ROUGH DRAFT

APRIL 1982

SOURCE?
BOB HOGFOSS

FIRE HISTORY
of the
GIFFORD PINCHOT NATIONAL FOREST

The Gifford Pinchot National Forest covers an area of nearly 1.5 million acres, ranging from Mt. Rainier to the Columbia River and from Mt. Adams to Mount. St. Helens. The land was first set aside by Congress in 1897 as part of the Rainier Forest Reserve. In 1908, it was transferred to the National Forest system as the Columbia National Forest, and in 1949, it was renamed the Gifford Pinchot National Forest (G.P.).

The area is heavily forested with Douglas-fir, Western hemlock, and red cedar. A small portion of the Forest east of the Cascade crest and south of Mt. Adams is covered with Ponderosa pine. The land is steeply cut by several major drainages and the general climate is one of hot, dry summers and mild, wet winters.

The natural fire regime of the G.P. is similar to other westside forests; major fires at any point are infrequent (50 to 400 year intervals) but catastrophic in their effects. Highly productive and long-lived tree species associated with the Douglas-fir Zone accumulate great quantities of intermediate to large class fuels. Fine fuels, the most readily ignitable, are present in a relatively small amount. The fire regime of the Ponderosa Pine Zone is quite different. Fires are more frequent (5 to 25 year intervals) but they are primarily surface fires and much less damaging (Martin et al, 1974).

Fine fuels on the west side of the Forest reach their maximum dryness in July and August, while the larger fuels do not usually dry out until September. Most of the fires in any given year on the G.P. are in July and August (roughly 65%), but the majority of these are less than ten acres in size. Most of the larger fires, and virtually all of the catastrophic fires, occur during September, or from late August to early October (Chart I).

One of the most critical factors affecting fire size is the foehn wind known as east winds. East winds are caused by pressure gradients and can occur at any time of year on all parts of the Forest. They are most frequent in the fall and are strongest near the Columbia gorge. The largest and most severe fires on the G.P. have been pushed by east winds (Yacolt, Siouxon, Lewis River, Cispus, Dole, Willard, Ruth). All but the Cispus were on the south end of the Forest where the east winds are strongest. They were all preceded by several weeks of extremely hot and dry weather and all but the Willard started in September.

Human activity and lightning are the two basic sources of ignition for all forest fires. Lightning is much less common west of the Cascade Crest than it is to the east, but it still accounts for a large number of fire starts on the G.P. (35% - 75% per year: Chart II). Thunderstorm cells develop more frequently on the lee side of Mount St. Helens and the Cascade Crest than they do elsewhere and lightning activity there is higher (Maps I [redacted]).

Man-caused fires account for more acres burned than do lightning fires, largely because they occur where there is more available fuel and they are not restricted to a certain time in the season. Historically, Yakima, Klickitat, and Lewis River Indian groups set fire to old logs for drying berries, and lingering fires sometimes spread. Fires may also have been set intentionally to maintain berrying grounds or keep hunting areas open (Hunn, 1982). (MAP II)

Non-Indian settlement around the Forest began in the 1850's, and many fires were set to clear land. Fires were left smoldering throughout the summer, and when weather and fuel conditions were right, they would rekindle and spread. The Yacolt Burn of 1902 began when east winds drew several abandoned clearing fires together. The Cispus Fire of 1902 was started by a prospector who wanted to clear downed logs off his pack trails. Many large fires at the turn of the century were started as a result of increased human presence and careless burning practices.

A great amount of large unburned fuel and standing snags remained after the major fires. This increased the fire danger of an area as regeneration took place. Old burns were more susceptible to both lightning and man-caused ignitions. All of the largest fires of 1902 reburned at least once in following years. Some reburned as many as six times (Map III). Huge snags still outline parts of several old burns on the Forest.

The early fires were extremely intense. In September of 1902, 160,000 acres of Forest land were on fire. The Yacolt fire spread 25 miles in a 36 hour period. From 1902 to 1929, between 1/4 and 1/2 million acres burned or reburned on Forest land. By 1930, the Columbia N.F. was sarcastically being referred to as the "Columbia National Burn" (Chart III).

Initial attempts at controlling the fires were limited to protecting buildings and farms. After the 1902 fires, prevention and suppression organizations were formed throughout the Northwest. The primary task of the Forest Service in its early years was forest protection, but at first, manpower was low and access limited. In 1910, the Forest Staff consisted of the Supervisor, his Deputy, a Clerk and a Ranger. Seasonal help added three Rangers and ten Guards. Forty miles of wagon road and 330 miles of trails served as fire-breaks and access routes. One of the most commonly used suppression techniques was backfiring, although uncrontrolled clearing fires were set as late as the 1930's in the name of backfires, whenever some wildfire burned close enough to be used as an excuse (Cowan, 1961).

Suppression efforts became more effective by the end of the 1930's. More than 25 lookouts had been built on the Forest between 1913 and 1935, and fire detection was greatly improved. There was better access and more organized methods of suppression. Shortwave radios were used for the first time on the Forest in 1936. Airplanes were first used to map fire spread and location in 1938 on the Siler Creek Fire.

