Alaska Department of Natural Resources Division of Forestry 1990 Annual Report



Tok River Fire 1.9.9.0



CIRC. DOC.

ALASKA STATE



Governor Steve Cowper is presented a tee-shirt by Fire Operations Forester Joe Stam during the Governor's presentation of awards at the Fall Fire Review.

Cover

On the cover is a copy of a water color of the Tok fire by California artist Alex Hoshovsky. Mr. Hoshovsky was passing through Tok as the fire neared the community and stopped to paint the picture. The original was given to the Division of Forestry and now hangs in the Tok Area Office.

Table of Contents

STATE FORESTER COMMENTS	i
HIGHLIGHTS	1 1
FIRE MANAGEMENT Wildland Fire Protection Fire Season 1990 Fire Cooperator Assistance Fire Program Review Aviation Rural Community Fire Protection Program	2 2 3 5 7 0 2
FOREST PRACTICES	3 3
RESOURCE MANAGEMENT 14 State Forest Land 14 Timber Sales 16 Reforestation 17 State Forest Nursery 19 Forest Tree Improvement 20 Forest Health 21 Cooper Landing Fuel Reduction Project 22 Forest Insect and Disease Conditions 24	556790123
COOPERATIVE PROGRAMS 20 Service Forestry 20 Urban Forestry 20	6 6 6
SUPPORT SERVICES 23 Project Learning Tree 24 Arbor Day 24 Board of Forestry 24 Strengthening the Team 3	8 8 9 1
FISCAL REPORT	3
APPENDIX	7
DIRECTORY 44	5
ORGANIZATION CHART 44	7



Malcolm R. "Bob" Dick, Director

Several Oriental cultures name their year...Year of the Cat, Dog, Rat and the like. For the Division of Forestry, 1990 was the Year of Challenges. First came the Forest Practices Amendments, passed into law in May. Our next challenge also came in May with our first Project Fire near Teklanika. Thus began a roller-coaster fire season that saw crews busy till snowfall. A totally unanticipated event was a bumper crop of white spruce cones that ripened during the intense fire season. Concurrent with the "all hands" fire season and cone crop, was the laborious drafting of forest practices regulations, upgrading the Eagle River Nursery and timber sales, forest practices inspections and the myriad other things we do. To cap it off, we published and took to public hearing an agency review draft of "Alaska Forests-Our Future," a first time effort at an agency philosophy and business plan.

I am particularly proud of the division's fire season safety and performance record. Thousands of people and hundreds of aircraft operated under very, very difficult circumstances to control fires that threatened several communities. We had many incidents but no severe injuries or major aircraft accidents. Our thanks go to the men and women of the division, BLM and the Forest Service who made it all happen. Special kudos go to the unsung heroes who are still laboring over the paper work!

Forest Practices gets bigger every time we turn around. Division responsibilities made a major leap via the statutory amendments. The most important changes deal with water quality, fisheries protection and enforcement provisions. The division will implement regulations in 1991. In addition, the new regulations will require substantial training and monitoring programs as we move forward. Lots of work to do here.

The division has recognized for several years that our reforestation program needs help. The Alaska Reforestation Council agreed with us and enthusiastically took our case to the 1990 legislature. An appropriation resulted in \$1.7 million destined for the program. Badly needed facilities and nursery staff upgrades are first priority. The ultimate goal is dependable reforestation throughout the state. This legislative action is particularly appreciated by the division. Raw materials for various forest products are an important part of the division's job description. The division strives to maintain a land base and technical staff to ensure a flow of raw material throughout the state. Our timber sales and personal use sales programs continue to provide forest products in the state but we would like to do more. An ever increasing interest in Alaskan forest products may allow us to increase our timber sales program, particularly in the interior.

Yes, 1990 was a year of challenges. It was also a year in which we met head on those challenges. 1991 will not be any easier although we hope the fire season will be less dramatic! We are ready to serve our customers, state citizens, to the best of our ability.



Governor Cowper presenting a water color of the Tok River Fire, painted and donated by visiting artist Alex Hoshovsky of California, to Dick Malchow, Tok Area Forester. (left to right: Frenchie Malotte, Dick Malchow and Bob Dick, Division of Forestry; Governor Steve Cowper; DNR Commissioner Rod Swope.)

Achievements

Highlights

Day-to-day activities can often be routine and repetitive, but in a collective fashion these tasks add up to major program accomplishments for the division.

• Processed 201 forest practices notifications for 55,091 acres of forest land and conducted 146 on-theground inspections. Added five new staff positions to forest practices for a total of 8.5 positions in this program.

• Responded to 460 fires which burned 981,291 acres of state protected land.

• Produced 586,086 seedlings for reforesting federal, state, private and municipal lands.

• Planted 303,843 seedlings on 707 acres of state harvested or burned land.

• Executed 59 commercial timber sales contracts and 22 beachlog salvage licenses for 35,783,200 board feet of sawlogs, pulpwood, fuelwood and other products.

• Issued 1,657 fuelwood permits, 15 houselog sales and 5 sawlog sales for personal use by Alaskans.

• Smokey the Bear fire prevention program presented to approximately 7,800 children and adults around the state.

• Co-sponsored a three-day workshop with the University of Alaska and the Institute of Northern Forestry on forest management.

• Held open houses at each area and regional office throughout the state on the division's Tree Program. One hundred and sixty people attended.

• Provided 622,899 hours of work for emergency fire fighters for total payroll of \$7,398,210.

• Sponsored or participated in 10 Project Learning Tree workshops for 110 educators.

• Passed through \$655,000 by cooperative agreement to the Kenai Peninsula Borough for spruce bark beetle work at Cooper Landing.

• Conducted a 12-acre prescribed burn for research efforts on the Bonanza Creek Experimental Forest and a three-acre burn for a scarification/reforestation project at Haines.

• Participated in Arbor Day plantings and programs around the state.

• Issued 2,793 burning permits as part of the fire prevention information program.

• Worked with the Department of Fish and Game on the Mat/Su Save the Moose Project.

• Prepared and held public meetings around the state on each area office's five year harvest schedule.

• Provided forest management expertise to the Department of Natural Resources planning process.

• Assisted local residents in forming the Kenai Peninsula Chapter of Global Releaf.

• Participated in a joint plan development along with the U.S. Forest Service, other agencies and private sector groups on addressing the fire hazard problem in the Cooper Landing area created by the spruce bark beetle.

Wildland Fire Protection

Fire management in Alaska is different, largely because Alaska has large blocks of undeveloped land and a small human population. And yet people are the main reason we manage wildfire. Cities and cabins, wildlife habitat management, resource protection are all things of citizen concern that are considered in our fire management program. The current fire management program has been developed over the last three decades. An estimated 1.5 to 2.5 million acres burned annually prior to this time. Data compiled in 1983 showed suppression efforts since 1969 reduced annual average acreage burned from 625,000 to 375,000.

Wildland fire suppression is administered by the State's Department of Natural Resources, 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. To facilitate these agreements, protection requirements and standards have been developed through an interagency planning process. Alaska is the only state covered by an interagency fire plan.

An important division objective for Alaska fire management planning is to reduce fire suppression costs. Some fires are beneficial to natural resources and, in some cases, damages from suppression action are greater than from the fires. The division cooperates in using a sophisticated prioritization method to determine which fires will be suppressed.

Some years like 1990, will produce more fires than can be physically attacked. Establishment of priorities serves to target suppression forces.

Federal and state land managers have cooperatively selected approximately one-fourth of the land base as requiring "Full Protection" (minimize acres burned), one-fourth as requiring "Modified Protection" and one-half "Limited Protection" (lands where fire is allowed to burn except when a higher valued resource is threatened). Since 1984, the state has allowed 195 fires to burn unimpeded on its lands.



Fire Season 1990

The 1990 fire season represents the third most severe season since 1957. A total of 460 fires burned 981,291 acres of state protected land. The first fire began in April. From April through June, 177 fires occurred and included a major 15,830-acre project fire near a community along the Teklanika River which burned from May 26 to August 29.

The second significant period of fire activity began on July 1 and from July through September, 283 fires occurred. A total of 228 new incidents occurred during July. Eight communities were threatened simultaneously. All federal and state agencies involved in village evacuation were convened to develop an "Operations Plan for Emergency Evacuation." This plan was adopted by the three suppression agencies and will be available for use in future years.

The Tok River Fire was 1990's most serious fire. It was initially reported six miles southeast of the town of Tok at 25 acres on July 1. Fire growth and behavior were officially described as "extraordinary". On July 4 Tok and a Coast Guard Long Range Navigation facility (LORAN master station) were threatened and evacuation began. Moderating weather conditions on July 5 allowed strengthening of control lines. The fire initially was declared contained on July 14 at 44,390 acres. Containment was lost on July 17 with a major run to the southeast, and eventually threatened Tetlin Village eight miles away. Evacuation was necessary. Control efforts continued until final containment was established on August 27. It is a credit to all involved that only two out-buildings were lost.



Fire burning north of Tok.

