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Summary of Fires in Everglades National Park and Big Cypress National Preserve, 1981

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INTRODUCTION

Fire records and summaries are proving to be more and more valuable with time. Concern about the economics of fire management and increasing use of historical fire records by resource managers in establishing and implementing state-of-the-art fire management programs are principle reasons. Documentation of fire parameters, conditions, expenditures, etc. is of great value to resource management and research personnel. Such reports are necessary to the establishment and implementation of fire management programs and to the interpretation and comparison of former and existing conditions.

Fire statistics for the 1981 calendar year for Everglades National Park and Big Cypress National Preserve are presented herein (Table 1 and 2). The 1981 fire season is the third full year of NPS fire management responsibility for Big Cypress, and the thirty-fourth year for Everglades. Everglades National Park fire records from 1948-1979 are included in Taylor (1981a) currently under revision. These records, combined with the 1978, 1979, and 1980 summaries (Taylor 1980, Taylor and Doren 1982), include all records to date for both park areas.

EVERGLADES NATIONAL PARK

The Fire Year

The 1980-1981 dry season created a severe fire control situation throughout the state (Interagency Wildfire Council Meeting, February 4, 1980). Drought conditions from the last few months of 1980 continued into 1981 through July (National Geological Survey 1981). Water levels generally remained below the mean for the first seven months of the year (Hydrology Synopsis 1981). Rainfall was generally represented by weeks of little or no rain interspersed by occasional and heavy downpours (Drought Index, Pine Island, 1981).

Lightning Strikes

In order to better understand the role of fire in South Florida and determine the potential for natural fires, information on the distribution and intensity of lightning strikes is essential. Prior to 1950 (Robertson 1953), there was a strong belief that lightning fires did not occur in the Everglades. Not until the establishment of fire lookout towers in 1951 was it accepted that lightning fires do occur. Today approximately 40 percent of all fires in Everglades are attributed to lightning (Taylor 1980, Taylor 1981, Taylor and Doren 1982).

Knowledge of the distribution of lightning strikes and lightning strike fires over time is extremely important. Particularly in

developing a fire management program with the purpose of reproducing the long-term effects of fire in the Everglades system in such a way as to perpetuate the ecosystem as naturally as possible. A parkwide aerial survey (recording each fire, location, and size) performed yearly, near the end of September, provides accurate data on lightning strike fires which occur in Everglades National Park. As shown in Figure 1, the number of lightning strike fires declines dramatically in September; chances of overlooking one are greatly reduced after this time. Future plans include installation of a Lightning Detection System (LDS). In cooperation with the U.S. Air Force, the installation of an LDS within Everglades will permit access to lightning data from the area-wide system. This data would provide extremely accurate information on lightning frequency, seasonality, distribution, and intensity, which is essential to understand the natural role of fire in the Everglades system.

Twelve lightning strike fires, termed 'prescribed natural fires,' occurred in 1981. They fell into three reasonably distinct size ranges. Eight fires ranged in size from 1 to 36 acres (avg. 11.5 acres); three fires ranged from 172-450 acres (avg. 284 acres); and one fire burned 19,982 acres.

Large lightning strike fires, such as 8121-B (Resource Management Fire Records 1981), occur most frequently in June and July as shown in Figure 1. The months immediately preceeding the summer rains are usually characterized by low water levels (Robertson 1953, Wade et al. 1980) and low fuel moistures (Resource Management Fire Records 1972-1981), thereby, facilitating fire spread. Reduced rainfall in July 1981 aggravated by lower than average rainfall the preceeding months (Drought Index, Pine Island, 1981) exacerbated the extensiveness of fire 8121-B. Fire 8121-B burned for 14 days in both pinelands and prairies. It generally burned as well at night as during the day. Severe pine scorch (over 90% per tree) was evident over extensive areas during the initial days of head-fire activity.

Wildfires

Two significant wildfires occurred in Everglades during the 1981 season: the Parkline fire (8113-A), which burned six-thousand acres, and the South Chekika fire (8114-A), which burned eighteen-thousand acres. The fires occurred during a drought-year, dry season, and started outside of the park. Several hammocks were destroyed as a result of severe soil fires. Control was limited to fuel reduction burning using natural and/or artificial barriers as control lines. Direct attack was not feasible because of restrictions on equipment use (Fire Management Plan 1979).

The area in which these fires started - wildlands used for hunting and recreation - are typical of the land surrounding the park. When people use these areas during the dry season, fires frequently result from a variety of reasons such as arson. These fires (8113-A and

8114-A) provide excellent examples of the continued need for boundary protection burns. Close cooperation with the Florida Division of Forestry and memoranda of understanding with private land-holders have enabled us to prescribe burn these areas and/or allow fire to move across these contiguous boundary areas, greatly facilitating fire control activities.

Prescribed Fire

The 1981 prescribed fire year was the second year of a major shift in prescribed burning in Everglades from winter to summer and from various combinations of back and headfires (from year to year) to head-fires. Rationale for this shift was: (1) natural fires are caused by lightning and in most cases would have occurred in concert with the wet season, and (2) most large natural fires are head-fires (Resource Management Fire Reports, 1972-1981). From a management viewpoint it is also cheaper to burn in the summer with head-fires.

Prior to 1980, prescribed burns were done completely out of sequence to the lightning (natural) fire season (Fig. 4). The 1980-1981 change to wet season burning added more fires during this time of the year (Fig. 4). However, other burning activities account for the year-round distribution of fires in 1981 (Fig. 4). The February - March fires were ignited for research, farmland reclamation, and boundary protection purposes. May fires represent farmland reclamation burns, and the October - November fires represent boundary protection burns (Fig. 4). Boundary (fuel reduction) burns are primarily dependent on the water level, not the amount of rainfall. If summer water levels are too high to accomplish adequate fuel reduction these burns are delayed until water levels are appropriate. Therefore, they may appear out of sequence in relation to the natural fire season.

Pine scorch appears to increase both in percent of scorch per tree and percent of scorch per unit area when head-fires are used. Hardwoods also seem to be reduced more effectively with head-fires (Taylor 1981b). Preliminary observations seem to indicate that damage in overstory pine trees is mostly visual, while a greater percentage of small pine trees are killed. Johansen (1975) and Langdon (1971) have indicated that over 90 percent crown scorch per tree (in overstory trees) reduces growth rate the first year, but by the second year, growth rates have equalled that of trees with less than 90 percent scorch and have exceeded the growth rate of unburned control trees. Lotti et al. (1960) stated that understory hardwood control is enhanced and that grasses and forbes are promoted with the use of summer head-fires. However, these studies are not directly applicable to Everglades pine forests. Therefore, it is critical that we continue to monitor the vegetation in order to determine any effects our fire management program may be having on the system.

To accomplish this we hope to establish two research/monitoring projects. One project will evaluate the possible different effects on

vegetation between head-fires and backing-fires. The second will document and evaluate fire season (wet season vs. dry season) and fire return interval (3 years vs. 6 years).

Stagnation Index/Smoke Management

The difficulties in prescribed burning (Taylor and Doren 1982) that were associated with the stagnation index (Florida Division of Forestry 1976) have been resolved. A new memorandum of agreement has been approved. The essential changes relate to use of the stagnation indices as nighttime indicators only and are enforced only when population centers are liable to be impacted. These changes have greatly increased the number of permissable burn days for our summer prescribed burn program.

Muhlenbergia Research Fires

This was the third year for the long-term study of fire effects on Muhlenbergia prairies (Taylor 1980). The annual burn plots did not burn in 1980 resulting in two years of fuel accumulation for the scheduled 1981 burns. All three annual burn plots did burn with a two year rough present. The Muhlenbergia plots will continue to be burned in proper sequence and fire return interval. Data collection will be on a 3-5 year interval, dependent on funding.

Hole-in-the-Donut

Only one burn was accomplished in 1981 (8106-C). The lack of funds for personnel to collect data from the research plots (Taylor and Doren 1982) and time involved in burning were the major factors resulting in reduced burning in the Donut during 1981. The study plots will continue to be monitored as funding allows. Preliminary data show that, in areas where fine fuels are located (major fuel is Brachiaria purpurascens (Raddi) Henri.), fire is effective in reducing hardwood accumulation and in killing Schinus. Fire also appears to enhance the spread and density of the fine fuels, thereby, providing more area to be affected by burning.

SUMMARY OF EVERGLADES NATIONAL PARK

The 1981 fire year in Everglades was accentuated by extreme drought and several large fires. Information from summaries such as this and further analysis of fire behavior information (Taylor 1981a) can help predict fire occurrence problems and management needs. Everglades is attempting to develop more definitive management strategies in the fire program. The lightning detection system, research burns, updates in memoranda of agreement, and analysis of prescribed and wildfire information, should further fine tune our fire management program.

BIG CYPRESS NATIONAL PRESERVE

The third year of National Park Service fire control responsibility in Big Cypress National Preserve was characterized by low rainfall, low water levels, and large fires which were difficult to control. The Fire Management Plan had not yet received Regional approval, therefore, all fires were suppressed in accordance with Fire Management Guidelines.

Fire Sizes, Locations, and Causes

The period of record for fire data in Big Cypress is very short (2-3 years for most locations), however, patterns in fire locations, sizes, and causes are beginning to emerge. Taylor previously noted (Taylor 1980, Taylor and Doren 1982) that most fires are "man-caused" (89% in 1979, 75% in 1980), originate along roads, and are ignited on Sundays (41% in 1979) (Table 11). Fire patterns in 1981 followed similar trends: 86 percent of all fires were man-caused (incendiary) (Table 9 and 10) and most fires originated along well used roads (Fig. 7). Days of the week with the highest number of ignitions were Saturdays, Sundays, and Mondays rather than only Sundays, as in 1979. More lightning strike fires were reported in 1981 than in either 1979 or 1980, but this may not be an accurate portrayal of the frequency of lightning ignited fires. These data may be inaccurate because:

1. The National Park Service did not assume fire control and surveillance responsibility for all areas within BICY until December 1979.

2. Lightning strike surveillance flights were not performed routinely or annually (as in Everglades National Park).

3. Most 1981 lightning strike reports were not confirmed by field documentation.

Monthly fire frequencies continue to reflect visitor use of the preserve as first mentioned by Taylor (1980). November, December, January, and March usually have had the greatest number of fires/month (Table 12); these are months during which hunting seasons are open. Often the fire frequency is low in February which may reflect the close of the deer hunting season and a reduction in visitor use of the area (Dayhoff, pers. comm.) Additionally, the number of fire starts, average fire size, seasonality of fire in each vegetation type (Taylor and Doren 1982), and difficulty of fire control are affected by ground water levels. As the dry season (November through May) progresses, the number of fire starts, average fire size (Table 12), and difficulty of fire control all increase. As the ground water levels decrease, fire danger increases even in the vegetation communities which characterize lower elevations (Taylor 1980), i.e., prairies, cypress prairies, and cypress domes (Gunderson 1982 a,b). Though fire

danger is governed by a complex of environmental parameters, ground water level is a good indictor of the state of the entire complex. Ground water levels, monitored at Bridge 84 and 105, illustrate the inverse relationship between water levels and average fire size (Fig. 8). Ground water levels were relatively low during the first half of 1981 and below average in May, June, and July (Sikkema 1981). Accordingly, the total number of fires and total acres burned were higher in 1981 than in either 1979 or 1980.

Turner 10

On May 8, 1981, the largest fire in National Park Service history, to date, began. The fire, named Turner 10, was a complex of fires that included fires numbered 81099A through 81117FA (Table 10). The reported 165,906 acres burned was calculated from the total area within the burn perimeter (Fig. 9). An accurate map of burned areas within the fire perimeter was not made, so actual acreages of burned areas can not be determined. However, approximately one third of that area did not burn (Taylor, pers. comm.).

Fire suppression efforts during Turner 10 were hampered by a number of environmental conditions: primarily, below average rainfall, low ground water levels, low fuel moistures, and southwesterly to southeasterly winds. Often fire managers in BICY are able to utilize cypress strands and cypress domes as natural fire breaks. These areas are effective fire breaks because they often contain standing water; they have sparse, discontinuous fine fuels; and the fine fuels present often have high fuel moistures. At the time of Turner 10, cypress strands and domes contained no standing water and fine fuel moistures were low, therefore, these areas could not be relied on as effective fire breaks. Prevailing winds during the fire were predominately SW to SE compounding fire control difficulties. Strands are generally oriented NE to SW, therefore, the southerly winds pushed fires parallel to the strands rather than directly into them, which might have impeded fire spread (Dayhoff, pers. comm.). Fires spread north along strands; then around the northern edges into adjacent unburned prairies and pinelands.

Ground water levels in 1981 were low enough to increase the difficulty of fire control but were not so low as to facilitate extensive soil fires. In April 1974, a fire burned the area southwest of the L-28 tieback canal; during this fire, soil fires were widespread resulting in high tree mortality rates in the cypress domes (Dayhoff, pers. comm.) Water levels monitored, at Bridge 84 and Bridge 105 in 1981 and 1974 illustrate the ground water levels present during each fire year (Fig. 12 and 13). Figure 12 shows ground water levels throughout each year while Figure 13 only compares the levels present during each fire (Turner 10 occurred in May 1981, the L-28 fire occurred in April and May 1974).

Impacts of Turner 10 were variable and difficult to generalize due to the large area covered by the fire, the wide range of fuel loads

encountered, and variable weather conditions occurring during the fire (the fire burned for about one month). No "official" projects were organized to document the effects of Turner 10, however, several informal reports were made:

1. Large areas of pine (Pinus elliottii var. densa) mortality were reported; some of these areas had been burned by headfires. (Rochefort, Mallory, and Yates, pers. comm.).

2. Infestations of Ips spp. and Cerambycid beetles were reported in the Bear Island area, west of Birdon Road, east of Turner River Road, and along Monument and Sandy Roads. (Patterson, Robertson, and Rochefort, pers. comm.)

3. Unusually high densities of Chrysopogon paucifloris were observed in flower in many pinelands (Alexander, Gunderson, Holland, Robertson, and Rochefort, pers. comm.).

4. Although press reports of Turner 10 mentioned heavy mortality of wildlife, these would appear to have been speculative as little mortality was evident in the field. Post-fire bird populations in areas of heavily burned pineland appeared to be little changed in either species diversity or population density. Specifically, colonies of the endangered Red-cockaded Woodpecker in severely burned pine areas remained active after the fire and reproduced successfully. It appeared that most wildlife populations of BICY are able to withstand even severe fires without suffering a great deal of direct mortality. The indirect effects of wildfires on wildlife habitat may be more significant (Robertson, pers. comm.).

5. Reports of several possible soil fires were made during Turner 10 by National Park Service personnel on surveillance flights. However, since the areas were inaccessible by helicopter and difficult to reach by land, the sitings were not confirmed. In general, few soil fires are believed to have occurred during Turner 10.

