Information Report FF-X-47
March 1974

A SYSTEM TO PREDICT THE OCCURRENCE OF LIGHTNING-CAUSED FOREST FIRES

by

P. H. Kourtz

Forest Fire Research Institute
Canadian Forestry Service
Department Of The Environment
Nicol Building
331 Cooper Street
Ottawa, Ontario
K1A OH3

CONTENTS

Abstract

The efficiency of aerial fire detection patrolling could be significantly improved if a reliable thunderstorm tracking and lightning fire prediction scheme were available. One method to determine the areas over which thunderstorms have passed requires the use of expensive combined weather radar - Sferics systems. An alternative to this, is a network of limited-range lightning sensors placed at each forestry weather station. Following this latter approach, the Forest Fire Research Institute embarked on a three year sensor development and test program. During the 1973 fire season a network of 19 sensors was located over a 60,000 square mile area of northwestern Ontario. Results showed that this approach provided an inexpensive and reliable means of storm tracking. In addition, a strong relationship was found between sensor counts, fuel moisture content as calculated by the Fire Weather Index system and the occurrence of lightning caused fires.

Acknowledgements

I wish to express my appreciation to the Ontario Ministry of Natural Resources for their excellent cooperation during the field testing phase of this study. Specifically I would like to thank the staff of the Dryden Fire Center for assisting in the initial installation and maintenance of the thunderstorm sensor network and for collecting the daily observations from each sensor.

Special thanks go to the many northwestern Ontario weather station operators who faithfully monitored each sensor's activity and also to Mr. Joe Abella who constructed the antenna frames and weatherproof instrument shelters.

A SYSTEM TO PREDICT THE OCCURRENCE OF LIGHTNING-CAUSED FOREST FIRES

Introduction

Lightning was responsible for starting 26 percent of Canada's forest fires between 1961 and 1968 (Lockman, 1972). These fires resulted in an average annual area burned of 1.4 million acres or 56 percent of the total average annual acreage burned. Although specific statistics regarding the cost of lightning fires in Canada are not available they certainly represent a major proportion of Canada's average annual 24 million dollar direct fire suppression and damage costs.

The costly nature of lightning fires is usually attributed to their multiple occurrence in remote areas, where detection and initial attack are more difficult. These fires frequently go into a slow burning phase upon ignition and remain in that condition until the surrounding fuel and wind conditions will support rapid spread. Few Canadian agencies have the necessary manpower and transportation equipment to mount an effective initial attack on each of a large number of such fires. It is not surprising that one or more develops into a large and costly fire.

Project "Skyfire" of the U.S. Forest Service's Northern Fire Laboratory has been researching one possible solution to the lightning fire problem -- that of reducing the frequency of fire starting lightning flashes using cloud seeding techniques. This approach has the potential for high payoffs in the future. Project "Fire Scan" of the Northern Fire Laboratory attacked the problem from a different aspect. A sophisticated airborne infrared detection system capable of detecting a significant number of dormant fires before they enter their rapid spread phase has been constructed and tested. Despite this system's proven effectiveness, its acceptance by fire control agencies has been painfully slow. At least part of the reason for this is the archaic fire control budgeting system used by most fire control agencies that prevents the large capital expenditure required for this system.

A third alternative to the lightning fire problem, and the one commonly used in the field, is to intensify the detection and initial attack efforts in those areas in which thunderstorms have occurred. Some years ago when dense lookout networks were operated there usually existed a well-defined procedure for observing and reporting thunderstorms. Lookout observers paid close attention to those suspect areas and on occasion aerial detection patrols supplemented lookout coverage.

With the recent switch from lookouts to aerial detection two important changes relative to lightning fires have occurred. First, the "flexibility" of the aerial system has provided the potential for agencies to concentrate their detection effort in areas where lightning fires are thought to be located. Second, the storm tracking intelligence network once provided by the lookouts no longer exists. The result is an expensive and inefficient use of air patrols often in search of lightning fires in areas that have had no lightning. Even worse, many storms in remote areas occur unnoticed by aerial detection planning teams.

This report describes the Forest Fire Research Institute's attempts to develop an electronic thunderstorm tracking system that hopefully will provide information for improved scheduling and routing of detection patrols. Also, this report describes an attempt to carry this approach to the next logical stage -- that of forecasting the occurrence of lightning fires.

Electronic Methods for Thunderstorm Tracking

Radar operating in the five to ten centimetre wavelength range could be used to accurately track well developed thunderstorms. Identification of these thunderstorms is based on the degree of vertical cloud development. However, there is a large vertical range in which it is impossible to state whether or not a storm is producing lightning or not. Unfortunately, many thunderstorms fall within this range.

Sophisticated and expensive Sferics instruments that receive electromagnetic radiation from lightning can be purchased and these are capable of determining the azimuth bearing of each discharge to about the nearest 5 degrees. However, all attempts to correlate these observations with those of another nearby station to obtain range estimates have either failed or been prohibitively expensive.

Combining weather radar and Sferics systems enables one to accurately identify thunderstorms and to track them, but the range of such a combined system is at most 100 miles and considering the high costs of purchase and operation this alternative currently must be ruled out.

A third thunderstorm tracking technique involves the use of a dense network of limited range, electronic lightning sensors. The sensors would be located at either existing forestry field stations or at manned or remote electronic weather stations. Each morning the sensor counts (representing the number of lightning flashes within the instrument's range) would be relayed to the detection planning team. In most cases such counts would be relayed along with regular weather data.

Sensor Development

In 1971 Project Skyfire loaned the Institute an infrared lightning sensor possibly suitable for use in such a network. The testing of this instrument lead to a two year development program during which the following types of instruments were developed and tested:

(a) An improved version of the Skyfire sensor including more stable electronics and a solar radiation filter.

(b) A sophisticated infrared detector capable of identifying and counting only the long duration lightning flashes.

(c) A sensor that counted magnetic radiation disturbances caused by lightning discharges.

(d) A low-frequency radio-type sensor.

(e) A directional radio frequency sensor that could identify and count the number of discharges within each quadrant. (With the quadrant sensor a much wider range (say 50 mi.) could be tolerated therefore providing coverage of a large area with fewer sensors. However, the cost of a directional sensor is relatively high. The directional sensor developed and tested by this study had an estimated production cost of $2,000. Also it had poor range characteristics. Its maximum range varied with each storm from 35 to 75 miles.)

(f) An electrostatic field-change sensor. (This design was supplied by Drs. E.T. Pierce and N. Cianos of Stanford Research Institute, California).

All of the sensors were able to detect distant thunderstorms. Each sensor had its own advantages and disadvantages in terms of electronic stability, power drain, maintenance requirements, range limitations, antenna configuration and sensitivity to environmental electro-magnetic components.

Verification of range was made using visual observation, weather radar coverage adjacent to the test site and coverage from a combined weather-Sferics system 80 miles away. It should be noted that none of these sensors distinguished between cloud-to-cloud and cloud-to-ground flashes. The primary purpose of a sensor network is to determine the areas over which thunderstorms passed. For a more complete description of the sensors and their performance see (Kourtz, 1973).

Field Trial of the Network Concept

Based on these tests it was decided to install a network of 19 electrostatic field-change sensors (Pierce design) in northwestern Ontario during the 1973 thunderstorm season. Each sensor was set for a 20 mile range. Appendix 1 illustrates their location. This particular instrument (Fig. 1) was chosen because of its low power drain, electronic stability, well defined range and low cost ($250.00) (Kourtz, 1973). The instrument's major drawback was the large antenna that it required (Fig. 2).

The Pierce sensor is an electric field change detector with its antenna equivalent to one plate of a large capacitor, the other plate of this capacitor being earth. With a storm in the vicinity, large electrical fields arise between the plates of this capacitor (antenna) due to charge build-up in distant clouds. The electric field resulting from this charge system therefore results in a static voltage between the antenna and ground.

Thus the antenna can be thought of as a capacitor charged up to some voltage depending on the magnitude of the cloud charge and its distance from the antenna. In the event of a lightning flash, the cloud charge is discharged resulting in a change of the electric field. The resulting rapid change of voltage on the antenna is detected by the sensor. Only the changes in voltage are counted.

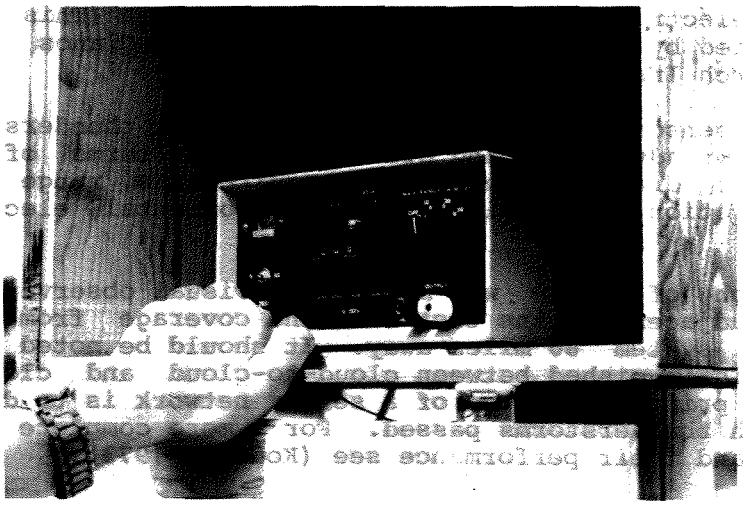


Fig. 1

The Pierce Lightning Sensor used in the 1973 Northwestern Ontario Field Trial

The Pierce Sensor Antenna

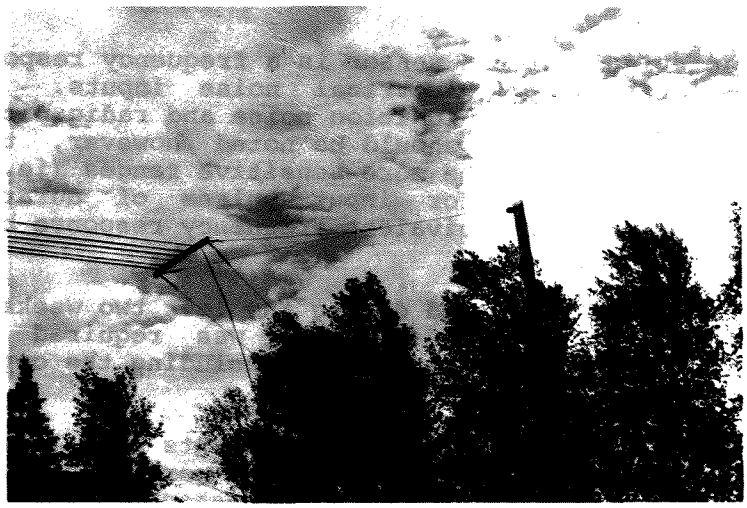


Fig. 2

The antenna consists of 6 parallel wires 14 metres in length and approximately 5 metres above the ground.

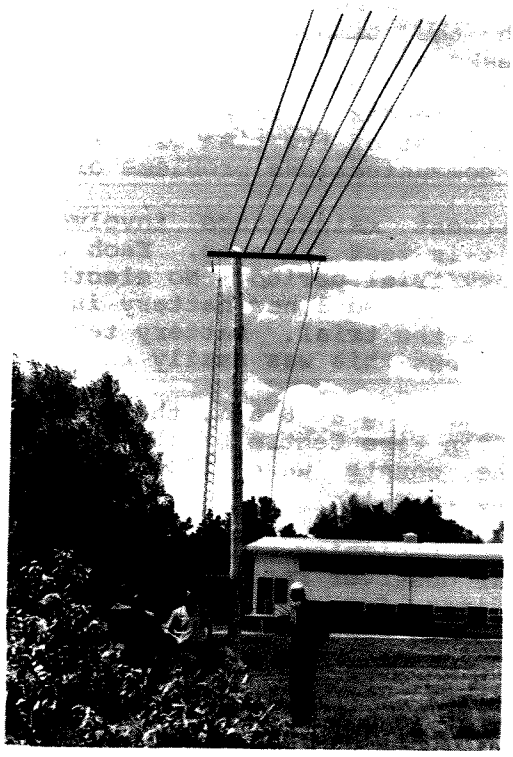


Fig. 3

Because most lightning falshes usually consist of a group of several strokes, the sensor is designed to register at a maximum rate of once per second. This feature eliminates multiple counts that could otherwise occur. Therefore a single count is obtained for any flash, independent of the number of return strokes which usually accompany the principal stroke.

An additional characteristic of the sensor is a frequency response designed to eliminate the effects of electrical noise inputs. The result is that very short pulses such as ignition noise and radio pickup have a minimal effect on the sensor. It should be noted however, that noise rejection is less effective on the more sensitive ranges (ie. 20 and 50 miles). Maximum sensitivity is for input pulses of duration between 0.5 and 15.0 millisecond, or equivalent frequency response band of 60 to 2000 kHz.

All nineteen sensors were installed during the last two weeks of May. It was estimated that about two man-day's labor was required for each installation. The total installation cost including the copper wire but excluding travel costs was about 75 dollars.

Thirteen of the antennae and corresponding instruments were located in open areas away from roads and these instruments performed quite satisfactorily throughout the remainder of the season. The six remaining antennae and instruments, by the end of the first week of July, were moved to more satisfactory locations within several hundred yards of their old locations. They were moved either because they were located too close to roads, electric motors or high voltage power lines resulting in false counts--or because the antennae were located underneath the timber canopy resulting in no counts. The various voltage leaks encountered during the past season could not cause false counts if they were 200 feet or more from an antenna. As the data indicates (Appendix 1) false counts rarely exceeded 10 per day per sensor and most of the time were absent. Missing data were usually the result of communications problems or lack of weekend staff.

Instrument maintenance involved a weekly battery and counter test using built-in test features. Each instrument ran continuously during the 96 day trial period. No electronic failures occurred and only one instrument required a new battery in spite of never being shut off until the end of the trial. Battery terminal corrosion did occur in several instruments but this was easily remedied.

Each morning at 8 a.m. the counts from the 19 sensors were relayed to the Dryden Fire Centre of the Ontario Ministry of Natural Resources. There, the counts were plotted on a map. (Appendix 1 contains these data in map form.)

At the beginning of the trial, lightning was reported according to the regular observer reporting system along with sensor counts. Based on the first few week's results using these two different methods of observation and assuming that the early network results were valid it can be concluded that the old system of thunderstorm reporting failed to detect over half the storms. Further comparisons and detailed analysis of these data were not possible after mid-June because in most cases the results of the two methods of observation were not independent. More and more faith was placed in the sensor results as the season progressed.

The trial ran for 96 days and during this period 64 days or 67 percent of all days had thunderstorms. Here a thunderstorm-day was defined as a day with one or more sensors reporting more than 10 counts. These storms started 96 fires. Some storms produced fewer than 10 counts while the maximum 24 hour count on a single sensor was 3703.

Storm activity was limited to local areas on the majority of thunderstoms-days. That is, 6 or fewer sensors reported counts above 10 on 67 percent of all thunderstorm-days. It is interesting to note, however, that on the general storm-days (more than 6 sensors reporting 10 or more counts) 91 percent of all the fires were started. Furthermore there were only 11 storm-days with 12 or more sensors reporting more than 10 counts but on these days 86 percent of all lightning fires were started.

Storms began and ended within the study area and on at least 10 occasions storms never moved outside the range of a single sensor. Rarely did storm activity occur across the whole study area. Only on one day did 18 sensors report more than 10 counts.

Correlation of Thunderstorm and Lightning Fire Occurrence

Once it became clear that the sensor network was identifying thunderstorm occurrences an interesting operational problem related to interpretation of data arose. Almost every day some sensors in the 60,000 square mile area detected storms.

The extent of the storm activity was far greater than that experienced by detection planners in the past. Also, it was quite clear that most of these storms were not starting fires. The problem was: to which storms should the detection planners dispatch their limited number of patrols?

Attempts were made using data from the thunderstorm tracking network and weather data to predict lightning fire occurrence. Appendix 1 contains a daily listing of some of these data. No sophisticated data analysis techniques have been used. Only a small number of observations have been accumulated to date and also, it is extremely difficult to identify the precise date and time of ignition of the fires. Analysis showed that:

(a) At best, only a weak relation exists between the severity of storms (measured by the sensor counts) and lightning fire occurrence. Throughout the 96 days 29 sensors reported counts exceeding 1,000 and associated with these observations were 9 fires. But the remaining 87 fires were associated with sensor counts between 10 and 1,000. There were 361 observations in this latter category.

(b) No direct relation exists between the amount of rainfall as measured at the nearest weather station, the occurrence of lightning and the ignition of lightning fires (see Table 1).

(c) A well defined relation exists between the sensor counts, yesterday's Duff Moisture Code (as calculated by the Canadian Fire Weather Index System, Anon. 1970) and lightning fire occurrence. An area is most likely to have lightning fires if the lightning sensor reports 50 or more counts and yesterday's Duff Moisture Code is 20 or greater. If both these conditions are not met the area is not likely to have lightning fires. Table 2 summarizes some results from applying this rule. The hatched areas on the maps in Appendix 1 are the areas that meet the above criterion. For convenience in the following sections of this report this criterion is referred to as the "Hatching Rule". Appendix 1 illustrates this rule applied to the 1973 study area data. Note the lightning fire occurrence pattern in relation to areas that received lightning and to hatched areas.

Table 1

Summary of Rainfall, Sensor and Lightning Fire Data*

Rainfall	Sensor Count Class	No. of Observations	Associated No. of Fires
1/10 inches or less	10 - 500	148	24
	501+	6	0
More than 1/10 inches	10 - 500	154	38
	501+	52	20

*A significant number of rainfall observations are missing

Table 2

Data on the Lightning Fire Prediction Scheme.	
No. of thunderstorm-days	64
No. of days with hatching[1]	23
Percentage of storm-days with hatching	36%
Total number of sensor-storm observations[2]	390
Total number of sensor-storm observations on days with hatching[3]	237
No. of sensor-storm observations with hatching	101
Total no. of lightning fires	96
No. of fires associated with hatched areas	73

1 The area represented by a sensor is hatched (Appendix 1) if it meets the following conditions a) 50 or more sensor counts and b) yesterday's duff moisture code of 20 or greater.

2 Sensor-days with counts greater than 10.

3 Note that hatching most often occurs on 'general' storm days.

On 13 of the days with hatching 86 fires (90%) occurred. The hatched areas and immediate vicinities included 75 percent of all lightning fires, based on the best estimates of ignition times. However, hatched areas are present only on about one third of the days on which storms occurred. Also, on days with hatched areas these areas represented approximately only 50 percent of the total area that received thunderstorms. One can expect 0.5 lightning fires per 1,000 square miles in hatched areas, whereas in other areas where storms occurred one can expect only 0.1 lightning fires per 1,000 square miles.

It is interesting to speculate on the underlying reasons why the hatching rule is so effective. The rule is not based on the number of fires that were started by lightning but rather on the number of lightning-caused fires that continued to burn and that were later detected. If it is assumed that such fires were located on the edges of the storm's precipitation area, yesterday's Duff Moisture Code (a measure of the medium fuel moisture content before the storm occurred) is an appropriate indicator as to whether or not they will continue to burn. Also associated with this theory is the reason for a minimum number of lightning strokes required to meet the prediction criterion. A significant proportion of the sensor counts probably represents cloud-to-cloud flashes. Also, of the cloud-to-ground flashes, most probably fall within the precipitation area of the storm. Therefore a large number of sensor counts (say 50) are required before there is much chance of having lightning strikes into the area outside the precipitation region.

Discussion

The electrostatic field-change sensor proved to be a reliable, maintenance free instrument that is quite satisfactory for the intended use. Its major drawback was the large antenna that it required. Fortunately, a 1 square foot, plate-like antenna and corresponding electronics have been developed by Quality Technology, Ottawa, to replace the Pierce sensor (Figure 4). This new sensor has been tested by the Institute during the past summer and it appears to be quite a suitable replacement. It has been estimated that the production cost of this modified sensor and antenna will be less than $250.

This new sensor operates in a very smilar fashion to the Pierce sensor; that is, it is triggered by rapid electric field changes that accompany lightning discharges. Two requirements must be satisfied to trigger the counter: a) the amplitude of the rate of change of the electric field must exceed a specified reference value, and b) the duration of time while above the amplitude limit must be greater than a specified time. A combination of these two criteria has been experimentally established that gives a reliable 20 mile detection range with an apparent preference for ground flashes.

The new design combines detector electronics and antenna into a small package which is mounted on the top of a mast. The counter and battery are housed in a separate package below and the two units connected by a cable. No ground connection is required. A single 9 volt lantern battery should provide power for a full season of

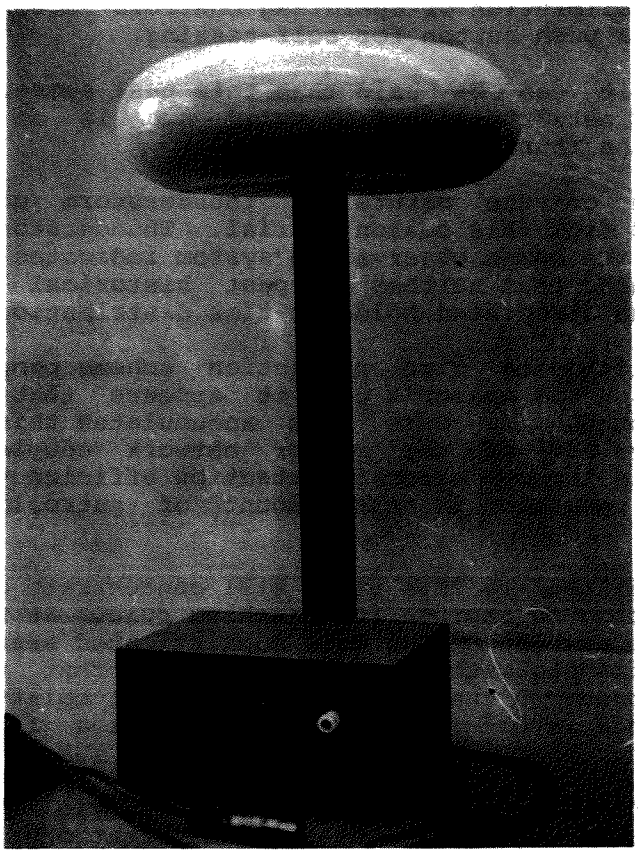


Fig. 4

New design, small antenna electrostatic field-change sensor to replace the Pierce sensor

continuous use. No calibration or operating controls are provided or required, other than a push-button for self-testing.

In conclusion it can be said that this past summer's trial has shown that the sensor network concept is valid and is an inexpensive partial solution to the thunderstorm problem.

New information on the nature of thunderstorm occurrence has already been obtained from this season's trial. Thunderstorms occur far more frequently than the human observation system indicates. Related to this it can be concluded that neither are past historical thunderstorm data valid nor are the associated holdover-time distributions valid.

Although the lightning fire prediction scheme proposed in this report is based only on one season's data it appears that a suitable method has been found. As more data accumulates this rule can be further refined. The use of the sensor network coupled with the hatching rule should improve aircraft detection efficiency. Their use could also lead to a reduction in the amount of patrolling required after thunderstorms.

Future work related to this study will concentrate on collecting more data and attempting to improve the hatching rule. At this time it is not felt that the development of more sophisticated sensors (such as those that identify flashes with long continuing current phases) will have much payoff based on the assumption that fuel moisture condition plays the dominant role in determining whether or not a lightning fire will continue to burn.

It is recognized that a major limitation to applying this system in some areas is the lack of sufficient weather stations. Perhaps a reassessment of the value of weather information for daily fire control decision making is in order.

Reference

1. Anon. 1970. Canadian forest fire weather Index, Canadian Forestry Service, Dept. of Fisheries and Forestry,

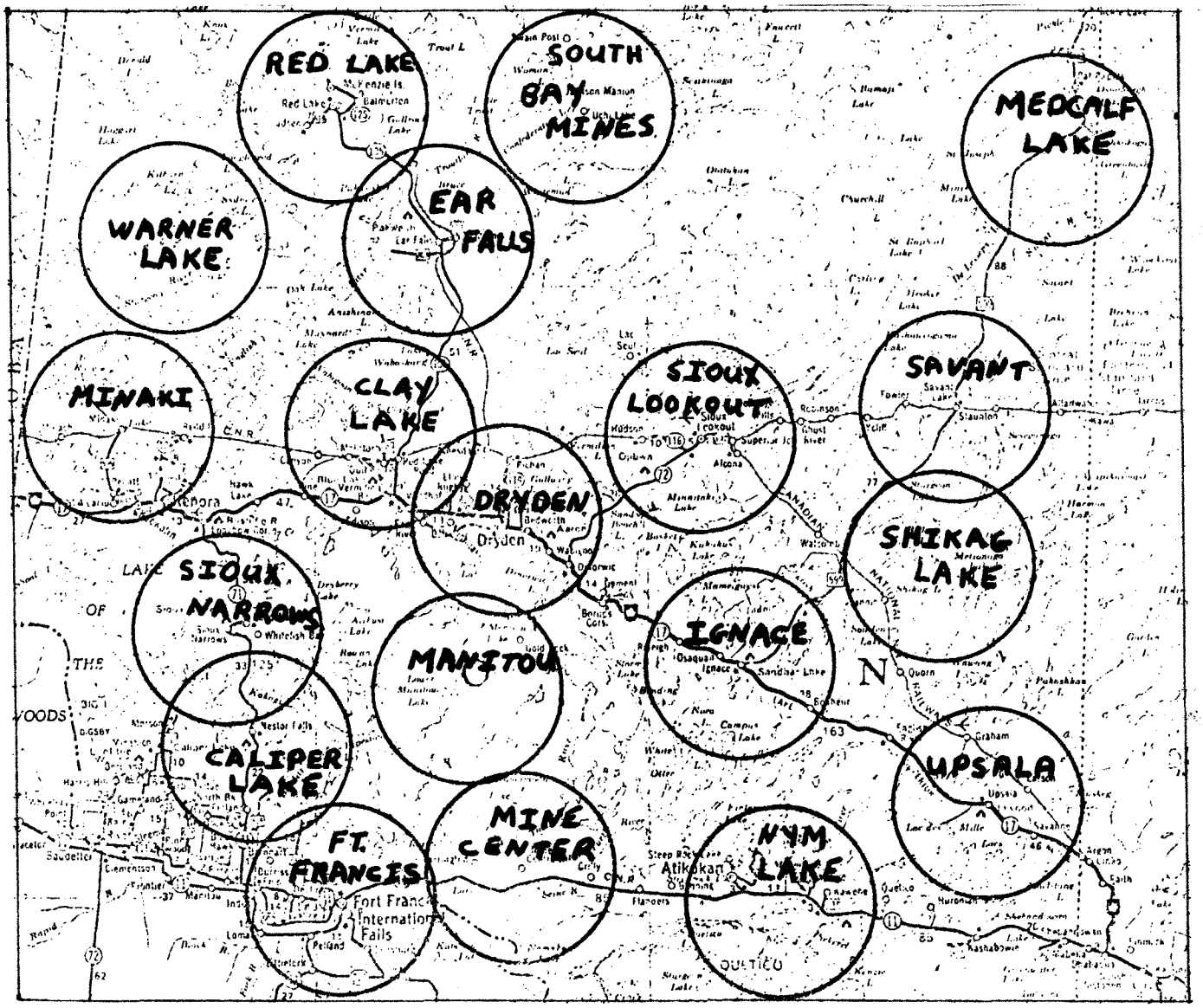
2. Lockman, M.R. 1972. Forest fire losses in Canada, 1969. Dept. of Environment, Forest Fire Research Institute.

3. Kourtz, P.H. 1973. Lightning Sensors tested, Fire Management Vol. 34 No. 3

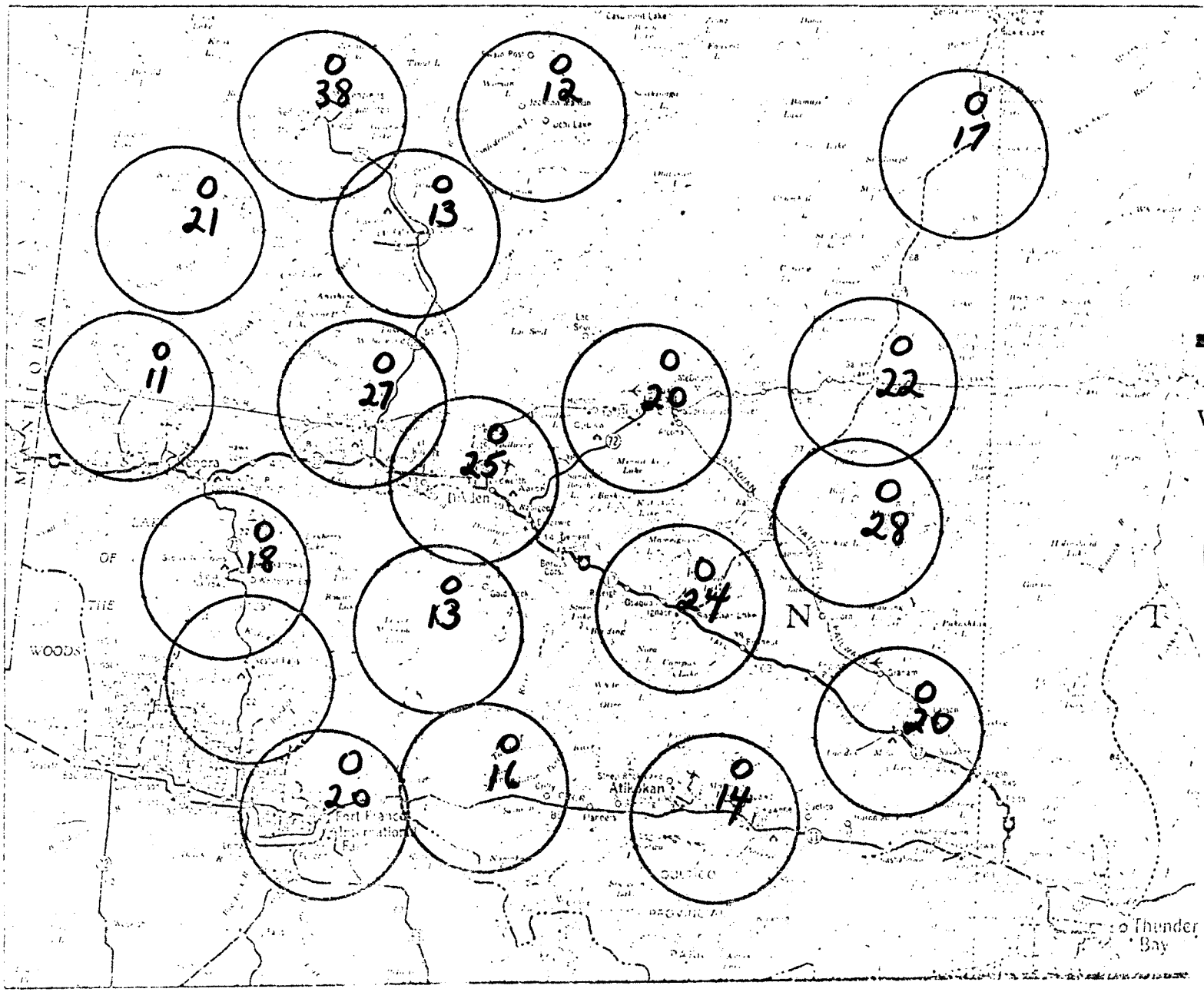
Appendix 1

Daily Sensor Count and Duff
Moisture Content Data from Northwestern Ontario
and
Fire Occurrence Prediction Areas
Actual Lightning Fire Locations

Locations of Lightning Sensors in
Northwestern Ontario



The circles represent the 20 mile range limit
of each sensor



LIGHTNING FIRE FORECAST DATA

May 28 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

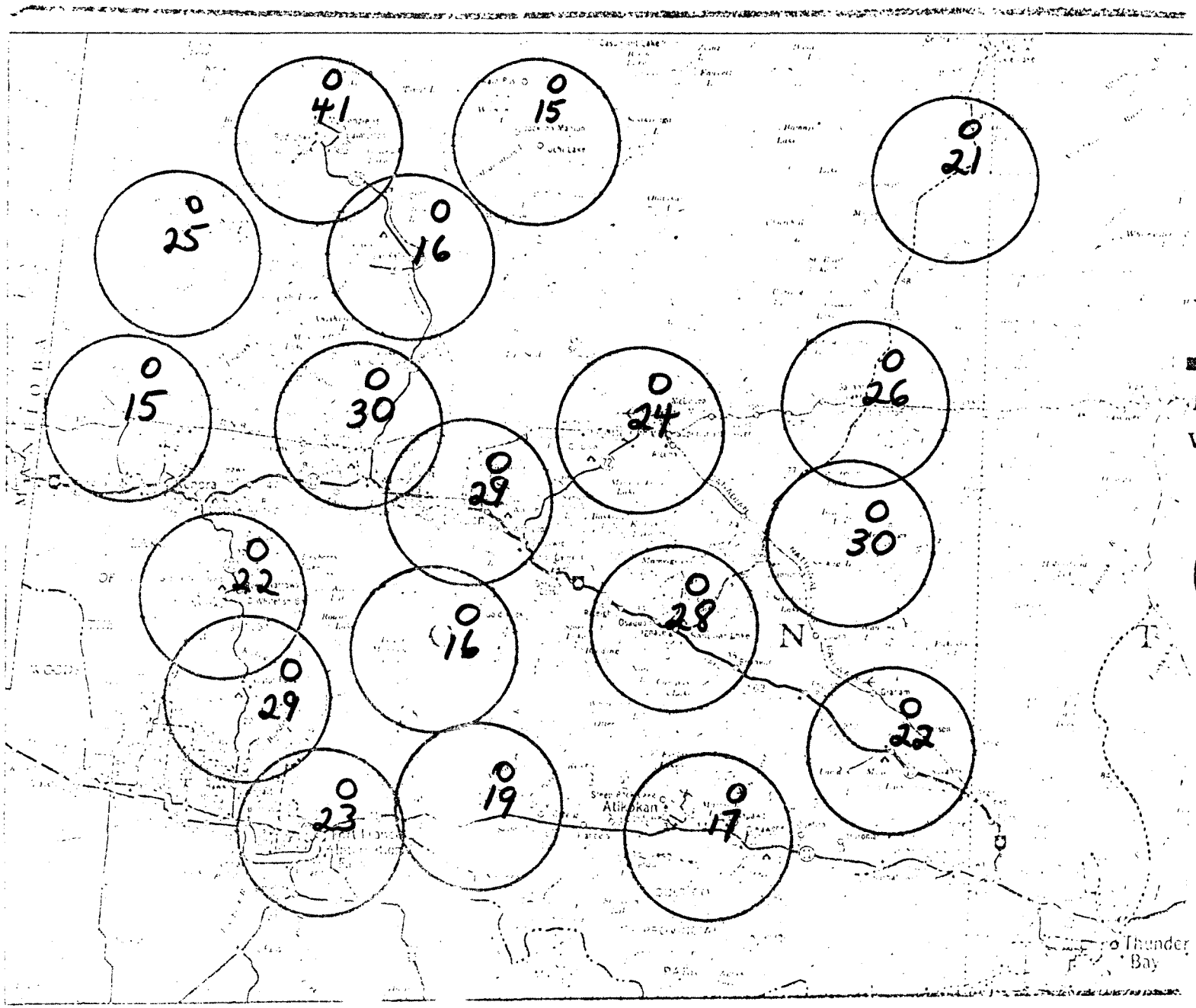
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

May 29 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

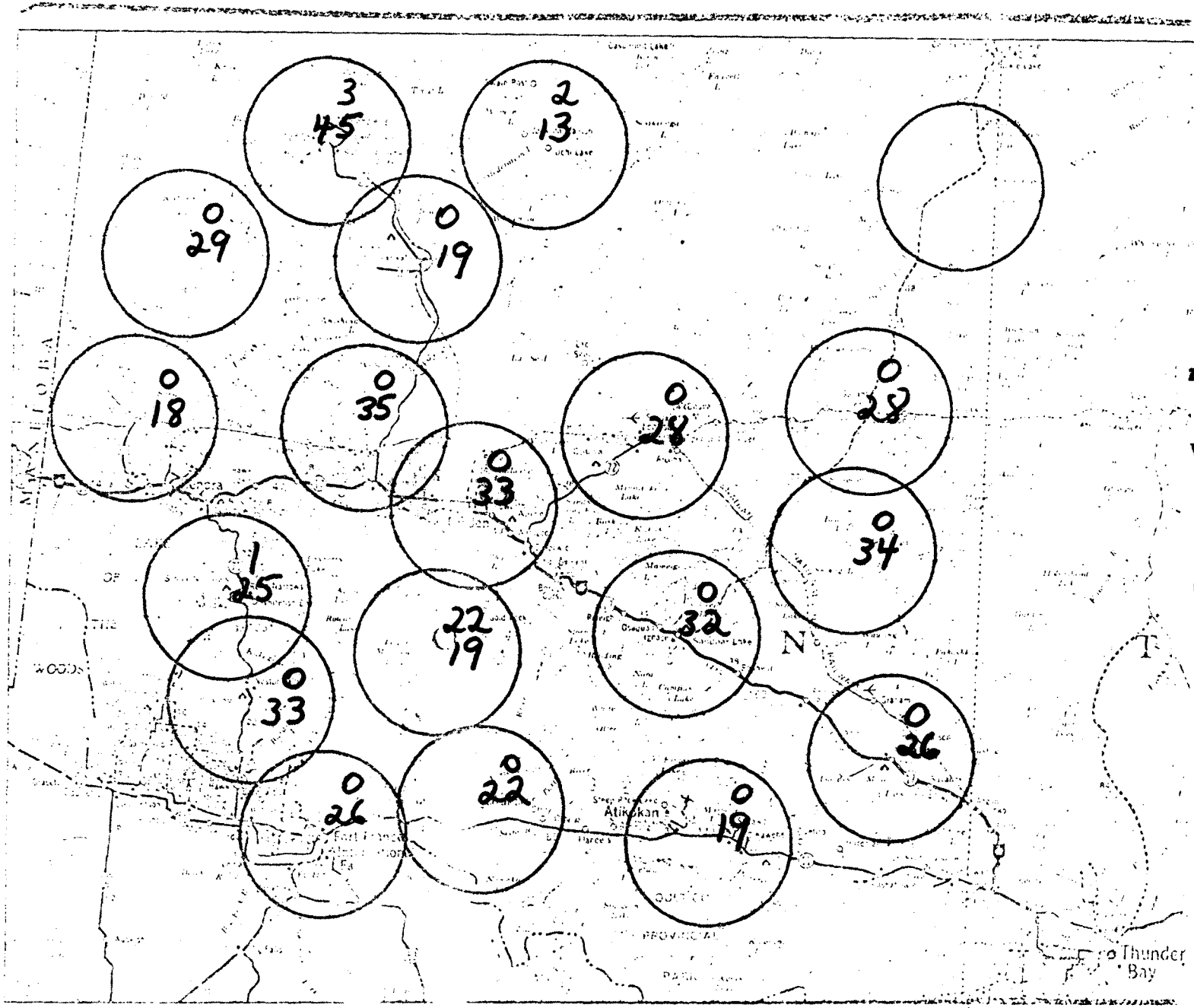
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

May 30 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

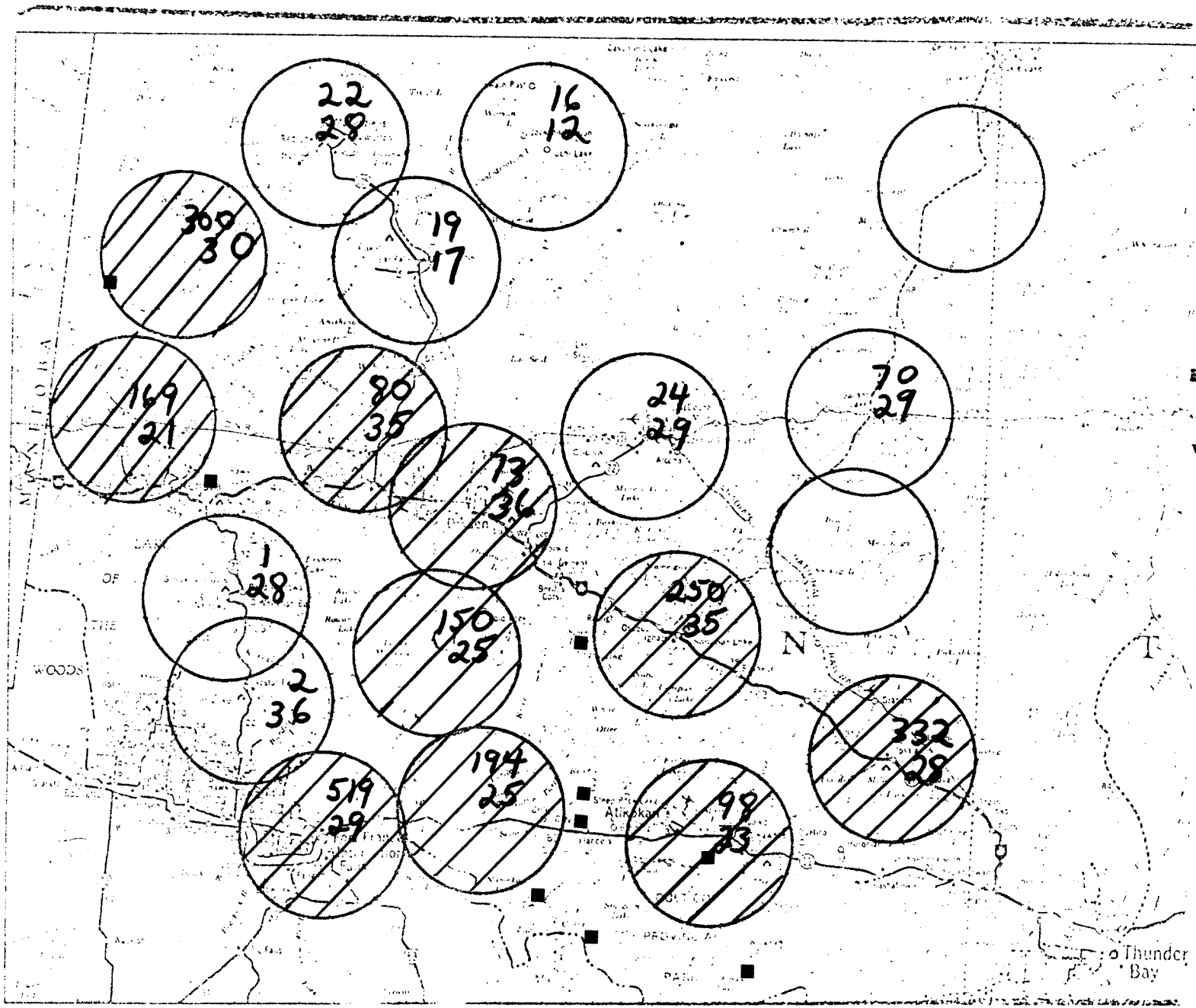
LOWER NO. IS YESTERDAYS DMC

▨ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

May 31 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

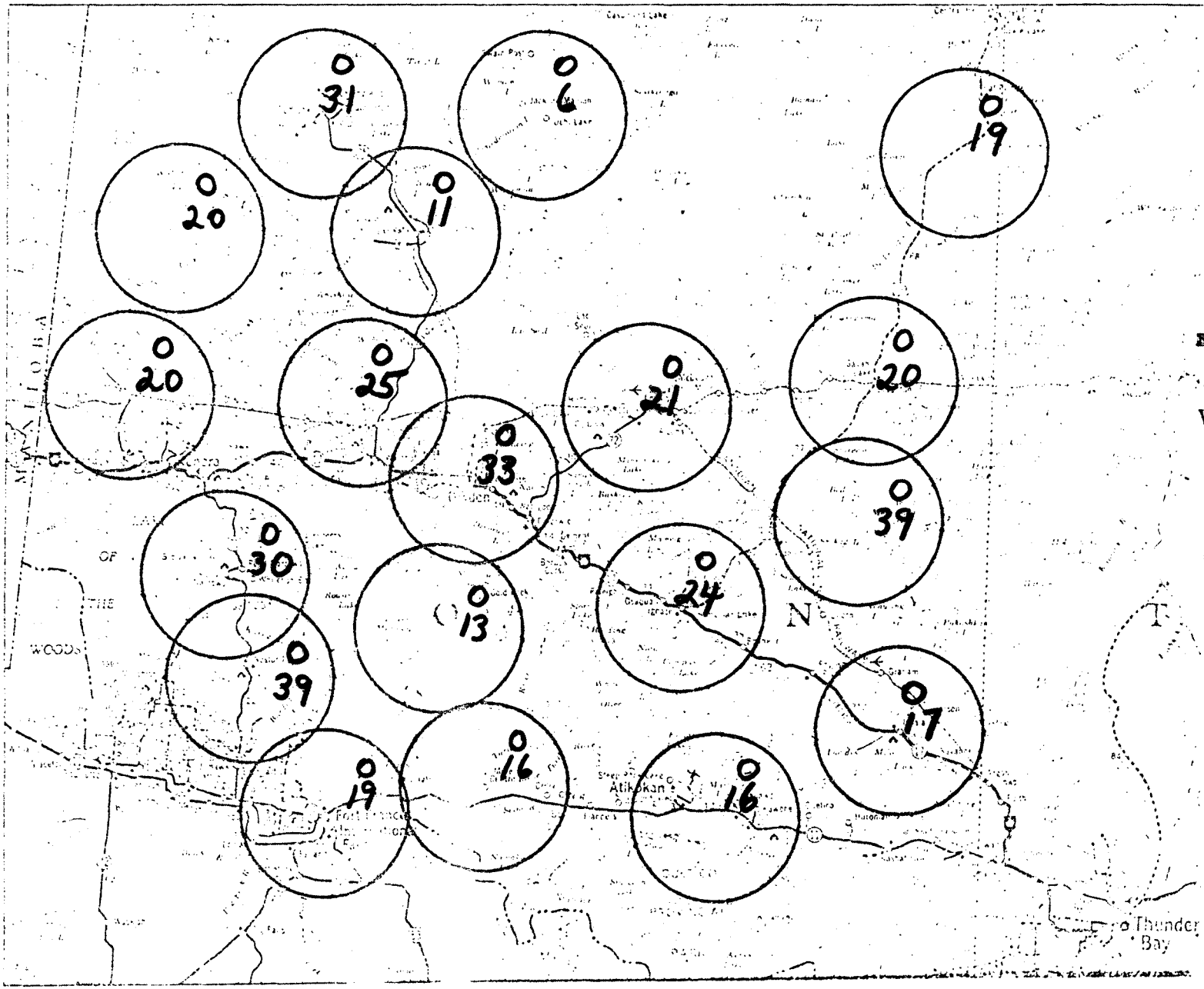
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 1 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

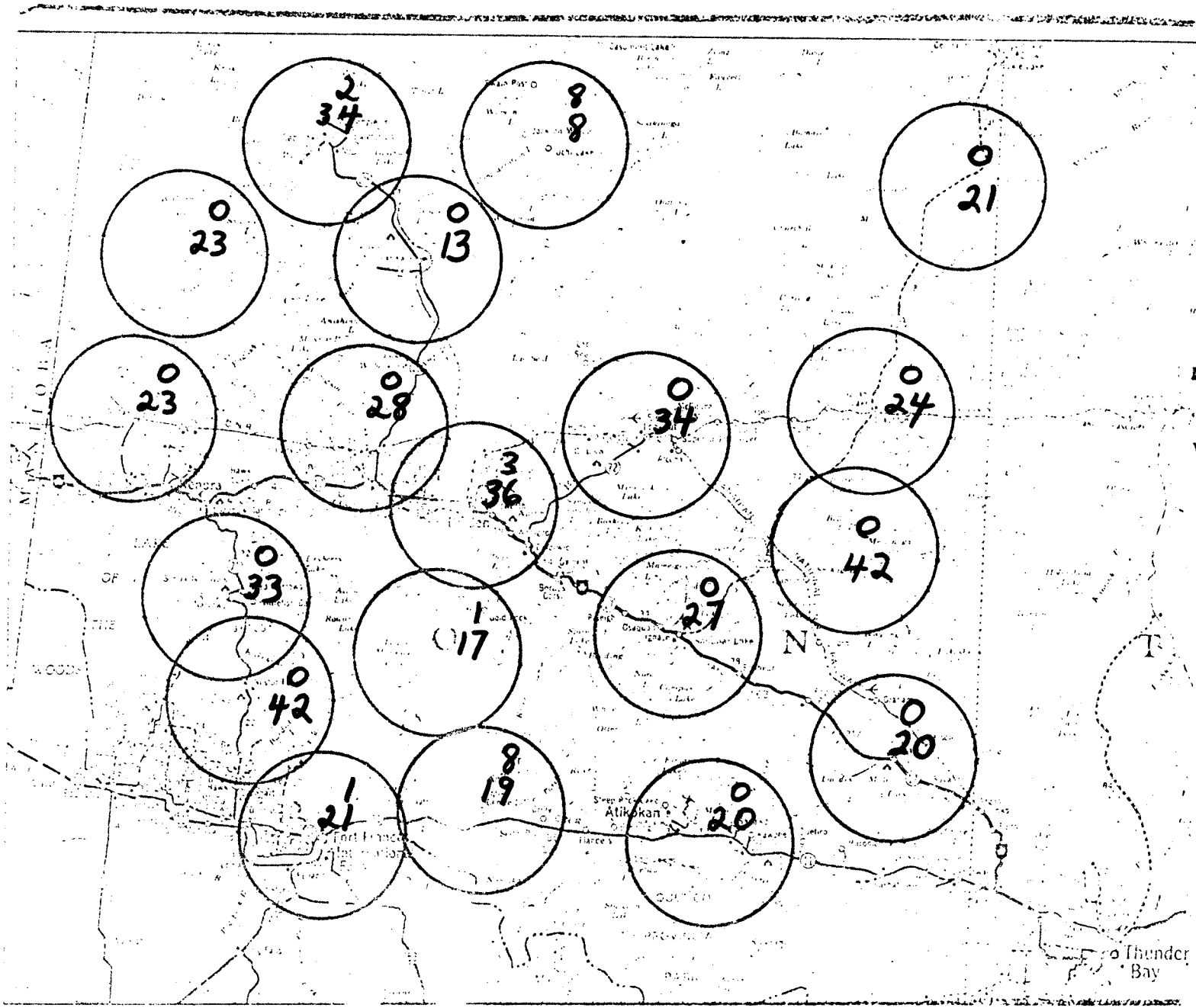
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 2 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

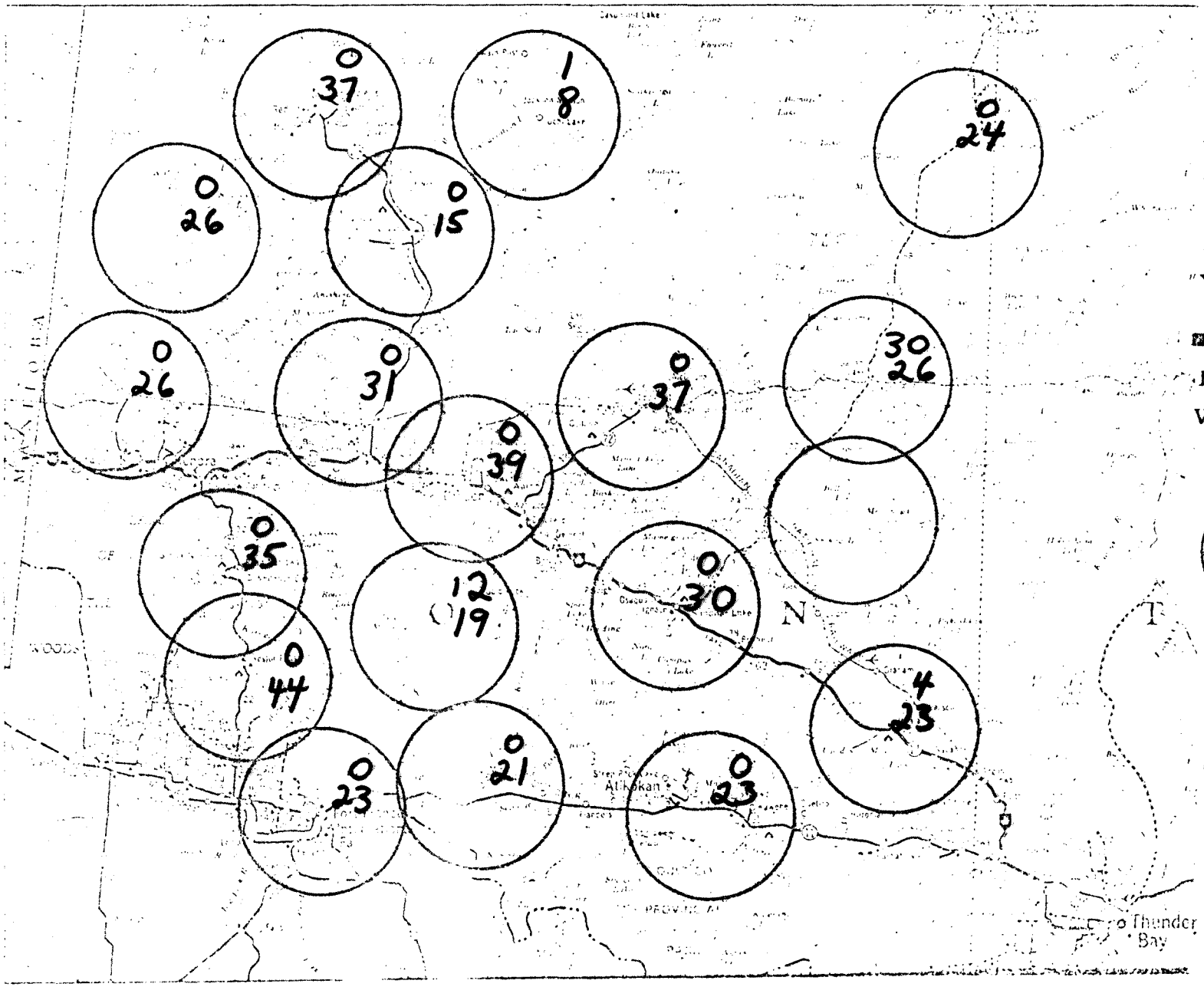
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE
FORECAST DATA

June 3 1973
8:00 a.m.

