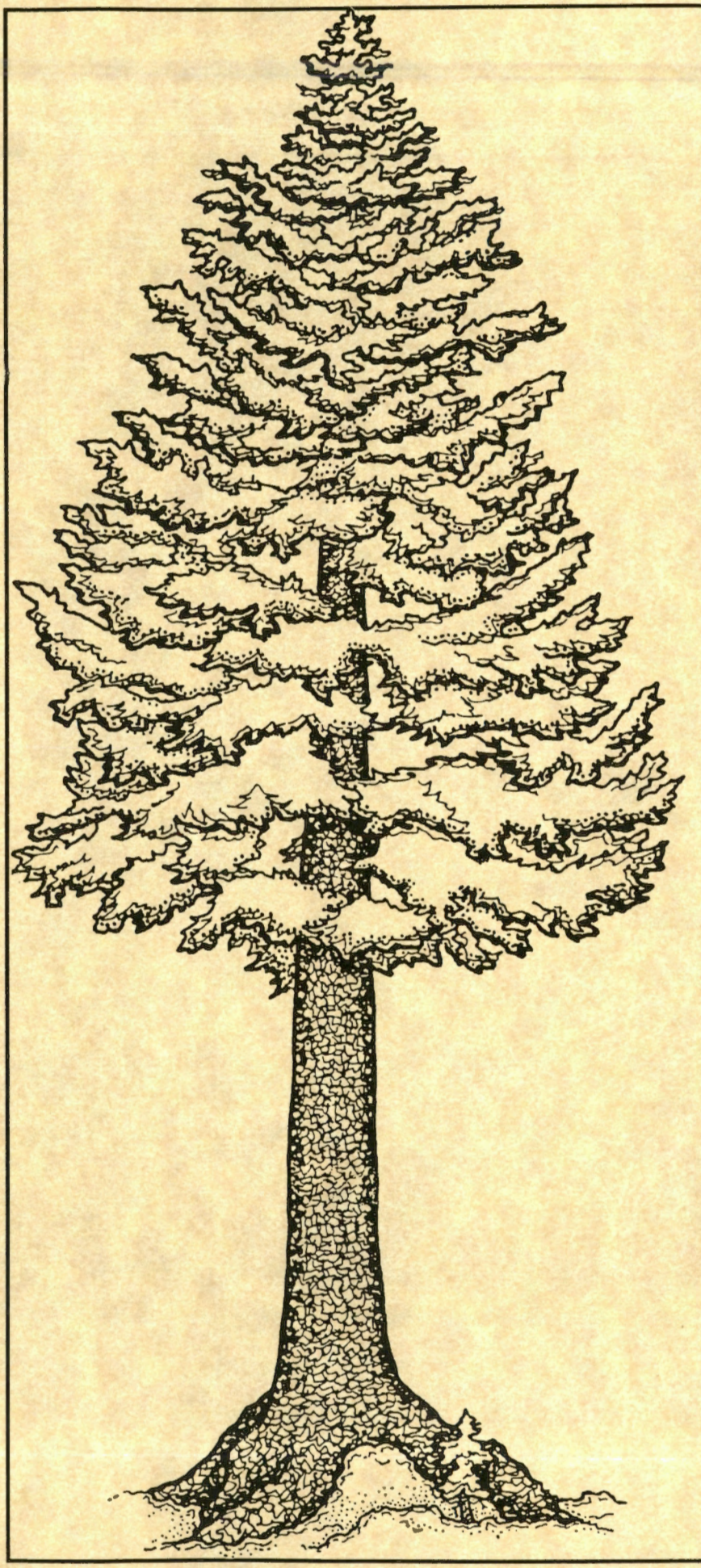

Alaska Division of Forestry

1991 Annual Report

Alaska Department of
NATURAL RESOURCES

Division of Forestry
1991
Annual Report

Alaska Department of Natural Resources
Division of Forestry
State Forester's Office
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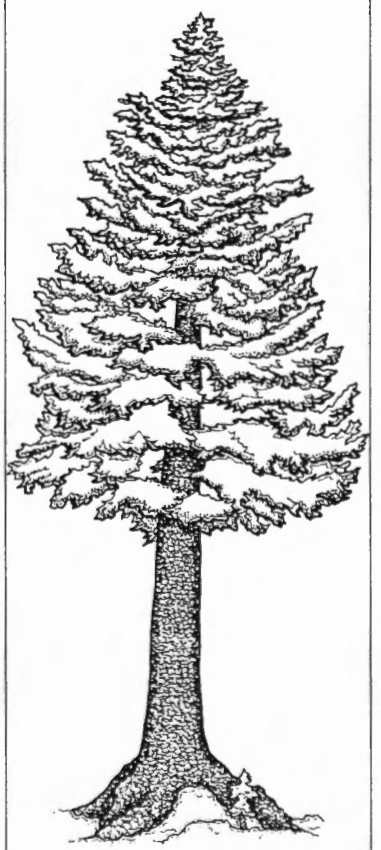


State Forester's Comments

Malcolm R. "Bob" Dick

This year's annual report will give you an overview of 1991. I would like to look ahead—set the stage, if you will—for 1992 and beyond.

Forest Practices regulations are complete. Next comes training, implementation and monitoring. The division will develop training workshops for agencies and operators; implementation of the new regulations will occur once the final package is signed; monitoring programs will be developed with agencies and operators. The Board of Forestry will be an integral part of the division's Forest Practices Program.

Timber sales will get more attention in 1992. The division will review the program to see where and how we can get timber to market. On a related note, the new forestry nursery will be built in Palmer. We will lose one crop but the expansion will supply more, higher quality seedlings destined for harvested and burned areas.

The Fire and Aviation Program has its hands full as it seeks to find the most efficient and safe program for today's budget realities. The growing urban/wildland interface and increasingly complex interagency relationships provide significant challenges for the 1990s. Restructuring options are being reviewed in such areas as crew contracting, aviation management, logistics, warehousing and fire prevention.

The division's Resources Section houses forest inventory, insect and disease, and silviculture experts, who provide technical and on-site support for our operational programs. Increasingly, this group is lending its expertise to landowners and others outside the division. We expect this trend to continue.

The Forest Health Program, which is just getting underway will focus on forest health problems, particularly the spruce bark beetle. The division will develop a plan for the Kenai Peninsula, emphasizing public input.

The division has also joined the national tree planting program, America the Beautiful. This federally funded effort includes the Forest Stewardship Program, which promotes stewardship on private non-industrial forested land, and Urban and Community Forestry, which supports tree planting and care in urban areas and communities. Two citizen committees guide these programs.

In 1989 the division established a goal of being a full service forestry agency, dedicated to good forest stewardship and the efficient use of our forests. We are getting ever closer to that goal, even with reduced budgets. It hasn't been easy but we are moving forward and are proud of our progress.

". . . the division established a goal of being a full service forestry agency, dedicated to good forest stewardship and efficient use of our forests. We are getting ever closer to that goal. . ."

Introduction

The Alaska Division of Forestry was established in November, 1981. Prior to that time it was a section within the Division of Forest, Land and Water Management. Today it is one of eight divisions under the Direction of the Commissioner of the Department of Natural Resources. Its mission is to manage and protect the state's forest resources.

The division manages state forested lands for multiple use and sustained yield. It encourages development of the timber industry and forest products markets; conducts personal-use and commercial fuelwood and timber sales; gives technical assistance to forest landowners; operates the Forest Regeneration Center; and administers the Forest Practices Act and the Community Forestry and Stewardship programs. The division also manages the Haines and Tanana Valley state forests, consisting of more than two million acres.

To perform these functions, the division has a central office for policy and program direction, regional offices that provide program direction and support, and ten area offices responsible for field work on a statewide basis.

In 1991 the division employed 94 people full-time, 138 seasonally, and about 950 emergency firefighters.

The Division of Forestry is designed to:

- protect water quality, fish and wildlife habitat and other forest values through the use of appropriate forest practices;
- provide efficient management of the benefits and products associated with a dynamic forest system;
- manage a wildland fire program on public, private and municipal lands;
- provide administrative and technical services to support program activities and meet state administrative directives.

1991 Highlights

Day-to-day activities may seem routine, but collectively they add up to major accomplishments for the Division of Forestry.

In 1991 the division:

- Cooperated with federal agencies in providing fire protection for 134 million acres of private, state and municipal land.
- Responded to 493 fires that burned 174,276 acres of state-protected land.
- Employed emergency firefighters who collected $9.09 million in state and federal wages.
- Administered aviation contracts and rentals that, along with fuel purchases, put nearly $6 million into Alaska's economy in 1991.
- Processed 193 forest practices notifications for 57,237 acres of forest land and conducted 222 inspections.
- Produced 827,388 seedlings for reforestation of federal, state, municipal and private land.
- Planted 618,936 seedlings on 605 acres of state harvested or burned land.
- Issued 40 commercial timber sale contracts and 11 salvage beach log licenses.
- Issued 928 fuelwood permits, 20 house log sales and 12 saw log sales for personal use by Alaskans.
- Issued 4,359 permits for burning, as part of the fire prevention program—1,500 more than in 1990.
- Constructed 31 miles of road and maintained an additional 180 miles.
- Granted federal community forestry funds, totaling $37,000, to nine communities for tree planting projects. The grants were matched with $53,000 in local donations and in-kind services.
- Administered a $32,000 grant from the Small Business Administration for a tree planting and highway beautification project in Delta Junction.
- Completed a draft plan for managing the 360-acre Homer Demonstration Forest.
- Began a major effort to address forest health in Alaska, beginning on the Kenai Peninsula.
- Participated in six open houses and provided information to the Division of Land for the Kenai Area Plan.

Fire Management

Wildland fire protection

Wildland fire suppression in Alaska is administered by the Division of Forestry, the Bureau of Land Management's Alaska Fire Service, and the U.S. Forest Service. Each organization protects its respective land under cooperative suppression agreements that were developed through an interagency planning process. Alaska is the only state covered by an interagency fire plan.