Forest use declined in the 1940's due to the War and fire starts declined. After the War, as timber cutting expanded, slash disposal was recognized as a serious problem. Throughout the 1950's and 1960's, experience was gained in controlled slash burning to reduce fire hazard or aid site preparation.

By the 1970's, fire and fuel management was becoming a sophisticated business. Better understanding of the relationships among weather, fuels, and fire behavior led to more capable use of prescribed fire and more rapid control of wildfire. Fire occurrence and size on the G.P. has gone down in the last few

decades. Prevention efforts have also reduced fire starts, especially during critical times.

Although prescribed burning has become an essential tool, it still carries dangers. Since 1960, over 90% of all man-caused fires over ten acres have been due to escaped slash burns. Escaped burns represent only a fraction of all prescribed burns, however. Other methods to reduce fire danger are also being tried, such as increased utilization, off-season and experimental types of ignition.

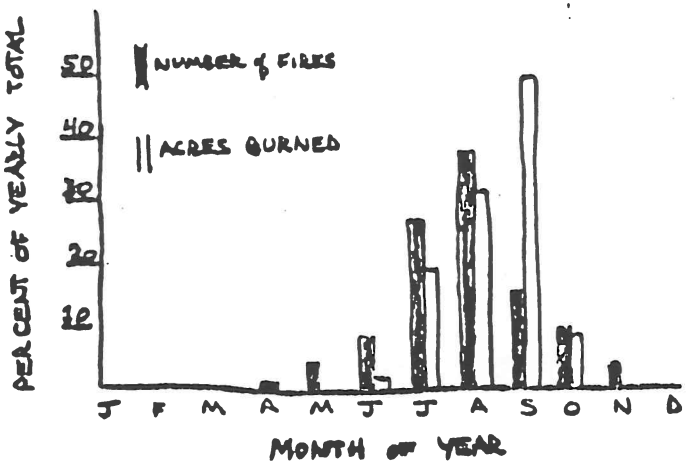
The aftermath of the 1980 eruption of Mount St. Helens left a fire problem not unlike the massive burns of the early 1900's. Salvage logging, prescribed burning and fuel breaks are being used to alter the fuel complex and reduce hazard.

The role of fire on the G.P. has changed in the last hundred years, but Forest managers today are still dealing with the same forest, having the same fuel characteristics and weather patterns it has always had. Catastrophic fires can be minimized or postponed, but it is inevitable that some large, severe fires will continue to occur in the future.

CHART I

GIFFORD PINCHOT N.F.

AVG. FIRE SEASON



AVG. FIRE SIZE

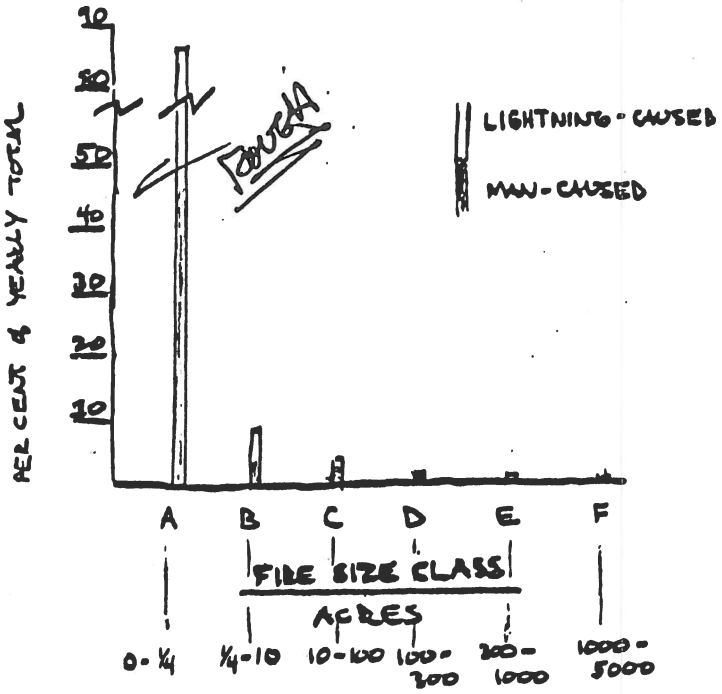


CHART II

YEARS	TOTAL NUMBER OF FIRES (ON F.S. LAND ONLY)	TOTAL AREA BURNED (ACRES)	1900–1979 TOTAL MAN-CAUSED – (%)	TOTAL LIGHTNING CAUSED – (%)
1900–1909	21?	160,000–290,000	NA	NA
1910–1919	373?	46,000–142,000	239 (64%)	134 (36%)
1920–1929	391?!	92,000–131,000	246 (63%)	145 (37%)
1930–1939	380	10,300–15,650	198 (52%)	182 (48%)
1940–1949	369	3876	89 (24%)	280 (76%)
1950–1959	282	1036	135 (48%)	147 (52%)
1960–1969				
1970–1979	884	6623	572 (65%)	312 (35%)