UPPER NO. IS
LIGHTNING COUNT

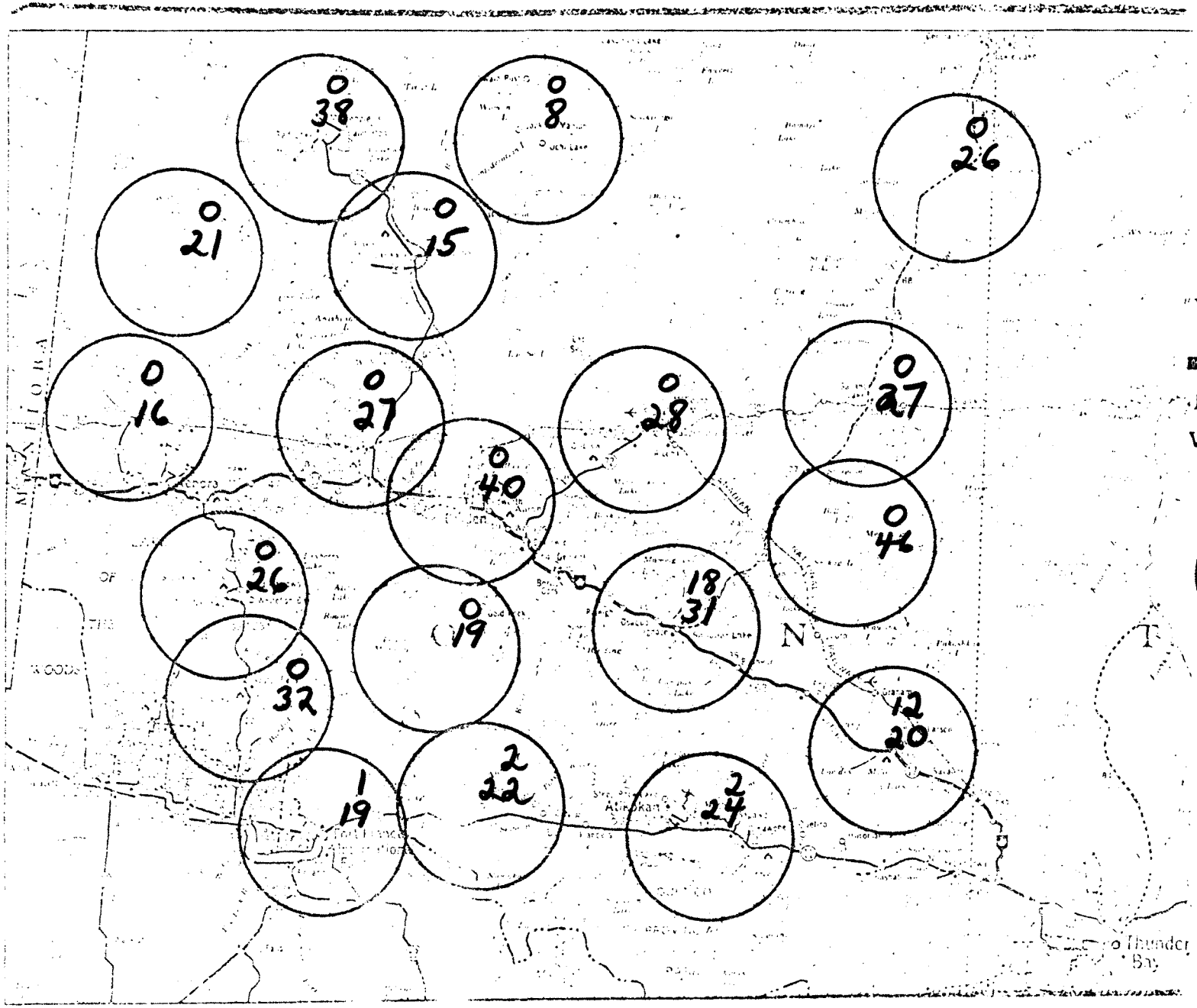
LOWER NO. IS
YESTERDAYS DMC

■ LIGHTNING FIRE
ESTIMATE START
WITHIN PREVIOUS
24 Hrs.

AREAS
IN WHICH
SENSOR
COUNTS ≥ 50
AND DMC ≥ 20

SEE FIG. 1 FOR
STATION NAMES

CIRCLE RADIUS
IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 4 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

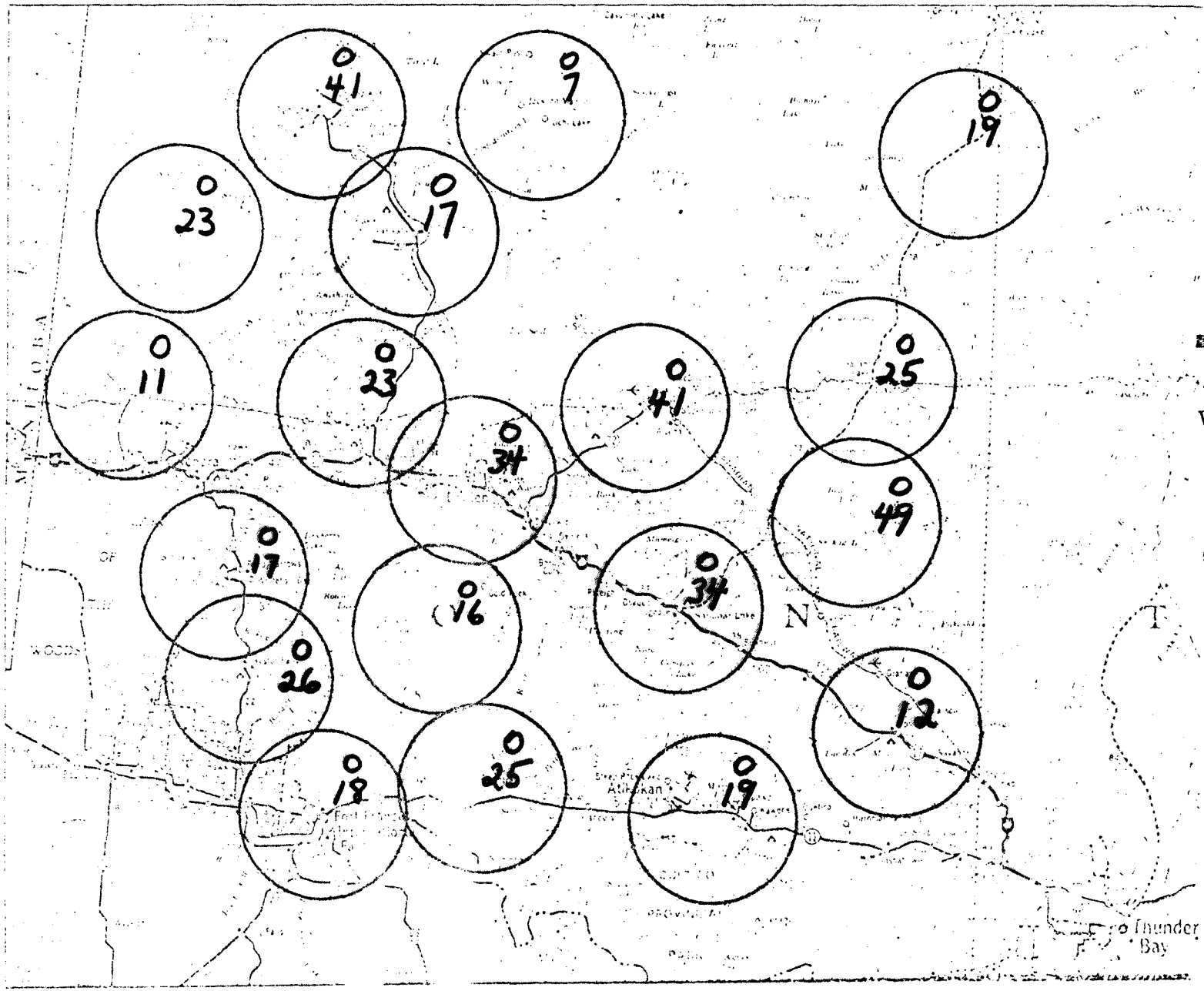
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 5 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

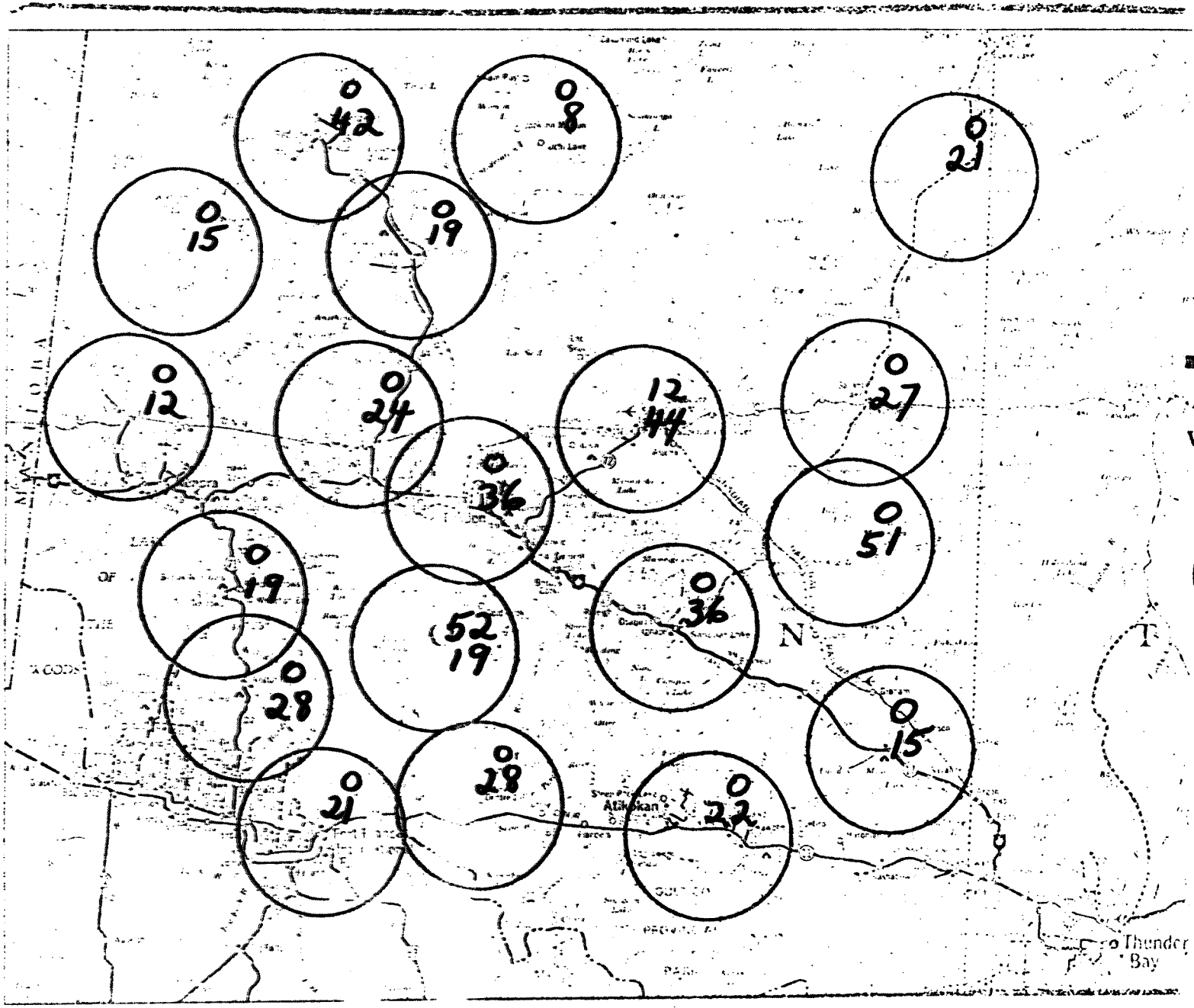
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 6 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

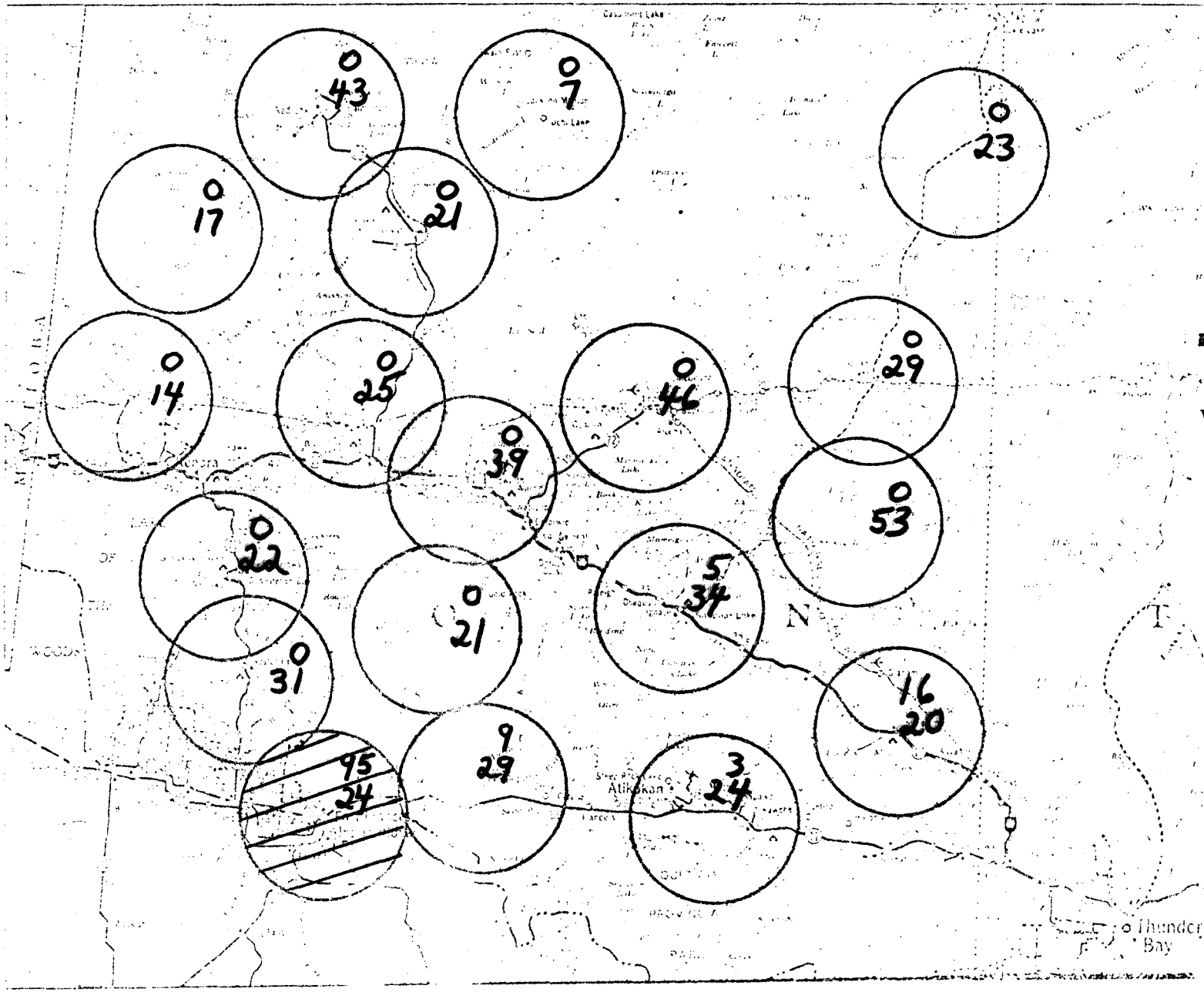
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 7 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

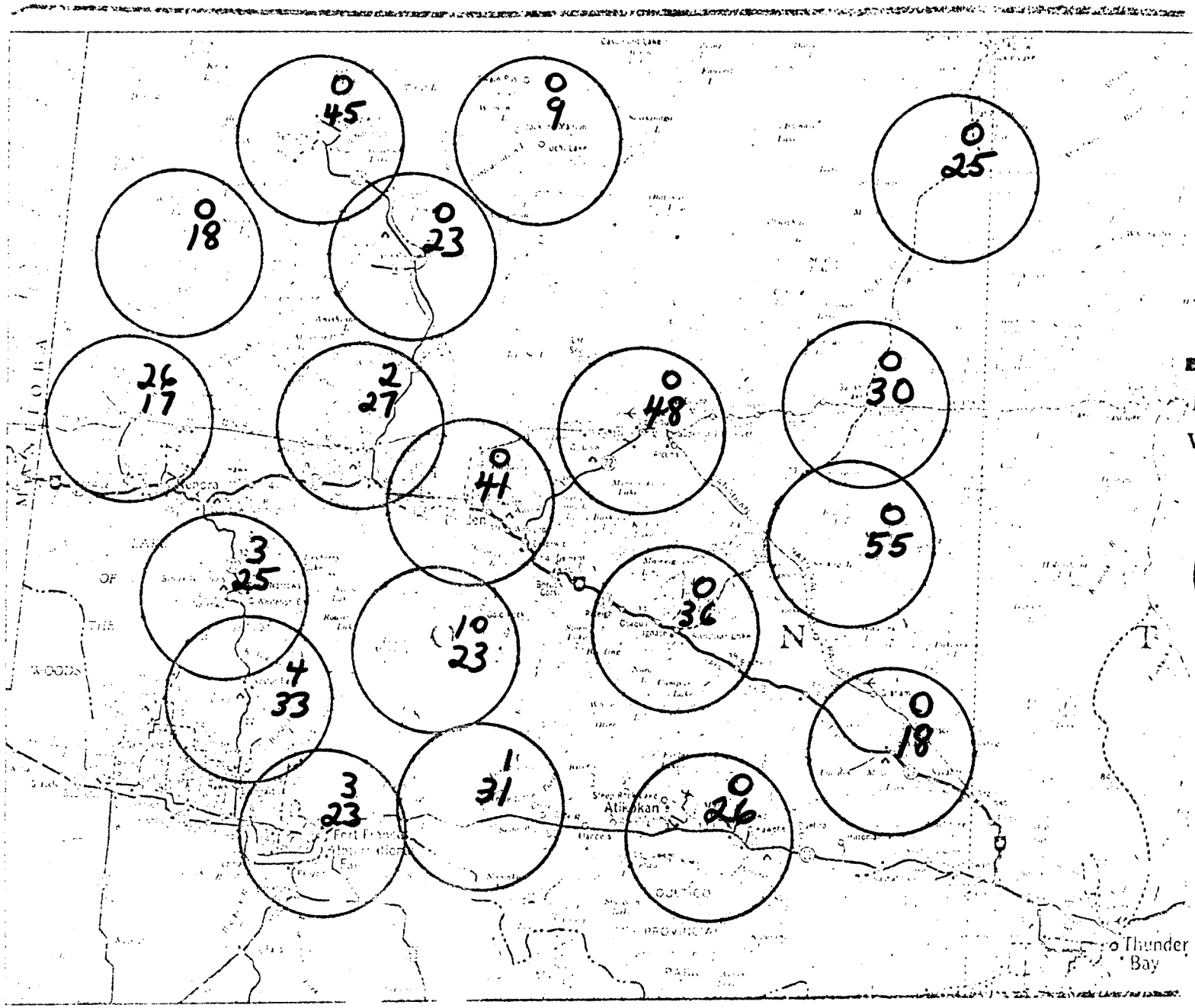
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 8 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

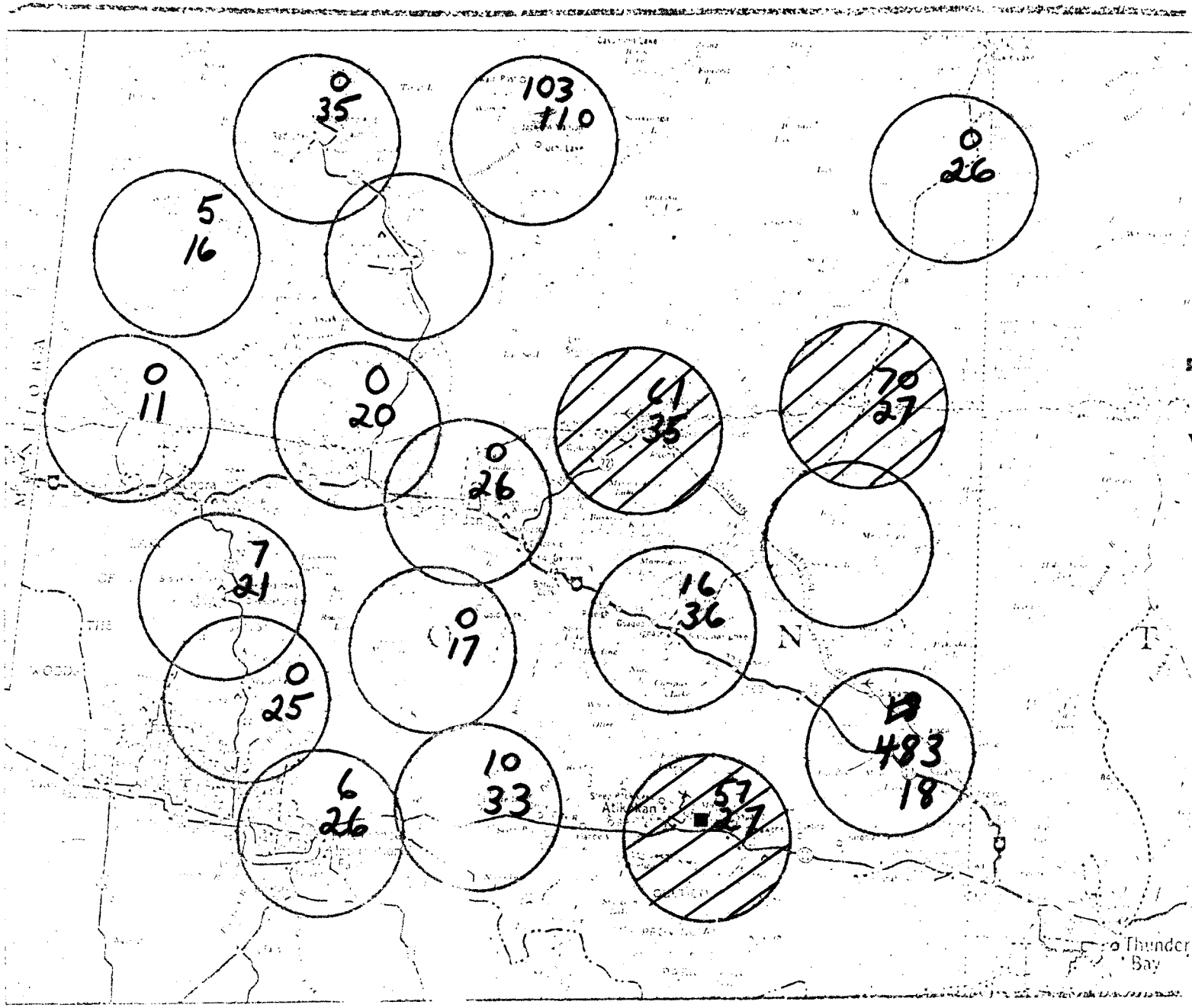
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 9 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

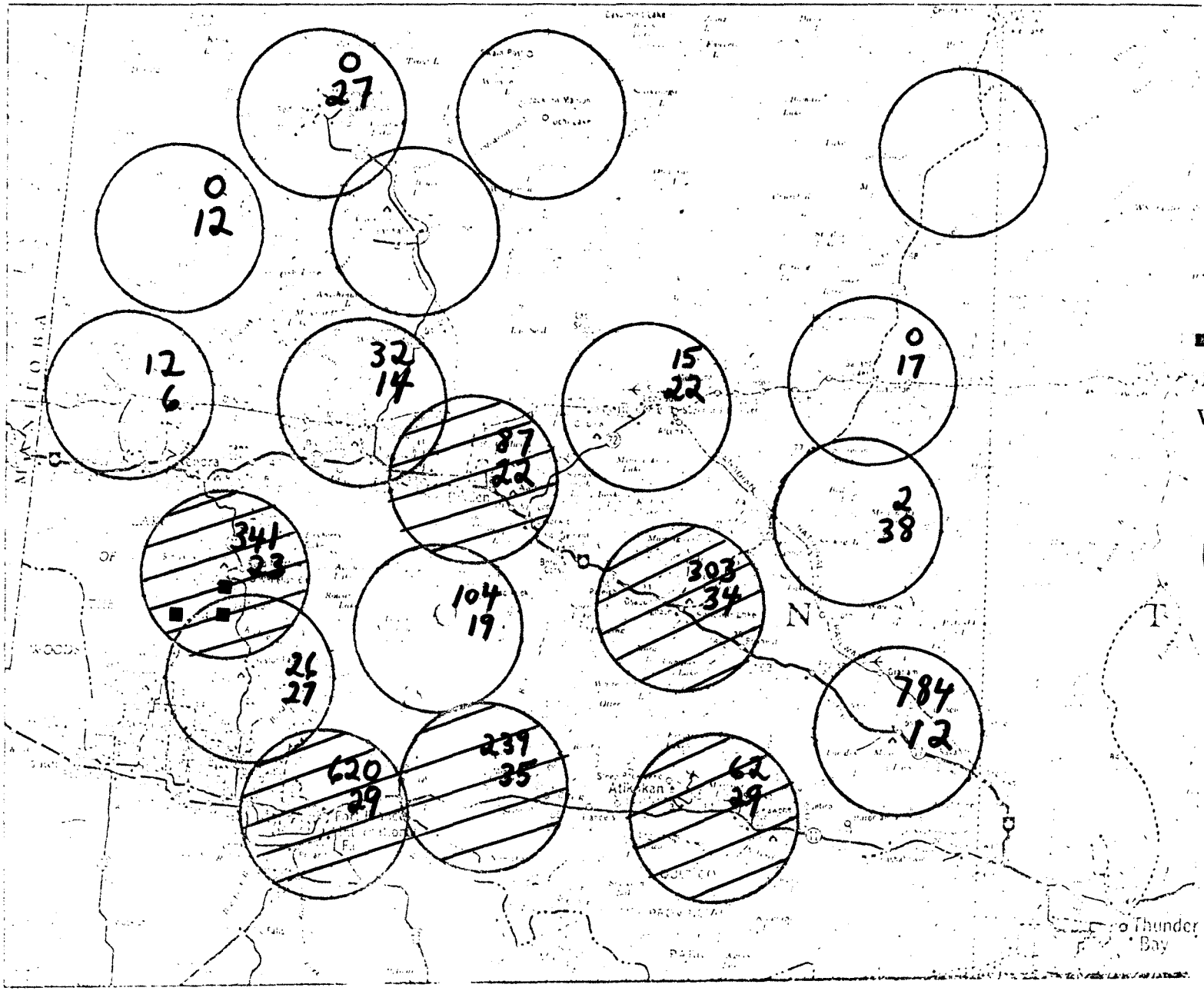
LOWER NO. IS YESTERDAYS DMC

▪ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 10 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

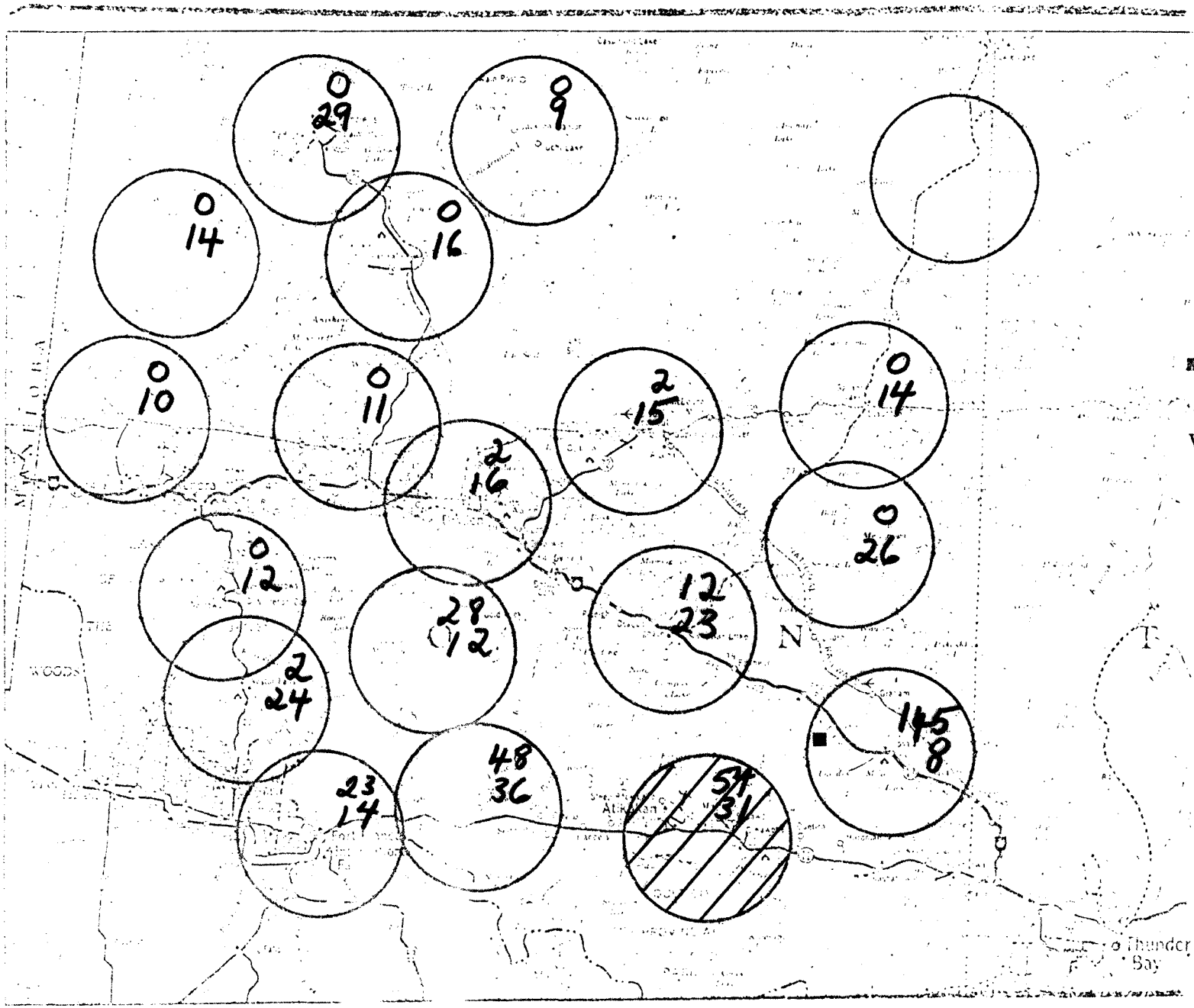
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 11 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

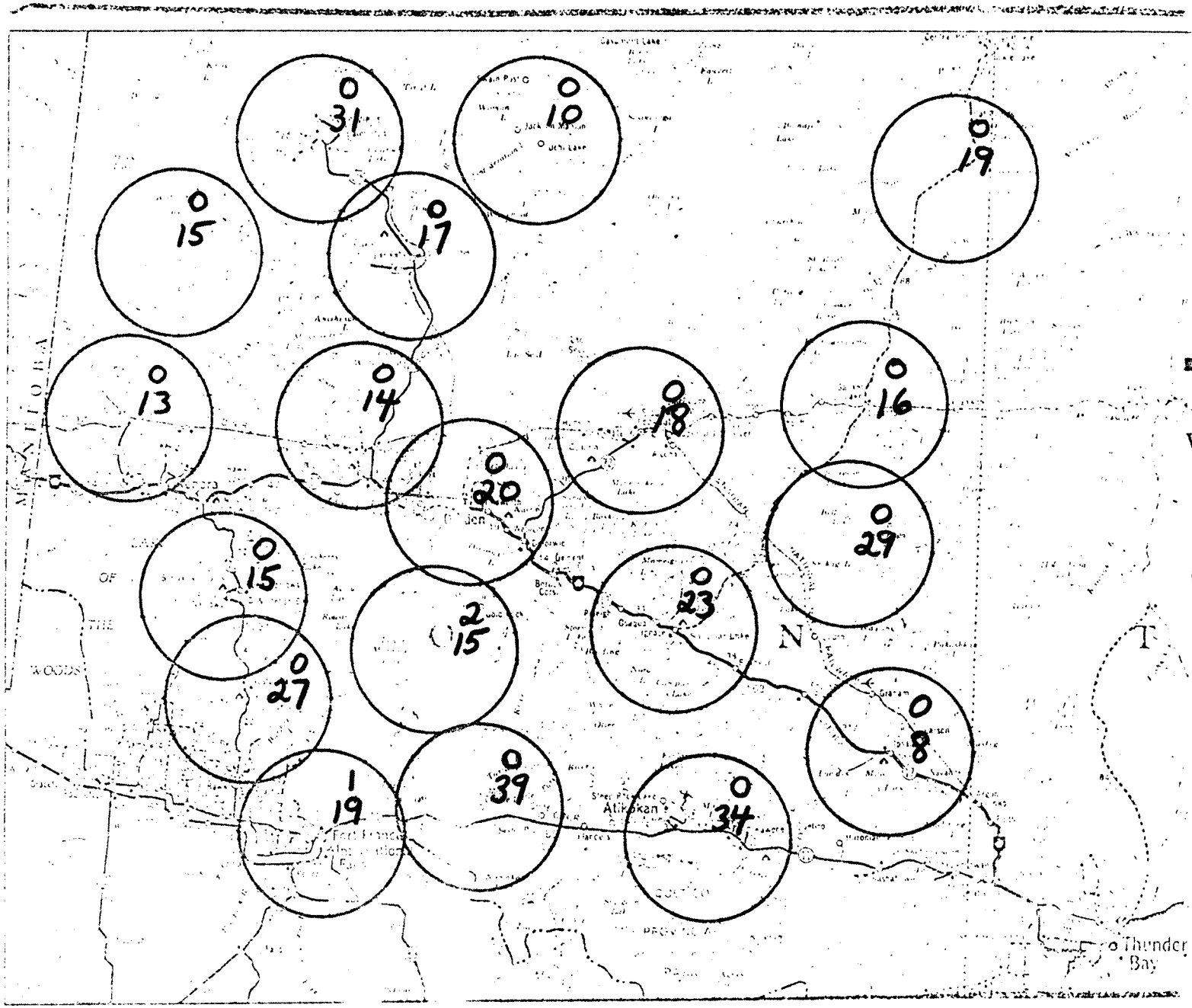
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 12 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

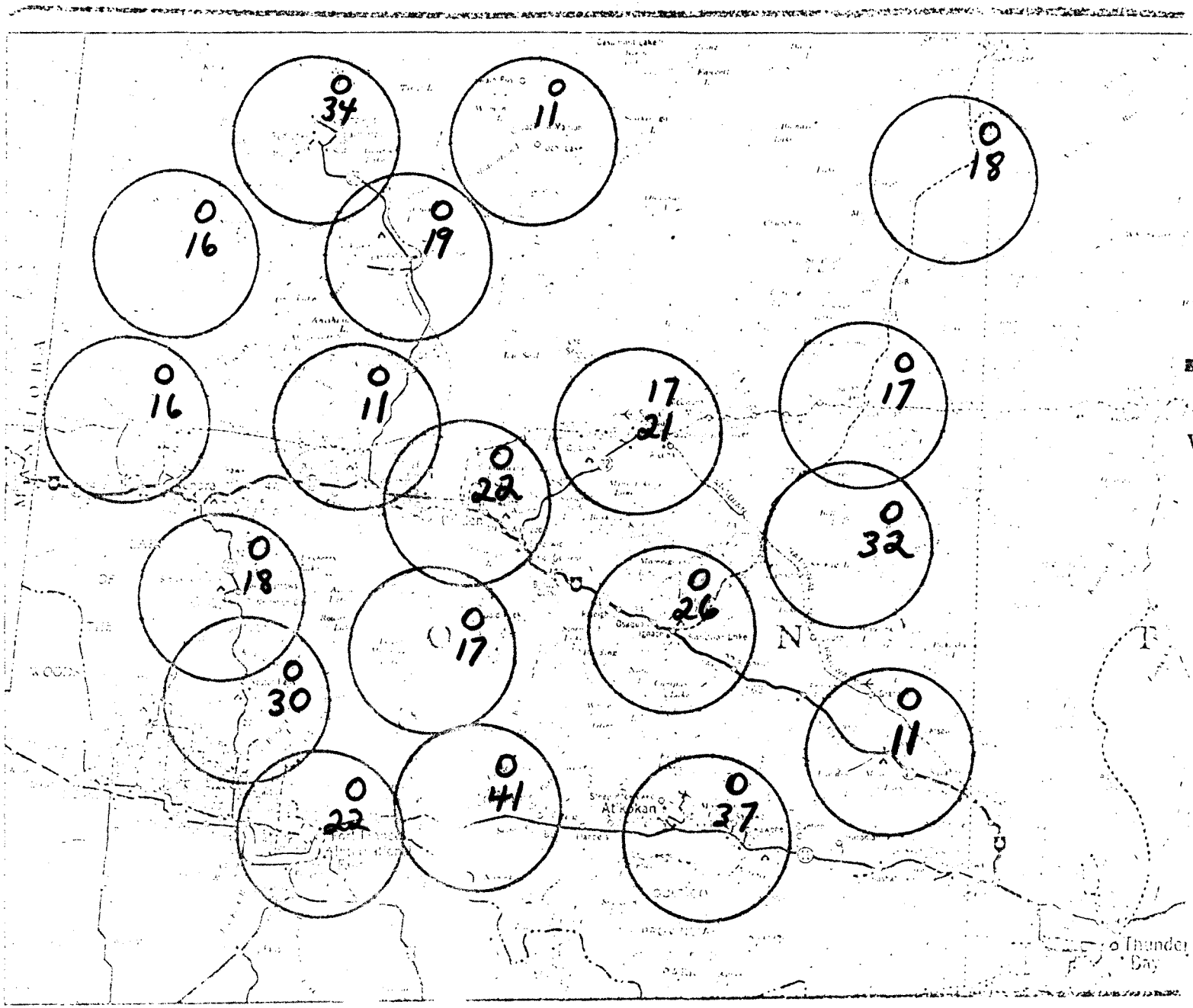
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 13 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

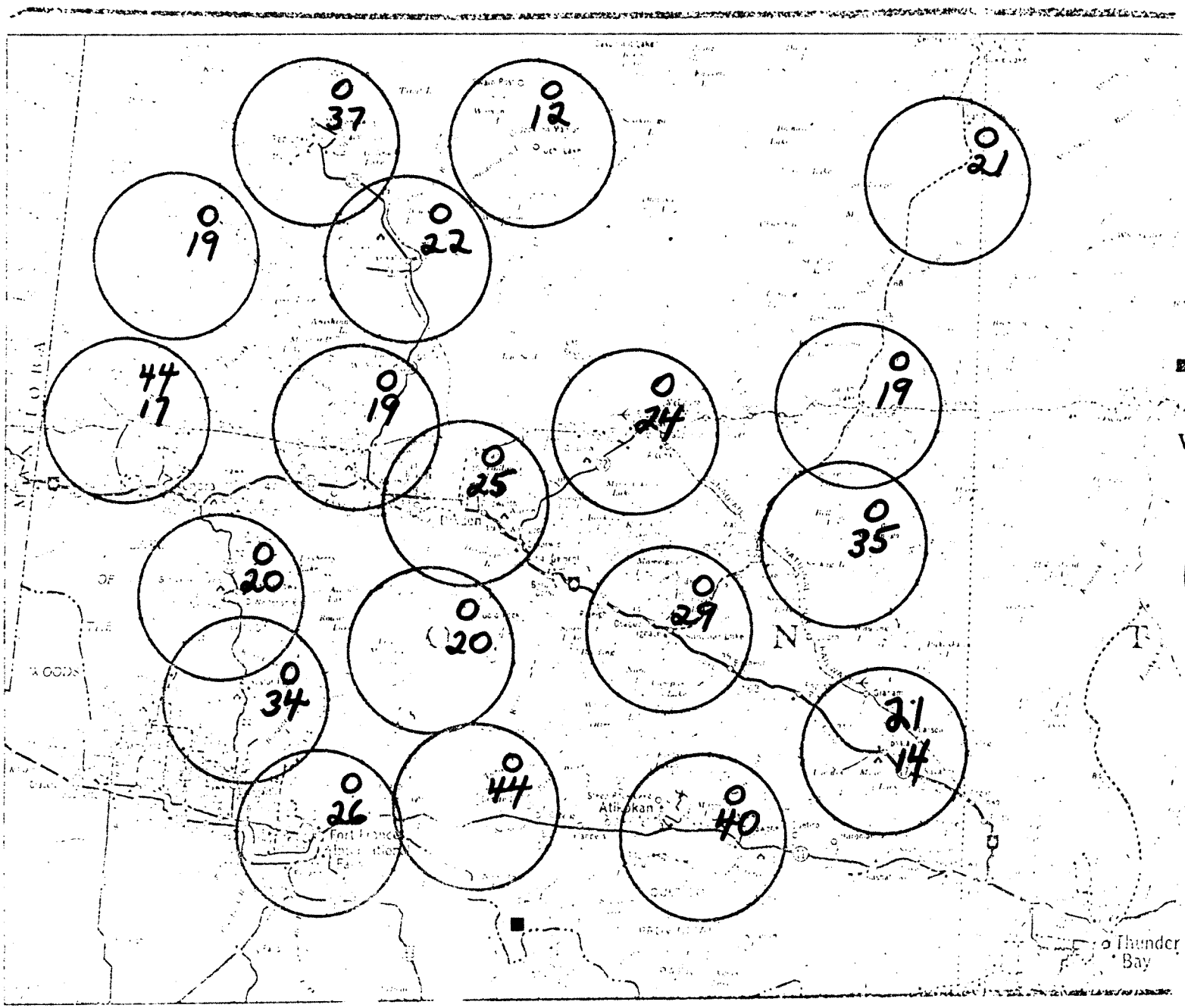
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 14 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