Turner 10 fire suppression managers could have been more effective and efficient in suppression efforts if they had realized the environmental conditions within the cypress areas. Ground water levels monitored at easily accessible sites can be used to predict water levels at sites critical to fire management operations. Hydrologic stations at Bridge 84 and Bridge 105 (along U.S. 41) were monitored in conjunction with three ground water wells in "remote" sites during a Fire Ecology Research Project conducted by the South Florida Research Center. The data collected at these sites illustrate (Fig. 10) the direct relationship between the two sites and the potential for monitoring ground water levels at easily accessible sites in order to predict water levels at strategic sites. Since Big Cypress covers a large area, a wide range of burning conditions exist simultaneously. For this reason, a number of sites would have to be monitored. Figure 11 illustrates the temporal dry-down difference

between a site on the Exxon 11-Mile Road and a site approximately 30 miles west in Deep Lake strand.

Fire Costs

It is not possible to assess 1981 fire costs due to incomplete fire reports. Fifty-five out of 186 fire reports did not have costs calculated; even the $750,000 + total cost on the Turner 10 fire was an estimate. Records of fire costs in 1979 and 1980 are also deficient.

Research Burns

The Big Cypress Fire Ecology Research burn program, directed by the South Florida Research Center, began in 1978. Three objectives of the study were:

1. to determine the effects of fire frequency and season on vegetative composition.

2. to determine the effects of fire frequency and season on fuel load accumulation

3. to aid in development of prescription burning parameters

Research efforts were directed at pinelands, cypress prairies, and mixed grass prairies because most fires occur in these vegetation types (Figs. 14, 15, 16, 17).

Research burns were initiated in July 1980. During 1981, the initial burns were completed in all winter burn plots and annual burns in the summer and fall burn plots (Table 13). Preliminary analyses of data collected in these plots have not been completed.

SUMMARY OF BIG CYPRESS NATIONAL PRESERVE

During the 1981 fire year, more fires and more acreage burned than in either 1980 or 1979. Though BICY was still in a full suppression mode, the average fire size was larger in 1981 than in either 1979 or 1980. Due to incomplete fire records and a lack of fire behavior observations, it is difficult to determine whether this increase was due to considerably higher fire danger ratings in 1981, inefficiencies in fire management (such as slow response time, insufficient fire surveillance activities, insufficient manpower, or inexperienced personnel), or a combination of the two. Examination of BICY fire records reveals a couple of correctable deficiencies:

1. Fire Costs

   Fire costs were not reported on 30 percent of the 1981 fire reports (form no. 1201). In 1979 and 1980 a large number of

fires were reported as having a total cost of $0.00 (23% in 1979 and 18% in 1980) Since even those fires listed without any charges did have maps submitted, no assessment was made of the money required to investigate, map, and write the reports. Therefore, the yearly costs from 1979 through 1981 are underestimates. Accurate records of fire costs would aid in realistic budget planning.

2. Fire Behavior Observation

Fire behavior observations were only recorded on research burns by Everglades National Park personnel; they should be recorded on every fire. Realistic fire danger ratings can only be established from a good data base; at this time BICY does not have a sizeable data base.

Complete, accurate fire records are a valuable tool in developing and then fine tuning a Fire Management Program; with a little more effort BICY fire records could meet this standard. At the time of this writing (August 1983) BICY personnel are beginning to collect fire behavior observations on selected prescribed burns. Experience in Everglades has shown that collecting fire behavior data only on prescribed burns is not enough. In order to obtain a wide range of fire weather and fire behavior observations, data must be collected on all prescribed burns and wildfires. These corrections in fire records will provide fire managers with some of the relevant data necessary to responsibly direct the BICY Fire Management Program.

Another deficiency in the BICY Fire Management Program is Fire Research. Though a good program was initiated in 1978 by the South Florida Research Center, it was terminated in March 1982. BICY Resource Management personnel are continuing to burn the study plots on schedule but have neither the time nor expertise necessary to monitor the vegetation plots. Funding of the Fire Research Program and complete fire records are necessary for responsible fire management in Big Cypress.

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LITERATURE CITED

Gunderson, L. H., and L. L. Loope. 1982a. A Survey and Inventory of the Plant Communities in the Raccoon Point Area, Big Cypress National Preserve. National Park Service, South Florida Research Center Report T-665, Homestead, FL. 36 p.

Gunderson, L. H., and L. L. Loope. 1982b. An Inventory of the Plant Communities within the Deep Lake Strand Area, Big Cypress National Preserve. National Park Service, South Florida Research Center Report T-666, Homestead, FL. 39 p.

Sikkema, D. 1981. Everglades Hydrology Synopsis. National Park Service, South Florida Research Center, Homestead, FL.

Taylor, D. L. 1979. Summary of Fires in Everglades National Park and Big Cypress National 1977 and 1978. National Park Service, South Florida Research Center Report T-565, Homestead, FL.

Taylor, D. L. 1980. Summary of Fires in Everglades National Park and Big Cypress National Preserve, 1979. National Park Service, South Florida Research Center Report T-595, Homestead, FL. 23 p.

Taylor, D. L. 1981a. Fire History and Fire Records for Everglades National Park, 1948-1979. National Park Service, South Florida Research Center Report T-619, Homestead FL. 121 p.

Taylor, D. L., and A. Herndon. 1981b. Impact of 22 Years of Fire on Understory Hardwood Shrubs in Slash Pine Communities within Everglades National Park. National Park Service, South Florida Research Center T-640, Homestead, FL.

Taylor, D. L., and R. F. Doren. 1982. Summary of Fires in Everglades National Preserve and Big Cypress National Preserve, 1980. National Park Service, South Florida Research Center Report T-663, Homestead, FL. 39 p.

Table 1. Fire statistics for Everglades National Park, 1981

	CAUSE														
	Incendiary			Lightning			Prescribed			Research			Total		
1981	No.	Acres	Cost	No.	Acres	Cost	No.	Acres	Cost	No.	Acres	Cost	No.	Acres	Cost
JAN	1	1	$20.00	-	-	-	1	6	$1,521.00	2	168	$411.00	4	175	$1,952.00
FEB	1	1	20.00	-	-	-	-	-	-	-	-	-	1	1	20.00
MAR	1	1	50.00	-	-	-	4	583	6,714.00	-	-	-	5	584	6,764.00
APR	4	24,336	50,954.00	-	-	-	-	-	-	-	-	-	4	24,336	50,954.00
MAY	*1	400	875.00	-	-	-	-	-	-	-	-	-	*1	400	875.00
JUN	-	-	-	5	299	636.00	-	-	-	-	-	-	5	299	636.00
JUL	-	-	-	6	19,549	6,324.00	3	2,717	4,403.00	1	12	419.00	10	22,378	11,146.00
AUG	-	-	-	-	-	-	2	2,518	6,961.00	-	-	-	2	2,518	6,961.00
SEP	-	-	-	2	35	192.00	-	-	-	-	-	-	2	35	192.00
OCT	-	-	-	2	5	282.00	3	1,880	3,457.00	-	-	-	5	1,885	3,739.00
NOV	-	-	-	-	-	-	4	9,201	8,538.00	-	-	-	4	9,201	8,538.00
DEC	-	-	-	-	-	-	-	-	-	1	33	419.00	1	33	419.00
TOTALS:	8	24,739	51,919.00	15	19,988	7,435.00	17	16,905	31,596.00	4	213	1,249.00	44	61,842	92,200.00
1981 Average		3,092	6,490.00		1,332	496.00		994	1,859.00		53	312.00		1,405	2,095.00
1980 Cost/Acre			2.10			.37			1.87			5.86			1.49
1948-1981 Average	Figures are not provided due to errors found in Taylor (1981). Corrected figures will be included in future publication.														

* Outside Park Boundary

Table 2. Rainfall and acreage burned by month, 1981.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Rainfall inches	.33	5.99	2.03	.10	4.93	3.12	6.05	19.76	12.98	1.74	1.84	.62
Acres Burned	175	1	584	24,336	400	299	22,378	2,518	35	1,885	9,201	33

Monthly Rainfall - 10 year period 1972-1981

	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	Monthly Mean
JANUARY	.33	3.86	1.86	3.32	1.96	.91	.16	.27	1.94	1.16	1.48
FEBRUARY	5.99	1.36	.49	4.60	1.65	2.11	.83	.06	1.94	2.72	2.18
MARCH	2.03	1.29	.28	2.81	.70	.20	.25	.13	1.06	1.40	1.02
APRIL	.10	4.33	10.65	6.31	.64	3.93	.06	5.38	.42	7.08	3.89
MAY	4.93	5.04	5.17	5.07	12.81	8.14	7.67	2.29	3.08	4.52	5.87
JUNE	3.12	14.61	5.65	8.71	8.67	8.13	9.72	8.24	8.96	8.70	8.45
JULY	6.05	12.37	6.69	6.31	5.53	3.94	7.16	10.71	8.91	10.05	7.77
AUGUST	19.76	9.20	4.30	11.41	5.98	13.95	8.53	10.56	14.43	7.63	10.58
SEPTEMBER	12.98	8.81	7.91	12.63	10.78	8.10	7.06	7.42	3.31	5.15	8.42
OCTOBER	1.74	4.39	5.08	9.65	3.53	2.17	5.63	4.32	3.10	5.39	4.50
NOVEMBER	1.84	7.38	.67	1.32	2.89	4.24	1.03	2.12	.36	4.07	2.59
DECEMBER	.62	1.34	3.73	2.58	3.58	1.19	.51	.26	2.96	.90	1.77

Table 3. Number and acres of incendiary fires by month for Everglades National Park, 1972-1981.

	1981		1980		1979		1978		1977		1976		1975		1974		1973		1972	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
JAN	1	1	-	-	-	15	1	1	-	-	1	8	-	-	1	200	2	11	1	3,626
FEB	1	1	-	-	-	-	-	-	-	-	-	-	-	-	2	151	1	9	5	15,935
MAR	1	1	3	528	-	-	-	-	1	1	-	-	5	33,506	3	4,472	4	4,190	7	2,540
APR	4	24,336	-	-	-	-	-	-	2	7	-	-	2	3,689	4	44,253	4	6,071	-	-
MAY	-	-	-	-	1	3	-	-	1	6	-	-	-	-	2	11,112	5	1,687	-	-
JUN	-	-	-	-	-	-	1	120	-	-	-	-	-	-	-	-	3	1	-	-
JUL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AUG	-	-	2	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SEP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OCT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NOV	-	-	1	268	-	-	-	-	-	-	-	-	1	12	2	743	1	101	-	-
DEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	45	-	-

Table 4. Number and acres of lightning strike fires by month for Everglades National Park, 1972-1981.

	1981		1980		1979		1978		1977		1976		1975		1974		1973		1972	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
JAN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FEB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
APR	-	-	1	135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MAY	-	-	-	-	-	-	-	-	-	-	2	38	3	1,955	1	153	-	-	1	147
JUN	5	299	3	1,440	1	1	2	753	-	-	-	-	13	6,484	6	5,558	-	-	1	128
JUL	6	19,549	6	205	4	668	-	-	3	365	1	9	5	694	-	-	7	530	6	457
AUG	-	-	14	275	8	1,566	4	137	1	1	2	45	3	351	4	2,479	5	360	3	132
SEP	2	35	2	1,196	-	-	2	35	-	-	-	-	-	-	1	220	1	1	6	392
OCT	2	5	-	-	-	-	-	-	-	-	-	-	5	199	-	-	1	82	-	-
NOV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	300
DEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	11	-	-

Table 5. Number and acres of prescribed burns by month for Everglades National Park, 1972-1981.

	1981		1980		1979		1978		1977		1976		1975		1974		1973		1972	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
JAN	3	174	1	143	2	589	-	-	2	1,422	4	1,911	5	3,981	6	2,707	12	2,417	-	-
FEB	-	-	2	3,423	1	216	-	-	4	720	2	186	4	576	11	2,699	8	686	2	88
MAR	4	583	3	3,003	2	530	1	787	1	28	12	13,643	7	2,631	4	9,125	8	6,955	2	667
APR	-	-	1	310	1	40	-	-	1	27	-	-	7	173	3	28	5	77	1	45
MAY	-	-	3	831	-	-	-	-	-	-	1	560	-	-	1	10	3	55	1	19
JUN	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
JUL	4	2,729	1	1	-	-	-	-	-	-	-	-	1	43	-	-	-	-	-	-
AUG	2	2,518	2	45	-	-	-	-	-	-	-	-	-	-	-	-	1	50	-	-
SEP	-	-	1	1,031	1	38	-	-	-	-	-	-	1	503	-	-	-	-	2	26
OCT	3	1,880	-	-	4	1,378	-	-	-	-	1	640	3	299	2	20	5	371	6	152
NOV	4	9,201	1	606	3	1,012	1	60	1	4	5	2,075	4	1,129	8	399	6	189	4	1,590
DEC	1	33	-	-	2	805	4	795	1	3,877	4	1,278	3	775	-	-	3	371	5	1,325

Table 6. Total numbers and acres of fires by month for Everglades National Park, 1972-1981.

	1981		1980		1979		1978		1977		1976		1975		1974		1973		1972	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
JAN	4	175	1	143	3	604	1	1	2	1,422	5	1,919	5	3,981	7	1,907	14	2,428	1	3,626
FEB	1	1	2	3,423	1	216	-	-	4	720	2	186	4	576	13	2,850	9	695	7	16,023
MAR	5	584	6	3,531	2	530	1	787	2	29	12	13,643	7	33,137	7	13,597	12	11,145	9	3,207
APR	4	6,335	2	445	1	40	-	-	3	34	-	-	9	3,862	7	44,281	9	6,148	1	45
MAY	-	-	3	831	1	3	-	-	1	6	3	598	3	1,955	4	11,275	8	1,742	1	166
JUN	5	299	3	1,440	1	1	3	873	-	-	-	-	14	6,485	6	5,558	3	1	1	128
JUL	10	22,278	7	206	4	688	-	-	3	365	1	9	6	737	-	-	7	530	6	457
AUG	2	2,518	16	320	8	1,566	4	137	1	1	2	45	3	351	4	2,479	6	410	3	132
SEP	2	35	3	2,227	-	-	3	73	-	-	-	-	1	503	1	220	1	1	8	418
OCT	5	1,885	-	-	4	1,378	-	-	-	-	1	640	8	498	2	20	6	453	6	152
NOV	4	9,201	2	874	3	1,012	1	60	1	4	5	2,075	4	1,129	10	1,129	7	290	7	1,890
DEC	1	33	-	-	2	805	4	795	1	3,877	4	1,278	3	775	-	-	5	427	5	1,325

Table 7. Average number and average acres of fires by month, 1972-1981.

