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Wildland Fire Activity Summary -

Chronology of the year's events: The year began with a weather pattern that produced unseasonably warm temperatures nation-wide except in California and the Southwest. The fire season in Florida continued unabated into the new year. The mid and lower Mississippi River received heavy rainfall throughout this period. By early March fire activity began in earnest in the Eastern Region. Big Cypress National Preserve experienced two large incendiary fires on March 11th, which burned over 5,000 acres before being controlled several days later. Fireworks were the cause of a 1,246 acre fire that occurred on Padre Island National Seashore in Texas.

During the spring southern Florida received the first precipitation of the year. The moisture only affected the southern third of the state, which was the most critically deficient area. Everglades assisted in suppression of a 10,000+ acre Florida state fire in late April, early May. By late May fire activity was increasing in the Southwest. Carlsbad Caverns' "Big" fire, caused by an escaped campfire, burned over 33,000 acres before being brought under control in early June.

Precipitation continued in the Mississippi River drainage, as well as the Northwest, southern Florida, and southern California. Cool temperatures prevailed over the west except in the Southwest, where warm and dry conditions continued. Lightning activity generated considerable fire activity in the Southwest, including the Frijole fire in Guadalupe Mountains National Park which burned over 6,000 acres before it was brought under control after seven days of interagency suppression efforts. This warm and dry weather spread into the Rocky Mountain area and increased fire activity.

In July, after a prolonged period of below normal precipitation, Alaska experienced a rapid build up of fire activity associated with dry lightning. Mobilization of interagency resources from the "lower 48" was undertaken to assist in dealing with the hundreds of thousands of acres that were ignited throughout Alaska. Denali reported several large fires (2,000 - 40,000 acres) occurring in limited and modified suppression zones throughout the month of July and early August. Cooling trends, higher relative humidity, and widely scattered precipitation eventually brought these fires under control. Activity was occurring simultaneously in the Great Basin, Northwest, Northern Rockies, and in the Southeast. Lightning activity generated three large (>1,000 acres) wildfires in the Everglades in early July.

During August, widespread dry lightning occurred in northern California, Oregon, Washington, and the Great Basin which resulted in numerous fire starts. Storms responsible for spawning more than 37,000 lightning strikes in less than 2 weeks were blamed for starting over 1,300 fires in California. Public evacuation and closure of Yosemite National Park occurred on August 9th in order to set the stage for suppression actions required to bring under

control two major complexes (A-Rock and Steamboat) encompassing numerous fires and thousands of acres. In the end, over 12,000 acres had burned, 66 structures and 14 vehicles were lost in the community of Foresta, and the park remained closed to the public for 9 days. Yosemite was reopened to the public on a limited basis on August 17th, with full access reestablished by the 20th. The same widespread storm system started large fires in Whiskeytown and Lava Beds in northern California, and North Cascades National Park in Washington. By the third week of August fire activity began to decline as cooler temperatures, higher RH and precipitation prevailed.

Activity during September continued decreasing as cooler, wetter conditions prevailed in the west with the exception of southern California. In the Southeast drought conditions in southern Georgia and northern Florida worsened. Several NPS areas responded with assistance to severe fire activity in Okefenokee National Wildlife Refuge located on the Florida-Georgia state line.

The year ended with a wide array of arson and other human caused fires in the Southeast and Mid-Atlantic states. Several parks from these areas also provided assistance to Southern Region forests that were hit hard by a rash of human-caused fires. Considerable prescribed burn activity was conducted during the later half of the year in Everglades, Big Cypress, Sequoia-Kings Canyon, Yosemite, Grand Canyon, Big Thicket, Cape Hatteras, and Jewel Cave.

Branch of Fire Management

Accomplishments: 1990 marked another positive year of growth and change for the Branch of Fire Management. In June, the position of Branch Chief in Washington, D.C. was filled by Elmer Hurd who had been the Deputy State Forester with the Alaska Department of Natural Resources (DNR). Prior to that assignment, Hurd held several key fire management positions, including: Chief, Fire and Aviation, Alaska DNR, and Chief, Fire and Aviation, BLM Anchorage District. Relocation of this key NPS position to the Washington office was vital to develop and maintain better communications with the agency directorate, and with other federal fire management agencies, whose chiefs also are located in Washington, D.C.

The Structural Fire Specialist position, situated in the Boise office, was filled in November by Jim Farrel, who came to the service after serving 37 years with the Orange County, California fire service. Farrel had served as a Battalion Chief since 1980. A major program goal is to develop an analysis program paralleling FIREPRO that uses an historical database inventory to project staffing and funding needs servicewide. Although his position is located at Boise, Farrel will have a close working relationship with other NPS operations that share structural fire management responsibilities (e.g. safety, maintenance, and engineering design).