The Alaska Interagency Fire Management Plan recognizes that fire is a part of the natural cycle, as well as a potential destroyer of life, property and resources. The plan divides the state into fire-suppression areas based on major natural fire breaks and the objectives of land managers.

Fire suppression efforts are focused on communities and valuable natural resources. In remote and unsettled areas, fires are monitored to assure they do not burn unchecked toward areas where human life or development can be threatened.

All lands in Alaska have been placed in one of four Fire Protection Levels:

Critical Protection: Areas where life and property are present receive immediate and aggressive suppression efforts.

Full Protection: Areas with high value resources, where fire adversely impacts the resource management objectives, also receive immediate and aggressive suppression efforts.

Modified Action: Areas of high value resources, but where land managers may consider the trade-off of acres burned versus suppression costs. Initial attack is immediate but resource managers guide the suppression effort.

Limited Action: Areas where fire is beneficial or the cost of fighting the fire is greater than the fire damage. Fires are monitored and no suppression action is taken except to prevent the fire from burning onto higher value land.

1991 fire season

The 1991 fire season began with concerns that the drying trend of the past few summers could cause problems. The record snow pack in the Interior did not soak the organic layer because most of the snow melted before the ground thawed enough to absorb it.

The first fire began on April 1, on state protected land in the Delta area. There were 20 fires in April, all on state protected land. The first lightning fire of the summer was on May 6 near Delta. There were nine additional lightning fires in May; none caused major problems. Fire occurrences for the month were not unusual, however, 27 new fires were reported May 1 through May 12 in state protected areas.

June began normally with the first day of multiple lightning-caused fires on June 6. The season's one-day high for new starts was June 30, with 46 new fires.

The project fire period began on June 22 with 42 new fires. From that day until July 3 there were 269 new fires. The Upper Yukon and Tanana Zones and the Southwest Area were the hardest hit. The Yukon Territory also recorded 100 starts the last eight days of June.

After July 3 starts dropped to an average of 2.7 per day for the rest of the month. There were no new starts the first week of August, however, there were 28 during the rest of the month.

There were 20 new fires during September, with four occurring on September 2, the day of the last recorded lightning start. The last AFS fire began on September 29 and the last fire of the season was reported on November 15 near Illiamna.

Fire Highlights

Pothole Lake Fire

The Pothole Lake Fire was discovered on May 19 in the Kenai National Wildlife Refuge, in an area that required monitoring only. After aerial reconnaissance and a review of weather forecasts, the Division of Forestry and the refuge manager decided to continue daily monitoring.

By May 21 the fire was threatening to move east, possibly into a modified suppression area in the Chugach National Forest. An updated evaluation obligated the division to take some indirect suppression action and a small management corps and firefighters were dispatched.

On May 24, after winds switched during a large burnout effort, a type II team was brought in. During a five-mile run on May 26, requiring the evacuation of Hidden Lake Campground, a type I team was employed. At the height of the suppression activity the fire organization grew to more than 625 people. The fire was controlled on June 3 at 8,900 acres.

The fire appeared in local, state and national news stories due to its proximity to Cooper Landing and the evacuation of the campground. Although the fire drew attention to the beetle-killed forests, it seemed to spread through the dead grass of early spring more than through the dead spruce trees.

A local multi-agency coordinating group, made up of the Forest Service, Fish and Wildlife Service, Kenai Peninsula Borough and the Division of Forestry coordinated concerns of land managers and presented them to the fire management team.

American Wellesly Lake Fire

On August 17, a 40-mph wind caused a fire, which was being monitored on Fish and Wildlife Service land, to escape. The fire ran nine miles in six hours and came within a half-mile of the U.S. Customs and Immigration complex at the Yukon/Alaska border. It also threatened another dozen residences and structures along the Alaska Highway, both in Canada and in Alaska. Heavy smoke and high winds led to the evacuation of 25 people.

The fire became dangerous when it spread toward homes, other high-value improvements and the visual corridor along the Alaska Highway. It required the cooperation of both the U.S. and Canadian Customs and Immigrations Services, the Fish and Wildlife Service, the BLM, the Division of Forestry, the Canadian Department of Northern Affairs and Canadian Fire Management. Interagency and international fire suppression cooperative agreements were successfully implemented during the fire. The fire was contained at 19,150 acres.

1991 fires by cause on state protected land

	Number	Acres
Lightning	130	164,920.2
Campfires	60	7,941.5
Field/debris	72	996.5
Fireworks	17	304
Dump/trash	21	21.7
Children	37	6.8
Smoking	27	6.1
Incendiary	7	2
Other	122	78
Total	**493**	**174,276.8**

1991 Statewide Fire Statistics

Fire activity by landowner

Landowner	No.	Acres
State Division of Land	112	255,637.3
State Dept. of Transportation	14	3.3
State Refuge	0	0
State Parks	14	7.8
State Railroad	8	21
State Forest	6	3.7
State Mental Health	3	5,761
State University	5	1,812.7
Borough/City	15	3
Private	270	1,342
Bureau of Land Mgmt.	89	522,577.6
National Park Service	13	86,651.1
Fish & Wildlife Service	72	703,090.7
Bureau of Indian Affairs	5	673.2
Native Lands	81	169,478.6
Military	35	2,688.1
Canada	2	345
Forest Service	16	557.1
Total	**760**	**1,750,653.2**

Fire activity statewide

Number of fires:	760
Acres burned:	1,750,653.2

Area key

AMS	Anchorage/Mat-Su
KK	Kenai/Kodiak
VCR	Valdez/Copper River
SW	Southwest
F	Fairbanks
D	Delta
T	Tok
SE	Southeast
CGF	Chugach National Forest
CMF	Tongass Nat'l Forest, Chatham Area
KNF	Tongass Nat'l Forest, Ketchikan Area
STF	Tongass Nat'l Forest, Stikine Area
GAL	Galena
TAL	Tanana
UYK	Upper Yukon
FCC	Fire Coordination Center, Fairbanks

1991 Fires by Area and Management Option

State protected

	CRITICAL		FULL		MODIFIED		LIMITED		TOTAL	
Area[1]	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
AMS	102	1,132.1	10	5.5	2	1.8	2	128	116	1,267.4
KK	43	19.6	3	106.5	0	1,386	1	6,418	47	7,930.1
VCR	7	1.6	14	3.9	1	0.2	4	5,697	26	5,702.7
SW	6	5.4	33	45,181.8	17	36,941.8	26	53,661.8	82	135,790.8
F	112	165.8	37	1,737.1	10	505.7	1	10	160	2,418.6
D	8	12	12	179.7	0	0	0	0	20	191.7
T	18	2.7	14	16.7	3	155.0	6	20,801	41	20,975.4
SE	0	0	1	0.1	0	0	0	0	1	0.1
Total	**296**	**1,339.2**	**124**	**47,231.3**	**33**	**38,990.5**	**40**	**86,715.8**	**493**	**174,276.8**

U.S. Forest Service protected

	CRITICAL		FULL		MODIFIED		LIMITED		TOTAL	
Area[1]	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
CGF	7	14	6	1.3	0	0	1	0.1	14	15.4
CMF	0	0	3	0.3	0	0	0	0	3	0.3
KNF	2	0.2	1	0.2	0	0	0	0	3	0.4
STF	0	0	0	0	0	0	0	0	0	0
Total	**9**	**14.2**	**10**	**1.8**	**0**	**0**	**1**	**0.1**	**20**	**16**

Alaska Fire Service protected

	CRITICAL		FULL		MODIFIED		LIMITED		UNPLANNED*		TOTAL	
Area[1]	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
GAL	0	0	7	7,803	27	17,739.2	26	71,429.2	1	3	61	96,974.4
TAL	3	271.6	14	72,047.4	33	543,662.9	40	326,260.6	26	2,556.5	116	944,799
UYK	6	4.1	15	74.1	24	197,191.8	16	333,639.8	9	3,677.1	70	534,586.9
FCC	0	0	0	0	0	0	0	0	0	0	0	0
Total	**9**	**275.7**	**36**	**79,924.5**	**84**	**758,593.9**	**82**	**731,329.6**	**36**	**6,236.6**	**247**	**1,576,360.3**

Statewide

	CRITICAL		FULL		MODIFIED		LIMITED		UNPLANNED*		TOTAL	
Area[1]	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
Total	314	1,629.1	170	127,157.6	117	797,584.4	123	818,045.5	36	6,236.6	760	1,750,653.2

[1]Area key on page 6 [2]Military land

Fire management goals

Management

- Stabilize the organizational structure that supports the fire program.
- Finalize master agreements with the BLM and Forest Service.
- Become a working member of the Western State Fire Managers organization.
- Improve property management, inventory control and fire equipment cost-tracking by computerizing the fire warehouse system.
- Complete and implement the *Forest Fire and Aviation Program: A Program Review and Workforce Analysis 1991*.

Operations

- Complete development of an Air Attack Supervisor position under supervision of the Fire Operations Forester and implement the Air Attack Supervisor Module.
- Strengthen relationship with the Chugach National Forest.
- Verify the accuracy of the Canadian Forest Fire Danger rating System on Alaska fuels.
- Expand the prescribed fire program with the Alaska Department of Fish & Game.
- Initiate an evaluation of the merits of the Limited Action Protection category and quantify the impacts on the ecosystem and natural resources.
- Complete consolidation of the 13 Interagency Fire Management Plans.

Aviation

- Develop relationship with the Alaska Fire Service to provide for joint decisions on air tanker and smokejumper aircraft requirements.
- Complete a Five-year Aviation Plan.

Training

- Formalize our approach to providing training for structure fire departments.
- Train division managers and initial attack personnel in the Canadian Forest Fire Danger Rating System.
- Develop and offer contract administration training with emphasis on aviation contracts.
- Provide fire management training for division line officers.