	Incendiary		Lightning Strike		Prescribed		Total	
	Avg. No.	Avg. Acres	Avg. No.	Avg. Acres	Avg. No.	Avg. Acres	Avg. No.	Avg. Acres
JAN	.80	386.2	-	-	3.3	1,334.4	4.1	1,720.6
FEB	.90	1,609.6	-	-	3.4	859.4	4.3	2,469
MAR	2.4	4,523.8	-	-	4.4	3,795.2	6.8	8,319
APR	1.6	6,035.5	.1	13.5	1.9	70.0	3.6	6,056
MAY	.9	12,808	.7	229.3	.9	147.5	2.5	1,657.6
JUN	.4	12.1	3.1	1,466.3	.1	.1	3.6	1,478.5
JUL	-	-	3.6	2,247.7	.6	277.3	4.2	2,525
AUG	.2	.7	4.4	534.6	.5	261.3	5.1	799.6
SEP	-	-	1.4	187.9	.5	159.8	1.9	347.7
OCT	-	-	.8	28.6	2.4	474.0	3.2	502.6
NOV	.5	112.4	.3	30.0	3.7	1,626.5	4.5	1,626.5
DEC	.1	4.5	.1	1.1	2.3	925.9	2.5	931.5

Table 8. Individual fires for Everglades National Park, 1981.

Fire Number	Location (Lat.-Long.)	Cause	Fire Mgmt Unit	Acres	Cost	Date
8101-d	25°24'-80°37'	Research	2b	161	112.00	01-08-81
8102-c	25°22'-80°38'	Prescribed	2b	6	1,521.00	01-15-81
8103-d	25°23'-80°26'	Research	3	43	299.00	01-20-81
8104-c	25°28'-81°10'	Prescribed	1	43	1,493.00	03-02-81
8105-e	25°24'-80°40'	Prescribed	3	5	838.00	03-04-81
8106-c	25°23'-80°42'	Prescribed	2b	525	3,852.00	03-06-81
8107-a	25°24'-80°32'	Incendiary	2b	1	20.00	01-17-81
8108-a	25°21'-80°39'	Incendiary	3	1	50.00	03-19-81
8109-d	25°25'-80°37'	Prescribed	2b	10	531.00	03-26-81
8110-c	25°23'-80°36'	Incendiary	3	1	20.00	02-01-81
8111-c	25°34'-81°03'	Incendiary	1	115	70.00	04-04-81
8112-c	25°32'-81°00'	Incendiary	1	220	70.00	04-04-81
*8113-a	25°30'-80°33'	Incendiary	2b	6,000[a]	27,968.26	04-06-81
*8114-a	25°30'-80°40'	Incendiary	2b	18,000[b]	22,846.00	04-12-81
*8115-a	25°40'-80°39'	Incendiary	2a	400[c]	875.00	05-17-81
8116-b	25°34'-80°44'	Lightning	3	5	100.00	06-12-81
8117-b	25°37'-80°40'	Lightning	2b	5	100.00	06-19-81
8118-b	25°37'-80°42'	Lightning	2c	3	100.00	06-19-81
8119-b	25°36'-80°46'	Lightning	2a	3	100.00	06-19-81
*8120-b	25°29'-80°20'	Lightning	2b	285[d]	236.08	06-28-81
8121-b	25°40'-80°20'	Lightning	2b	19,039	5,569.00	07-05-81
8122-b	25°22'-80°45'	Lightning	2b	1	10.00	07-10-81
8123-c	25°20'-80°44'	Prescribed	3	1,907	2,136.00	07-11-81
8124-b	25°30'-80°46'	Lightning	2a	229	425.00	07-18-81
8125-c	25°24'-80°39'	Prescribed	3	38	541.00	07-23-81
8126-c	25°23'-80°36'	Prescribed	3	772	1,726.11	07-27-81
8127-d	25°25'-80°38'	Research	2b	12	419.00	07-28-81
8128-b	25°40'-80°47'	Lightning	2c	1	80.00	07-26-81
8129-b	25°40'-80°47'	Lightning	2c	36	80.00	07-26-81
8130-b	25°40'-80°52'	Lightning	2c	450	160.00	07-26-81

Table 8 continued.

Fire Number	Location (Lat.-Long.)	Cause	Fire Mgmt Unit	Acres	Cost	Date
8131-c	25°24'-80°44'	Prescribed	3	944	3,350.00	08-06-81
8132-c	25°24'-80°42'	Prescribed	3	1,574	3,611.00	08-06-81
8133-b	25°27'-80°42'	Lightning	2b	14	96.48	09-28-81
8134-b	25°25'-81°03'	Lightning	1	21	96.48	09-28-81
8135-c	25°23'-80°36'	Prescribed	3	518	1,126.79	10-17-81
8136-c	25°22'-80°36'	Prescribed	3	443	459.91	10-15-81
8137-b	25°30'-81°09'	Lightning	1	2	143.73	10-19-81
8138-b	25°36'-81°10'	Lightning	1	3	138.54	10-19-81
8139-c	25°24'-80°41'	Prescribed	3	919	1,871.02	10-20-83
8140-c	25°22'-80°36'	Prescribed	3	83	439.12	11-03-81
8141-c	25°20'-80°50'	Prescribed	3	4,092	2,571.19	11-07-81
8142-c	25°40'-80°57'	Prescribed	2c	4,017	4,924.21	11-25-81
8143-c	25°27'-80°39'	Prescribed	2b	1,009	604.00	11-25-81
8144-d	25°24'-80°37'	Research	2b	33	419.27	12-09-81

* Portions, and or all of each of these fires occurred outside the park boundary.
a 70 acres in the park
b 8,239 acres in the park
c 0.0 acres in the park
d 172 acres in the park

Table 9. Comparison of fire causes 1979, 1980, and 1981 in Big Cypress National Preserve. (% of total fires)

	Man-caused (Incendiary)	Pasture Burns	Research Burns	Lightning
1979	89%	7%	-	4%
1980	75%	5%	6%	2%
1981	86%	1%	6%	6%

Table 10. Individual fires for Big Cypress National Preserve, 1981.

Fire Number	Location T-R-S	Cause	Acres	Cost ($)	Date
		January			
81001A	55S-33E-19, 25, 30, 31	Incendiary	280	300.00	1-3
81002A	51S-33E-9	Incendiary	70	225.00	1-4
81003A	50S-30E-1, 2, 11, 12	Incendiary	1,200	345.00	1-5
81004A	52S-34E-7, 18	Incendiary	140	250.00	1-5
81005A	52S-34E-2, 3, 11	Incendiary	140	225.00	1-5
81006A	53S-35E-19	Incendiary	9	225.00	1-4
81007A	52S-34E-12, 13	Incendiary	105	225.00	1-4
81008A	52S-32E-3	Incendiary	125	75.00	1-5
81009A	51S-34E-18	Incendiary	15	75.00	1-5
81010A	53S-34E-8	Incendiary	10	75.00	1-5
81011A	53S-34E-25	Incendiary	80	100.00	1-5
8102A	53S-33E-6	Incendiary	12	25.00	1-5
81013A	49S-30E-25	Incendiary	50	20.00	1-5
81014A	52S-30E-24	Incendiary	90	300.60	1-5
81015A	55S-32E-1, 12 55S-33E-6, 7	Incendiary	320	240.91	1-11
81016A	51S-33E-22, 23	Incendiary	28	158.00	1-11
81017A	52S-32E-3	Incendiary	50	158.00	1-11
81018A	53S-31E-9	Incendiary	2	10.00	1-8
81019A	52S-31E-19	Incendiary	60	614.87	1-8
81020A	53S-32E-15, 16, 21, 22	Incendiary	910	3,860.72	1-10
81021A	49S-30E-13	Incendiary	3,450	742.91	1-9
81022FA	50S-30E-34	False Alarm		78.00	1-10
81023FA	51S-30E-2	False Alarm		78.00	1-10
81024A	54S-33E-19	False Alarm		78.00	1-10
81025A	52S-31E-7	Incendiary	120	589.00	1-13
81026A	53S-33E-15	Vehicle	1	22.40	1-14
81027A	53S-32E-9	Incendiary	120	159.76	1-16

Table 10 continued.

Fire Number	Location T-R-S	Cause	Acres	Cost ($)	Date
81028FA	54S-34E-21	False Alarm		97.50	1-16
81029A	52S-30E-31	Incendiary	1	0	1-16
81030A	53S-33E-18 53S-32E-13, 14, 23, 24, 26	Incendiary	2,410	865.59	1-17
81031A	52S-30E-24	Incendiary	50	467.55	1-17
81032A	52S-30E-4	Incendiary	75	90.00	1-19
81033C	49S-30E-9, 10	Pasture Burn	150	0	1-23
81034A	51S-31E-12, 13 51S-32E-18	Incendiary	50	78.00	1-24
81035A	53S-34E-6	Incendiary	12	58.50	1-25
81036A	52S-30E-35 53S-30E-2	Incendiary	20	219.19	1-26
81037A	53S-34E-5, 6, 7	Incendiary	28	71.79	1-26
81038A	51S-34E-23	Incendiary	90	234.00	1-31
		February			
81039A	51S-30E-26, 27, 34, 35, 36 52S-30E-1, 2, 12	Incendiary	1,760	1,098.31	2-2
81040A	51S-32E-27, 34, 35	Incendiary	240	276.00	2-4
81041A	51S-31E-14, 23, 24, 26	Incendiary	180	212.00	2-4
81042D	51S-30E-28	Research	100	281.00	2-4
81043A	50S-31E-6	Incendiary	60	347.00	2-5
81044A	54S-34E-29	Incendiary	12	310.50	2-8
81045A	52S-32E-10	Incendiary	2	18.00	2-8
81046A	51S-32E-1, 12 51S-33E-6, 7	Incendiary	150	101.00	2-10
81047A	53S-30E-2, 11	Incendiary	320	239.00	2-14
81048FA	51S-30E-10	False Alarm		15.00	2-14
81049FA	50S-30E-15	False Alarm		0.00	2-19
81050A	53S-33E-16, 17	Incendiary	220	101.24	2-20

Table 10 continued.

Fire Number	Location T-R-S	Cause	Acres	Cost ($)	Date
81051A	52S-30E-31, 32	Incendiary	225	579.45	2-20
81052D	51S-34E-33	Research	80	445.00	2-25
81053D	51S-34E-33, 34	Research	70	603.00	2-25
		March			
81054D	53S-33E-12	Research	40	185.00	3-5
81055D	53S-33E-12 53S-34E-7	Research	40	274.16	3-5
81056FA	50S-30E-12	False Alarm		0.00	3-7
81057A	53S-30E-1	Incendiary	60	432.00	3-8
81058A	54S-33E-24	Incendiary	65	597.00	3-11
81059A	52S-34E-11, 12, 13, 14	Incendiary	115	297.00	3-11
81060A	53S-33E-1, 2, 11, 12	Incendiary	160	189.00	3-14
81061A	53S-33E-25, 26, 34 35, 36 53S-34E-30, 31, 32 33, 34 54S-33E-1, 2, 3, 12 54S-34E-3-17	Incendiary	7,615	891.00	3-15
81062A	53S-32E-7	Incendiary	2	96.56	3-15
81063A	51S-33E-7, 8, 16-20	Incendiary	1,630	945.00	3-16
81064FA	52S-31E-8	False Alarm		189.00	3-17
81065A	53S-34E-36	Incendiary	1	66.00	3-18
81066A	53S-34E-23, 24, 25, 26	Incendiary	220	324.00	3-21
81067A	51S-32E-5, 6, 7, 8, 17	Incendiary	820	675.00	3-21
81068A	52S-30E-18	Incendiary	65	211.00	3-22
81069A	51S-33E-25, 36 51S-34E-17, 18, 19 20, 21, 22, 28, 29, 30, 31	Incendiary	2,900	5,207.00	3-27

Table 10 continued.

Fire Number	Location T-R-S	Cause	Acres	Cost ($)	Date
81070A	53S-32E-14	Incendiary	1	184.00	3-28
81071A	53S-34E-2, 3, 10, 11 54S-34E-26, 27, 28, 29, 32, 33, 34, 35, 36	Incendiary	3,250	1,996.00	3-28
81072A	53S-32E-14	Incendiary	4	64.37	3-28
81073A	50S-30E-3 50S-31E-6 51S-30E-11, 12, 14, 15 21-36 51S-31E-7, 8, 16-20 29-32	Incendiary	10,970	16,276.00	3-28
81074FA	53S-32E-14	False Alarm		12.91	3-28
81075FA	53S-32E-14	False Alarm		14.14	3-28
81076FA	53S-32E-14	False Alarm		70.49	3-28
81077A	53S-34E-23	Incendiary	1	5.00	3-29
81078A	53S-32E-14	Incendiary	1	101.17	3-29
81079A	53S-32E-14	Incendiary	1	595.47	3-29
81080A	53S-32E-14	Incendiary	1	15.94	3-29
81081A	53S-32E-14	Incendiary	1	10.00	3-29
81082A	54S-34E-6	Incendiary	2	50.00	3-30
81083A	53S-30E-1	Incendiary	3	140.00	3-30
81084A	52S-30E-25	Incendiary	12	181.00	3-30
81085A	49S-30E-29, 29	Incendiary	5	89.00	3-31
81086A	53S-34E-21	Incendiary	20	65.00	4-5
81087FA	53S-34E-26	False Alarm		0.00	4-6
81088A	53S-31E-12	Incendiary	1	203.00	4-8
81089A	54S-34E-29, 30	Incendiary	245	3,085.70	4-10
81090A	53S-34E-36	Incendiary	1	28.15	4-12
81091A	53S-34E-36	Incendiary	1	98.44	4-12
81092FA	50S-30E-15	False Alarm		0.00	4-17
81093A	53S-34E-17	Incendiary	2	259.68	4-18
81094A	52S-30E-36	Incendiary	1	74.63	4-22

Table 10 continued.

Fire Number	Location T-R-S	Cause	Acres	Cost ($)	Date
81095A	53S-34E-36	Incendiary	40	385.75	4-27
81096A	49S-30E-32, 33	Incendiary	3	605.00	4-28
81097A	52S-30E-32	Incendiary	1	64.83	4-30
		May			
81098A	54S-34E-23, 24	Incendiary	1	18.83	5-5
81099A	52S-30E-32	Incendiary	163,280	750,000.00	5-8
81100A	50S-31E-1-5, 8-16, 21 28, 32-36 50S-32E-1-6 50S-33E-4-8, 17, 18 19, 27, 31, 32, 34, 35 51S-31E-1-36 51S-32E-1-36 51S-33E-2-4, 9-12 14-22, 25-36 51S-34E-2-5, 7-11, 13-22, 28-32 51S-30E-11-14, 33-35 52S-30E-1-4, 6-12, 14-16, 20, 21, 29, 30 52S-31E-1-6, 8-17, 19-36 52S-32E-1-35 52S-33-E-1-9, 18 53S-31E-1-6, 8-12 53S-32E-2-11, 18	Incendiary	(included w/81099A)	(included w/81099A)	5-11
81101A	51S-32E-12	Incendiary	"	"	5-11
81102A	52S-30E-13	Incendiary	"	"	5-14
81103A	52S-30E-13	Incendiary	"	"	5-17
81104A	52S-30E-13	Incendiary	1	"	5-17
81105A	50S-31E-2	Incendiary	75	"	5-22

Table 10 continued.