Dean Berg, a Fire Management Officer at Great Smoky Mountains National Park was selected in December to fill the Fire Information Specialist position left vacant since March. The position was rewritten to include more emphasis in FIREPRO III oversight, particularly in the area of conducting audits of park fire programs.

Wendy Bristol, a Computer Programmer Analyst with NOAA in Alaska, was selected for the Computer Specialist position which was announced in the fall. The new position will serve in the vital role of computer system manager for the Branch's Digital VAX 3800.

The fiscal structure consisted of seven primary work elements for managing FIREPRO accounts. Normal year operations are funded through the Department of Interior Firefighting Account, with "noyear" funds, which means that funding can be carried over from year to year for ongoing projects. ONPS funds are still used to support programs in place before the advent of FIREPRO, and to provide enhanced fire management capabilities in many parks. During severe wildfire years, if suppression funds within the NPS portion of the Interior Firefighting Account are insufficient to cover expenditures, the NPS will transfer funds from other programs and then seek to restore funds to affected programs through a supplemental appropriation.

In the area of training, several significant accomplishments occurred in 1990. The first session of the new Fire Management for Managers course was presented in March to forty park superintendents. While the course was considered a success, revisions were made and plans made for a second, improved version to be offered in 1991. The Rx-90, Burn Boss course was revised and presented at Chiricahua National Monument.

Based on review recommendations of fire entrapment and shelter deployment situations, a 4-hour "Extreme Fire Behavior Seminar" was developed and presented in four sessions to NPS employees and interagency cooperators. In addition, an instructor hand-off session was conducted for S-336, Fire Suppression Tactics, to prepare 20 NPS lead instructors for the purpose of providing this critically needed training in 1991.

The multi-agency fire training schedule maintained by the Branch and the BIA was made computer transfer capable for the Forest Service and BLM Data General (DG) for use by other state and federal cooperators.

A major proposal in suppression curriculum revision was finalized and sent to the field for comments in November. The proposal would eliminate the redundancy in "I" and "S" courses, and put emphasis on a skills based versus training based curriculum. A Branch staff recommendation established a consolidate interagency training nomination form which is now the standard form used by all member agencies of the National Wildfire Coordinating Group (NWCG).

The monumental task of revising NPS-18, Wildfire Management Guideline, was begun in January and completed in December with the assistance and review of over 40 NPS and cooperating agency personnel. The approved guideline is expected to be printed and distributed in early 1991.

A draft Wildland Fire Prevention Analysis Handbook was developed with the assistance of Grand Teton's fire Staff. The handbook will provide guidance to field areas for developing and implementing a wildfire prevention plan as an element of the fire management program.

Production of a video, "Fire Management in the National Park Service", was initiated with broad spectrum attention to suppression, prevention, research, and prescribed fire activities. The video, when completed, should be a useful resource for local interest and support groups, the media, interpretive activities, etc.

Prescribed natural fire programs in three parks were approved and operational in time for the 1990 fire season. Several more parks are on the verge of gaining approval and reestablishing their prescribed natural fire programs in time for the 1991 fire season. Also in line with this activity, the Branch released task books for 8 prescribed fire positions.

The national advisory group on fire danger rating has sponsored a user field test of the new Weather Information Management System (WIMS) which will replace AFFIRMS in two years (target mid-1992). Ten NPS region and park units are serving as field testers of this new system.

Branch staff are working with the EROS Data Center (via the Missoula Fire Lab) in defining live fuel moisture over broad areas using satellite data (AVHRR). Calculations are surprisingly precise and could eventually replace human estimates as inputs to NFDRS. The process could lead to automating these inputs in the future. A significant by-product could be very precise and inexpensive fuels mapping via the captured satellite imagery.

Staff membership on the NWCG's Prescribed Fire and Fire Effects Working Team has provided the opportunity to participate in new and significant national projects. A premiere example is direct participation and work with the EPA on implementing new air quality regulations using reasonably available control measures (RACM) and best available control measures (BACM). In addition, participation on the NWCG's curriculum subcommittee has begun development of prescribed fire curriculum for courses in fire effects, prescribed fire managers, monitoring, and others. Branch staff participated in numerous other working teams and advisory groups, attended interagency meetings and BIFC Multi-agency Coordinating Group (MAC) strategy sessions. Staff members audited fire programs in 12 park areas. Staff members participated in 2 reviews of major fires and the Exxon Valdez oil spill. Five staff members performed on interagency suppression operations, filling positions as Fire Behavior Analyst, air Support Group Supervisor, and Area Commander on fires in Alaska, Idaho and Yosemite National Park.