(SOURCE: G.P.N.F. ARCHIVES; FILES 5100, 5140-1 AND 1960–1979 INDIVIDUAL FIREMAN'S REPORTS)

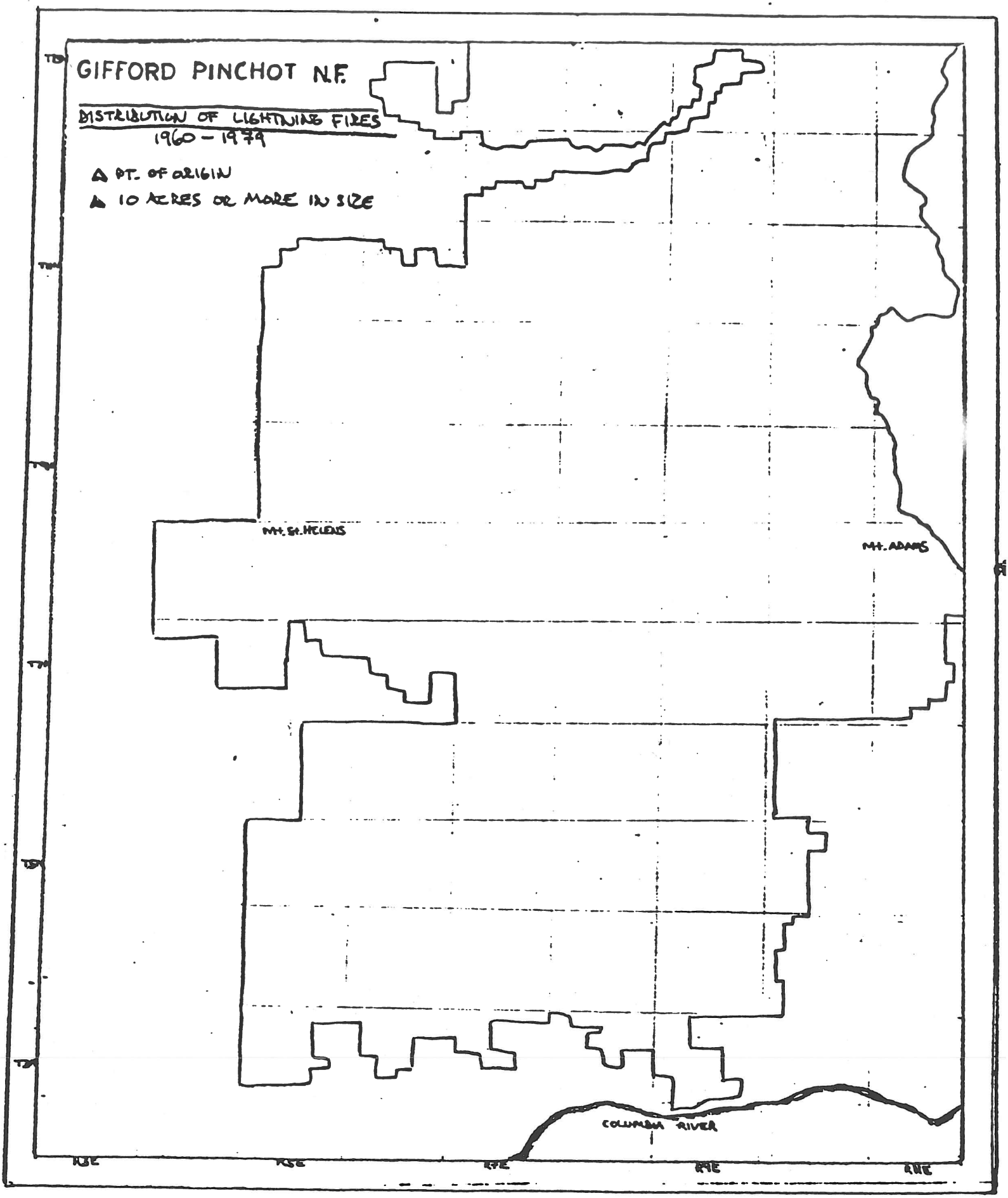
NOTES: 1) 1900–1929 ?-INDICATES INCOMPLETE OR CONTRADICTORY RECORDS

2) 1900–1939 FIRE SIZES BASED ON ESTIMATES – UPPER AND LOWER RANGES GIVEN

3) 1940–1979 MORE ACCURATE RECORDS REFLECT A) INCREASED FOREST USE AND BETTER FIRE DETECTION (GREATER # OF FIRES) AND, B) MORE EFFECTIVE SUPPRESSION (LESS ACRES BURNED)