EMERGENCY OUT-OF-STATE CREW USE (20-person crews)			
Year	# of crews		
1970	40		
1973	6		
1981	18		
1982	4		
1985	39		
1986	22		
1987	59		
1988	54		
1989	61		
1990	7		

EMERGENCY FIREFIGHTERS WAGES PAID BY AGENCY					
Calendar	Yr. State	Federal	Total		
1980	614,887	600,561	1,215,448		
1981	1,705,360	2,898,293	4,603,599		
1982'	19,950	1,230,351	1,250,301		
1983	1,553,258	1969,374	3,522,532		
1984	234,388	507,004	741,392		
1985	561,238	2,656,350	3,166,588		
1986	2,515,750	2,832,208	5,347,958		
OT	561,770	·	561,770		
1987	646,674	5,352,799	5,999,473		
1988	4,474,107	5,146,861	9,620,968		
1989	1,805,955	2,276,175	4,082,130		
1990	7,398,211	5,765,547	13,161,758		
Total ¹ Special ap	Total22,091,54831,233,52353,273,917'Special appropriation due to Fair Labor Standards Act (FLSA)				





4

Fire Cooperator Assistance

Structure fire community assistance was significant throughout the season. Task Force and engine strike teams were mobilized numerous times. Fourteen volunteer and two municipal fire departments provided engines and personnel. Advanced EMT support was also provided where needed. State citizens may not recognize the assistance provided by the fire departments. We owe them a hearty, "Thank You."

The division's Fairbanks Area mobilized a Task Force of engines to assist them in initial attack during the periods May 26 through May 31, July 1 through July 9 and July 19 through July 27. Fire departments involved included Chena Goldstream, North Star, Ester, North Pole, University of Alaska, Steese and Moose Creek.

On July 5, 1990 two engine strike teams were mobilized for the Tok River Incident. The strike team configurations consisted of four engines from Valdez, five engines from Glennallen, and one engine plus two tenders from Tok. On July 9, another strike team was mobilized and contained six engines (three Mat-Su and two Anchorage) plus a Battalion Chief and a single engine from Northway.

Engines from Glennallen and Kenny Lake assisted at the Tanacross Retardant Base as well as Crash Rescue Engines from Fairbanks International Airport. Fire department personnel also provided significant advanced EMT support through the entire incident.

Structure fire departments responded to 54 wildland fire incidents statewide under cooperative agreement and assisted on an additional 69 responses or 22% of the incidents. Their involvement was a significant part of a record year demand. Again, our thanks!

The Canadian Yukon Forest Service gave the division outstanding support and cooperation during the entire fire season and especially for the Tok River Fire. Every time we asked for any resource they responded without hesitation and at times gave us tactical fire resources that they needed for their own operations. The support on the Tok River Fire was without a doubt instrumental in saving structures in the village and perhaps saving Tok itself.



Keith Kepki, head of Yukon Forest Service, Fire Management, receives a State of Alaska Commendation Award from Governor Cowper.



Dick Seaman, Yukon Forest Service Protection Coordinator, accepts a State of Alaska Commendation Award on behalf of the retardant tanker pilots.



Gene Schloemer, Alaska Fire Service Manager, recognized by Governor Cowper for Fire Service support.

The Alaska Fire Service was unselfish in their support. They let areas of their protection burn while supporting the division with smoke jumpers, air tankers, air attack and overhead.

Governor Cowper made presentations to Keith Kepke and Dick Seaman of the Yukon Forest Service and Gene Schloemer of Alaska FireService for their unselfish support and cooperation during the entire fire season.

Fire Program Review

The 1990 fire season was the worst in the history of the division. The problems encountered during this fire season tested the division, its people, its policies and procedures and its cooperative relationships. State Forester Bob Dick requested assistance from the U.S. Forest Service in conducting a review of the division's response and performance in dealing with the wildland fires in 1990.

In response to the request, an interagency team was organized that involved the following people:

• Richard M. Bacon, Director, Aviation and Fire Management, U.S.D.A. Forest Service, Milwaukee, Wisconsin

• Carson Bergland, Fire Control Supervisor, Minnesota Division of Forestry, Grand Rapids, Minnesota

• Roger Erb, Fire Management Specialist, U.S.D.I. Bureau of Land Management, Washington, D.C.

• Ed Lewis, U.S.D.I. Bureau of Land Management, Anchorage, Alaska

• Charles Lundfeldt, Fire Chief, Valdez Fire Department, Valdez, Alaska

• Steve Servis, Fire Management Officer, Gila National Forest, U.S.D.A. Forest Service, Silver City, New Mexico

• William C. Teic, Deputy Director for Fire Protection, California Department of Forestry and Fire Protection, Sacramento, California

The interagency review team convened on September 2, in the State Forester's office in Anchorage and closed out there on September 7 with a brief overview of its findings. In between the team reviewed documents and briefing papers and visited with division employees, cooperators and land managers in Anchorage, Fairbanks and Tok.

The review team recognized that many things in the division were going right:

• An automated payroll system for Emergency Fire Fighters.

• Customer satisfaction with the suppression services by major land management agencies.

• Use of the Canadian Fire Danger Rating System and METAFIRE.

• The safety record for the year.

Several criticisms were made:

• The division's air program needs attention.

• The division doesn't have the depth of fire fighting resources to deal with the average "bad" year.

• The division must become a leader in the state's fire service community.

• The division must build a constituency.

The report provides information and recommendations the division will work with in the years to come as we continue to develop our organization.

Special visitors to this year's postseason review were Governor and Mrs. Cowper. Governor Cowper stopped by to personally hand out State of Alaska Commendation Awards to division employees who provided superior performance during the 1990 fire season. Employees receiving the Governor's Award were Scott McEwen, Joe Stam, Cheryl Surface-Wilcock, Andy Alexandrou and Mike Bobo.



Scott McEwen, State Intelligence Coordinator, recognized by Governor Cowper for his outstanding performance in introducing the Canadian Fire Danger Rating System to Alaska.



Joe Stam, Fire Operations Forester, congratulated by Governor Cowper for his professional interagency cooperation during the 1990 fire season.





Mike Bobo, Intial Attack Foreman, recognized by Governor Cowper for his involvement in the successful defense of Tok. The Governor noted that Mike's actions were instrumental in saving homes, if not a significant portion of the entire community.

Andy Alexandrou, Acting Southwest Area Forester, receives State of Alaska Commendation Award from Governor Cowper for outstanding performance during the 1990 fire season.





Division employees attending the fall fire review in Anchorage.

Every fall, land management agency representatives and fire managers get together to discuss the previous fire season. Many issues are addressed and resolved. Others are addressed over the winter by employees assigned to the task.

Some of the issues brought forward for discussion were:

- Problems with wildland fire in an urban area;
- · setting priorities for resources;
- monitoring limited action fires;
- use of the escaped fire analysis.

State Forester Bob Dick took the opportunity to thank the division employees for their dedicated service during the long and stressful 1990 fire season. Special Certificate of Appreciations were presented to the following employees for their outstanding performance of duties:

Northern Region

Ruth Earnshaw, Ric Plate, Jim Couckuyt, Mike McGowan, Gary Reabold, Ray Kraemer, Mark Rutherford and Sandy Gabbard

Southcentral Region

Larry Adams, John LeClair, Ida Hazlett, Linda Abruzzino, Mel Monsen, Barbara Phegley, Thomas Smayda, Kenneth Bingham, Dave Dehart, Tom Marok, Randy Hart, Lynn Wilcock and Chris Olson

Fire Management

Dave Hendren

Aviation

Alaska's unprecedented 1990 fire season presented the division and our cooperating agencies with many challenges. The scope and complexity of aircraft operations required the division to utilize all our normal agency resources and many rarely used agencies and aircraft. The National Guard with helicopter support, the FAA's temporary control tower in Tanacross, and the Canadian air tankers are examples. The performance of the Yukon Forest Service retardant tanker pilots and their "bird dogs" (lead planes) was extremely competent and professional. Many other organizations in Alaska and the lower 48 participated on our behalf.

Hundreds of aircraft and flight crews are involved annually in support of wildfire suppression in Alaska, from supercubs to Boeing transports, helicopters and retardant tankers. Our division reliance on aircraft is the highest of any fire prone state or Canadian province.

Helicopter resources were the most difficult to obtain again this year and will probably continue to be scarce in the future. Prioritization was essential for the most effective use of the available medium helicopters.

Aviation safety was excellent, with only one hard landing accident and no injuries, in thousands of aircraft operations. The division logged a total of 7,936 flight hours, moved 3,020,215 pounds of cargo by aircraft and moved 40,798 passengers.

The Palmer Air Tanker Base loaded a record 75,500 gallons of retardant, 210,000 pounds of cargo and 131 passengers throughout the season. One division employee was assisted by several temporary workers to accomplish these tasks.

After many years as military trainers and eight years with the division, Forestry's T-28 aircraft are about ready for retirement. Maintenance problems and poor flying conditions due to smoke resulted in lower T-28 flight hours in the Northern Region. However statewide the T-28's flew 579 hours, an increase of 11 hours over 1989.





Division of Forestry's T-28s.

The 1990 Alaska fire season demonstrated the importance of the national and international multi-agency wildfire programs, the sharing of resources, personnel, and exchange of technology required for effective fire suppression.