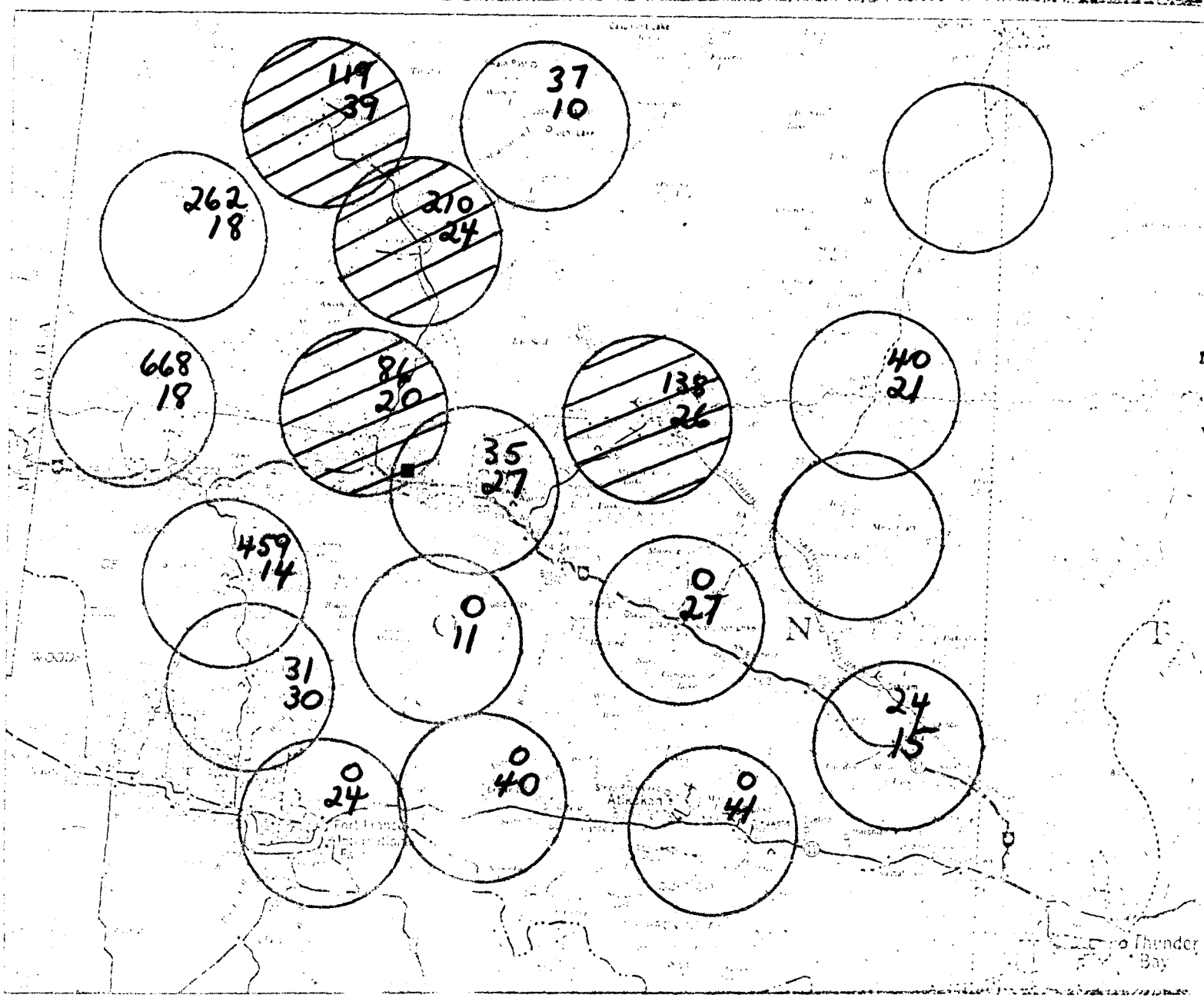
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 15 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

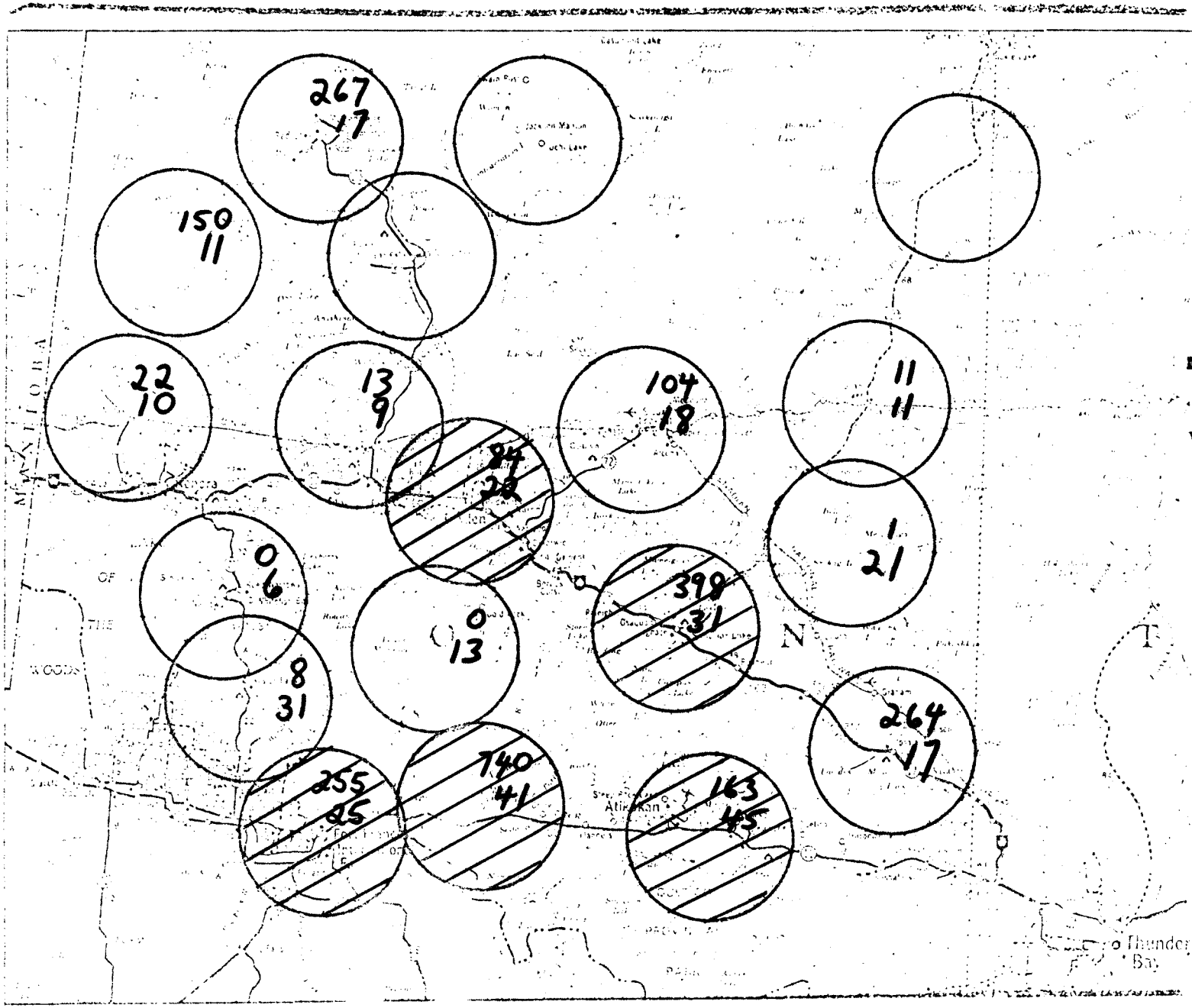
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 16 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

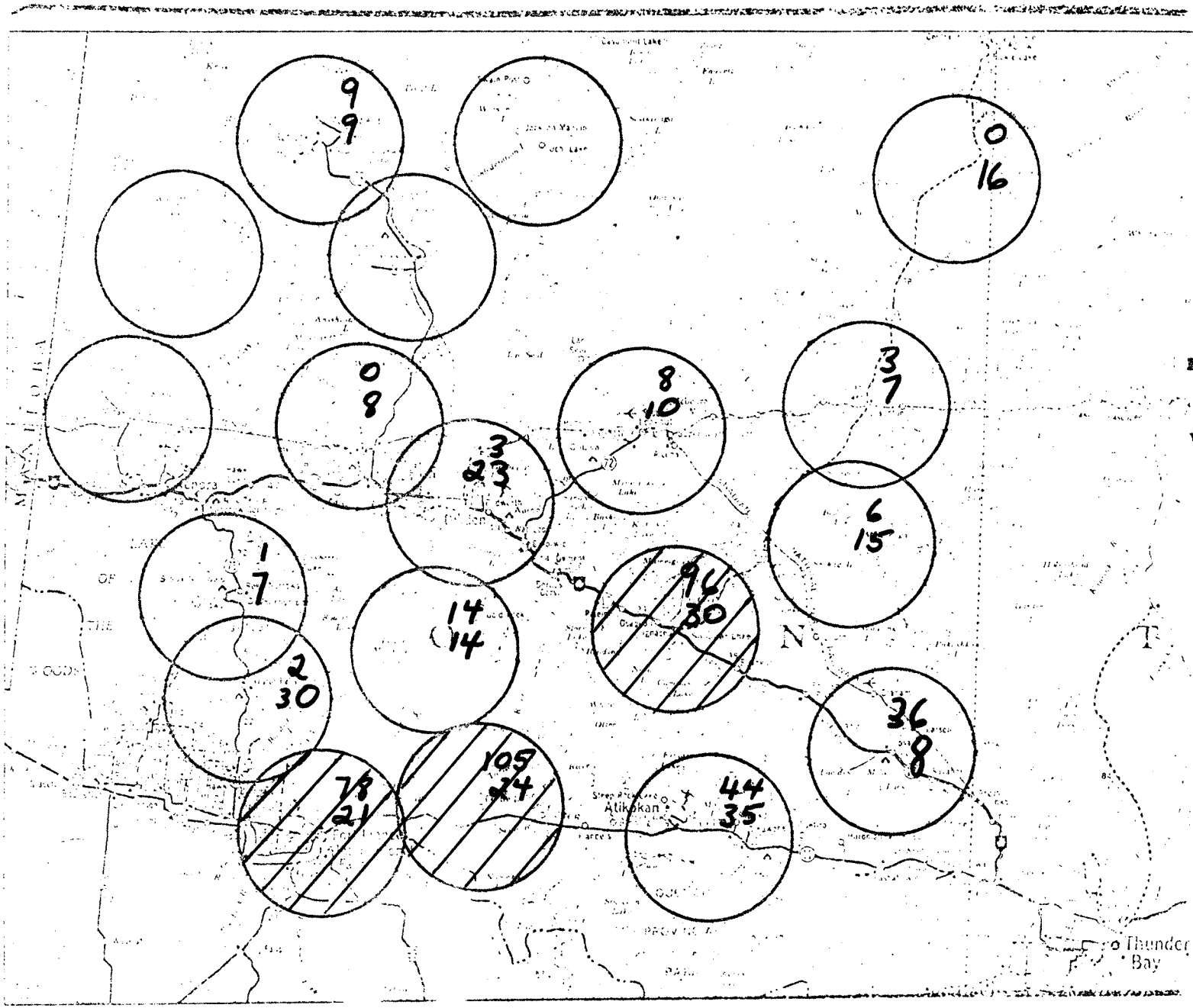
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 17 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

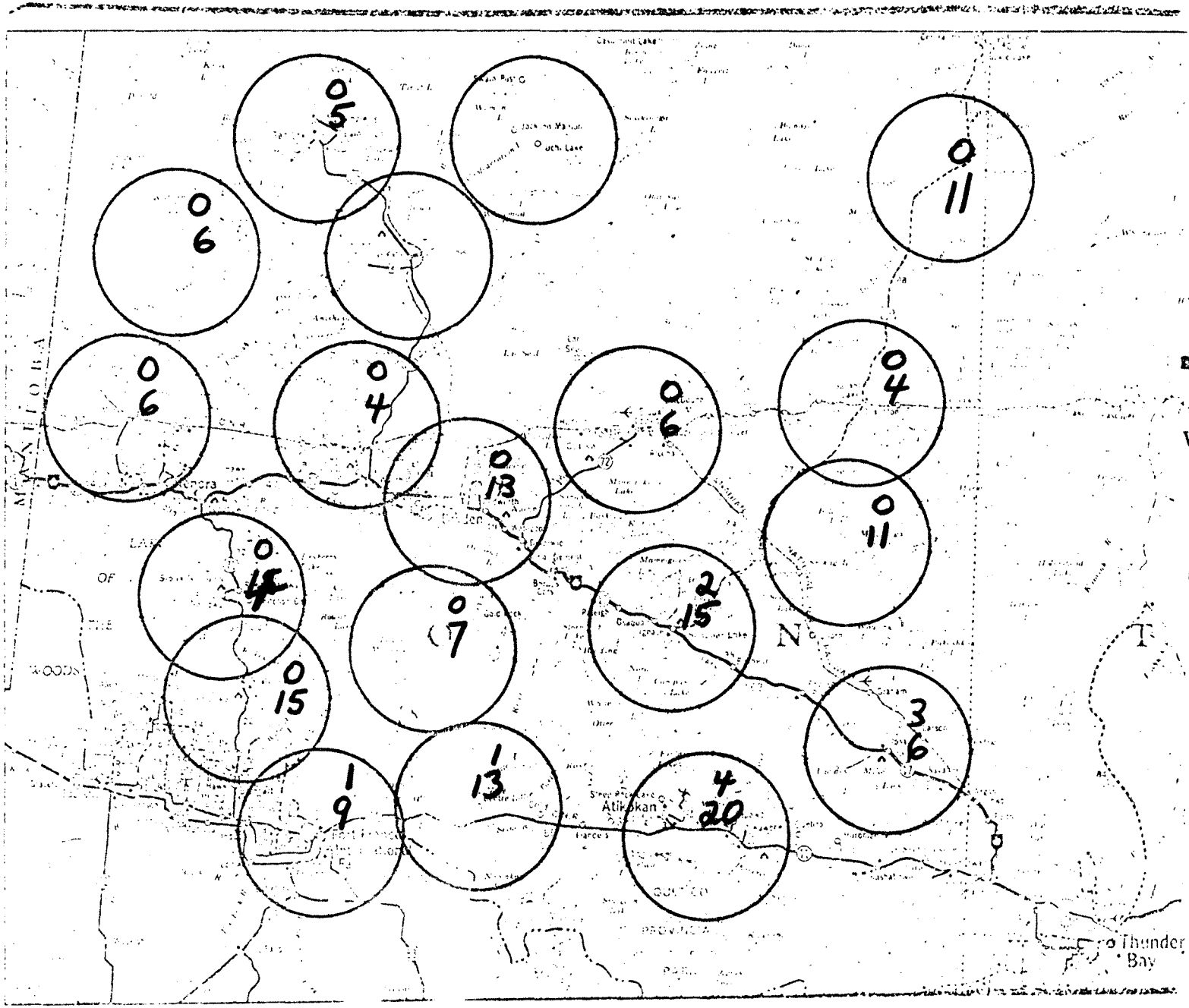
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 18 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

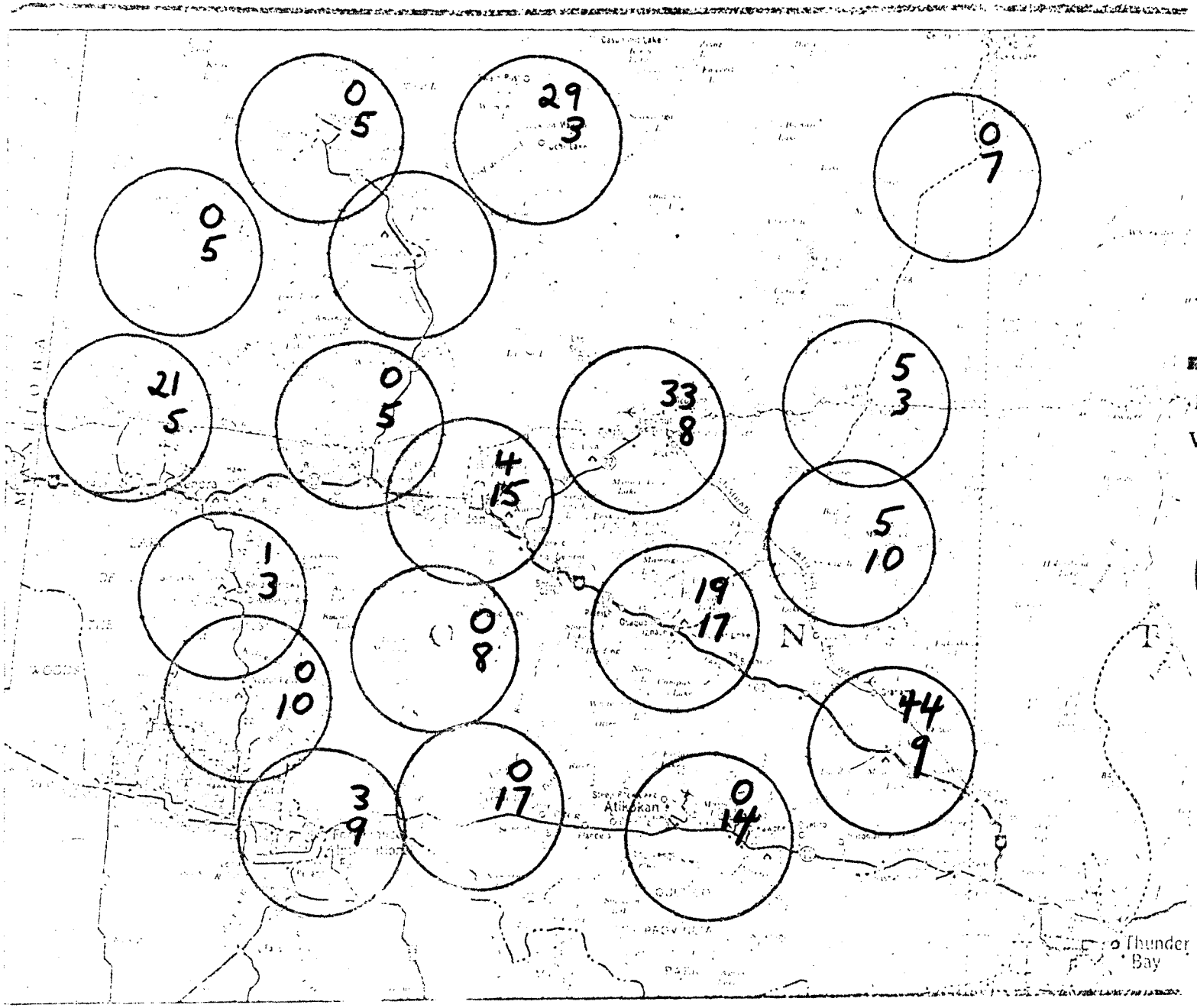
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 19 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

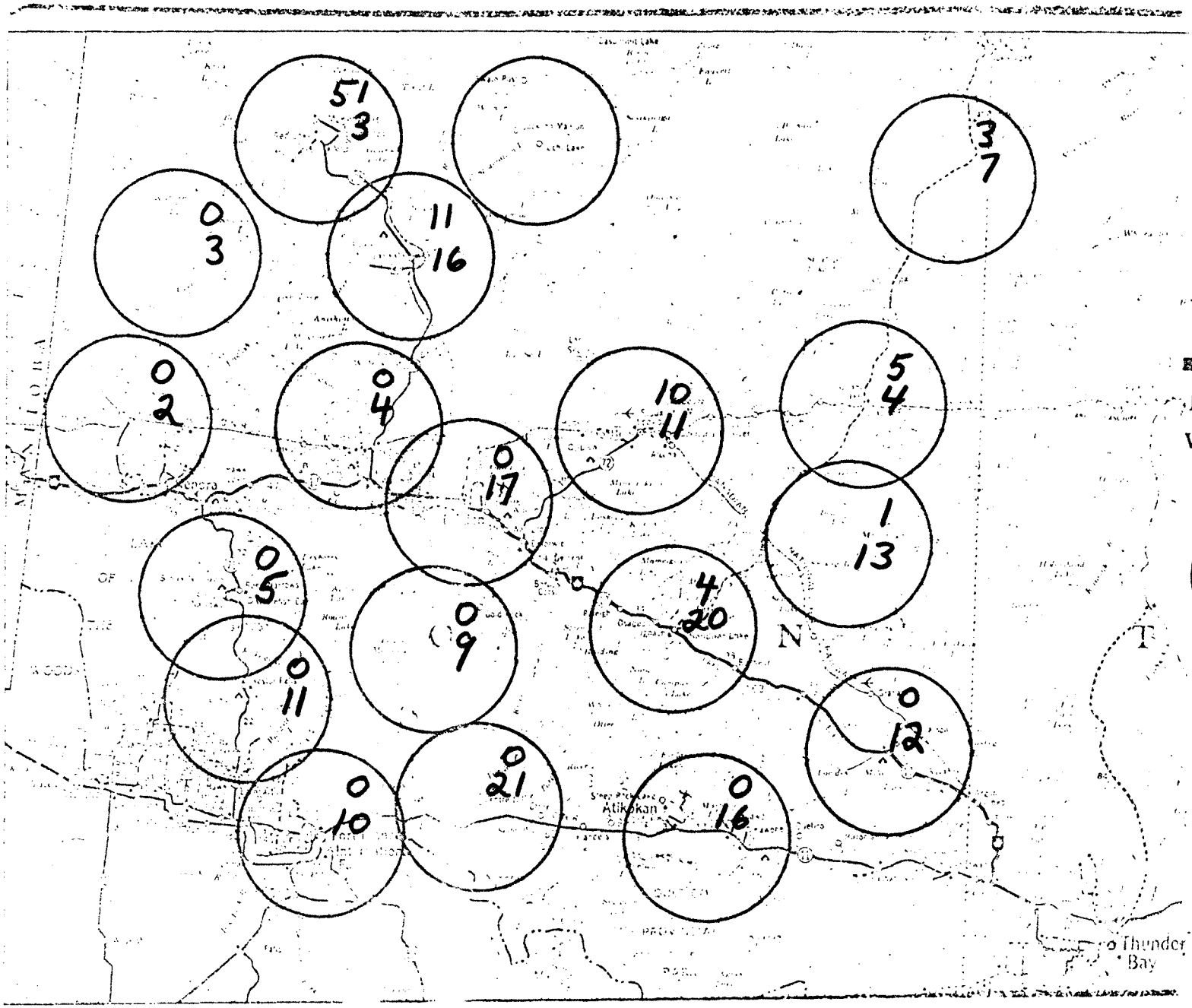
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 20 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

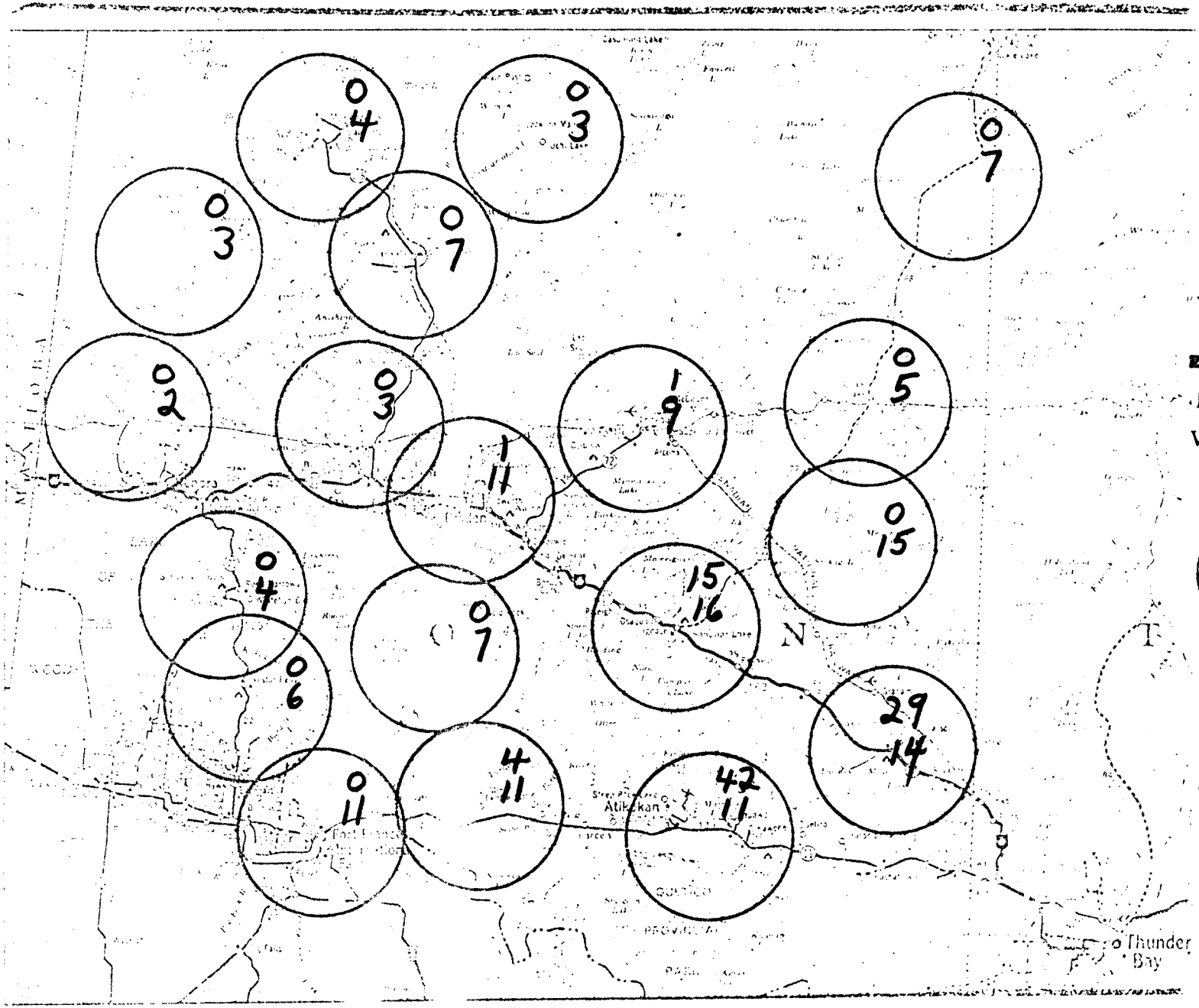
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 21 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

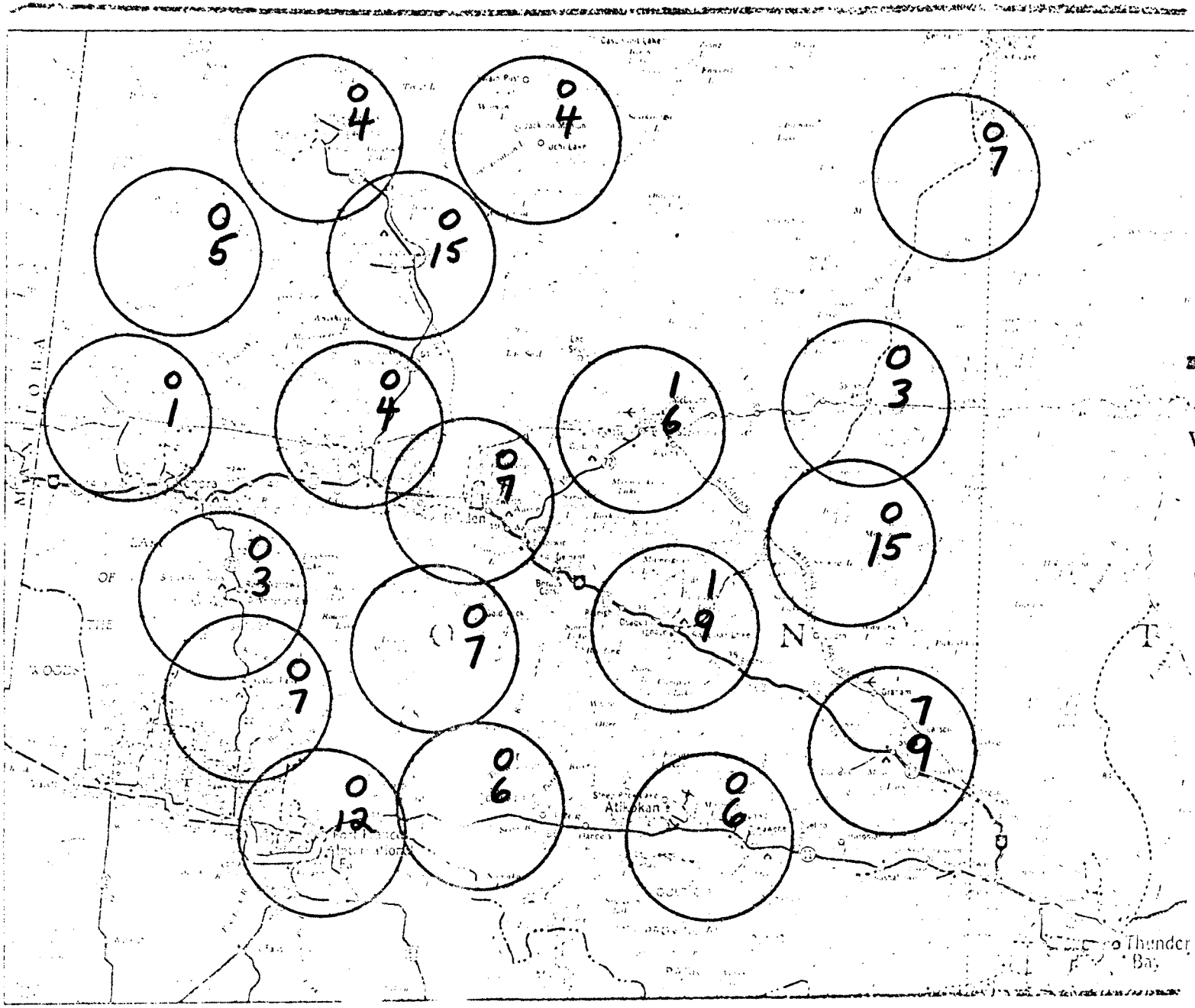
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 22 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

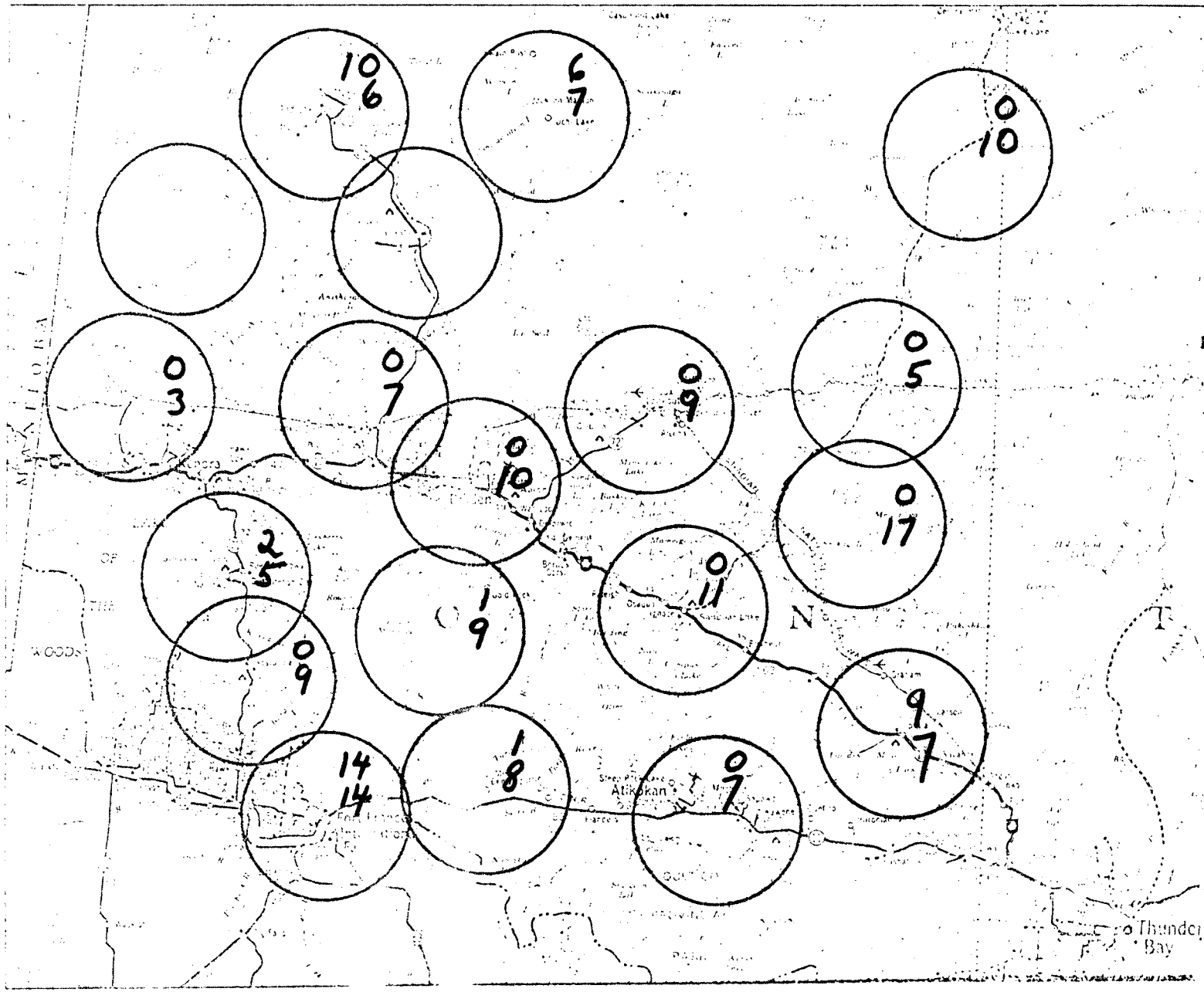
LOWER NO. IS YESTERDAYS DMC

▪ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 23 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

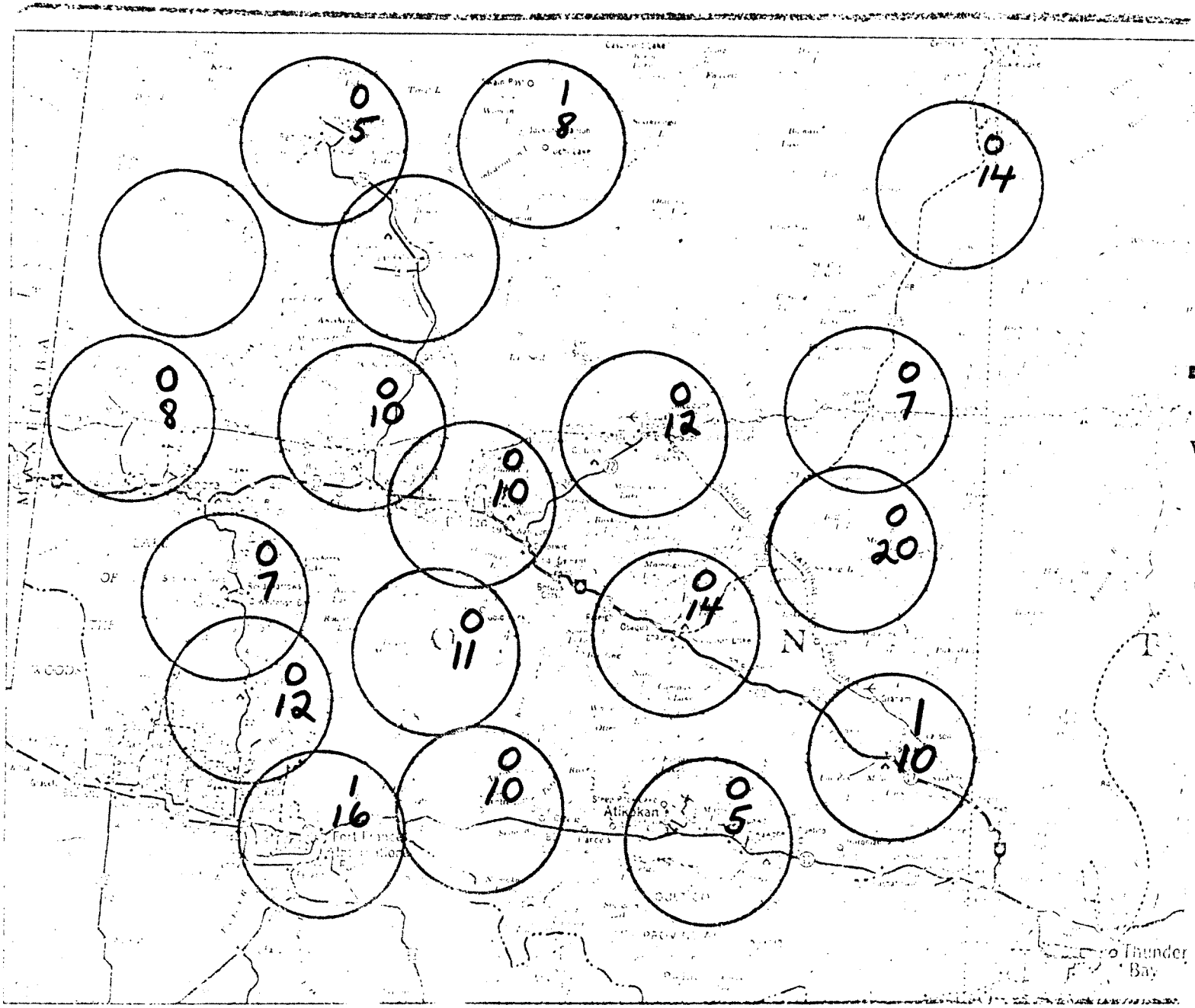
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 24 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

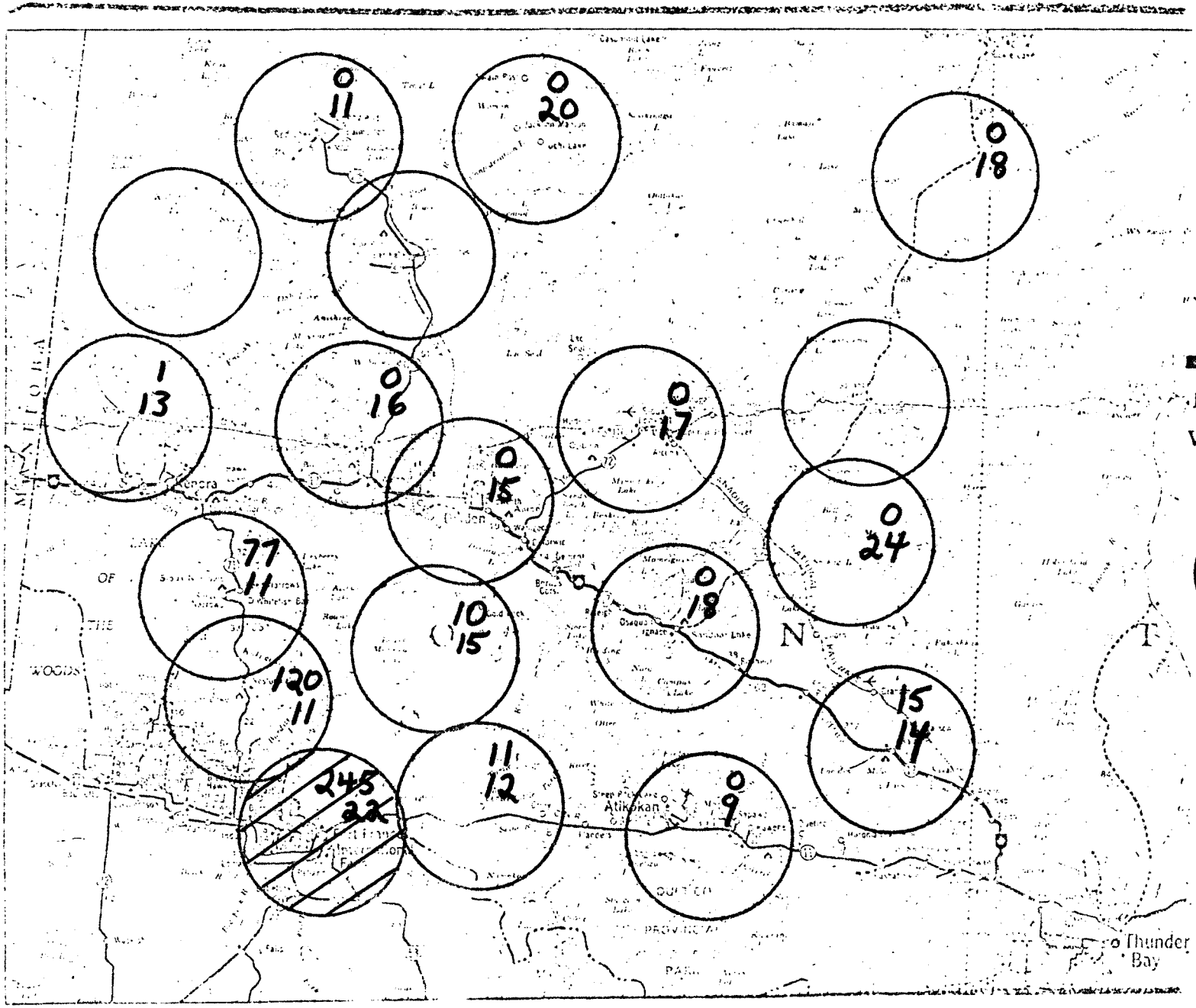
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 25 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

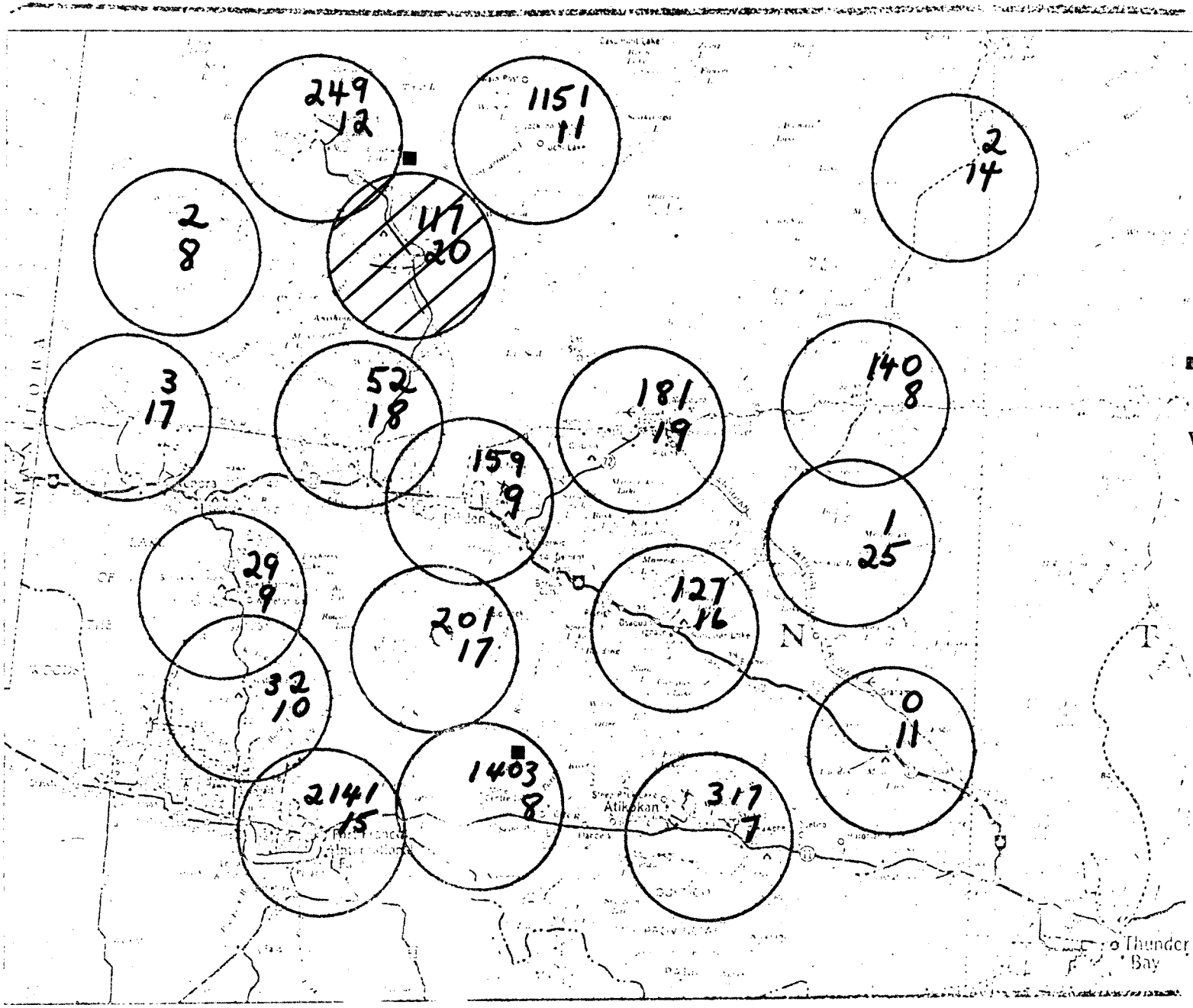
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 26 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