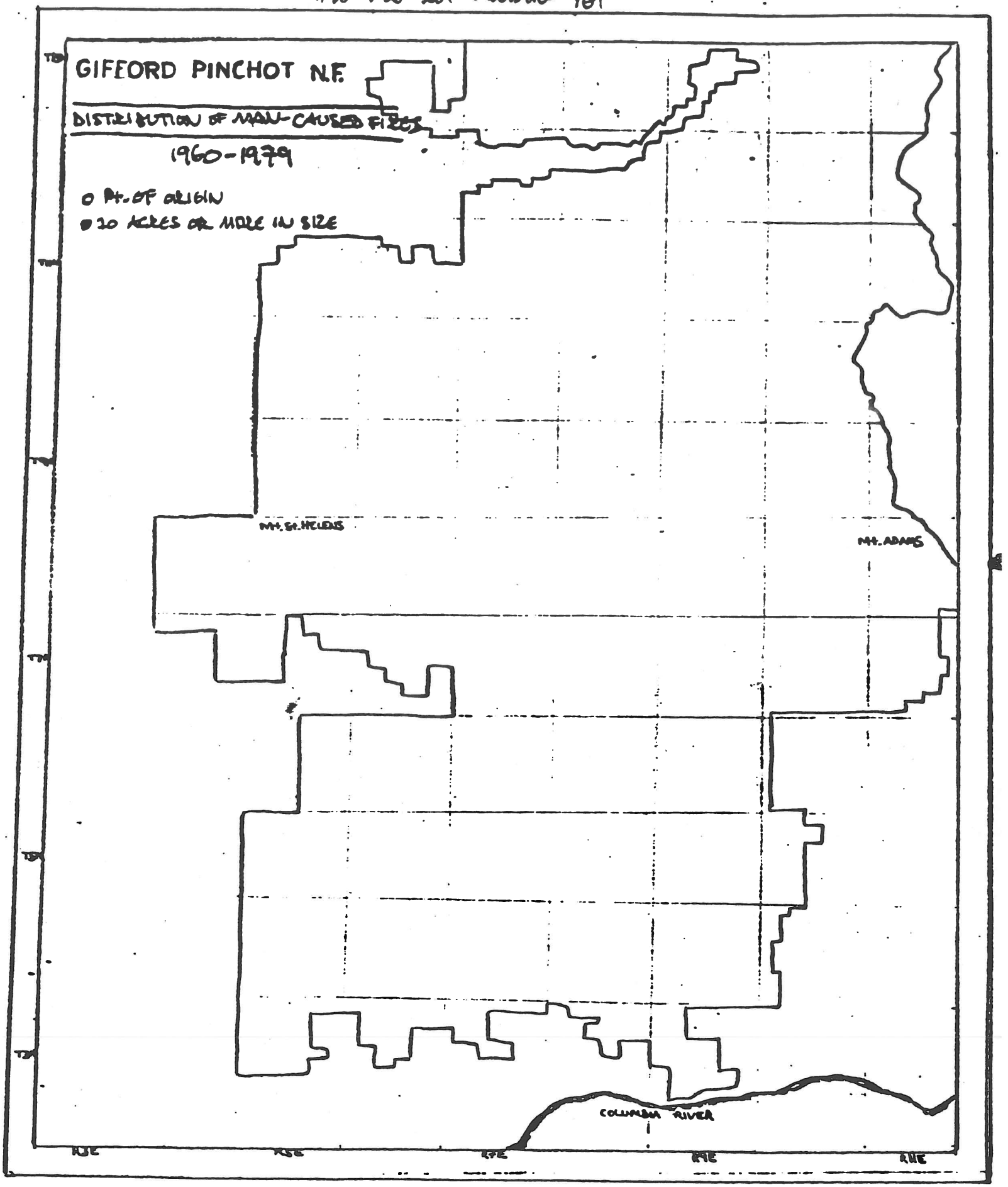
4/30 - MAP NOT FINISHED YET

MAP I

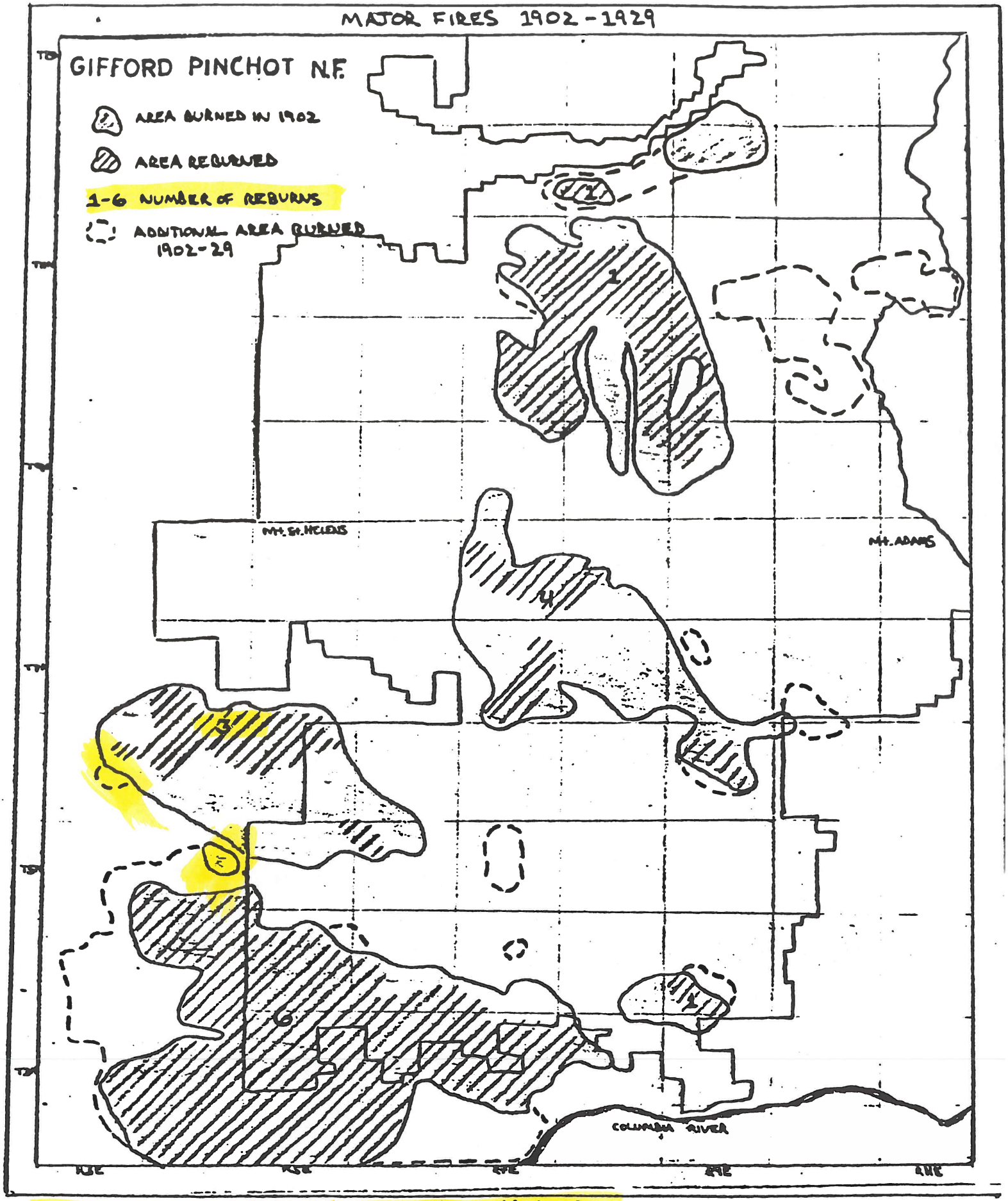


MAP II

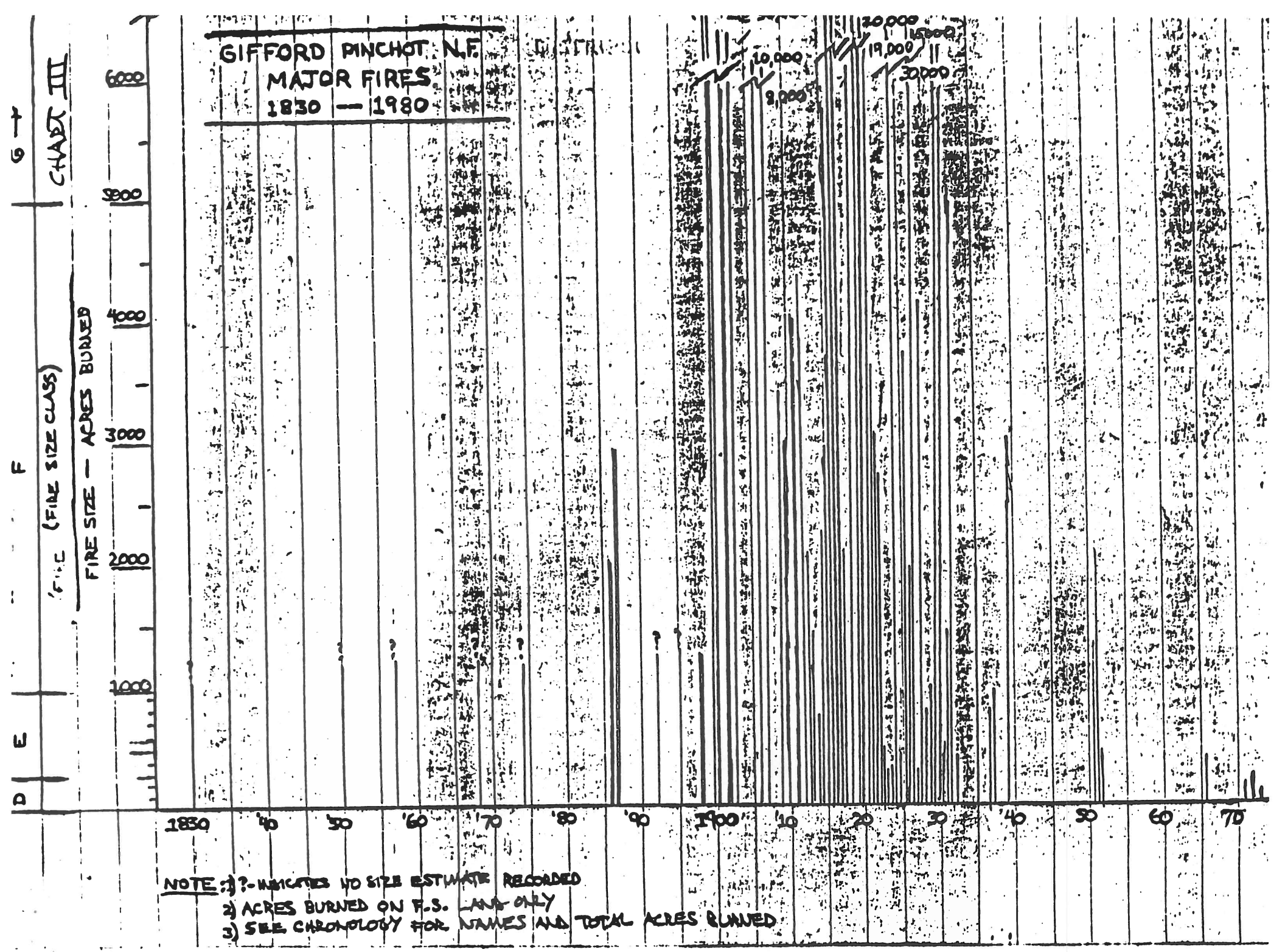
4/30 MAP NOT FINISHED YET



MAJOR FIRES 1902-1929



SOURCE: ADAPTED FROM 1929 MAP IN G.P.N.F. ARCHIVES


GIFFORD PINCHOT N.F.
MAJOR FIRES
1830 — 1980
CHART III
FIRE SIZE — ACRES BURNED
F.S.C. (FIRE SIZE CLASS)
G
F
E
D
6000
5000
4000
3000
2000
1000
10,000
8,000
20,000
15,000
19,000
30,000
1830
'40
'50
'60
'70
'80
'90
1900
'10
'20
'30
'40
'50
'60
'70
NOTE: 1) ?- INDICATES NO SIZE ESTIMATE RECORDED
2) ACRES BURNED ON F.S. LAND ONLY
3) SEE CHRONOLOGY FOR NAMES AND TOTAL ACRES BURNED

CHRONOLOGY OF MAJOR FIRES AND RELATED EVENTS

PRIMARY SOURCES: G.P.N.F. ARCHIVES, INDIVIDUAL FIRE REPORTS AND INVESTIGATIONS. OTHER SOURCES AS NOTED.