Prevention

- Initiate action to create a non-profit fire prevention and education organization. (Learn to Live with Wildland Fire)
- Complete Hazard Mitigation Plan on the 1990 Tok River fire. (FEMA requirement)
- Conduct a prevention analysis to determine program needs and deficiencies. (USFS participation)

Communications

- Complete and bring to full operation the computerized Fire Suppression Tracking System.
- Complete Five-year Communications Plan.
- Determine if the Initial Attack Management System is a viable communication network for interagency initial attack operations.
- Complete communications upgrades for the Southwest and Tok areas. (dependent on CIP/supplemental funding)

Fire management program

Fire and aviation working group formed

In December, 1990 a fire and aviation working group formed to help guide the division's fire program. The group has been accepted within the division as an effective clearinghouse for fire related issues and has become an important part of the management structure. The group meets monthly to help chart the future of the fire program.

Interagency cooperation

The state participated in interagency type II fire overhead teams for the first time in 1991. The state and federal government had previously had separate teams. The teams were used successfully on state and federal responsibility fires nine times and the state will continue to participate in the future.

In another cooperative, cost-saving effort, the Southern Region and the Chugach National Forest started an interagency dispatch function in Anchorage.

Land manager meetings

The Southwest Area Forester and Fire Management Officer met with land managers for the National Park Service and the Fish and Wildlife Service in Dillingham, Bethel and King Salmon to discuss fire plans and management goals. This was the first opportunity for some land managers to hold such discussions with the fire management agency. The meetings proved to be informative and good training exercises for all who participated. Wildland Fire Suppression topics covered were:

- fire management plans and updates
- suppression capabilities
- communications, radio frequencies
- cabins/improvements, locations
- sensitive areas such as archaeological sites, burial sites, and nesting areas
- level of involvement and land manager's ability to assist DOF
- land manager's concerns about DOF operations
- utilization of resources

Canadian Forest Fire Danger Rating System

In 1990, the division examined the possibility of using the Canadian Forest Fire Danger Rating System in Alaska, as it appeared to be more applicable to Alaska's fire environment than the American System. Several division employees went to Alberta for training in the spring of 1991 and then trained other personnel. The system was very useful in managing wildfire in the state in 1991.

The Division of Forestry and the Big Lake Volunteer Fire Department cooperate on an early season grass fire.

T-28 program

The state has successfully used surplus T-28 airplanes since 1984. However, due to the poor availability of replacement parts, they will be gradually phased out by 1993.

McGrath retardant ramp damaged by flood

The retardant ramp in McGrath was closed for a week during fire season because of flood damage. It was reopened with a new management plan detailing safety procedures and traffic patterns to increase safety and prolong the useful life of the surface. The plan included moving the service island and installing steel hardstands.

Damage to the ramp was estimated at $63,900. Total flood damage to the fire station and ramp was estimated at $114,822.

Tok fire mushrooms

The 100,000-acre fire near Tok in 1990 created conditions for a bumper crop of morel mushrooms in 1991. An estimated 350,000 pounds were collected and nine buyers paid pickers up to $3 per pound, green weight. The morel mushroom is a delicacy in Europe, where it is sold for up to $75 per pound dry weight. A few local families who persisted earned up to $20,000 for their summer's work. Many professional pickers arrived from outside Alaska, including a crew of 30 Cambodians that camped out for 30 days.

This was the first time commercial mushroom buyers had been to Interior Alaska and the experience has created nationwide interest in commercial mushroom harvesting in Alaska. The many large fires that burn in Alaska each year may provide other opportunities for mushroom harvesting—an interesting way to use forest products to diversify Alaska's economy.

Rural community fire protection grants

The division administers Rural Community Fire Protection grant monies from the U.S. Forest Service. Through this program, volunteer fire departments serving communities of under 10,000 people may apply for grants of up to $5,000 on a 50/50 cost share basis to organize, train and equip fire protection units. In 1991 the division approved 20 grants, totaling $69,990, to conduct training and to purchase portable pumps, radios, protective clothing, smoke detectors, self contained breathing apparatus, fire hose and supplies.

Department	Grant Amount
Haines VFD	$1,500
Thorne Bay VFD	5,000
Wrangell VFD	2,930
Chugiak VFD	2,358
Houston VFD	1,968
Palmer VFD	5,000
Victory VFD	3,200
Chitina VFD	600
Copper Center VFD	5,000
Glennallen VFD	5,000
Kenny Lake VFD	5,000
Valdez VFD	4,664
Ester VFD	2,500
Chena-Goldstream VFD	3,750
McKinley VFD	900
Moose Creek VFD	2,140
Nenana VFD	4,430
North Star VFD	5,000
Delta VFD	4,050
Huslia VFD	5,000
Total	**$69,990**

Emergency firefighter wages paid by agency

Calendar Year	State	Federal	Total
1980	614,887	600,561	1,215,448
1981	1,705,360	2,898,293	4,603,653
1982	19,950	1,230,351	1,250,301
1983	1,553,258	1,969,374	3,522,632
1984	234,388	507,004	741,392
1985	561,238	2,656,350	3,217,588
1986	2,515,750	2,832,208	5,347,958
OT[1]	561,770		561,770
1987	646,674	5,352,799	5,999,473
OT[2]	643,932		643,932
1988	4,474,107	5,146,861	9,620,968
OT[3]	907,865		907,865
1989	1,805,955	2,276,175	4,082,130
1990	7,398,211	5,765,547	13,163,758
1991	5,344,384	3,741,521	9,085,905
Total	**$28,987,729**	**$34,977,044**	**$63,964,773**

[1] Special appropriation due to Fair Labor Standards Act.

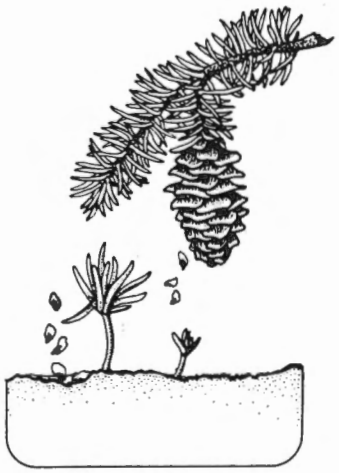
[2] U.S. Dept. of Labor ruling required payment at time-and-one-half when week exceeded 40 hours. Amount shown was paid in 1990.

[3] U.S. Dept. of Labor ruling required payment at time-and-one-half when week exceeded 40 hours. Amount shown was paid in 1991.

Emergency out-of-state crew use (20-person crews)

Year	Number of crews
1970	40
1973	6
1981	18
1982	4
1985	39
1986	22
1987	59
1988	54
1989	61
1990	7
1991	0

Resource Management



Alaska Forest Regeneration Center

In 1991 the Alaska Forest Regeneration Center (nursery) shipped 640,433 seedlings and sowed 827,388 to fill increased orders. Seedlings were used to reforest state, federal and non-industrial private land; for research; Arbor Day activities and other civic purposes such as Koncor Forest Products' First-Tree Program.

As in past years, inmate laborers from the Department of Corrections worked at the nursery throughout the year. Two full-time forestry technicians, a maintenance worker and a University of Alaska Anchorage student intern also provided labor. Handicapped students received vocational training through an agreement with the Anchorage School District.

Regeneration center plans move

In 1990 the state legislature appropriated funds to expand the Forest Regeneration Center, which is located in Eagle River at the site of the division's mechanical shop and fire warehouse. The expansion was planned for that site, but when an engineer found the water supply inadequate for a larger facility the search began for another location. The division is now considering 12 acres at the University of Alaska Agriculture and Forestry Experiment Station on Trunk Road near Palmer. This location is readily accessible to the public, has sufficient water and no flood danger.

Expansion plans call for moving the division's two greenhouses from Eagle River and constructing two new greenhouses, depending on costs. Annual production for the four greenhouses would be about 800,000 seedlings (200,000 in each greenhouse). The Alaska Reforestation Council has recommended an eventual annual production of 1.6 million seedlings.

The two greenhouses at Eagle River have each been producing two crops of 200,000 seedlings each per year, however, in the future the division intends to grow only a single crop each year to produce higher quality seedlings and to allow greater flexibility in production schedules.

An important addition to the nursery will be a 100-foot by 100-foot head house containing equipment for tray filling and sowing, seed extraction and cleaning, and fertilizer and pesticide storage and mixing. It will also include a walk-in freezer, 600-square-foot cooler, lunch room, shower and wash rooms.

Regeneration

Fabric Mat Study

In areas impacted by spruce bark beetles, or that have not produced adequate natural regeneration following timber harvest, Calamagrostis grass dominates the ground vegetation. The grass is a stiff competitor for spruce seedlings, as its thick rhizome layer cools soils and the foliage blocks sunlight.

The division, in cooperation with the Institute of Northern Forestry, established several plots on the Kenai Peninsula and on a timber sale unit near Willow to assess the use of fabric reforestation mats with white spruce seedlings. The mats inhibit the growth of vegetation around the seedlings.

While initial costs of planting with fabric mats is higher than some other techniques, it may be cost-effective when compared to seedling survival rates and the replanting costs on sites dominated by grass. These studies compare survival, growth and form of seedlings using mats, against control plots with no mats. They will also distinguish the best type of mat fabric for use in Alaska's forests.

Trencher for regeneration

The Anchorage, Mat-Su and Kenai-Kodiak area offices, in cooperation with the Department of Fish and Game, purchased a TTS-35 disc trencher for regeneration work on timber sale and habitat enhancement projects. The trencher was first used in the spring of 1991 and results of work in the Susitna Valley and on the Kenai have been promising.

