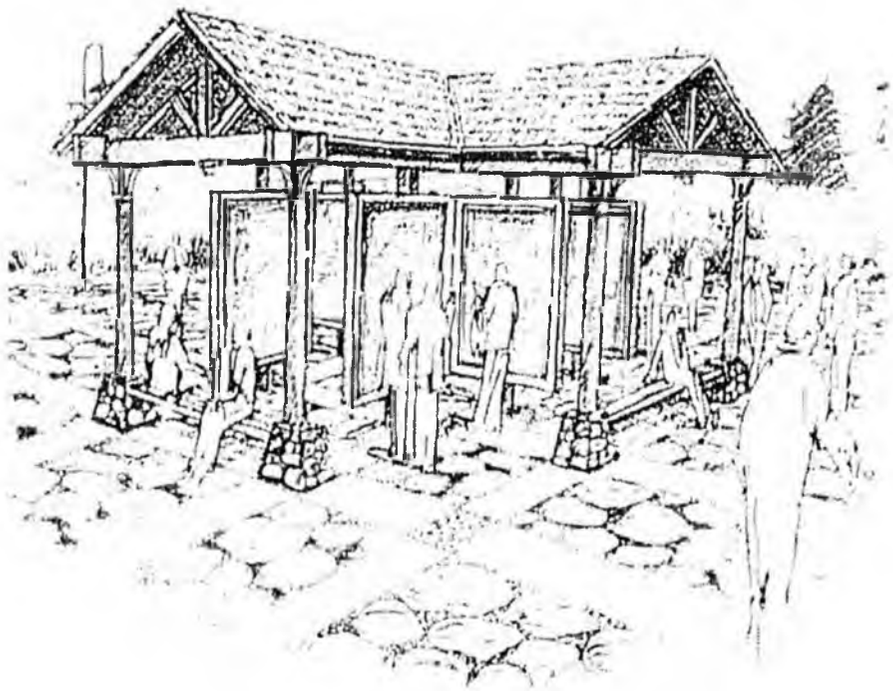
Facilities to meet current demand are planned for 1999

- The park visitor center was built in 1965 when visitation was 25,000 per year; today it is about 140,000.
- The NPS planning and design work are underway for remodeling the visitor center and stabilizing and rehabilitating the two historic buildings next to the Russian Bishop's House (the Priest's Quarters and Old School).
- The Priest's Quarters, built in 1887, and the Old School, built in 1897, would be adapted for use by administrative staff now working in the visitor center.
- The visitor center would be remodeled to expand exhibits, restrooms, a totem pole display area and the Southeast Alaska Indian Cultural Center.
- Both projects are on the NPS tentative FY 1999 construction list of priorities.



Increases in recreational visits have paralleled the growth of the cruise ship industry.

Sitka/Gateway Community Planning



A proposed informational kiosk in Sitka.

In a coordinated effort with the community of Sitka, the National Park Service is preparing a general management plan and environmental impact statement to chart the course of Sitka National Historical Park over the next 10-15 years.

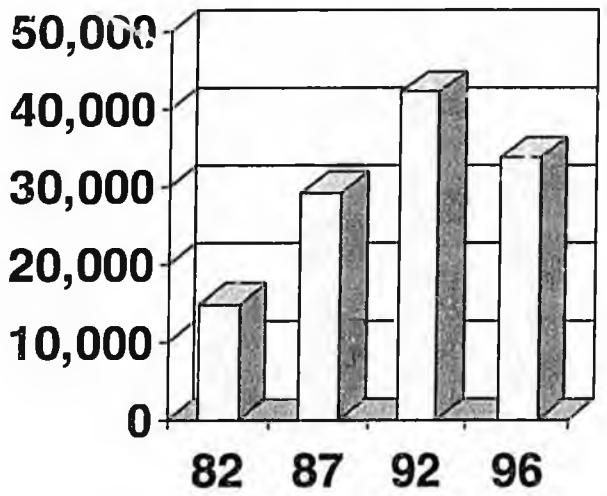
The pilot project -- part of the NPS Gateway Community Planning Initiative -- focuses on working cooperatively with the neighboring community on planning for land use, visitor facilities, alternative transportation, community services and other issues.

The Sitka effort was launched in 1995. In community workshops, participants chose to focus on vehicle and pedestrian access, the rich cultural diversity of Sitka, visitor information, environmental quality, community education programs, and the development of visitor facilities. A completed plan will be presented to the city and borough assembly in February.

Sitka is Alaska's oldest federal park, established in 1910 to commemorate the 1804 Battle of Sitka.

Wrangell-St. Elias/Visitor Center

Wrangell-St. Elias N.P. encompasses 13.2 million acres, or more than one-seventh of all the land managed by the NPS.



Visitation counting methods changed in 1996, but use of popular facilities has continued to grow.

Strategies for dealing with growth:

- Visitor center construction in 1999. A 230-acre site has been purchased, and a road has been built to the site. Architectural design and exhibit planning are in progress. The visitor center cost is estimated at between $4.5 and $6.5 million, depending on the design. A decision on which of two design alternatives will be made in March 1997. If funded, Phase I of construction (utilities and well) could be awarded in FY98.
- McCarthy Road cooperative project with state. (See Appendix).
- Continue incremental improvements to facilities in Chitina, Slana & on the Nabesna road.
- Skookum Volcano Trail construction will occur in 1997. The trailhead for the five-hour loop is on the Nabesna Road.
- Securing agreement on Kennecott acquisition and management. (See Appendix).
- Participation in regional planning efforts with private enterprise and local government, including work on tourism through the Land Managers Forum.
- Construction of public toilets at McCarthy.
- Continue rehabilitation of public use cabins.

Community Alliances

Local Employment

The Alaska National Interest Lands Conservation Act gives the NPS authority to hire people into excepted service positions because of their special knowledge of the area based on their having lived in or near the park. People hired under the program bring tremendous benefits to the NPS, but are not classified as career Service employees. The Alaska Field Area believes this is a flaw; after a period of satisfactory work with the NPS, these local hire employees should attain career status and be able to compete for other jobs on an equal footing as their co-workers. The fix must be done legislatively, and would need to be be supported by the Alaska congressional delegation.

The NPS also uses local volunteers in a variety of jobs. In FY 1996, they contributed more than 35,000 hours.

Bering Land Bridge/Northwest Areas: The four units have a staff of 27 career employees, 13 of whom are local hires. the staff includes nine Native Alaskans, two of whom are division chiefs. For the past four years, Bering Land bridge has employed a local village high school student in the Resource Apprenticeship Program Student (RAPS). He has assisted with administrative jobs, developed and performed an interpretive program and, in 1996, assisted with the recovery of a mammoth tusk.

Sitka: In FY 1996, 11 of 13 seasonal employees were local hires. Of those, two were Alaska Natives. Of the nine full-time and four half-time permanent employees, five are local hire.

Wrangell-St. Elias: In 1996, the park had 22 permanent employees of which eight were local hires. For the summer, the park hired 20 local residents as seasonal employees.

Denali: The park has expanded recruitment outreach in five communities to attract local hire applicants. Job descriptions are being tailored for the type of skills found in Bush communities and different ways of structuring jobs to accommodate local lifestyles are being evaluated.

Klondike Gold Rush: Local hires total about 14 FTE out of a park staff of 59.

One Klondike Gold Rush volunteer was Cynthia Brackett Driscoll, whose great-grandfather was George Brackett, a road builder and entrepreneur during the Gold Rush days. Her research resulted in public programs at the park, contributions to the park library, and a book about her family's history.

Alaska Public Lands Information Centers

APLICs provide more than 300,000 visitors with trip planning services every year.

The centers in Anchorage and Fairbanks answer more than 25,000 letters and phone calls each year.

The Centers were mandated in ANILCA as a partnership of federal and state land managing agencies representing over 250 sites. The NPS manages the Anchorage and Fairbanks centers. The state operates the center in Tok and the Forest Service operates the center in Ketchikan. The Centers provide convenient one-stop shopping for visitor information.

The statewide system of APLICs is faced with an increase in demand coupled with reduced funding. The state recently withdrew most of its $140,000 contribution to the operation of the Fairbanks and Anchorage centers. The NPS is exploring other avenues to more creatively fund operations.

The Anchorage Center recently entered into a partnership with the Alaska Marine Highway System (AMHS). The AMHS has moved into the center and will help pay to operate it. Until other funding sources are identified, the NPS remains committed to fund these successful models for cooperative information centers.

In addition to trip planning, the Fairbanks and Anchorage centers offer a myriad of professional services to the visiting public including:

- **Fee Collection:** The Anchorage Center handles public use cabin reservations for the National Park Service.

- **Educational programs:** The Fairbanks and Anchorage Centers served nearly 30,000 youth in Anchorage and Fairbanks through on- and off-site educational program.

- **Military Outreach:** The Fairbanks Center works with the orientation program for new recruits to Fairbanks and for their families.

- **Community Outreach:** Centers work with local universities, hosting community events such as films, public meetings and demonstrations by Native artists.

Existing U.S. park units would make up the American side of an international park.

The FY-96 Beringia budget is $670,000, of which 77% goes to research and community cultural projects.

Native groups received 72% of the research and community cultural project money; the University of Alaska Fairbanks received 26%.

Recording data in an abandoned Native coastal village.

New insights into an ancient landscape

The Beringia program grew from a 1989 recommendation by a joint Soviet-American planning team to establish an international park in this remarkable region. Political revolution and other events have slowed the pursuit of a joint international designation, but key interdisciplinary program goals are being accomplished:

- Extensive alliances have been made with groups outside the NPS, including Native and Russian organizations, all of which have significant expertise in the region.
- The program has assisted in the re-establishment of cultural traditions between the indigenous people of Alaska and Russia, and fostered conservation practices.
- Noted researchers from the U.S. and Russia are attracted to the region under the Beringia program. The program has produced more than 50 published scientific papers.
- Hundreds of plant species have been identified in the preserve for the first time; dozens of species have been found for the first time in North America.
- Science camps for youth, trade fairs, dances and other cultural activities have been sponsored.
- Research proposals are prioritized by a review panel comprised of three Alaska Native corporation members and two NPS members, a process that helps weave academic research and local studies based on traditional knowledge.

Gates of the Arctic/Access

Gates of the Arctic National Park and Preserve is a remote but very accessible wilderness, with increasing numbers of people enjoying the park throughout the year. The heart of the 8.5 million acres unit is just 90 air minutes north of Fairbanks, and hundreds of lakes and rivers in the park allow for easy float plane access. Six major rivers are part of the Wild and Scenic Rivers system.

- **Business:** Over 50 commercial businesses from Alaska and around the world assist visitors with logistics and equipment needs. Typical backcountry visitors spend a minimum of a week in the park, and month-long stays are not unusual.

- **Visitor service:** Three NPS offices on the perimeter of the Park provide information and visitor services. The Dalton Highway Visitor Center, just east of the park, provided services to over 5,000 visitors last summer.

- **Winter use:** Winter visitation has increased dramatically as dogsled trips into the Brooks Range have become popular for groups from around the world. The guiding and outfitting of these trips has become a multi-million dollar industry for the area.

The park's wilderness area, first made famous by Bob Marshall, attracts hikers from around the world.

Wrangell-St. Elias/Access

Public Use Cabins: The park has restored five historic cabins that are available for free public use on a first-come, first-served basis. The cabins are Nugget Creek, Jake's Bar, Hubert's Landing, Too Much Johnson, and Solo Mountain.

Trails: The park has identified at least 38 trails with potential to be improved for public access. The Skookum Volcano Trail will be opened this summer by a Sierra Club work group. This trail provides a loop route from the Nabesna Road that can be completed in five hours.

Chisana Airstrip: The park and state Department of Transportation agreed to allow the development of a master plan with FAA funding for the Chisana Airstrip. Three public meetings have been held (Chisana, Anchorage, and Fairbanks).