Fire Number	Location T-R-S	Cause	Acres	Cost ($)	Date
81106A	53S-34E-18	Incendiary	1	(included w/81099A)	5-22
81107A	53S-31E-6	Incendiary	1	"	5-22
81108A	53S-31E-8, 9, 10 11, 12, 13, 14, 15, 16, 17	Incendiary	2,250	"	5-23
81109A	54S-35E-8	Incendiary	1	"	5-24
81110A	53S-34E-29	Incendiary	5	"	5-29
81111A	53S-34E-4	Incendiary	1	"	5-24
81112A	52S-30E-18	Incendiary	150	"	5-25
81113A	52S-29E-35, 36, 52S-30E-30, 31	Incendiary	140	"	5-29
		June			
81114A	53S-33E-15	Incendiary	1	"	6-1
81115A	53S-33E-14	Incendiary	5	"	6-1
81116A	54S-35E-19	Incendiary	140	"	6-2
81117FA	53S-34E-36	False Alarm		"	6-3
81118A	55S-33E-27	Lightning	75	225.00	6-11
81119A	52S-30E-10, 11, 12 13, 14, 15 52S-30E-22-27	Incendiary	2,800	79,675.00	6-14
81120A	53S-30E-1	Incendiary	1	(included w/81119A)	6-16
81121A	53S-31E-23	Incendiary	1	"	6-16
81122A	53S-31E-23	Lightning	1	"	6-17
81123A	53S-31E-14	Lightning	1	"	6-17
81124A	52S-34E-9	Lightning	3	"	6-18
81125A	55S-33E-8	Lightning	1	"	6-19

Table 10 continued.

Fire Number	Location T-R-S	Cause	Acres	Cost ($)	Date
		July			
81126A	53S-32E-15	Lightning	1	76.66	7-11
81127A	51S-34E-27, 33-35	Incendiary	440	3,827.91	7-14
81128A	54S-34E-32	Lightning	20	12.09	7-21
81129A	52S-30E-22	Lightning	10	424.60	7-27
81130A	54S-35E-8	Incendiary	1	109.64	7-29
		August			
81131D	53S-34E-7	Research	1	812.50	8-4
81132FA	51S-34E-27, 28	False Alarm	1	*	8-4
81133A	55S-35E-18, 19	Lightning	56	*	8-7
81134A	55S-35E-19	Lightning	20	*	8-7
81135A	54S-34E-33	Lightning	30	*	8-7
		September			
81136D	51S-30E-22	Research	1	*	9-24
		October			
81137A	53S-34E-27, 28	Incendiary	120	*	10-11
81138A	52S-33E-12, 13	Incendiary	50	*	10-11
81139A	53S-32E-21	Incendiary	50	*	10-11
81140A	51S-34E-26, 35	Incendiary	40	*	10-11
81141A	50S-30E-17, 20	Incendiary	110	*	10-13

*Not available. Costs were not reported on DI-1201 submitted to the Regional Office.

Table 10 continued.

Fire Number	Location T-R-S	Cause	Acres	Cost ($)	Date
		November			
81142A	52S-32E-?	Incendiary	unable to determine	*	11-13
81143A	50S-33E-25, 26, 35	Incendiary	150	*	11-14
81144A	50S-33E-?	Incendiary	unable to determine	*	11-14
81145A	51S-34E-26	Incendiary	60	*	11-15
81146A	52S-34E-9	Incendiary	1	*	11-15
81147A	53S-32E-16, 17, 20	Incendiary	70	*	11-15
81148A	53S-32E-16, 17, 20	Incendiary	70	*	11-15
81149A	53S-32E-9, 16	Incendiary	80	*	11-15
81150FA	50S-30E-2	False Alarm		*	11-16
81151A	51S-34E-35	Incendiary	60	*	11-18
81152A	54S-33E-24	Incendiary	1	*	11-19
81153A	50S-30E-4	Incendiary	1	*	11-19
81154A	53S-33E-20, 21	Incendiary	135	*	11-20
81155A	53S-31E-21	Incendiary	120	*	11-21
81156A	54S-33E-23	Incendiary	1	*	11-25
81157A	54S-35E-15	Incendiary	1	*	11-25
81158A	53S-32E-12	Incendiary	1	*	11-26
81159A	52S-35E-32	Incendiary	20	*	11-29
		December			
81160A	53S-32E-21	Incendiary	570	*	12-6
81161A	55S-32E-1	Incendiary	110	*	12-6
81162A	53S-30E-1	Incendiary	1	*	12-7

*Not available. Costs were not reported on DI-1201 submitted to the Regional Office.

Table 10 continued.

Fire Number	Location T-R-S	Cause	Acres	Cost ($)	Date
81163A	52S-34E-29, 32, 33	Incendiary	460	*	12-10
81164D	51S-34E-28, 33	Research	1	*	12-10
81165A	53S-34E-30	Incendiary	90	*	12-12
81166A	52S-33E-13	Incendiary	110	*	12-12
81167A	51S-34E-23	Incendiary	50	*	12-13
81168A	54S-34E-21	Incendiary	11	*	12-14
81169A	52S-34E-2	Incendiary	40	*	12-15
81170A	52S-34E-25	Incendiary	20	*	12-16
81171A	54S-35E-17	Incendiary	1	*	12-17
81172A	53S-34E-29	Incendiary	10	*	12-19
81173A	51S-34E-25, 26, 35, 36	Incendiary	40	*	12-19
81174A	52S-35E-20	Incendiary	20	*	12-19
81175A	51S-34E-15, 16, 22	Incendiary	240	*	12-19
81176A	50S-30E-15, 16, 17 20, 21, 22	Incendiary	700	*	12-19
81177A	52S-34E-8, 9	Incendiary	2	*	12-19
81178A	52S-34E-9, 10, 15, 16, 17, 22	Incendiary	1,070	*	12-19
81179A	53S-34E-29, 30	Incendiary	40	*	12-20
81180A	50S-30E-34	Incendiary	11	*	12-20
81181D	51S-30E-21, 22	Research	1	*	12-20
81182D	53S-34E-7	Research	2	*	12-22
81183A	50S-30E-1	Incendiary	8	*	12-22
81184A	50S-30E-13	Incendiary	18	*	12-22
81185A	52S-30E-20, 21	Incendiary	43	*	12-25
81186A	49S-30E-26, 27, 34 35	Cattle Permit	1,200	*	12-26

*Not available. Costs were not reported on DI-1201 submitted to the Regional Office.

Table 11. Fire starts by day of the week.

	Day of the Week						
Year	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1979	41%	7%	12%	12%	7%	12%	7%
1980	16%	16%	14%	10%	15%	10%	19%
1981	25%	16%	10%	11%	9%	12%	16%

Table 12. Number of fires, number of acres burned, and average fire size in 1979, 1980 and 1981 (BICY).

	# Fires			# Acres Burned			Average Fire Size (Ac)		
Month	1979	1980	1981	1979	1980	1981	1979	1980	1981
Jan	15	4	34	4227	257	10273	282	64	302
Feb	5	6	13	736	546	3419	92	182	263
Mar	20	30	27	9236	8967	27982	462	300	1036
Apr	6	3	10	5801	445	311	967	223	31
May	6	3	16	177	340	165906	31	113	10369
Jun	1	6	11	4	3905	3029	4	651	275
Jul	2	6	5	130	1265	472	65	211	94
Aug	0	5	4	0	405	107	-	81	27
Sep	0	0	1	0	0	1	-	-	1
Oct	3	7	5	28	781	370	9	156	74
Nov	9	34	17	1067	1127	701	119	33	41
Dec	14	40	27	2728	9928	4869	195	245	180
Totals	84	138	170	24140	27906	217440			

Table 13. Research burns completed in 1981.

Fire Number	Date	Plot Name	Age Rough	Comments
Mixed Grass Prairie				
81042D	2-4-81	Winter Annual & Three Year	unknown	burned
81136D	9-24-81	Summer Annual	1 year	would not burn
81181D	12-21-81	Fall Annual	1 year	would not burn
Cypress Prairie				
81054D	3-5-81	Winter Three Year	unknown	burned
81055D	3-5-81	Winter Annual	unknown	burned
81131D	8-4-81	Summer Annual	1 year	would not burn
81182D	12-22-81	Fall Annual	1 year	would not burn
Pineland				
81052D	2-25-81	Winter Annual	unknown	burned
81053D	2-25-81	Winter Three Year	unknown	burned
81127A	7-14-81	Summer Annual	1 year	*burned
81164D	12-10-81	Fall Annual	1 year	would not burn

*burned by an incendiary fire

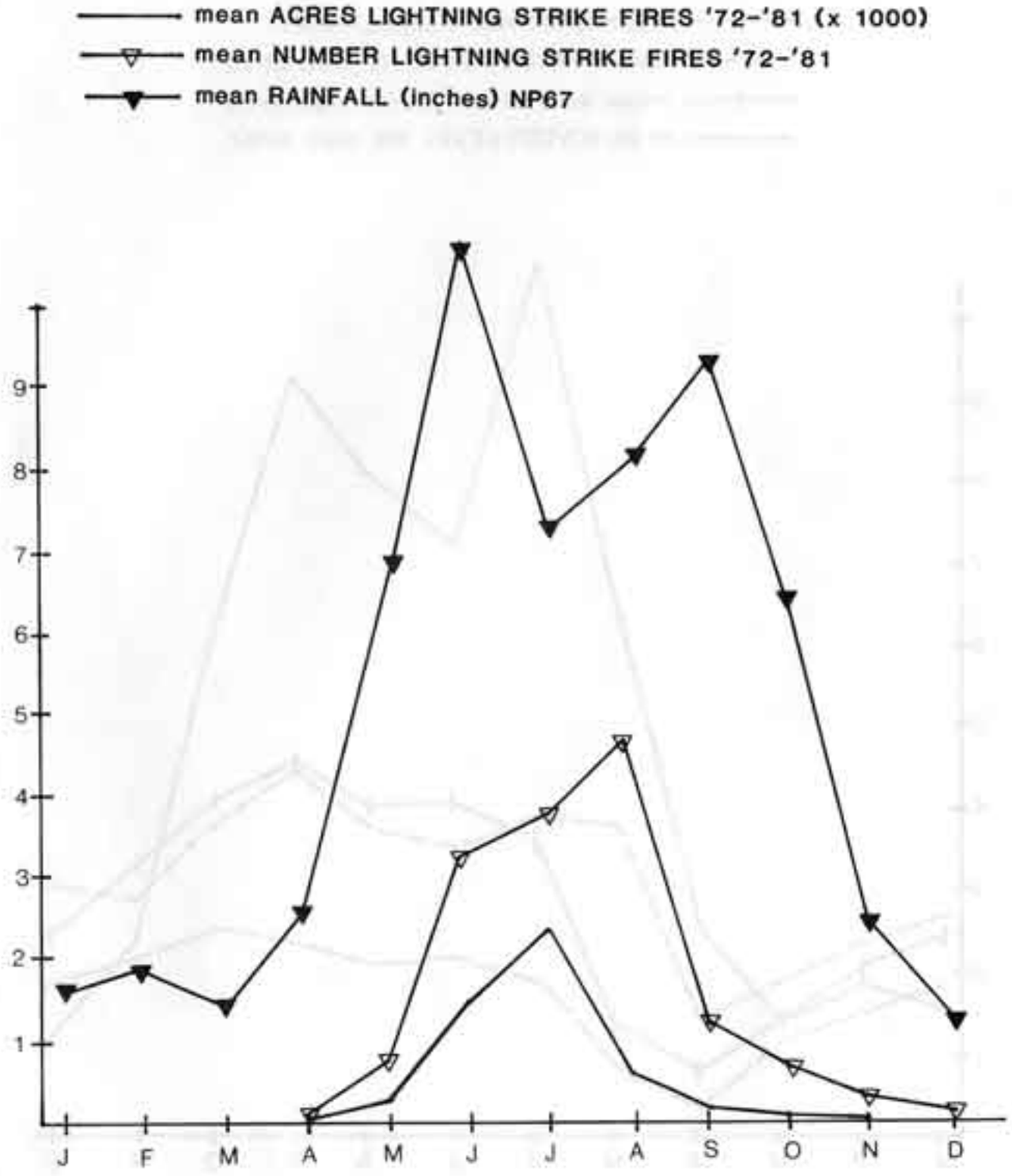

Figure 1. Mean monthly acreage of lightning strike fires 1972-1981, mean monthly number of lightning strike fires 1972-1981, and mean monthly rainfall in Everglades National Park.

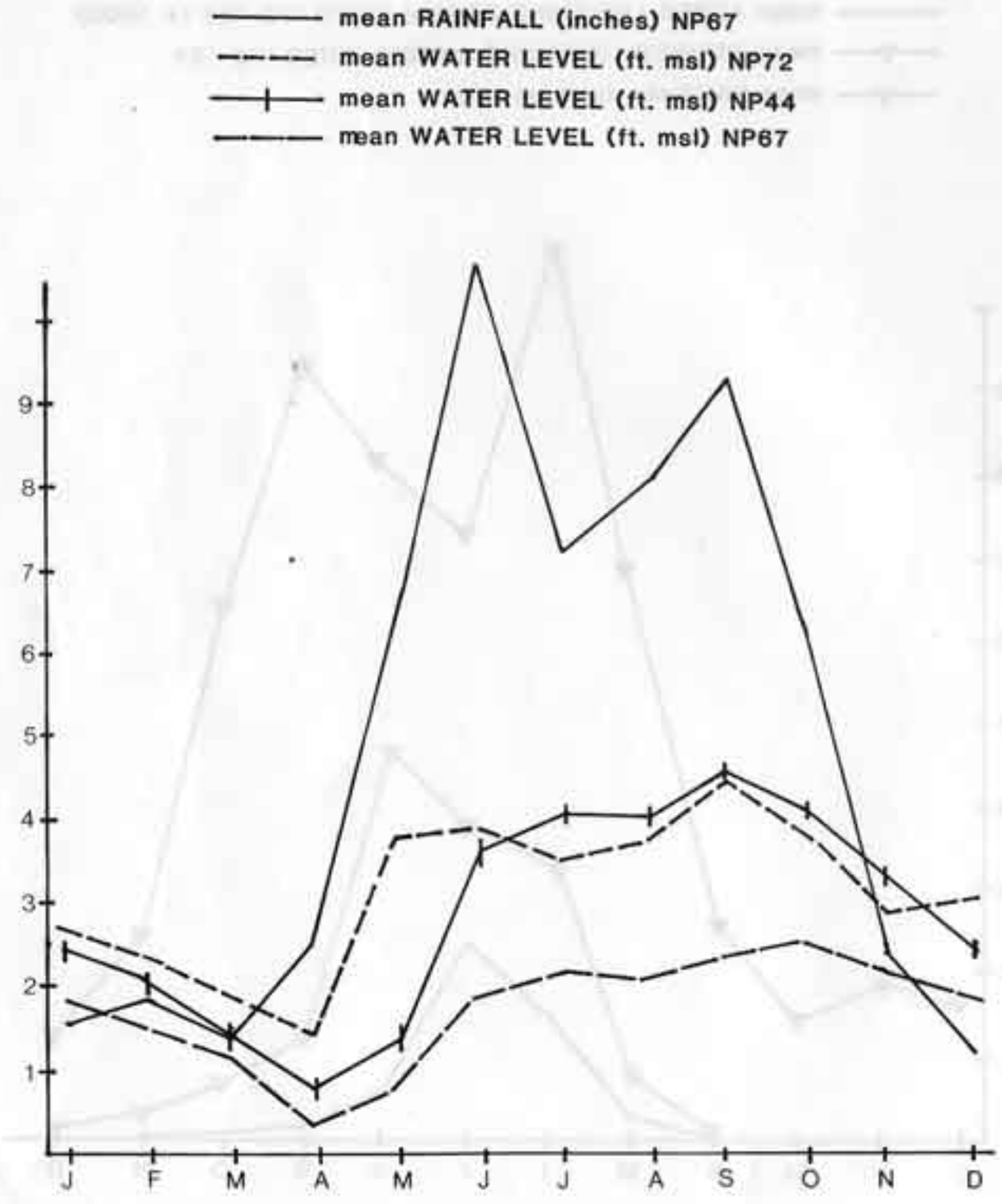

Figure 2. Mean monthly rainfall and water level at three hydrologic stations during 1981 in Everglades National Park.