1991 nursery production

Species	Seedlings Sown
white spruce	702,318
lodgepole pine	29,046
Siberian larch	28,046
Scotch pine	13,800
Sitka spruce	11,800
paper birch	9,400
willow (cuttings)	6,076
American green alder	4,018
European mountain ash	3,600
blue spruce	3,600
Sitka alder	3,000
Norway spruce	2,800
Siberian pea shrub	2,176
poplar (cuttings)	1,173
mountain hemlock	2,000
subalpine fir	1,000
Sakhalin fir	800
Siberian pine	600
Swiss stone pine	400
bush cinquefoil	356
misc. species	1,379
Total	**827,388**

	Seedlings	
Client	**Sown**	**Shipped**
State	618,936	444,394
Federal	53,824	17,553
Borough	132,000	130,038
Private	22,628	48,448
Total	**827,388**	**640,433**

Species	Seed processed (lbs)
white spruce	701
Lutz spruce	140
Sitka spruce	13
paper birch	8
black spruce	3
Total	**865**

Reforestation

Reforestation	1990	1991
Seedlings grown	586,086	827,388
Acres planted	707	605
Pounds of seed processed	28	865
Acres surveyed for regeneration	370	2,395
Acres of site preparation	421	462
Acres direct-seeded	0	240

Fabric mats inhibit the growth of vegetation around seedlings and give them a better chance of survival.

Forest insects & disease

Forest insect populations and disease increased throughout the state in 1991. This was the third consecutive year with warm, dry springs and early summers, which allowed insect populations to increase dramatically. The largest increase in acres infested by destructive insects was in southcentral and interior Alaska.

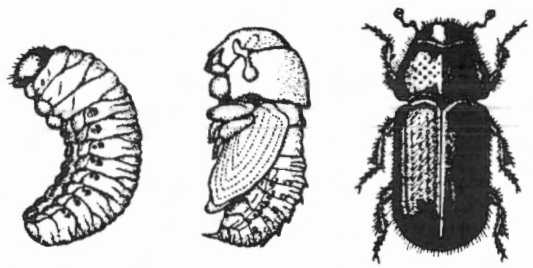
Hardwood defoliators

Hardwood defoliator activity increased for the second consecutive year throughout most of southcentral and interior Alaska. Willow defoliation accounted for most of the increase. Assorted leaf miners, Noctuid and Rusty-tussock moth larvae defoliated more than 130,000 acres of willow in 1991, compared to 30,000 acres in 1990.

Exploding populations of spruce budworm near Fairbanks and Delta Junction defoliated more than 20,000 acres of white spruce. Black-headed budworm defoliation on western hemlock and Sitka spruce in Prince William Sound decreased to 7,000 acres compared to 40,000 acres of defoliation detected in 1990. White and Sitka spruce throughout southwest and southcentral Alaska were affected by needle rust. Aspen leaf blight was conspicuous for the second consecutive year on portions of the Kenai Peninsula.

A list of forest insect and disease infestations in Alaska by acreage, land ownership and pest is on page 17.

A summary of statewide annual survey results titled the "Alaska Conditions Report" is available from the State Division of Forestry (762-2107) and the U.S. Forest Service, State and Private Forestry Office (271-2575). The report includes extensive summaries of forest insect and disease trends by pest species statewide. The annual forest insect and disease aerial survey is a cooperative effort between the Division of Forestry and the Forest Service.



Spruce bark beetles

Spruce bark beetle activity increased for the third consecutive year, with on-going and new infestations affecting more than 375,000 acres, primarily in the southcentral and interior regions. This represents an increase of 142,000 acres, or 38 percent, over all areas surveyed in 1990. On just state and private lands, including Native corporation land, spruce beetle-caused mortality increased from 152,000 acres in 1990 to 215,000 in 1991, a 62 percent increase.

Spruce beetle activity in the Copper River area near Chitina increased from 11,000 acres in 1990 to 25,000 acres in 1991. In the Clam Gulch/Tustumena Lake area on the Kenai Peninsula the infestation on state and private lands grew from 35,000 acres to about 55,300 acres. On the west side of Cook Inlet near the Theodore River/Beluga area and the Skwentna River, the infestation increased from 12,700 to 45,000 acres.

An area in Southcentral Alaska where spruce beetle activity decreased is along the south side of Kachemak Bay where 10,000 acres of infested Sitka spruce were detected in 1990 and only 7,000 acres were detected in 1991. No expansion was detected outside the area originally infested.

Another area of reduced activity was the Yukon River where the number of infested acres decreased for the second consecutive year, to about 80,000 acres. In 1987, aerial surveys detected 100,000 infested acres between Anvik and Koyukuk.

Southeast Alaska experienced less dramatic increases in spruce beetle damage due to generally cool, wet weather, which tends to keep insect populations in check. The most notable increase was in the Haines area where several discrete populations of spruce beetles infested 6,500 acres on University of Alaska and Mental Health Trust lands.

Spruce beetle pheromone testing

The Division of Forestry continues to cooperate with the U.S. Forest Service pest management researchers in testing spruce bark beetle pheromones as a way to manipulate spruce beetle populations. Spruce beetles produce chemicals (called pheromones) to communicate with other beetles, for mating, to locate susceptible spruce hosts, and to attract or repel other spruce beetles.

Pheromone research has been limited because of the time and expense involved in obtaining EPA registrations, formulating adequate quantities of the pure pheromone and rigorous testing. However, recent advances with new pheromone components have enhanced the lure strength and efficiency of spruce beetle traps.

Pheromones are being used primarily as a beetle monitoring tool, but there is the potential for manipulating low-level populations and reducing damage in large areas.

The anti-attractant pheromone, methylcyclohexenone (MCH), though experimental, may prove effective in reducing the build-up of spruce beetle populations during logging operations, right-of-way clearing, or similar activities. Applying the synthetic chemical to susceptible spruce sends signals to attacking beetles that the trees are full and that they should go elsewhere. This disrupts the natural dispersal of beetles.

The Forest Service and Division of Forestry were asked by Marathon Oil Co. to evaluate right-of-way debris clearing along a gas pipeline to determine what treatment could be used to minimize spruce beetle populations. The pipeline, located on the west side of Cook Inlet, had Lutz spruce decked on both sides of the clearing.

Following Forest Service recommendations, an aerial and ground application of MCH was made along the right-of-way in May to test its efficiency. The Forest Service and DOF completed sampling the treatment in August. Overall, very low numbers of spruce beetle attacks and progeny were found in the 30 evaluation plots, but, based on the low levels of beetles in the right-of-way, the effects of the MCH treatment were not conclusive. The number indicated a low endemic spruce beetle population in the surrounding forests. A publication with details of the test is available upon request. Its title is "Evaluation of Potential for Spruce Bark Beetle Population Build-up in Right-of-Way Clearing Debris Tyonek/Beluga—August 1991."

Sampling spruce beetle infestation in trap trees.

Kenai Peninsula infestation and surveys

In an annual detection flight over the Kenai Peninsula, state and U.S. Forest Service entomologists mapped a new, large infestation of spruce bark beetles in the vicinity of Kasilof/Clam Gulch. The 1991 infestation is estimated at 101,543 acres; this is in addition to the 39,033 acres infested in 1990. Tree mortality was found on Native, university, borough, state and federal land. DOF completed systematic survey plots in the impacted area during 1990 and 1991. Data from the surveys will be analyzed and a summary report prepared in late 1992.

A ground survey at Upper Trail Lake, near Moose Pass, after the July aerial survey, found new pockets of infestations. Forestry technicians and Seward Skill Center forestry students took samples on the north and east sides of the lake in October to determine numbers of infested spruce per acre for this and the last two years. Although the visual impact of the red, beetle-damaged trees is very evident, preliminary information from the survey indicates a low level of beetle-caused mortality in the spruce stands along the lake and Johnson Pass Trail. An additional ground survey is planned for summer, 1992, to assess impacts on the residual spruce stands in the area.

Information on growth increment, height, age, basal area and tree diameter will be compiled and provided to the Kenai Peninsula Borough in 1992. Most of this area is state community grant land selected for conveyance to the borough under its municipal land entitlement.

Klukwan Forest Products baits log decks with attractant pheromones to prevent spruce beetles from leaving the decks and infesting adjacent unlogged spruce.

Three student interns working in the Kenai-Kodiak Area collected field data on bark beetle infestations from more than 600 one-half-acre strip plots. The crew recorded the number of trees within each plot and the number of beetle infested spruce by the year that the attack occurred. Three plots within each strip recorded species, dbh, heights, stand composition and vegetative ground cover data. Most of the plots were located in the Clam Gulch/Kasilof vicinity, but some were on other parts of the peninsula, including the Homer Demonstration Forest.

Public meetings on Kenai infestation

Forest health and fire problems caused by spruce beetles near Cooper Landing have lead to a great deal of interest on the part of the public and media. Kenai-Kodiak Area Office staff attended public meetings at the Funny River Road and Homer chambers of commerce to raise public awareness of spruce bark beetle problems on the peninsula. They presented information about the infestation, how to recognize the beetles and beetle attacked trees, how to protect trees from beetles and actions being taken by the state and other agencies.

Pest Management Assistance

The Division of Forestry provides technical pest management assistance to private non-industrial landowners, using matching grants from the U.S. Forest Service. The division completed two such projects in 1991. It helped Klukwan Forest Products to bait log decks with attractant pheromones on land owned by the Ninilchik Native Association to prevent spruce beetles from leaving the decks and infesting adjacent unlogged spruce.