The 1990 calendar year came to a productive conclusion with the week-long National Fire Management Conference held in Seattle in December. This was the first time in NPS history that the Service was able to bring together all of its fire management staff. A total of 113 participants were in attendance representing WASO and the Branch of Fire Management, all 10 regional offices, and fire management personnel from 45 park units.



FIRE TYPE	# FIRES	NPS ACRES
Suppressed on NPS lands by NPS full control strategy	541	46,712
Suppressed on NPS lands by NPS modified control strateg	y 55	112,453
Suppressed on NPS lands by other federal agency	4	142
Suppressed on NPS lands by non-federal agency	40	1,819
TOTAL WILDFIRES	640	161,126
Prescribed natural fires Prescribed burns	31 143	3,046 78,139
TOTAL PRESCRIBED FIRES	174	81,185
Self-extinguished on NPS lands	146	264
Mutual aid by NPS on other lands	173	
Support actions (non-local)	/09	
False Alarms	100	

Table 1. National Fire Activity 1990

Table 2. Wildfires and Acres by Size Class 1990

SIZE CLASS	AGENCY	Y LANDS	OTHEI	R LANDS	ALL I	LANDS
IN ACRES	FIRES	ACRES	FIRES	ACRES	FIRES	ACRES
A (02)	350	40	62	7	412	47
	172	312	62	150	234	462
C (10-99)	65	1,779	29	1,238	94	3,017
D (100-299)	18	2,623	3	1,106	21	3,729
E (300-999)	13	6,418		4,460	21	10,878
F (1,000-4,999)	12	21,904	7	18,803	19	40,707
G (5,000-	10	128,050	4	108,472	14	236,522
TOTAL	640	161,126	175	134,236	815	295,362

There were 640 wildfires reported on NPS land in 1990, which is 71% of the normal fire year calculation (Table 12). Approximately 81% of the wildfires were controlled at under 10 acres in total size. The only fire size classes that exceeded the agency norm were those ranging in excess of 1,000 acres.



CAUSE	AGENCY LANDS		AGENCY	LANDS
	# FIRES	# ACRES	%FIRES	%ACRES
Lightning	259	117,623	40.2	73.0
Campfire	68	12,238	10.7	7.6
Smoking	26	1,438	4.2	0.9
Debris Burning	35	1,716	5.5	1.1
Incendiary	10	28	1.6	0
Equipment Use	15	976	2.3	0.6
Railroads	4	23	0.6	0
Children	9	3	1.4	0
Misc/Unknown	214	27,081	33.5	16.8
TOTAL	640	161,126	100	100

Table 3. Wildfires by Cause 1990

Table 4. Large Wildfires 1990

Region	Park	Suppression	Fire	NPS	Total
		Strategy	Name	Acres	Acres
				ж. Э	
SER	Big Cypress	Control	Miller	1,596	1,596
	Big Cypress	Control	Toms	4,172	4,172
	Everglades	Control	DOF 291	5,064	10,564
	Everglades	Contain	Foot	1,000	1,000
	Everglades	Contain	Wood	2,000	2,000
	Everglades	Contain	Graveyard	1,784	1,784
SWR	Carlsbad Caverns	Control	Big	11,040	33,135
	Guadalupe Mtns.	Control	Frijole	6,014	6,014
	Lake Merideth	Control	Big Canyon	3,048	7,300
	Lake Merideth	Control	Plum	1,432 ·	1,868
	Padre Island	Control	Springbrea	1,246	1,246
WRO	Lava Beds	Control	Ross	3,240	3,240
	Whiskeytown	Control	Kanaka	1,634	3,069
	Yosemite	Control	Steamboat	5,280	5,280
	Yosemite	Control	A-Rock	6,490	18,100
ARO	Denali	Contain	Hot Slough	24,300	24,300
	Denali	Contain	Swift Fork	20,270	20,270
	Denali	Contain	Yoder Lake	6,260	15,010
	Denali	Contain	Bear Creek	43,446	43,446
	Denali	Contain	Billberg	1,400	1,400
	Denali	Contain	Spence Crk	5,491	5,491
	Denali	Contain	Sandless	2,240	2,240