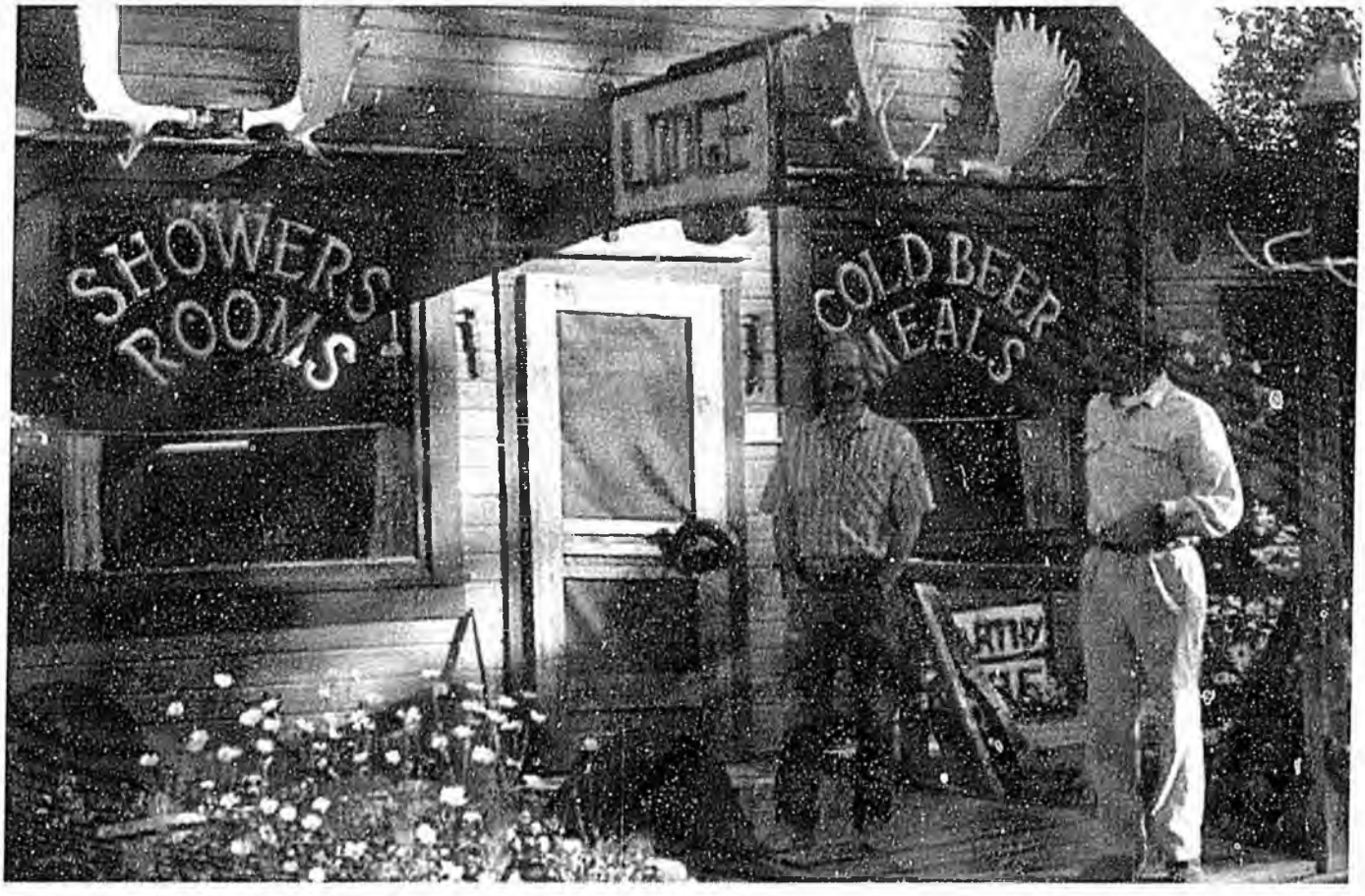
Backcountry Airstrips: The park spends about $22,000 per year maintaining more than 20 Bush airstrips for public access in the park.

Chitina Wayside: The park and state Department of Transportation are planning to install an interpretive wayside and toilet facility in Chitina. DOT is funding construction through the ISTEA program.

Nabesna Road: The park and the State Department of Transportation have an agreement to begin the planning for a Nabesna Scenic Road Plan. This plan will mirror the McCarthy Road process by involving the local communities, land owners, and Native organizations in the planning for public and private amenities. Road width, surface type, picnic areas, parking areas, camping, trailheads and interpretation will be a part of the plan.

The park has installed five picnic tables, several fire rings, and trailhead information signs along popular areas on the Nabesna Road. Camping is encouraged at both Twin Lakes and Jack Creek.

Wrangell-St. Elias/Community



Visitors in front of the popular McCarthy Lodge.

Alaska Land Managers Forum Chitina Valley Project: A task force is being considered to focus on private/public tourism infrastructure in the Copper/Chitina valley. The Copper Valley and Wrangell-St. Elias are being proposed as a major alternative destination to Denali National Park.

Public Toilets: The park and the state Department of Transportation have agreed to build the first two public toilets in McCarthy this spring. A second set is planned for the McCarthy Road side of the tram.

Community Economic Development: The park received a $30,000 grant from the National Park Foundation to develop a Native Alaskan Interpretive Curriculum through the Prince William Sound Community College. This curriculum will be used to stimulate local "ecotourism" businesses within the Native and non-Native community.

Concessions: The park has 16 hunting guide concessioners. There are 49 incidental business permits for air taxis, river rafters, backpacking guides, mountaineering guides, and game transporters.

Working with Neighbors

The Moore House, right, will be restored for the 1997 Gold Rush Centennial.

Klondike Gold Rush: The park has played a major role along with state and local groups in planning for the "rush" of visitors expected in Skagway and in the region for the 1997-98 centennial of the Gold Rush. The park has worked with Canadian officials in managing the Chilkoot Trail, and expects more hikers in 1997 than in any year since the Gold Rush.

Denali: Doyon, Ltd. , the regional Native corporation for much of Interior Alaska, purchased the Kantishna Roadhouse in 1995. Space on the former Liberty One mining claim was assigned to them under a Special Use Permit. At its own expense, Doyon removed unsightly debris and fuel-contaminated soil left by former users. Doyon also encouraged Roadhouse guests to use the company's bus or the NPS shuttle bus system rather than private vehicles. This reduced by more than 150 the number of road travel permits issued in 1996. Doyon also maintained the number of day-trip buses to its facility at 1995 levels, foregoing possible increases in business.

Kenai Fjords: In lieu of paying lease fees to the Port Graham Native Corporation for the use of land on which the park has a public use cabin, the park patrolled coastal Native-owned lands and trained a corporation employee as a coastal ranger. The park hopes to expand the program in 1997. The park receives a donation from a local tour boat company to pay a NPS ranger who goes on the all-day coastal park tour. A second company hopes to begin offering the NPS presence on its boats in 1997.

...Working with Neighbors

Bering Land Bridge: During the summer, the preserve provides Nome residents and visitors with weekly natural history lectures, often conducted by visiting scientists. The programs are videotaped and later aired on Nome's local access cable television channel.

• NPS archaeologist Jeanne Schaaf is developing a videotape and language workbook focusing on folktales about Serpentine Hot Springs for use in primary and secondary grades in Northwest Alaska.

• Preserve staff flew camping gear, supplies and materials into Serpentine Hot Springs for 18 students from the Northern Lights Recovery Youth Group. The young men participate in challenging physical work as a means of recovering from addictive behaviors. The group performed work on the Serpentine airstrip as park volunteers during their stay in the preserve.

• The NPS signed an $184,000 agreement under the Indian Self Governance Act to fund the Eskimo Heritage project. This is the first such agreement in the nation between a Native American tribe or government and a federal agency other than the BIA. The project is a comprehensive collection of tapes, photographs, videotapes, slide and interviews with elders that will help preserve the Bering Strait region's cultures, traditional knowledge and languages.

Sitka: For 27 years, Sitka N.H.P. and the Southeast Alaska Indian Cultural Center have been partners in providing education and enjoyment to visitors and in preserving traditional SE Alaska culture and art forms. The cultural center is a Native-run, non-profit organization located in the Sitka visitor center.

• In February 1996, a new totem pole depicting the clans that settled the Sitka area was raised in the traditional manner at the park. The project was developed and managed by the cultural center with oversight by Native elders and support from the NPS.

The Southeast Alaska Indian Cultural Center is supported primarily by the NPS under a cooperative agreement. The park's goal is to extend the center's operation from seasonal to year-round. The center currently receives between $50,000 and $70,000 in support from the NPS. Year round operation would cost $120,000.

...Working with Neighbors

The development concept plan for Nome calls for a partnership to accomplish the construction of a visitor center/museum. It would be jointly operated by the city of Nome, the NPS and a Native corporation. The NPS continues to consult with its potential equity partners to gain support for this project.

Klondike Gold Rush: On July 5, 1997, the park will help celebrate the centennial of the Gold Rush by dedicating the J. Bernard Moore House. The park restoration crew has worked on the restoration since early 1995. The house -- built by a town founder -- will become an exhibit for interpreting family life in Skagway at the turn of the century. It will contain two partially furnished rooms in all of their Victorian splendor, as well as exhibit panels and artifacts. A Moore grandson is scheduled to attend the dedication.

The Gold Rush centennial has also kindled a strong partnership between the park and the C.C. Filson Company. In research for an update of the park teacher's guide, the woolmaker's name was prominent among businesses. The company assisted the park interpretive staff in producing a more comprehensive guide. Filson is also a partner in "The Stampede Kit," designed to allow a "hands on" method of teaching. The kit contains a gold pan, gravel, fake gold for salting the pan, postcards, a swatch of Filson wool fabric and a manual to assist the teacher. The kits should be ready for spring shipping.

Gates of the Arctic: This is the only national park in Alaska that has a Native village within its boundary. Anaktuvuk Pass is the last inland Eskimo community that remained nomadic until 30 years ago. Recent Congressional legislation calls for cooperative management of all-terrain vehicles used by residents in the area. Three other distinct Alaska cultural groups from 10 adjacent communities are allowed to use the parklands for subsistence activities. The park is also discussing numerous agreements would coordinate management of migratory wildlife that use park lands. These include the Western Arctic Caribou Herd of 500,000 animals and sheefish of the Kobuk River.

External Programs: Through the National Park Service's National Register Programs, the Alaska Field Area provides technical assistance and advice in cultural resources to dozens of local communities across the state.

YOUR BOOKMARK

FOR

www.nps.gov

Every NPS unit in Alaska has its own World Wide Web site as part of the Service's larger Internet presence.

Go to: www.nps.gov , choose "Visit Your Parks," and go to Alaska or alphabetical list.

Denali, Bering Land Bridge, Wrangell-St. Elias, and Klondike Gold Rush have the most comprehensive Web pages. Others are under construction.

• **Yukon-Charley Rivers National Preserve** will host more than two dozen Native Alaskan high school graduates this summer as part of a combined Upward Bound and Earth Quest program at the Coal Creek facilities. The young adults are college-bound and will work on several resource projects, as well as learn other skills.

• **Archaeology Week:** The NPS is a co-sponsor of Archaeology Week, an annual program that presents lectures and school programs in several communities statewide.

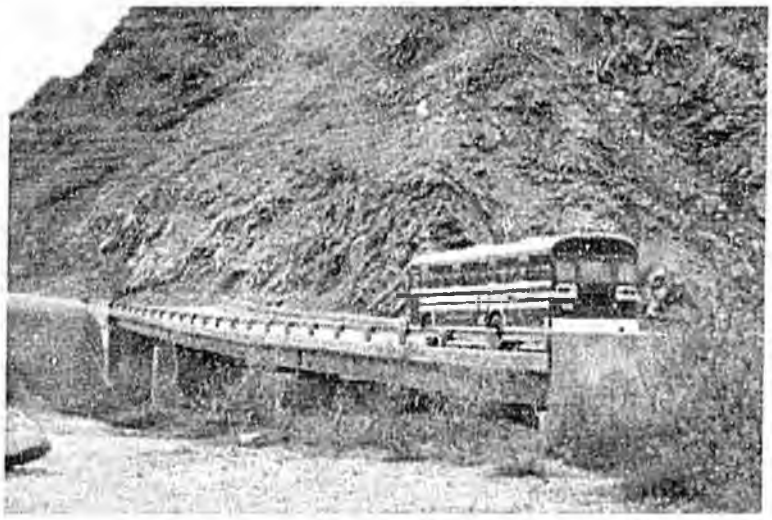
• **Search and Rescue:** The Shishmaref search and rescue team received $25,000 from Bering Land Bridge as part of a cooperative agreement to make improvements to four shelter cabins in the preserve. The cabins are heavily used in the winter by residents traveling by snowmachine between villages.

• **Arctic Visitor Center:** The NPS is a partner in a multi-agency effort to establish a first-class visitor facility on the Dalton Highway at Coldfoot. The center would serve visitors to Gates of the Arctic National Park, the Arctic National Wildlife Refuge, the BLM's Dalton Highway corridor, and other public lands. In 1996, more than 6,000 people attended evening programs at the existing small facility.

• **Community Service:** NPS employees are a significant part of their community life, serving on planning commissions, on volunteer fire departments and ambulance squads, as service club officers and in schools.

Park Issues/Appendix

Denali/Access



A shuttle on the Denali park road.

Access into Denali will be a significant focus of National Park Service management and interest groups. The issue splits among three areas: management of the existing park road; development of new access on the south side; and the study of feasibility of a new northern access route.

Denali shuttle bus: The Denali shuttle bus system has run for 25 years, since the completion of the George Parks Highway in 1972. In 1996, about 90,000 people rode the shuttle; another 106,000 rode the concessioner's Tundra Wildlife Tour buses to Mile 55; and 60,000 rode the shorter Natural History Tour to the Mile 17 overlook. Front country plans propose increased visitation.

- Significant improvements have been made in the reservation system. Early written and fax reservations are being taken this year. Aiso, phone reservations will be taken seven days a week.
- About 40 percent of the shuttle bus reservations are available in advance by phone. The remaining tickets are available by phone and in person within two days of use.

Northern access study: A feasibility study on a new northern access route into the park along the Stampede route will be complete in March. The report represents the combined effort of the NPS, state Departments of Transportation, Natural Resources, Fish and Game, and the Alaska Railroad.

- The report considers both rail and road access.
- Significant input was received from the Fairbanks Chamber of commerce, the Alaska Visitors Association, and state Division of Tourism, as well as local businesses and other interest groups.
- The study will not result in specific recommendations, but will review construction feasibility, costs and potential market. It does not evaluate environmental consequences, but recommends additional studies if further planning takes place.

Denali Mountaineering

Denali National Park ranger Daryl Miller was honored with the Silver Plaque award in Pinzolo, Italy, in 1996. He was the first American to receive the award which honors those who risk their lives to save the lives of others. A Marine Corps veteran, Miller, 52, has been involved in 31 lifesaving rescues since 1982.