1991 Forest Insect and Disease Infestation in Alaska by Land Ownership [1]

Pest	Nat'l Forest	Other Federal	Native	State/Private	Total
Spruce beetle *Dendroctonus rufipennis (Coleoptera)*	19,526	142,228	23,315	191,748 [2]	**376,817**
E. larch beetle *Dendroctonus simplex (Coleoptera)*		156		3,425	**3,581**
Engravers *Ips spp. (Coleoptera)*		2,572	1,414	1,902	**5,888**
Spruce budworm Choristoneura spp. *(Lepidoptera)*			1,791	25,143	**26,934**
Black-headed budworm *Acleris gloverana (Lepidoptera)* affects w. hemlock, Sitka spruce	11,064		2,107	234	**13,405**
Hemlock sawfly *Neodiprion tsugae (Hymenoptera)*	934				**934**
Large aspen tortrix *Choristoneura conflictana (Lepidoptera)*		3,176	267	677	**4,120**
Spear-marked black moth *Rheumaptera hastata*		4,223			**4,223**
Birch defoliation *various spp. (Lepidoptera)*		215	251	716	**1,182**
Cottonwood defoliation . *various spp (Coleoptera, Lepidoptera)*	2,955	4,617		9,119	**16,691**
Willow defoliation *(Coleoptera, Lepidoptera)*		53,538	75,081	3,098	**131,717**
Alaska yellow cedar decline[3] (cumulative)	500,406		17,511	8,718	**526,635**
Total Acres	**534,885**	**210,725**	**121,737**	**244,780**	
Grand Total 1,112,127 **acres**					

[1] Table does not include many of the most destructive diseases, e.g., wood decays and dwarf mistletoe, because those losses are not detectable in aerial surveys.

[2] Represents an increase of 63,000 acres over 1990 on state and private (including Native corp.) land. This is almost 70% of the total increase in spruce beetle infestation statewide on all ownerships since 1990.

[3] Acreage of Alaska yellow-cedar decline is the cumulative total up to 1991 and not an annual figure.

Forest Health Initiative

The Alaska State Legislature appropriated $450,000 to the Division of Forestry in 1991 to develop a "forest pest infestation management plan." Pete Buist was hired as project manager in August. Recognizing that pest problems are often a symptom of poor forest health, the division decided to look at ways to improve the condition of forests in general, as a means of preventing and suppressing infestations. The division is beginning on the Kenai Peninsula, but intends to expand the effort to other forests in the state.

The first step in this project is to complete a forest health management plan for the western Kenai Peninsula and Kalgin Island. Three groups were formed to provide information and help draft the plan—a Planning Team made up of Division of Forestry and U.S. Forest Service staff; a Policy Group with the major landowners and managers within the planning area; and a Working Group, an advisory committee of representatives from state and federal agencies, land managers, private landowners and others interested in forest health on the Kenai. The working group will meet regularly through the spring of 1992 and a draft plan will be completed by July 1.

Public Opinion Survey

The Division of Forestry commissioned the University of Alaska Anchorage, Institute of Social and Economic Research (ISER) to research public opinion on managing spruce bark beetles. ISER's study, entitled, *Developing a Public Consensus on the Management of Spruce Bark Beetles on the Kenai Peninsula* includes a survey of 400 peninsula households and 100 Anchorage households.

Nearly 90 percent of those surveyed said that dead or dying spruce trees are the most serious problem with forests on the Kenai Peninsula. Respondants said the chief problems caused by beetle-killed trees were (1) less attractive views, (2) fire threat, and (3) loss of privacy. Other problems cited were the large areas affected, loss of timber and declining property values.

The survey asked how the state should manage infested spruce in four locations—near homes, along highways, in campgrounds and in the backcountry.

Following is a summary of the responses:

- About three out of four respondents want the state to cut and remove dead trees near homes.
- More than half want the state to plant new trees near homes and either scrape the ground or use fabric mats to discourage grass from choking seedlings.
- Fewer than one-quarter support the use of chemicals near homes to kill grasses that could choke newly planted trees.
- Two-thirds of peninsula residents and more than half of Anchorage residents want the state to cut and burn beetle-killed trees along the highways and plant new trees.
- A substantial minority—40 percent in Anchorage and nearly 30 percent on the peninsula—think the state should do nothing about beetle-killed trees along highways.
- More than half want the state to thin infested trees in campgrounds.
- Nearly 40 percent favor protecting selected trees in campgrounds by spraying them with insecticides.
- Southcentral residents are almost evenly split in their opinions about what the state should do about beetle-killed trees in the backcountry; roughly half say the state should do nothing, and almost half want the state to cut and burn dead trees and plant new ones.

A summary of survey results is available from the Division of Forestry. A copy of the complete report is available from ISER (786-7710) for a cost of $5.

America the Beautiful

America the Beautiful is a national tree planting initiative introduced by President Bush in 1990. It calls on the public, volunteers, businesses, industry and local government to work together to plant and care for one billion additional trees each year.

Healthy community trees and forests provide important environmental, social and economic benefits to the nation and to local communities. Trees and forests:

- enhance wildlife, fish and human habitats;
- conserve energy in buildings by providing summer shade and winter wind protection;
- improve air, soil and water quality, and reduce soil erosion;
- act as natural air cleaners by removing carbon dioxide and other impurities from the atmosphere and by releasing oxygen into the atmosphere;
- provide valuable products (lumber, paper, firewood, etc.) and associated jobs which strengthen local economies;
- improve aesthetics in neighborhoods, communities and business areas, which increases neighborhood pride and property values;

The Forest Service provides national guidance and funding for America the Beautiful and the Division of Forestry coordinates the program in Alaska. Dan Ketchum was hired in August as coordinator for America the Beautiful's two main programs, Community Forestry and Forest Stewardship.

Two citizen advisory groups were appointed by the state forester to provide direction to the programs. The Alaska Community Forestry Council and the Alaska Forest Stewardship Coordinating Committee were formed and each held an organizational meeting in late August.

Forest Stewardship

The Forest Stewardship Program's goals are to:

- help private forest land owners to more actively manage their forests and related resources;
- increase the number of trees planted and cared for nationwide;
- enhance economic, environmental and aesthetic qualities of rural areas; and
- reduce global carbon dioxide levels.

To meet these goals, the Forest Stewardship Program provides technical assistance to owners of non-industrial private forest land—forested land owned by a private individual, group, association, corporation, Indian tribe or other private legal entity, such as an Alaska Native Corporation, not involved in wood product manufacturing.

Landowners, with the help of a natural resource professional, prepare a Forest Stewardship Plan that meets their land management objectives. The plans address such aspects of forest management as:

- soil and water quality;
- wetlands and their role in the ecosystem;
- timber production, harvesting and regeneration;
- protection from fire, pests and disease;
- recreation and aesthetics;
- fish and wildlife habitat.

The Stewardship Incentive Program (SIP) is a cost-share assistance program for non-industrial, private forest landowners who own a maximum of 1,000 forested acres. SIP allows up to 75 percent cost-sharing for certain activities that protect, manage or enhance forest resources. Landowners must develop, and agree to maintain, a Forest Stewardship Plan to be eligible for the SIP.

Instead of focusing simply upon trees as a crop, Forest Stewardship helps educate people about the forest as a complete ecosystem containing many plants, animals, birds and fish—all of which depend on a healthy forest condition.

National Association of Conservation Districts

Community Forestry

The objectives of Alaska's Community Forestry Program go beyond just planting trees. They are to:

- maintain an active Alaska Community Forestry Council.
- encourage the establishment of local community tree boards or advisory committees wherever there is a need and desire for them.
- provide information, training, and educational opportunities on the benefits of, and proper techniques for, retaining, planting and caring for community trees.
- enhance the understanding of, and technical skills for, sound vegetation maintenance and arboricultural practices, including the cultivation of trees, shrubs and complementary ground covers, by individuals who plan, develop and maintain urban landscapes and community trees and forests.
- support, and increase the number of, citizens informed and involved in local volunteer efforts to plant and maintain trees, shrubs and perennials.

- encourage more local governments to develop effective, long-term, community forest and tree, shrub and perennial management programs.
- encourage state agencies, local government, industry, private business, civic groups and individuals to support and fund community forestry.
- encourage and support the establishment of school, community and university forests.
- increase the number of trees and shrubs retained, established and cared for in Alaskan communities.
- increase the number of trees and shrubs retained, planted and cared for during urban development and community expansion.
- encourage owners of private residences and commercial properties to retain, maintain and increase the number of trees and shrubs on their properties.
- encourage and support programs involved in research, introduction or trials of new tree, shrub and perennial varieties in Alaska.

Community forestry grants

The division awards federal grants to communities to encourage local tree planting projects and provides technical assistance to ensure their success. Any nonprofit organization or local government may prepare proposals for projects on nonfederal public property.

To be considered for funding, a project must have the support and involvement of community volunteers. It must also accomplish a specific goal or remedy a specific problem and include a detailed five-year maintenance plan for any trees planted.

In 1991, the division funded demonstration and pilot projects in nine communities. Federal funds totaling $37,249 were matched by $53,530 in donations and in-kind services from comunities that received the grants. Projects included plantings to beautify the grounds of public buildings and schools in Delta, Anchorage, Talkeetna and Wrangell; plantings along streets in Fairbanks, Wasilla and Palmer; landscaping a ballpark in Sitka; and creating a living wind break in Nome. More than 300 ornamental trees, 500 ornamental shrubs and 3,500 seedlings were planted.

Resource management and planning

Anchorage/Mat-Su Area

The Anchorage/Mat-Su Area Office completed the State Forest Land Management plans for the Kashwitna Corridor and Recreation River, and the Susitna Forestry Guidelines in 1991. Mental Health Land Trust legislation identified all land classified for forestry in the Susitna Forest Guidelines Area (502,890 acres) as part of a land pool for possible selection by the Mental Health Land Trust.

Kenai Area

The Division of Forestry assisted the Division of Land in preparing a Kenai Area Plan. Forestry staff participated in six public open houses, provided input on areas to retain in state ownership, areas to be managed for timber production, activities that would conflict with forest management, maps depicting areas needing forest management actions, and silvicultural prescriptions for various forest conditions.

Ruffed Grouse Management Area in Delta

The first annual Ruffed Grouse Society event in Delta was held in the fall to demonstrate the division's interest in seeing habitat improvements for these feathered creatures. Ruffed Grouse Society President Sam Pursglove was given a tour of a 40,000-acre aspen stand considered a potential ruffed grouse management area. A grant was proposed to make small patch cuts in this over-mature stand to encourage young aspen shoots. Al Edgren of DOF, Sam Pursglove, and Paul Karczmarczyk of ADF&G were featured in the Ruffed Grouse Society magazine in February.