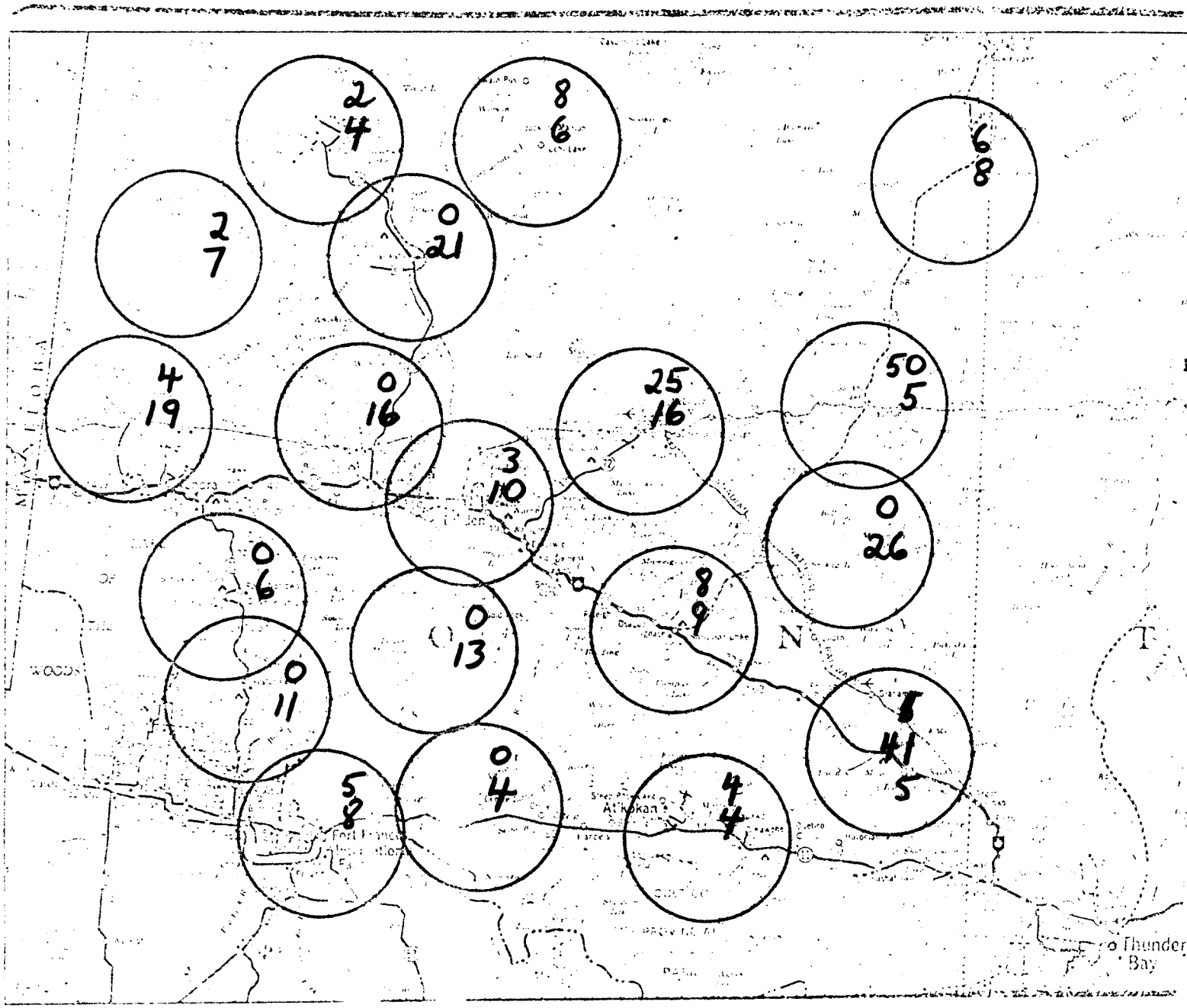
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 27 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

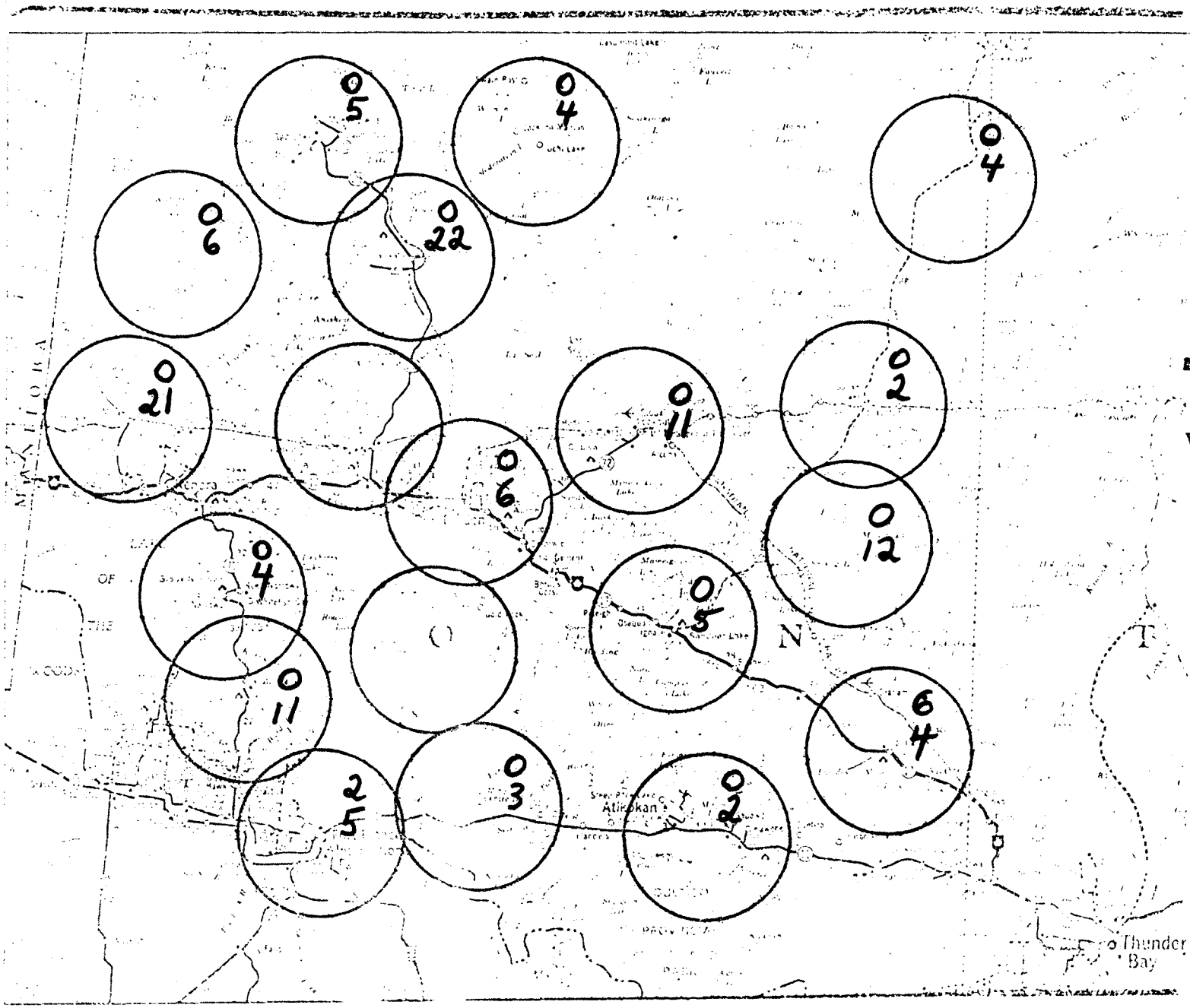
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 28 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

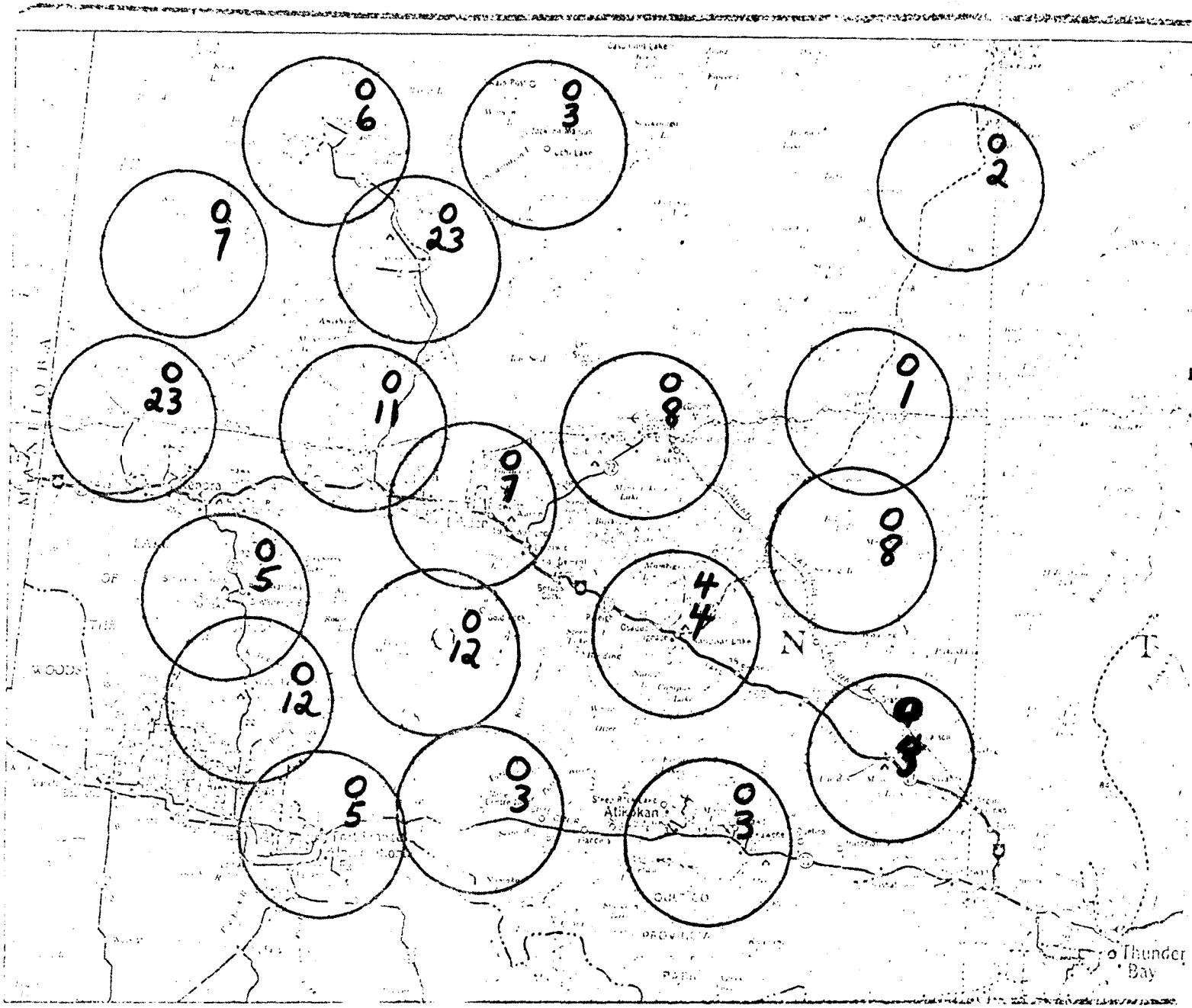
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 29 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

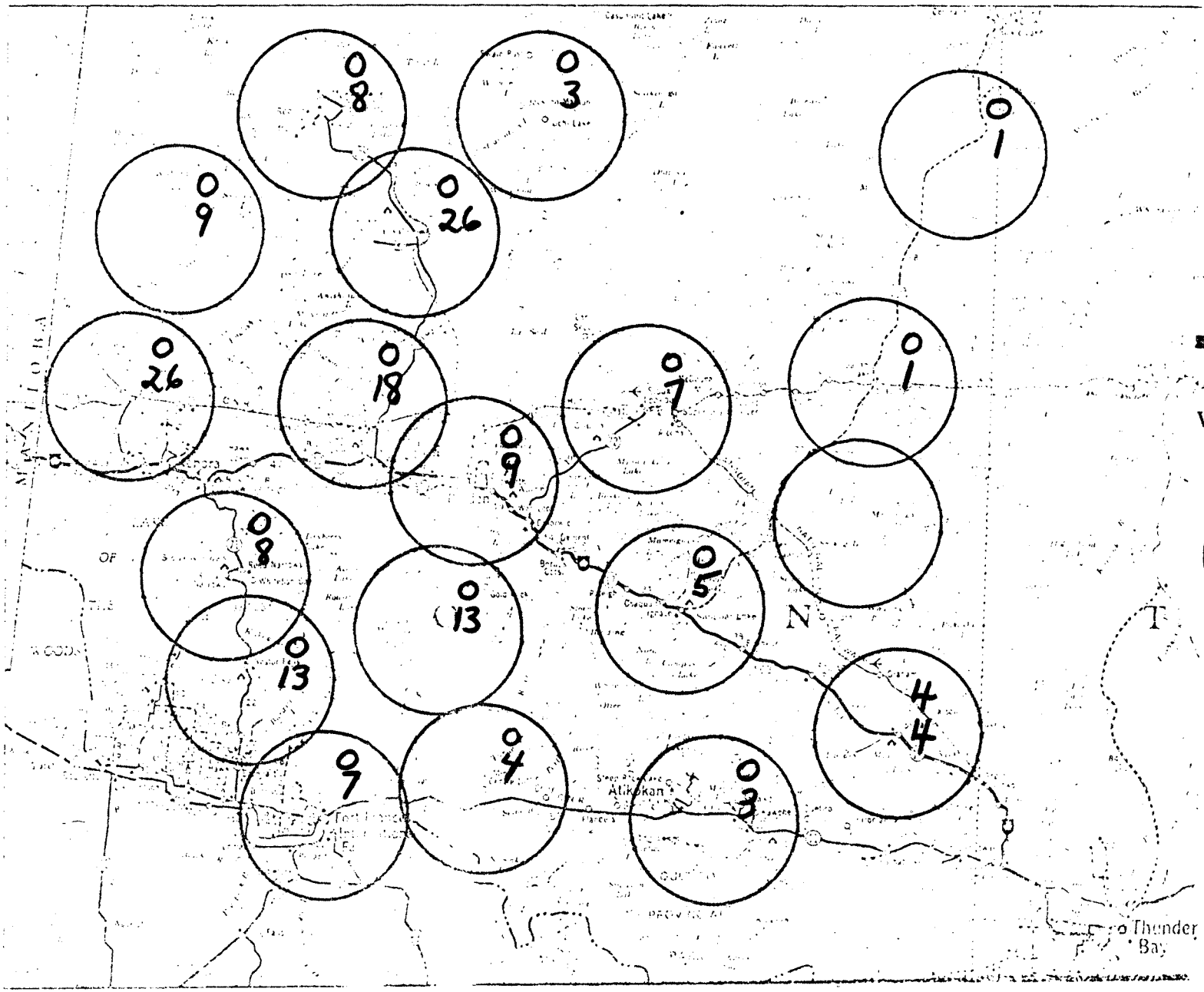
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

June 30 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

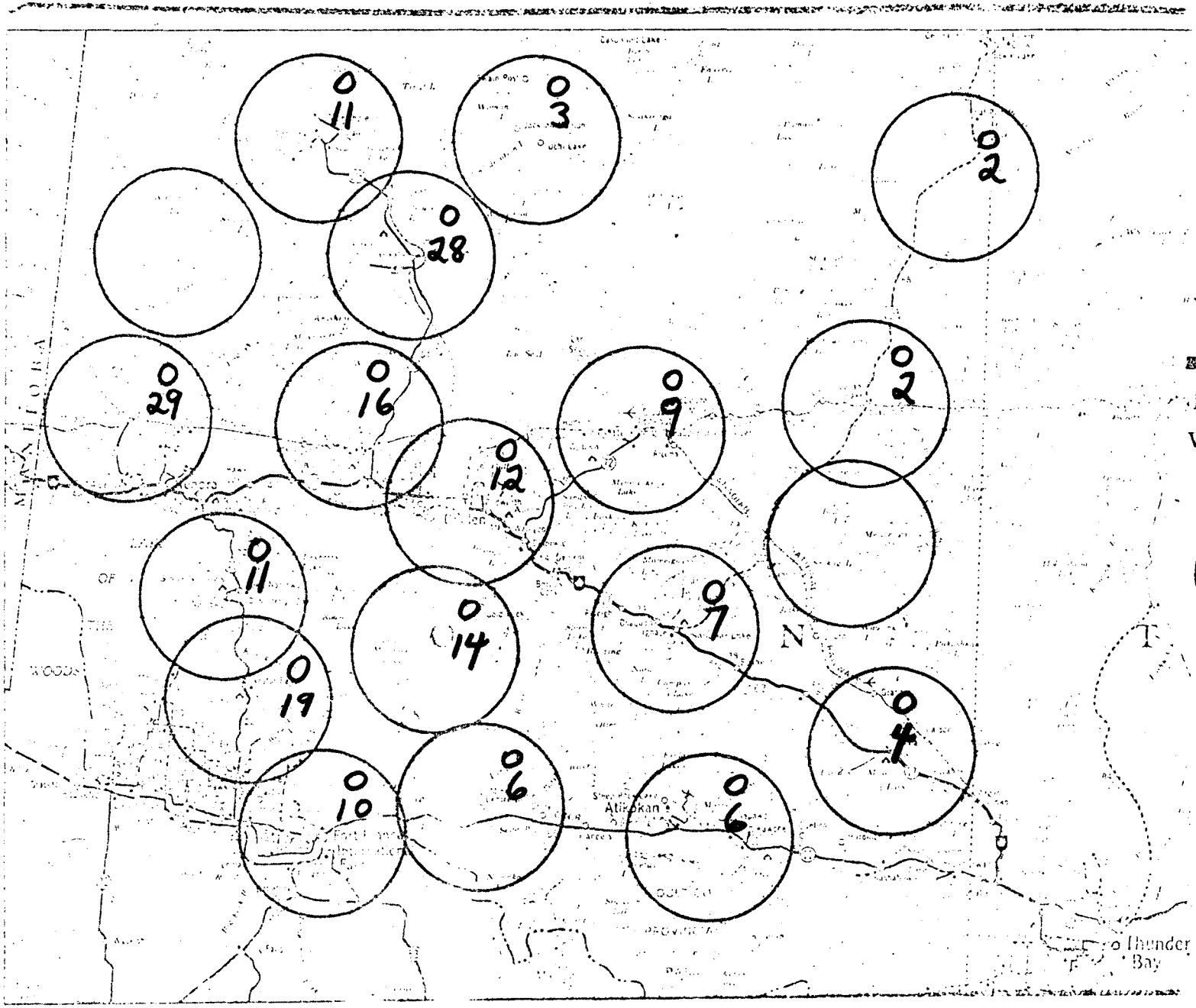
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 1 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

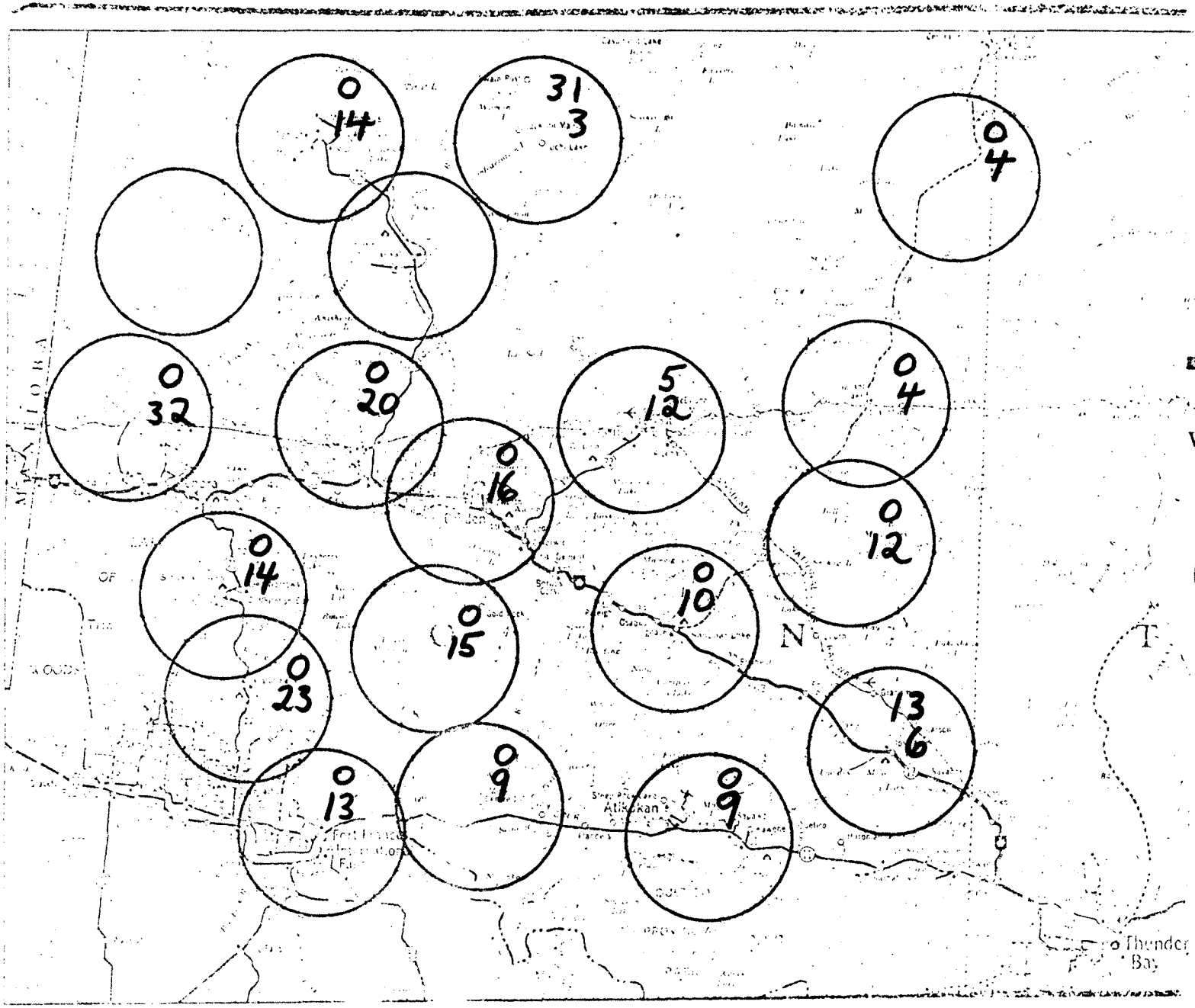
LOWER NO. IS YESTERDAYS DMC

▨ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 2 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

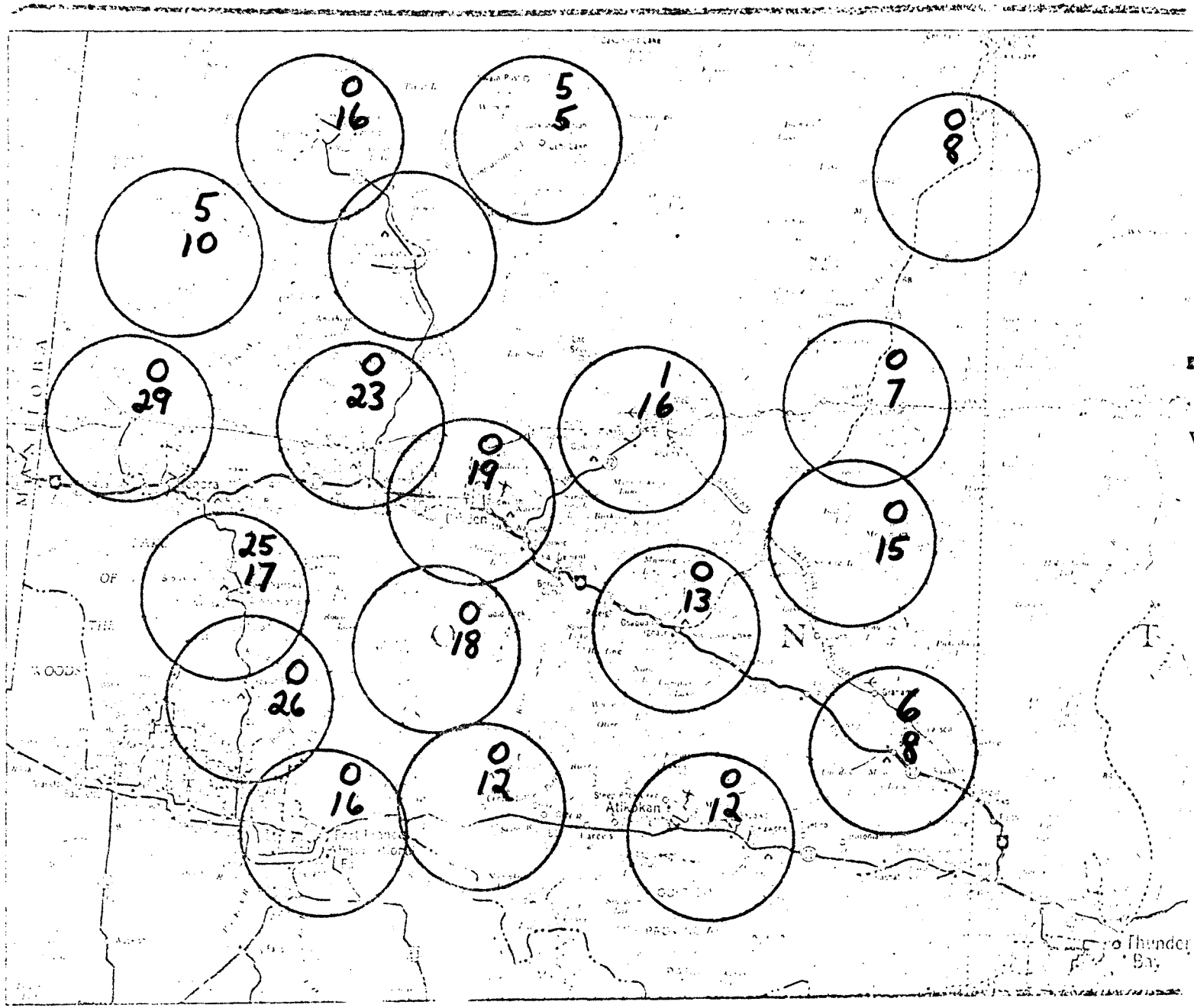
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 3 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

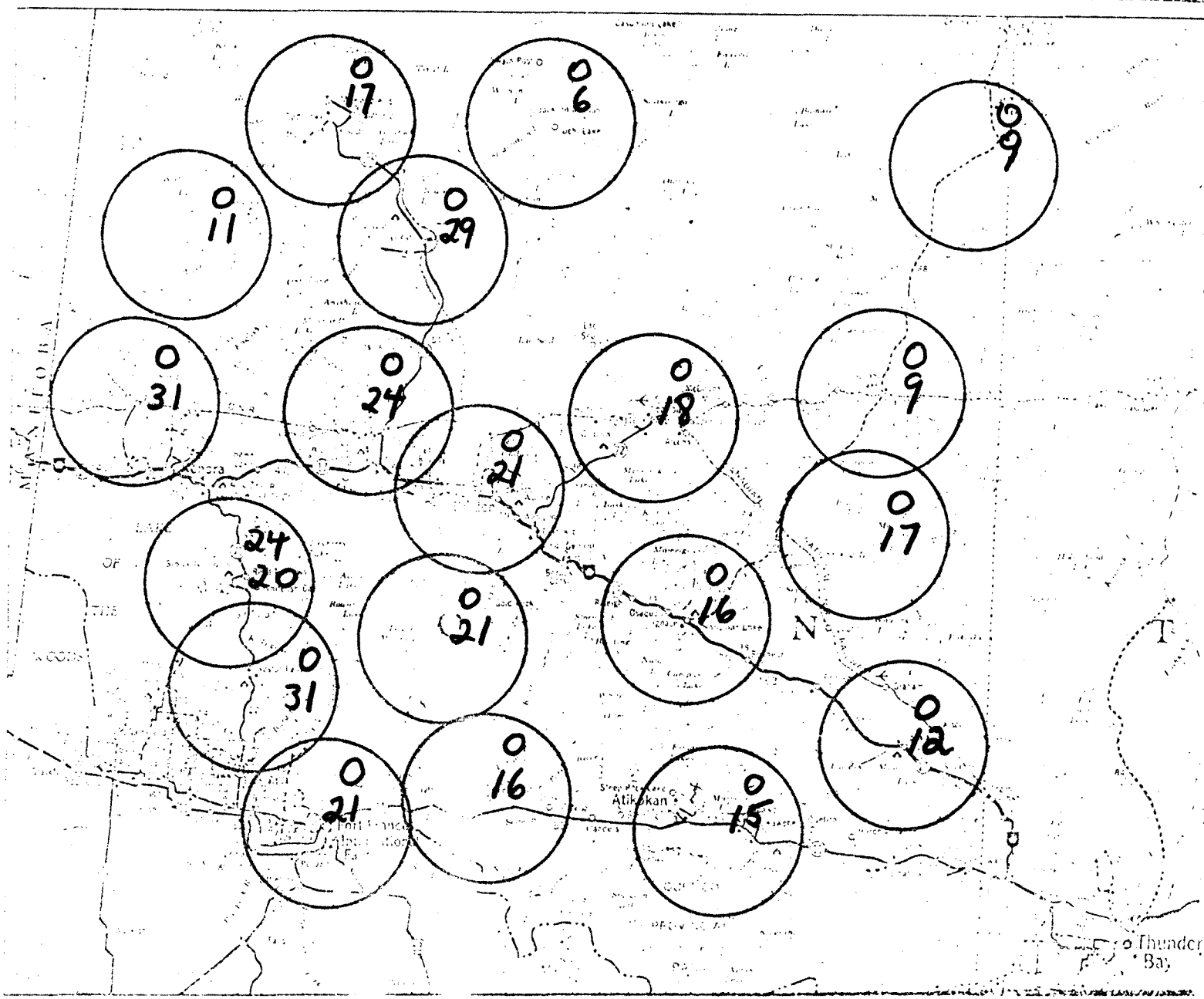
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 4 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

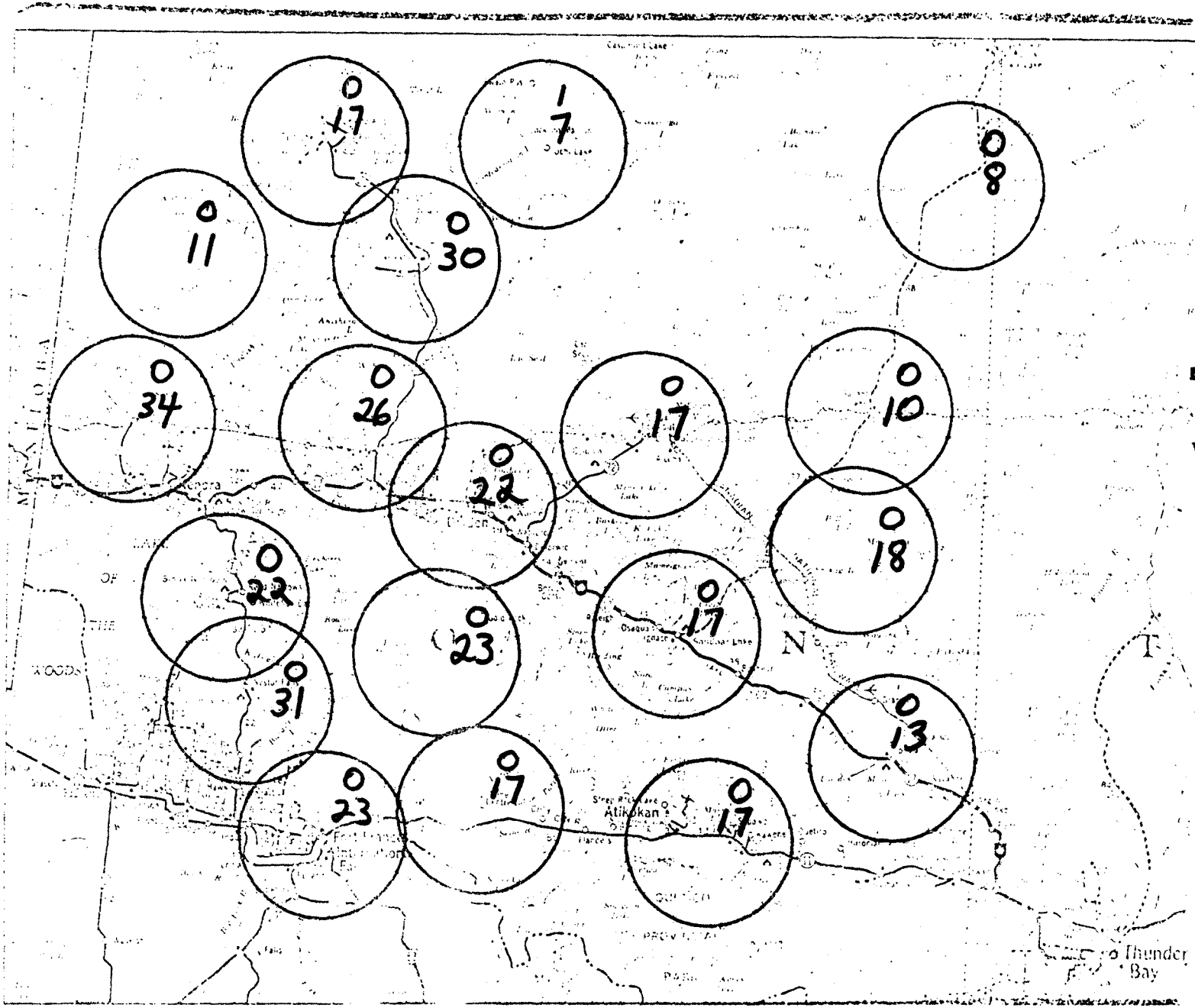
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 5 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

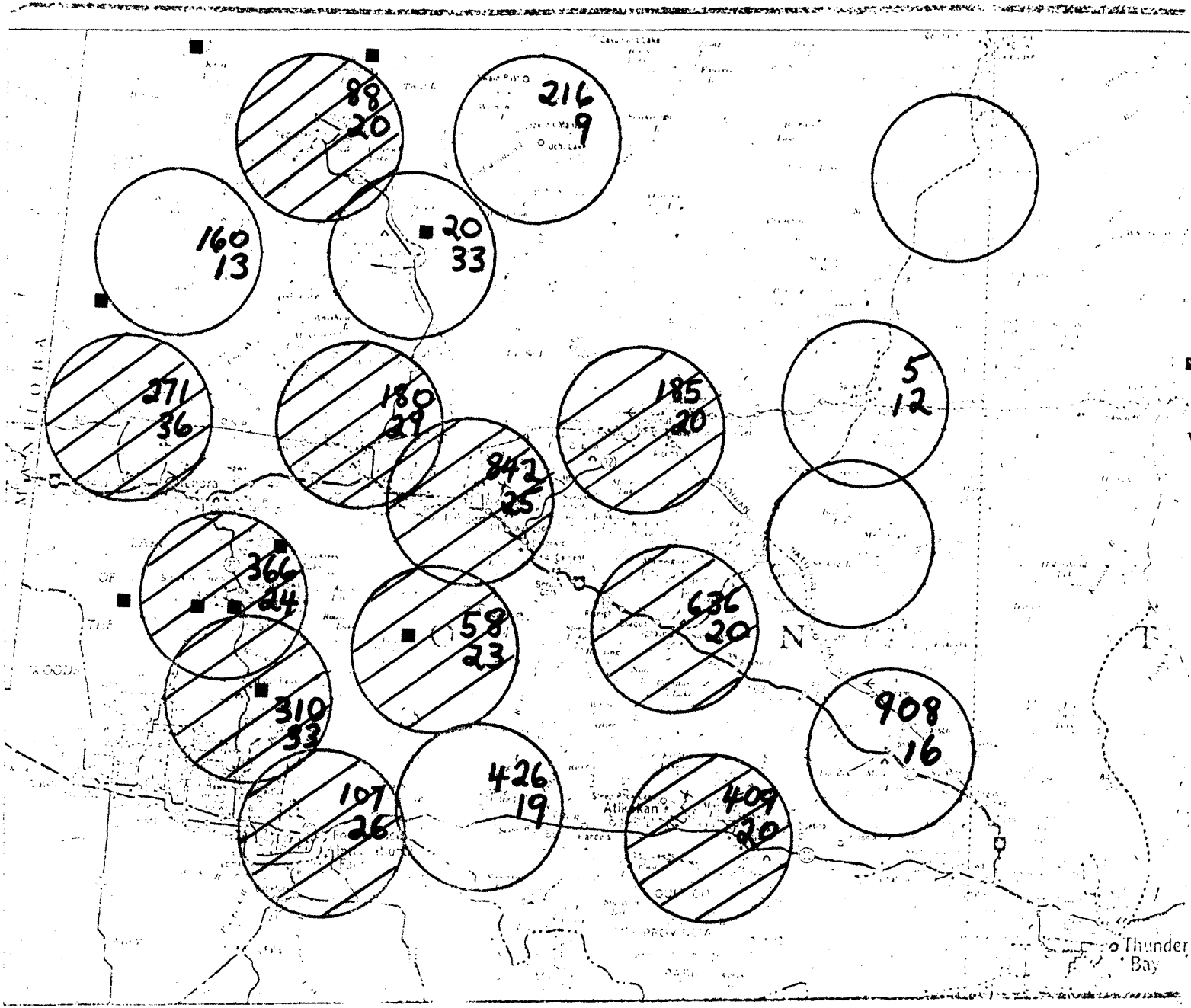
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 6 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

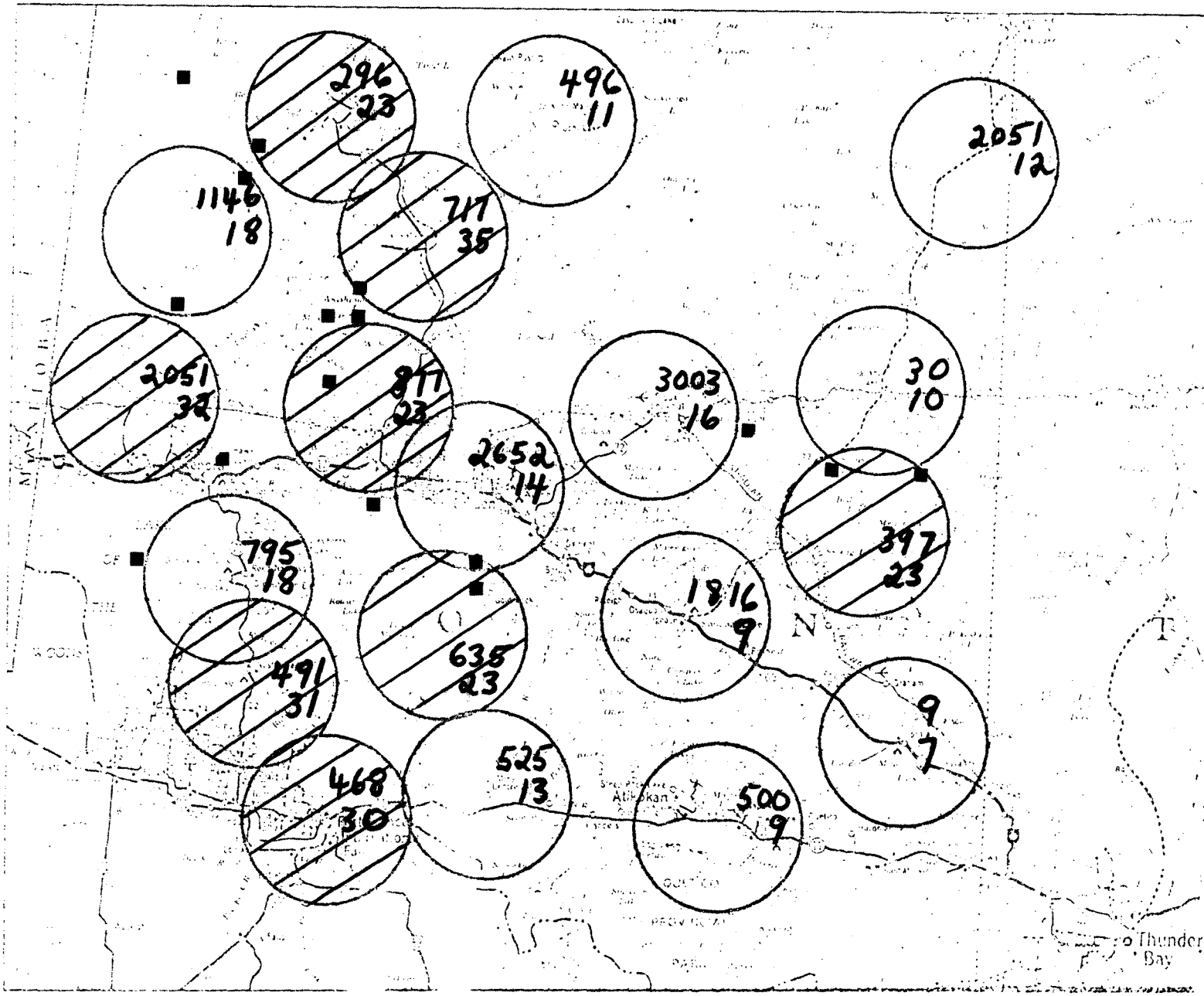
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE
FORECAST DATA

July 7 1973
8:00 a.m.

UPPER NO. IS
LIGHTNING COUNT

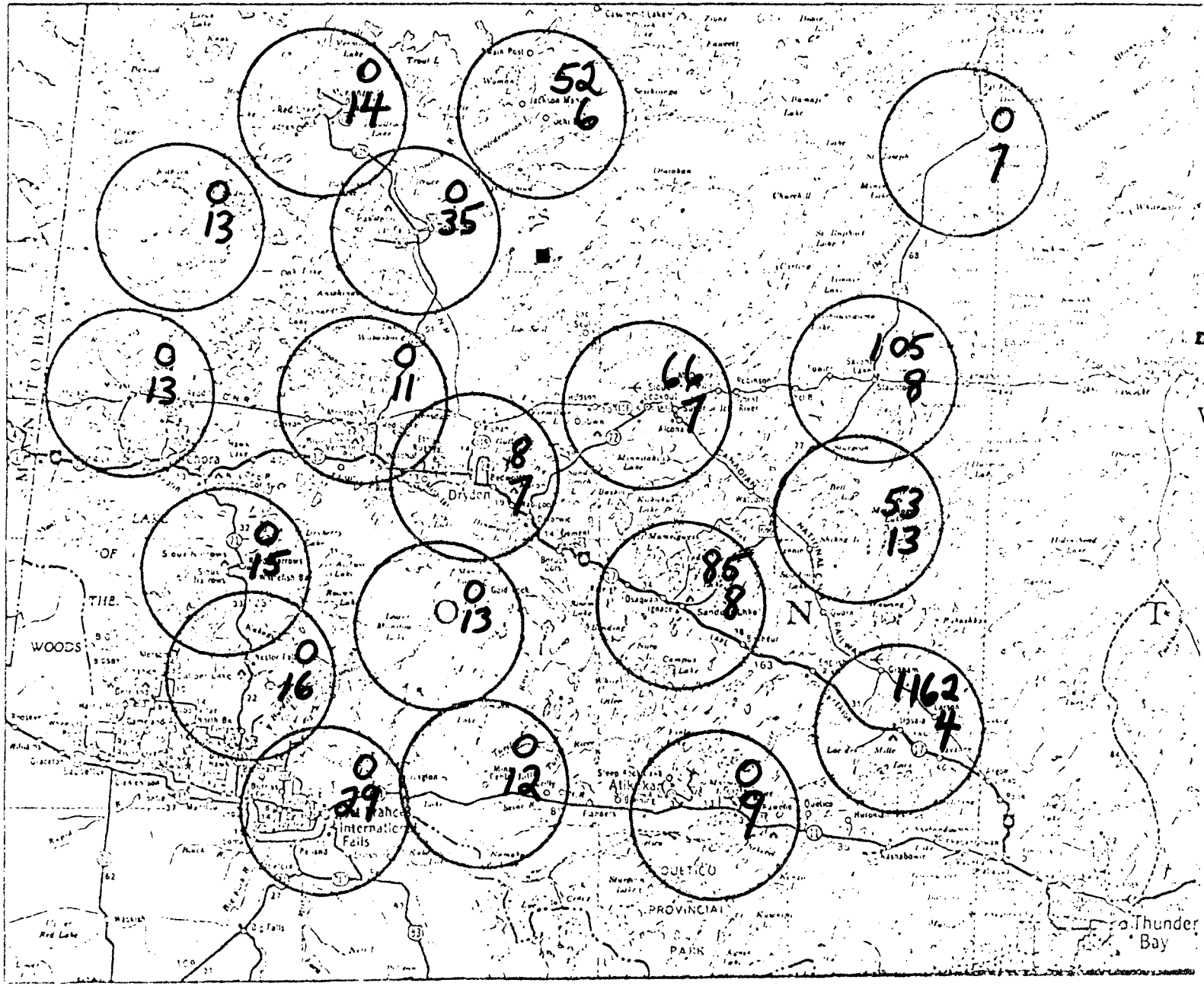
LOWER NO. IS
YESTERDAYS DMC

■ LIGHTNING FIRE
ESTIMATE START
WITHIN PREVIOUS
24 Hrs.