- About 1,200 climbers attempt Mount McKinley and Mount Foraker each year; about half succeed. In a typical season, at least one climber dies and several major, high-altitude rescue missions are performed by NPS mountaineering rangers.

- Each climber pays a $150 fee and must register 60 days in advance of the climb of Mount McKinley or Mount Foraker.

- The fee offsets administrative expenses -- such as ranger patrols and pre-positioning of supplies on the mountain -- and is not a rescue fee.

- The NPS leases a high-altitude helicopter for rescue work. It costs about $260,000 per season. The contract helicopter provides the safest and fastest means for NPS rescuers to respond to mountain incidents.

- Military helicopters have a longer response time and can be committed to military missions outside Alaska. National Guard helicopters in Anchorage cannot operate above 11,000 feet.

- The new mountaineering ranger station in Talkeetna opens in early 1997. The center was built by local contractors, and features interior work by several local artists. The $1.8 million building replaces an unplumbed and poorly heated log cabin as the south district's primary climber and visitor contact facility.

Gates of the Arctic/Land Exchange

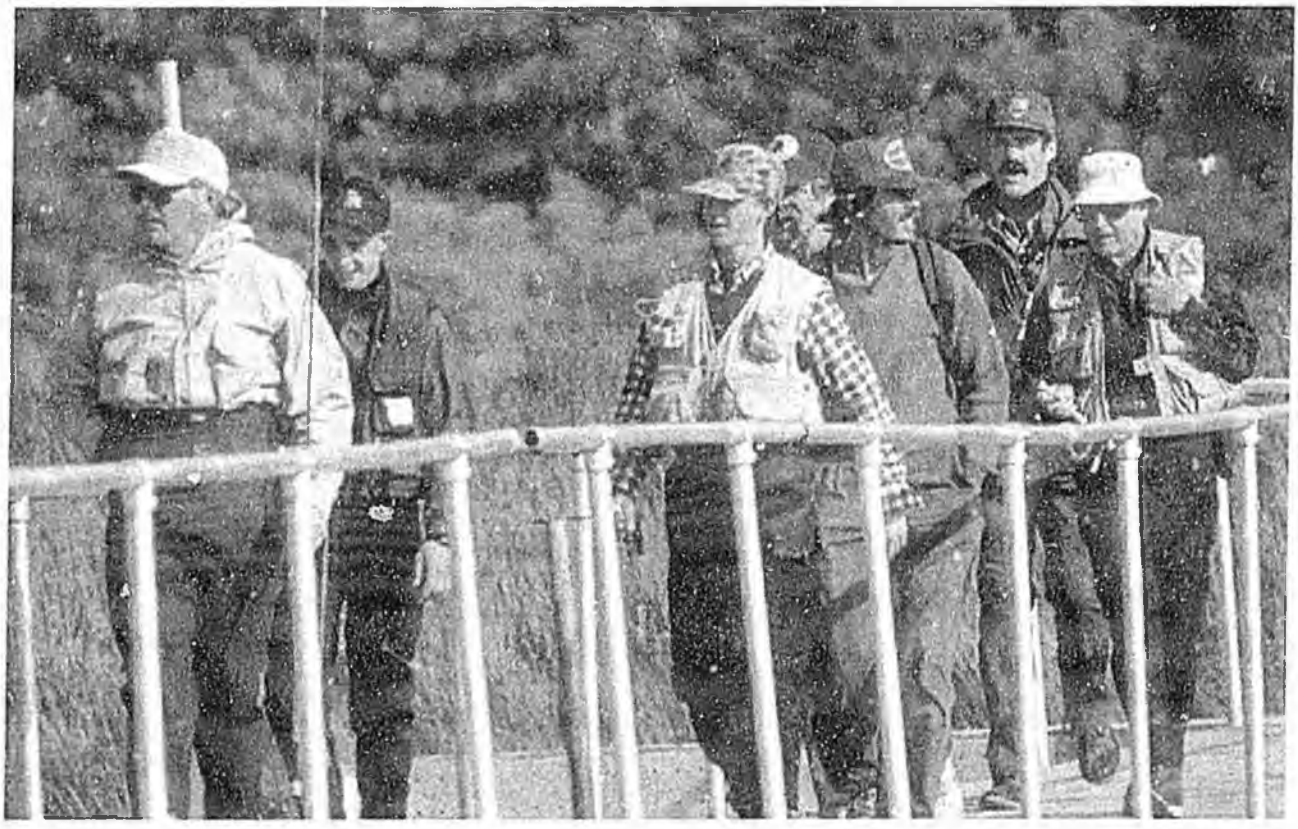
West of Itikmalak Valley, Gates of the Arctic.

Gates of the Arctic National Park has a unique opportunity to protect additional arctic habitat and wilderness land along the northern boundary of the park. Arctic Slope Regional Corporation is interested in trading subsurface estate and lands it owns in the northern portion of park and in areas that were originally planned to be included within the park.

The privately owned subsurface lands in the Itkillik drainage of the preserve were selected with plans to develop oil and gas reserves. The land is within 20 miles of the Dalton Highway and could easily be developed. This is one of the most scenic areas of Gates of the Arctic and is an important caribou migration route.

Nearly 2 million acres encompassing the Killik River drainage that was originally planned for inclusion in the park is now available for a possible land exchange. These lands would provide the arctic habitat for the park that is presently missing. The area has rich culture resources, including prehistoric sites. There are extraordinary wildlife, fisheries and recreational resources not found in any national park unit. The Killik River has been recommended for Wild and Scenic designation.

Katmai/Dispersed Use



Fishermen at the Brooks River bridge.

Katmai National Park and Preserve is developing a backcountry management plan in anticipation of dispersed use from Brooks. Use limits will begin at Brooks in 1998, while at the same time there is increased interest in bear viewing, fishing and other uses of the park.

• **Alternative destinations:** The park staff is looking at alternatives that include primitive facilities in Bay of Islands (campsites, food storage, pit toilets, etc.) and use areas along the park coast where commercial operators can conduct operations.

• **Coastal visitation:** The park is also working with two businesses on the coast to determine if incidental business permits can be issued utilizing stipulations developed through the 106 consultation process with the natives and State. There are about 30,000 user days along the coast, although most stay offshore.

• **Valley of 10,000 Smokes:** Additional backcountry use of the park may also be seen in the Valley of 10,000 Smokes. Under the recently approved development concept plan, the Three Forks Overlook Cabin at the valley end of the park road will be remodeled and the trail to Ukak Falls on the valley floor will be improved. Road rehabilitation occurs this year.

Klondike Gold Rush/Chilkoot Trail

Summer of 1997 marks the beginning of the Centennial celebrations in honor of the Klondike Gold Rush of 1897-98. To commemorate the crossing of the Chilkoot Trail by more than 20,000 stampeders 100 years ago, local Skagwegians Jeff Brady and Buckwheat Donahue will sponsor a Dyea to Dawson race in June. Fifty two-member teams will set out with 50-pound packs to challenge the Chilkoot Trail and the Golden Stairs, before retrieving canoes 33 miles later and boating the remaining 500 miles to Dawson.

- **Higher numbers:** As the Centennial celebrations approach, trail hiker numbers continue to increase, while total park visitation rises at an average rate of 12% annually.

- **Better facilities:** With the noted increase in use along the trail and a projected increase in numbers for 1997-1998, the park has improved visitor use facilities at each campground. Campsites have been added and improved, outhouses replaced, and additional food storage bear poles, dish-water pits, and interpretive media installed. Trail conditions improve each year. Warming shelters constructed in 1993 provide hikers with shelter from the notorious Chilkoot weather.

- **International status:** Efforts are continuing by the National Park Service and Parks Canada to gain a Klondike Gold Rush International Park status.

- **New Canadian fees:** In 1997, Parks Canada will begin a $35 fee (Canadian) for overnight hikers wanting to cross the Canada/U.S. border at the Chilkoot Summit. Parks Canada will impose a 50 hiker per day limit. Also, a $10 reservation fee will be collected through C.A.M.I.S., an automated Canadian reservation system. The NPS will work with Parks Canada to ensure a steady flow of hikers along the entire 33-mile trail.

- **Visitor information:** An international, interagency Trails Information Center is proposed in one of the park's restored historic buildings in Skagway to begin in May. The information center would be staffed by personnel from the NPS, Forest Service and Parks Canada.

Wrangell-St. Elias/McCarthy Road

A cooperative process: In 1995, following recommendations from the community of McCarthy, the state Department of Transportation entered into an agreement with the NPS and the state Department of Natural Resources to prepare a plan for the McCarthy Road scenic roadway. The purpose of this plan is to determine the type of public facilities (turnouts, picnic areas, etc.), and methods of preserving the scenic/historic character of the roadway, including the style of road construction that will retain the general character of the road and be compatible with the park. Twenty-nine planning/public meetings have been held with representatives from the communities and Native corporations, and other land owners and managers. The results of this study will be summarized in the draft EIS, and available for further review, comment and amendment as part of the overall road study document.

The scenic roadway plan includes:

- A no-build alternative. Selection of this alternative means no systematic improvement of the entire road; however, it does not preclude small projects, as necessary, to keep the road open.
- A 24-foot-wide gravel road, mostly following the existing route, as presented in the original scoping documents and meetings.
- A 24-foot-wide hard surface alternative in combination with minor realignments and other features to preserve the low-speed scenic/historic character of the road. (Without special construction measures, a hard surface roadway would have a different profile than a gravel roadway. The embankment would require a higher and, therefore, wider foundation. The driving surface of the road would remain 24 feet wide.)
- Parking and facilities at the Kennicott River, west of the Footbridge: DOT&PF and NPS are currently working to prepare a site plan based on the needs and concepts that the corridor planning team discussed last fall in McCarthy.
- Handicap Access, toilets and other facilities, footbridges to McCarthy: This study will include consideration of a bike path/trail (handicap accessible) connecting the footbridges and McCarthy, and will address the need for public facilities, including toilets, in McCarthy.
- Trail Study: This study will consider a continuous trail along the corridor or segments in the areas of greatest need. In either situation, a trail can be integrated with the road or separated from it. The trail will be studied for multiple uses including pedestrians, bicycles, motorcycles, horses, dog sleds, snowmobiles and all terrain vehicles.

The state Department of Transportation will produce a draft EIS for public comment this summer.

Wrangell-St. Elias/Kennecott Acquisition

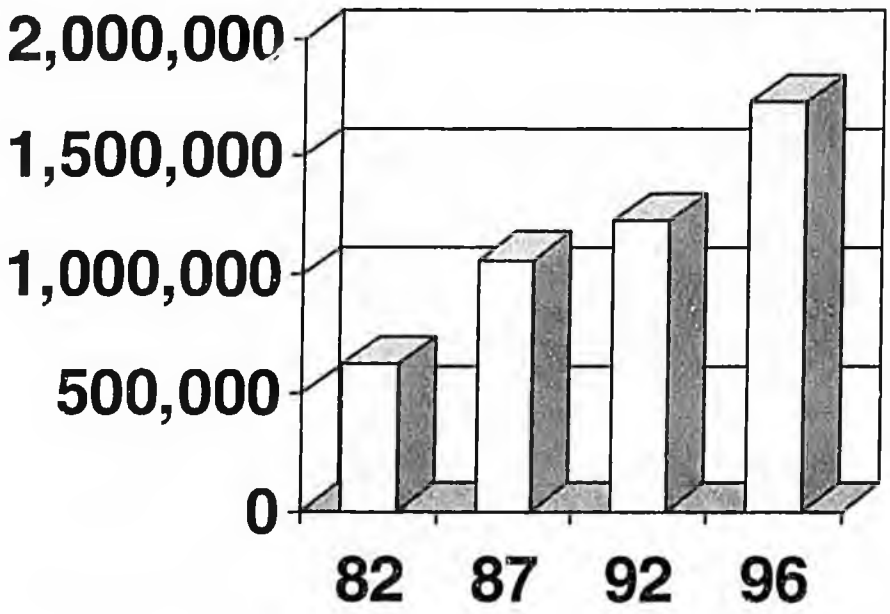
The site is now a National Historic Landmark. In a May, 1991, report to Congress, the NPS recommended that the buildings and land be acquired as part of the park. The lands included in the recommendation are 1,336 acres of surface estate owned by the Great Kennicott Land Company; 1,503 acres of surface estate owned by the Consolidated Wrangell Mining Company; and 3,030 acres of mineral estate owned by the Kennecott Corporation.

Donation proposed: The Great Kennicott Land Company proposes donating 14 acres in the center of the historic complex, including three major buildings, to the NPS. The remaining surface estate is offered for sale. Kennecott Corporation is discussing donation of their mineral interest in Kennicott as well as about 12 acres of fee estate.

Acquisition later this year: The NPS plan is to complete the acquisition of this property by November of 1997. Kennecott Corporation conducted a site investigation and clean-up of hazardous materials at Kennicott, and reports spending $3,000,000 on this effort. The NPS conducted a hazardous materials review to determine the cost of remediating remaining hazardous materials. This is estimated to be $180,000. The surface owners have tentatively agreed to pay for $125,000 of additional clean- up from the proceeds of a sale. The Conservation Fund, Great Kennicott Land Company and Consolidated Wrangell Mining Company have entered into a purchase agreement that expires at the end of 1997. The National Park Service is having the property surveyed to identify encroachments, is resolving land title problems, and is reviewing an appraisal of the Great Kennicott Land Company's and Consolidated Wrangell Mining Company's holdings. This review is expected to be complete by mid-January, 1997.

