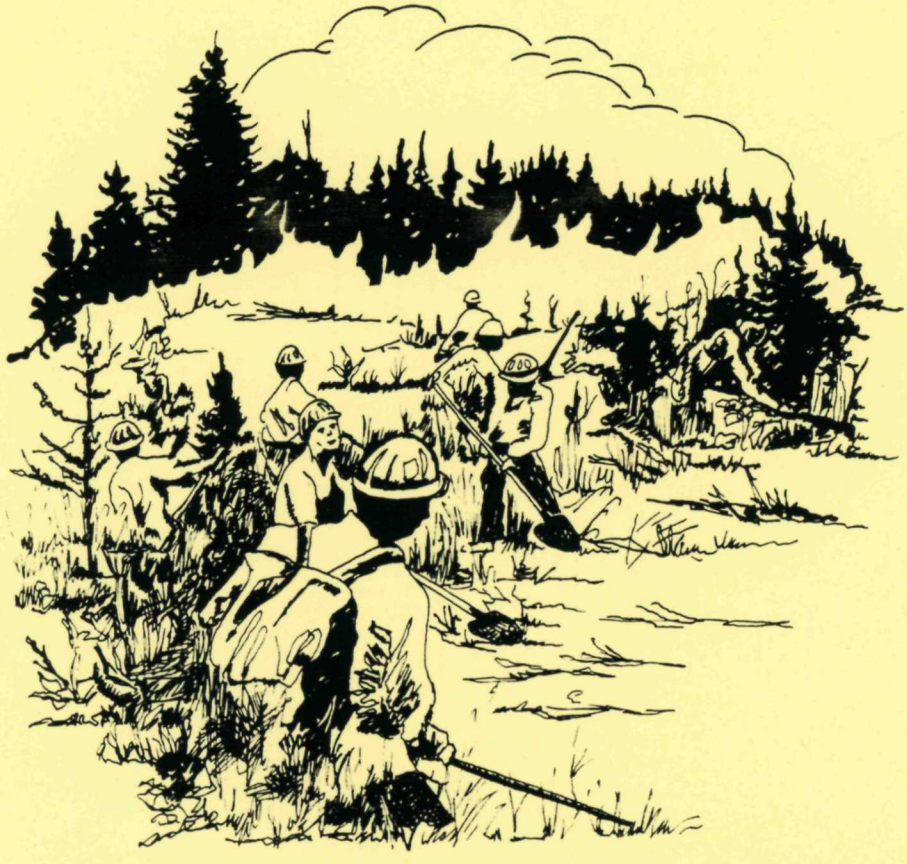
National Park Service
Wildland Fire Report
1986



National Park Service
Branch of Fire Management
Boise, Idaho
February 1987

United States Department of the Interior

NATIONAL PARK SERVICE
Branch of Fire Management
3905 Vista Avenue
Boise, Idaho 83705

IN REPLY REFER TO:

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Y26 (FIRE)

May 13, 1987

Memorandum

To: Associate Director, Cultural Resources
Through: Chief, Ranger Activities Division

From: Chief, Fire Management Branch

Subject: Wildland Fire Report, 1986

We have enclosed a copy of the first annual Wildland Fire Report to be produced by the National Park Service. This report was extracted from the Servicewide computerized database which has just become fully operational.

A quick review of this report will indicate the complexity of wildland fire management today. Of the 231,000 acres burned over in the National Park System this year, 48 percent were burned by prescribed fire, while 52 percent were impacted by wildfire. Three of the parks set aside for historic or cultural purposes were impacted by these wildfires. They include Harpers Ferry National Historical Park in National Capital Region, the Cumberland Gap National Historical Park in Southeast Region, and the Pea Ridge National Military Park in the Southwest Region.

The data contained in the report and its portrayal will be undergoing a review this year. We would welcome your input in refinements which might lend themselves to specific information related to your activities. From our perspective, it might be possible to further refine the portrayal of some of the prescribed burns conducted by the Service in regard to the particular cultural purposes for which those burns are conducted.

We hope you find this of use and that you will feel free to call upon us for additional information if the need should arise.