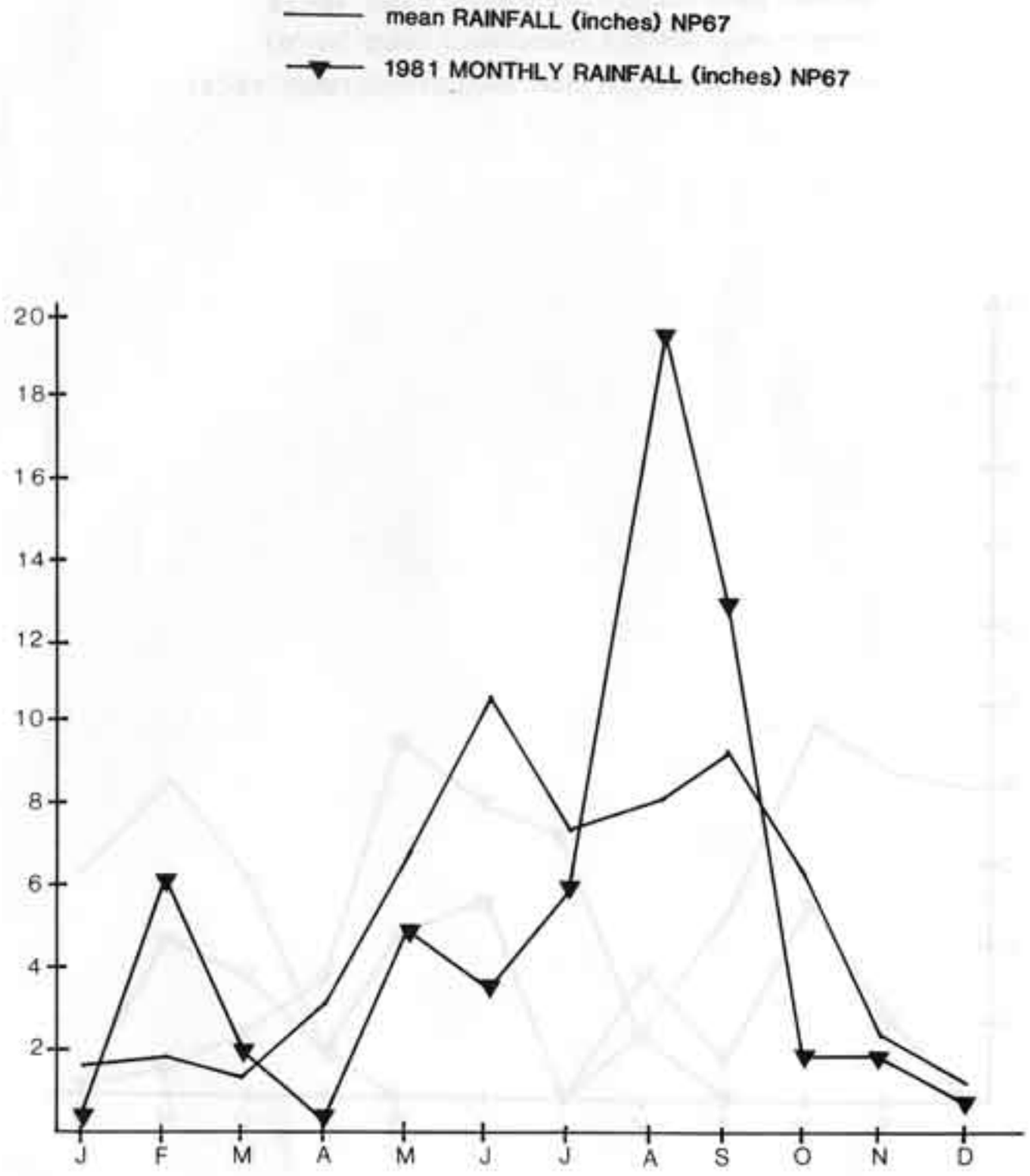

Figure 3. Mean monthly rainfall and 1981 monthly rainfall at hydrologic station NP67, Everglades National Park.

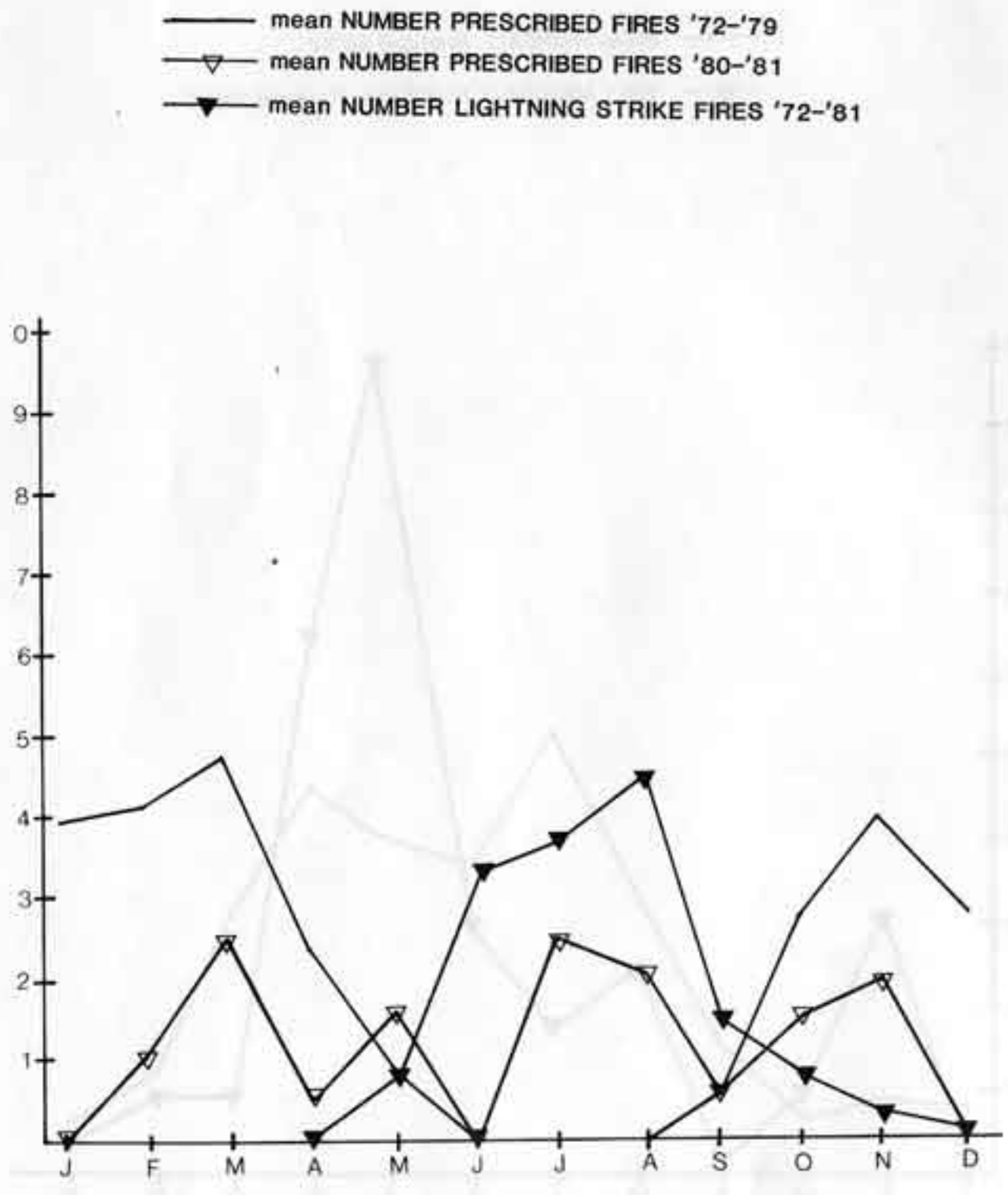

Figure 4. Mean number of prescribed fires 1972-1979, mean number of prescribed fires 1980-1981, and mean number of lightning strike fires 1972-1981 per month in Everglades National Park.

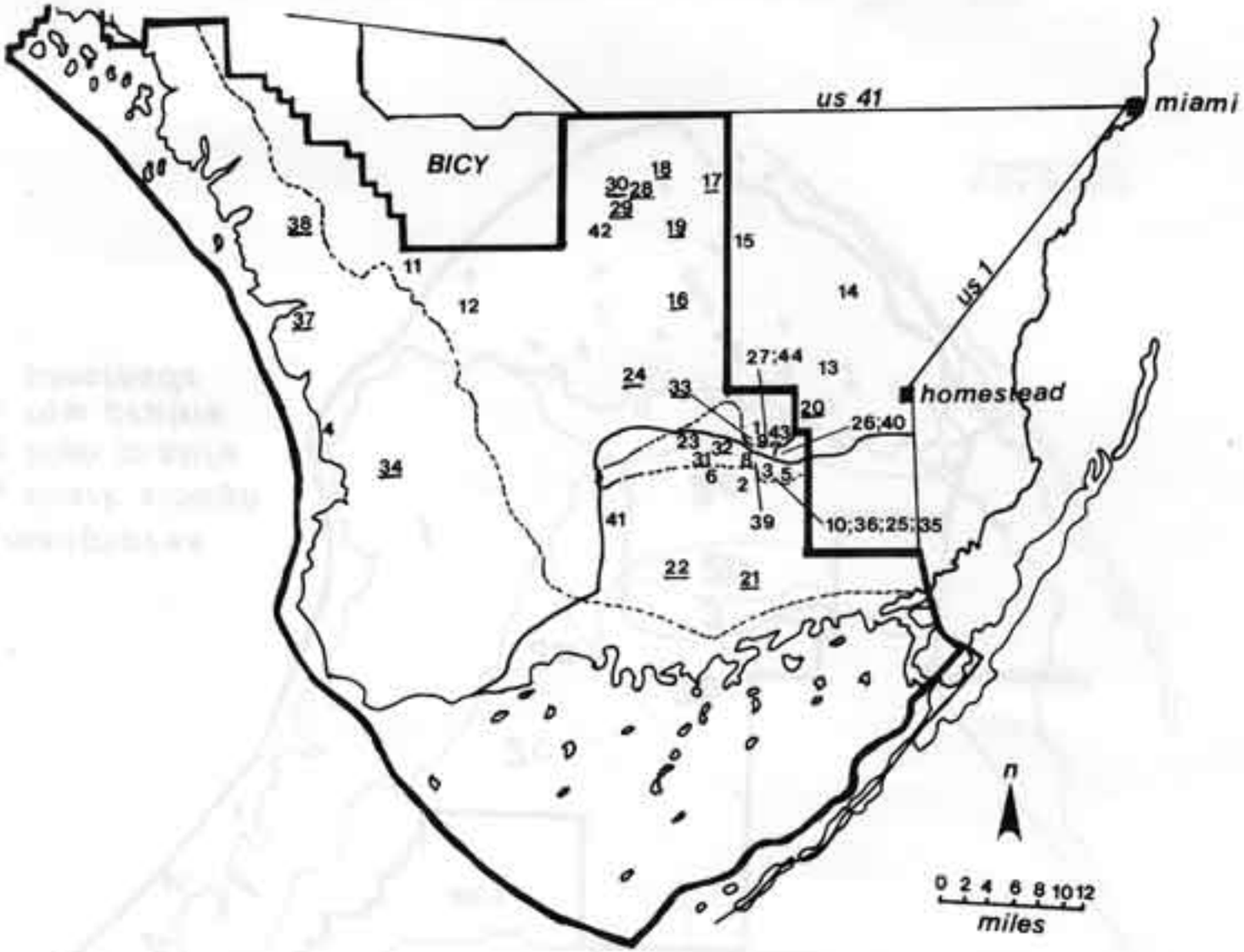

Figure 5. Approximate location of fires during 1981 within Everglades National Park. Fire numbers shown correspond to Table 1; lightning fires are underlined.