Funding requirements: Acceptance of donations for mineral estate and fee interest lands would be of minimal cost to the federal government; acquisition of the surface estate is estimated to be $4,200,000. There are currently approximately $1,000,000 of existing ONPS funds that can be applied toward the purchase price, thereby lowering the amount of L&WCF money that would be needed. There will also be the cost of stabilization of historic structures and other modifications of the site.

Recreational Visits



Visitation continues to rise at most Alaska parks

- Visitation occurs primarily between mid-May and mid-September
- Many cruise ship passenger visit more than one park in Southeast Alaska. Many visit Denali or Kenai Fjords as part of the inland portion of their tour.
- Visitation to Alaska's parks has nearly tripled since 1982.
- Visitors to the 9 NPS units not connected to the state road system tend to stay in parks longer, hire local air taxis or guides, and spend considerable amounts in the local economy.

BRIEFING: PUB. TRUST DOCTRINE AK DEPT. OF FISH & GAME

Alaska State Legislature

Senate

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February 25, 1998

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INFORMATION REQUEST RE: WATERWAY MANAGEMENT ISSUES

Dear Sirs,

Thank you very much for participating in the January 30th and February 4th Senate Resources Committee hearings on waterway management issues. I believe those hearings were very productive and brought to light some important areas of concern in a very complex set of issues. As I stated at the conclusion of our hearings, the issues of public access, navigability and public trust/public trust doctrine will continue to be a priority of the Senate Resources Committee.

During the hearings, and in discussion with our auditors, several issues were raised that could potentially benefit from legislative action. I appreciate the scope and difficulty of managing these complex issues and am very interested in working with you to develop a strategy to better address them in the future. To that end, I request you provide me with a thorough response to the following questions at your earliest possible convenience.

1) What is the status of 17(b) easements reserved on lands conveyed to corporations subject to the 1976 agreements? (i.e., in order to allow BLM to continue to convey land, the corporations agreed to replace any easements found to be improper or unlawful with donated "replacement" easements following the decision on the lawsuit) In those cases where conveyance is completed, but the easements have not been donated, what are your specific intentions to acquire the donated easements per the terms of the agreement? Actions by which agency and under what timelines?

2) Please provide a list of those airports that are leased, but not owned, by the state, including those planned to be moved and their status. What specific measures are you currently employing, or would you suggest be employed, to assure easements are retained and marked from airports to public lands and waters?

3) Please provide an analysis of the consistency with ANCSA of the federal regulations which terminate ANCSA 17(b) easements by a specified year or if they are not used, and include viable options to challenge those regulations or the terminations. In addition, please provide a similar analysis of options for administrative resolution. Please include reasonable timeframes and likelihood for success.

4) Please provide an analysis of possible administrative and/or legislative options which could be considered to assure public easements across private lands are appropriately marked and that officials providing marking or maintenance of markers will have access to those lands. Include options such as right of refusal to prosecute trespass, providing incentive for private landowners to mark or contract for marking and any other criteria that could be used to provide benefits to private landowners.

5) Please identify all procedures which are currently used to review federal and state land conveyances, including verifying final survey notices, to assure accurate reflection of legal access [17(b) and RS 2477] and navigable waters in final surveys and conveyances.

6) Please provide draft statutory language and administrative options to effect state title to navigable waterways such that landowners who have been inappropriately conveyed title to submerged lands, which should have passed to the state with statehood, are officially notified of state ownership. This should include specific steps and timelines to address pre-Gulkana conveyances and/or to encourage corporations to request BLM (and/or ways to require BLM) to correct conveyances that inappropriately conveyed state submerged lands. One such option could include proposed language to statutorily assert ownership and navigability using the standards currently in effect as defined by the Gulkana and subsequent decisions. In addition, please

provide a legal analysis of how this could affect navigability disputes with the federal government.

7) Please provide suggested statutory language which would protect and define the public trust rights to engage in activities in navigable waterways. I would also be interested in your opinion on whether the incorporation of the preamble in 85 SLA chapter 82 in AS 38.05.127 or 38.05.128 in part clarifies these rights. The public trust rights I refer to include anchoring, wading, portaging, moving boats across gravel, use of gravel bars and stream banks below ordinary high water and other activities necessarily related to fishing, hunting, boating, navigation, and other public activities that do not alter the course and subsurface of the waterway.

8) What are the possible processes or legal steps that the state would employ in defending a public user of state lands or water rights in the case of legal conflict?

9) What possible alternative do you see to make the easement atlases more available to the public? Could they be distributed at cost through some organization? Do you have other publications that utilize other distribution options that may work for the atlases?

I understand that these are detailed questions and that some of the answers could be sensitive to future litigation. In that regard, please feel free to provide confidential analysis where appropriate.

Thank you for your attention to this request. I look forward to working with you to craft legislation that will assist you in managing these important issues. Please don't hesitate to contact me, or my staff, if you are in need of additional clarification.

Sincerely,

RICK HALFORD

RH:bwh

cc: Jane Angvik, Director, Division of Lands
Tina Cunning, ANILCA Program Manager, ADF&G
Joanne Grace, Assistant Attorney General

BRIEFING:

TIMBER INDUSTRY

ALASKA STATE LEGISLATURE

SENATE RESOURCES COMMITTEE

Official Business

State Capitol
Juneau, AK 99801

AGENDA
2:00 TO 4:00 p.m.
Tuesday, February 18, 1997

TIMBER INDUSTRY BRIEFING: Joint with House Resources - Room #124

Jack Phelps, Executive Director, Alaska Forest Association
Keaton Gildersleeve, President Gildersleeve Logging Company & A.F.A.
Errol Champion, Silver Bay Logging Company
Bob Loescher, Vice-President, Sealaska Corporation
John Sturgeon, President, Koncor Forest Products
Terry Nininger, Vice-President, Circle DE Pacific
Dan Benson, Ketchikan Pulp Company Sawmill
Dick Leary, Controller, Ketchikan Pulp Company

I. Introduction - Forest Resource Development in the Interior
Jack Phelps

II. Timber Industry in the Southeast
Keaton Gildersleeve

III. Governor's Souteast Regional Timber Task Force
Independant Sales Program
Errol Champion

IV. State Forest Practices Act
John Sturgeon

V. Beetle Kill and State Timber
Terry Nininger

VI. Value-Added Processing in Alaska
Ketchikan Saw Mill
Dan Benson, Dick Leary

NEXT MEETING

Wednesday, February 19

HJR 12 Leases in National Petroleum Reserve
SB 22 Board of Game Qualifications

ADJOURN

PRIMER

Timber Industry

PROFILE

• The Alaska forest products industry directly employed an average of 2600 people in 1995, and indirectly employed approximately three times that number in industry-induced jobs. This is down from 4,400 people directly employed by the industry in 1990, and several thousand indirect-employment jobs.

• Employment in Southeast Alaska's timber industry, including timber harvests from private land and from the Tongass National Forest, is at its lowest point in ten years. The Southeast economy has lost $60 million in forest products payroll since 1990.

• Of the eight forest products manufacturing facilities operating in 1990, only four are still in operation, and the Ketchikan Pulp Company pulpmill is slated for closure in the spring of 1997. This will mean the loss of 500 more industry jobs.

• Alaska's total timber harvest in 1995 was 696 million board feet. The total timber harvest in 1990 was over one billion board feet. The total Southeast Alaska harvest in 1995 was 461 million board feet, the lowest since 1985. Timber harvested includes Sitka spruce, hemlock, western red cedar, Alaska (yellow) cedar, white spruce, cottonwood, black spruce and lutz spruce.

• Alaska's timber regions are managed by four landholders: the Federal government, 51%; state, university and local governments, 25%; Native Corporations, 24%; and other private landowners, .4%.

• The two largest national forests in the United States are in Alaska; the Tongass National Forest in Southeast Alaska, and the Chugach National Forest in Southcentral Alaska. The Tongass National Forest is larger than all of the other national forests combined.

EXPORTS

• The total value of forest products exported from Alaska in 1995 was $548 million. The total value of exports in 1990 (in 1995 dollars) was $733 million.

• Japan is the key export market for forest products, accounting for 62% of total 1995 export value. In terms of dollar value, Japan received 100% of Alaska's 1995 chip exports, 96% of softwood lumber and cant, 74% of softwood logs and 14% of total pulp exports. South Korea, Taiwan and Thailand and Canada are also important export markets.

ISSUES

• Through federal management of the Tongass National Forest, the land base available for the commercial timber program has been reduced to the extent that timber dependent communities of Southeast Alaska are at the near subsistence level.

• The spruce beetle epidemic in the forests of Southcentral and Interior Alaska infested over a million acres of spruce in 1996. Since first notice of the spruce beetle in Alaska's forests in 1989, dead and dying spruce now extend to nearly three million acres. Beetle kill renders the wood unusable within three years, and spruce forests killed by beetles rarely reproduce spruce again. In addition to the economic impact, beetle kill increases fire hazard and produces negative consequences to wildlife, tourism, recreation, fisheries, watersheds, and other values.

FORECAST

• With over three-fourths of Alaska's timber lands in federal and state government control, development of public policy in support of harvesting a reliable supply of timber is the key to the industry's future.

KEY CONTACTS

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Alaska's Untapped Hardwood Resources

By Jack E. Phelps

The gigantic Sitka spruce of Alaska's coastal forests are legendary. Loggers have been harvesting spruce, cedar and hemlock from southeast Alaska for more than a century, although only in the mid-1950s did industrial scale logging begin. In 1954, the first dissolving pulp mill began operations at Ward Cove near Ketchikan, and in 1959, Alaska Pulp Company opened a similar mill in Sitka. Small softwood sawmills, cutting mostly spruce, have dotted Alaska's landscape for many years. What has gone largely untapped, however, are huge resources of hardwoods in the boreal forest of Southcentral and Interior Alaska.

The boreal forest varies greatly in composition from site to site, but may be generally characterized as a mixed spruce and hardwood forest. Both white and black spruce abound, but only the white spruce has significant commercial value. Principal hardwood species are aspen and paper birch. The state of Alaska owns more than five million acres of hardwood forests, including mixed stands, and calculates a sustained yield of 60 million board feet (mmbf). Native village corporations in the region own more than 820,000 acres of hardwood and mixed spruce and hardwood forests, according to Chris Maisch, chief forester for the Tanana Chiefs Conference.

Currently, local industry is utilizing less than one million board feet of hardwoods. Some is cut for dimensional lumber and cabin logs, and at least two companies are commercially producing bowls from high grade birch logs. A significant opportunity for expansion of a hardwood industry, especially in the greater Fairbanks area, still awaits an entrepreneur willing to make the necessary investment.

The potential was addressed recently when the legislature rewrote parts of the law governing state timber sales. In a bill sponsored by the governor, supported by the forest products industry and by virtually all members of the legislature on both sides of the aisle, the Department of Natural Resources was given authority to enter into negotiated sales for the purpose of fostering new investment in processing facilities. While much of the public debate on the bill centered on increasing the harvest of white spruce, lawmakers and industry leaders were primarily interested in the new law's potential for opening opportunities to develop the state's hardwood resources.

Ron Ricketts of the Fairbanks Industrial Development Corporation says that one company has shown an interest in utilizing Alaska birch, along with other species, to make oriented strand board. Using birch peelers to make core stock for plywood is another possibility for industrial development using Alaska hardwoods. A veneer plant would provide local jobs and improve the economies of scale needed to enable smaller companies to expand their operations and begin new ones. One scheme that has been seriously suggested is for a consortium of companies to develop a joint sort yard serving various users of both hardwoods and spruce. Ricketts is working with several companies to explore these possibilities.

The major hurdle is getting the assurance of a sufficient and stable supply to enable the companies to make the initial investment. The new law signed by Governor Knowles last summer is a good first step in that direction, according to Ricketts. The law allows negotiated sales to provide up to 10 mmbf per year for a maximum of 10 years. Since at least one of the proposals under consideration would require 15 to 20 mmbf per year, some combination of sales from different ownerships may be necessary. Ricketts is looking to develop an agreement that includes one or more Native corporations selling timber in conjunction with state sales.

Both Ricketts and Maisch are optimistic that an agreement can be reached if the right proposal is put on the table. "Whether these companies will ultimately decide to proceed remains to be seen," says Ricketts. "What is certain is that the new law has created an opportunity for an expanded forest products industry in the Interior."

Jack E. Phelps is an SAF member and is executive director of the Alaska Forest Association in Ketchikan, Alaska.

Send chapter news and pictures to the Western Forester.

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Alaska Forest Practices Act Issues
AFA Position Statement
October 18, 1996

1. Department Priorities — The consensus reached by the 1989 Forest Practices Review Steering Committee resulted in a balanced agreement between various interests. For example, private landowners agreed to donate a large portion of their lands and timber for stream buffers and agreed to substantially increase their logging costs by following more stringent "best management practices." On the other hand, the state agreed to adequately enforce the Alaska Forest Resources and Practices Act (FPA) with qualified people. The state is still taking our trees and our costs are still higher. However, the state is now backing out of its commitment to adequately enforce the FPA with qualified people. The state must decide what its budget priorities are. If the enforcement of the FPA is a priority, then the state budget should reflect that. The timber industry already pays more than its fair share in the form of taxes, increased production costs and donated trees in mandatory riparian buffers.