AREAS
IN WHICH
SENSOR
COUNTS ≥ 50
AND DMC ≥ 20

SEE FIG. 1 FOR
STATION NAMES

CIRCLE RADIUS
IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 8 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

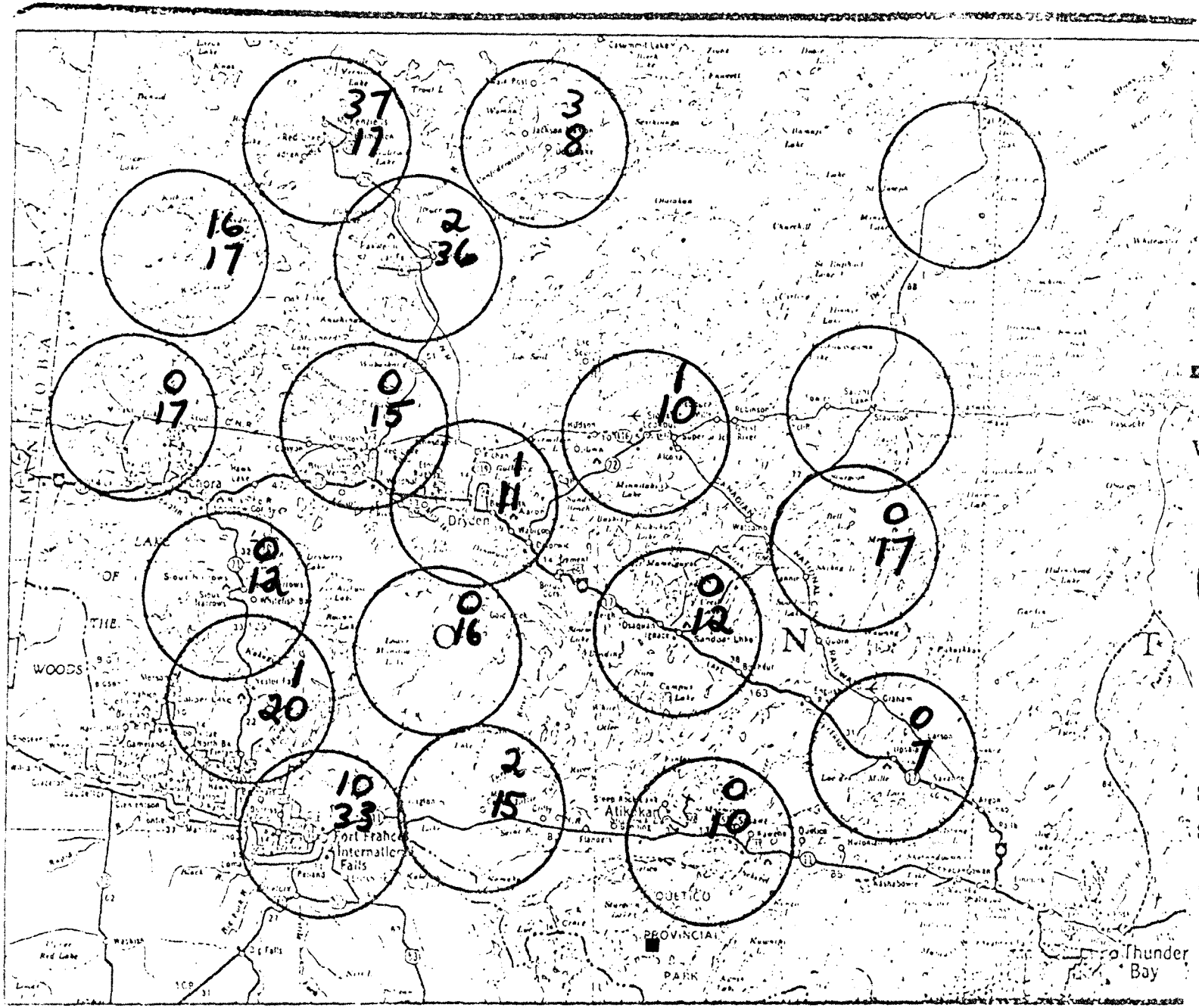
LOWER NO. IS YESTERDAYS DMC

LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 9 1973

8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

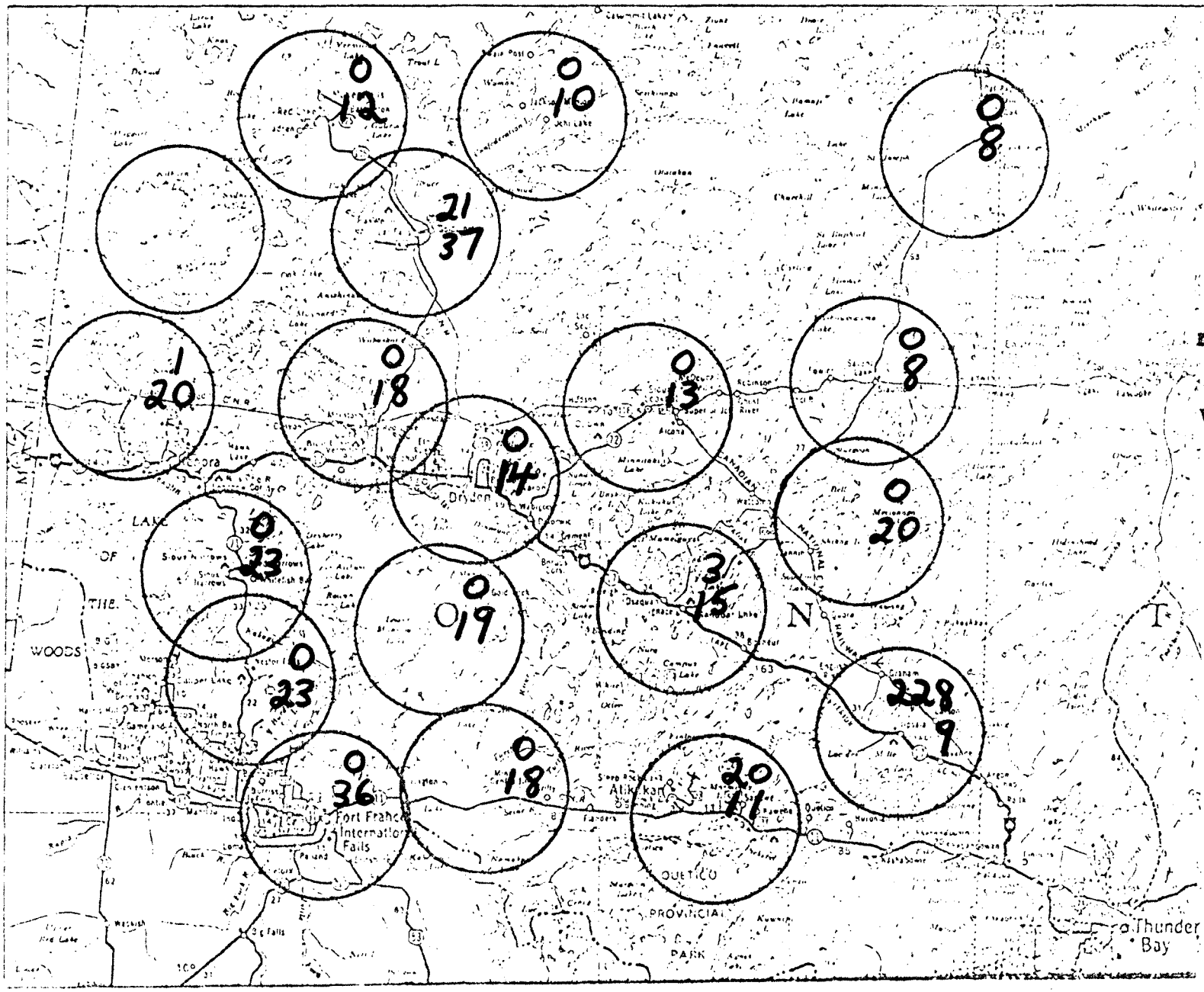
LOWER NO. IS YESTERDAYS DMC

▨ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 10 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

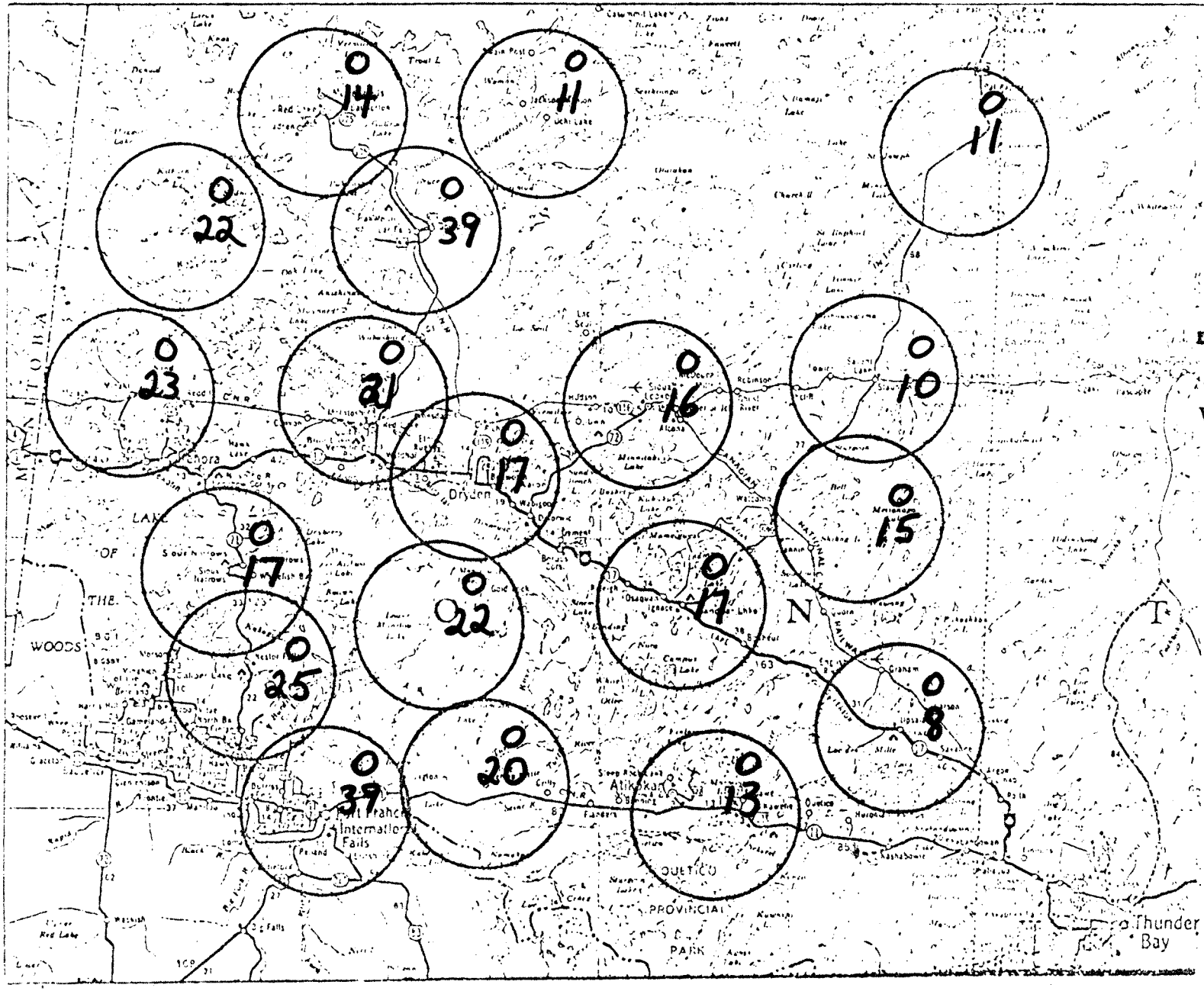
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 11 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

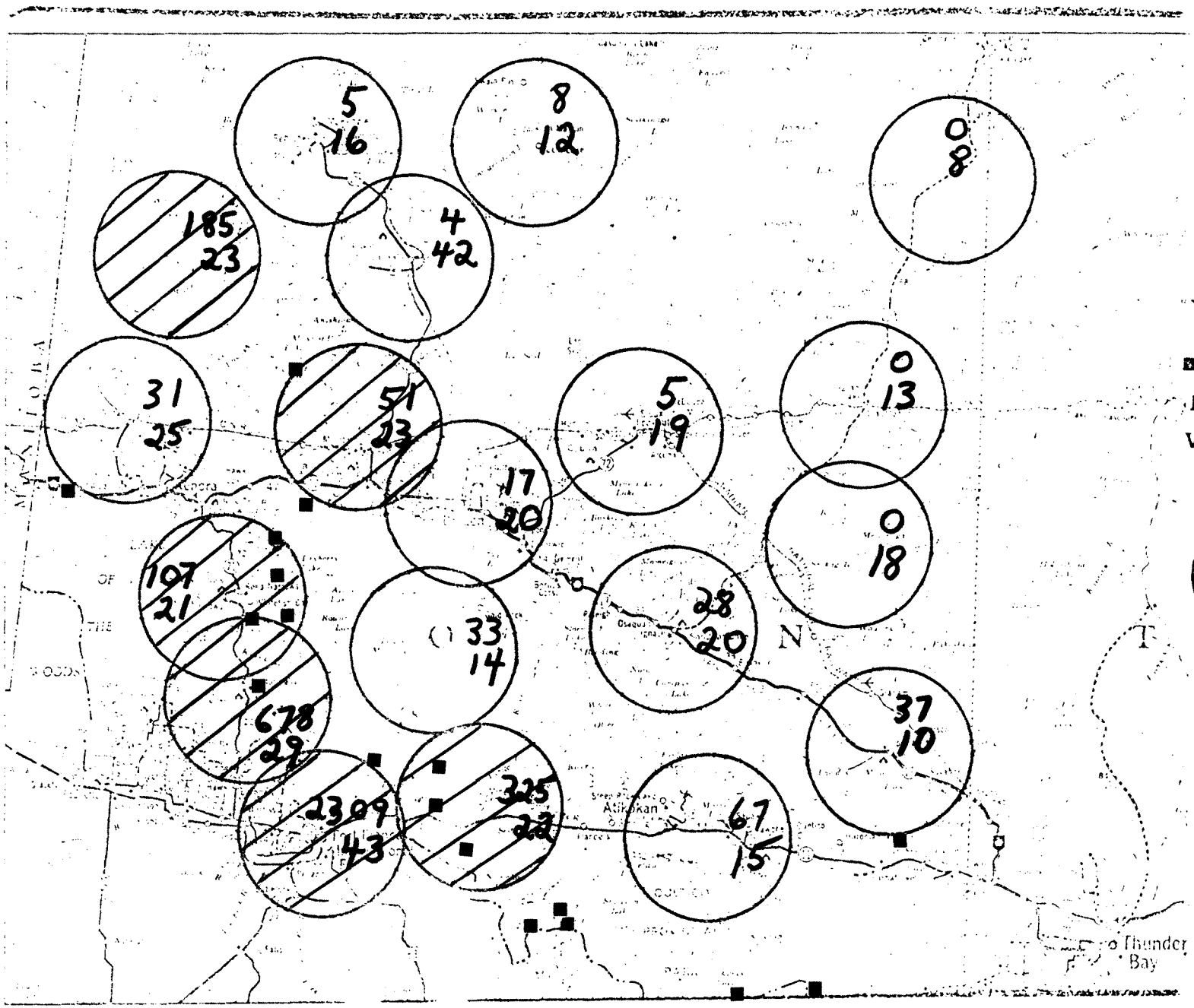
LOWER NO. IS YESTERDAYS DMC

LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 18 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

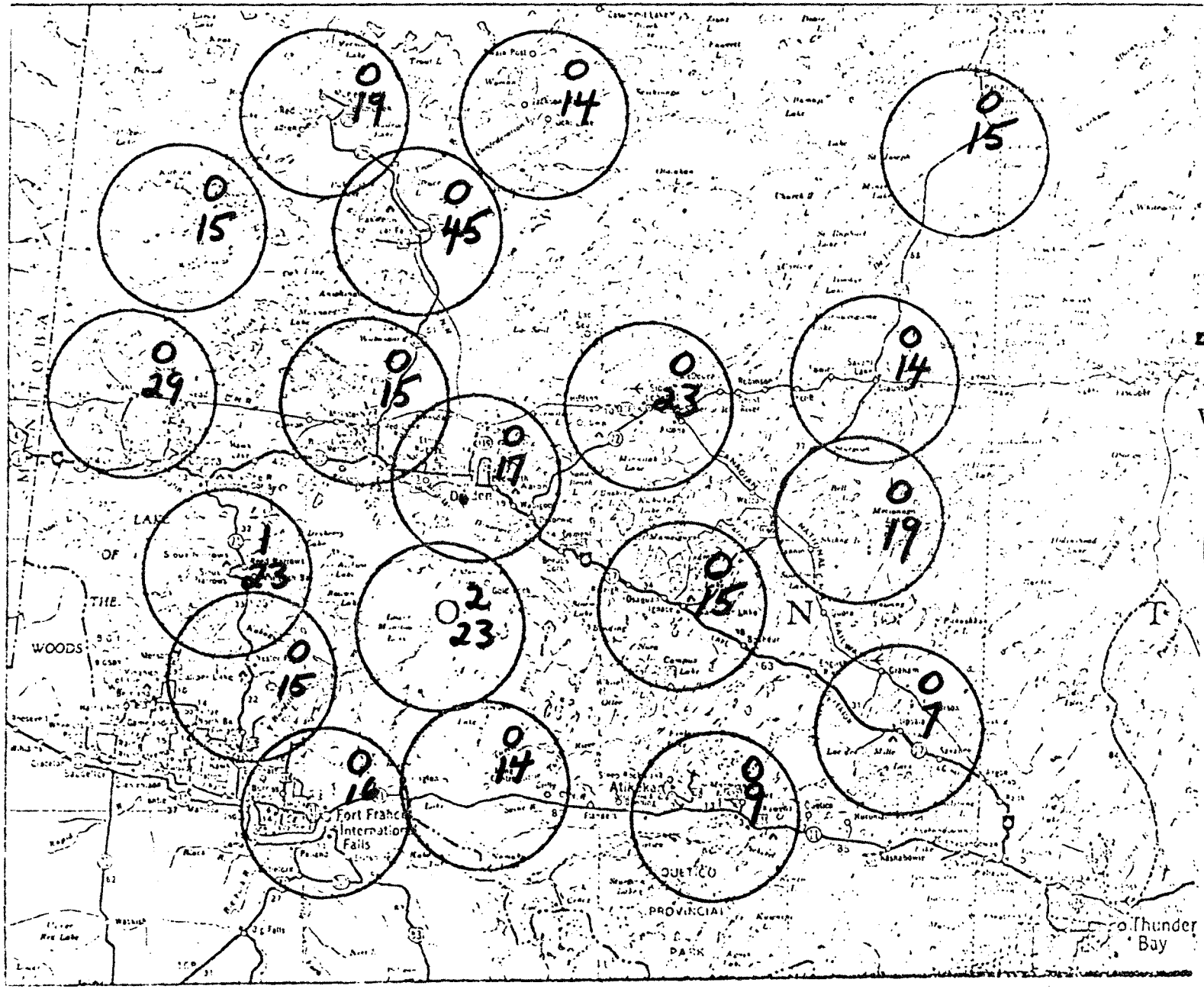
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 13 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

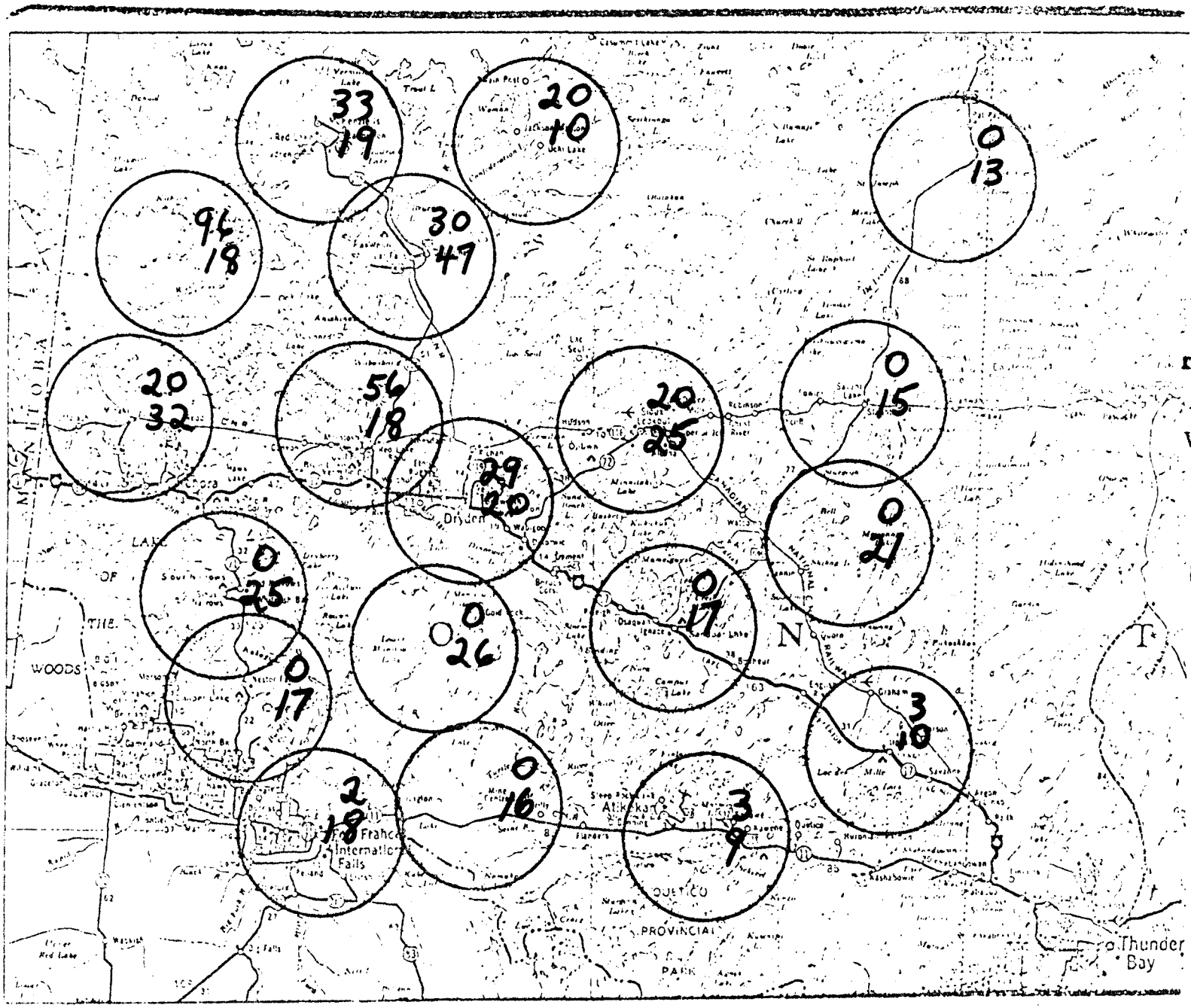
LOWER NO. IS YESTERDAYS DMC

▪ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 14 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

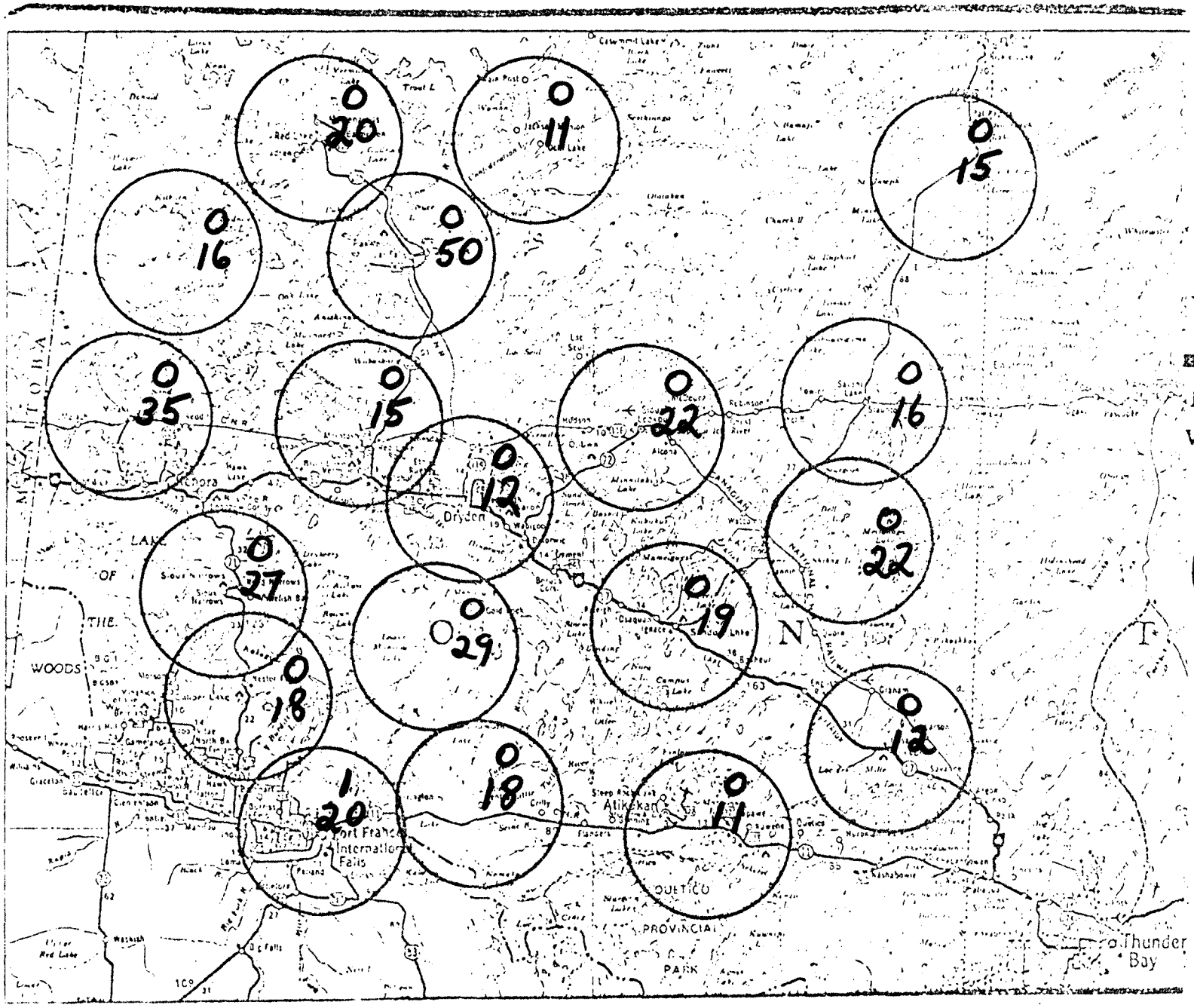
LOWER NO. IS YESTERDAYS DMC

LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 15 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

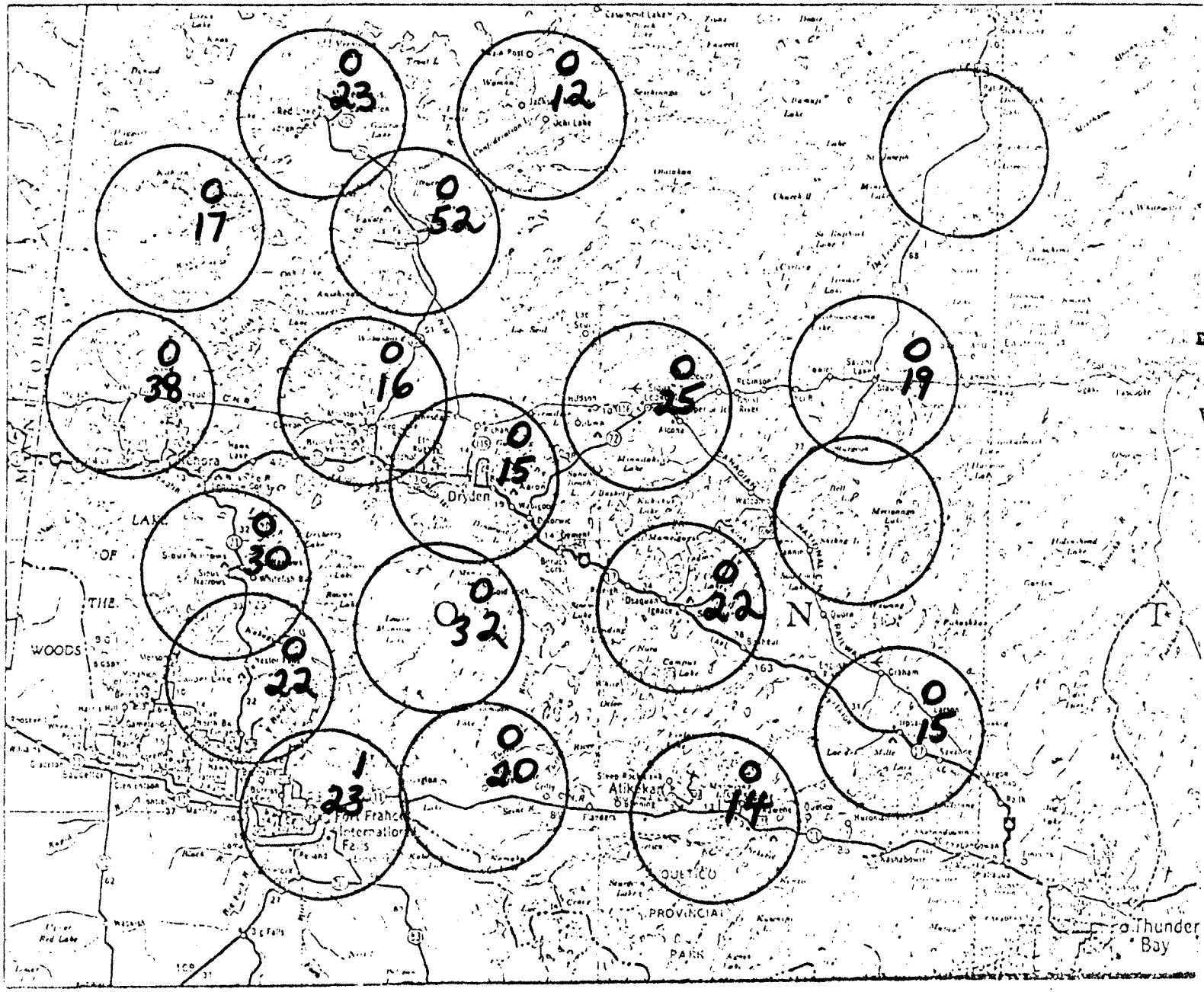
LOWER NO. IS YESTERDAYS DMC

▣ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 16 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

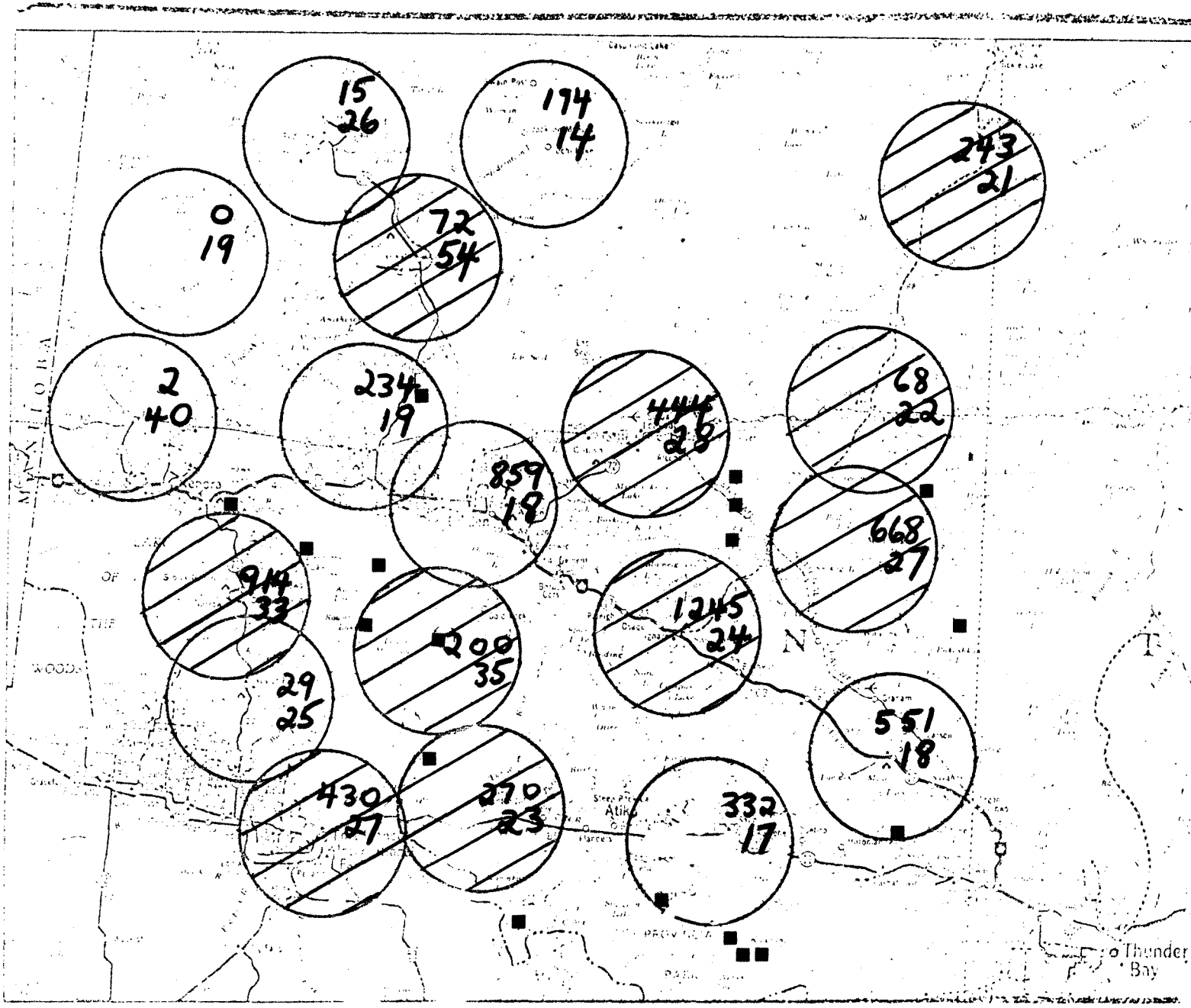
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 17 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

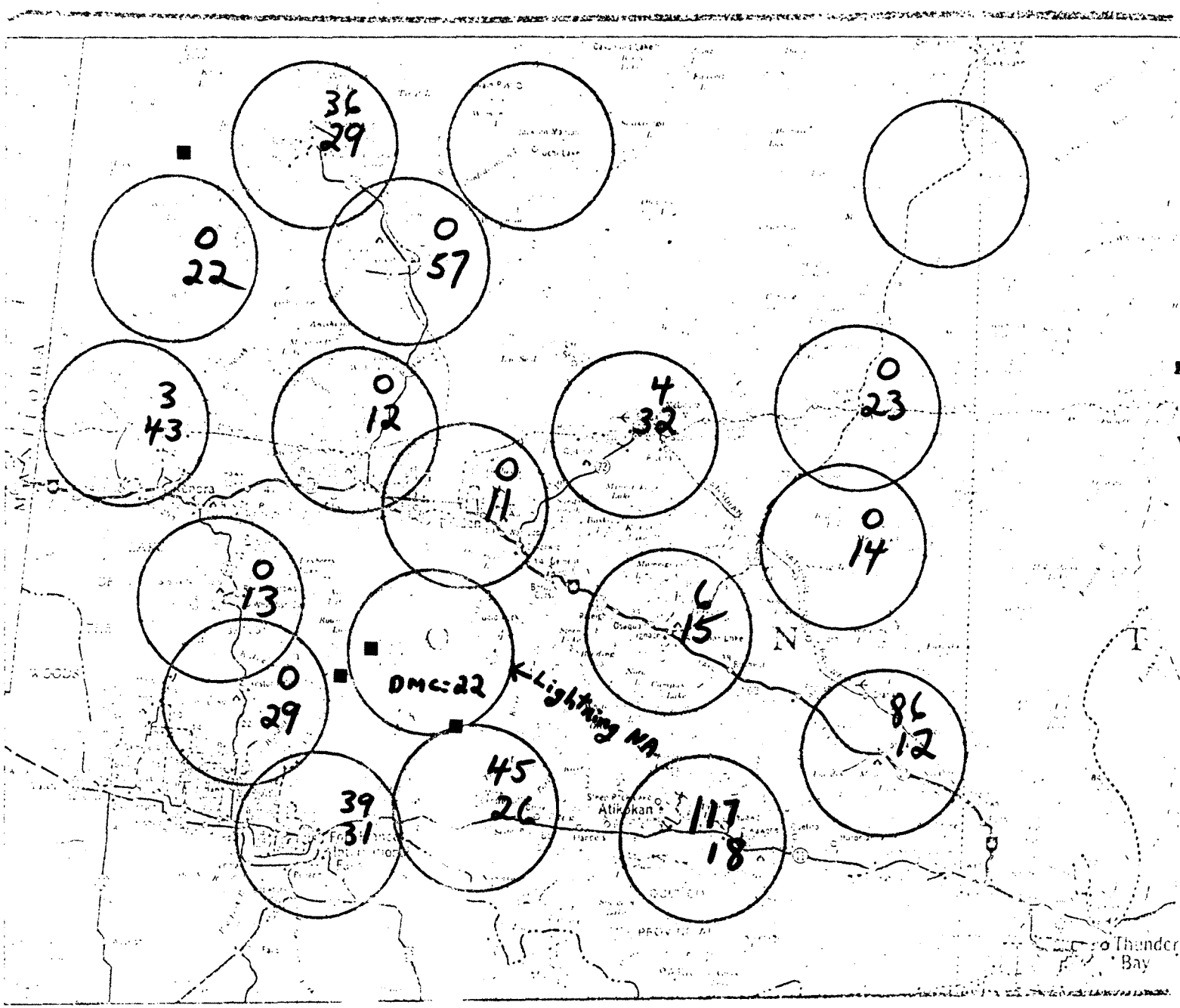
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 18 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

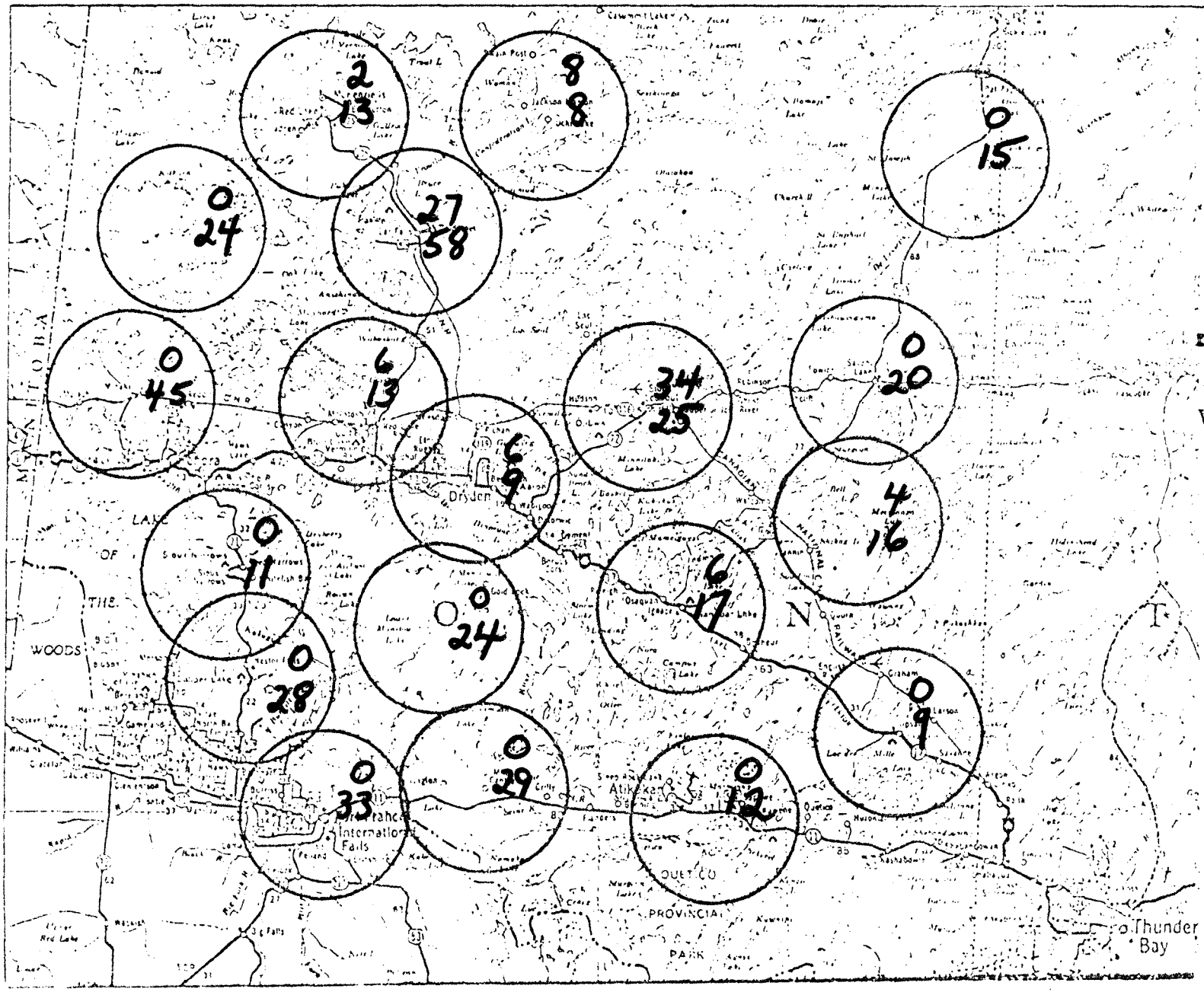
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 19 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

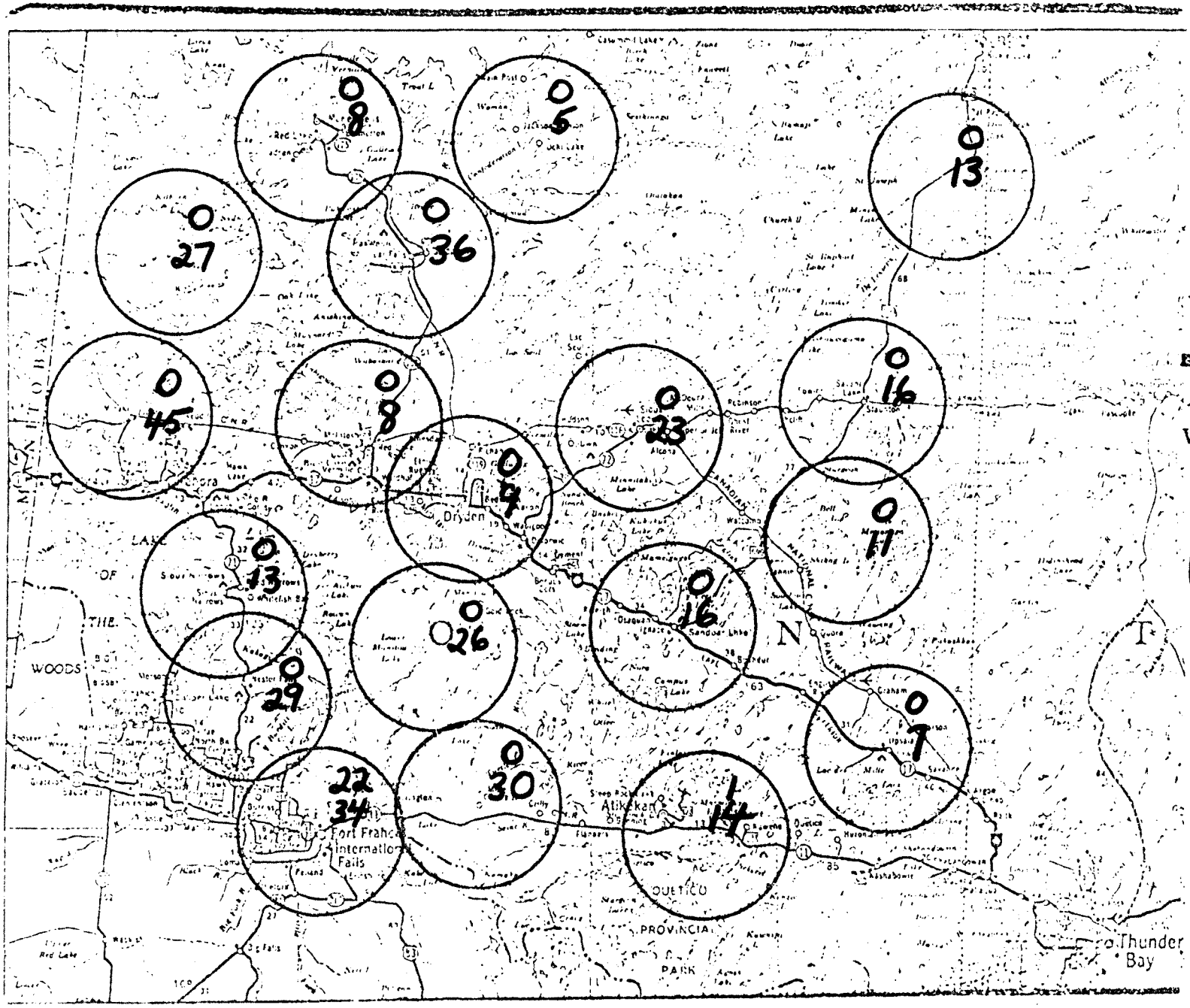
LOWER NO. IS YESTERDAYS DMC

▣ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 20 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

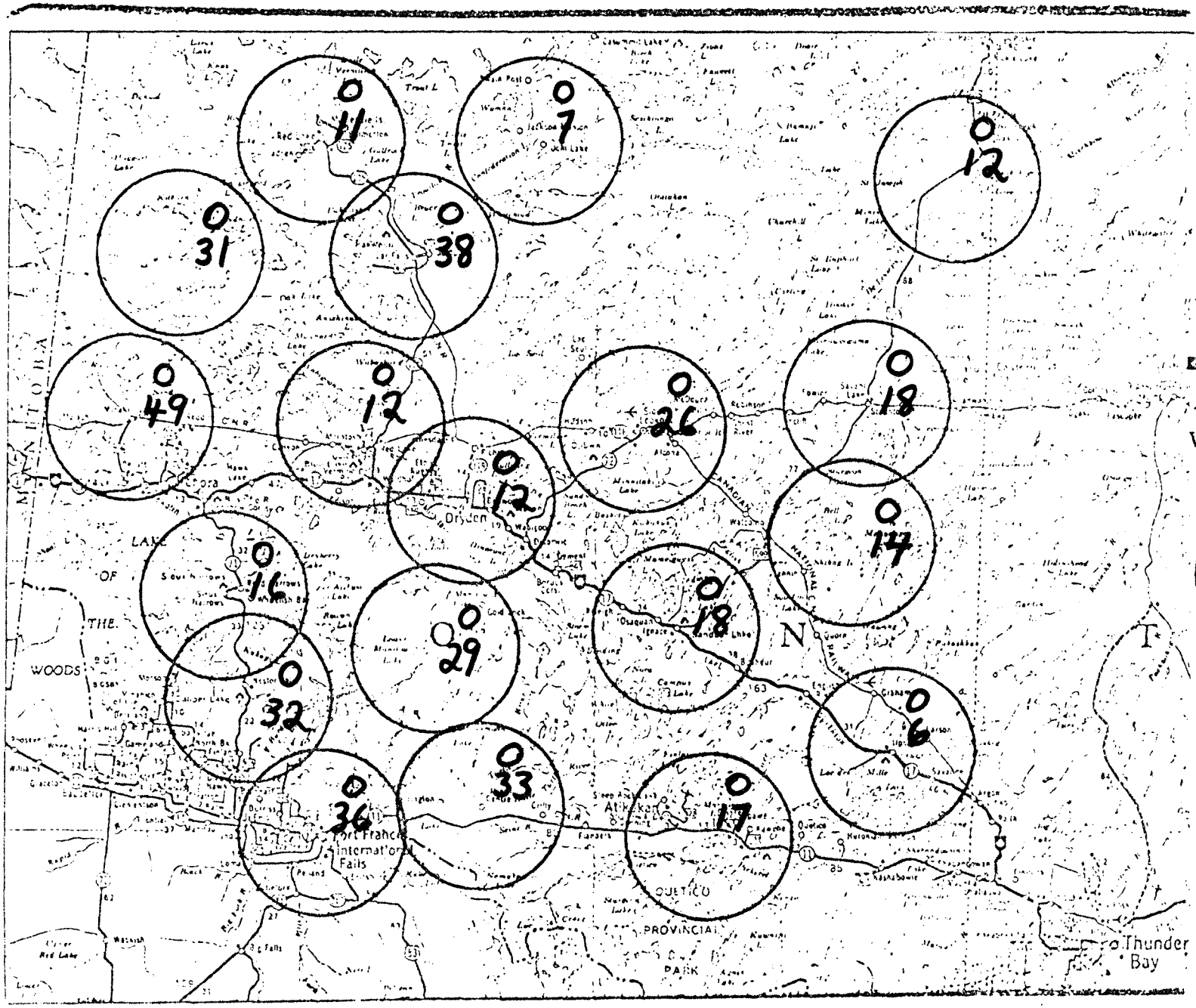
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 21 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