The Goodpaster River settlement

When former DNR Commissioner Rod Swope signed the Tanana Basin Area Plan the communities of Delta and Tok responded with a protest of the restrictions. The Delta City Council, Tok Chamber of Commerce and other private citizens and organizations submitted petitions and resolutions to the incoming Hickel administration opposing the plan.

The next DNR Commissioner, Harold Heinze, directed the Division of Land to work with the communities to resolve the issue. A working group of 15 representatives from local government, state agencies and private interest groups was formed, but was not able to reach consensus. Majority and minority viewpoints were presented to the planning team, which ultimately drew compromising corridor boundaries and set guidelines. The commissioner has signed amendments to the Tanana Basin Area Plan and the Tanana Valley State Forest Plan that allow access to state forest and other state lands that surround a river corridor one to two miles wide. The general public seems satisfied with this settlement.

Forest inventory

In support of the Yakataga Area Plan, the inventory and associated Geographical Information System coverages were edited. Maps showing timber values, 20-year timber availability and vegetation stratification were produced.

Aerial surveys of spruce beetles in the Kasilof and Ninilchik vicinity were digitized and laid over a map of land ownership. The map illustrates the ownership complexity of the Forest Health Initiative project.

A partial fire database was constructed that portrays the 1991 fire season. Also, area/zone boundaries were converted to the Geographical Information System and used in a map showing fire occurrences from 1985 through 1989.

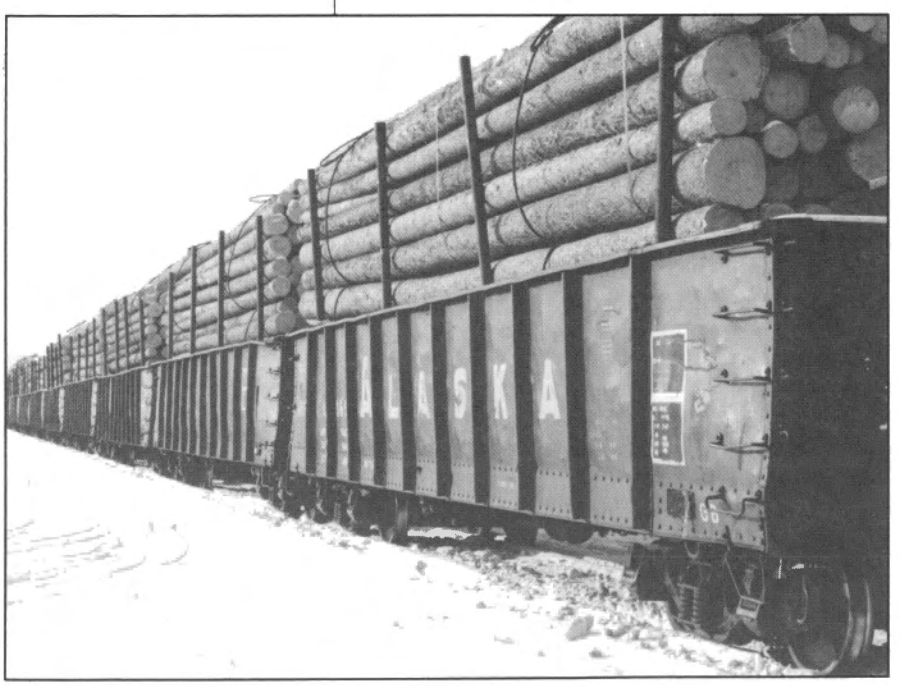
The division's goal for forest resource management is to efficiently manage the benefits as well as the products of a dynamic forest system.

Timber sales

Falls Creek salvage sale

A cooperative salvage sale of bark beetle-killed trees in the Falls Creek area was sold between the Division of Forestry, University of Alaska and Cook Inlet Region, Inc. in November. DOF Kenai-Kodiak Area staff proposed a joint salvage sale to combat the spruce bark beetles in the Kasilof-Clam Gulch vicinity. Although the University and CIRI agreed to the sale, they did not have field staff to set up it up. In order to move the sale forward, DOF staff completed the field and paper work. The Kenai-Kodiak Area is also, by agreement, administering the sale. Harvest operations will be complete by the end of March, 1992.

An increase in bark beetle activity in the area was detected in late 1989. During the spring of 1990, DOF staff put in more than 45 trap tree plots and 50 beetle pheromone traps. The trap tree plots were successful in drawing beetles into the down green trees. Harvest operations must be completed and trap trees removed by the spring of 1992, when the beetles emerge and fly to new host trees.



Logs in the Fairbanks railroad yards on their way to Japan.

Mat-Su timber sales

The Five-Year Schedule of Timber Sales for the Anchorage/Mat-Su Area was withdrawn because 99 percent of the proposed sales were located on lands hypothecated to the Mental Health Land Trust.

Southwest Area timber management

Southwest Area foresters and technicians had a busy year of data collection and resource planning. The Five-Year Timber Sale Schedule was updated, and reviewed by agencies and the public. Sale administration efforts were stepped up, with several visits to each of the active sales and a preliminary regeneration survey conducted on one of the sales. Observations of severe insect infestations along the Kuskokwim River resulted in plans to harvest additional infested trees from one sale area.

Additional sales were added to the timber sale schedule for fiscal years 1993 through 1997 following meetings with loggers from Bethel and McGrath. In particular the loggers requested that the division begin planning a sale near Big River on the Kuskokwim River northeast of McGrath.

Southeast beach log salvage licenses

The number of beach log salvage licenses dropped from a record high of 22 in 1990 to 11 in 1991. These licenses are a direct reflection of current log prices, since the cost of the one-year license is fixed. Although the process for issuing the licenses has been streamlined, it still requires between three and nine months.

Log brands

The 1990 Log Brand Book showed the following activities regarding the five-year log brands that were issued in 1986 and expiring in 1991:

Activity	1986	1991
Renewed	27	27
Expired	29	
New		18
Total	**56**	**45**

Of 54 log brans registered in 1987, 13 have been renewed.

Forest Resources & Practices Act

Key elements of the Forest Practices Program are:

- to educate forest landowners, operators and the public about the requirements of the Forest Resources and Practices Act and proper forest practices
- to administer the Forest Resources and Practices Act by reviewing notifications, conducting forest inspections and taking appropriate enforcement actions.

In 1991 draft regulations to implement revisions made to the Forest Resources and Practices Act in 1990 were completed and presented for public review. The intent of the proposed regulations is to establish a new working relationship among state agencies, timber owners and the timber industry. There is a new enforcement procedure with significant penalties for non-compliance.

Public hearings were held in Anchorage, Fairbanks, Juneau and Ketchikan for the public to present verbal and written comments.

Following the hearings, a revised draft of the regulations was presented to the Board of Forestry for review in December.

Forest practices activity has increased statewide, but the Southeast Region continues to be the most active. There were 142 forest practices notifications for 21,016 acres in the Southeast Region in 1991. The total acreage was down almost 30 percent from 1990, and down 37 percent from the 1989 high. However, the number of inspections climbed to an all-time high of 149, up 66 percent from 1990 and 73 percent from 1989. This jump in inspections is a result of the increased requirements in the new Forest Resources and Practices Act.

The trend of growth in inspections and in variation requests is likely to continue for the next few years. Such activities are also increasing in areas outside of the Southeast, especially on Native corporation land in Interior and Southcentral Alaska. Harvesting operations continue on the lower Kenai Peninsula, on Afognak Island, near Cordova and near Tetlin.

Kitoi Lake timber harvest

Two large-scale timber operators provided plans in early 1991 for harvesting timber in the Kitoi Lake watershed on Afognak Island. The lake supplies water for a Department of Fish and Game fish hatchery. The planned harvest caught the attention of the hatchery manager and Kodiak fishermen who feared that the harvest could potentially impact fish production at the hatchery.

As interest mounted in the plans for the timber harvest, a special interest group, the Kodiak Environmental Network, sponsored well-attended public forums. The Division of Forestry, ADF&G's Habitat and Commercial Fish divisions, the landowner, timber industry representatives and an environmentalist participated in a panel discussion at one of these meetings. The division focused on requirements of the 1990 Forest Practices Act amendments and the safeguards these legislative standards would provide for this important fishery. At a second meeting, the state forester provided information on the maintenance of water quality during and after timber harvest.

Plans for the harvest proceeded and operations were completed during 1991. The forest products industry set up water sampling stations to test for any differences in water quality. Samples from streams running through the harvest area were compared with nearby unaffected streams. Kitoi Lake was sampled near the water intake for the fish hatchery. The tests showed little discernable variation in the water quality as a result of the timber harvest activity.

The Forest Practices Program is designed to protect water quality, fish and wildlife habitat and other public forest values through the use of appropriate forest practices.