1764	LARGE FIRE IN UPPER CISPUS DRAINAGE, IDENTIFIED BY TREE-RING STUDY (HOFMAN + KRABBELS, 1921)
1830	LARGE FIRE IN LEWIS RIVER DRAINAGE; IN HISTORICAL REPORTS AS TOLD BY INDIANS
1853	McCLELLAN EXPEDITION PASSED THROUGH SOUTH END OF FOREST + NOTED RECENT EVIDENCE OF LARGE BURNS AROUND HEAD OF WIND RIVER NEAR TWIN BUTTE
1855	SETTLERS BEGAN CLEARING + BURNING LAND IN SKAMANIA COUNTY
1857	LARGE FIRES "NE OF VANCOUVER" IN LATE AUGUST ("OREGONIAN")
1867	SETTLERS CLEARING LAND IN LEWIS RIVER VALLEY
1868	MANY LARGE FIRES BURNING THROUGHOUT PACIFIC NW. SEVERAL FIRES REPORTED "N/NE OF VANCOUVER" FROM MID-AUGUST TO END OF SEPT. JUNE AND JULY EXTREMELY HOT + DRY. STRONG EAST WINDS IN SEPT. ("OREGONIAN")
1874-5	LARGE FIRE "N/NW OF MT ADAMS" ("OREGONIAN")