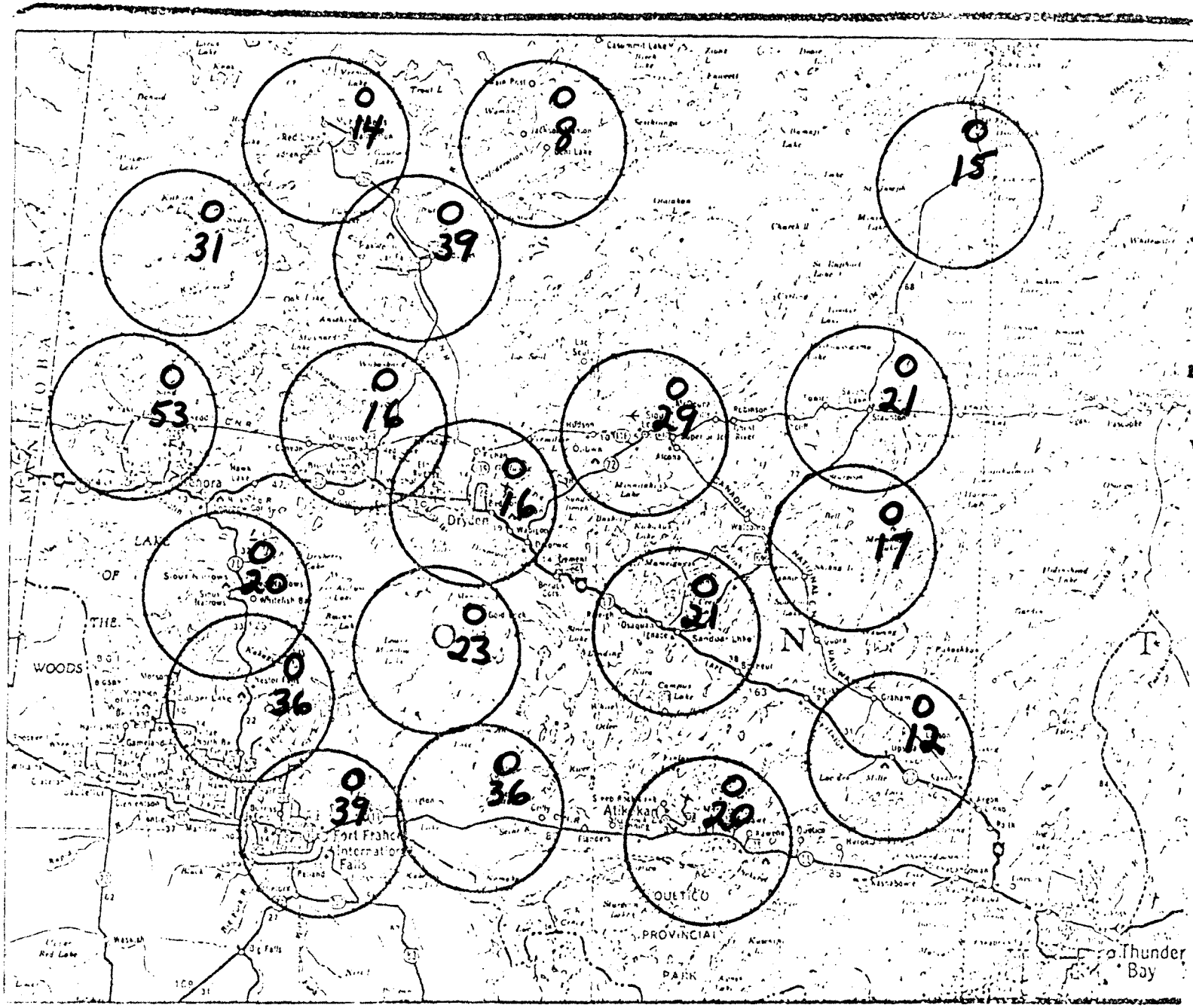
LOWER NO. IS YESTERDAYS DMC

LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 22 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

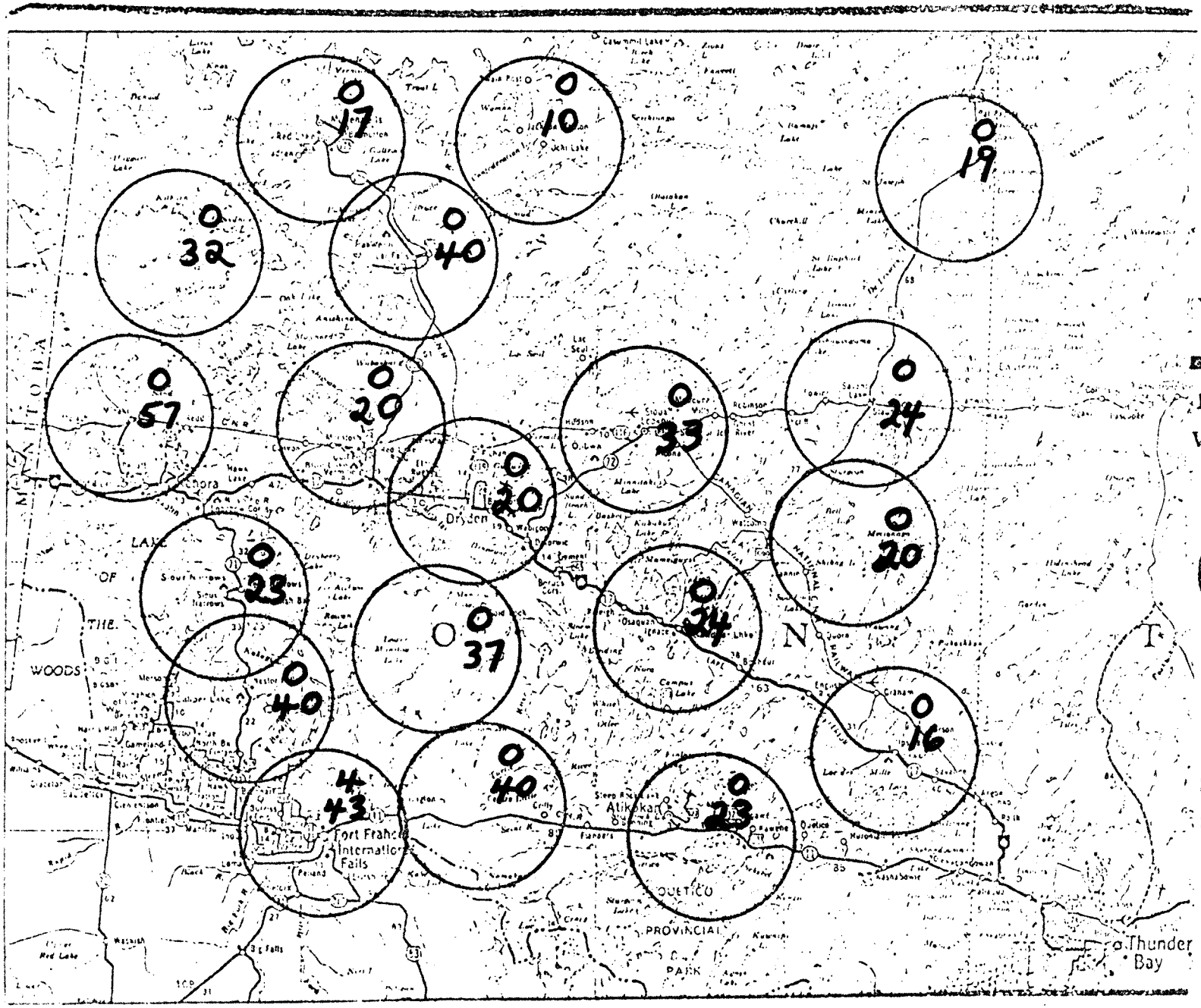
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 23 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

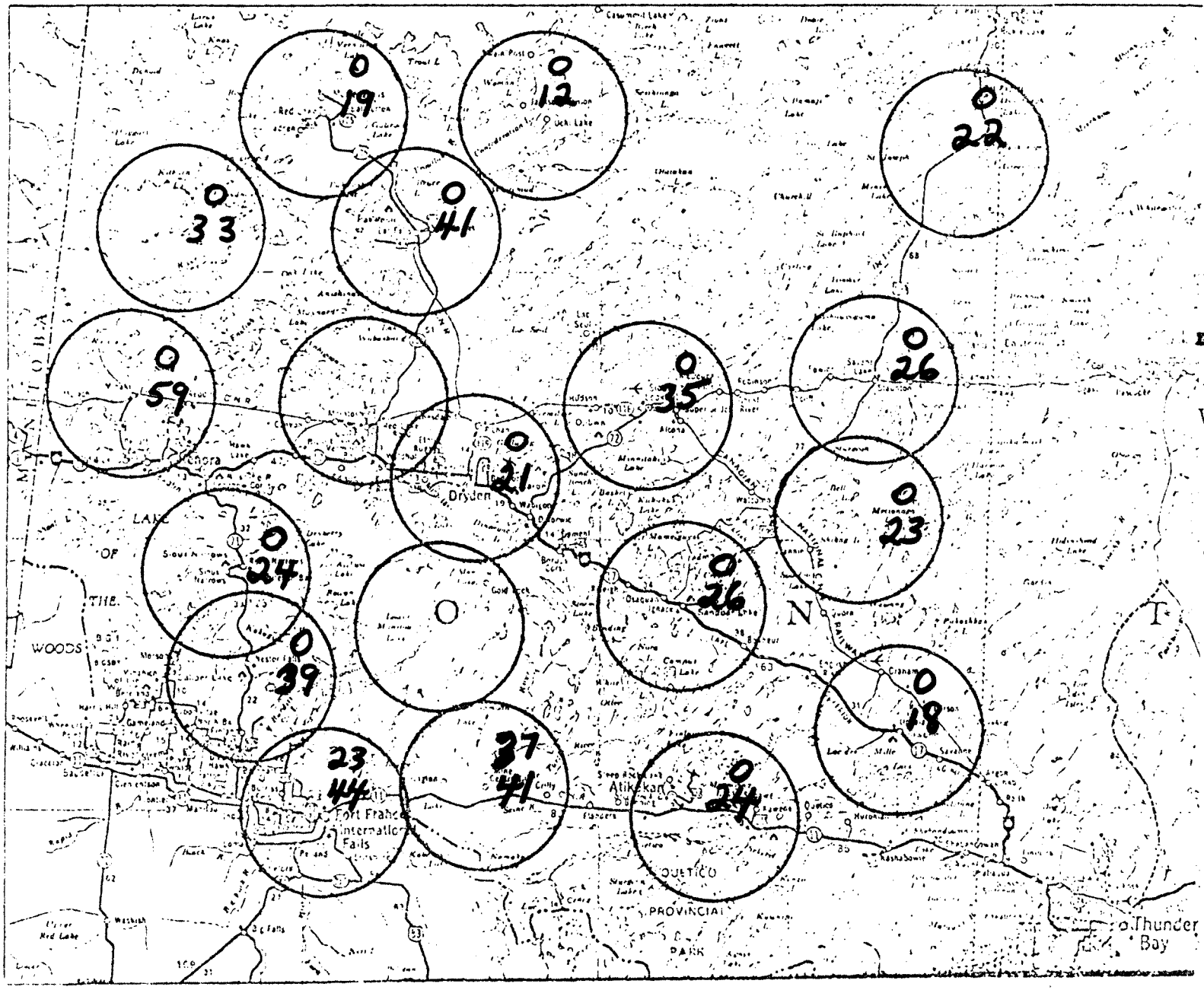
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 24 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

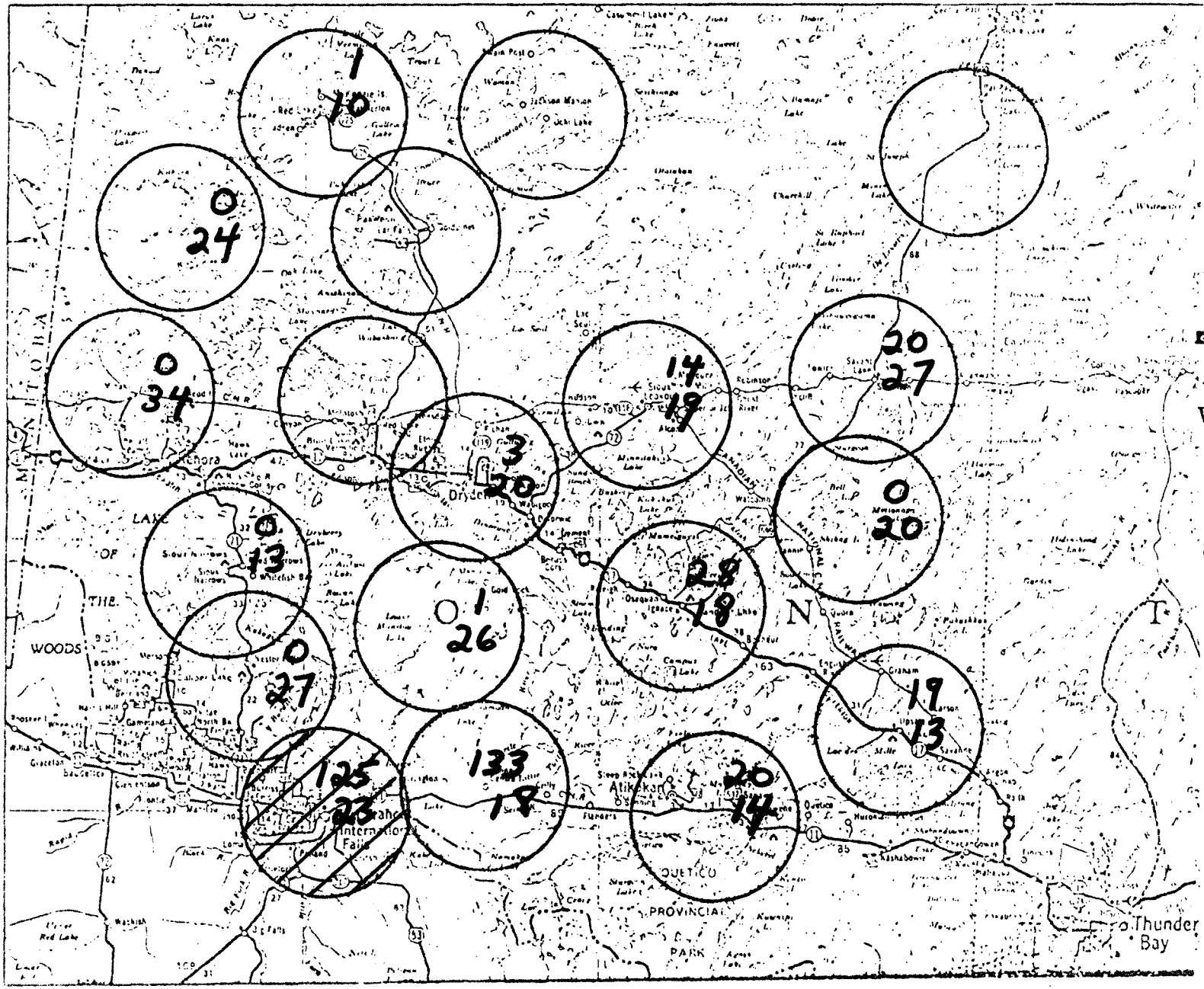
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 25 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

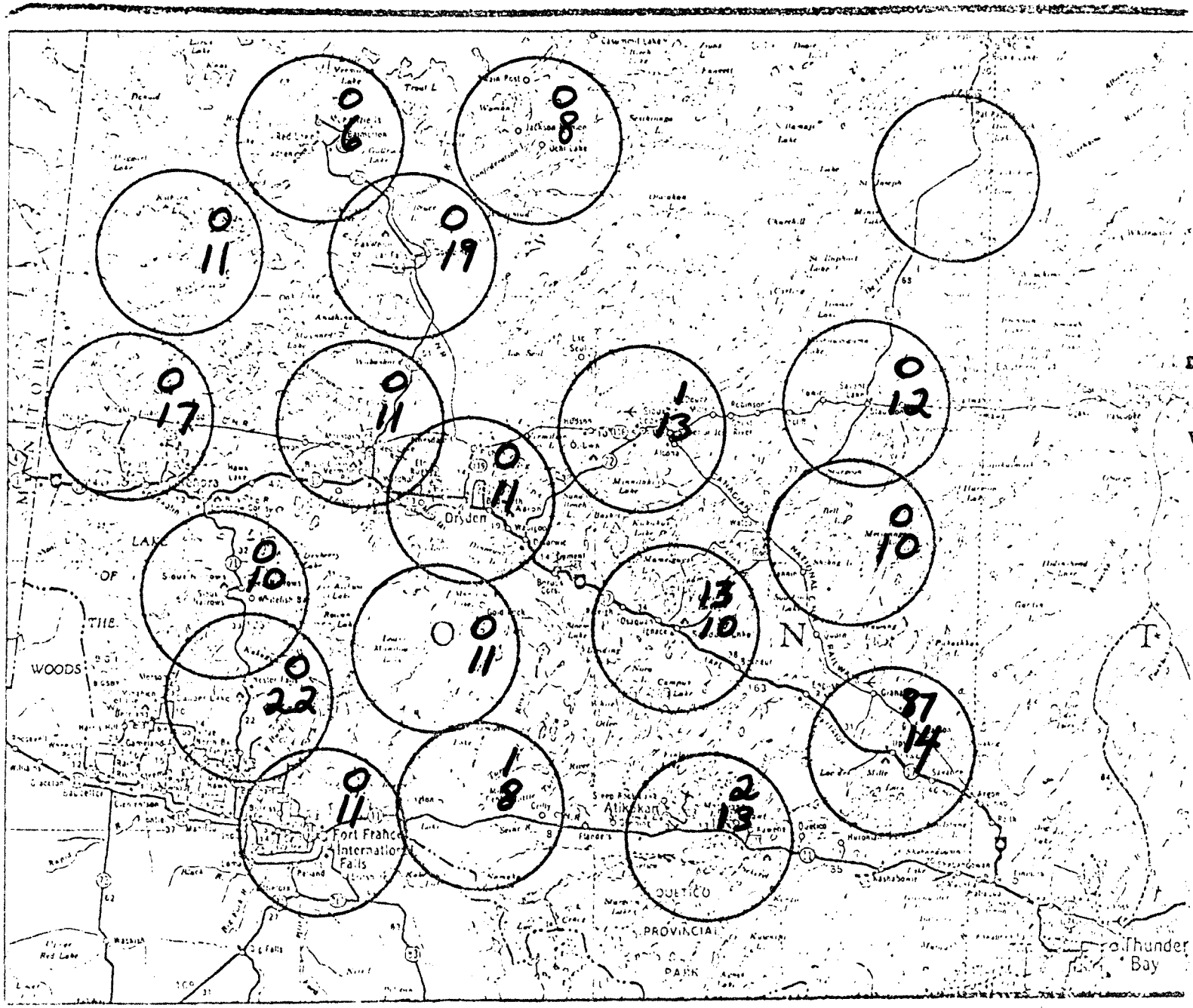
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 26 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

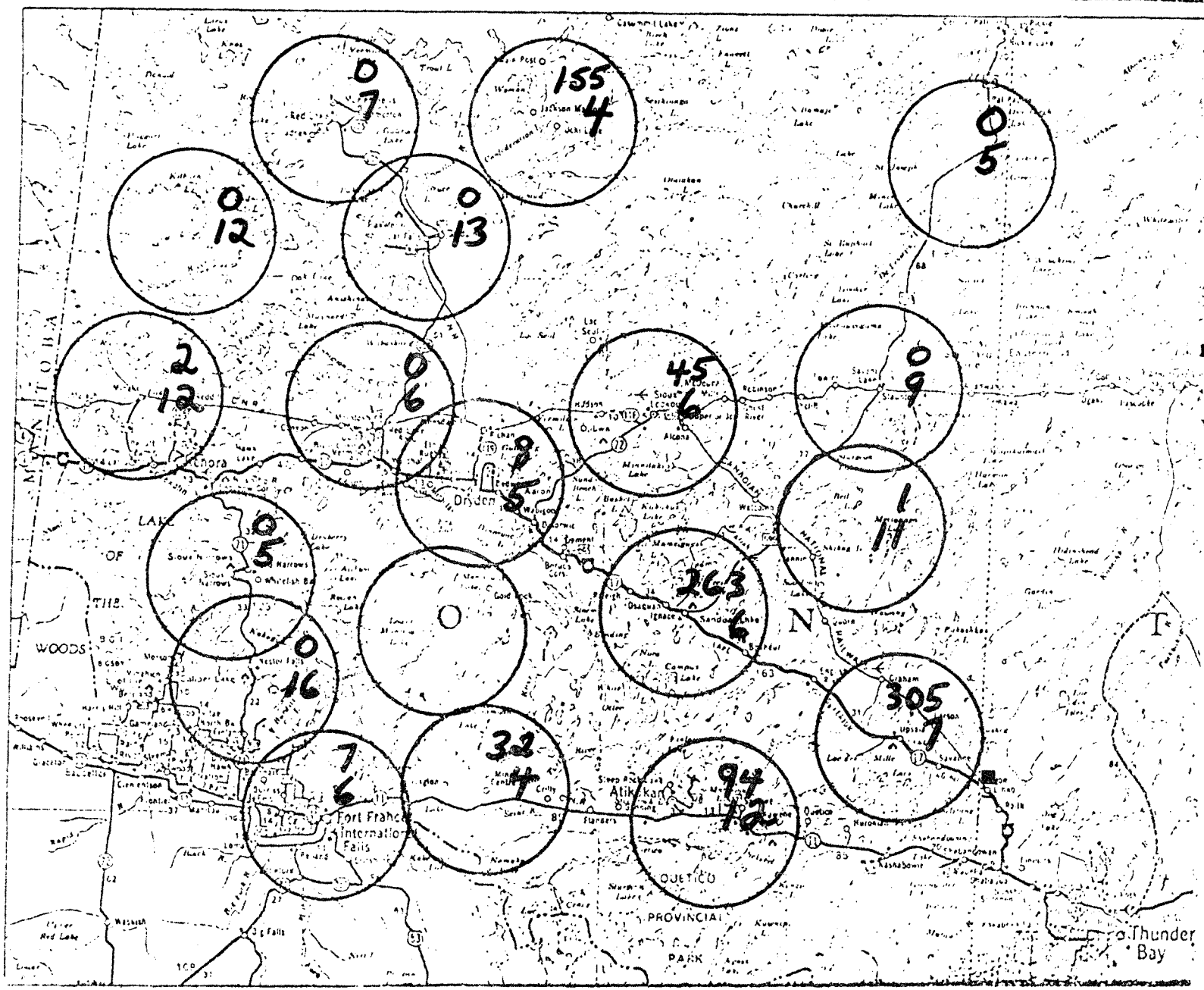
LOWER NO. IS YESTERDAYS DMC

LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS $\geq$ 50 AND DMC $\geq$ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 27 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

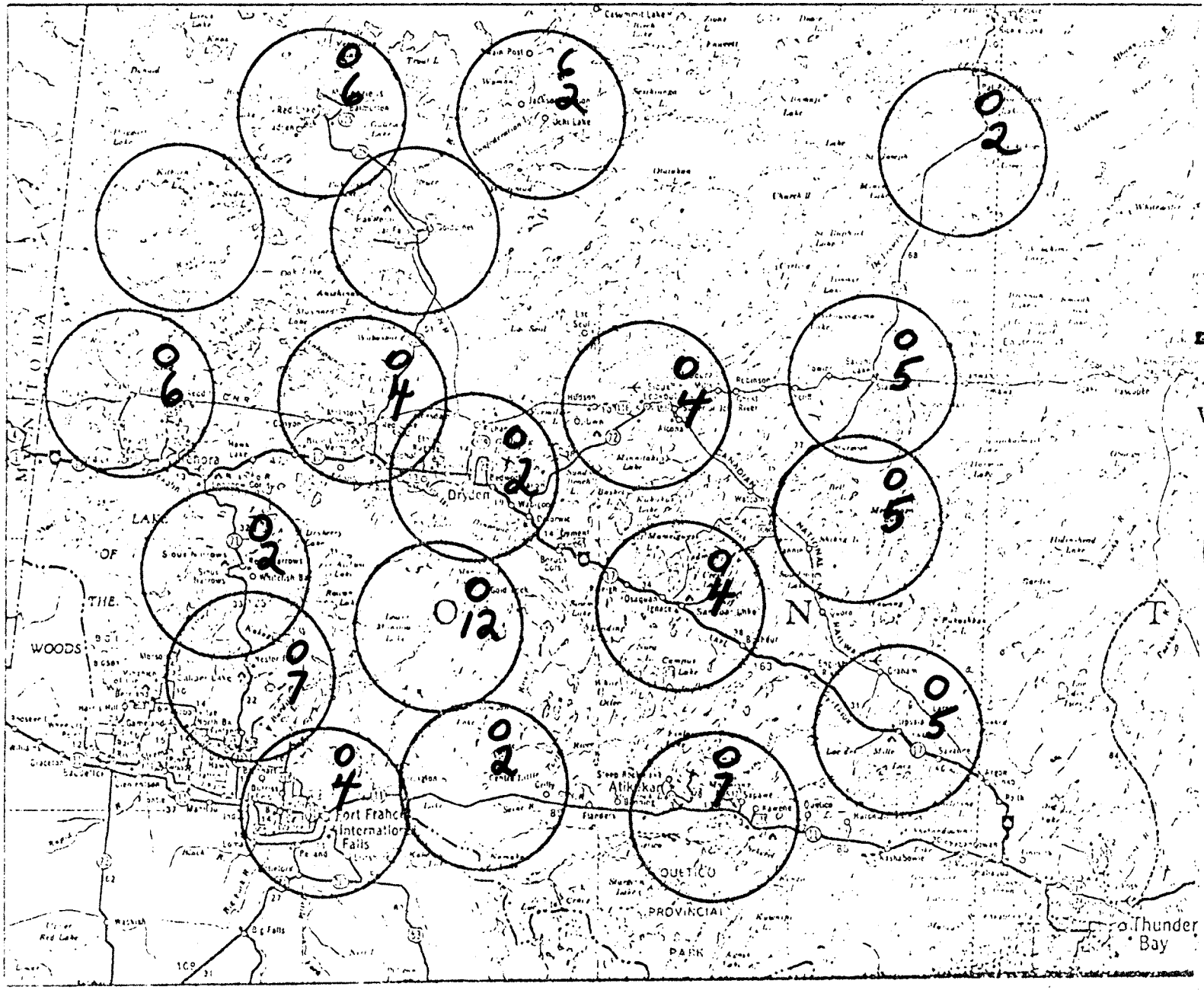
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 28 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

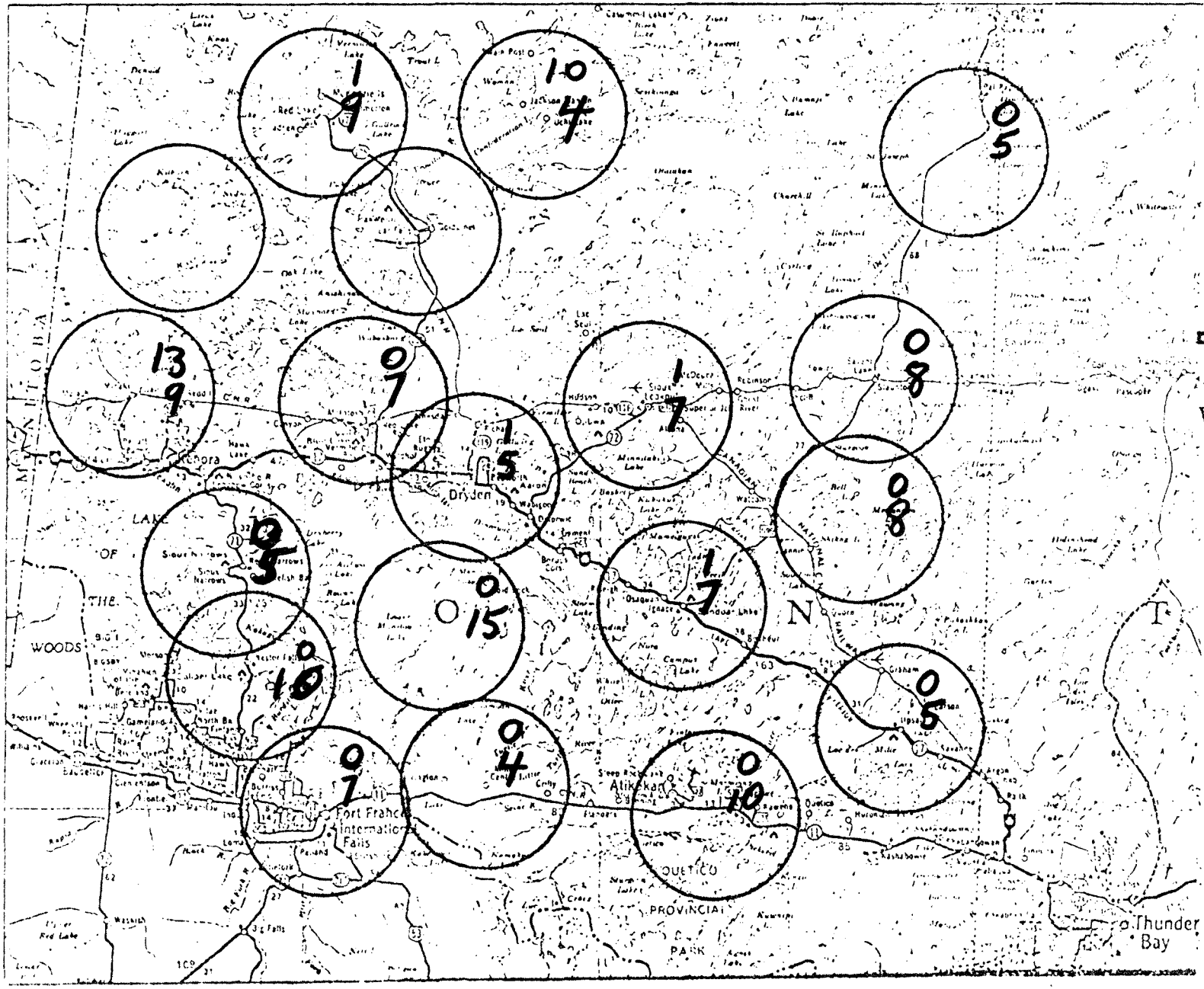
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 29 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

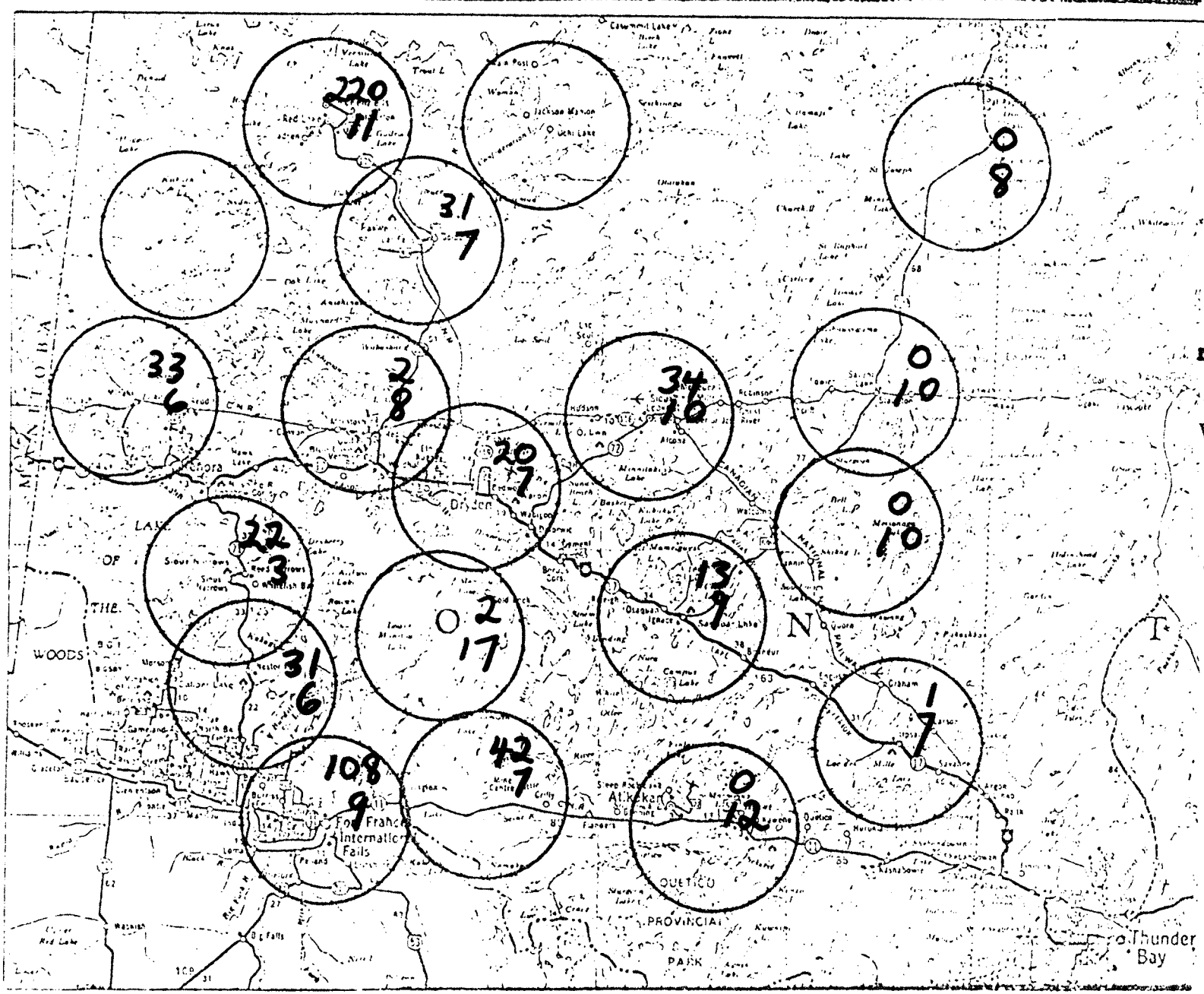
LOWER NO. IS YESTERDAYS DMC

LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS $\geq$ 50 AND DMC $\geq$ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 30 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

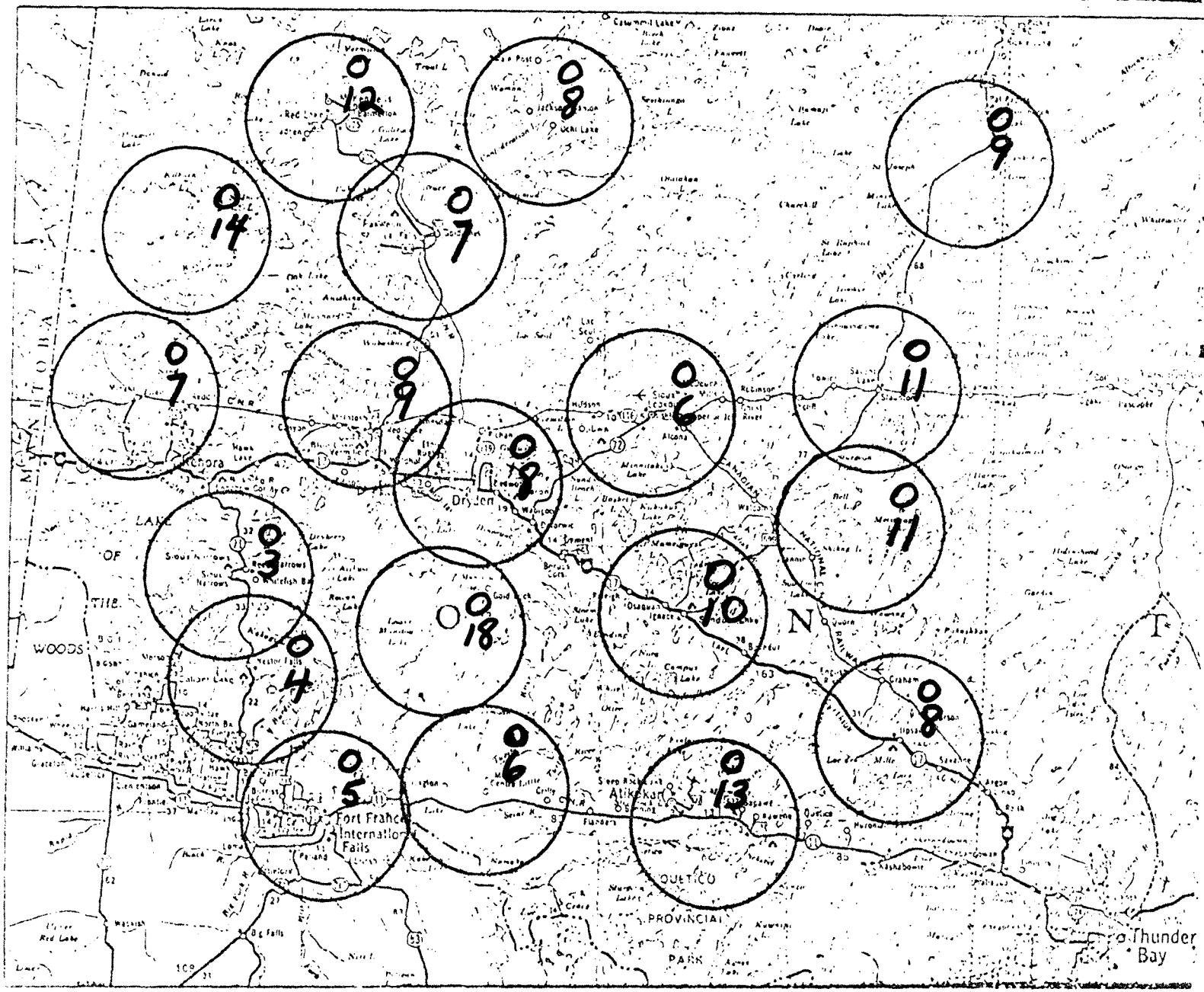
LOWER NO. IS YESTERDAYS DMC

LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

July 31 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

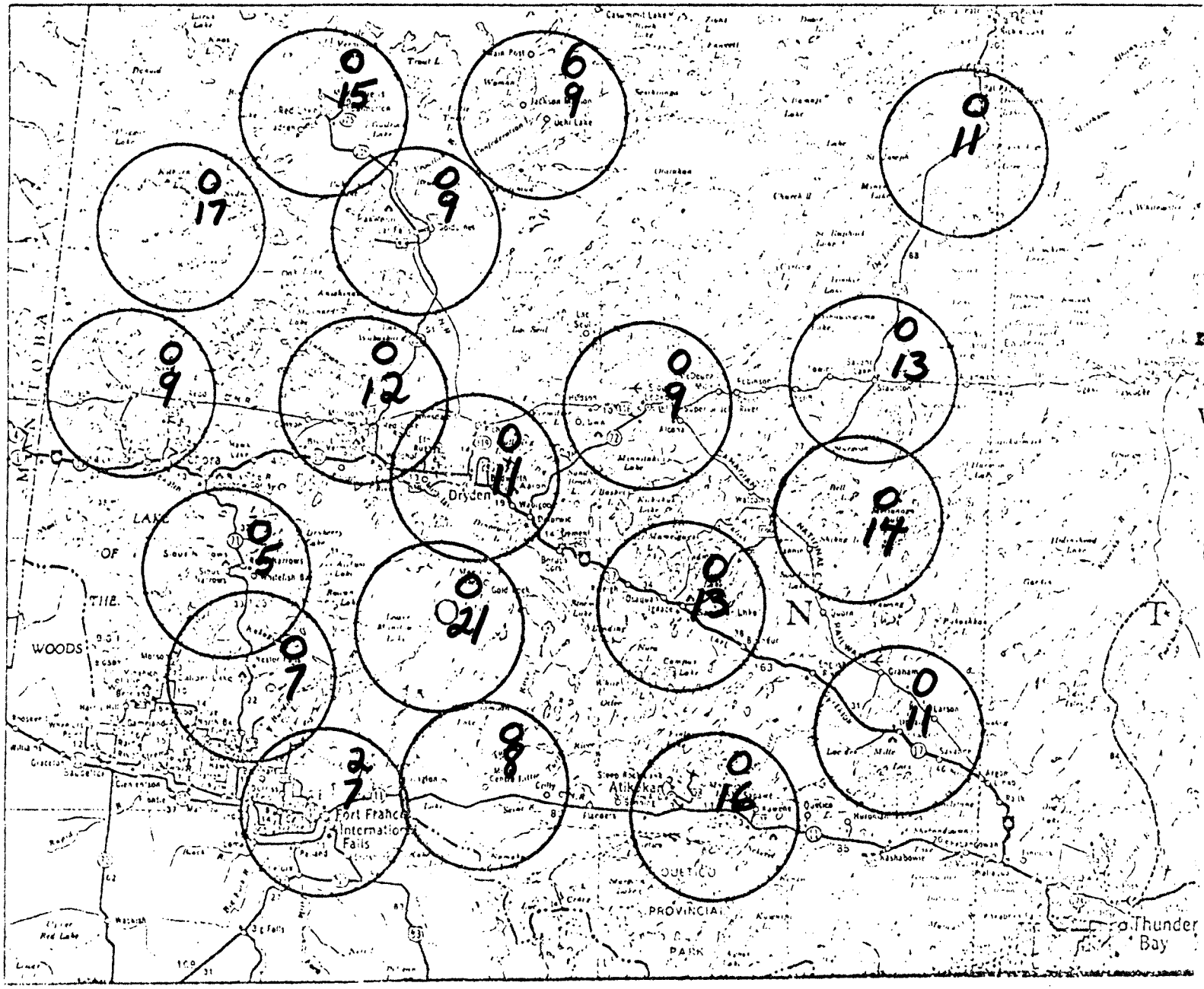
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 1 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

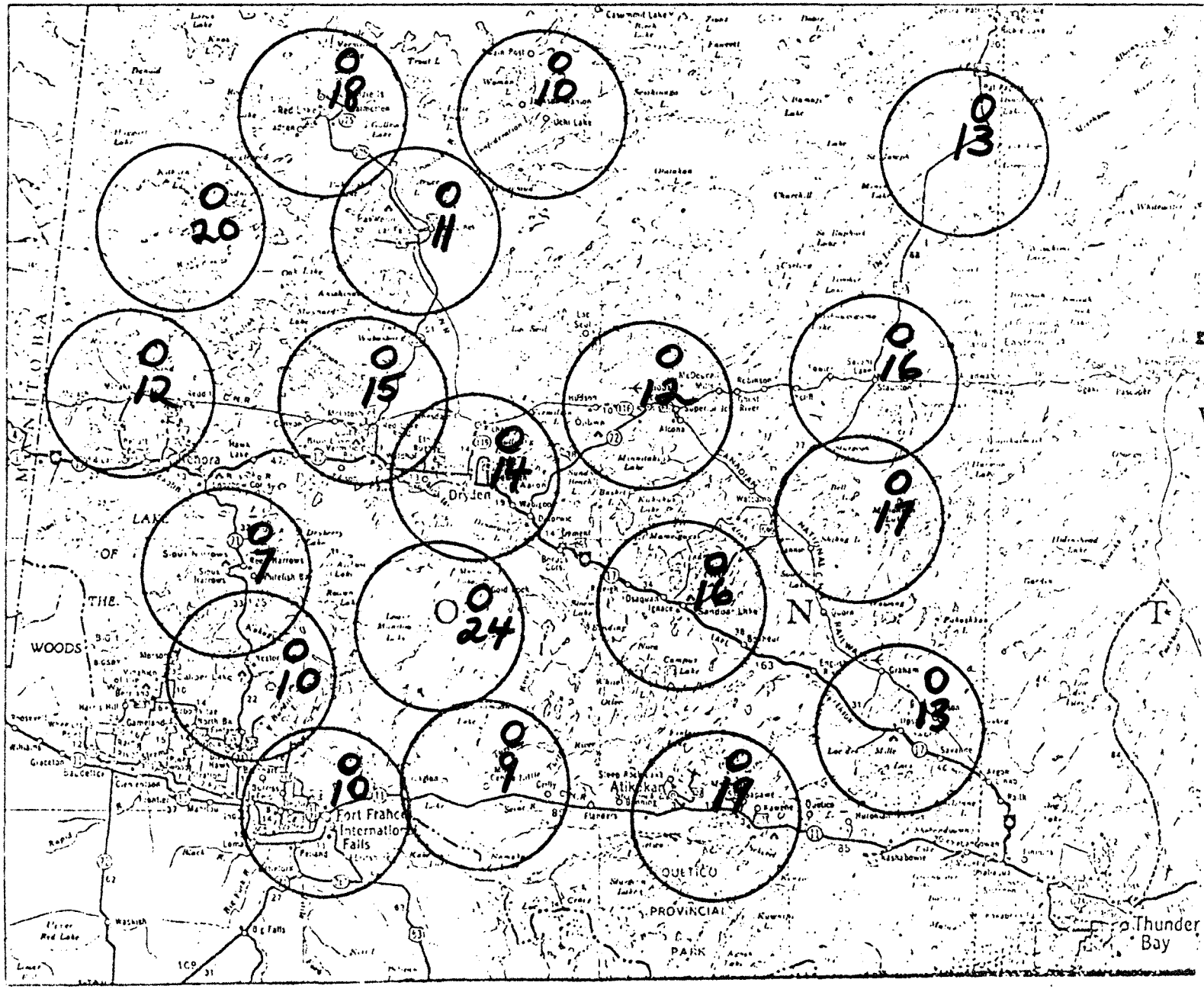
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 2 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

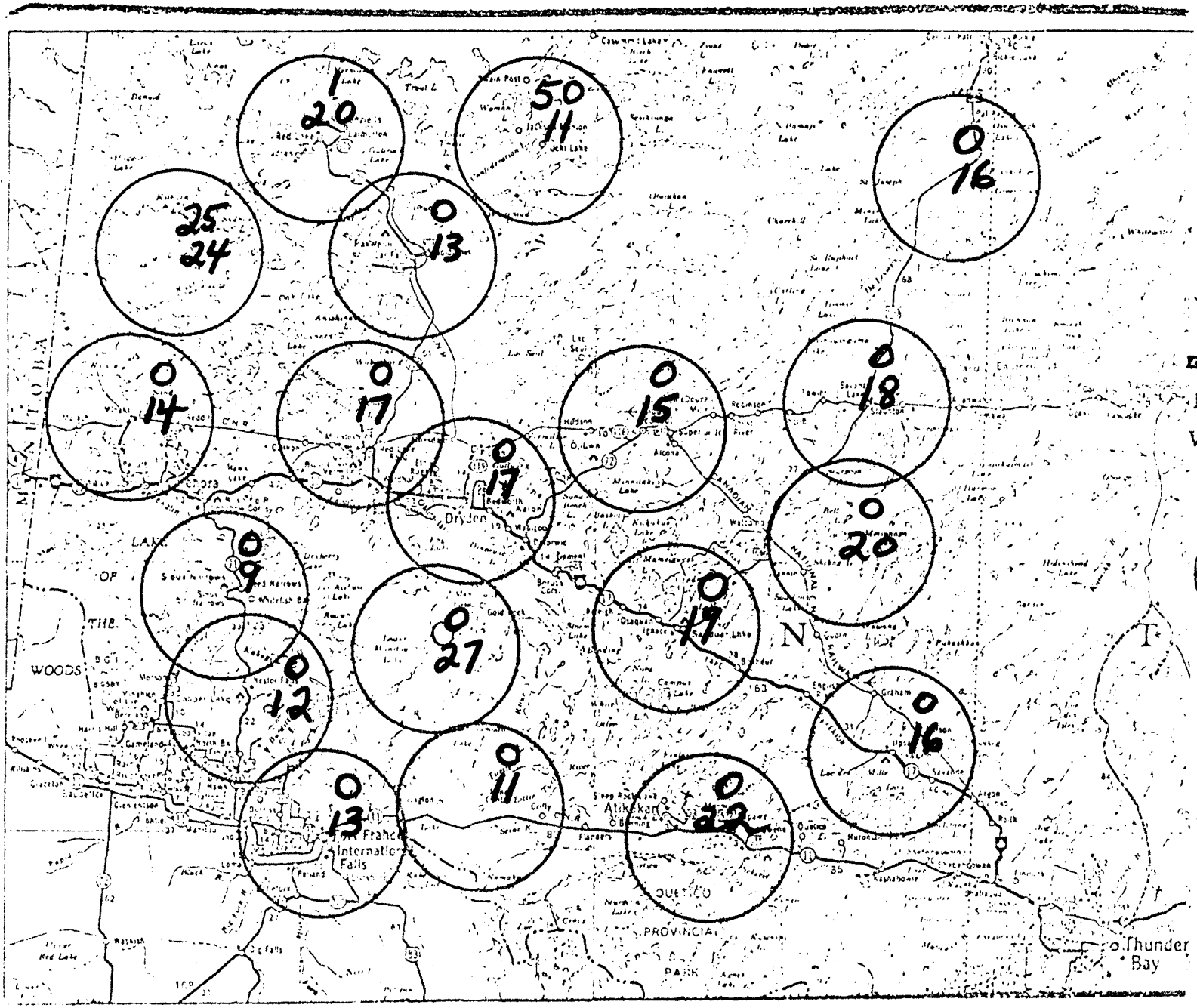
LOWER NO. IS YESTERDAYS DMC

▣ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 3 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