The private landowners understand that the state budget must be reduced. We also believe that the state must determine priorities. We request that the State of Alaska, in preparation of upcoming budgets, honor its commitment to adequate enforcement of the FPA by making it a priority budget item. We specifically request that the Division of Forestry remain the lead agency for the enforcement of the Forest Practices Act and that the function be adequately funded.

Commissioner Shively's letter to Jack Phelps, dated September 12, 1996, and the accompanying DOF issue paper suggest that the state consider timber severance taxes, user fees or industry funding of consultants as alternatives to meet the state's Forest Resources and Practices Act obligations. At the outset, the industry is opposed to severance or other taxes and user fees, for the reasons described above. Similar to the state, the industry is discussing the use of consultants or contractual services to meet most forest practices obligations. Instead of different parties independently evaluating this alternative, we recommend that there be an integrated, collaborative effort to determine the practicality and appropriateness of this concept.

2. **Accountability of ADF&G Policy Positions** – While acknowledging that the ADF&G has some very dedicated and professional people, it is also generally acknowledged that some of their positions are not accepted as valid by many private landowners and others. They have taken positions, both as a department and as individual employees, that are not based on sound science and have not gone through any peer review outside the Alaska Department of Fish and Game. Often these positions are in disagreement with other official positions. The state needs a formal process to ensure ADF&G's positions are fairly reached and based on sound, well accepted science. ADF&G must be made accountable for any positions it takes as public policy and when the positions are not substantiated, a public correction must be made.

3. **Alaska Department of Fish & Game Active Participation in Stream Monitoring Studies** – The timber industry, in cooperation with DNR, DEC and several Federal agencies, strongly supports stream monitoring projects to determine the effectiveness of the FPA in adequately protecting salmon habitat and water quality. Private landowners have shown this support the past five years by conducting several monitoring projects at great expense. The studies have been offered for peer review through the Cooperative Forestry/Fisheries Working Group. We request that the ADF&G cooperate with the timber industry by actively participating in the Cooperative Forestry/Fisheries Working Group, by working cooperatively in the monitoring program and by contributing a fair and timely assessment of the data produced by the studies.

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Testimony of Jack E. Phelps, Executive Director
Concerning work of the Science & Technical Committee

Offered to the Alaska Board of Forestry
January 21, 1997

The Alaska Forest Association has closely observed the work of the Science and Technical Committee formed last year to examine allegations set forth in the report from the Department of Fish and Game, Habitat Division regarding the state's Forest Resources and Practices Act. Among other claims, the report stated that "ADF&G staff are uniformly of the belief that the implementation of the FPA remains seriously deficient." The Science & Technical Committee was formed to investigate those allegations and to determine the extent to which the aforementioned belief could be substantiated by facts.

In short, the question was whether substantial harm was being done to fish and wildlife habitat as a direct result of timber harvests, particularly on private land. A closely related question which was not directly raised by the report but that begged an answer in the process, was whether any reduction in theoretical carrying capacity of any habitat was disproportionate to the benefit derived by the private landowners from managing their timber resources for their shareholders. This question is raised by the fairness doctrine and the "no big hit" doctrine of the Alaska Forest Resources and Practices Act.

Simply put, these doctrines declare that a balance must be struck between the values at stake when private land interests come in contact with public resource interests, in this case fisheries. The fairness doctrine insists that there be shared risks and incentives for both timber owners and the public, represented by the regulatory agencies. The "no big hit" doctrine requires that private landowners should not carry an inordinate economic burden for minimal losses to fish habitat. The law envisions a balance of interests between forestry and fisheries when it comes to timber harvests on private land.

After a year of meetings and careful examination of the evidence, the Science & Technical Committee's work suggests that the existing law protecting fish habitat is working very well. Many of the issues discussed by the committee had to do with technical definitions and minutia, not evidence of actual harm. The deliberations tended to verify that logging is having a very minor impact on fish habitat. Timber harvest on private lands, at the rate and under the regulatory conditions that now exist, is taking place without significant harm to Alaska's important fisheries resources.

To those of us in the industry who have worked to comply with the Forest Resources and Practices Act, and have made a sizable investment in fish habitat research over the past several years, this comes as no surprise. It is compatible with the tentative findings of our own ongoing scientific studies and of the research being done by others. A recent paper published in the journal of the American Fisheries Society shows that fewer than 5 percent of the anadromous fish spawning aggregates in Southeast Alaska are in decline — and some of those are in unlogged areas. Private landowners have willingly left millions of dollars worth of trees in riparian buffers over the past half decade, and those contributions are augmenting the health of Alaska's fisheries.

AFA commends the participants in the Science and Technical Committee for ensuring that the process of addressing the Habitat Division's report was conducted in a professional and scientific manner. On balance, the leadership of the committee was fair and diligent. Various participating parties were consistently given a fair hearing, and the committee was able to arrive at a satisfactory level of consensus. The Science and Technical Committee has done a good job of identifying and clarifying technical problems with monitoring and enforcement of the Act, and most of the recommended changes have the industry's support.

It was a good process, but it was an expensive one. It was costly for the state, and it was costly for industry. AFA member companies, one in particular, invested more than $100,000 over the past year to enable professional and research staff to attend the meetings and study the ADF&G allegations. On the state side, the process demanded huge blocks of time from Division of Forestry and Department of Fish and Game personnel, taking staff away from field work. This is unfortunate and ironic, given the frequently stated complaint from Fish and Game that they lack the financial resources to do adequate field work.

The Alaska Forest Association is committed to supporting reasonable enforcement procedures for the Forest Resources and Practices Act. Industry has shown its willingness to work through the process, even at great expense, to ensure that other resources are not harmed by harvest activities. We hope that the exercise forced upon industry, the Board of Forestry and the other agencies last year by ADF&G's approach will not be repeated in the future. If one agency or another has questions or wishes to raise concerns about scientific or technical issues, those issues should be raised using established interagency procedures, and the discussion should take place in the context of scientific investigation before unnecessary alarm bells are rung with the press and the general public.

Thank you for the opportunity to testify on this important matter.

Tongass Land Management Plan Revision
Its effect on the forest products industry in Alaska

I. **Best estimate of the numbers** (these are tentative, and we have information leading us to conclude that there is pressure to further reduce the numbers)

A. Commercial land base available for timber harvest — 700,000 acres

B. Proposed Allowable Sales Quantity (ASQ) — 270 mmbf, 220 mmbf economic

>> Under the Supervisor's Preferred Alternative:
Timber harvest land base = 1.2 million acres
ASQ = 357 mmbf, 297 mmbf economic

C. Projected annual harvest — 154 mmbf sawlog plus utility (based on historic falldown of 30%); or 126 mmbf net sawlog. Compare this to the 10 year average from 1984 - 1993: 346 mmbf.

D. Keep in mind the new calculations are "sawlog plus utility;" whereas, under the current and traditional system, calculations are "net sawlog." This represents an additional falldown of about 18%. In other words, the ASQ under the new revision is really 220 mmbf total, and 180 mmbf economic. Also keep in mind that under the law, this is maximum allowable harvest over a ten year average; not deliverable volumes, despite the rhetoric.

E. Finally, please note that with only 700,000 acres in the land base and the various other harvest restrictions built into the plan, it is going to be very difficult for the Forest Service to produce the volume the plan calls for. In other words, we believe even the reduced the ASQ is unrealistic, given other aspects of the plan.

II. **Needs of the industry**

A. Existing sawmills need more than 200 million board feet of sawlogs to operate at capacity, as shown in the attached chart. This means a harvest in the 400 mmbf range. The gap could be tightened a little depending on the ability of some of the mills to cut #3 sawlogs and to make some lumber from pulpwood, but these would be marginal cuts and likely would have a negative effect on the operations' bottom lines.

B. Due to market and other economic concerns, the industry considers chip exports an unsatisfactory long-term component of a sustained timber industry in Southeast Alaska. The region needs a facility to utilize low grade wood and residual chips. The minimum pulpwood harvest needed to sustain such an operation (e.g., a medium density fiberboard plant) is estimated to be 87 mmbf. To operate at capacity, the plant would also have to receive a portion of the residual wood chips from sawmills. The attached chart shows that more than enough would be available if the existing sawmills were operating at capacity.

C. Aside from the known capacity of existing mills, the industry's best effort to estimate potential employment from harvest and milling activity in Southeast Alaska was set forth in the recent paper, "Four Visions of the Timber Industry on the Tongass National Forest." This paper showed that if harvest from the national forest were consistently at 300 mmbf, economies of scale would come into play that would truly sustain a viable, integrated timber industry. At 200 mmbf, those economies evaporate, and it is likely that only one or two mills and a handful of "mom and pop" operations would be viable.

III. Other issues

A. Implementation of the Anadromous Fish Habitat Assessment (AFHA) standards, using small Habitat Conservation Areas (HCAs) to connect all large and medium HCAs, implementation of the various components of "Natural Setting" Land Use Designations (LUDs), and other harvest restrictions in the proposed plan will cause a significant reduction in the availability of second growth for future harvest. This is particularly disturbing because the justification for implementing these new "protections" is scientifically weak. For example, the AFHA standards have been found to be unnecessary by the Forest Service in the past, and the top federal expert on these matters, Dr. Michael Murphy of the Auke Bay lab, has shown that the existing buffer system is more than adequate to protect anadromous fish habitat.

B. Requiring the retention of half the productive old growth in the timber harvest LUDs has not been shown to be necessary to protect animal species, and is simply another impairment to the Forest Service's ability to meet the market demand for timber as mandated in the Tongass Timber Reform Act. There are sufficient set asides in the forested areas of the Tongass already to meet the needs of wildlife; no genuine viability studies have demonstrated the need for this additional restriction.

C. The science represented in the recently released wildlife assessments is dated and inadequate to justify the proposed radical changes in the plan. It also appears that the data used was selected to achieve a predetermined result. For example, the goshawk assessment does not adequately consider the paucity of information on these birds, nor does it seem to consider the implications of telemetered data from goshawks living in the urban interface zone of east Douglas Island. Those data would tend to undermine the conclusion that goshawks need old growth habitat. Mature conifers (80 year old second growth) are probably adequate. Interestingly, this was the tentative conclusion reached by an ADF&G study in the early '90s.

IV. Conclusion

For the federal government to devastate the remaining timber industry without adequate environmental justification should be unacceptable to the State of Alaska. We have no ability to intervene in what is obviously an on-going process. The state legislature and the administration should stand as an advocate for the Alaska timber industry vis-a-vis the White House. The industry needs the state's best effort at intervention.

Summary of Remaining Sawmill Capacity in Southeast Alaska*

Prepared by AFA for Governor Knowles'
Southeast Regional Timber Task Force
Revised January 10, 1997

Sawmill	Sawlog Volume	Total Volume
Viking	30	60
[Seaborne Lumber	30	60]
MITE	10	20
Pacific Rim Cedar	7	14
Icy Straits	5	10
The Mill (Petersburg)	5	10
Herring Bay	9.5	19
Various POW	10	20
KFC Ward Cove	50	100
Annette Hemlock	45	90
	201.5	403
Less 12% cedar:		<48.4>
Less sawlog component:		<201.5>
Pulpwood available:		153.1 mmbf

Residual chips from sawmills (waste from the sawmill process) which, added to the available pulp logs, will make raw material for a primary manufacturing facility designed to use low value wood: 151 bone dry units

*In considering this summary, the reader should keep several points in mind. 1) the list is not exhaustive in that other small mills exist, particularly north of Frederick Sound; 2) Seaborne Lumber is currently closed, although the owner has plans to reopen in a new location; 3) volumes listed reflect capacity, not necessarily recently attained operating levels; 4) unanimity does not exist on the cedar component — 12 percent is used across the forest because it is the figure used in the TLMP revision. Some consider it conservative; 5) all volumes are given in million board feet (mmbf) Scribner, except residual chips which are given in Bone Dry Units (BDUs), the industry standard measurement.

On December 20, Governor Knowles' Southeast Regional Timber Task Force passed this resolution urging the Federal government to finalize the plan for timber harvest from the Tongass National Forest.

Task Force members, including mayors of Southeast Alaska cities, understand the needs of the people and communities of the Tongass. They know that timber harvest is compatible with sport fishing and hunting, commercial fishing and tourism. They believe in a balanced, multiple use of the forest that allows for a significant industry as well as supporting other uses of the Tongass. They understand the need for sufficient timber supply to keep both the forest and the economy healthy.

They want the government to quit stalling and to finalize the forest plan so Alaskans can get back to work.

A Managed Forest is a Healthy Forest for Today and Tomorrow.