David B. Butts

Enclosure

NATIONAL PARK SERVICE

WILDLAND FIRE REPORT

1986

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February 1987

National Park Service
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1986 WILDFIRE ACTIVITY SUMMARY

Land management agencies experienced record numbers of wildfires on public lands during 1986, for the second consecutive year. Drought conditions in the Southeast, continuing from the previous year, led to large fire activity in that area in March through May. In June and early July, intense fire activity developed in Alaska. Then dry summer weather, coupled with an extraordinary amount of lightning activity, caused thousands of fires in the Northwest and Great Basin in August. During the first 14 days of August, 400,000 lightning strikes were recorded in the Northwest, with a maximum of 40,000 lightning strikes per day.. In that month, 7905 fires, burning over 754,000 acres, were reported. States of Emergency were declared in both Oregon and Idaho, and a national mobilization of personnel and other resources was required to suppress all of the concurrently burning fires.

Nationwide, there were approximately 86,000 wildfires reported on public lands in 1986, which burned 2.8 million acres. These figures represent a slight decrease in fires and acres from the historically worst fire year reported, which was 1985.

The National Park Service fire occurrence, during the year, followed generally the same pattern as the national fire activity. In the spring, large wildfires occurred in the Southeastern Region. In June, numerous large fires occurred in Alaska, which were largely managed as prescribed natural fires. In August, there were numerous park fires in Oregon. An unusually dry autumn in the Sierra enabled several wildfires being managed under a "contain" strategy to continue to burn slowly for several months, through December.

National Park lands experienced 632 wildfires, burning approximately 116,810 acres, and 145 prescribed natural fires, burning 75,491 acres. This is the largest amount of acreage to burn in any single year in Service history. A majority of the largest fires were managed as prescribed natural fires or as suppression fires under a containment strategy, rather than full suppression. These alternative management techniques dramatically reduced the amount of resources and dollars obligated to Service wildfire suppression efforts.

The National Park Service also provided firefighters and equipment to local cooperating agencies for wildfire suppression. There were 159 mutual aid dispatches reported in 1986, on which 28,761 acres of other agencies' lands burned.

The major involvement of the National Park Service in wildland fire activities during 1986 was participation in the national mobilization in August. Five hundred twenty-eight NPS firefighters and overhead personnel were dispatched dispatched to Western fires. All 10 regions contributed personnel to the interagency effort; engines from Western Region and a helicopter from Rocky Mountain Region were also dispatched. During the Alaskan fire activity, an NPS lead plane was contributed to interagency suppression efforts. This is the second consecutive year that the National Park Service has participated in a large-scale national mobilization of firefighters.

Large park wildfires on National Park Service land often require fire suppression personnel and equipment from other agencies. There were five of these "project" fires on NPS lands in 1986; these fires required a total of 1,050 firefighters and overhead and 20 aircraft from other agencies to assist in the suppression effort. More resources were provided to the National Park Service by the interagency community for these five fires than were provided by the National Park Service to assist other agencies during the August mobilization.

Table 1. NATIONAL FIRE ACTIVITY 1986

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	477	33,286
Suppressed on NPS lands by NPS modified control strategy	60	86,065
Suppressed on NPS lands by other federal agency	16	255
Suppressed on NPS lands by non-federal agency	81	369
Natural out on NPS lands	100	786
Prescribed natural fire	145	75,491
Prescribed burn	108	36,024
False alarm	25	--
Mutual aid by NPS	159	28,761
Support action (non-local)	359	--

Table 2. WILDFIRES AND ACRES BY SIZE CLASS 1986

SIZE CLASS IN ACRES	AGENCY LANDS FIRES	AGENCY LANDS ACRES	OTHER LANDS FIRES	OTHER LANDS ACRES	ALL LANDS FIRES	ALL LANDS ACRES
A (0 - .2)	303	36	42	5	345	41
B (.3 - 9)	230	345	65	166	295	511
C (10 - 99)	55	1,838	32	1,510	87	3,348
D (100 - 299)	16	2,701	5	876	21	3,577
E (300 - 999)	14	7,201	10	4,901	24	12,102
F (1000 - 4999)	11	21,318	3	7,382	14	28,700
G (5000 +)	5	86,537	2	75,987	7	162,524
TOTAL	634	119,976	159	90,827	793	210,803

In 1986, 84 percent of all wildfires on NPS lands were controlled at under 10 acres in size. The five largest wildfires accounted for 74 percent of all park acreage burned.