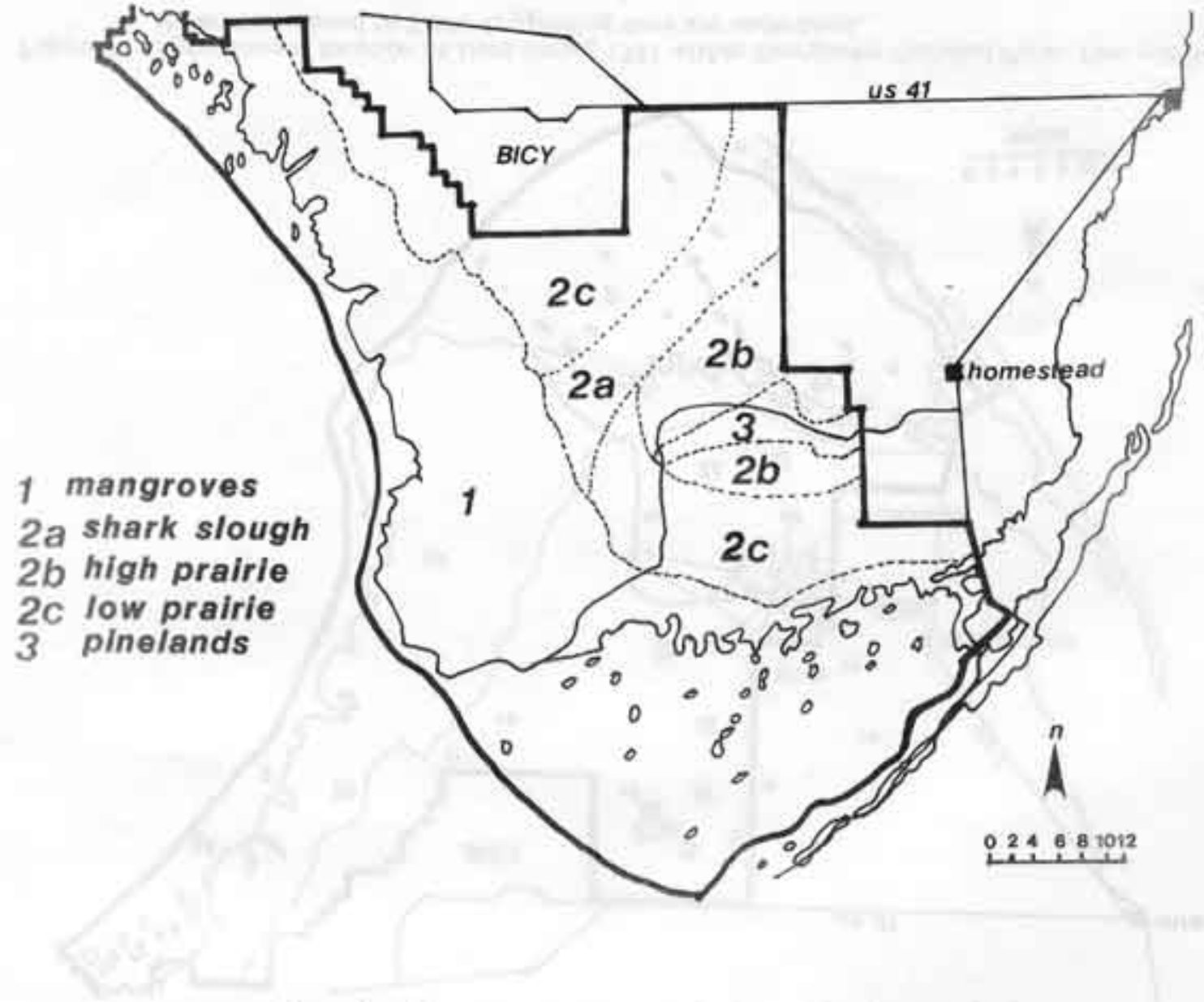

Figure 6. Fire management zones in Everglades National Park.

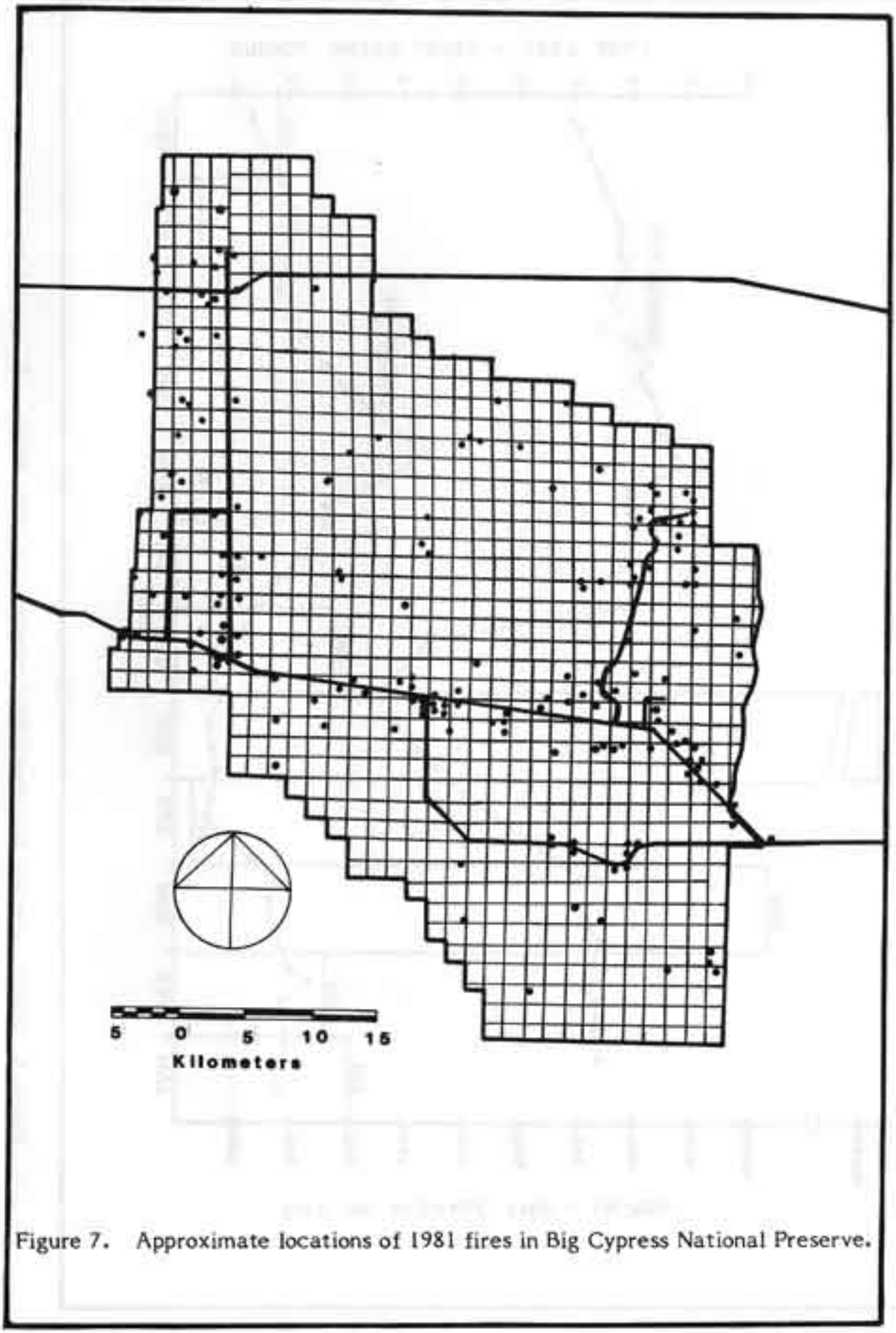

Figure 7. Approximate locations of 1981 fires in Big Cypress National Preserve.

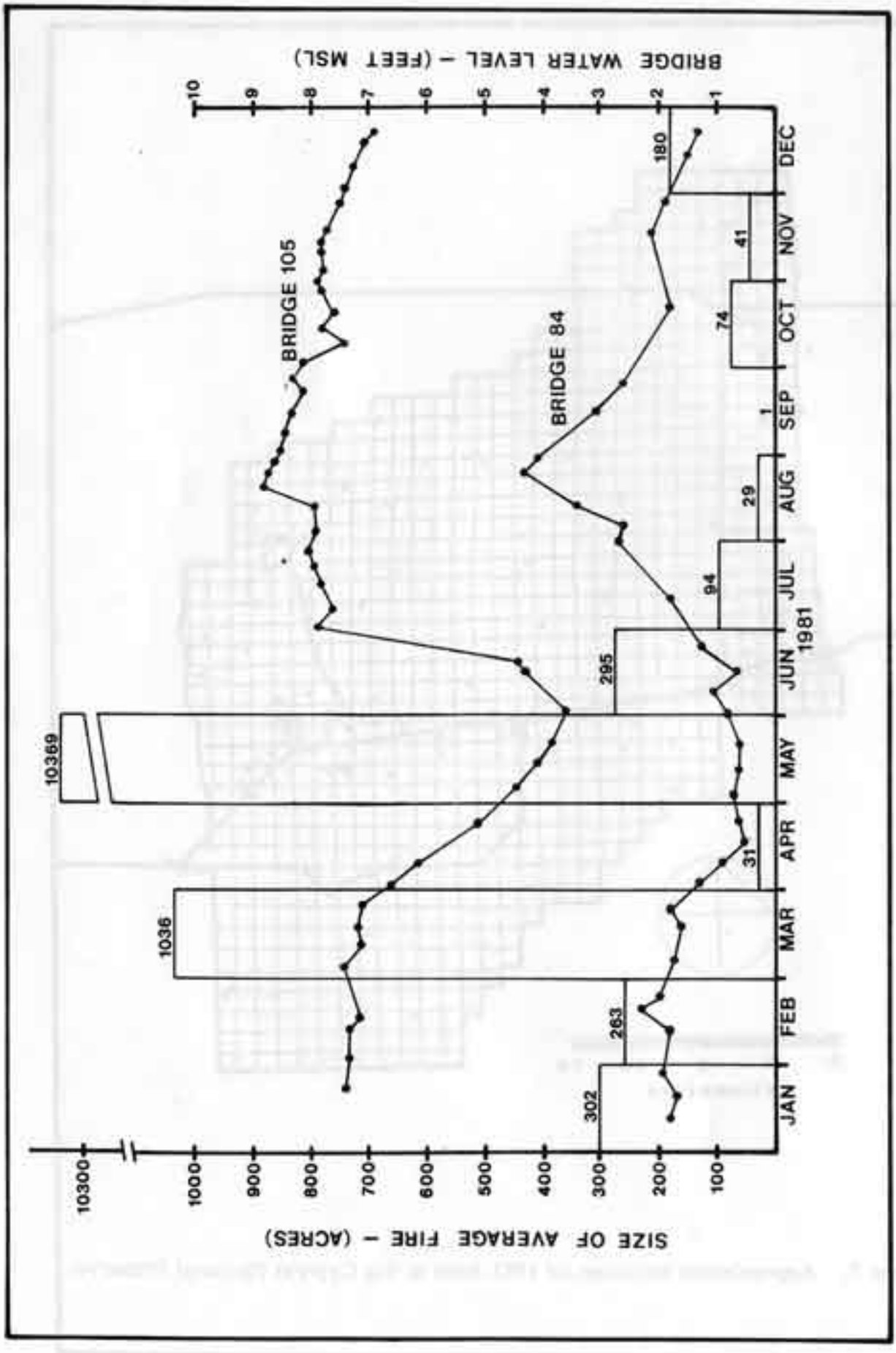

Figure 8. Monthly average fire sizes (1981) compared to water levels at Bridges 84 and 105.

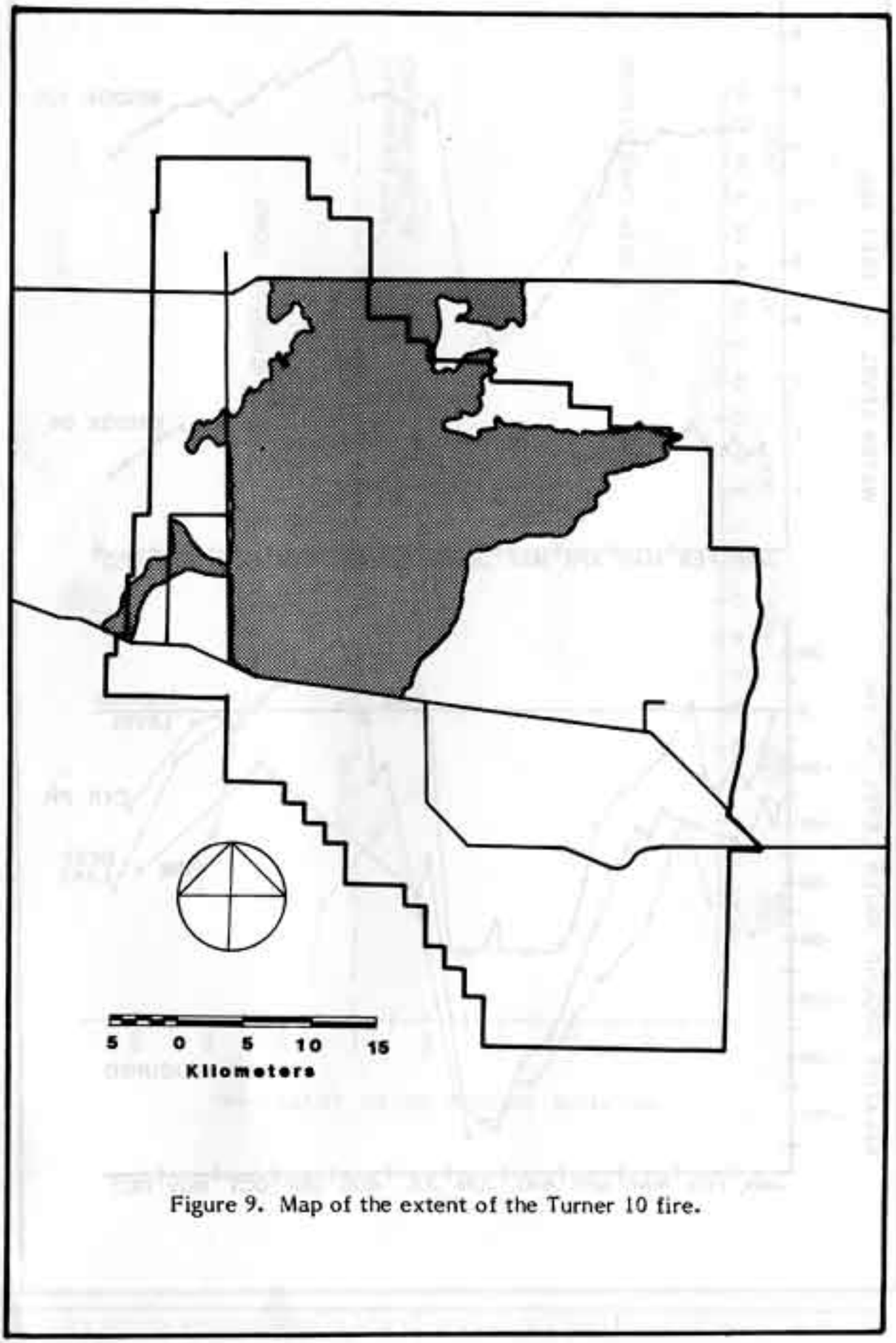

Figure 9. Map of the extent of the Turner 10 fire.