1886	STRAWBERRY MT FIRE ~2000 ACRES TUMWATER (TUMTUM?) FIRE ~3000 AC
1887	LOGGING BEGINS ON TOUTLE RIVER AND NEAR SPIRIT LAKE
1890	MORE LOGGING IN LOWER LEWIS RIVER

1892 — LARGE FIRE (REBURN?) N/NW OF Mt ADAMS

1895 — LARGE FIRE IN JOHNSON-KILBORN AREA

1897 — RAINIER FOREST RESERVE CREATED

Mt MARGARET FIRE ~1000 AC

1902 — 480,000 ACRES BURNED (750 SQ. MILES), ½ OF THAT YACOLT

- YACOLT BURN - STARTED BY SEVERAL CLEARING FIRES, SPREAD BY EAST WINDS. SEVERE DROUGHT IN JULY + AUGUST.
- 18 PEOPLE KILLED
- LEWIS RIVER BURN ~30,000 ACRES - SEPTEMBER, THOUGHT TO BE CAUSED FROM ABANDONED LOGGING OR CLEARING FIRES
- SIOUXON FIRE ~30,000+ AC. CAUSE UNKNOWN BUT NO LIGHTNING ACTIVITY @ TIME OF START
- CISPUS BURN, ~50,000 STARTED 2 SEPT BY PROSPECTOR WHO WANTED TO CLEAR LOGS (FROM OLDER BURN) OFF HIS TRAILS