Normal Fire Year calculations indicate that the number of fires in 1986 was 33 percent below the norm of 940 fires. However, the five fires in size Class G represent 250 percent of the expected number of Class G fires, which is two fires per year.

Table 3. WILDFIRES BY CAUSE 1986

CAUSE	AGENCY LANDS		OTHER LANDS		ALL LANDS	
	FIRES	ACRES	FIRES	ACRES	FIRES	ACRES
Lightning	173	69,270	48	36,887	221	106,158
Campfire	79	4,813	11	165	90	4,978
Smoking	49	170	6	2,150	55	2,320
Debris Burning	30	88	19	626	49	714
Incendiary	108	18,251	27	11,432	135	29,684
Equipment Use	13	11	15	127	28	138
Railroads	3	245	3	78	6	323
Children	24	13	4	66	28	79
Miscellaneous	155	27,115	26	39,293	181	66,408
TOTAL	634	119,976	159	90,827	793	210,803

The most common cause of wildfires on National Park Service lands in 1986 was lightning. Lightning-caused fires also accounted for the largest amount of acreage burned.

Table 4. LARGE WILDFIRE OCCURRENCE 1986

REGION	PARK	SUPPRESSION STRATEGY	FIRE NAME	NPS ACRES	TOTAL ACRES
Alaska	Denali	Confine	A069	5,800	31,000
	Denali	Confine	A185	25,000	58,000
Mid-Atlantic	Shenandoah	Control	Big Run	4,475	4,475
Pacific NW	Crater Lake	Contain	Sphagnum	1,000	1,000
	Crater Lake	Confine	Castle Pt	1,000	1,000
Southeast	Big Cypress	Control	Deep	3,212	3,333
	Big Cypress	Control	Austin	10,122	10,122
	Big Cypress	Control	84 West	9,200	11,600
	Everglades	Confine	Eliocharis	36,415	36,415
	Everglades	Contain	Marlboro	1,103	1,103
Southwest	Padre Island	Confine	Pan Am	1,200	1,200
	Padre Island	Confine	Fireworks	4,023	4,023
	Padre Island	Contain	Rocket	940	1,600
Western	Hawaii Volc.	Contain	Paliuli	1,200	1,200
	Yosemite	Contain	Cascade Crk	1,965	1,965
	Yosemite	Contain	Eleanor	1,200	1,200

There were 16 wildfires that reached 1000 acres or larger. Twelve of these large fires were managed with a confine or contain strategy, rather than full suppression.

Table 5. LARGE PRESCRIBED NATURAL FIRES 1986

REGION	PARK	FIRE NAME	NPS ACRES	TOTAL ACRES
Alaska	Denali	A201	2,600	2,600
	Denali	A203	3,100	3,100
	Denali	A233	23,000	23,000
	Denali	A237	6,300	6,300
	Denali	A238	1,400	1,400
	Gates Arctic	A309	2,500	2,500
	Yukon Charlie	Eureka Ck	30,000	44,000
Rocky Mtn	Dinosaur	Long	645	1,367

Of the 145 prescribed natural fires that occurred, eight reached a size of 1000 acres or larger. Prescribed natural fires in Alaska accounted for 93 percent of all NPS prescribed natural fire acreage in 1986.

Table 6. LARGE PRESCRIBED BURNS 1986

Seven of the 108 prescribed burns that were ignited on National Park Service lands in 1986 exceeded 1000 acres. Fifty-six percent of prescribed burn acreage occurred in the Southeast Region.