Alaska Forest Association

SOUTHEAST REGIONAL TIMBER TASK FORCE RESOLUTION SUPPORTING THE TIMBER INDUSTRY

WHEREAS the mission statement for the Governor's Southeast Regional Timber Task Force calls on the Task Force to "develop a vision and a plan to acnieve a balanced industry . . . that is economically viable," and further calls on the Task Force to "identify immediate steps necessary to allow (remaining) businesses to remain viable;" and

WHEREAS, the Southeast Regional Timber Task Force has held five meetings over the last four months to discuss the future of the timber industry in Southeast Alaska; and

WHEREAS employment and economic prosperity in Southeast Alaska are inextricably linked to the resources of the Tongass National Forest and are dependent on their management; and

WHEREAS, jobs in the forest products industry are an important element of the economic diversity and opportunity in the region allowing communities to maintain healthy economies; and

WHEREAS industry members of the Task Force have advanced an outline of a business plan which shows that an annual harvest of 300 mmbf is the minimum level the industry believes is necessary to sustain an integrated timber industry in Southeast Alaska; and

WHEREAS, the industry model indicates the potential for maximizing employment in the forest products industry by developing additional secondary manufacture of wood products within the state; and

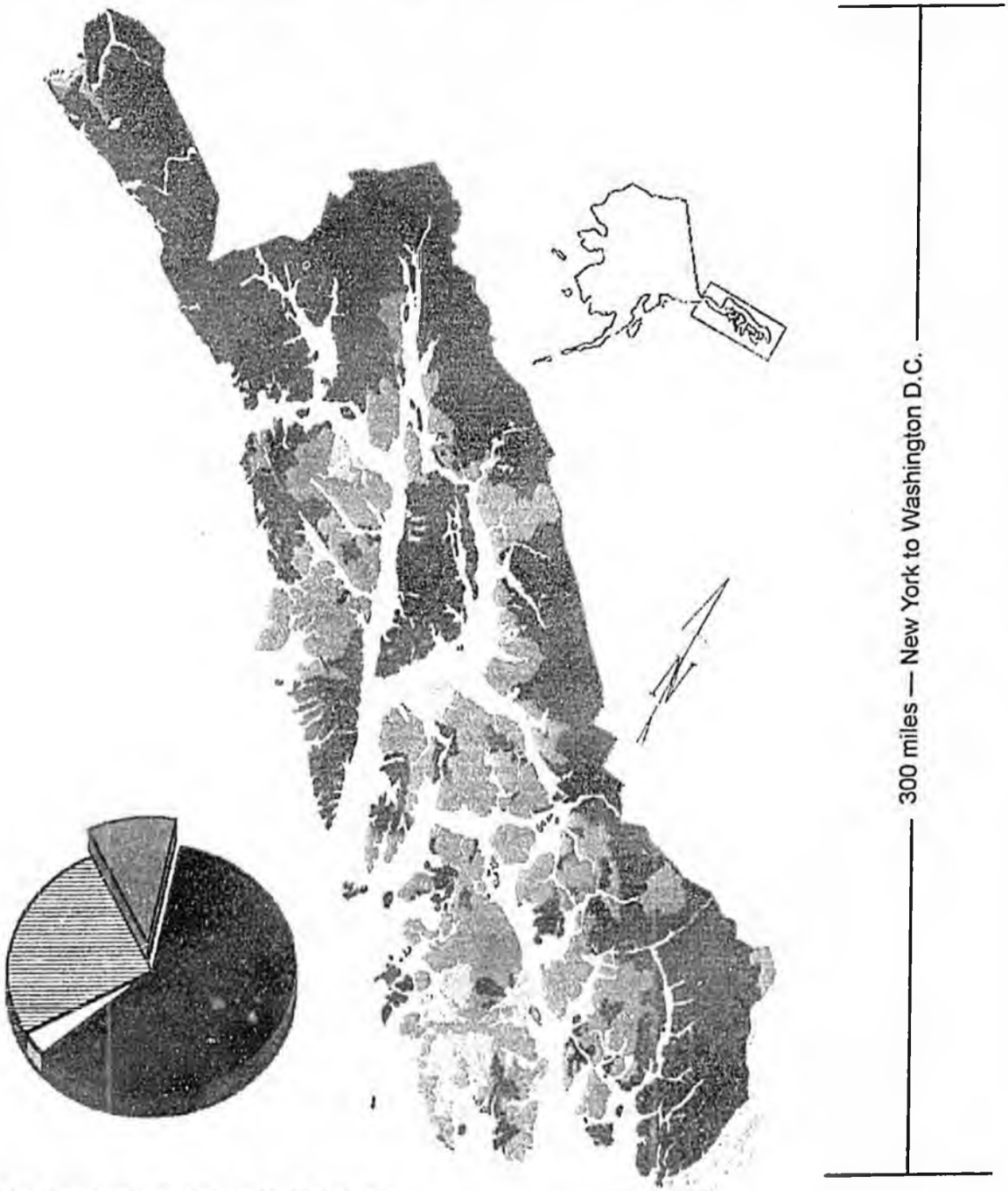
WHEREAS, coupled with the need for a stable fiber supply, the success of secondary manufacturing in Southeast Alaska depends on a healthy primary manufacturing component, including a facility to process low end wood; and

WHEREAS the industry model suggests including the application of new technology, enhanced productivity and expanded marketing efforts in the new Tongass timber industry;

THEREFORE, BE IT RESOLVED that at a minimum the preferred alternative of the Tongass Land Management Plan announced by the forest supervisors be maintained because any decision to further reduce the harvest level in the Tongass below that volume will devastate the existing timber industry infrastructure throughout Southeast Alaska; and

FURTHER RESOLVED that the State of Alaska strongly objects to any reduction in the volume of the preferred alternative and to any further delay in the issuance of the Record of Decision for the Tongass Land Management Plan revision.

Tongass National Forest
16,997,000 acres



WILDERNESS, PARKS, ROADLESS, etc.
Land set aside including non-forested lands, muskegs, wetlands, municipalities, etc.

MULTIPLE USE AREA
Only 1/3 can be developed for timber harvest

NATIVE LANDS
Lands set aside under ANCSA

Nearly 90% can never be developed for timber harvest.

THE TONGASS NATIONAL FOREST

Total acreage	16.9 million	
Non-forested acres (ice, rocks, muskeg, etc.)	6.9 million	
Wilderness, parks, monuments, etc.		2.5 million
Forested acres	10.0 million	
Municipalities (boroughs and cities)		0.1 million
Wilderness, parks, monuments, etc.		2.9 million
Unsuitable or unavailable for timber harvest		3.7 million
Available for harvest (100-year rotation)		1.7 million
Other multiple use (no harvest)		1.4 million

Native corporations control approximately 600,000 acres, formerly National Forest lands, granted to them in 1971 under the Alaska Native Claims Settlement Act (ANCSA). Less than 300,000 of those acres are available or suitable for logging.

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8.6 million acres (51% of the Tongass, 86% of the forested land) are in old growth conditions.
5 million acres are productive old growth (suitable for commercial timber production).
4 million acres of productive old growth are off limits to logging. 1.5 million acres (30%) are protected in wilderness areas, National Monuments and research natural areas. Another 2.5 million acres (50%) are in areas designated for other purposes which exclude timber harvest, including beach fringes and stream buffers.
Since 1954 (when industrial timber harvests began on the Tongass), roughly 400,000 acres (3.9% of the forested acres) have been harvested.
93% of the productive old growth present in 1954 is still untouched.
Annual regrowth was 2¾ times the rate of harvest in 1990, when the Tongass Timber Reform Act (TTRA) was passed. With reduced logging, the ratio is currently much higher.
There are no threatened or endangered species on the Tongass. There is no evidence that wildlife has been harmed by 40 years of industrial logging.

Wolves—following an ESA listing attempt in 1993, research done by the US Fish and Wildlife Service and the Alaska Division of Wildlife Conservation indicates a healthy population in Southeast Alaska.

Deer—abundant throughout the Tongass, both the subsistence and sports take is supported by the deer population. Currently the sports bag limit, set by ADF&G, is 4 per hunter.

Salmon—escapement is high, stream productions are healthy, runs have set records over the last decade. Salmon runs are presently at 101% of their 1954 levels.

Marten—introduced to the islands of Southeast Alaska, this fur bearer has adapted well and now supports a trapping harvest throughout the region.

Summary

Federal legislation in 1971 (ANCSA), 1980 (ANILCA) and 1990 (TTRA) has gradually reduced the Tongass land base available for the commercial timber program. Of the 16.9 million acres in the Tongass, now only 1.7 million are subject to timber harvest on a 100 year rotation cycle. This is only 17% of the total forested lands; the remainder is managed for other purposes. This puts the timber-dependent communities of Southeast Alaska at or near the subsistence level. Further reductions, such as those proposed in the 1996 Tongass Land Management Plan Preferred Alternative, will be catastrophic for Alaskans and are not necessary to protect other uses of the forest, such as fish and wildlife.

John Sturgeon

ALASKA FOREST PRACTICES ACT REVIEW

Final Report

June, 1989

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Alaska Department of NATURAL RESOURCES

Department of Fish and Game

Department of Environmental Conservation

Chapter 1. Riparian Management

A. Private Land

1. Background & Riparian Standards for Region I

Introduction and General Summary

The riparian or streamside areas within Alaska's forest lands and the management of those areas was perhaps the most difficult of all the issues dealt with by the Alaska Forest Practices Act Review Committee. These areas are critical for the protection of water quality, and fisheries and wildlife habitat, and they are also some of the most productive areas for timber production. Therefore these areas are of high interest to all parties involved in this forest practices review. In order to develop Riparian Management Standards, a working group made up of Steering Committee members was formed to deal specifically with streamside issues. They quickly learned that while there was scientific information available to guide their decisions, it was incomplete. Some decisions would have to be based on assumptions.

A technical committee was convened to complete the following:

Frame the issues.

Develop a stream channel typing system.

Resolve the scientific questions to the extent possible.

Identify areas where appropriate scientific information was unavailable and where further research needed.

Examine the effects of various streamside leave tree requirments and the attendant risks to fish habitat, water quality, and the economic impacts to timber owners and operators.

Provide the steering-committee working group with recommendations if the technical committee could not agree on standards.

The steering-committee working group used the technical committee's report for reference during negotiations. They also agreed that because of lack of scientific certainty, four principles were necessary components of any system that would balance the needs of all the resources at stake. Those principles were

1. Fairness

   Any successful system must be based on shared risk and incentives for both timber owners and regulators to make it work.

2. No "Big Hit"

   Neither fish nor timber should bear an inordinate share of the burden; that a balance must be found. No private landowner should have to bear an unusually large burden.

3. Enforceable

   Standards and regulations should be understandable and measurable for ease in implementation.

4. Professional Management

   To provide optimum utilization of manpower and some system flexibility for fish and water quality protection, and timber management, the new system would require careful planning and targeted field effort.

The interim riparian standards described later in this section resulted from negotiations based on these principles and information developed by the technical committee. They are intended to protect fish and water quality within the streamside zone while providing some opportunity for timber harvest. Other forestry related upland activities, such as roading and timber harvest, will be covered in standards to be developed as a result of this agreement.

The agreement-in-principle and the recommended legislation are intended to be reviewed within three years. This three year time is intended to allow for further research and to gain experience implementing the act's regulatory and administrative standards -- especially the riparian standards and enhanced notification system. It is presumed that a representative group will be convened for the review, or that the review will be conducted by the restructured Board of Forestry. In either event, this review will be done with full public input and participation. In addition, DNR, DF&G, and DEC will each present an annual report, independently, to the Board of Forestry and the legislature on the resources for which they have statutory expertise and make recommendations for any improvements to rectify procedural or substantive problems. For more information concerning review of the act, see page 64.

Technical Committee Work Summary

Stream Channel Typing System

The first task of the riparian-technical committee was to develop a stream channel typing system. The committee examined a U.S. Forest Service classification system and consolidated over 50 categories into a nine channel types. A description of these channel types is included in the chart on the next page.

These nine stream channel types are used as a framework for forest practices regulations. Each channel type applies to a segment of either flowing (i.e., streams) or standing (i.e., lakes and ponds) waters that have specific physical characteristics. Physical characteristics used to define channel types are channel gradient expressed as percentage slope, presence or absence of channel incision greater than 2 meters, perennial or intermittent stream flow, size of the dominant substrate, and stream width at the ordinary high-water mark. In addition to these five physical characteristics a functional group name has been listed, which describes each channel type.

Channel types are determined by comparing the physical characteristics of the water segment in question with the channel typing criteria listed in the chart on the following page. The category with criteria most similar to the physical characteristics of the segment in question is defined as the channel type.