The division's senior air attack pilot Clay Hogan, retired in August after ten years with the division. Clay's dedication and professionalism was appreciated by everyone in the division and the fire community.

The number of flight hours of both contract and rental aircraft increased dramatically in 1990 due to the extraordinary fire season. Contract aircraft flew a total of 1,732 hours in 1990 compared to 543 in 1989. Use of rental aircraft went from 856 hours in 1989 to 5,625 in 1990. The majority of Alaska's aviation companies are utilized by the division each year, and 1990 was no exception, Alaska's aviation community provided the highest percentage of aircraft and pilots used statewide in fire suppression.

One exception to using Alaskan aviation companies during 1990 was the support received from the Yukon Forest Service. They furnished three bird dogs (lead planes) and nine air tankers, including two CL-215's. Total hours for the nine air tankers were 157 in which they delivered 365,519 gallons of foam, 126,366 gallons of retardant and 33,106 gallons of water.



Canadian CL 215 from the Yukon Forest Service in service on the Tok fire.

Rural Community Fire Protection

The division administers the Rural Community Fire Protection (RCFP) grant monies distributed through the U.S. Forest Service. Under this program, volunteer fire departments serving communities of under 10,000 people may apply for grants on a 50/50 cost share basis for up to \$5,000 to organize, train and equip fire protection units. This year, the division approved 20 grants totalling \$71,152 to purchase portable pumps, radios, protective clothing, smoke detectors, self contained breathing apparatus, firehose and supplies, and conduct training.

1990 Successful R.C.F.P. Fire Department Grants

Minto	\$ 2,550
Bettles	4,760
Circle	2,100
Chena Goldstream	1,600
Deltana	2,500
Shishmoref	5,000
Akhiok	3,098
Dillingham	5,000
Sutton	1,610
Ouzinkie	3,000
Kalifonsky Beach	4,932
Aniak	2,169
Port Lions	600
Woman's Bay	2,078
Unalaska	5,000
Meadow Lakes	3,545
Fish Hook	2,960
Ninilchik .	5,000
Seward	5,000
Metlakatla	5,000
Port Alexander	3,650
Total	\$71,152

Forest Practices

Forest Practices

Changing public values have resulted in a demand for more stringent protection during forest harvest operations. New laws provide expanded protection of public resources such as water quality, certain fish and wildlife habitat and wetlands on public and private lands. These demands resulted in increased regulations on the use of private, state and municipal forest harvest operations.

A Forest Practice Section was created in the state forester's office and staffed with chief and logging engineer positions. The division's mission in forest practices is to protect water quality, fish and wildlife habitat and other public forest values. The new section will see that the mission is carried out by the field staff through the use of appropriate forest practices.

A comprehensive set of revisions to the 12-year old Forest Resources and Practices Act (FPA) was signed into law on May 12, 1990 by Governor Cowper. Some sections took effect immediately with the remainder of the FPA taking effect October 1, 1990. The revision's established stringent new requirements to protect fish habitat and other non-timber resources on state, municipal and private lands. The revised act provides for:

• An expanded system of enforceable regulatory standards;

• mandatory no-cut buffers in specified riparian management zones;

- enhanced notification with public and agency review;
- revised enforcement procedures and strengthened penalties for violations;

• clearly defined roles for the Departments of Environmental Conservation and Fish and Game;

• increased emphasis of wildlife and other non-timber used; and

• a newly constituted Board of Forestry which balances industry and environmental interests.



Voluntary leave strip around a small pothole lake used by waterfowl.

Forest Practices

The forest practices program processed 201 notifications covering operations on 55,091 acres during the year from operators starting forestry operations. The notifications and onthe-ground inspections were handled by a staff of three full time employees located in Juneau and Ketchikan and two employees who split their time between fire and forest practices in Kenai and Glennallen. The division obtained additional funds to increase forest practice field compliance with passage of the revision of the FPA. Additional full time staff positions were added to the Juneau, Ketchikan, Kenai and Anchorage offices.

Draft regulations to implement the new revisions are still being hammered out by timber industry leaders, resource agencies and other forest user groups. Public hearings should be taking place in the spring of 1991. Upon adoption of the regulations a series of training sessions around the state will be undertaken to inform landowners, operators, division and agency staff on the FPA requirements and regulation implementation.

Forest Practice Activities	1989	1990
Number of Notifications	215	201
Acreage Under Notification	84,908	55,091
Number of Inspections	127	146
Number of Training Sessions	8	5
Alaska Coastal Management		
Project Reviews	118	78

State Forest Lands

Resource Management The amount of forest land available to produce forest resources greatly influences the potential supply of forest resources available to Alaskans.

Forest land uses are based upon landowner management objectives and policies. In the case of public state lands, such objectives and policies are established by legislative direction and mandated planning processes.

Not all forest lands are capable of growing commercial quantities of wood for industrial use. Due to landowner objectives or legislative constraints, not all lands which are capable of commercial timber production are managed for timber production. Alaska's state commercial forest land base has declined due to allocation of forest land to uses that preclude timber harvest. The division has made planning processes a high priority. Our goal is to keep as much forest land as possible available for resource production. Present planning processes underway include the Sustina Valley, Tanana Valley State Forest, Kenai Peninsula and Yakataga.



Timber Sales

The division's mission is to manage forest land and to protect the forest's natural values while supporting Alaska's economy through development of timber and wood products.

An important division priority is the timber sale program. In 1990 we provided 35,783,200 board feet (all products) to Alaska industry and citizens for many uses. Sawlogs and pulpwood (26,998,800 board feet) are commercially sold. House logs, fuel wood and other products (8,784,400 board feet) are made available to all citizens through small commercial and personal use sales. Forest products are an increasingly important part of the Alaska economy. In 1990, the division returned to the General Fund \$477,580 from all products cut. The volume of 18,603,300 board feet was down just over 4,000,000 board feet from 1989. This was due to litigation involved with the State/University Icy Bay timber rights and the Mental Health Trust Lands. Regional cut and sold information can be found in the Appendix.



Interior white spruce ready for export from the Port of Anchorage.

Reforestation

Reforestation is to forestry what good fish returns are to fishers. Without appropriate reforestation, Alaska forests would be depleted. Reforestation can be natural, as is the case in Southeast Alaska, or it can be artificial.

Replanting harvested or burned areas received a much needed boost when state lawmakers appropriated \$1.7 million for the effort in the final days of the 1990 session. The legislation was successful in large part due to the efforts of the Alaska Reforestation Council. The Reforestation Council. formed in June, 1988, is a non-profit group of foresters, agronomists, land planners and representatives of the business community, resource agencies and others interested in the future of Alaska's forests. The division is indebted to all those who recognized our reforestation needs and worked to secure the funding.

Reforestation is much more than just planting seedlings. Seedlings must be grown from seed and seed must be collected from appropriate tree species in areas where we expect to replant seedlings. The division attempts to have on hand a five to ten year supply of several different species (Sitka spruce, white spruce, hemlock, Alaska paper birch are the most common) from several hundred geographic areas. This is complicated by the fact most species have inconsistent cone crops. One year in five or ten may be the norm. When a good cone crop appears for white spruce, for example, the division must replenish its supply of seed. This causes complications. In 1990 a good cone crop coincided with a catastrophic fire season. The division field staff sandwiched cone collection into a very busy year.

A total of 917 bushels of white spruce cones were purchased from the public or collected by division crews from the Big Lake, Fairbanks, Delta, Tok and Copper river areas. Five bushels of Sitka spruce were collected from Haines and one bushel of Norway spruce came from Anchorage.

An aerial collection trial was based out of the Delta Area Office during August 29 thru September 1, 1990. A 206 B Bell helicopter was hired for use with the Fandrich Aerial Shear. After a day of training for pilot and ground crew to become familiar with the operation the next three days were spent collecting cones from the Quartz Lake and Johnson slough areas. A total of 55 bushels were collected. While the test was a technical success, division staff felt the cost was too high for operational cone collection by helicopter.



Fandrich aerial cone shear.

Fandrich aerial cone shear topping white spurce in the Delta area.

All cones were stored at the Eagle River Nursery where seed will be extracted during the winter. A total of 27.8 pounds of seed were extracted from cones collected in 1989.

The division cooperated with the Alaska Department of Fish and Game to promote moose browse. One test involved shearing mature willow which had grown beyond the reach of browsing moose. The sheared areas are expected to sprout back and provide easily accessible food for moose.

Another test involved cutting willow stems for propagation in new areas. About 300 stems were cut into one foot sections and shoved into the ground. Despite the hard packed soil, 50 to 60 percent of the stems grew and supported foliage in 1990.

In keeping with the divisions aim to replant each year's harvested acres, a total of 303,843 seedlings were planted on 707 acres. The Southeast



Region planted 80,173 Sitka spruce on 241 acres within the Haines State Forest; the Southcentral Region planted 56,300 white spruce on the Kenai Peninsula and the Mat/Su Valley; and the Northern Region planted 117,400 white spruce, 33,970 lodge pole pine and 16,000 Chinese larch within Tanana Valley State Forest.