REGION	PARK	FIRE NAME	NPS ACRES	TOTAL ACRES
Southeast	Big Cypress	Tenmile 2	2,020	2,020
	Big Cypress	Birdon NW	1,312	1,312
	Big Cypress	Brown	3,104	3,104
	Everglades	West Boundary	3,547	3,547
	Everglades	Pines WA	3,431	3,431
	Everglades	Block B	1,083	1,083
Southwest	Big Thicket	Prescribed	1,760	1,760

Table 7. WILDFIRES AND PRESCRIBED NATURAL FIRES 1977-1986

YEAR	WILDFIRES		PRESCRIBED NATURAL FIRES	
	# FIRES	NPS ACRES	# FIRES	NPS ACRES
1977	852	16,003	98	18,935
1978	749	21,140	158	11,254
1979	940	24,670	106	20,838
1980	951	46,962	136	24,212
1981	1322	95,055	216	52,545
1982	795	37,408	89	7,014
1983	580	14,696	96	10,606
1984	691	19,945	214	42,923
1985	611	12,628	166	23,494
1986	634	119,976	145	75,491

While the number of wildfires in 1986 was only 67 percent of the Normal Fire Year calculation of 940 fires, the number of acres burned was the greatest in agency history. This was due primarily to the extreme fire season in Alaska, which accounted for almost 31,000 acres. The number of prescribed natural fires on NPS lands in 1986 equalled 92 percent of the Normal Fire Year calculation of 158 fires, but again the amount of acreage burned was the largest in agency history. This was due to 70,000 acres of prescribed natural fire in Alaska.

Table 8. PRESCRIBED BURNS 1977-1986

CALENDAR YEAR	TOTAL FIRES	NPS ACRES
1977	10	224
1978	13	380
1979	49	928
1980	83	17,996
1981	102	24,199
1982	96	7,439
1983	89	11,821
1984	99	11,052
1985	119	18,002
1986	108	36,024

There has been a gradual increase in the number of prescribed burns being conducted by National Park areas. In 1986, the largest prescribed burn programs, measured by total acres burned, were managed in Everglades National Park and Big Cypress National Preserve, both in the Southeast Region.

Table 9. FIRE OCCURRENCE BY REGION 1986
ALASKA REGION

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	--	--
Suppressed on NPS lands by NPS modified control strategy	.5	30,803
Suppressed on NPS lands by other federal agency	4	15
Suppressed on NPS lands by non-federal agency	2	1
Natural out on NPS lands	1	1
Prescribed natural fire	23	70,496
Prescribed burn	--	--
False alarm	--	--
Mutual aid by NPS	1	1
Support action (non-local)	12	--

The 1986 fire season was the most active wildfire and prescribed natural fire year for the National Park Service in Alaska since the Alaska National Interest Lands Conservation Act of 1980. Over 100,000 acres burned, with two modified suppression fires in Denali burning over 30,000 acres of park land. One prescribed natural fire in Yukon-Charlie Rivers National Preserve burned over 30,000 acres; large prescribed natural fires also occurred in Denali, Gates of the Arctic, and Wrangell-St Elias National Parks.

Most notable about the management of this large amount of fire activity was the use of prescribed natural fire and confinement, rather than full suppression tactics. Suppression forces, which in Alaska are provided by the Alaska Fire Service, Bureau of Land Management, were used on less than 20 acres of these fires. The Normal Fire Year calculation for Alaska indicates a norm of 23 wildfires and 4 prescribed natural fires; a shift in management strategy is underscored by 1986's predominance of prescribed natural fires over wildfires.

Table 10. FIRE OCCURRENCE BY REGION 1986
MID ATLANTIC REGION

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	23	4,717
Suppressed on NPS lands by NPS modified control strategy	--	--
Suppressed on NPS lands by other federal agency	--	--
Suppressed on NPS lands by non-federal agency	2	1
Natural out on NPS lands	3	1
Prescribed natural fire	--	--
Prescribed burn	--	--
False alarm	1	--
Mutual aid by NPS	4	9
Support action (non-local)	18	--

The Mid-Atlantic Region was affected by the prolonged drought in the eastern and southeastern United States in the spring of 1986. The largest fire to occur was the Big Run Fire at Shenandoah, which burned over 4000 acres in May. A total of 326 firefighters and overhead personnel, and five aircraft from outside agencies were utilized on the Big Run Fire suppression effort.