Region	Park	Fire Name	Acres	Fuel Type	Cost/Acre
Rocky Mtn.	Badlands	Quinn	1,800	Grass/Pine	\$3.00
	Wind Cave	Upper Quinn	2,300	Open Pine	\$5.00
Southeast	Big Cypress	Raccoon Rx	6,695	Palmetto	\$0.72
	Big Cypress	10 Mile Corn	1,683	Sawgrass	\$1.00
	Big Cypress	Baxter #1	9,290	Sawgrass	\$0.67
	Big Cypress	Airplane	2,500	Sawgrass	\$2.86
	Big Cypress	Lostman's	1,577	Palmetto	\$1.38
	Big Cypress	Little 2	7,941	Palmetto	\$1.16
	Big Cypress	Windmill Rx	10,444	Sawgrass	\$0.60
	Big Cypress	Hwy Corr	6,020	Sawgrass	\$0.39
	Big Cypress	Airplane 91	1,210	Palmetto	\$1.25
	Big Cypress	Lostman Rx	4,021	Palmetto	\$1.24
	Big Cypress	Brown's Rx	1,990	Sawgrass	\$0.65
	Big Cypress	Bishop Rx 2	1,318	Sawgrass	\$0.65
	Big Cypress	Cold/Sisso	3,154	Sawgrass	\$0.65
	Everglades	West Bndry	3,200	Sawgrass	\$1.50
	Everglades	Block A	2,240	Palmetto	\$0.86
	Everglades	Block B	1,412	Palmetto	\$6.00
	Everglades	East Ever	3,126	Sawgrass	\$5.00
Western	Sequoia-King	Avalanchel	2,800	Conifers	-

Table 5. Large Prescribed Burns 1990

There were 143 prescribed burns completed during 1990, for a total of 78,139 acres treated. The largest burn program was conducted at Big Cypress National Preserve in Florida, where over 57,000 acres was burned.





Table 6. Fire Management Expenditures Fiscal Year 1990

During fiscal year 1990 a total of \$25,419,988 was spent in 7 fire management fiscal accounts. Primary work elements 340 and 341 were established to support Prescribed Natural Fire Operations and Hazard Fuel Reduction programs respectively. The Annual Operating Program for Program Management (PWE 342) was established to support national and regional overhead activities, training development, interagency fairshare activities and permanent staffing. Emergency Presuppression (PWE 343) includes funding for step-up plans implemented during periods of very high and extreme fire danger. Suppression funding (PWE 344) includes costs of wildfire suppression actions, and Emergency Rehabilitation (PWE 345) provided funding for rehabilitation actions implemented in association with, and immediatly after suppression. Presuppression funding (PWE 346) includes initial attack preparedness, training, capitalized equipment, and support for 2 interagency hotshot crews.







Region







Table 9. Mutual Aid Responses by Region 1990



KEY: NAR - North Atlantic Region NCR - National Capital Region MAR - Mid-Atlantic Region SER - Southeast Region MWR - Midwest Region

RMR - Rocky Mountain Region SWR - Southwest Region WRO - Western Region PNR - Pacific Northwest Region ARO - Alaska Region



 Table 10.
 Support Action Personnel by Region 1990

This table dispalys the maximum single-day commitment of personnel to interagency wildfire suppression during 1990.





Support actions are primarily wildfire suppression assists to non-local areas. They do not include local, mutual-aid responses. National mobilizations of National Park Service personnel for interagency wildfire suppression efforts were unheard of until 1985. Since that time many agency personnel, including those whose regular job assignments are not fire-related, have been trained and dispatched to fire assignments.

Table 11 displays the number of support action dispatches reported for the past six years. The actual number of individuals dispatched is substantially greater. The maximum number of personnel dispatched for support actions in 1990 peaked during the first week in August when there were 989 National Park Service employees reported out of their home units. These figures do not include people who were involved in mutual aid or local suppression activities, or the people involved in fire-related support positions at their home units.

In addition to personnel, NPS helicopters, engines, and other equipment were used during the national mobilization.

SIZE CLASS IN ACRES	NUMBER OF WILDFIRES	NUMBER OF PRESCRIBED NATURAL FIRES
A (02)	467	79
B (.3 - 9)	. 288	35
C (10 - 99)	92	22
D (100 - 299)	· 27	13
E (300 - 999)	16	10
F (1,000 - 4,999)	11	8
G (5,000 +)	5	2
TOTAL	906	169

Table 12. NPS Normal Fire Year Statistics

Start days: 277 Peak number of starts in a day: 25

The normal fire year calculation displayed here is based on an analysis of NPS fire history for the ten years from 1980 through 1989. "Normal" occurrence is defined as the third worst year in a ten year analysis period, and the statistics for each size class may be derived from different years.