Division foresters estimate there are between eight and fourteen thousand areas needing some amount of replanting, most of it in Southcentral and Interior forests. The backlog has come about from salvage sale harvested beetle-killed spruce in Southcentral, and fire-destroyed areas in the Interior. This backlog is recognised by division foresters and is being reduced as funding allows. Present day sales are not a part of this backlog and are being reforested as part of our routine operations. The 1990 fire season added to the number of acres needing reforestation. Those acres will be added to the pool as our checks are completed.

REFORESTATION	1989	1990
Seedlings grown	800,000	586,086
Hardwood cuttings grown	7,500	0
Bushels of cones collected	107	245
Pounds of seed processed	32	28
Acres surveyed for regeneration	816	370
Acres scarified	1,228	421
Acres direct-seeded	486	0

State Forest Nursery

Resource

Management

Late in 1989 the Alaska Reforestation Council (ARC) purposed a change in the name and mission of the Eagle River Nursery.

The suggested new name would be Forest Regeneration Center, and its role would include those functions usually associated with a Forest Tree Improvement Program such as: production of root stock for grafting and grafting of vegetative material for the establishment of seed orchards; the processing of cenes, seed and pollen from seed areas. superior trees and seed orchards; and the production of seedlings for progeny tests, provenance tests, operational planting, etc., and the record keeping that goes along with those activities.

The idea behind this suggestion was that the name Forest Regeneration Center would reflect a broadened mission and would provide expanded support for the nursery.

At the same time a long time Department of Natural Resources employee, with many years devoted to forestry, drowned on the Kenai River. Lawrence A. "Dutt" Dutton began his forestry work in 1962 at Haines and moved to Anchorage in 1966. As management forester in the State Forester office, Dutt was involved in the nursery development from the pilot project in 1974 until the late 1970s when he was appointed Southcentral Regional Manager for DNR -Division Land & Water Management.

In recognition to Dutt's many contributions to state citizens, the division and DNR, the Eagle River Nursery name will be changed to the Lawrence A. Dutton Forest Regeneration Center. Managing and protecting Alaska's forest to maintain the status quo is not adequate to sustain the increasing uses of the resources. Seedlings must be planted every year to replace losses to insects, fire and to reforest harvest sites.

A total of 586,086 seedlings were supplied to the following clients:

• State - Division of Forestry 452,536, Division of Agriculture 800;

• Federal - Chugach National Forest 12,054, Denali National Park 25,408;

• Private - Citifor 6,000, Chugach Forest Products 14,600, Society of American Foresters 8,426;

• Research - Institute of Northern Forestry 45,862, State and Private Forestry (Kenai Project) 20,400.

As previously noted, the division received additional reforestation funding from the 1990 legislative session to improve and expand the nursery by adding new greenhouses at Eagle River. An engineer's report on upgrading the water and electrical systems indicated that most of the available funds would be consumed for that purpose alone. A decision was made to look at other options.

The decision was made to co-locate the forest nursery operations at the Division of Agriculture's Plant Materials Center (PMC) near Palmer. The PMC operates on 405 acres in carrying out its two programs: The North Latitude Revegetation and Seed Production Project and the North Latitude Vegetable and Landscape Crop Improvement Project. With room to handle future expansion of the nursery into bare root research and possible production and compatible PMC programs the move is enthusiastically endorsed by both division.

Resource Management

1990 Seedling Production					
Species	Number	Species	Number		
Sitka Spruce	42,112	Solidago Multirdiata	6,176		
White Spruce	379,198	Senecio Lugens	4,704		
Lodgepole Pine	60,574	Hedysarum Alpinum	4,225		
Scotch Pine	4,300	Oxytropis	4,224		
Paper Birch	10,376	Aster Sibericus	3,584		
Siberian Larch	51,724	Arnica Frigida	1,696		
Tamarack	200	American Green Alder	800		
Blue Spruce	784	ThinleafAlder	7,000		
Siberian Peashrub	784	Sitka Alder	3,626		
TOTAL 586,086					

Forest Tree Improvement

Although environmental and silvicultural factors can produce significant gains in tree growth, the scientific development and production of superior trees through genetic improvement can also produce gains of 5 to 10 percent.

Tree improvement through superior tree cone selections and other means helps ensure strong healthy seedlings. The division through a grant to the Alaska Reforestation Council (ARC) has set in motion the development of a tree improvement plan. The primary goal of the division's tree improvement program is to coordinate the genetic improvement of selected tree species grown in the nursery. Faster growing , higher quality trees produce an economically and ecologically more valuable forest resource. A graduate student from the University of Alaska Fairbanks has been hard at work on the project with completion set for 1991. The ARC project will produce the following:

- Seed collection guidelines for Alaska;
- a Plus Tree Selection Manual;
- a white spruce seed production area at Tok;

• a paper birch seed production area in the Mat-Su Valley; and

• seed zone maps for the entire state.

Forest Health

A healthy forest can be described through management objectives for the forest. A forest managed for wilderness will have one description of a healthy forest. A forest managed for resource production will have very different criteria. Both, however, need conscious decisions as to how they will be managed.

Forests have evolved with a host of endemic insects, diseases and other agents. The major factor in the overall forest health is the vigor of the trees and other forest vegetation. The natural role of insects and diseases in forest ecology is becoming better understood. We know, for example, that pest attacks usually are directly related to tree vigor or health. The division's primary focus in The Integrated Forest Pest Management Program (IFPM) is to help landowners and land managers develop meaningful forest management plans and programs, to encourage a good neighbor policy among landowners and to promote a positive public perception toward good forest management practices. Another goal is to develop an understanding of the potential for tree hazards and increased fire danger in high use recreation or other developed areas impacted by destructive forest insects and plant diseases.

Through various types of cooperation and programs, the agencies involved in IFPM can provide training and assistance to help resource owners and managers throughout Alaska.



Board of Forestry members receive briefing from U.S.F.S. personnel on forest health in the Cooper Landing area.

Cooper Landing Fuel Reduction Project

The division placed a high priority on addressing the fire hazard problem in Cooper Landing area which resulted from a major spruce bark beetle infestation. Staff initiated and participated in a joint plan development along with U.S. Forest Service and several other agencies and private sector groups.

Due to the potential fire danger, priorities were established:

Protect life and property from wildfire;

• Reduce the fuel loading adjacent to private lands;

• Salvage usable forest products from the beetle killed forest and create employment opportunities;

• Put the forest back into productivity as quickly as possible to reduce long-term visual effects.

At the start of the project the State of Alaska still owned 2,340 heavely impacted acreas within the Cooper Landing area previously selected by the Kenai Peninsula Borough. In June 1990 these lands were transferred to borough ownership. The 1990 legislature appropriated \$670,000 to complete fire hazard reduction actions in the Cooper Landing area.

The division generated a Cooperative Agreement with the Kenai Peninsula Borough in which the borough became responsible for the fuel reduction project. The division transferred \$655,000 to the borough to fund the work.

The fuel reduction project is fully under way at the close of calendar 1990. Twelve active contracts are in progress. These contracts will remove dead trees next to the Sterling Highway, provide fuel breaks and remove accumulations of dead timber near community subdivisions.



Ed Holsten, entomologist, U.S.F.S.; Bruce Oskolkoff, president, Ninilchik Native Assn.; Wade Wahrenbrook, forester, D.N.R. inspect tree for spruce bark beetles.

Forest Insect and Disease Conditions

During the spring and summer of 1990, Alaska experienced its second consecutive year of the warm, dry conditions. This allowed insect populations and associated tree damage to increase significantly in susceptible spruce and hardwood stands of the state, most notably in Southcentral and the Interior. Forest insect infestations and disease outbreaks detected by the 1990 Alaska aerial detection survey showed an increase on state and private land of 91,759 acres from 1989.

A dramatic increase was seen in spruce beetle (Dendroctonus rufipennis) activity on state and private lands surveyed (including native ownerships). Total state and private spruce areas affected in 1990 approximated 152,000 acres, almost double when compared to the total state and private spruce beetle-infested acreage in 1989 (83,000 acres). The total acreage affected by the spruce beetle statewide (including federal ownerships) now encompasses 232,406 acres of on-going and new infestations, representing a net statewide increase of 54,656 acres over 1989 figures.

Areas of significant increases in spruce beetle activity include the Copper River Area near Chitina, the west side of Cook Inlet near the Skwentna River, and portions of the southern Kenai Peninsula.

The Yukon River outbreak, conversely, decreased by more than half in 1990, from approximately 100,000 acres to 41,000 acres of new attacks. The lower Yukon River area consists of significant stands of high-value white spruce which represent a substantial value to native (and state) resource managers. Ground checks of the infested areas undertaken by U.S. Forest Service entomology specialists this past summer indicated that Engraver beetles (<u>Ips spp.</u>) may be as important as the spruce beetle (<u>D. rufipennis</u>) as mortality agents there. In fact, Ips beetles may have been more important in prolonging the outbreak during the last few years.

The largest areas of <u>decreasing</u> spruce beetle activity occurred in the northern portion of the outbreak; specifically along the Nulato River and near the confluence of the Koyukuk and Yukon Rivers. The division is pursuing a coordinated effort to deal with insect problems on these valuable forests.