Statewide Forest Practices Activities

Activity	1990	1991
Number of notifications	201	193
Acreage under notification	55,091	57,237
Number of inspections	146	222
Number of training sessions	5	10
Alaska coastal mgmt. project reviews	78	70

Cut and Sold on State Lands
1959 ~ 1991

Year	Annual Sales Volume (MBF)	Annual Cut Volume (MBF)	Cut Value ($)
1959-66	231,109	93,227	$238,415
1967	134,371	45,816	164,782
1968	97,948	47,974	162,210
1969	246,415	49,018	221,371
1970	14,926	53,568	229,101
1971	41,077	43,191	246,091
1972	23,110	50,591	401,133
1973	449,452	38,356	218,357
1974	21,146	51,241	376,450
1975	4,655	33,540	430,486
1976	2,358	41,714	73,043
1977	2,412	60,251	544,884
1978	6,932	30,301	638,806
1979	156,235	32,382	1,016,585
1980	4,949	47,547	1,254,500
1981	18,402	53,678	1,491,554
1982	24,154	35,198	488,512
1983	72,145	35,511	402,774
1984	21,087	28,044	833,793
1985	20,178	12,864	192,109
1986	10,469	18,995	233,862
1987	27,588	25,884	379,540
1988	27,475	25,177	515,980
1989	21,600	22,711	514,632
1990	35,783	18,603	477,580
1991	10,156	16,241	236,205

Sawtimber Calendar Year Average Stumpage Per MBF

Year	Aspen	Birch	Cottonwood	Hemlock	Sitka Spruce	White Spruce
1981	0.00	32.22	7.46	14.53	24.82	35.96
1982	0.00	27.27	10.00	10.92	28.24	25.65
1983	14.47	29.95	0.00	3.50	166.93	39.95
1984	10.60	26.70	0.00	0.00	32.72	20.20
1985	0.00	0.00	15.10	21.85	17.65	26.52
1986	20.13	30.00	15.10	9.22	19.44	25.00
1987	10.00	8.76	0.00	14.13	18.78	7.32
1988	2.03	0.00	9.42	3.00	97.80	21.11
1989	2.13	7.01	9.96	5.88	71.29	34.25
1990	0.00	6.86	10.00	3.67	46.95	17.14
1991	0.00	24.76	0.00	0.00	82.57	14.32

Cut and Sold Report by Region, CY 1991
Volume - MBF Scribner

Volume Cut

Region	Sawtimber	Other Products[1]	Volume
Northern	7,000.0	4,000.0	11,000.0
Southcentral	1,412.0	1,101.0	2,513.0
Southeast	2,728.4	0.0	2,728.4
Total	**11,140.4**	**5,101.0**	**16,241.4**

Volume Sold

Region	Sawtimber	Other Products[1]	Volume
Northern	4,100.0	5,419.0	9,519.0
Southcentral	349.0	216.0	565.0
Southeast	72.2	0.0	72.2
Total	**4,521.2**	**5,635.0**	**10,156.2**

[1]Other products include pulp logs, fuelwood, house logs, etc.

Contracts Issued by Type and Area
CY 1991

	COMMERCIAL USE			PERSONAL USE		
	Fuelwood Sales	Saw log Sales	Beach log Salvage	Fuelwood Permits	House log Sales	Saw log Sales
Northern Region						
Fairbanks	14	15	0	645	10	0
Delta	2	2	0	118	2	2
Tok	1	1	0	108	0	0
Total	**17**	**18**	**0**	**871**	**12**	**2**
Southcentral Region						
Anchorage/Mat-Su	0	1	0	18	6	9
Kenai/Kodiak	0	1	0	25	2	0
Valdez/Copper River	0	0	0	14	0	0
Southwest (McGrath)	0	0	0	0	0	0
Total	**0**	**2**	**0**	**57**	**8**	**9**
Southeast Region						
Juneau	1	1	7	0	0	0
Haines	0	1	0	0	0	1
Ketchikan	0	0	4	0	0	0
Total	**1**	**2**	**11**	**0**	**0**	**1**
GRAND TOTAL	**18**	**22**	**11**	**928**	**20**	**12**

Special Services and Activities

Arbor Day

Each spring communities around the country set aside a time to celebrate the beauty and usefulness of trees by holding special tree planting ceremonies and activities. In Alaska, Arbor Day is the first Monday in May. Planting trees is but a starting point; Arbor Day gives us the opportunity to educate people about he value and importance of trees and their ecological and economic roles. The division supported and participated in the following Arbor Day activities in 1991:

- provided tree seedlings to the Society of American Foresters to distribute at shopping malls,
- sent 8,000 seedlings home with school children in Fairbanks, along with information about proper planting and care,
- DNR Commissioner Harold Heinze, State Forester Bob Dick and U.S. Forest Service Regional Forester Mike Barton led a tree planting ceremony on the University of Alaska campus in Fairbanks.

Smokey shows off his fire truck during a fire prevention program in the Mat-Su area.

Delta outdoor classroom

Five hundred fourth and seventh grade students attended an outdoor classroom in Delta, sponsored by the Division of Forestry, Department of Fish and Game and the Soil and Water Conservation Service. Forestry staff focused on measuring heights and diameters, and determining the volume of the measured trees. An increment borer was used to determine age. Both students and staff enjoyed their learning experience.

Earth Day 1991

Division of Forestry staff in Fairbanks sponsored a forestry booth for Earth Day, with the theme, "Forestry—the Initiator of Sustainable Living." They gave away tree seedlings and tips on planting and care, had a forest products display, and offered a number of hands-on tree activities.

Smokey Bear

As he does every spring, Smokey Bear emerged from hibernation and toured schools in Fairbanks. In addition to his "learn not to burn" message, he talked about the importance of trees and wood products in our daily lives. Smokey encouraged students to be good citizens of the earth by helping renew our forest resources and gave each student a Siberian larch seedling to plant at home.

Southwest Area staff made presentations in nine schools along the Kuskokwim River, teaching fire prevention and wise burning procedures to 378 students. Pamphlets and Smokey Bear educational materials were given to the students and teachers. These 30-minute programs covered:

- fire history in the local area
- how human-caused fires are started
- what to do when you spot a fire
- tips for making a safe campfire and burning trash
- nature-caused fires.

Mat-Su student interns

A crew of high school interns spent the summer working for the division in the Mat-Su area. The crew planted 9,863 seedlings in the Willer-Kash area near Willow. Planting was interrupted during fire season but completed by August 1.

The interns were assigned to two small fires for training and to one project fire at Galickson Creek in Takotna, where they spent 14 days. Their final projects for the summer were removing hazard trees in state parks and helping the Mat-Su Borough lay out a timber sale.

Homer Demonstration Forest

The Homer Demonstration Forest covers 360 acres of state-owned land just northwest of Homer. It was established in 1986 and is managed by the Division of Forestry.

In 1991 a draft framework plan was prepared by the USDA Soil Conservation Service based on guidance by the Division of Forestry, an interagency steering committee and members of the Homer Community. The plan provides a framework for the use and management of the forest.

The plan states that the Homer Demonstration Forest will be managed to provide areas where schools, interested organizations and the general public can:

- observe demonstrations and field trials of various ways to use and manage forests;
- learn first-hand about forest ecology;
- observe and learn about wildlife;
- recreate in ways that are compatible with other forest management objectives.

The forest will be managed so that:

- the quality of its soils, waters, plants, animals and air is maintained for future generations;
- the potential productivity of its reosurces is not diminished by their use.

The draft framework plan underwent public review late in the year and will be adopted by the steering committee in 1992. Detailed implementation plans will then be developed to specify exactly how the land used laid out in the framework plan are carried out.

Student intern cleans up slash near Big Lake.

Project Learning Tree

Project Learning Tree (PLT) is an environmental education program for kindergarten through 12th grade teachers. The goal of PLT is to help students develop the skills, knowledge and attitudes needed to make wise decisions regarding the use and management of natural resources and the protection of environmental quality.

PLT provides lessons, materials and activities for teachers, and training in how to use them in the classroom. PLT is cosponsored by the American Forest Foundation and the Western Regional Environmental Education Council. Alaska sponsors include the Alaska Forestry Association, Cooperative Extension Service, Department of Education, Forest Service, and the Division of Forestry. The PLT curriculum guides are being revised and made more appropriate for use in Alaska.

Dan Ketchum, the division's representative on the statewide Coordinating Committee, three other division employees and one Cooperative Extension employee attended a PLT workshop in October, which qualified them to conduct workshops for school teachers.

Alaska Board of Forestry

The nine-member Board of Forestry advises the state on forestry-related issues and regulations. Board members are appointed by the governor from groups and organizations that represent a wide range of forestry intersts.

Board members are Malcolm R. "Bob" Dick, state forester; Ralph Malone, non-governmental forestry representative; Andy Miscovich, mining organization representative; Loisann Reeder, recreational organization representative; John Sturgeon, Forest Industry Trade Association; William Thomas, native corporation representative; and Carl Yanagawa, non-governmental fish and wildlife biologist. There were two vacancies on the board in 1991.

WASF meets in Alaska

The Western Association of State Foresters and the Alaska Society of American Foresters held a joint annual meeting in Fairbanks in May. Presentations focused on Alaskan, as well as national, issues such as forest stewardship, public lands management and land ethics. A field trip highlighted the geologic history of the Fairbanks area, with visits to the permafrost tunnel, a large mining operation and several forest sites. Alaska State Forester Bob Dick was elected chair of the Western Association of State Foresters.

Tok tree-improvement workshop

The Alaska Reforestation Council sponsored a tree improvement workshop in Tok September 24-25, in cooperation with the University of Alaska Fairbanks, Cooperative Extension Service, Institute of Northern Forestry, U.S. Forest Service State and Private Forestry, and Division of Forestry. The workshop provided field foresters and technicians with elementary techniques for tree improvement applicable to Alaska.

Dr. Ed Packee, the workshop leader, gave presentations on silviculture and tree improvement, and led discussions on how silvicultural systems affect the future genetic value of stands, wood quality and seed zone maps. Dr. John Alden discussed basic tree genetics and gave a slide program on advanced tree improvement techniques used in Scandinavia.

The workshop included a tour of the Tok seed production area, where ideas for establishing seed production areas and superior tree selection were presented. Participants also visited a plantation of exotic tree species near Tok.