1905 — USFS FORMED - FIRE PROTECTION A MAJOR REASON

1906 — SMITH CREEK FIRE ~10,000 AC

JOHNSON-KILBORN FIRE (REBURN?) ~8000 AC

FIRE GUARD STATIONS BUILT @ GOTCHEN CREEK, SKATE CREEK (LATER → (M.A.2.S) (WIND RIVER), SILVER CREEK (RANGER), + SPIRIT LAKE (ST. HELENS)

1908	COLUMBIA NATL FOREST CREATED — 942,000 ACRES
	"
1910	CAMP 5 FIRE ~8000 AC
	TWIN BUTTES ~4500 AC
	WALUPT LAKES ~3500 AC
	COWLITZ ~4000 AC
	CARSON ~2000 AC
	COL. N.F. DIVIDED INTO 4 RANGER DISTRICTS, EACH HAVING 3-8 FIRE PATROL DISTRICTS
	NO LOOKOUTS YET, BUT THESE POINTS USED REGULARLY BY PATROLMEN: TWIN BUTTES, BUTTE CAMP, LOOKOUT MT., OBSERVATION PEAK, RED MT., LITTLE HUCKLEBERRY MT., STEAMBOAT, MORRISON RIDGE
1912	MT MARGARET (REBURN?) ~500 AC
	CAMP 6 ~1500 AC (CAMP #'s REFERRED TO LOGGING CAMPS — MOSTLY WEYERHAEUSER'S)
1913	CISPUS AREA (TWIN SISTER?) HAD A TENT LOOKOUT SET UP WITH AN ANEMOMETER + THERMOMETER AS A WEATHER STATION
1914	DEAD HORSE FIRE ~2500 AC
1915	TRAIL PEAK FIRE ~8000
	CISPUS LOOKOUT BUILT (SOME RECORDS SAY 1926 THOUGH)
	~~MT SO HELENS LOOKOUT BUILT~~ ?

1716	GABLE FIRE (CISPUS REBURN) ~7000 AC. BURNED IT OVER
1917	STEVENSON FIRE ~6500 AC
	JACK MT. ~12,000 AC ~22000+ TOTAL ON F.S.
	PINTO ROCK ~2000 AC
	YACOLT REBURN ~12,000
1918	CISPUS REBURN ~60,000 AC. ALSO CALLED GREENHORN FIRE
	HAMILTON FIRE ~20000 AC.
	CAKEY BUTTE ~2400 AC
	BURNT PEAK ~3500 AC
	MARTHA CREEK ~500 AC
	COPPER CITY ~200 AC
	MITCHELL PEAK ~300 AC
	YALE ~3140 AC
?	SUNSET ~326
	TWO LAKES ~30,000
	WASHOUGAL ~19,006
	- GREENHORN FIRE (REBURN of CISPUS) STARTED BY LIGHTNING AROUND 12 JUNE (HIGH LIGHTNING ACTIVITY SUMMER)
	- FOREST SUPERVISOR VISITED FIRE IN JUNE, THEN RE-TURNED IN FALL TO SURVEY DAMAGE (IT WAS STILL BURNING AS NO REAL SUPPRESSION ACTION COULD BE TAKEN)
	ASSOC. FORESTER E.J. FERRY WROTE: "SPROUTS OF VINE MAPLE BURNED IN APRIL HAD GROWN 6 OR 7 FEET AND BUSH OSBORNE TOOK A PHOTOGRAPH OF MR ALLEN (THE SUPERVISOR) BESIDE ONE OF THESE SPROUTS HIGHER THAN HIS HEAD. WE WERE AMUSED TO HAVE THIS

PICTURE OF THE SUPERVISOR BESIDE A TREE TALLER THAN HIMSELF WHICH HAD GROWN WHILE HE WAS FIGHTING THE FIRE.