On the Kenai Peninsula, a new, large infestation near the Clam Gulch/Kasilof area (southwest of Tustumena Lake), an area first attacked by the beetle about 20 years ago, was charted by aerial survey in July/August, 1990, on approximately 39,000 acres affecting state, federal, borough, university as well as Native and numerous other private ownerships. With assistance from the U.S. Forest Service entomology specialists, a preliminary field survey was conducted by the division during winter, 1990, to assess timber volume loss. percent infestation, and insect population levels so that a biological evaluation may be prepared. Management recommendations will be used to assist landowners within the infestation area. With cooperation from the U.S. Forest Service, Kenai Peninsula Borough and other affected landowners the division's pest management unit will conduct follow-up evaluations and suppression activities will continue into 1991 on the Clam Gulch/Kasilof infestaton.

Spruce beetle populations continue to infest 10,000 acres of Sitka spruce stands within Kachemak Bay State Park. Areas of heaviest spruce beetle concentrations are located from Aurora Lagoon to Battle Creek. Spruce beetle activity is declining at Halibut Cove, and in the Seldovia area where a few infested trees are apparent in stands bordering subdivision roads north of Seldovia.

Another area of significant increased spruce beetle activity occurred in the Copper River area, primarily on Federal and Native ownerships. The Tiekel River outbreak increased in intensity after last year's decline. Spruce beetle activity moved northward from Pump Station 12 to infest an additional 3,000 acres, bringing the total area infested to 25,000 acres.

Of interest was the detection of almost 11,000 acres of recent spruce beetle activity due south of the confluence of the Chitina and Copper rivers. The first spruce beetle outbreak (200,000 acres) recorded in Alaska in 1922 was located near this area. It appears that spruce stands in this area have again become susceptible to spruce beetle outbreaks. Closer examination will be given to this area in 1991.

Scattered spruce beetle activity continues along the Kuskokwim River on approximately 8,000 acres near Devil's Elbow. Spruce beetle infestations detected in 1989 southeast of McGrath were not active in 1990.

Spruce beetle activity on the west side of Cook Inlet near Beluga and Tyonek continues at low endemic levels. Infestations remain apparent on 2,000 acres of Kalgin Island. Spruce beetle infestations increased dramatically north of Beluga Lake near the Skwentna River. Approximately 13,000 acres of scattered infested spruce were detected in 1990 in contrast to approximately 3,000 acres aerially detected in 1989.

Light, scattered spruce beetle activity was aerially detected in the Anchorage Bowl on approximately 13,000 acres near Potter Creek and along the Hillside area. This represents a small increase in activity since the 1989 aerial survey. Spruce beetle populations continued to decline in the Eagle River area. A few hundred acres of scattered infested spruce are still apparent along the Eklutna River.

Hardwood defoliation increased throughout Interior Alaska in 1990. Cottonwood defoliation occurred on more than 9,000 acres, principally in the Prince William Sound area (Coleoptera--leaf beetles; and Lepidoptera--blotch-miners). Aspen defoliation by the Large Aspen Tortrix (Lepidoptera) increased in Interior Alaska after a few years of low activity. Aerial detection surveys in 1990 noted about 63,000 acres of defoliated aspen throughout the state; approximately 20,000 acres of defoliated aspen occurred in Southcentral Alaska (Mat-Su Valley and Kenai Peninsula): the remainder in Interior Alaska.

Interior Alaska localities most heavily affected include: Copper Center and Willow Lake--4,700 acres; Nabesna area--10,300 acres, and along the Yukon River west of Eagle--6,500 acres. Increased defoliation is expected in 1991 although overall impact should be minimal.

Birch defoliation on state and private land was not readily apparent from the annual aerial survey however, as with most aerial surveys of insect

defoliators, it is very difficult to differentiate specific insects damage from other causal agents (e.g., plant disease, moisture stress, flooding, other insects).

Localized, but heavy spruce defoliation, not apparent from the aerial survey, occurred on Sitka spruce from Ninilchik to Anchor Point during the summer, 1990. Foresters and entomologists received hundreds of phone calls from the public on the southern portion of the Kenai Peninsula about damage caused by an unidentified species of forest looper similar in appearance to the greenstriped forest looper (Geometridae, Melanolophia imitata) of Southeast Alaska's maritime spruce/hemlock forests. This looper feeds in the larval stage on new needle growth of mature spruce and usually does not

cause significant damage to the trees; infestations last 2-3 years with low, in-frequent mortality.

However, when populations are high, overcrowding occurs and larvae may "balloon" down from mature trees where significant populations may overcome young growing or planted spruce seedlings causing significant mortality. This occurred in the Anchor Point area on a reforestation project which may require replanting in 1991.

Another insect, the black-headed budworm, increased in activity in Prince William Sound where approximately 40,000 acres of defoliated western hemlock and Sitka spruce were aerially detected this year versus 19,000 acres detected in 1989.

1989 FOREST INSECT AND DISEASE INFESTATION IN ALASKA BY LAND OWNERSHIP AND PEST, IN ACRES

Pest	National Forest	Other Federal	Native	State/Private
Spruce beetle Dendroctonus ssp. (Coleoptera)	22,759	57,379	33,431	118,837*
Engravers Ips pertturbatus (Coleoptera)		80	193	53
Large aspen trotrix Choristoneura conflictana (Lepidopter	a)	34,636	3,675	24,922
Birch defloiation various spp. (Lepidoptera)	532	14,441	78	166
Black-headed budworm Acleris gloverana (Lepiodptera affects w. hemlock, Sitka spruce)	29,590		9,863	
Spruce budmoth Chorestoneum spp. (Lepidopthera)	8,600			11,500
Cottonwood defoliation . Various spp (Coleoptera, Lepidoptera,	5,645)		1,713	
Willow defoliation (Coleoptera, Lepidoptera)	4,148	16,726	5,650	3,980
Alaska yellow cedar decline <i>(cummulative u</i> p to 1990)	447,475	1,478	14,321	5,293
Aspen leaf blight				10,975
Spruce needle rust		5	16,578	
Totals:	518,749	124,745	85,502	175,726
State Total (insects and disease): 90	14 722**			

State I Otal (insects and disease): 904,722"

*Increase of 61,393 acres over 1989 on state /private land; 54,656 net increase over all ownerships. **Total does not include many of the most destructive diseases, e.g., wood decays and dwarf mistletoe, which are not detectable in aerial surveys.

Cooperative

Programs

Service Forestry

The division's service forestry program is designed to provide private non-industrial landowners with minimum cost professional forestry assistance to encourage proper management of their forest lands. The Service Forester works particularly with incentives ' programs such as the Forestry Incentives Program, the Agricultural Conservation Practices and the Conservation Reserve Program. While each of these programs contain similar management practices, their application is designed to accomplish different objectives.

The service forestry program has been handled as a secondary job by division area personnel closest to the landowner requesting assistance. This action has led to requests for assistance being delayed when forest technicians were involved with their primary duties. To increase the division's ability to meet landowner requests a full time federally funded Service Forester position was created and filled in November 1990.

The new service forester spent considerable time contacting 40 landowners who were "backlogged" due to the interior fire season. Their assistance requests included wildlife, watershed, harvesting, planting and inventory needs.

Time was also spent on building a better working relationship with the Soil and Water Conservation Districts and Board, Cooperative Extension Service, and the Agricultural Stabilization and Conservation Service. These efforts resulted in these agencies actively involving the division in their programs.

The number of assists to private landowners around the state in 1990 were: Northern Region - 35; Southcentral Region - 34; Southeast Region - 4.

Urban Forestry

St. George Island is a treeless island located in the Pribilof Island group in the Bering Sea. A unique opportunity came to the division when the Village of St. George and the St. George Tanaq Corporation approached us with the idea of planting trees on St. George Island. Although St. George is at the same latitude with Sitka, its remote location is known by few and visited by even fewer citizens.

The original proposal was to plant trees for windbreaks and for aesthetic purposes in the village. It rapidly became apparent this afforded a unique opportunity to establish forestry research plots on this remote island.

Dr. John Alden, a USDA-Forest Service geneticist stationed at Fairbanks, determined the species of forest trees which would have the best chance of survival on St. George. His recommendations were:

- Larix genelinii--Gemelinii Larch or Dahurian Larch
- Picia sitchensis-Sitka Spruce
- Pinus contorta---Shore Pine

The gemelinii larch is from Northeast China, the Sitka spruce is from Kodiak Island and the shore pine is from the Pacific Northwest.

Cooperative Programs

Bill Beebe, Division of Forestry and Wallace Watts, U.S. Forest Service, traveled to St. George the week of June 18-22, 1990. After meeting with Maxim Malavansky, Mayor of St. George, and Anthony B. Merculief, President of St. George Tanaq Corporation, agreement was reached on planting sites and how the St. George eighth grade class will measure, monitor and complete reports on the plantings.

Actual planting began on June 20 with two adults and 15 children. About 200 seedlings were planted in the city of St. George on city owned property, approximately 30 seedlings were planted on the southwestern shore of the island near the new harbor and about 150 seedlings were planted near the landfill in the center of the Island.

Two research plots containing about 400 seedlings each were established at Garden Cove (about a one hour walk from town). One plot will test a variety of planting techniques and various species while the other will only test the species. An additional 200 seedlings were planted around the Garden Cove area to minimize the visual impacts of the square plots.