Training in 1991

Type	# of courses	Participants
Emergency	5	154
Wildfire for fire departments	5	112
Initial attack	15	99
Extended attack	15	38
Fire management	27	117
Administration	1	13
Supervision and management	9	11
First aid and safety	1	1
Computer management	8	21
Technical resource training	3	12
Forest management	8	26
Totals	**97**	**604**

Appendices

Fiscal Year 1991 Actuals

(in thousands)

Funding Sources	Forest Management	Fire Suppression
General Funds	$9,175.4	$27,531.2
Federal Funds	444.3	23,446.8
Other Funds	630.0	27.1
Totals	**$10,249.7**	**$51,005.1**

Positions		
Permanent Full-time	93	1
Permanent Part-time	138	0
Non-Permanent	17	950
Staff Months	1,970	2,012

Resource Management	Northern Region	Southcentral Region	Southeast Region	Central Office	Totals
Resource Management	699.7	363.4	448.7	259.0	1,770.8
State Forest Nursery				73.4	73.4
Board of Forestry				3.8	3.8
Firewood Access	24.0	14.0			38.0
HB331 Forest Practices		155.5	122.6	156.8	434.9
HB15, Sec 128 Cooper Landing Fuel Reduction Project		65.7			65.7
Subtotal	**$723.7**	**$598.6**	**$571.3**	**$493.0**	**$2,386.6**
Fire Management					
Pre-suppression	1,927.0	2,896.9	22.0	506.3	5,352.2
Rural Community Fire Prot/Fed				71.2	71.2
Anchorage School District Interns		56.0			56.0
Subtotal	**$1,927.0**	**$2,952.9**	**$22.0**	**$577.5**	**$5,479.4**
Forest Administration					
Federal Coop Forestry Assistance				358.1	358.1
Forest Administration	404.4	395.9	111.9	512.3	1,424.5
Unbudgeted RSAs				601.1	601.1
Subtotal	**$404.4**	**$395.9**	**$111.9**	**$1,471.5**	**$2,383.7**
Totals:					
Forest Management	**$3,055.1**	**$3,947.4**	**$705.2**	**$2,542.0**	**$10,249.7**
Fire Suppression					**$51,005.1**
Grand Total					**$61,254.8**

Fiscal Year 1992 Budget

(in thousands)

Funding Sources	Forest Management	Fire Suppression
General Funds	$9,560.5	$3,069.4
Federal Funds	705.3	5,350.0
Other Funds	33.8	0
Totals	**$10,299.6**	**$8,419.4**

Positions		
Permanent Full-time	88	2
Permanent Part-time	127	3
Non-Permanent	17	750
Staff Months	1,829	1,545

Resource Management	Northern Region	Southcentral Region	Southeast Region	Central Office	Totals
Resource Management	937.7	531.3	701.3	345.3	2,551.6
Forest Regeneration Center (nursery)				493.8	493.8
Board of Forestry				10.7	10.7
Subtotal	**$973.7**	**$531.3**	**$701.3**	**$849.8**	**$3,056.1**
Fire Management					
Pre-suppression	1,700.3	2,827.2	28.2	419.0	4,974.7
Rural Community Fire Prot/Fed				77	77
Anchorage School District Interns		58.4			58.4
Subtotal	**$1,700.3**	**$2,885.6**	**$28.2**	**$496.0**	**$5,110.1**
Forest Administration					
Federal Coop Forestry Assistance				628.3	628.3
Forest Administration	513.74	420.2	119.3	451.9	1,505.1
Subtotal	**$513.7**	**$420.2**	**$119.3**	**$1,080.2**	**$2,133.4**
Totals					
Forest Management	**$3,187.7**	**$3,837.1**	**$848.8**	**$2,426.0**	**$10,299.6**
Fire Suppression					**$8,419.4**
Grand Total					**$18,719.0**

Aircraft Utilization Report

Category	FLIGHT HOURS					FLIGHT COSTS				
		Contract		Rental			Contract		Rental	
	DOF FEP[1]	Fixed Wing	Rotor Wing	Fixed Wing	Rotor Wing	DOF FEP[1]	Fixed Wing	Rotor Wing	Fixed Wing	Rotor Wing
1. Detection	0	0	29.1	83.2	1.9	0	0	14,550	17,031	2,073
2. Air coordination	0	0	0	0	0	0	0	0		
3. Reconnaissance	524.4	0	0.2	50.7	41.6	0	0	100	10,555	40,440
4. Helitack	0	0	717	0	8.3	0	0	329,720	0	13,120
5. Retardant/bucket	0	170.3	29.6	0	28.2	0	358,501	14,800	0	45,368
6. Prepositioning	0	4.0	8.7	2.7	32.4	0	8,262	4,350	560	39,783
7. Cargo/paracargo	0	0	21.6	0.6	15.4	0	0	10,800	161	26,180
8. Fire Transport	0	296	118.2	1,472.1	970.8	0	29,598	58,950	997,568	1,637,102
9. Non-fire transport	0	0	10.4	10.2	2.4	0	0	5,200	11,159	1,140
10. Smokejumper delivery	0	0	5.3	0	0	0	0	2,650	0	0
11. Training/maintenance	35.2	0	7.4	15.7	0	0	0	3,700	830	0
12. Misc./medi vac	0	0	14.6	1.5	10	0	0	7,400	305	5,132
13. Totals	**559.6**	**470.3**	**692.1**	**1,636.7**	**1111**	**$367,910**	**$396,361**	**$452,220**	**$1,038,169**	**$1,810,336**
14. Passengers	0	403	8,016	1,799	9,556					
15. Retardant-gallons	0	377,840	0	0	0					
16. Water/foam-gallons	0	0	474,763	0	161,584					
17. Cargo (lbs)	0	17,399	703,578	290,834	862,505					
18. $ availability in excess of flight $						0	$494,984	$1,271,788	$20	$73,796
19. Fuel-gallons		45,388	24,807	0	14,691					
20. Fuel cost							0	$39,592	0	$16,099

Total Line 13	**$4,064,996**
Plus Line 18	**$1,840,588**
Plus Line 20	**$55,691**
Total Cost	**$5,961,275**

[1] Division of Forestry Federal Express Property

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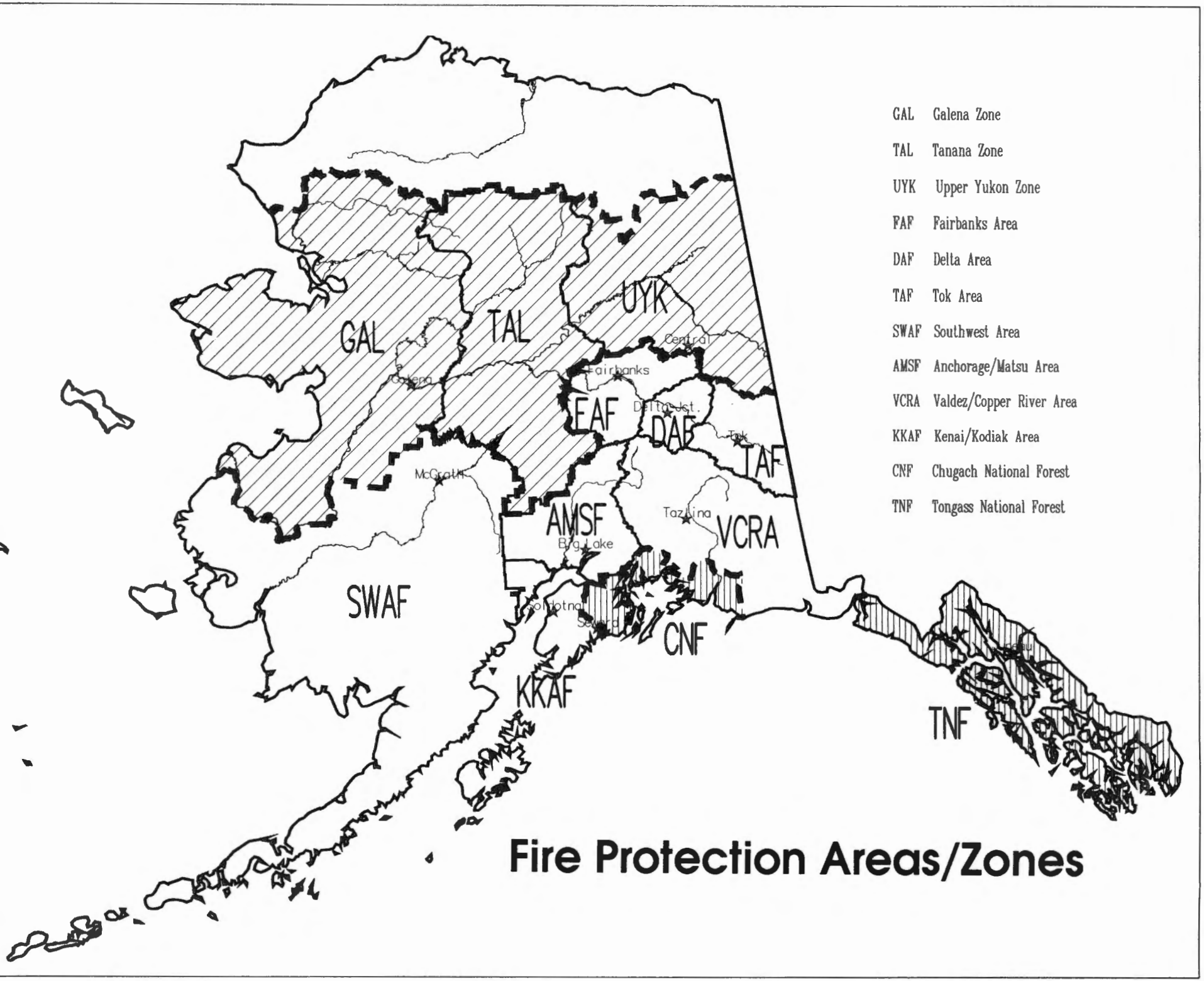
GAL Galena Zone
TAL Tanana Zone
UYK Upper Yukon Zone
FAF Fairbanks Area
DAF Delta Area
TAF Tok Area
SWAF Southwest Area
AMSF Anchorage/Matsu Area
VCRA Valdez/Copper River Area
KKAF Kenai/Kodiak Area
CNF Chugach National Forest
TNF Tongass National Forest
GAL
TAL
UYK
Central
Fairbanks
Galena
EAF
Delta Jct.
DAF
Tok
TAF
McGrath
AMSF
Tazlina
VCRA
Big Lake
SWAF
Soldotna
Seward
CNF
KKAF
TNF
Fire Protection Areas/Zones

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