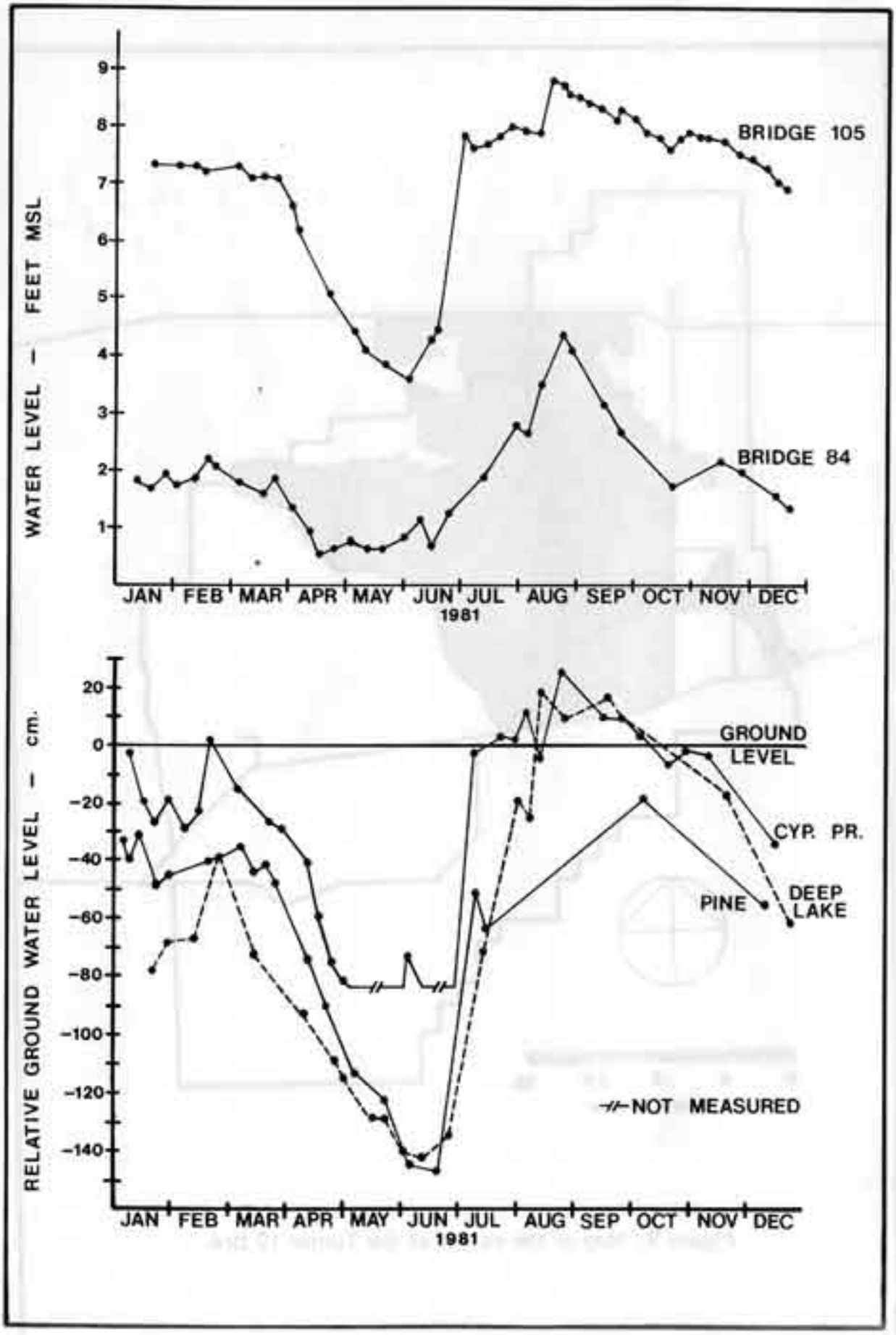

Figure 10. Monthly water levels at Bridges 84 and 105 and relative ground water levels in three Fire Ecology Study Areas in 1981.

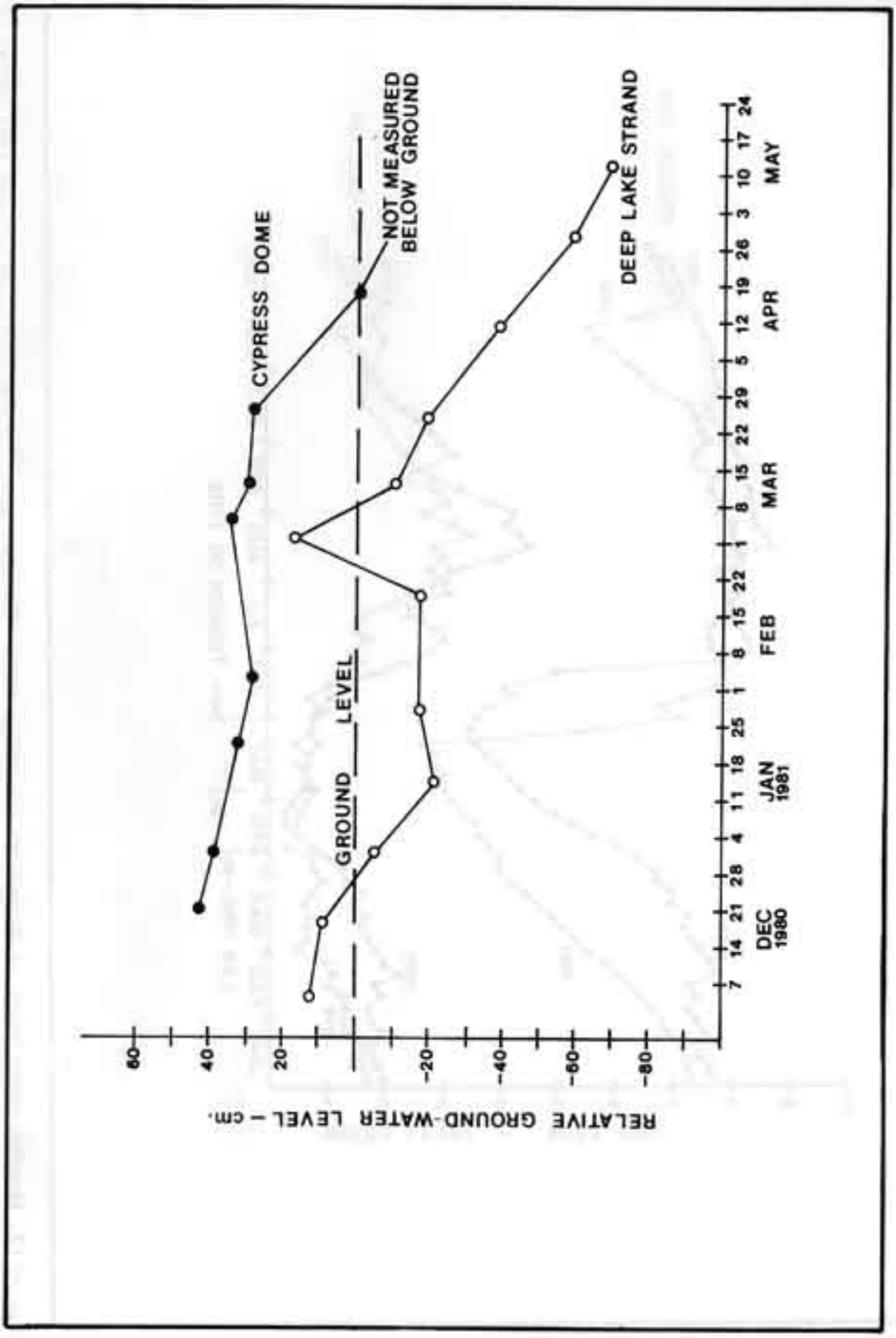

Figure 11. Monthly ground water levels in Deep Lake Strand and in a cypress dome on 11 Mile Road in 1980-1981.

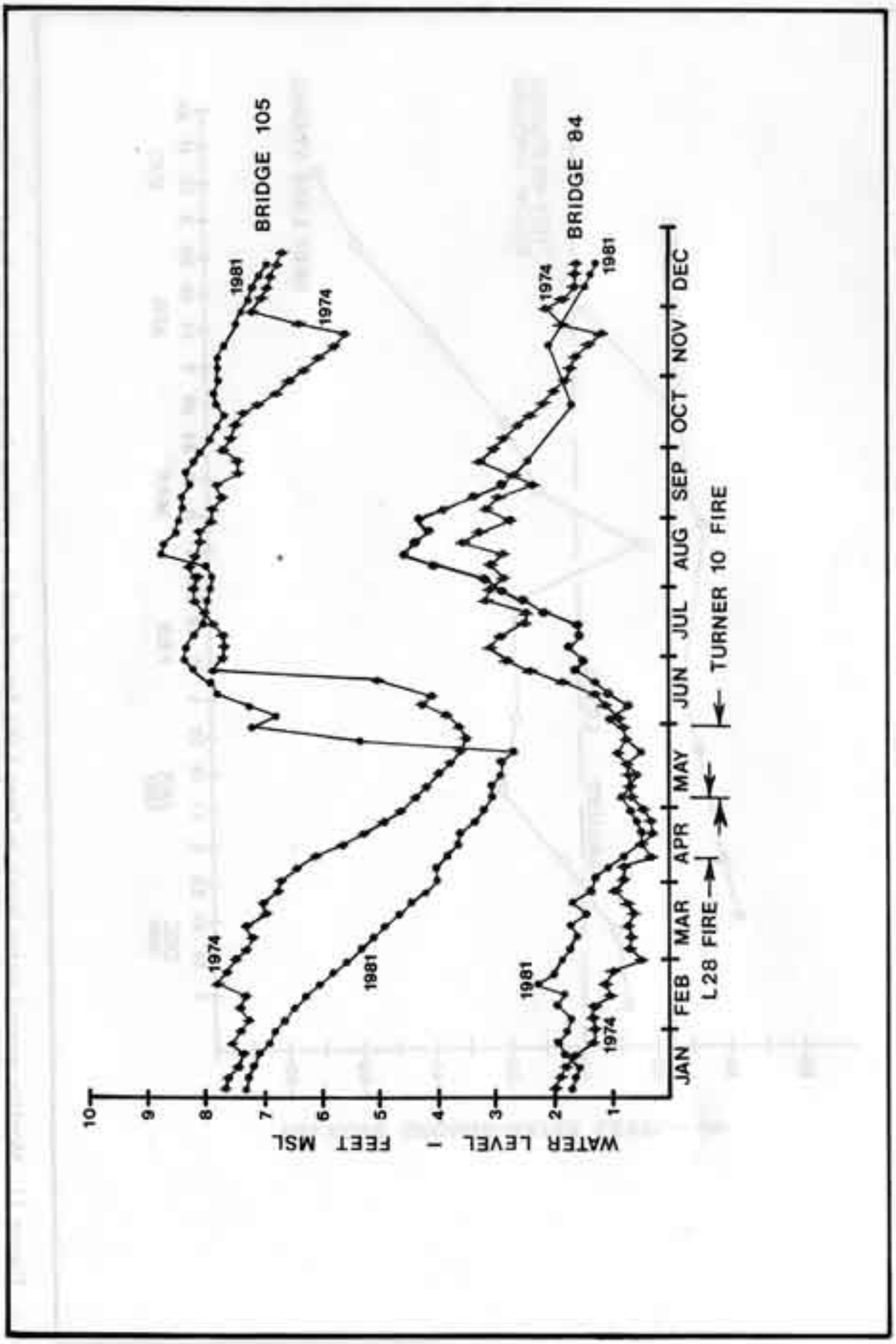

Figure 12. Monthly water levels at Bridges 84 and 105 in 1981. The time spans for the 1974 L-28 fire and 1981 Turner 10 fire are indicated on the x-axis.

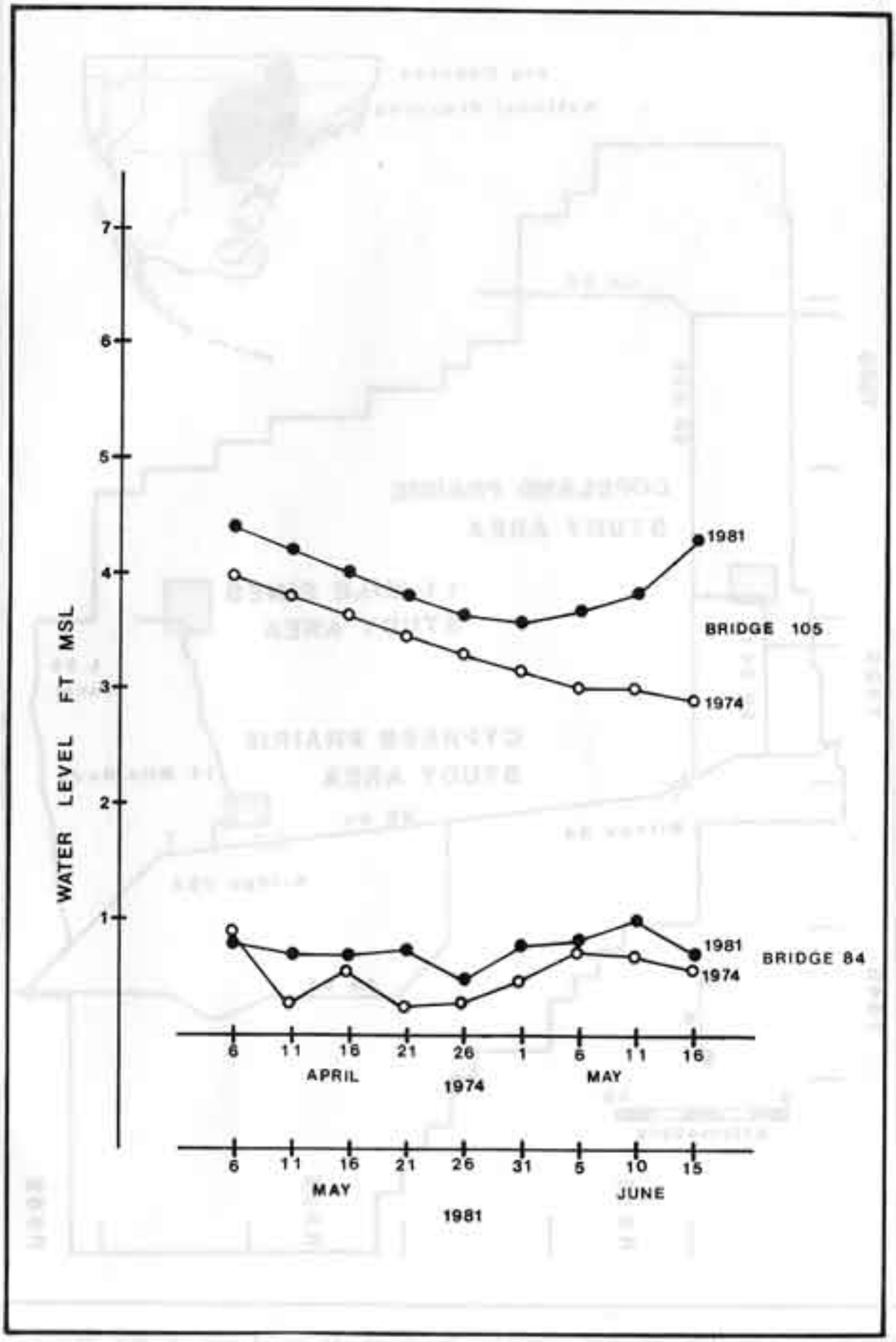

Figure 13. Comparison of monthly water levels at Bridges 84 and 105 during the 1974 L-28 fire and 1981 Turner 10 fire.