St. George residents plant trees around their homes.



St. George residents plant trees on their treeless island.

Support Services

Project Learning Tree

Project Learning Tree (PLT) is an award-winning environmentaleducation program designed for teachers and other educators workingwith students in kindergarten through grade 12. PLT providesready-made lessons and activities that can be used to supplementexisting curricula.

The PLT goal is to help students develop the skills, knowledge and attitudes necessary to make wise decisions regarding the use and management of natural resources and the protection of environmentalquality.

Division personnel participated in PLT workshops for teachers throughout the state. The workshops are designed to train teachershow to use PLT activities and materials for their classroom. PLToffers state citizens a splendid educational opportunity in forest use and conservation.

PLT is cosponsored by the American Forest Foundation and the Western Regional Environmental Education Council. The primarysponsors of PLT in Alaska: Alaska Forestry Association, Cooperative Extension Service - University of Alaska Fairbanks, Alaska Department of Education, USDA Forest Service - Region 10, and Alaska Department of Natural Resources - Division of Forestry.

The division sponsored or participated in the following PLT workshops:

• Three PLT workshops in Anchorage -33 educators

- PLT workshop in Tok 5 educators
- PLT workshop in Juneau 11 educators
- PLT workshop in Palmer 8 educators

- PLT workshop in Delta 12 educators
- PLT workshop in Ketchikan 12 educators
- PLT workshop in Fairbanks 18 educators
- PLT workshop in Girdwood 11 educators

Since the program started in Alaska in June 1986, there have been 94 facilitator and 435 educators trained.

Arbor Day

Across the United States, people set aside one day each year to celebrate the beauty and usefulness of trees. Alaska's Arbor Day was established as the first Monday in May. In 1973 the law was amended to change the date to the third Monday in May which is more appropriate for tree planting in Alaska.

Why plant trees? We feel better around trees, whose graceful forms relieve the monotony of straight roads. We feel better around trees, whose shade cools on a hot summer day. But we also feel better around trees because they make our environment healthier. Trees hold the soil, reduce water pollution, clean the air and help wildlife. The result is an environment that is a better place to be for us and all the creatures who share it.

Support ' Services

Planting trees is but a starting point. Arbor Day also gives us the opportunity to educate the public about the value and importance of trees and their ecological and economic roles. Public awareness and understanding is central to wise utilization of our resources.

The division was able to take part in many community projects such as:

• Tree seedlings distributed at shopping malls in conjunction with the Society of American Foresters.

• Provide seedlings and planting instructions to the Klatt Community School's Adopt-A-Tree beautification and cleanup program.

• Delta Area personnel joined in with other groups planting trees near the Delta Junction visitor center.

• Fairbanks Area and Northern Region personnel participated in tree plantings and programs at five locations around Fairbanks.

We look forward to Arbor Day becoming an important Alaskan event.

Board of Forestry

The Board of Forestry met in Juneau January 30 and 31, 1990. They received two committee reports - one dealing with handling the spruce bark beetle infestation and the other on the Board's analysis of the division's internal audit of the timber sale program. The Board met with the Joint Senate/House Resource Committees January 31 presenting their views on the division's budget and reforestation issues.

The final meeting of the current Board of Forestry was held in Kenai on June 6, 1990. Because passage of the Forest Practices Act revision by the legislature created a new board structure, Governor Cowper requested that the current board take no formal action. The result was an informal informational gathering. Board members reviewed legislative action on forestry legislation, the most important of which was the Forest Practice Act revision.

On June 7, 1990 the board members visited Cooper Landing to view U.S. Forest Service firebreaks in the beetle ravaged Chugach National Forest. Members were treated to a guided tour of Chugach Alaska Corporation's new high-tech sawmill at Seward.



Board of Forestry members inspect a U.S.F.S. fuelbreak in the Cooper Landing area.

Support Services



Board of Forestry members tour Chugach Alaska Corporation's new high-tech sawmill at Seward.

a new board of 9. Eight appointments were announced by Governor Cowper in early October.

State Forester, Bob Dick, is ex-officio, non-voting chairman.

New appointees and the interest they represent are:

• Southeast Alaska Seiners Executive Director Kate Troll (commercial fishing organization);

• Klukwan's William Thomas (Native Corporation established under ANCSA);

• Southeast Alaska Conservation Council's Steve Kallick (environmental organization); • Koncor's John Sturgeon (forest industry trade association);

• Consulting fisheries biologist Carl Yanagawa (professional fish/wildlife biologist);

• Ralph Malone, director of property management for the Fairbanks North Star Borough (professional forester, non-government);

• Susitna Valley Association's Loisann Reeder (recreational organization); and

• Gold miner Andrew W. Miscovich (mining).

Strengthening the Team

Continued training to acquire the skills division employees need to confront the new challenges and issues is of great importance to the division.

Training opportunities in the public process and in consensus building are found in the private sector and made available. Workshops on, valueadded opportunities, Research Technology Transfer, Woodlot Management and Symposia on Nonpoint Source Pollution Control and New Perspectives for Watershed Management were attended. Emergency Fire Fighter training continues to be a division priority. Each year different villages receive training designed for entry level wildland fire fighters in Alaska and includes the nationally required courses to obtain an Interagency Fire-Job Qualification Card, i.e., Red Card. This training assures a ready workforce is available when the division answers its fire suppression responsibility.

TYPE TRAINING N	NUMBER OF COURSES	PARTICIPANTS
Emergency	13	310
Wildfire for Fire Departme	nts 1	20
Initial Attack	7	39
Extended Attack	12	60
Fire Management	10	45
Administrative	2	15
Supervision and Manager	nent 7	20
First Aid and Safety	2	34
Computer Management	7	20
Technical Resource Train	ing 3	17
Forest Management	1	1
TOTALS	66	581

Support Services

FISCAL REPORT

33

FISCAL YEAR ACTUALS 1990

(in Thousands)

Funding Sources:	Forest Managem	ent	Fire	Suppressi	on
General Funds	9,289.5			4,263	.7
Federal Funds	311.1			5,771.	3
Other Funds	699.7			2,110.	.7
Component Totals	\$10,300.3			\$12,145.	.7
Positions:					
Permanent Full Time	80.0			0.	0
Permanent Part Time	131.0			0.	.0
Non Permanent	17.0			950	.0
Start Months	1,732.0			2,000	.0
	Northern	Southcentral	Southeast	Central	Project
Resource Management:	Region	Region	Region	Office	Totals
Resource Management	661.7	416.9	534.5	312.0	1,925.1
State Forest Nursery				157.0	157.0
Board of Forestry				12.7	12.7
Forest Program Development	Dealla lafantation	670.0		74.1	/4.1 670.0
H. B. 428, Sec. 68 Cooper Landing	Beetle Intestation	670.0			670.0 00.8
	ik	99.0			90.0
71 McGrath Waterli	ine	119.8			119.8
Subtotal	\$ 661.7	\$1.396.5	\$534.5	\$ 555.8	\$ 3.148.5
Fire Management: Presuppression Rural Community Fire Prot/Fed Anchorage School District Interns Subtota I	1,734.3 \$1,734.3	2,725.4 58.0 \$2,783.4	16.4 \$ 16.4	450.2 66.9 \$ 517.1	4,926.3 66.9 58.0 \$ 5,051.2
Forest Administration: Federal Coop Forestry Asst. Forest Administration	353.3	356.9	109.1	244.2 368.6	244.2
Unbudgeted HSA's	A 050 0		A (A)	668.5	668.5
Subtotal	\$ 353.3	\$ 356.9	\$109.1	\$1,281.3	\$ 2,100.6
Forest Management					
Component	\$2,749.3	\$4,536.8	\$660.0	\$2,354.2	\$10,300.3
Fire Suppression Compone	nt			· · ·	\$12,145.7
Forest Management Budget	Request Unit				\$22,446.0

FISCAL YEAR BUDGET 1991

(in Thousands)

Funding Sources:	Forest Managem	ent	Fire	Suppressi	ion
General Funds	\$10,623.6		· · ·	\$3,041	.0
Federal Funds	495.2			2,750	.0
Other Funds	32.4			0	.0
Component Totals	\$11,151.2			\$5,791	.0
Positions:					
Permanent Full Time	93.0			1	.0
Permanent Part Time	138.0			0	.0
Non-Permanent	17.0			950	.0
Staff-Months	1,970.0			2,012	.0
	Northern	Southcentral	Southeast	Central	Project
Resource Management:	Region	Region	Region	Office	Totals
Resource Management	995.0	645.0	722.2	496.0	2,858.2
Firewood Access	24.0	14.0			38.0
Regeneration Center				1,398.4	1,398.4
Board of Forestry				12.5	12.5
Subtotal	\$1,019.0	\$ 659.0	\$722.2	\$1,906.9	\$ 4,307.1
Fire Management:					
Presuppression	1,838.2	2,705.0	26.0	456.1	5.025.3
Rural Community Fire Prot/Fed	,			68.0	. 68.0
Anchorage School District Interns		58.2			58.2
Subtotal	\$1,838.2	\$2,763.2	\$ 26.0	\$ 524.1	\$ 5,151.5
Forest Administration:					
Federal Coop Forestry Asst				427.2	427.2
Forest Administration	352.5	385.7	112.8	414.4	1 265 4
Subtotal	\$ 352.5	\$ 385.7	\$112.8	\$ 841.6	\$ 1,692.6
Forest Management					
Component	\$3,209.7	\$3,807.9	\$861.0	\$3,272.6	\$11,151.2
Fire Suppression Component	ł				\$5,791.0
-					
Forest Management Budget	Request Unit				\$16,942.2

APPENDIX

37

REGION CUT-AND-SOLD REPORT CY 1990 VOLUME - MBF SCRIBNER

Volume Cut				
Region	Sawtimber	Other Products ¹	Volume	
Northern	7,081.2	3,483.7	10,564.9	
Southcentral	360.0	146.8	506.8	
Southeast	7,553.1	5.5	7,558.3	
TOTAL	14,994.3	3,636.0	18,630.3	
	Volume S	Sold		
Region	Sawtimber	Other Products ¹	Volume	
Northern	8,102.8	6,217.1	14,317.9	
Southcentral	837.0	2,561.8	3,398.8	
Southeast	18,059.0	5.5	18,064.5	
TOTAL	26,998.8	8,784.4	35,783.2	
•				

¹OTHER PRODUCTS includes Pulp logs, Fuelwood, House logs, etc.