Regionwide, an unusually large percent of lightning-caused fires were recorded. The overall number of wildfires was below the Normal Fire Year calculation of 66 wildfires.

Table 11. FIRE OCCURRENCE BY REGION 1986
MIDWEST REGION

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	24	1,199
Suppressed on NPS lands by NPS modified control strategy	--	--
Suppressed on NPS lands by other federal agency	1	1
Suppressed on NPS lands by non-federal agency	6	3
Natural out on NPS lands	1	1
Prescribed natural fire	--	--
Prescribed burn	20	403
False alarm	--	--
Mutual aid by NPS	6	12
Support action (non-local)	31	--

The Midwest Region had a below average fire season in 1986, in terms of the number of fires and acreage burned. Normal Fire Year calculations for the region estimate 82 wildfires and 8 prescribed natural fires. The most fire activity within the region occurred at Indiana Dunes National Lakeshore, with human-caused fires there accounting for over 99 percent of the acreage burned in the region. The region dispatched one crew of firefighters to the Southeast in the spring, and two crews to Oregon in August.

Table 12. FIRE OCCURRENCE BY REGION 1986
NATIONAL CAPITAL REGION

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	10	40
Suppressed on NPS lands by NPS modified control strategy	--	--
Suppressed on NPS lands by other federal agency	1	96
Suppressed on NPS lands by non-federal agency	2	3
Natural out on NPS lands	1	1
Prescribed natural fire	--	--
Prescribed burn	--	--
False alarm	--	--
Mutual aid by NPS	--	--
Support actions (non-local)	54	--

For the first time, enough qualified and equipped personnel were available within National Capital Region to have an intra-regional dispatch of 33 NPS firefighters to Harper's Ferry to control a 20 acre wildfire there. Also in 1986 for the first time, there were numerous dispatches of NCR personnel to fires in response to Forest Service, Region 9, requests for assistance to the Jefferson and George Washington National Forests.

The Normal Fire Year calculation for the National Capitol Region is 16 wildfires, which indicates that 1986 was slightly below normal for the number of park fires.

Table 13. FIRE OCCURRENCE BY REGION 1986
NORTH ATLANTIC REGION

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	18	17
Suppressed on NPS lands by NPS modified control strategy	--	--
Suppressed on NPS lands by other federal agency	2	140
Suppressed on NPS lands by non-federal agency	56	352
Natural out on NPS lands	--	--
Prescribed natural fire	--	--
Prescribed burn	8	3
False alarm	--	--
Mutual aid by NPS	1	1
Support actions (non-local)	2	--

North Atlantic Region sponsored a rather unusual project-level fire during the year. A small surface fire in Gateway National Recreation Area ignited organic materials deposited many years ago as fill, causing sub-surface fires that proved difficult to control. Total acreage burned was 14.5 acres; the fire burned intermittently from April to August, when it was finally suppressed. The region fielded a full crew of firefighters that was dispatched to Oregon.

The Normal Fire Year for the North Atlantic Region is 171 wildfires; an unusually low number of fires were reported in 1986.

Table 14. FIRE OCCURRENCE BY REGION 1986
PACIFIC NORTHWEST REGION

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	55	60
Suppressed on NPS lands by NPS modified control strategy	12	2,401
Suppressed on NPS lands by other federal agency	2	1
Suppressed on NPS lands by non-federal agency	4	7
Natural out on NPS lands	--	--
Prescribed natural fire	8	1
Prescribed burn	1	26
False alarm	--	--
Mutual aid by NPS	5	12
Support actions (non-local)	13	--

Pacific Northwest Region had the largest number of firefighters dispatched to non-park fires of any region. At the peak of the August activity, there were 145 PNR personnel out of their home parks on fires. Crater Lake was the only park in the region with a significant amount of wildfire activity during the August outbreak; about 2400 acres burned there. Those fires were managed under "confine" or "contain" strategies, and did not require interagency resources.

A Normal Fire Year for the Pacific Northwest Region is calculated to be 68 wildfires and 11 prescribed natural fires, indicating that 1986 was a normal year for fires on park lands.