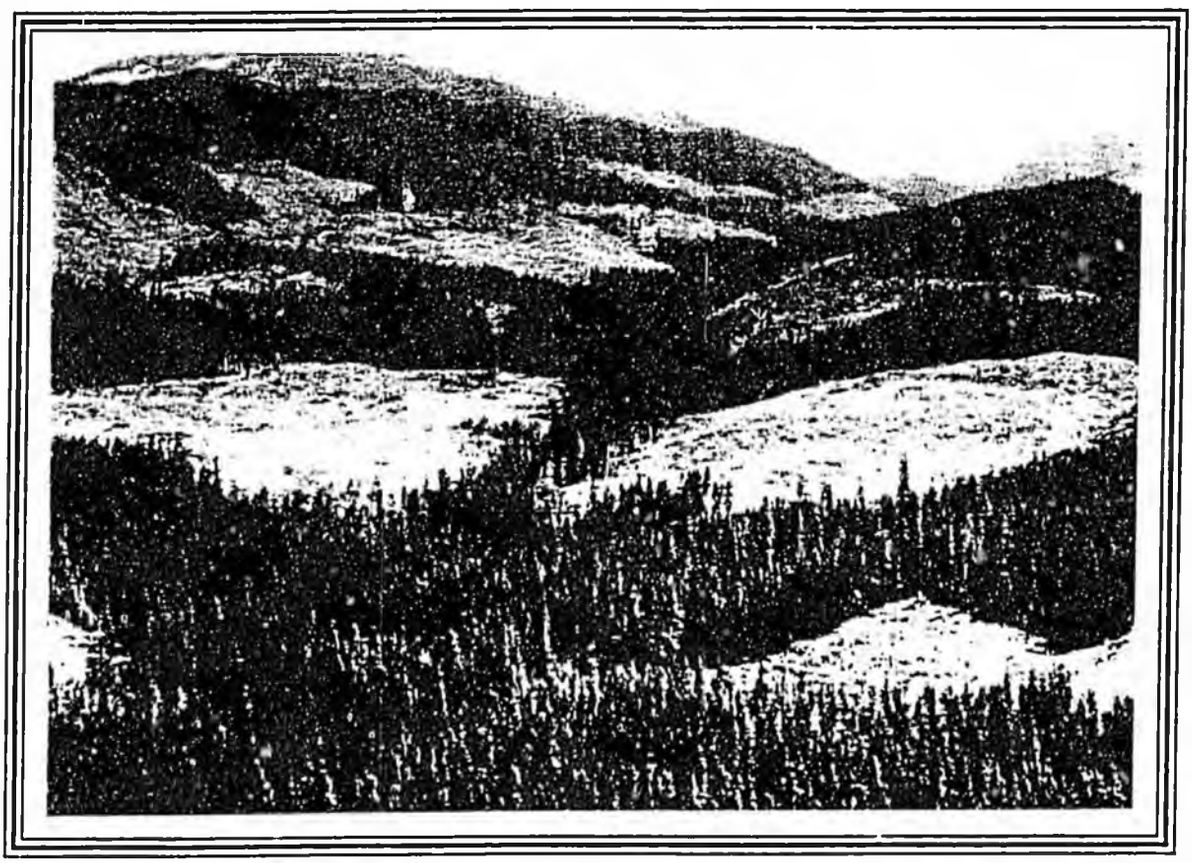
Science for Solutions

NOAA COASTAL OCEAN PROGRAM
Decision Analysis Series No. 7

FORESTRY IMPACTS ON FRESHWATER HABITAT OF ANADROMOUS SALMONIDS IN THE PACIFIC NORTHWEST AND ALASKA--REQUIREMENTS FOR PROTECTION AND RESTORATION

Michael L. Murphy

October 1995



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Coastal Ocean Office

Changes in stream temperature are considered harmful to salmonids because stocks are adapted to their stream's natural regime, and any change can alter development, growth, survival, and timing of life-history events (Beschta et al. 1987). Increased temperature beyond the preferred range can cause juveniles to leave or grow slower. High temperature can inhibit upstream migrations of adults and increase disease. Increased temperature can exacerbate die-offs of adult pink and chum salmon during temporary summer droughts in small coastal streams (Murphy 1985).

Although increased temperature is a major concern, field studies have generally failed to demonstrate significant temperature impacts on salmonids after clearcut logging (Beschta et al. 1987). On the contrary, streams in clearcuts can have large populations of juvenile salmonids (Murphy and Meehan 1991). The reason for this may be that tolerance limits determined in the laboratory may not apply to the complex thermal environments in streams. Local cool-water sources (e.g., upwelling groundwater) can provide refuge from periodic high temperature (Bilby 1984a). Daily stream temperature in clearcuts fluctuates widely and can briefly exceed the reported lethal threshold. Salmonids apparently can withstand these short-term exposures without detrimental impact (Beschta et al. 1987). These field studies, however, have generally examined streams in small clearcuts where the temperature increase was moderated by upstream forest. Cumulative increases in temperature from numerous small clearcuts could have major impacts on downstream habitat.

Another reason for lack of reported temperature impacts is that most studies have been conducted in regions with moderate temperature regimes in the center of the salmonid distribution (e.g., coastal Oregon, Washington, British Columbia, and Alaska; Hicks et al. 1991a). In other regions with higher ambient temperature, on the margins of their distribution, streams may become too warm for salmonids because of excessive exposure to sunlight (Bjornn and Reiser 1991). In these regions, larger streams, which are naturally more open to sunlight, often become uninhabitable for salmonids in summer. Canopy reductions along these streams or in their headwaters can extend the time and area that temperature is unsuitable.

Long-term warming of streams can cause increased competition and predation. Salmonids may be replaced because of competition from warmwater species (Reeves et al. 1987). Elevated water temperature in the Columbia River Basin allowed introduced smallmouth bass, major predators on juvenile chinook salmon, to expand their range into salmon rearing areas where cold water might have excluded them in the past (Li et al. 1987).

Although timber harvest can change stream temperature in summer, it does not greatly affect stream temperature in winter. Canopy removal can raise winter temperature in low-elevation, coastal drainages; but it can lower it in northern areas and higher elevations because of lost insulating cover and increased radiative cooling (Beschta et al. 1987). Where winter temperature decreases, ice forms more readily and salmonids may die from freezing and icing hazards. Although effects on winter temperature may be slight, caution is warranted because even a small change can affect fish when water temperature is low.

Increased winter temperature can have mixed effects on salmonids. Elevated temperature during egg incubation can speed development and cause fry to emerge early. Early emergence can be

beneficial by prolonging the growing season, leading to larger size in fall and winter, which helps overwinter survival (Holtby 1988; Thedinga et al. 1989). Early emergence, however, also exposes fry to late-winter freshets, and fry and smolts may migrate to sea before the spring plankton bloom in the estuary, leading to poor ocean survival (Holtby et al. 1989).

Because of the extensive geographic range of salmonids, potential temperature impacts should be viewed with a regional perspective. In some regions of the Pacific Northwest and Alaska, concern over increased summer temperature may be unwarranted (Beschta et al. 1987). In southeast Alaska, for example, stream temperature in clearcuts rarely exceeds 26°C, except in exposed, intermittent pools (Sheridan and Bloom 1975). Even in southeast Alaska, however, high temperature may be a problem for salmonids in some "temperature-sensitive" streams that are wide, shallow, low gradient, and have lake or muskeg sources (Gibbons et al. 1987). In other regions with comparatively high ambient temperature, such as southern Oregon, California, and the interior Columbia River Basin, increased temperature may have profound negative effects on salmonid populations.

SEDIMENT

The term "sediment" commonly refers to fine particles the size of clay and silt, but in the strict sense, sediment includes all particles from colloids to boulders. Generally, however, it is the fine sediments that are of concern because of possible detrimental effects on salmonid habitat, whereas the coarser gravels, cobbles, and boulders help shape channel morphology and provide substrate for cover and spawning. Logging activities can have major effects on the amount of sediments delivered to streams and their subsequent routing downstream.

In mountainous terrain, sediments of all sizes are delivered to streams primarily by landslides (Swanston 1991). These occur as slow-moving slumps and earthflows or as episodic debris torrents and avalanches which happen during heavy rainfall when saturated soils trigger slope failures. Undisturbed forest soils normally resist surface erosion because their coarse texture and thick surface layer of duff and moss prevent overland flow.

Surface erosion in forested sites usually occurs only after the soil is bared by landslides, fire, overgrazing, or logging (Swanston 1991). Compaction of soils by logging equipment increases surface erosion by reducing soil infiltration and causing overland flow. Surface erosion is greatly increased where disturbed or compacted soils are exposed to rainfall. Road surfaces, landings, skid trails, ditches, and disturbed clearcut areas can contribute large quantities of fine sediments to streams (Chamberlin et al. 1991). Nearly all forest operations disturb soil to some degree. Road construction and maintenance, log hauling, tree felling, yarding, slash disposal, and site preparation for replanting are all potential nonpoint sources of fine sediment pollution.

Construction of roads in steep terrain can substantially increase all types of soil erosion (Furniss et al. 1991). Landsliding associated with roads can be more than 300 times more frequent than in undisturbed forest, and because the landslides are relatively large, the amount of sediment produced from roads greatly exceeds the sediment from forests and clearcuts (Fig. 5.3; Furniss et al. 1991). The increase in landslides caused by roads depends on soil and bedrock type,

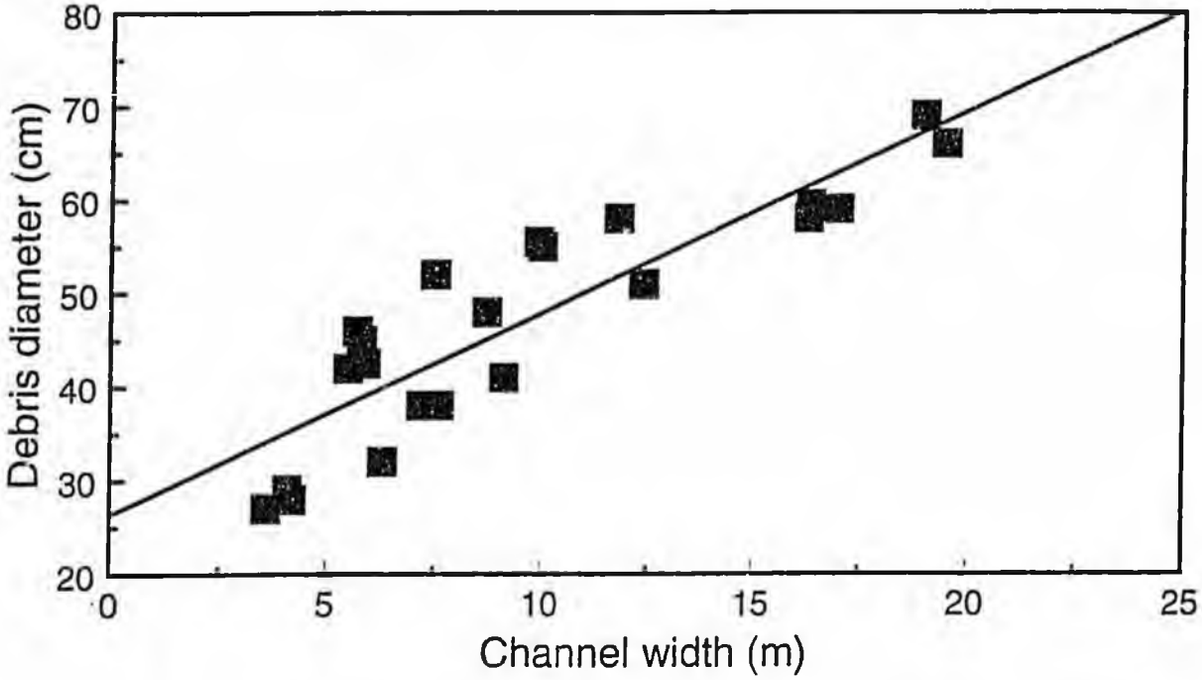


Figure 6.6. The diameter of stable large woody debris as a function of channel width. (After Bisson et al. 1987.)

beneficial functions of LWD in the stream (Heimann 1988). Once the key pieces are gone, the smaller LWD will not remain in place for long.

Selective harvest within buffers offers an opportunity to restore degraded riparian vegetation in second-growth areas (Bilby and Bisson 1991). Degraded riparian areas can be improved by appropriate silviculture if rules allow entry into buffer zones during timber harvest (T. O'Dell, Simpson Timber Company, Korbel, CA, pers. comm. 1994). By using silvicultural treatments, such as patch cutting, thinning, and conifer planting, alder-dominated riparian areas can be treated to restore vegetative diversity and provide LWD for recovery of productive stream habitat (Bilby and Bisson 1991). Active management of riparian areas may be necessary to meet the long-term needs of fish habitat (Sedell et al. 1989). Reestablishing conifers in riparian areas offers potential long-term benefits for both fisheries and timber managers.

OVERALL EFFECTIVENESS OF BUFFER ZONES

Evaluating the overall effectiveness of riparian buffer zones is difficult because of the long time periods involved for impacts to occur and for ecosystems to recover. Full impacts on LWD, for example, may take 100 years to occur, and habitat may take centuries to recover (Murphy and Koski 1989). Evaluation of the long-term effectiveness of riparian buffers relies heavily on modeling and extrapolation of data into the future.

Although one of the major functions of riparian buffer zones is to provide LWD for the stream, blowdown of trees in buffers sometimes results in a more abrupt loading of debris than intended. Blowdown is more likely in areas of poorly drained soil, where buffers are perpendicular to prevailing wind, and where the trees are conifers (C. Andrus, ODF, Salem, OR, unpublished manuscript; DeWalle 1983; Steinblums et al. 1984). Blowdown is not highly correlated with buffer width; however, wider buffers may still provide greater protection for the stream because blowdown is often concentrated at the buffer edge. Blanket prescriptions for buffer width and feathering edges may be ineffective in reducing blowdown (Boughton 1993). The risk of blowdown, however, can be reduced by adjusting the buffer layout so that boundaries take advantage of local windbreaks, such as mature forest, ridge lines, and rock outcrops (Gregory and Ashkenas 1990; Boughton 1993).

Blowdown in buffer zones is not considered a management failure nor a major problem for the stream (Murphy et al. 1986; C. Andrus, ODF, Salem, OR, unpublished). Blowdown accelerates LWD recruitment faster than in natural stands, but it is not an ecological disaster (Gregory et al. 1990). In southeast Alaska, where wind is a major ecological factor, only 10–15% of trees in buffers blow down (S. Paustian, FS, Sitka, AK, pers. comm. 1995). Upturning of roots can contribute sediment, but this not usually a problem (C. Andrus, ODF, Salem, OR, unpublished manuscript). Blowdown can also eliminate undercut banks, but this loss is offset by added cover from LWD (Heifetz et al. 1986). In specific cases where blowdown creates a problem, such as a barrier to fish migration, debris accumulations can be modified, but as little as possible to achieve desired results.