CONTRACTS ISSUED BY TYPE AND AREA - CY 1990

	Comm	nercial Use)	Personal Use					
	Fuelwood	Saw log	Beach log	Fuelwood H	louse log	Saw log			
	Sales	Sales	Salvage	Permits	Sales	Sales			
Northern Reg	ion								
Fairbanks	38	6	0	857	4	1			
Delta	3	3	0	70					
Tok	0	1	0	81	0	0			
TOTAL	41	10	0	1,008	4	1			
Southcentral	Region								
Mat-Su	2	2	0		5	2			
Kenai	- 1	0	õ	30	3	1			
Copper River	0	0	Õ	28	2	0			
McGrath	Ō	0	0 0	0	-	Ő			
TOTAL	3	2	0	649	11	3			
Southeast Re	egion								
Juneau	0	2	8	0	0	Ō			
Haines	1	0	0	0	0	0			
Ketchikan	0	0	14	0	0	1			
TOTAL	1	2	22	0	0	1			
GRANDTO	TAL 45	14	22	1,657	15	5			

An	nual Sales	Annual	Cut
Year	Volume (MBF)	Volume (MBF)	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

CUT- AND-SOLD ON STATE LANDS REPORT 1959-1990

SAWTIMBER CY 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

1990 STATEWIDE FIRE STATISTICS AFS--STATE--USFS

Number of Actual Fires:	802
Number of Acres Burned:	3,189,427.4

	Number of Fires and	Acres By Cause	
	LIGHTNING	MAN CAUSED	
Fires	410	392	
Acres	3,005,371.6	184,055.8	

ACTIVITY BY LANDOWNER

	State of Alaska Res	ponsibility	
Agency	Number of Fires	Number of Acres	
State Land and Water	144	656,376.0	
State Dept. of Transportation	11	1.3	
StateRefuge	0	0.0	
State Parks	16	29.5	
State Railroad	2	5.0	
State Forest	30	22,142.2	
StateUniversity	3	4.2	
Boro/City	22	6.5	
Private	220	2,208.3	
Canada	0	0.0	
Total State Responsibili	ty 448	682,981.3	

Ala	ska Fire Service (AFS) Responsibility	
Agency	Number of Fires	Number of Acres	
Bureau of Land Management	139	838,209.5	
National Park Service	14	105,227.2	
Fish & Wildlife Service	82	1,302,868.4	
Bureau of Indian Affairs	3	843.4	
Native Lands	63	212,506.0	
Military	15	46,462.3	
Canada	0	0.0	
Total AFS Responsibility	316	2,506,116.8	

U.S. Forest Service Responsibility									
Agency	Number of Fires	Number of Acres							
USFS	34	7.9							
Native Lands	3	320.4							
Fish & Wildlife Service	1	1.0							
Total USFS Responsibili	ty 38	329.3							

1990 STATEWIDE FIRE STATISTICS FIRES AND ACRES BY AREA AND MANAGEMENT OPTION¹

						IAIEFN	OIECI					
AREA	² CF	CRITICAL		FULL	MC	DIFIED	LI	MITED	UNPL	ANNED	т	OTAL
	NC) AC	NO	AC	NO	AC	NO	AC	NO	AC	NO	AC
AMS	82	46.6	11	3.3	1	0.1	2	5.0	0	0.0	96	55.0
KK	38	13.4	13	120.8	з	0.7	1	0.1	0	0.0	55	135.0
CR	2	0.2	17	13.4	9	12.5	7	484.4	0	0.0	35	510.5
SW	2	10.1	11	165,772.7	20	333,424.0	29	309,571.1	0	0.0	62	808,777.9
F	80	922.8	36	10,832.1	13	22,339.8	5	1,269.2	0	0.0	134	35,363.9
D	18	59.0	14	610.1	4	2,111.0	3	10,530.1	0	0.0	39	13,310.2
Т	14	3,485.9	17	105,079.5	4	1,872.5	3	12,700.1	0	0.0	38	123,138.0
SE	0	0.0	0	0.0	1	0.5	0	0.0	0	0.0	1	0.5
TOTAL	236	4,538.0	119	282,431.9	55	359,761.1	50	334,560.0	0	0.0	460	981,291.0

STATE PROTECTION

ALASKA FIRE SERVICE PROTECTION

AREA ²	CRITICAL		-	FULL	M	ODIFIED	LI	MITED	UNF	LANNED	-	TOTAL
	NO	AC	NO	AC	NO	AC	NO	AC	NO	AC	NO	AC
GAL	2	250.1	19	765.5	46	205,000.6	50	175,422.0	0	0.0	117	381,342.2
TAL	2	0.3	30	121,005.6	41	557,508.9	34	160,308.4	0	0.0	107	832,919.2
UYK	2	0.2	6	50,642.1	15	268,899.7	25	621,515.9	3	6.2	51	941,064.1
FCC	0	0.0	0	0.0	0	0.0	0	0.0	15	46,462.3	15	46,462.3
TOTAL	6	250.6	55	172,413.2	102	1,031,409.2	109	957,246.3	18	46,468.5	290	2,207,787.8

U. S. FOREST SERVICE PROTECTION

AREA ²	CRI	FICAL		FULL	MODIFIED LIMITED		ITED	UNPL	ANNED	TOTAL		
	NO	AC	NO	AC	NO	AC	NO	AC	NO	AC	NO	AC
CGF	9	1.8	3	2.7	0	0.0	1	0.1	0	0.0	13	4.6
CMF	0	0.0	12	2.2	0	0.0	0	0.0	0	0.0	12	2.2
KNF	2	7.0	13	332.1	2	0.2	1	0.1	0	0.0	18	339.4
STF	0	00	4	1.3	4	1.0	1	0.1	0	0.0	9	2.4
TOTAL	11	8.8	32	338.3	6	1.2	3	0.3	0	0.0	52	348.6

STATEWIDE

AREA	AREA CRITICAL		FULL N		MODIFIED I		LIMITED UNF		LANNED	1	TOTAL	
	NO	AC	NO	AC	NO	DA C	NO	AC	NO	AC	NO	AC
TOTAL	253	4,797.4	206	455,183.4	163	1,391,171.5	162	1,291,806.6	18	46,468.5	802	3,189,427.4

¹Management Option Definitions

Critical: Life and property sites that receive rapid and aggressive suppression.

Full: Areas of high value resources where fire adversely impacts the resource management objective. Attack is aggressive with an effort to extinguish the fire immediately.

Modified: A reas of high value resources but where the alternative exists to trade acres burned for suppression cost. Initial attack is immediate, but resource managers guide the suppression effort.

Limited: Areas where wildfire is not having an adverse impact and no suppression action is taken except to prevent the fire from burning on to a higher value land.