1919 MITCHELL PEAK (REBURN?) ~1000 AC

SUNSET ~5000 AC

BREWER ~3500 AC

ASSOCIATION ~26,800 AC

HUNGRY MEADOW ~300 AC

46,848 TOTAL ON OR NEAR FS LAND — 6P LAND — 3320 TOTAL ON FS LAND

1920 SPENCER FIRE ~7000 AC

1922 CLARK CO. TIMBER FIRE ~15,000 AC
ST. HELENS LOOKOUT BUILT

1924 SMOKEY CREEK ~2000 AC

CLOVER ROCK ~300 AC

MT ADAMS LOOKOUT BUILT FROM 1921-24 — CLOUDS OBSCURED ID TOO OFTEN TO BE USEFUL

1925 WIND RIVER FIRE ~4200 AC

PILOT KNOB ~600 AC

COUNCIL BLUFF ~500 AC

1926 STEINBART MT FIRE ~800 AC

1927 ROCK CREEK ~46,000 AC

LOST CREEK ~6000 AC

STOCKON REBURN ~1000 AC

HUNGRY PEAK REBURN ~800 AC

(1926)	GREEN RIVER FIRE ~500 AC
	CHICKOON ~500 AC
	- LIGHTNING STARTED MANY OF THE REBURN FIRES THIS YEAR, CATCHING SNAGS ON FIRE
	- 53,270 AC TOTAL BURNED; 27,857 AC ON F.S. LAND
1928	HIGH ROCK LOOKOUT BUILT
1929	DOG FIRE (REBURN + EXTENSION OF YACOLT) ~160,000 AC
	- DESTROYED MOST REGROD IN YACOLT; STARTED BY 2 MEN CAUGHT FIRES THAT RAN TOGETHER BY EAST WINDS
	- BURNED ~208,000 AC TOTAL; 60,000 ON F.S. ONLY
	- 1902-1929 BURNED OR REBURNED A TOTAL OF 918,934 ACRES; 487,113 ON F.S. LAND. AN ESTIMATED 140 SQ. MILES OF 1902 BURN AREA WAS REBURNED
	- LOOKOUTS BUILT: FRENCH BUTTE, HAMILTON BUTTE, SUMMIT PRAIRIE, BUNNT PEAK,
	- COLUMBIA NATL. FOREST BEING CALLED "COLUMBIA NATL RIVER"
1930	BUCK CREEK FIRE ~600 AC.
	DOG MT. ~1000 AC
1931	CLOVERLEAF ~5000 AC 10,000 AC TOTAL THIS YEAR
1933	RAINIER N.F. DISSOLVED, PACKWOOD + RANGER DISTRICTS ADDED TO FOREST, NOW ~1.5 MILLION AC.
	LOOKOUTS BUILT: (BY CCC) GOAT MT., FLAT TOP, RED MT)
1934	HAGER CREEK FIRE - 90 AC STARTED 24 AUG
	LOOKOUTS BUILT: (CCC) TONGUE MT, McCOY PEAK, MIDWAY, NANNIE, POMPEY'S PEAK

1933	RYAN-ALLEN FIRE 1800 AC STARTED ON 18 SEPT - WIND RIVER- ESCAPE SLASH BURN SPREAD BY EAST WINDS INTO BUT OF YACOLT BURN DAY CREEK LOOKOUT BUILT
1936	SHORTWAVE RADIOS USED FIRST TIME ON FOREST: 21 SETS; THE "PORTABLES" WEIGHED 25 LBS
1937	SPUD HILL 808 AC STARTED ON 1 AUG BY LIGHTNING (INSIDE OLD CISPUS BURN) 670 AC MAIN FIRE AND 138 AC SPOT - AN INVESTIGATION BY R.O. CONCLUDED THAT THE FOREST SUPERVISOR SHOULD HAVE RECOGNIZED THE POTENTIAL OF THE FIRE EARLIER + DIRECTED MORE RESOURCES TO IT. SEVERAL OTHER FIRES WERE BURNING AT THE TIME, HOWEVER, ESP IN THE WIND RIVER AREA - TOTAL OF 85 LIGHTN FIRES THIS YEAR
1938	SILVER CREEK FIRE ? STARTED 19 JULY - radio - AIRPLANE USED TO MAP FIRE SPREAD FOR FIRST TIME ON G.P.F.
1939	WILLARD FIRE 13,220 AC - 2540 ON F.S. LAND AUG 8-17 41 MILES OF FIRELINE - DIFFICULTIES IN FS-STATE COORDINATION ON THIS FIRE PROMPTED LATER CHANGES IN CO-OP ARRANGEMENTS
1949	COLUMBIA N.F. RECEIVED GIFFORD PINCHOT
1951	HUFFAKER MT FIRE ? AC
1952	2400 AC. OF YACOLT REBURNED DOG MT FIRE 400 AC GREEN RIVER ? AC

1967	SUMMIT CREEK FIRE 370 AC -BACKLOOP- STARTED ON ZEA
	BY LIGHTNING SEVERAL SPOT FIRES UP TO ½ MILE
1968	AERIAL DETECTION BEING USED, LOOKOUTS PHASING OUT
	[redacted]
1971	GUNBOOT FIRE 123 AC -ST HELENS- STARTED BY ESCAPE SLAS
1972	CUNNEY PASS FIRE ?
1973	SHINGLE MT FIRE 290 AC - 231 ON FS -WIND RIVER-
	ESCAPE SLASH
1974	APE FIRE 114 AC - 59 ON F.S. -ST. HELENS- EQUIP CAUSED
	ELK LAKE - 754 AC - 97 ON F.S. - ST. HELENS-
1976	MONTE CRISTO FIRE 62 AC -MARS- ESCAPE SLASH
1978	WIGWOSTA FIRE 248 AC -WIND RIVER- ESCAPE SLASH
1979	BABY RUTH 126 AC 27-29 SEPT ESCAPE SLASH
	RUTH FIRE 3,300 AC OCT 2 → SPREAD BABY RUTH BY
	EAST WINDS UP TO 50 MPH
1980	MAY 18 ERUPTION OF MT ST HELENS 154 SQ MILES OF
	BLOWDOWN, MANY LIGHTNING FIRES STARTED TO NE
	OF VOLCANO, ESP IN KEAN + CLEARWATER CREEKS