Physical exposure of the riparian community to increased light and wind could cause the buffer to deteriorate. When timber is harvested to the outer limit of the riparian zone, an edge is created that affects the interior microclimate of the riparian forest (Fig. 6.3). Relative humidity within the buffer declines, air temperature varies more, and windthrow and tree breakage increase. Increased side light accelerates shrub development which reduces herbaceous cover and tree regeneration (Hibbs et al. 1991). These factors may accelerate senescence of overstory trees and succession to shrub-dominated communities. Thus, wider riparian buffer zones may be needed to not only protect the stream but to ensure the long-term viability of riparian functions (Cederholm 1994).

Natural disturbance regimes that operate over long cycles could be important in the long-term effectiveness of buffer zones for maintaining habitat quality and diversity. The size of buffer zones generally does not account for natural disturbances that involve larger landscape scales (Everett et al. 1993). Attempts to maintain stable buffer zones against the natural tendency for disturbances in dynamic forest ecosystems may be ineffective or even counterproductive because stream productivity, unique habitats, or sensitive species often require disturbance events for long-term sustainability (Everett et al. 1993).

Over the long term, habitat formation in streams may depend on infrequent catastrophic disturbance events, such as major floods and landslides occurring after wildfire (Reeves et al., in press). The most significant outcome of natural disturbances was the episodic delivery of large quantities of mixed sediment and LWD into fish-bearing streams from hillslope failures and debris torrents triggered along headwater stream channels (Swanson et al. 1987; Hogan and

California where side slopes exceed 30% (100–150-ft buffers); large streams (mean discharge >10 cfs) in Oregon (100-ft buffers); and certain large streams in Washington where buffer zones are extended to include the wetland plant community (up to 100-ft buffers). All other fish-bearing streams have narrower buffers with reduced potential sources of LWD, and all buffers on private lands have some allowable timber harvest.

Based on buffer width, the buffers for representative fish-bearing streams on private lands in the five states could provide approximately 90% of LWD sources present in mature conifer stands if the buffers were unharvested and if they contained mature conifer forest or were restored to that condition (Table 8.4). Timber harvest within the buffers, however, reduces LWD sources to the minimum requirements for leave trees and other vegetation. These requirements are lowest in California, where only 25% of the conifer overstory including two large conifers per acre must be left, and is highest in Alaska, where a variance must be approved to remove individual trees. The resulting overall protection of conifer LWD sources on private lands ranges from only 23% in California to 82% in Alaska (Table 8.4).

Growth of trees during the timber rotation increases the trees for potential LWD. In Oregon, for example, targets for conifer basal area for leave trees are set so that trees will achieve desired future conditions halfway through a 50-year rotation. Oregon's rules are based on the expectation that basal area will grow 59% within 25 years, thereby achieving the level of LWD sources in a mature Douglas-fir streamside forest (T. Lorensen, ODF, Salem, OR, pers. comm. 1994). Assuming a similar growth rate (59% per 0.5 rotation period) in the other states, the resulting LWD sources at mid-rotation would exceed 90% of the level in mature forest in Alaska and Oregon, but would still be far below that level in California and Washington (Fig. 8.1).

These comparisons of LWD recruitment depend on estimates of average or normal mature forest. The value for Washington, in particular, depends on how many trees occur in an average mature streamside stand. Basal area and density of trees varies widely, and a single value for the percentage leave trees in Table 8.4 fails to portray the large variation that occurs in the field. Nevertheless, the values give a perspective of the relative level of protection for LWD sources under similar hypothetical conditions.

For comparison purposes, this evaluation of buffer effectiveness for LWD recruitment assumed that streamside areas contained mature forest. Many riparian areas in the Pacific Northwest, however, have second-growth vegetation consisting of hardwoods and brush (Gregory et al. 1990). In such cases, leaving a higher percentage of existing trees may not increase conifer LWD for the stream nor help reestablish conifers in the riparian area (Bilby and Bisson 1991). In these cases, regulations should encourage activities that modify riparian vegetation leading to desired future conditions of appropriate mature native forest species.

Oregon's approach provides a prototype model for managing second-growth riparian areas to achieve desired future conditions for both fish and timber. If the buffer lacks enough conifers to meet targets, no harvest is allowed. Monitoring data in Oregon indicate that because of the current condition of riparian forests, minimal tree harvest occurs in buffers on private lands (T. Lorensen, ODF, Salem, OR, pers. comm. 1995). To reestablish conifer stands along streams,

Table 8.4. Comparison of minimum level of protection for conifer LWD sources for representative anadromous fish streams in federal (NFP) and private lands in five states. For comparisons, preharvest buffers are assumed to have mature conifer forest.

	Federal NFP Class 1	AK Type A	CA Class I 40% slopes	ID Class I 15 ft wide	OR Type F >10 cfs[1]	WA Type 2 <75 ft wide
Buffer width (ft)	300	66	100	75	100	25–75
% LWD source trees in unharvested buffer[2]	100%	96%	92%	85%	92%	40–85%
% Prescribed leave trees	100%	85%[3]	25%[4]	58%[5]	63%[6]	38%[7]
% LWD sources after timber harvest[8]	**100%**	**82%**	**23%**	**49%**	**58%**	**32%**

[1]Mean annual streamflow in cubic ft per second.

[2]Values obtained from graphs in Murphy and Koski (1989) for Alaska and in McDade et al.(1990; model for mature conifers) for the other states. Buffers are assumed to have mature conifer forest.

[3]Value based on 15% harvest rate (R. Harris, Sealaska Corp., Juneau, AK, pers. comm. 1993).

[4]Value based on 25% retention of overstory conifers.

[5]Value obtained by comparing estimated basal area of prescribed leave trees (87 sq. ft per 1,000 ft) to estimated basal area in mature streamside stands on private lands in eastern Oregon (150 sq. ft/1,000 ft; T. Lorensen, ODF, pers. comm. 1994).

[6]Example for Coast Range. Value obtained by comparing standard basal area target to the normal yield of mature Douglas-fir forest adjusted for incomplete stocking and tree mortality (T. Lorensen, ODF, Salem, OR, pers. comm. 1994).

[7]Example for western Washington. Value obtained by comparing the 100-leave-tree requirement to the mean number of trees in mature streamside forest in the Western Cascades, corresponding to the maximum 75-ft buffer (263 trees/1,000 ft; T. Lorensen, ODF, Salem, OR, pers. comm. 1994).

[8]Value calculated by multiplying the % source trees in an unharvested, mature-conifer buffer times the % prescribed leave trees.

Oregon allows alternative prescriptions. as increased harvest followed by conifer planting in "conversion blocks" alternating wit ention blocks" with lesser harvest (Newton et al. 1995). Oregon further ensures some mediate LWD recruitment by providing basal area credits when operators add trees to strea

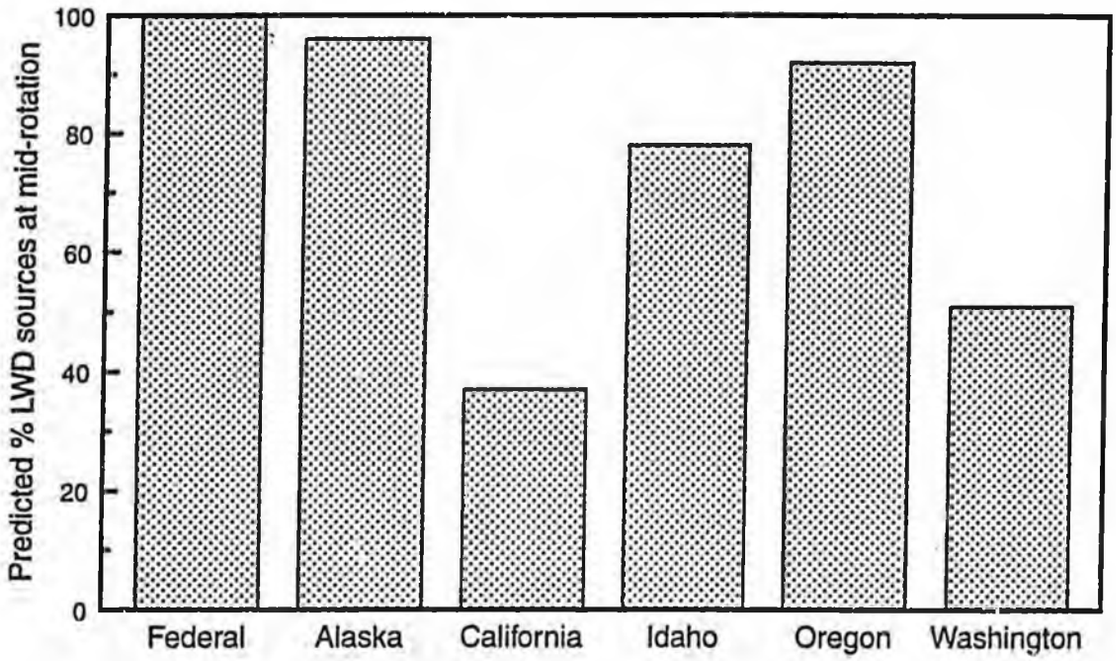


Figure 8.1. Predicted sources of conifer LWD in buffer zones at mid-rotation for representative fish-bearing streams as a percentage of LWD sources present in mature conifer stands. Values are based on federal and state requirements for buffer width and leave trees and assumes mature conifer forest in preharvest buffers and a 59% increase in LWD sources during the first one-half of a timber rotation (see text for explanation).

Prescriptions for buffers in other states, such as Washington's requirement for leave trees that are representative of the existing stand, do not encourage the desired result of improving riparian stands. Oregon's and California's rules also directly address the need for conifer LWD by specifying that leave trees consist of conifers, whereas Idaho and Washington allow both conifers and hardwoods to qualify as leave trees.

A no-harvest buffer zone is most appropriate along fish-bearing streams where streamside areas consist of mature native forest. Where riparian forests are degraded by past logging, a no-harvest prescription limits options for silvicultural treatments for restoring riparian functions for fish habitat (Bilby and Bisson 1991). A no-harvest prescription, unless it provides for "variations," also does not allow landowners to harvest valuable timber from the stand in site-specific cases as long as habitat is protected.

Alaska's approach illustrates the use of no-harvest buffers in mature forest, with "variations" allowing selective harvest. A 66-ft, no-harvest buffer zone is used along unconstrained anadromous fish streams to leave over 90% of LWD source trees present before harvest. Variations can be granted to landowners to harvest additional specific trees whose removal is

unlikely to adversely affect fish habitat. State habitat biologists and landowners debate the harvest of individual trees, and about 80% of variation requests are approved. The variation process results in about 15% of trees >12 inch (>30 cm) dbh within the buffer zone being harvested (R. Harris, Sealaska Corporation, Juneau, AK, pers. comm. 1993; Resource Development Council 1994). The state resource commissioners have found that the process generally works satisfactorily (ADFG 1994 Memorandum), but effectiveness of resulting buffers has not been evaluated.

Specifying a number of leave trees in buffers is a common way to set a minimum level of protection for LWD recruitment. Four of the five states require leave trees for fish-bearing streams, and three states require leave trees for perennial non-fish streams. Usually leave trees include many small trees [e.g., down to 3 inch (8 cm) dbh in Idaho] and only a few large trees. The size of these largest trees [>11 inch (28–50 cm) dbh] is generally appropriate to provide stable LWD in streams, but the smaller trees are probably ineffective for LWD (Bilby and Wasserman 1989). Current requirements in the four states are to leave only an estimated 23% to 58% of potential LWD compared to the sources present in mature conifer forest (Table 8.4). To provide optimal fish habitat, the number and size of leave trees need to be increased where additional large conifers are available.

Buffers on small non-fish streams, except for federal lands managed under NFP and PACFISH, are generally not adequate to provide LWD for the stream. All states except Alaska require leave trees along some non-fish perennial streams, but not enough to fully maintain LWD. Only Idaho routinely requires leave trees along intermittent channels (Table 8.3).

Longer term, the lack of LWD sources along small headwater streams can adversely affect downstream habitat in several ways. Reduced sources of LWD can reduce sediment storage in small headwater streams, resulting in more rapid sediment delivery to downstream reaches (Sullivan et al. 1987). Headwalls of small headwater streams can be important sources of LWD to downstream reaches via debris torrents (Swanson et al. 1987); lack of a buffer zone in these areas eliminates this function.

Sediment Control

Controlling sediment delivery is most important along small non-fish streams and intermittent channels because of their dense distribution [accounting for more than 50% of the total length of stream channels in a watershed (Reid and Ziemer 1994a)] and their capacity to transport sediment to downstream reaches. These streams, however, except on federal lands managed under NFP and PACFISH, generally have minimal buffers (Table 8.2). Perennial non-fish streams do have buffers in Idaho and California, and they sometimes have buffers in Washington if deemed needed by site-specific conditions. Perennial non-fish streams do not have buffers on federal lands managed under TLMP, nor along small Type N streams in western Oregon. Where buffers are left on perennial non-fish streams, they are usually heavily harvested (Table 8.3). Intermittent non-fish streams (with definite bed and banks) consistently have a buffer zone only on NFP/PACFISH lands and in Idaho; California and Washington sometimes provide a buffer for site-specific conditions.