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Table 14. Prescribed Natural Fires 1981 - 1990





Table 15. Prescribed Burns 1981-1990





Table 16.Mutual Aid Responses 1981-1990

National Park Service personnel have been requested for, and have responded to, more and more mutual aid fire suppression actions each year. Mutual aid responses are defined as suppression assists to other agencies under a Memorandum of Understanding, interagency agreement, or contract. Mutual aid responses also include NPS suppression action taken on other lands to prevent fire spread onto NPS lands. Mutual aid responses are geographically local, and do not include mobilizations of personnel from one geographic area to another.

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Table 17.False Alarms1981-1990



The number of false alarms reported in 1990 reached an all-time high of 100 incidents.

1981-1990						
YEAR	NUMBER OF WILDFIRES	% TIME WILDFIRE SUPPRESSION	% TIME PRESCRIBED FIRES	% TIME OTHER PROJECT	-	
1981*	42	38	7	33		
1982*	22	22	18	28		
1983*	19	20	.18	26		
1984*	55	53	10	14		
1985	42	65	5	13		

50

63

79

68

54

.13

4

3

10

. 9

17

15

3

6

12

Table 18. Interagency Hotshot Crew Workload Distribution1981-1990

* 1981 - 1984 statistics include Alpine, Arrowhead, and Bison crews

1985 - 1989 statistics include Alpine and Arrowhead crews

35

35

31 32

26

1986

1987

1988

1989

1990

The National Park Service presently manages 2 of the 63 Interagency Hotshot Crews as part of its contribution to national interagency fire suppression resources. The crews' primary function is hot-line wildfire suppression. When not needed for suppression activities, the crews are able to make significant contributions on interagency prescribed fire operations and other physically demanding natural resource projects.

The National Park Service crews are assigned to duty stations at host parks. The Arrowhead Crew is based at Sequoia-Kings Canyon National Parks, and the Alpine crew is based at Zion National Park.

In 1990, Alpine crew project work included several major assignments. Projects involved exotic species (Tamarisk) removal and trail maintenance at Zion National Park; hazard tree reduction and historic site restoration in Pipesprings National Monument; fuel break maintenance, fence construction and desert tortoise habitat management in Toiyabe National Forest; and a prescribed burn for the Bureau of Land Management.

During 1990, the Arrowhead crew project work completed for Sequoia-Kings Canyon National Parks involved prescribed burn preparation and firing, trail maintenance, historical building rehabilitation, and split rail construction. The crew also provided support for the parks' pre-season fire school. The crew also assisted nearby Sequoia National Forest in construction of a handicap trail and preparation of clearcut logging units for burning. In addition, a hazard fuel reduction project was completed around the Manza nita Lake Ranger Station in Lassen Volcanic National Park.

CREW	FIRE NAME	LOCATION	DATES
Alpine	Icebox	Las Vegas BLM	6/23-24
Alpine	Dude	Tonto NF	6/25-7/2
Arrowhead	Vista	Cleveland NF	6/26-27
Arrowhead	Pines	Monte Vista CDF	6/27
Arrowhead	Bedford	Cleveland NF	6/28-30
Alpine	Tok River	Alaska State	7/5-15
Arrowhead	Bouquet	Angeles NF	7/15-16
Alpine	Mormon Crk	Boise NF	7/16-21
Arrowhead	Gird Point	Bitterroot NF	7/17-26
Alpine	Butte	Ely BLM	7/22-24
Alpine	A,B,C, Misc	Boise NF	7/25-29
Alpine	Ditch Crk	Payette NF	7/29-8/3
Arrowhead	Cedar	Sequoia NF	7/30
Arrowhead	Yenez	Los Padres NF	7/31-8/1
Alpine	A,B,C, Misc	Uinta & Ouray BIA	8/4-15
Arrowhead	A,B, C, Misc	Sierra NF	8/5-8
Arrowhead	Steamboat	Yosemite NP	8/9-16
Alpine	Wasatch Mtn	Utah State	8/27-31
Arrowhead	Savage	Sierra NF	8/30-9/2
Alpine	Bear Valley	Dixie NF	9/12-13
Arrowhead	Cottonwood	Stanislaus NF	9/13-17
Alpine	Thunder Ridge	Utah State	9/17
Alpine	Shorts	Okefenokee NWR	9/26-10/10
Arrowhead	A,B,C, Misc	Sierra NF	9/29-30
Arrowhead	Steve	Sequoia NF	10/16-17
Arrowhead	Lytle	San Bernardino NF	10/21-22

Table 19. Interagency Hotshot CrewWildfire Assignments 1990



Graphic Design & Illustrations: Laurel Simos-BIA/BIFC Additional Illustrations: Jackie Thomas-BIA/BIFC