² Area Definition	
AMS - Anchorage/Mat-Su Area	
KK - Kenai/Kodiak Area	
VCR - Valdez/Copper River Area	
SW - Southwest Area (McGrath)	
F - Fairbanks Area	
D - Delta Area	
T - Tok Area	
SE - Southeast Region	
GAL - Galena Zone	
TAL - Tanana Zone	
UYK - Upper Yukon Zone	
FCC - Fire Coordination Center (Fairbanks)	
CGF - Chugach National Forest	
CMF - Tongass National Forest Chatham Area	
KNF - Tongass National Forest Ketchikan Area	
STF - Tongass National Forest Stikine Area	

1990 FIRE STATISTICS STATE RESPONSIBILITY LANDS

Number of fires: 448 Number of Acres Burned: 682,981.3

	FIRES AND ACRES BY STATE AREA ¹											
	AMS	KK	VCR	SW	F	D	Т	SE				
No.	95	38	24	31	130	39	22	1				
Acres	54.9	19.6	65.1	387,452.2	33,860.4	13,310.2	32,358.3	0.5				

	FIRES AND ACRES BY BLM ZONE AND USFS									
	Galena	Upper Yukon	Tanana	U. S. Forest Service						
No.	17	3	34	14						
Acres	73,365.0	48,155.1	94,320.7	19.3						

FIRES AND ACRES BY OWNER							
	State	Private	Canada				
No.	228	220	0				
Acres	680,772.9	2,208.4	0.0				

FIRES AND ACRES BY CAUSE								
Lightning Human Total								
No.	1.43	305	448					
Acres	652,758.2	30,223.1	682,981.3					

¹ State Area	² Size Classification Definiton
AMS - Anchorage/Mat-Su Area	Class Acres
KK - Kenai/Kodiak Area	A 0.00 to 0.25
VCR - Valdez/Copper River Area	B 0.26 to 9.90
SW - Southwest Area (McGrath)	C 10 to 99
F - Fairbanks Area	D 100 to 299
D - Delta Area	E 300 to 999
T - Tok Area	F 1000 to 4900
SE - Southeast Region	G 5000 and over

1990 FIRE STATISTICS STATE PROTECTION AREA

Number of Fires:460Number of Acres Burned:981,291.0

FIRES AND ACRES BY STATE AREA ¹										
	AMS	KK	VCR	SM	/ F	D	т	SE		
No.	96	55	35	62	2 134	39	38	1		
Acres	55.0	135.0	510.5	808,777.9	9 35,363.9	13,310.2	123,138.0	0.5		
		FIRES	AND ACF	RES BY SIZ	E CLASSIF	ICATION ²				
<u> </u>	A		В	C .	D	E	F	G		
No.	263	3	111	30	7	13	15	21		
Acres	27.9	2	11.3 8	94.2 1,16	4.0 6,719	9.0 36,87	8.0 93	5,396.6		

	FIRES AND ACRES BY OWNER ³									
	BLM	NPS	FWS	STA	PRI	NAT9US	FS	BIA	CITY	
No.	36	2	12	154	204	29	0	1	22	
Acres	403,425.6	436.1	711.7	465,475.8	1,638.9	109,383.4	0.0	213.0	6.5	
			FIRE	S AND AC	RES BY	CAUSE				
		Ligh	tning		Hu	man		Tota	al	
No.		-	148			312		46	60	
Acres		951,	675.0		29,6	616.0		981,291	.0	

SEARCH AND RESCUE BY STATE AREA ¹											
	AMS	KK	VCR	SW	F	D	Т	SE			
No.	18	6	7	1	0	0	2	0			

¹ State Area	² Size Class	sification Defintion	³ Owner Definition		
AMS - Anchorage/Mat-Su Area KK - Kenai/Kodiak Area VCR - Valdez/Copper River Area SW - Southwest Area (McGrath) F - Fairbanks Area D - Delta Area T - Tok Area	Class A B C C D E F	Acres 0.00 to 0.25 0.26 to 9.90 10 to 99 100 to 299 300 to 999 1000 to 4900	BLM - Bureau of Land Management NPS - National Park Service FWS - Fish and Wildlife Service STA - State PRI - Private NAT - Native USFS - U.S. Forest Service		
SE - Southeast Region	G	5000 and over	CITY - All city lands		

DIVISION OF FORESTRY AIRCRAFT UTILIZATION REPORT

Flight Hours								Flight Cost				
			С	ontract	Re	ental		Cor	ntract	F	Rental	
Ca	itegory:	DOF FEP ¹	Fixed Wing	Roto Wing	or Fixed g Wing	Rotor Wing	DOF FEP ¹	Fixed Wing	Rotor Wing	Fixed Wing	l Rotor Wing	
1.	Detection	281.7	80.7	4.7	181.9	15.8	\$105,744	\$8,070	\$1,690	\$37,136	\$12,277	
2.	Air Coordination	33.3	2.3	5.4	75.3		7,525	230	2,730	11,513		
3.	Reconnaissance	51.4	136.7	79.9	193.8	124.6	18,739	13,670	33,390	38,250	86,392	
4.	Helitack			157.5		334.7		·	74,650		759,564	
5.	Retardant/Bucket		144.6	70.1	114.1	77.6		260,552	34,750	50,096	120,173	
6.	Prepositioning	28.5	22.2	66.2	52.3	206.7	7,972	27,399	27,410	16,427	234,561	
7.	Cargo/Paracargo		3.0	77.9	382.5	87.7		300	33,930	181,396	137,165	
8.	Fire Transport	46.7	88.7	623.8	1,518.3	2,209.2	12,235	8,870	307,560	925,951	2,785,590	
9.	Non-Fire Transport	11.9	73.2	20.6			3,118	7,320	9,980			
10.	Smokejumper Delivery			10.8					5,400			
11.	Training/Maintenance	125.7	1.9	18.0			41,454	2,490	8,000			
12.	Misc. ²			44.2	19.0	32.0			20,800	4,953	23,275	
13.	Totals	579.2	553.36	1,179.1	2,537.2	3,088.3	\$196,786	\$328,901	\$560,290	\$1,265,722	\$4,158,996	
14.	No. Passengers	62	436	9,495	3,112	27,684						
15.	No. Gallons Retardt		436		126,366							
16.	No. Gallons Water		295,900	240,500	398,625							
17.	LBS. Cargo	24,255	6,950	928,157	337,737	1,723,116						
18.	\$ Availability in											
	Excess of Flight \$		\$18,493	\$1,279,049	\$354,482	\$106,682						
19.	Gallons	246,920		70,171	37,550	166,986						
20.	Fuel Gallons Cost	\$448,795	\$692,561	\$76,970	\$72,481	\$192,645			•			

SUMMARY

Total Line 13	\$6,510,695	
Plus Line 18	\$1,758,656	
Plus Line 20	\$1,483,452	
TOTAL COST	\$9,752,803	
	Total Line 13 Plus Line 18 Plus Line 20 TOTAL COST	Total Line 13 \$6,510,695 Plus Line 18 \$1,758,656 Plus Line 20 \$1,483,452 TOTAL COST \$9,752,803

¹DOF FEP-Division of Forestry Federal Excess Property ²Search and Rescue (SAR)

FORESTRY DIRECTORY

Director's Office 3601 C Street, Suite 1058 P.O.Box107005 Anchorage, Alaska 99510-7005 762-2501 FAX 762-2507

Bob Dick, Director/State Forester

George Hollett, Deputy Director Management

Dean Brown, Deputy Director Operations

Fire Management Frenchie Malotte, Section Chief 762-2505

Aviation Bud Graham, Supervisor 762-2509

Resource Management Vacant, Section Chief

Forest Practices Michael S. Christy, Section Chief 762-2131

Alaska State Forest Nursery Hiland Road P.O. Box 650 Eagle River, Alaska 99577 694-5880 Joe Stehlik, Nursery Manager

Northern Region Office 3700 Airport Way Fairbanks, Alaska 99709 451-2660 FAX 451-2690 Les Fortune, Regional Forester Delta Area Office Mile 267.5 Richardson Highway P.O. Box 1149 Delta Junction, Alaska 99737 895-4225 Al Edgren, Area Forester Tok Area Office Mile 123 Glen Highway Box 10 Tok, Alaska 99798 883-5134 Dick Malchow, Area Forester

Fairbanks Area Office 3700 Airport Way Fairbanks, Alaska 99709 451-2700 Pete Buenau, Area Forester

Southcentral Region Office 3601 C Street, Suite 1008 P.O. Box 107005 Anchorage, Alaska99510-7005 762-2217 FAX 568-3587 David Wallingford, Reg Forester

> Hotline Recording Fire Information in Summer Christmas Tree Permits in December 762-2412

Kenai/Kodiak Area Office Mile 92.5 Sterling Highway HC 1, Box 107 Soldotna, Alaska 99669 262-4124 FAX 262-6390 Jim Peterson, Area Forester

Mat-Su Area Office Mile 8.2 Big Lake Road P.O. Box 520455 Big Lake, Alaska 99652 892-6027 FAX: 892-7958 Jim Eleazer, Area Forester

Southwest Area Office Box 130 McGrath, Alaska 99627 524-3010 Fax: 524-3932 Bill Beebe, Area Forester Valdez/Copper River Area Office Mile 110 Richardson Highway P.O. Box 185 Glennallen, Alaska 99588 822-5534 Fax: 822-5539 Martin Maricle, Area Forester Southeast Region Office 400 Willoughby Ave, 5th Floor Juneau, Alaska 99801 465-2491 Fax: 586-2754 Jim McAllister, Regional Forester

> Haines Area Office Gateway Building P.O. Box 263 Haines, Alaska 99827 766-2120 Roy Josephson, Area Forester

Icy Bay Field Office P.O.Box460 Cordova, Alaska 99574 424-3922 Chris Foley, Forester

Juneau/Icy Bay Area Office 400 Willoughby Ave, 5th Floor Juneau, Alaska 99801 465-2491 Mike Peacock, Area Forester

Ketchikan Area Office 2230 Sealevel Dr, #217 Ketchikan, Alaska 99901 225-3070 Bill Hanson, Area Forester

Agency Fire Protection Areas



Department of Natural Resouces Division of Forestry



This publication was released by the Department of Natural Resources to provide information about the operations of the Division of Forestry during 1990. Four hundred copies were printed in Anchorage, Alaska at a cost of \$4.94 per copy.