Table 15. FIRE OCCURRENCE BY REGION 1986
ROCKY MOUNTAIN REGION

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	46	292
Suppressed on NPS lands by NPS modified control strategy	2	902
Suppressed on NPS lands by other federal agency	1	1
Suppressed on NPS lands by non-federal agency	1	1
Natural out on NPS lands	--	--
Prescribed natural fire	35	776
Prescribed burn	2	637
False alarm	4	--
Mutual aid by NPS	46	11,195
Support actions (non-local)	47	--

Many Rocky Mountain Region firefighters were utilized on mutual aid actions with local cooperators, and over 60 firefighters were dispatched during the August mobilization.

The Rocky Mountain Region had relatively few wildfires on park lands. There were 43 percent of the Normal Fire Year calculation of 106 wildfires. The Normal Fire Year calculation of 34 regional prescribed natural fires was closely matched by the actual total of 34 prescribed natural fires in 1986.

Table 16. FIRE OCCURRENCE BY REGION 1986
SOUTHEAST REGION

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	110	25,585
Suppressed on NPS lands by NPS modified control strategy	9	38,665
Suppressed on NPS lands by other federal agency	--	--
Suppressed on NPS lands by non-federal agency	6	1
Natural out on NPS lands	--	--
Prescribed natural fire	15	3,021
Prescribed burn	26	20,343
False alarm	3	--
Mutual aid by NPS	29	13,040
Support actions (non-local)	7	--

The Southeast Region was affected by drought, with dry conditions carried over from 1985. The moisture deficit in the region continued throughout the year. Southeast Region had an unprecedented number of personnel mobilized within the region to fight agency fires in Big Cypress National Preserve, Cumberland Gap National Historical Park, Everglades National Park, and Great Smoky Mountains National Park.

A large number of personnel from other agencies were called on for assistance on large NPS fires in the Southeast. Approximately 725 firefighters and overhead from outside of the National Park Service were used in suppression efforts at Great Smokies and Big Cypress during the Spring.

The Normal Fire Year calculation for the Southeast Region is 149 wildfires and 35 prescribed natural fires, so 1986 was below normal in terms of the total number of fires.

Table 17. FIRE OCCURRENCE BY REGION 1986
SOUTHWEST REGION

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	42	875
Suppressed on NPS lands by NPS modified control strategy	5	6,963
Suppressed on NPS lands by other federal agency	--	--
Suppressed on NPS lands by non-federal agency	1	2
Natural out on NPS lands	--	--
Prescribed natural fire	6	41
Prescribed burn	22	3,117
False alarm	6	--
Mutual aid by NPS	29	1,518
Support actions (non-local)	66	--

The eastern portion of the Southwest Region was affected by the prolonged drought in the southeastern United States. The Ozark Hill country was particularly dry in the Spring. Human-caused fires were responsible for much of the acreage burned in the region. A series of arson-caused fires occurred at Pea Ridge National Military Park and Buffalo National River, and fireworks ignited large fires at Padre Island National Seashore.

The Normal Fire Year calculation for the Southwest Region is 58 wildfires and 8 prescribed natural fires, indicating that 1986 was below normal in terms of the number of fires.

Table 18. FIRE OCCURRENCE BY REGION 1986
WESTERN REGION

FIRE TYPE	# FIRES	ACRES
Suppressed on NPS lands by NPS full control strategy	127	1,131
Suppressed on NPS lands by NPS modified control strategy	19	5,091
Suppressed on NPS lands by other federal agency	6	2
Suppressed on NPS lands by non-federal agency	4	1
Natural out on NPS lands	--	--
Prescribed natural fire	45	824
Prescribed burn	18	1,376
False alarm	8	--
Mutual aid by NPS	18	2,457
Support actions (non-local)	78	--

Western Region had a relatively light fire season. The most troublesome fire was a 700 acre wildfire in Yosemite, that required the evacuation of over 1000 visitors and employees from the Glacier Point area. The region contributed over 80 firefighers to the interagency mobilization, with 37 people out of Grand Canyon National Park on fire assignments at one time.

A comparison of 1986 with the Normal Fire Year calculation for the Western Region shows roughly half the normal number of wildfires (339), and 60 percent of the usual number of prescribed natural fires (45).