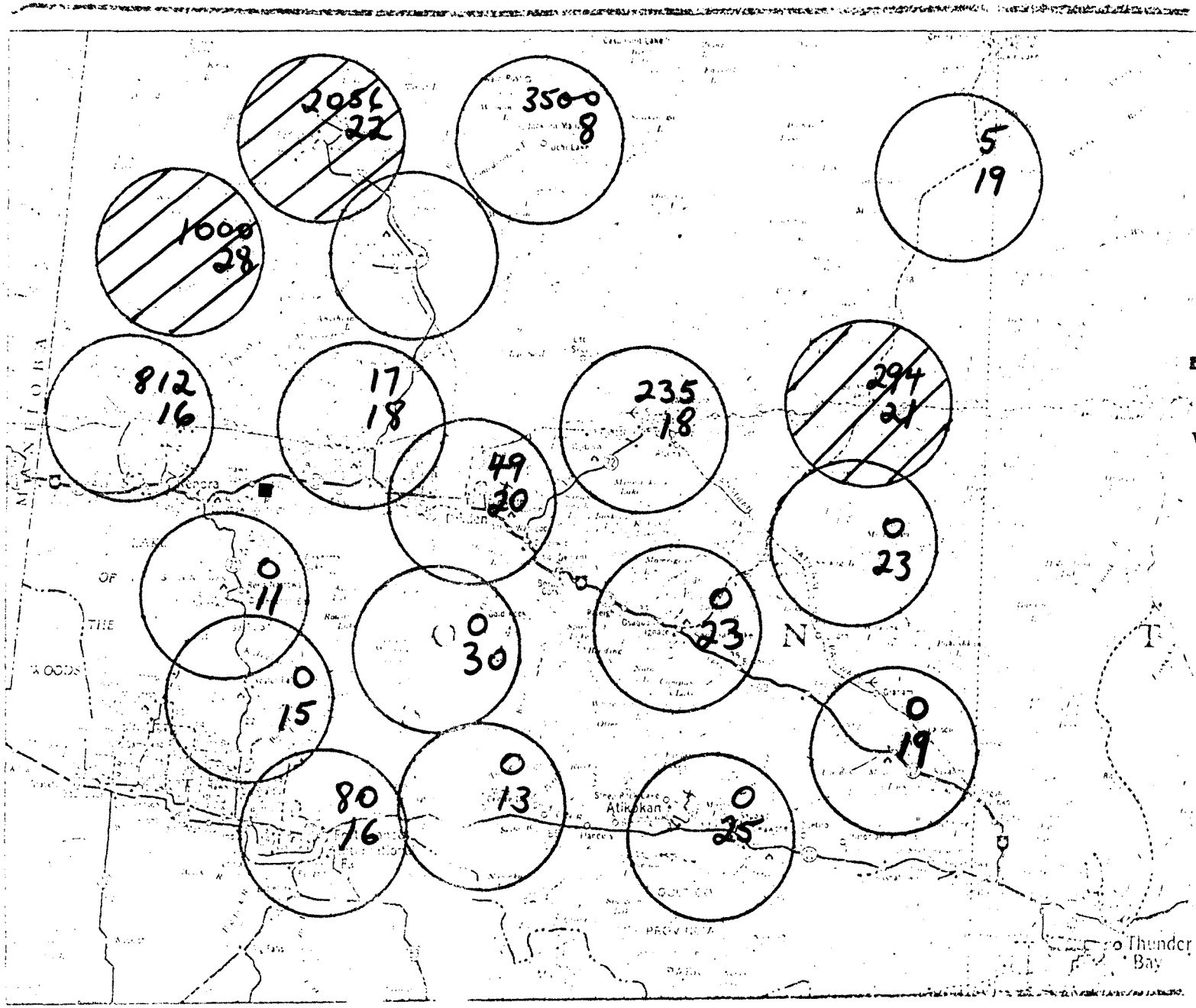
LOWER NO. IS YESTERDAYS DMC

LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 4 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

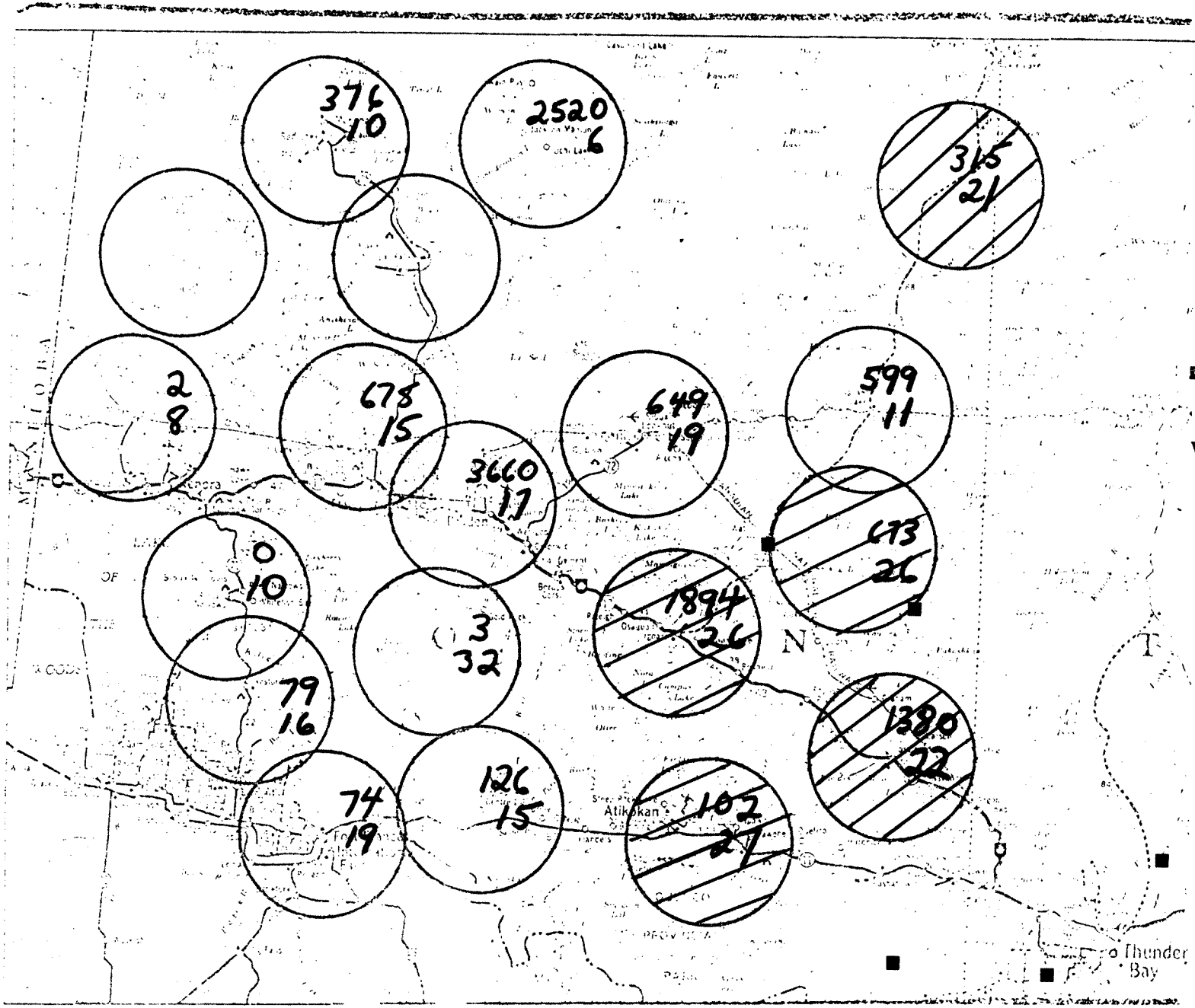
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 5 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

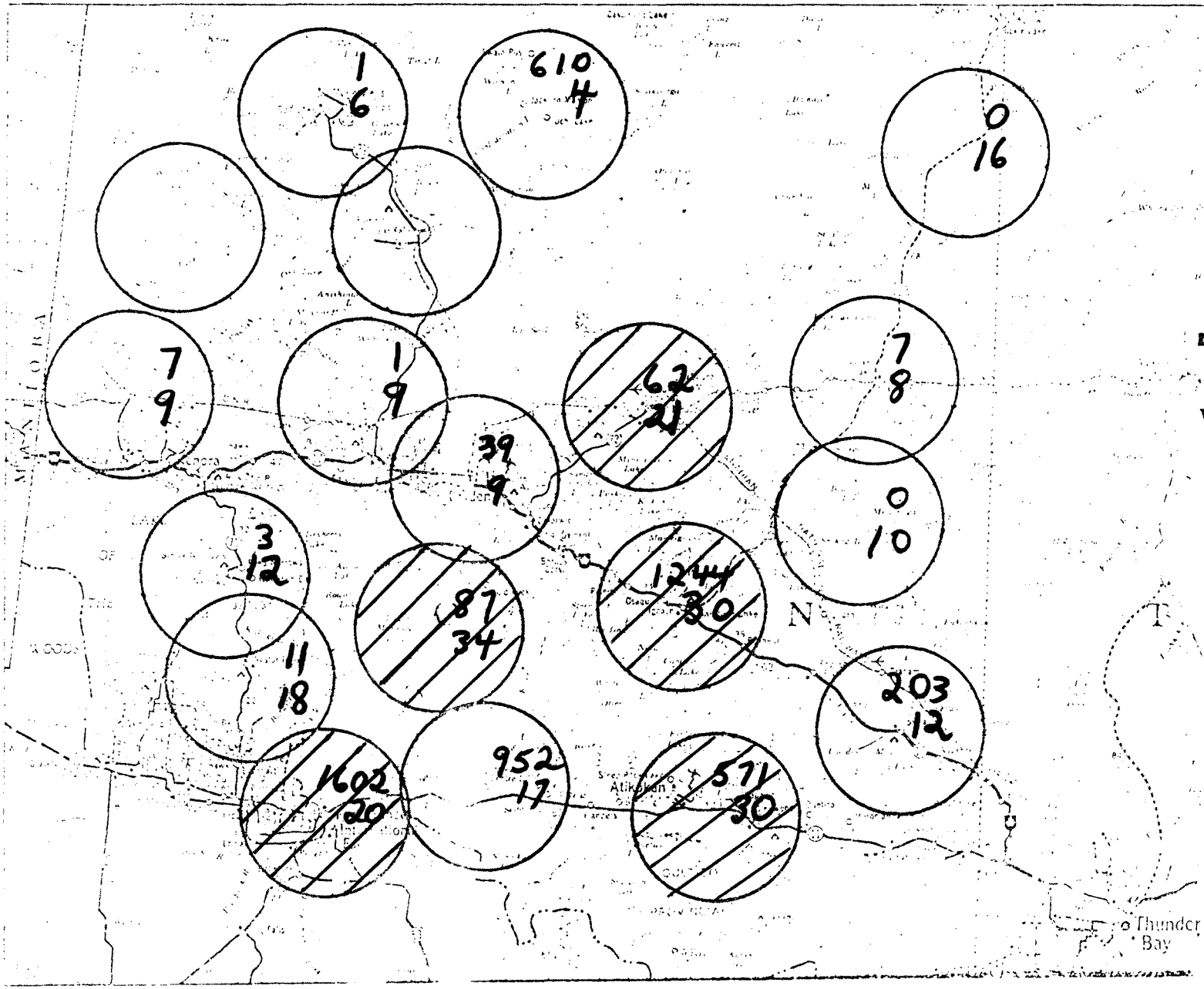
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 6 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

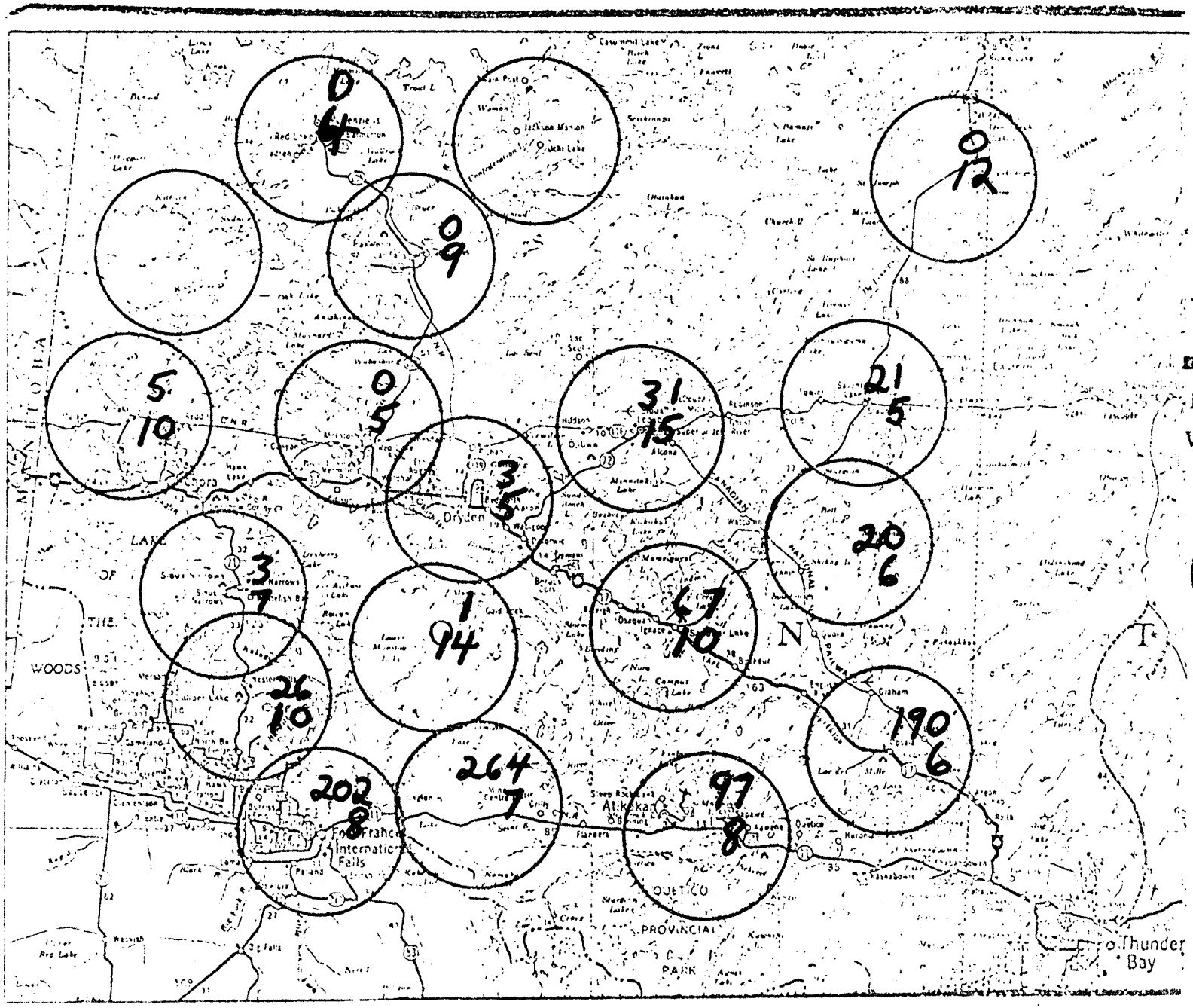
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

~~Aug~~ 7 1973

8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

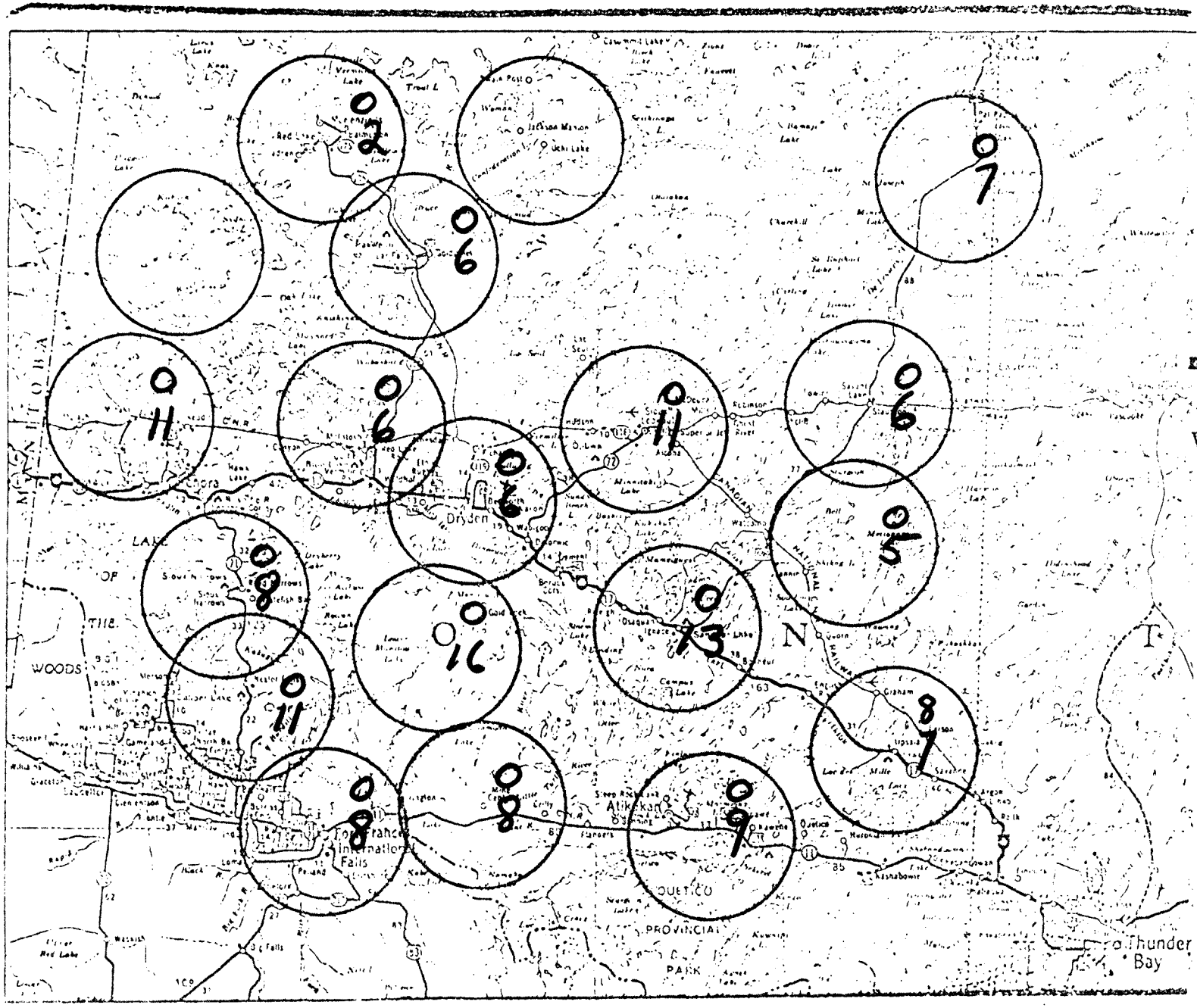
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 8 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

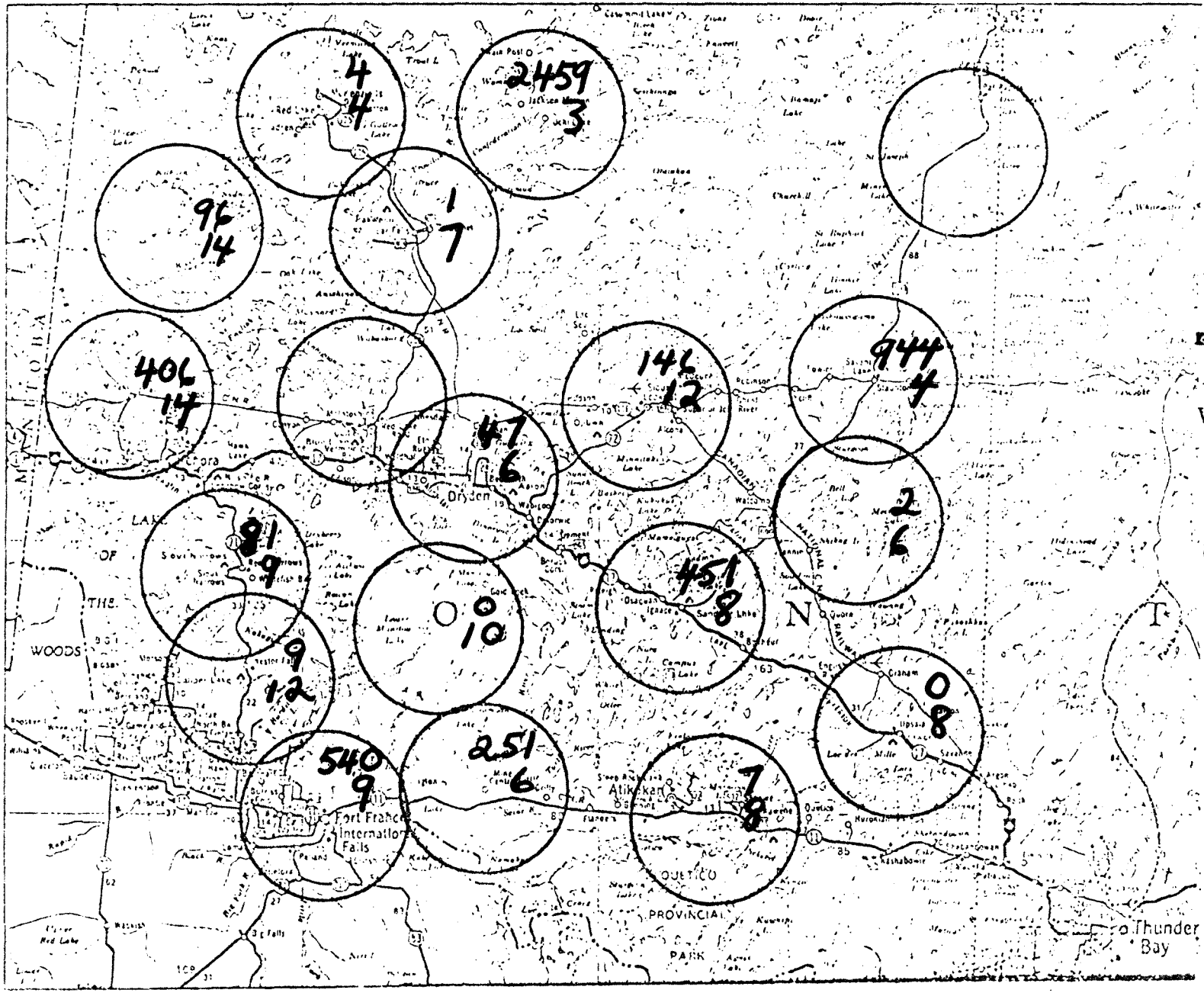
LOWER NO. IS YESTERDAYS DMC

▣ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 9 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

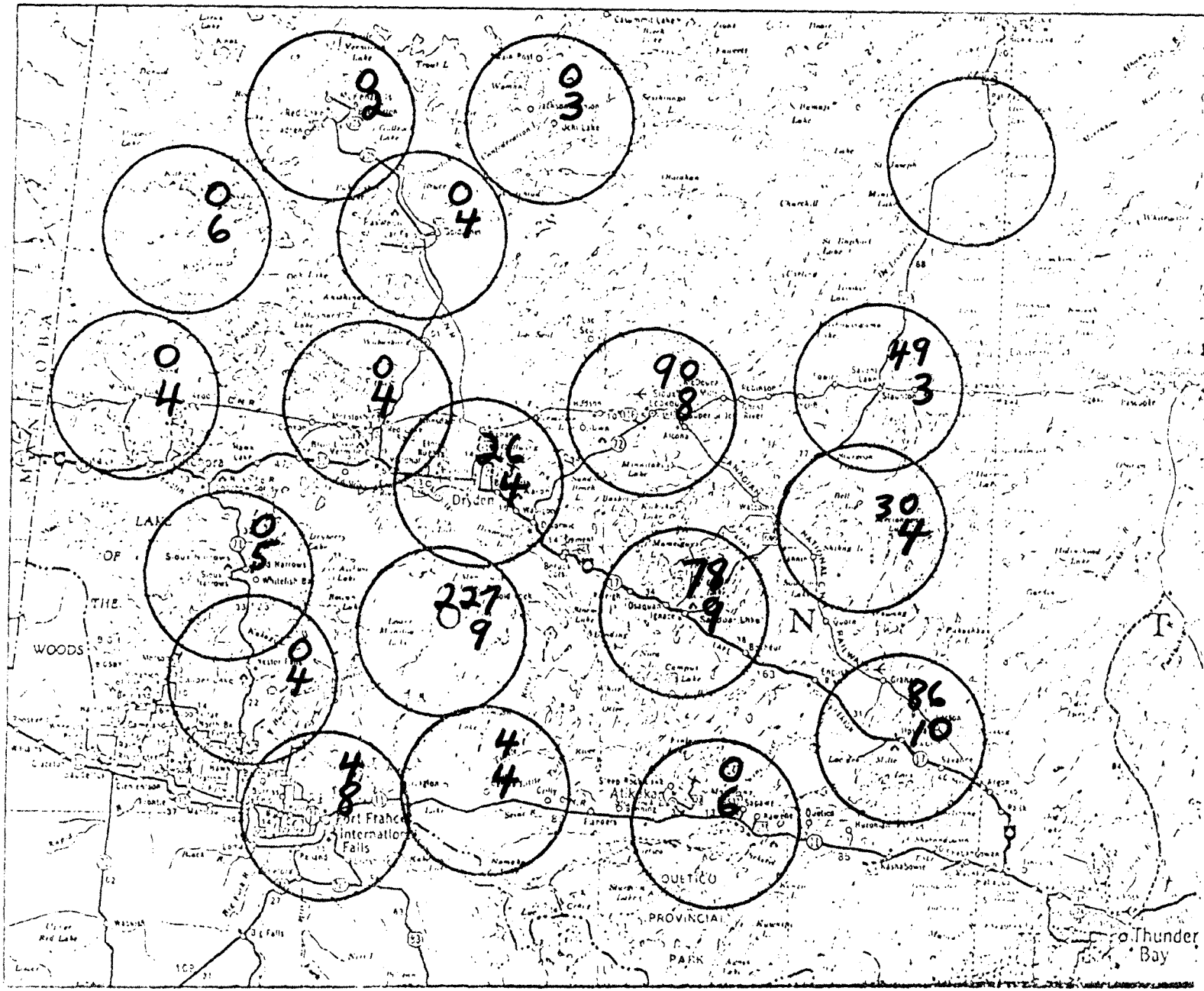
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug. 10 1973
8.00 a.m.

UPPER NO. IS LIGHTNING COUNT

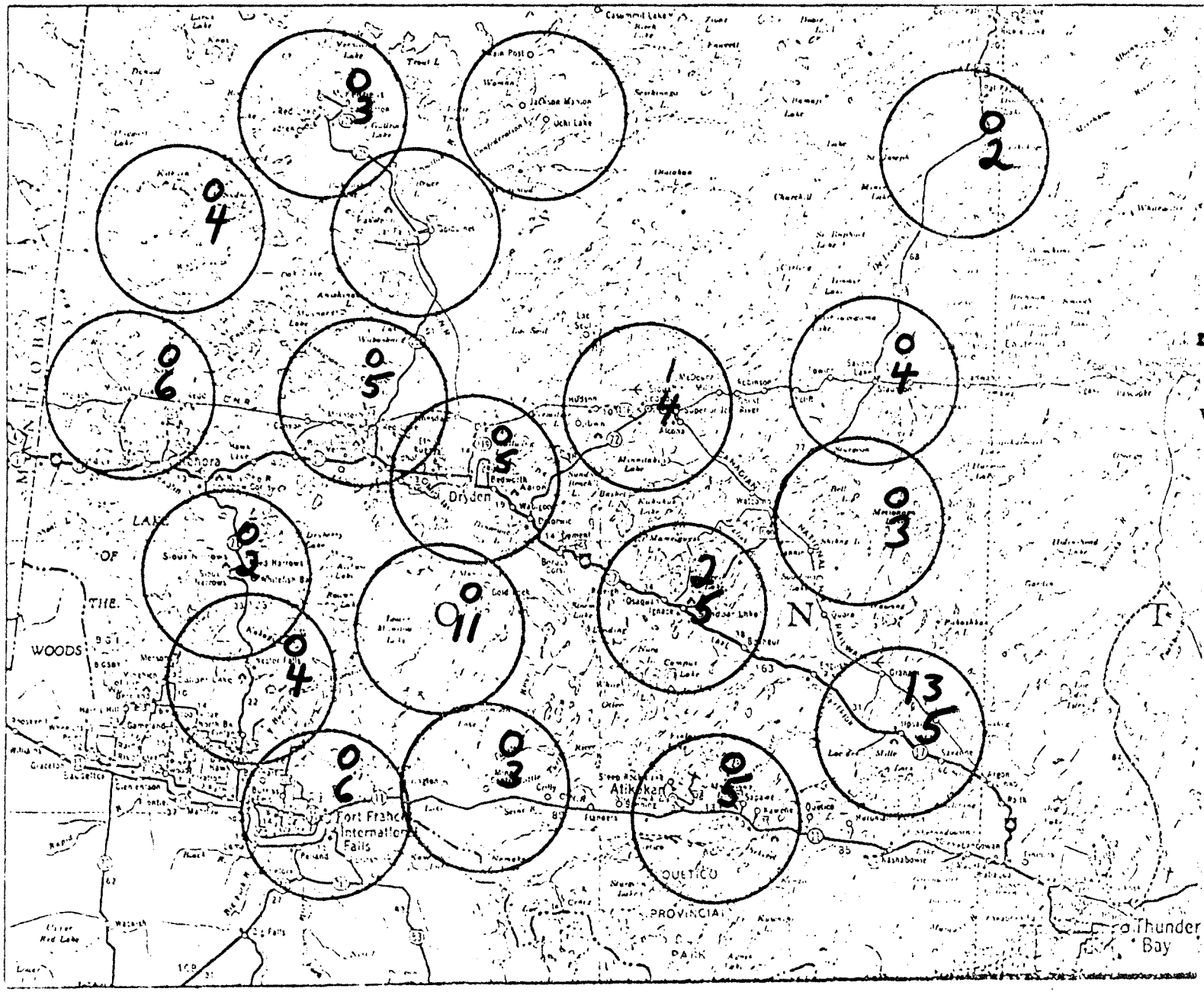
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 11 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

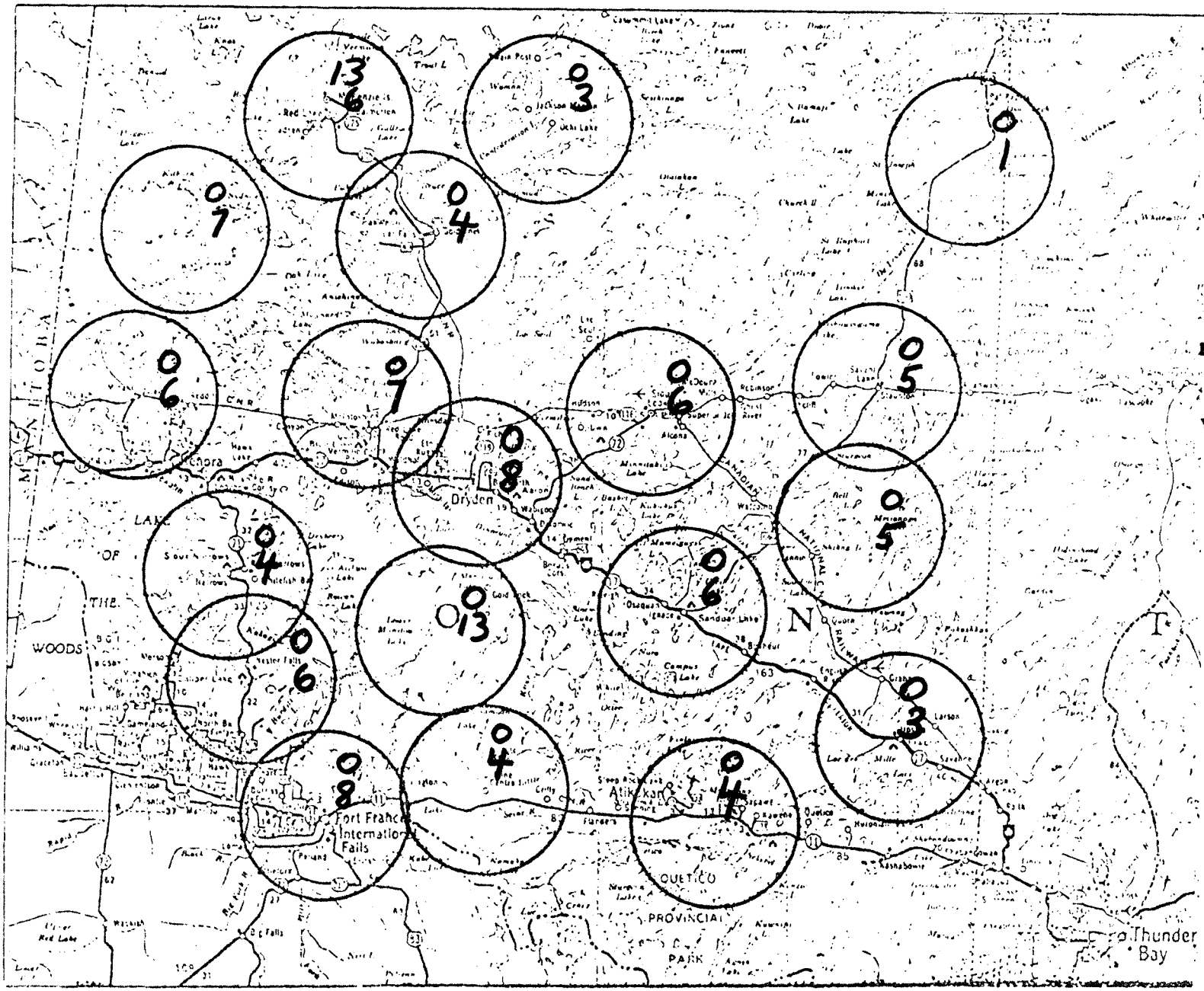
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 12 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

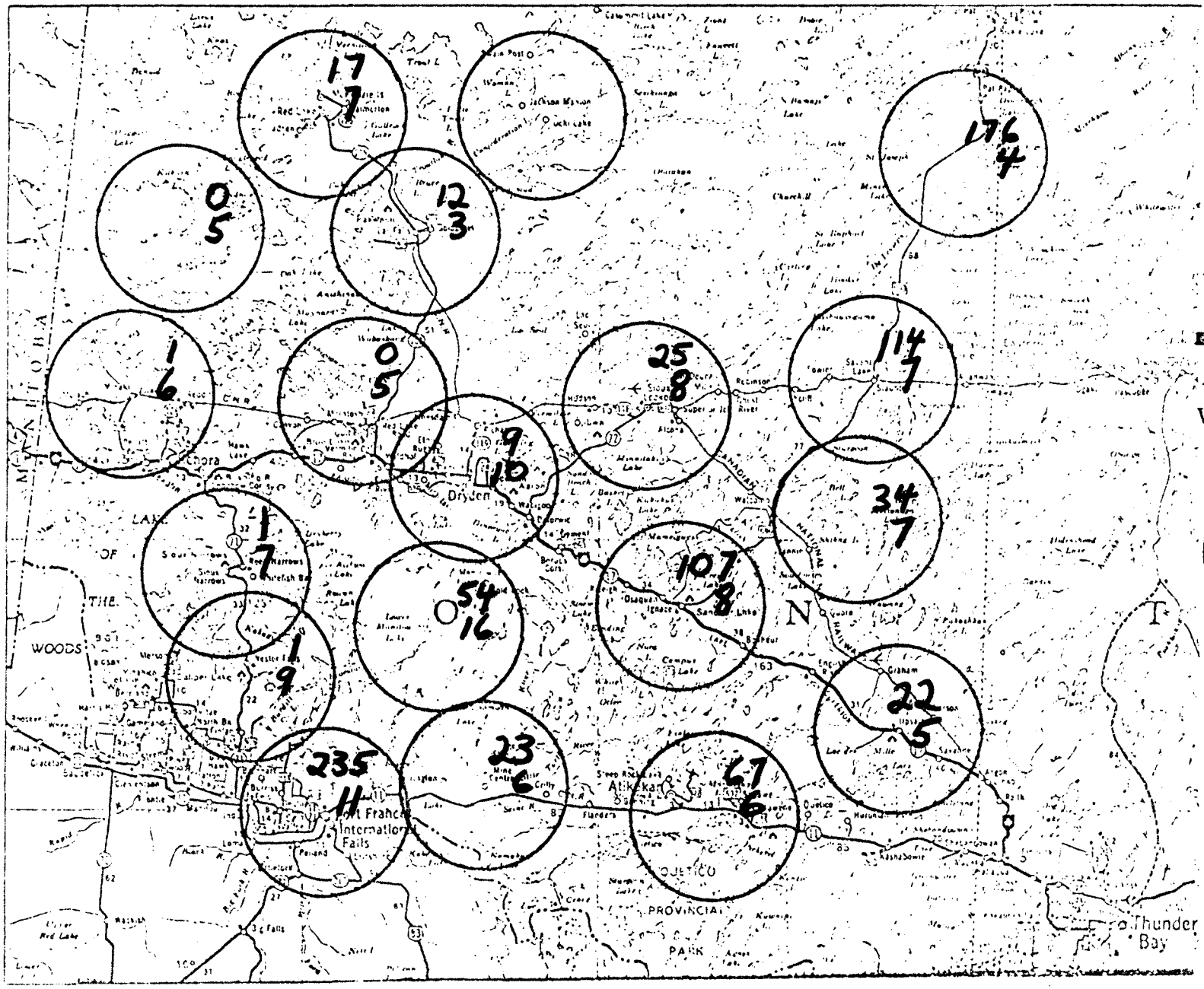
LOWER NO. IS YESTERDAYS DMC

▣ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 13 1973
8:30 a.m.

UPPER NO. IS LIGHTNING COUNT

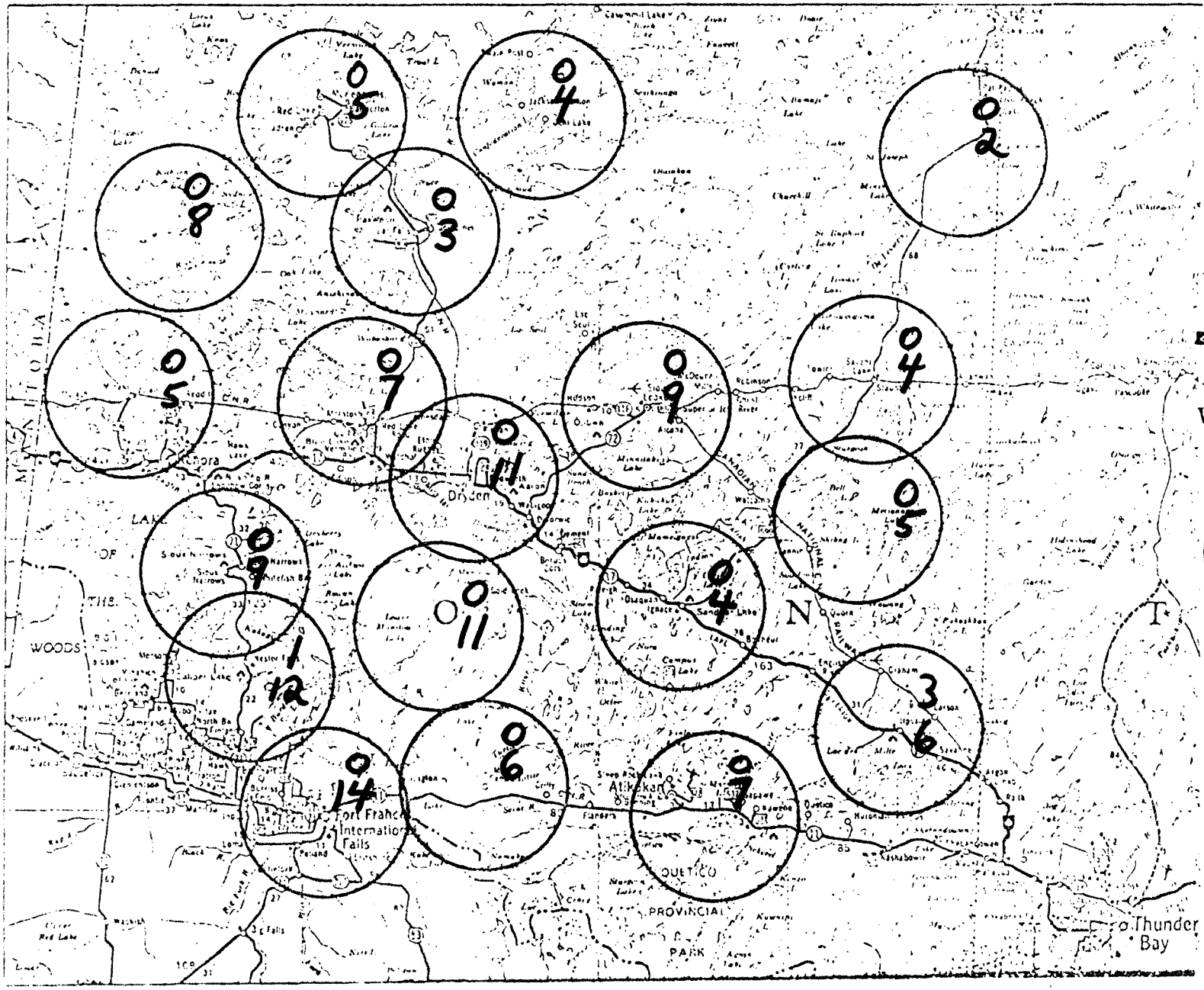
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 14 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

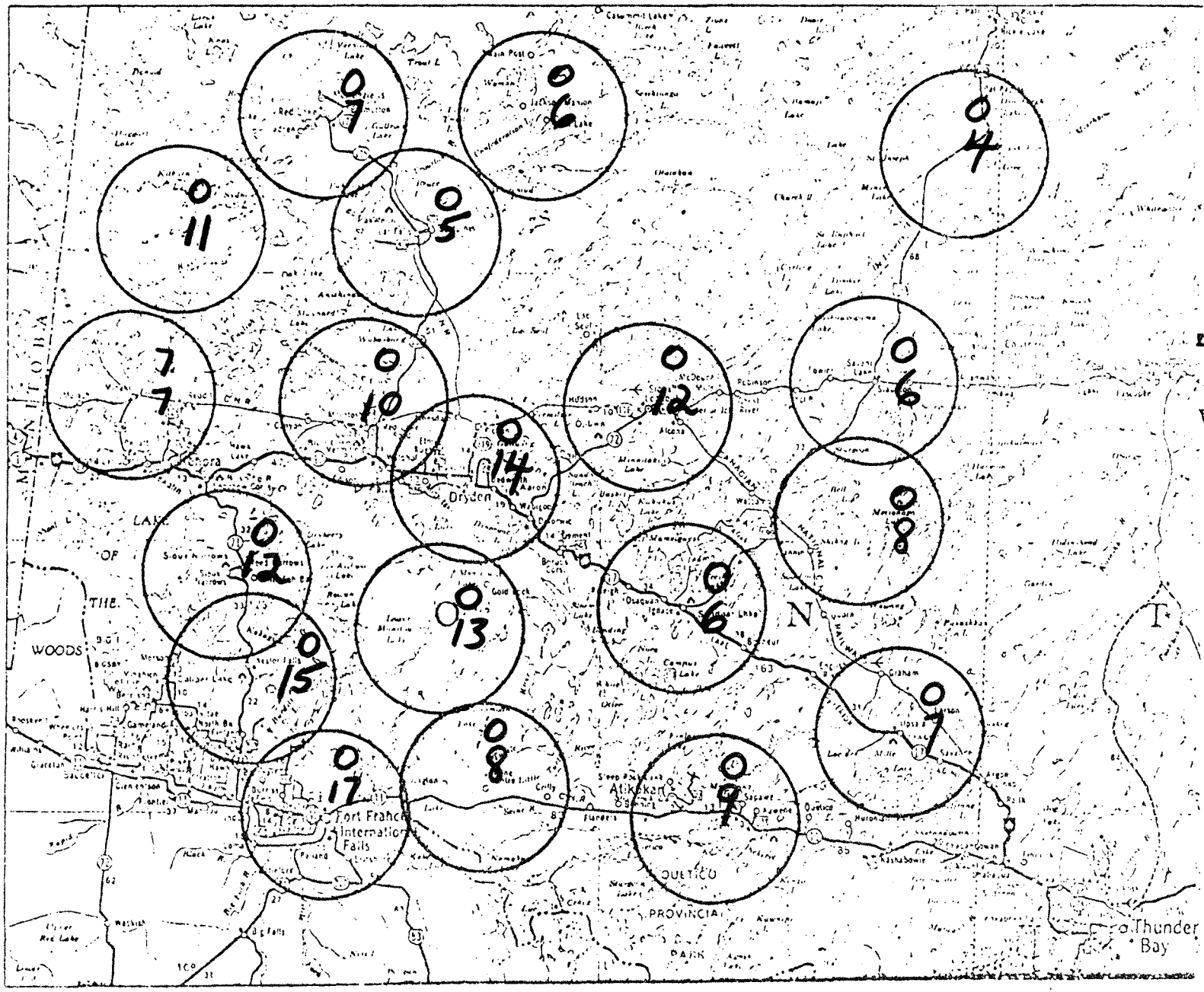
LOWER NO. IS YESTERDAYS DMC

▣ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 15 1973

8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

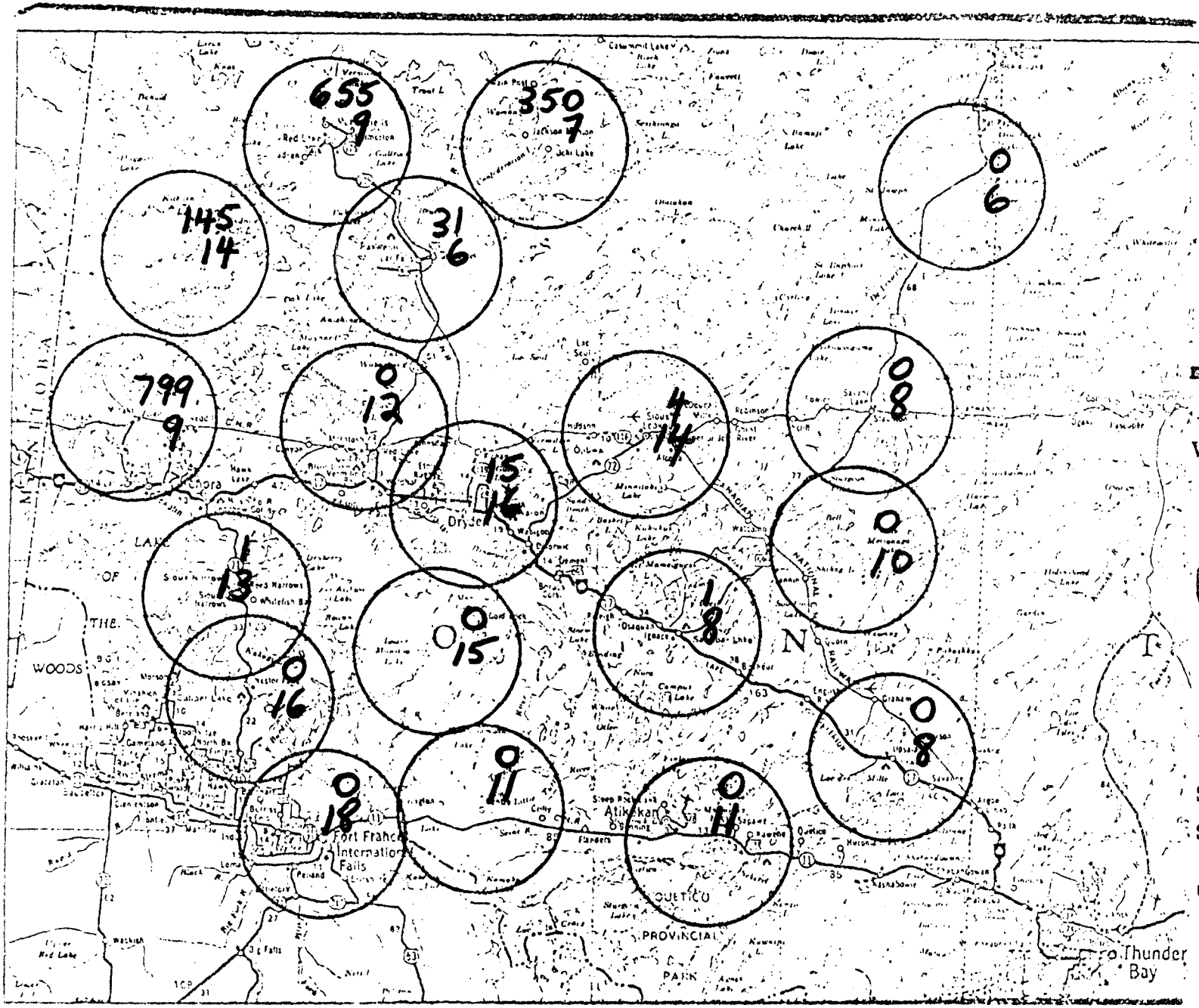
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE
FORECAST DATA

Aug 16 1973
8:00 a.m.