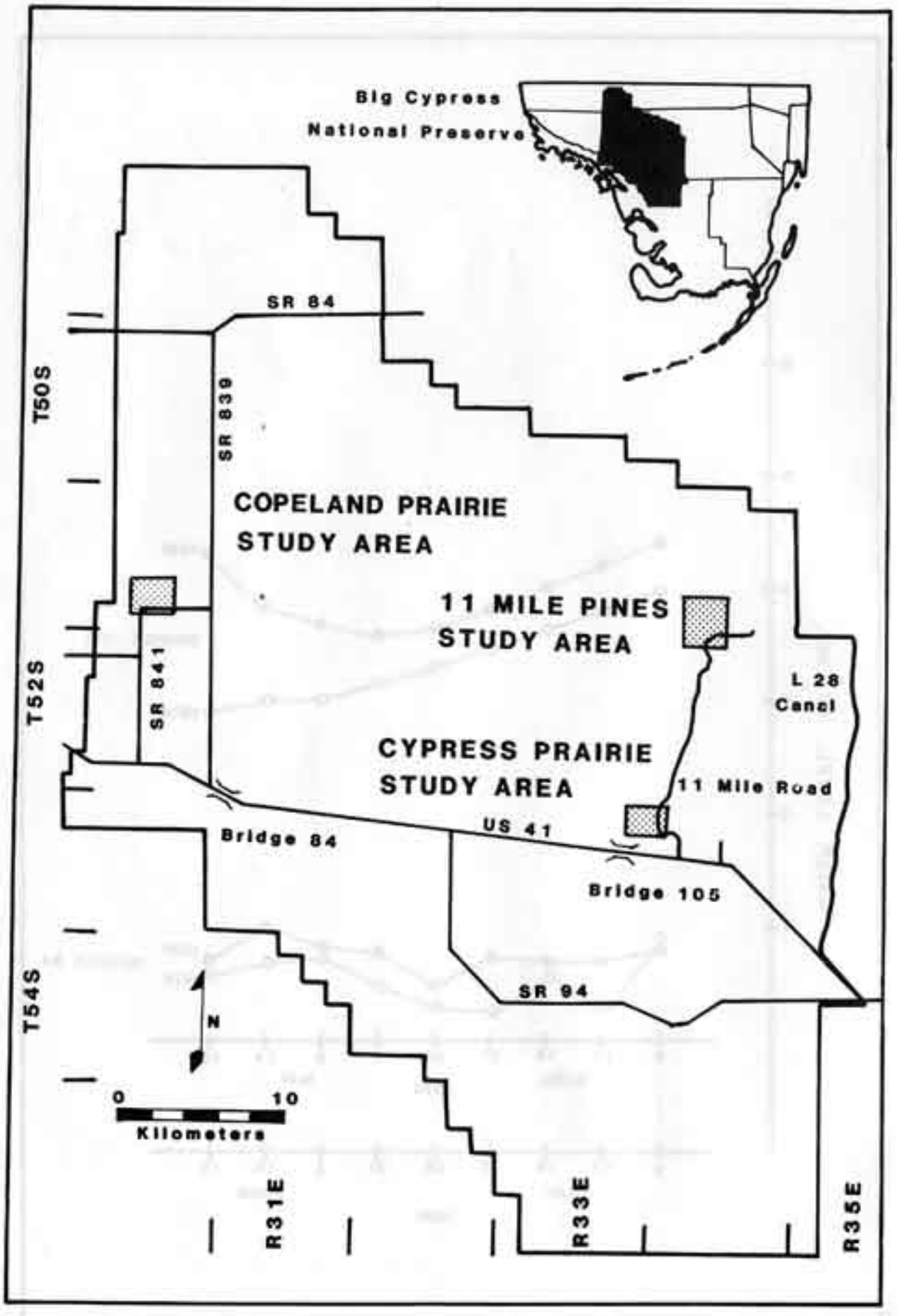

Figure 14. Location of Fire Ecology Research Study Areas in Big Cypress National Preserve.

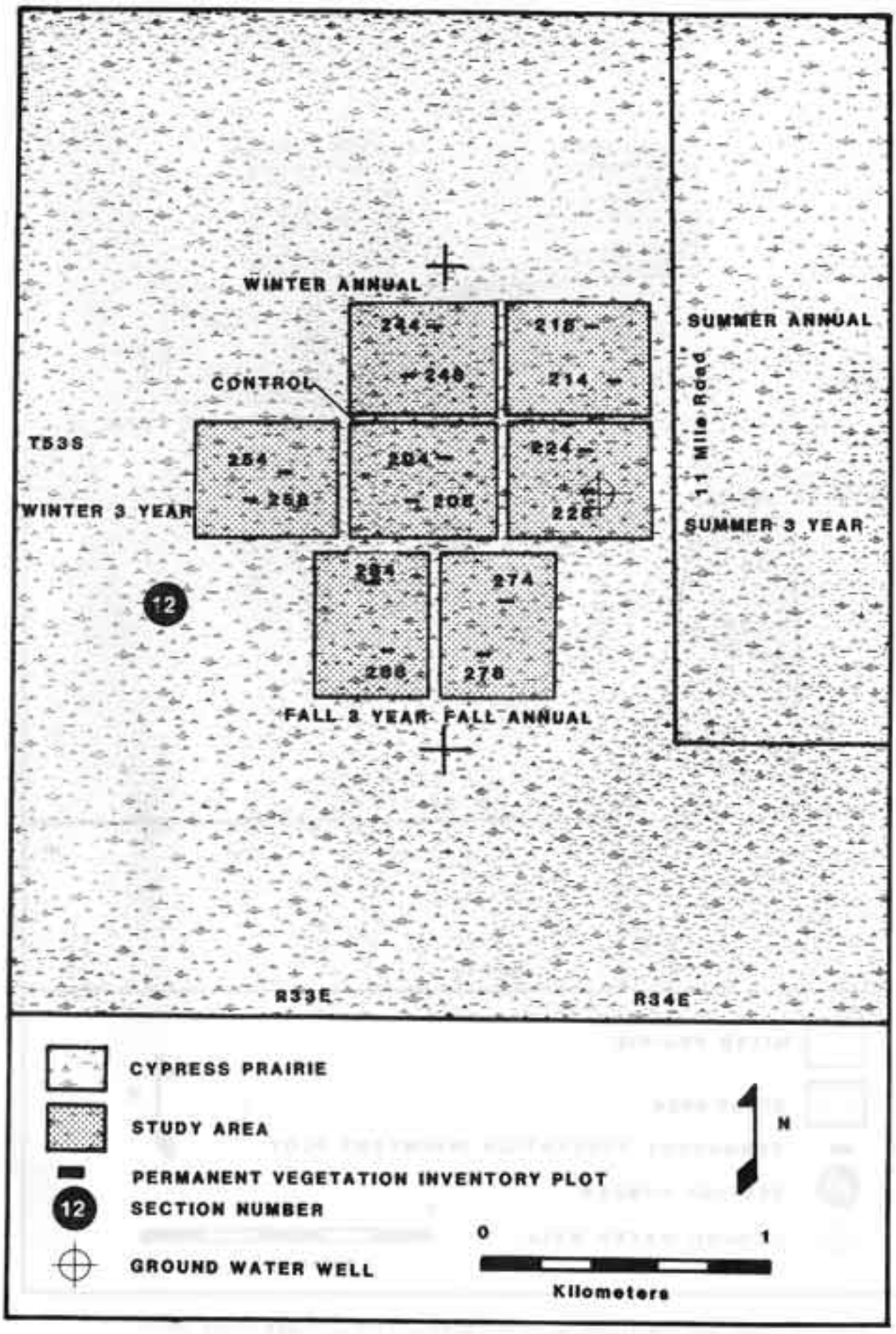

Figure 15. Locations of cypress prairie Fire Ecology Research Study plots.

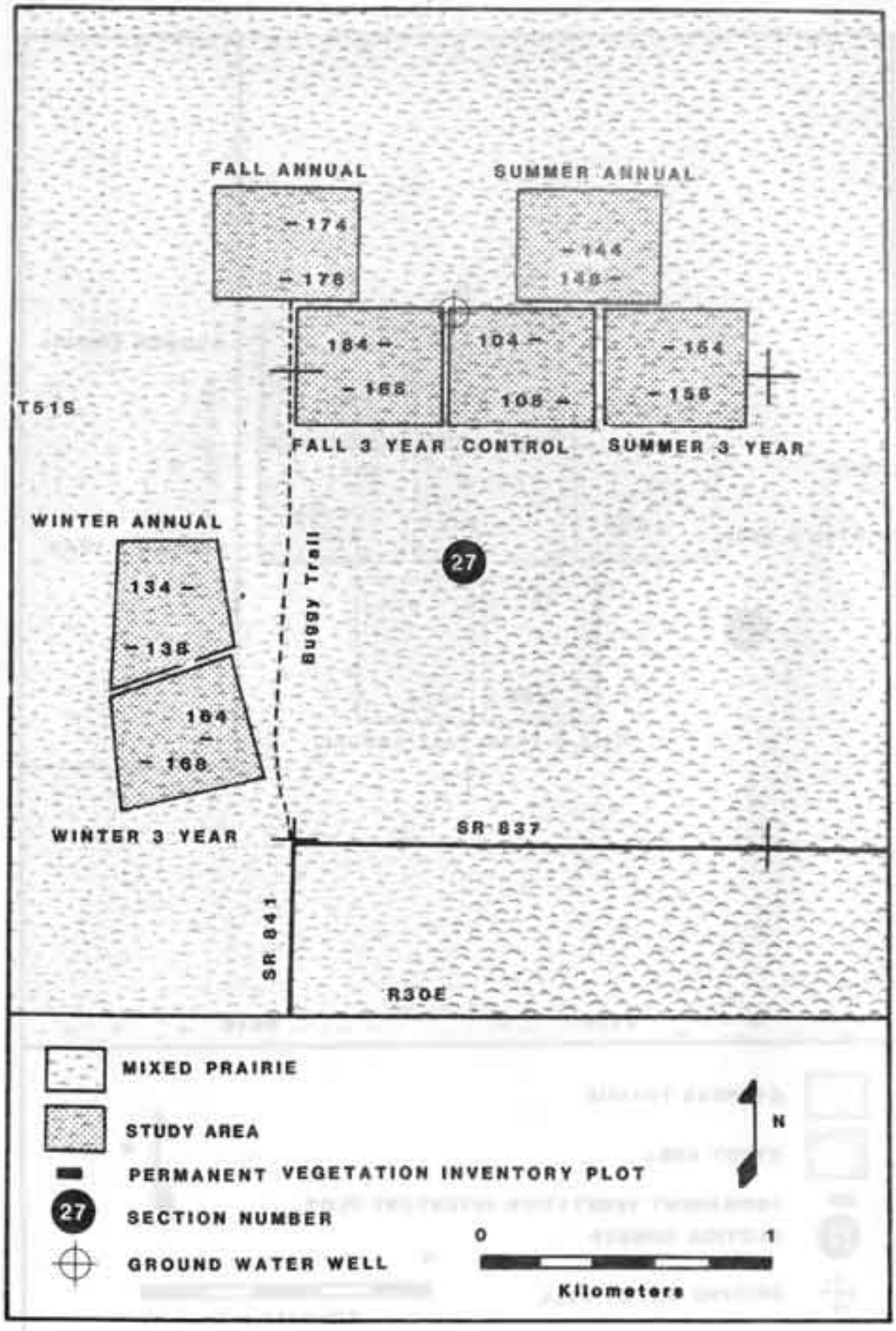

Figure 16. Locations of mixed prairie Fire Ecology Study plots.

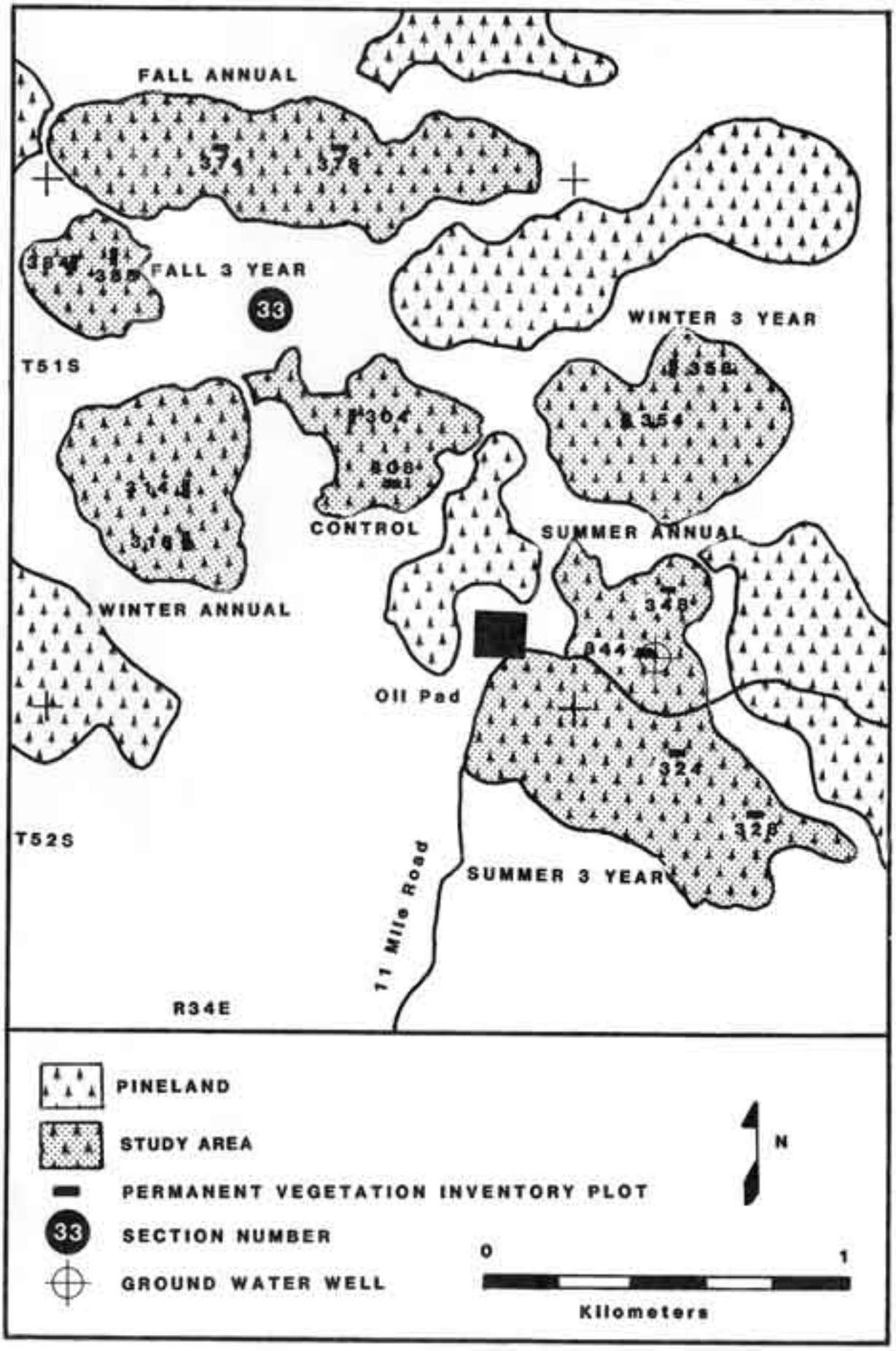

Figure 17. Locations of pineland Fire Ecology Research Study plots.