UPPER NO. IS
LIGHTNING COUNT

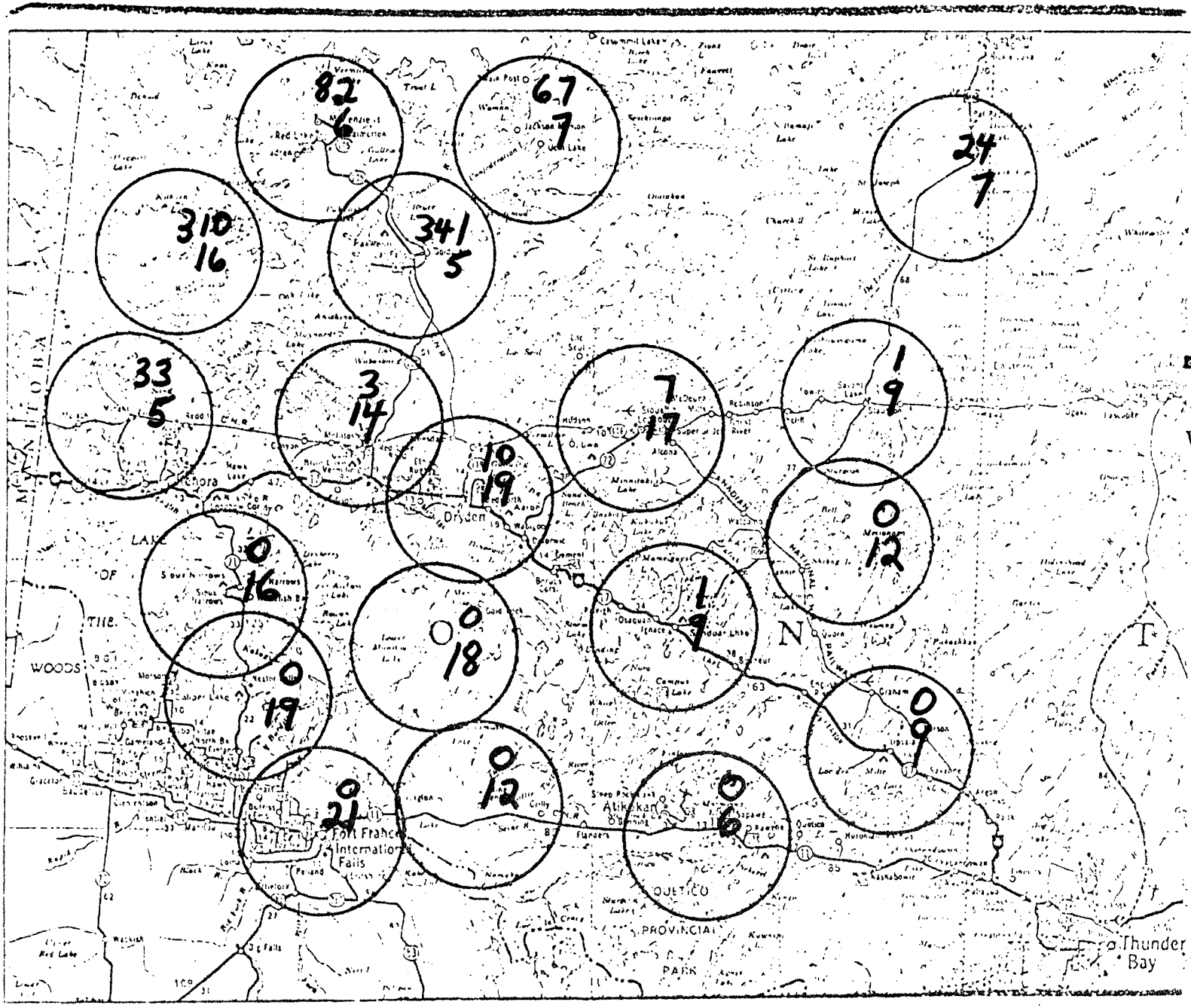
LOWER NO. IS
YESTERDAYS DMC

■ LIGHTNING FIRE
ESTIMATE START
WITHIN PREVIOUS
24 Hrs.

AREAS
IN WHICH
SENSOR
COUNTS ≥ 50
AND DMC ≥ 20

SEE FIG. 1 FOR
STATION NAMES

CIRCLE RADIUS
IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 17 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

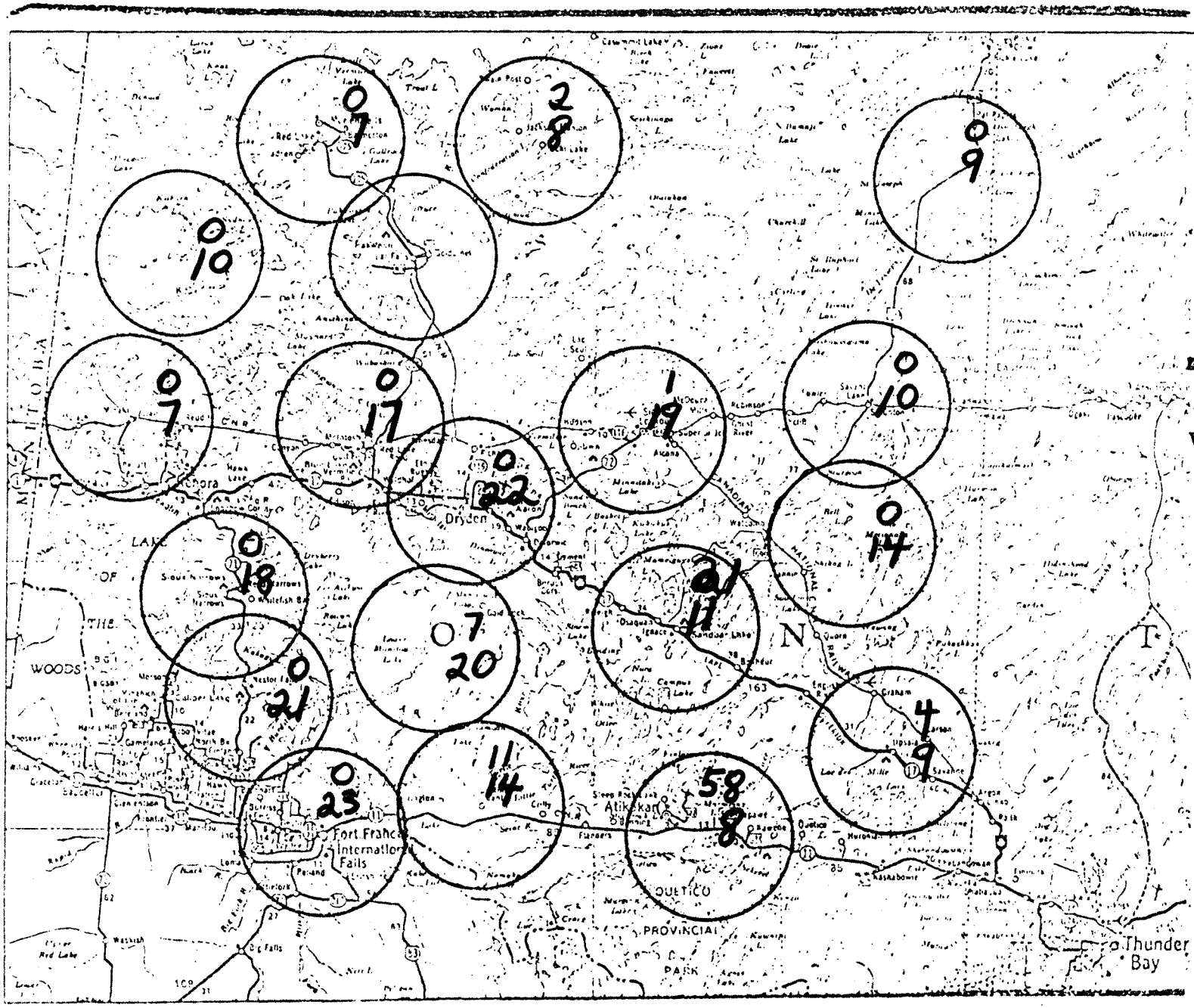
LOWER NO. IS YESTERDAYS DMC

LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 18 1973

8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

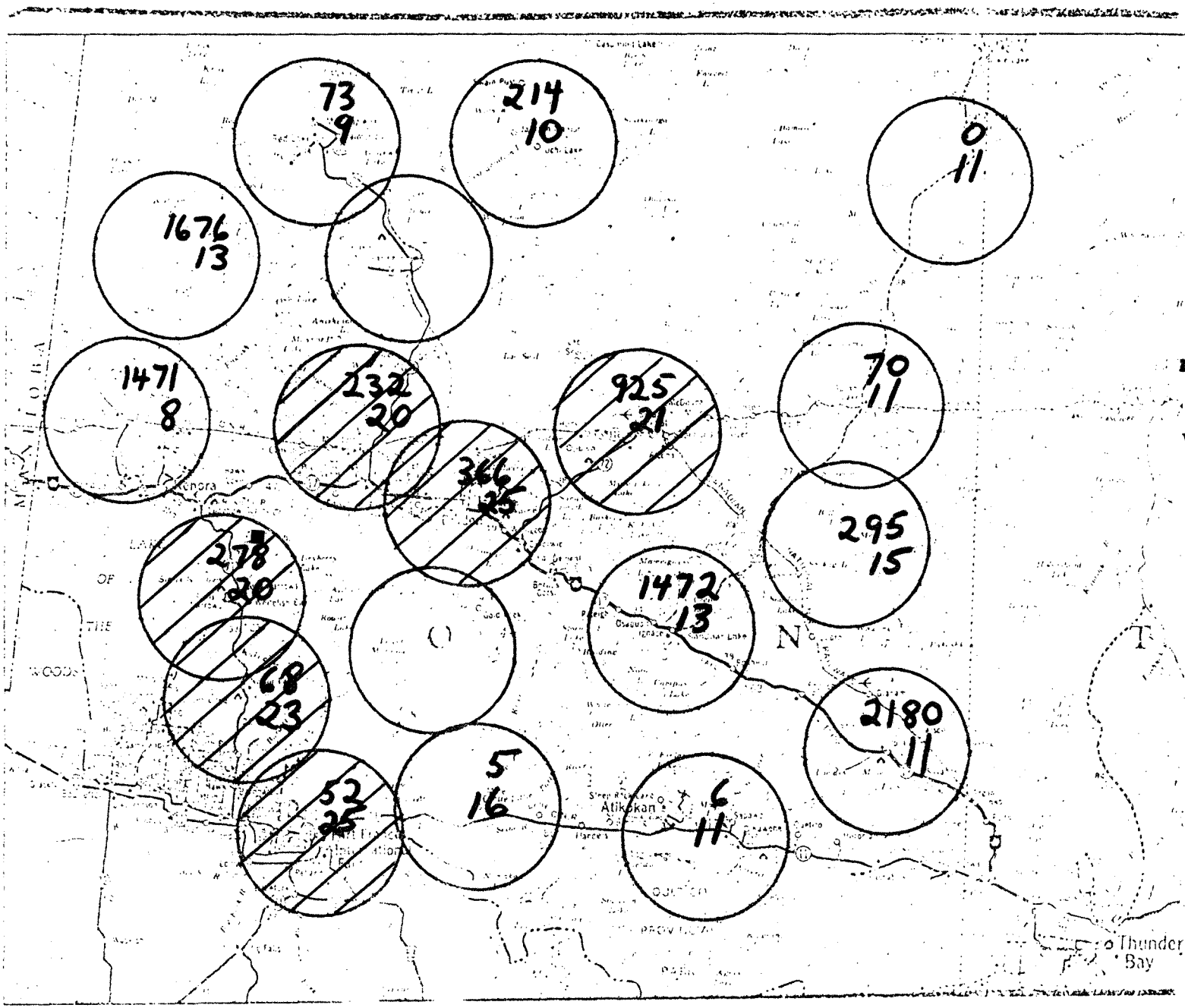
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 19 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

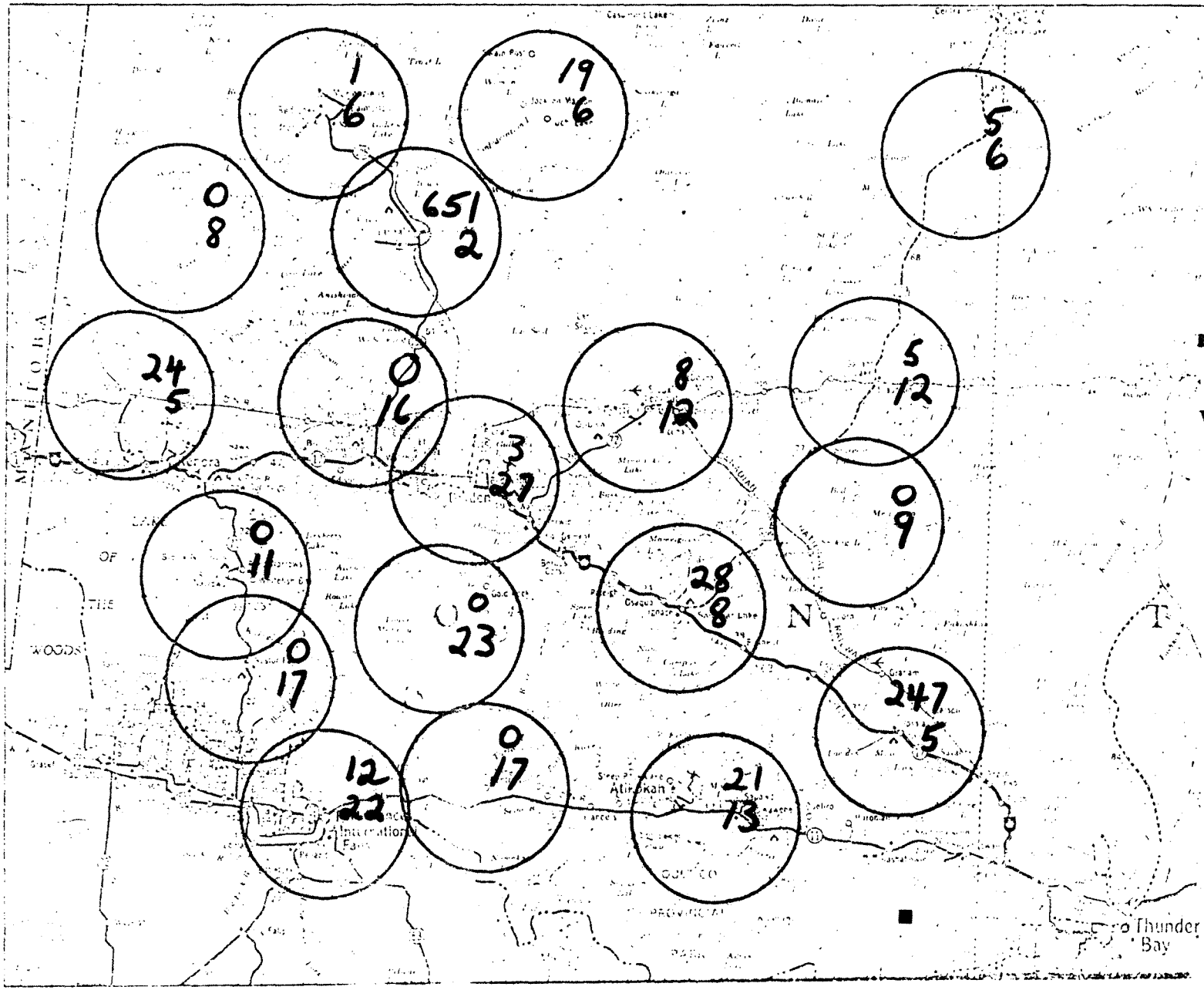
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 20 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

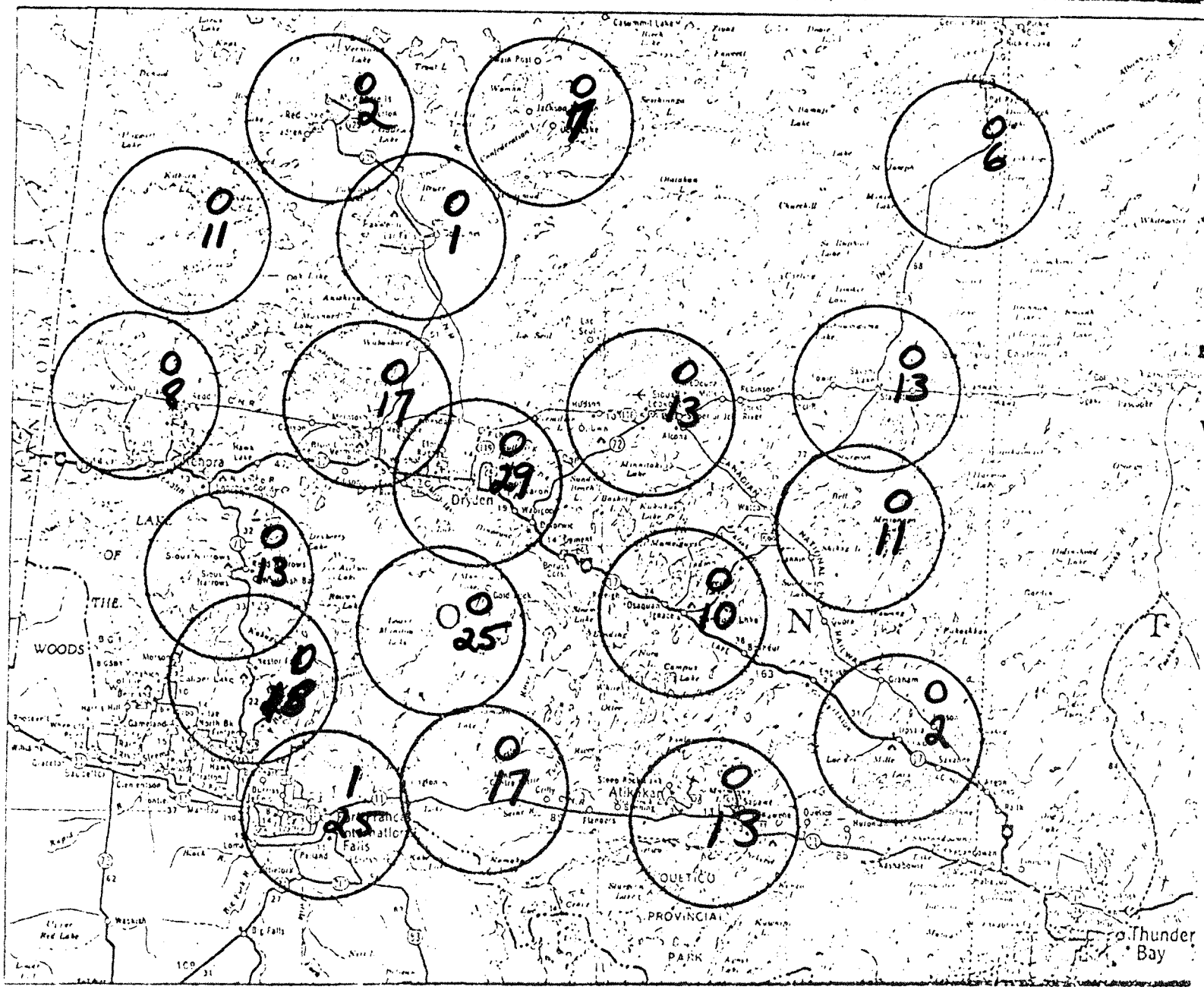
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 21 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

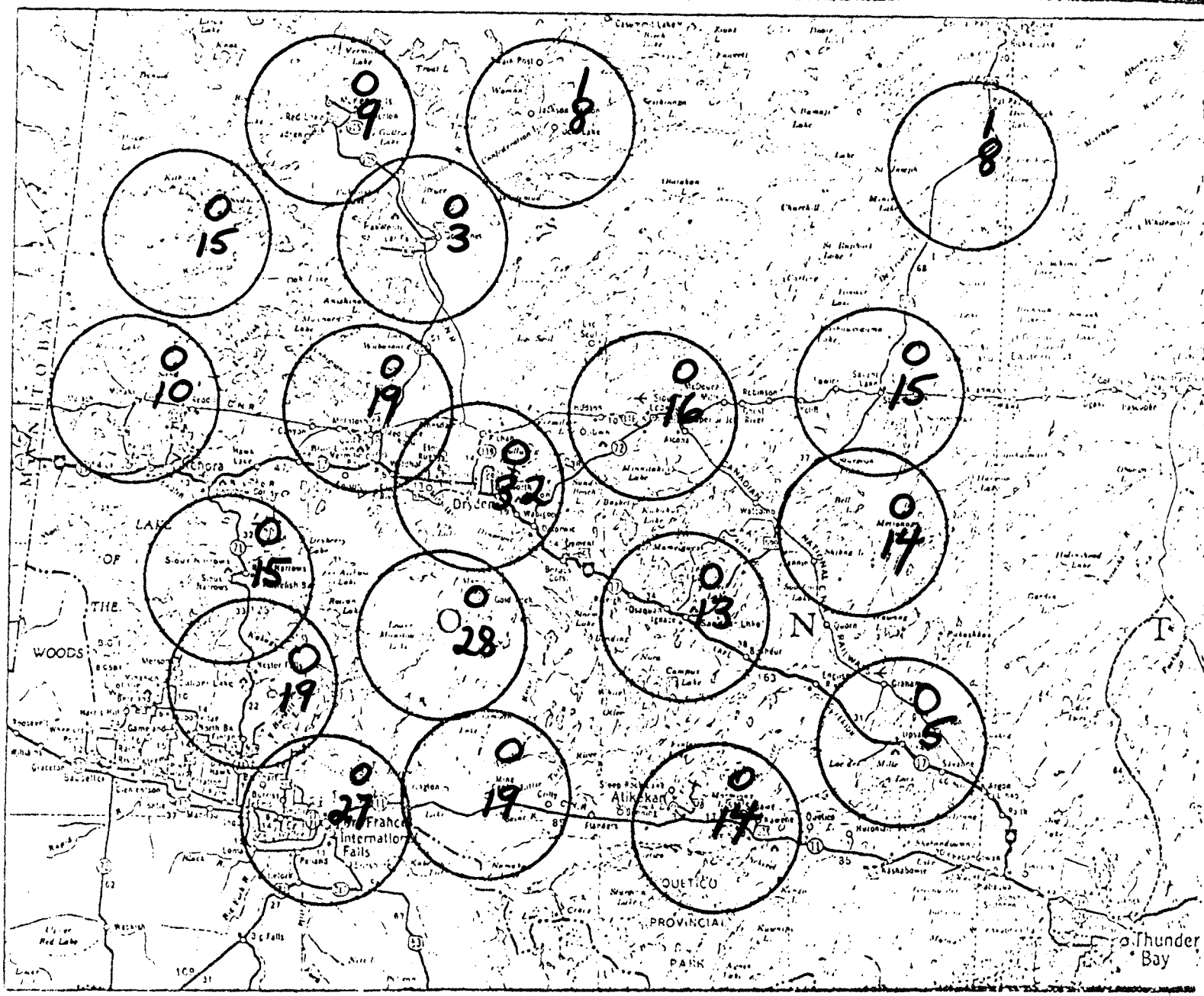
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 22 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

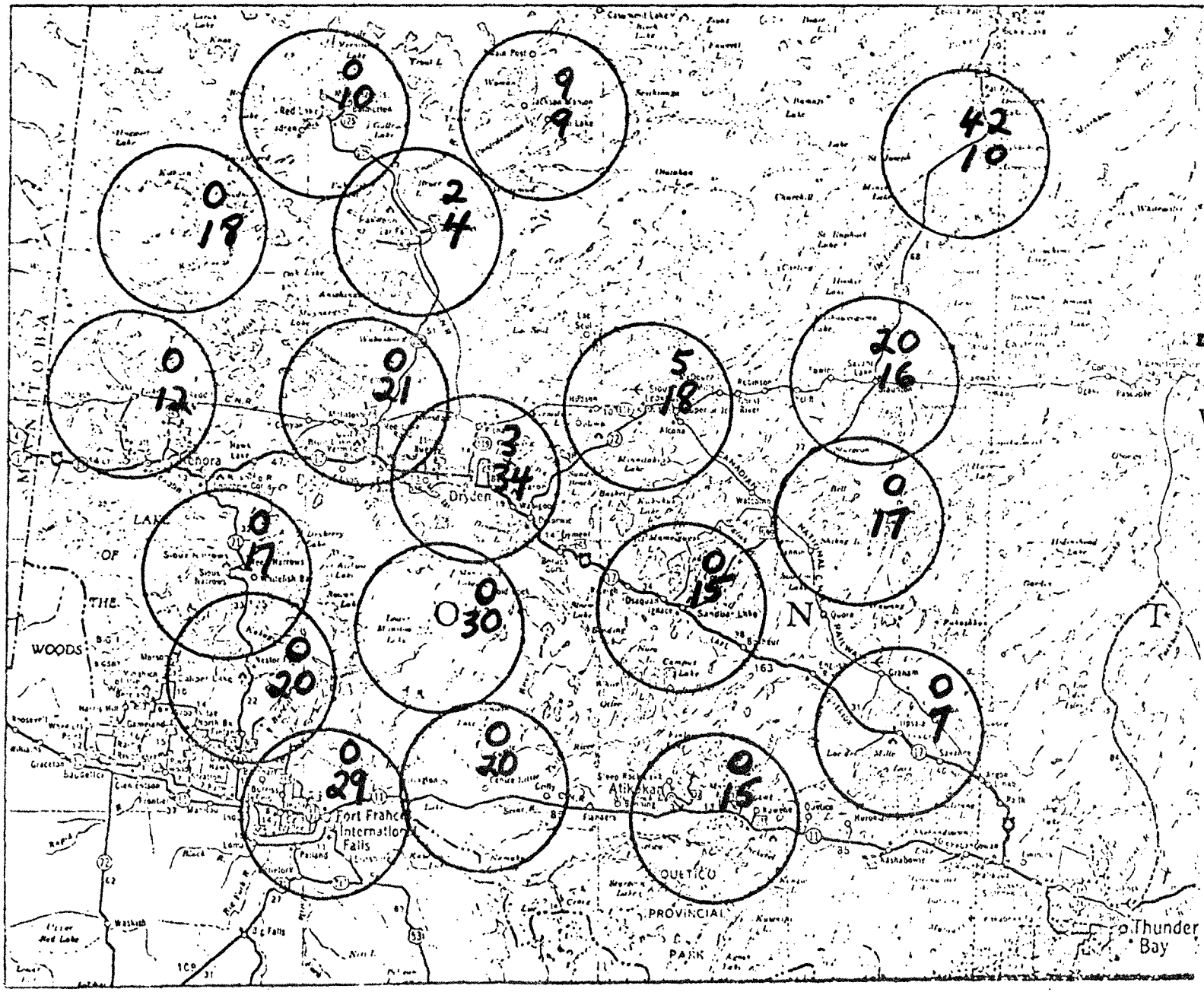
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 23 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

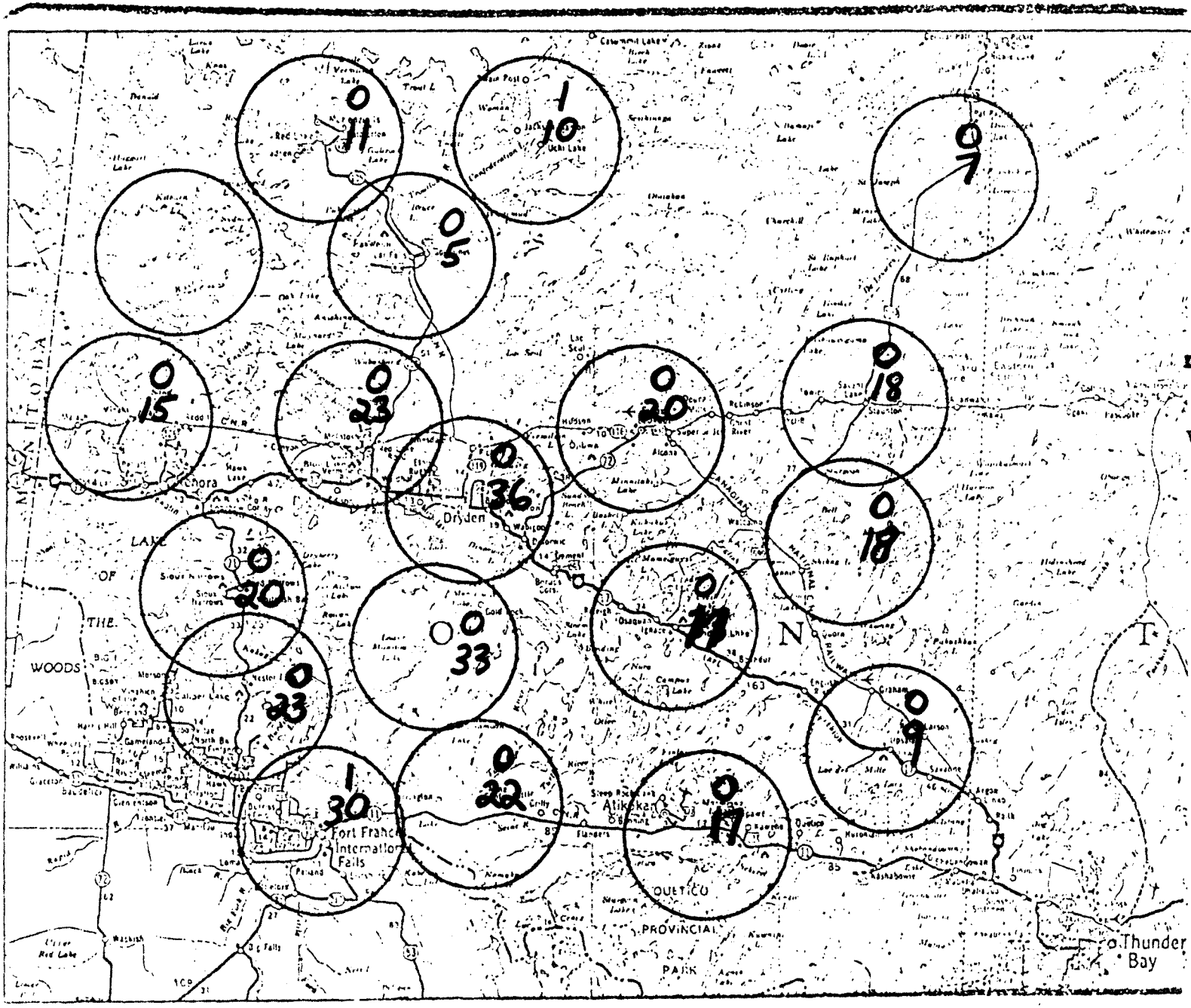
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 24 1973
8.00 a.m.

UPPER NO. IS LIGHTNING COUNT

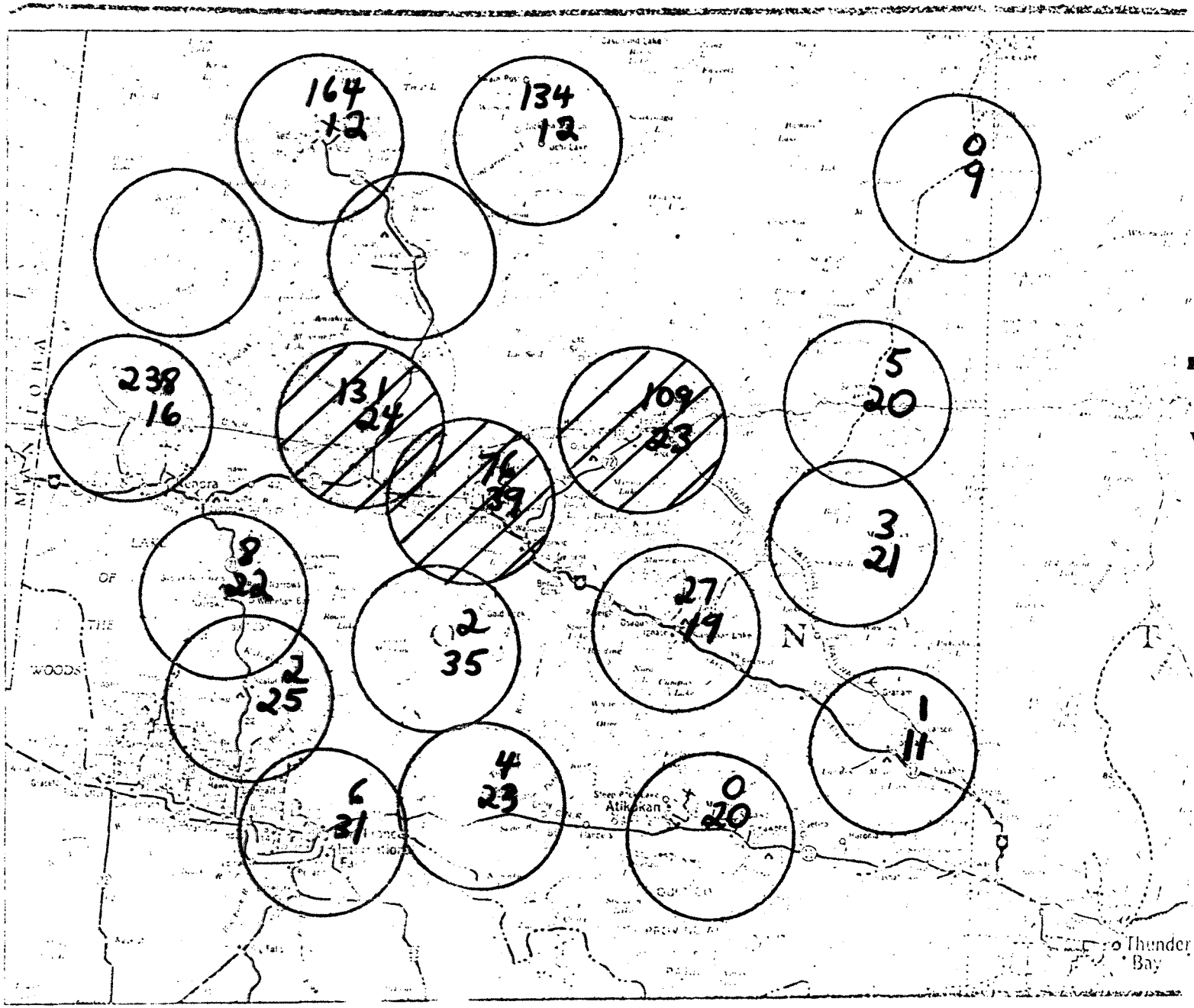
LOWER NO. IS YESTERDAYS DMC

▪ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 25 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

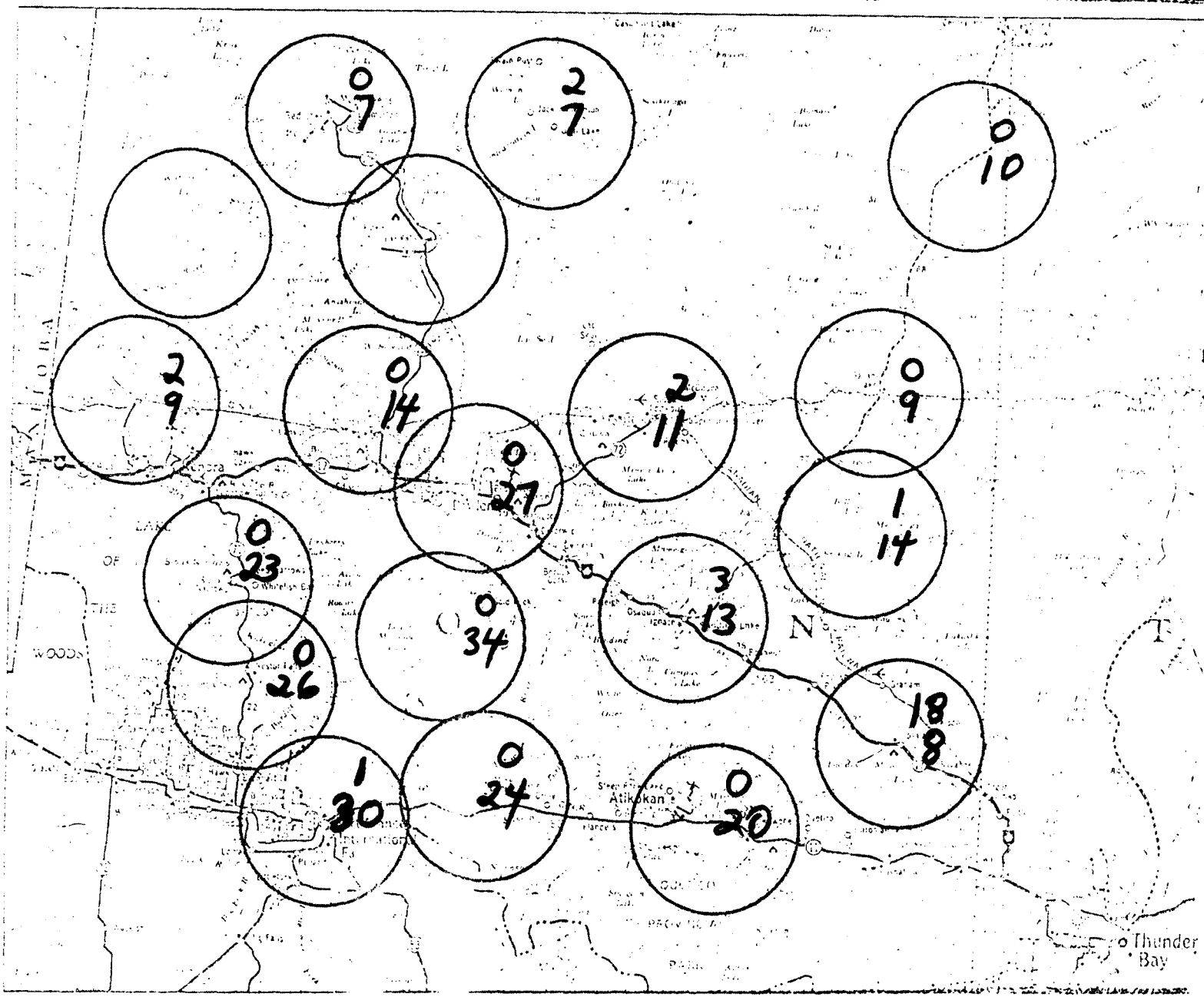
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 26 1973

8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

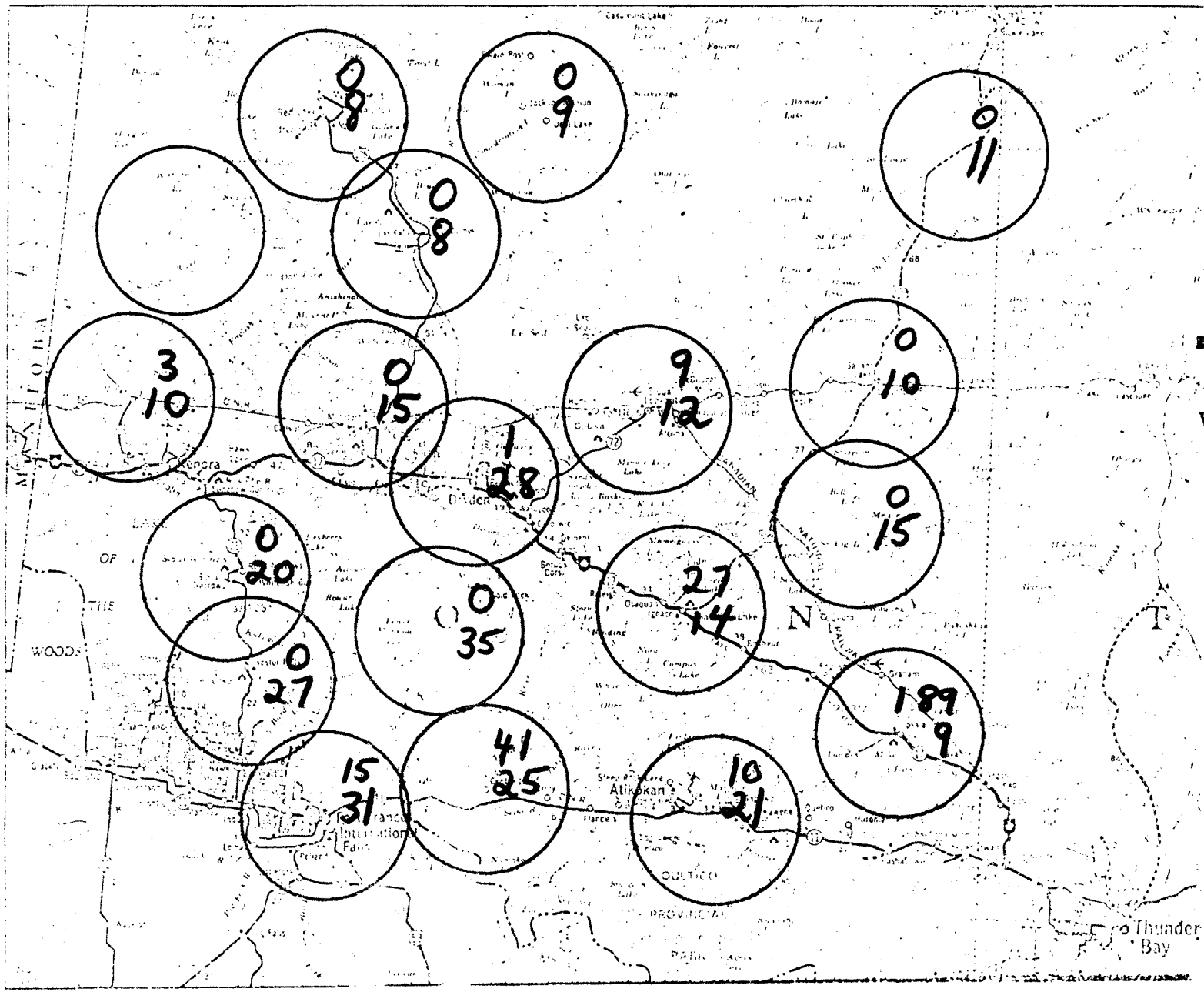
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 27 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

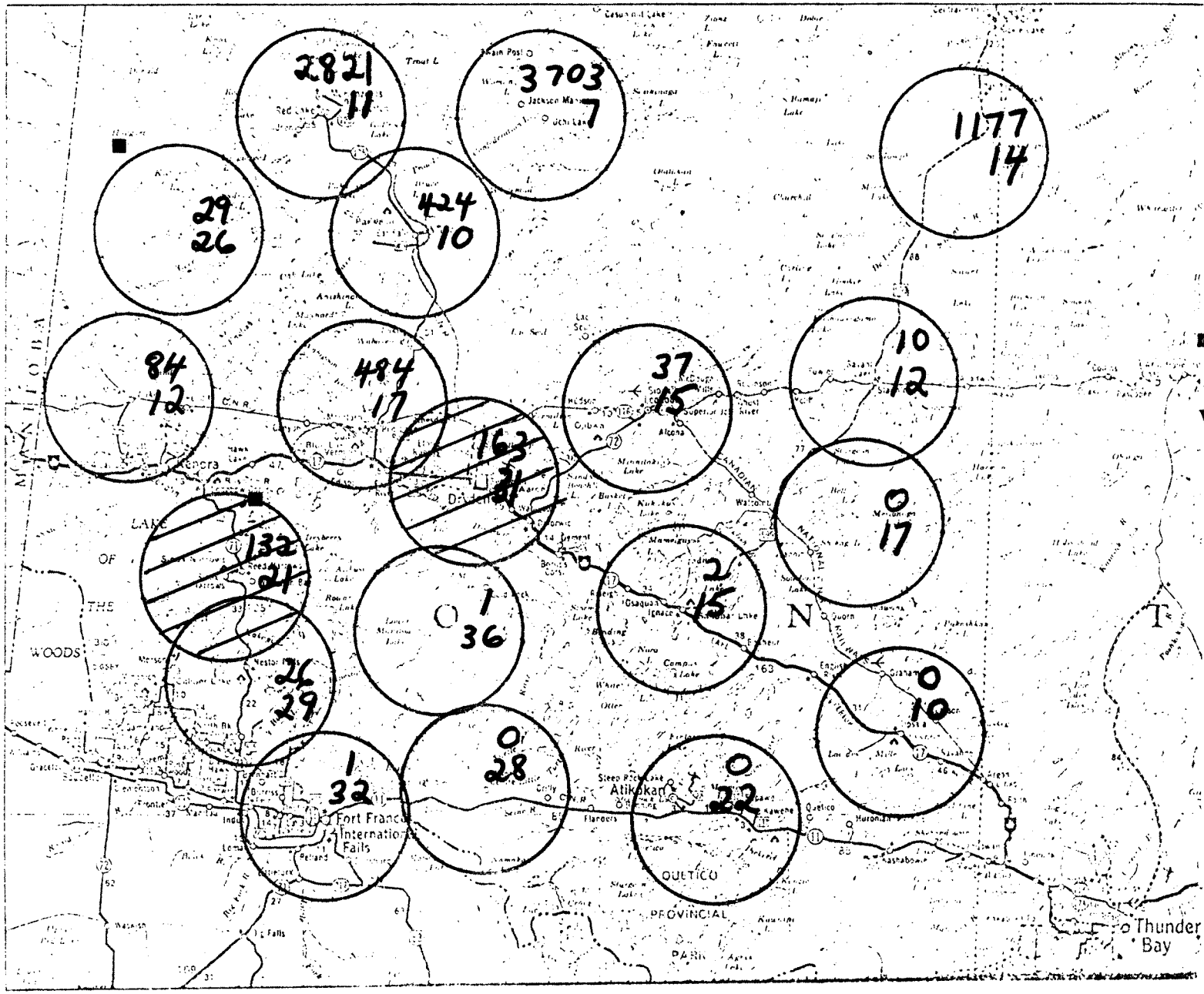
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 28 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

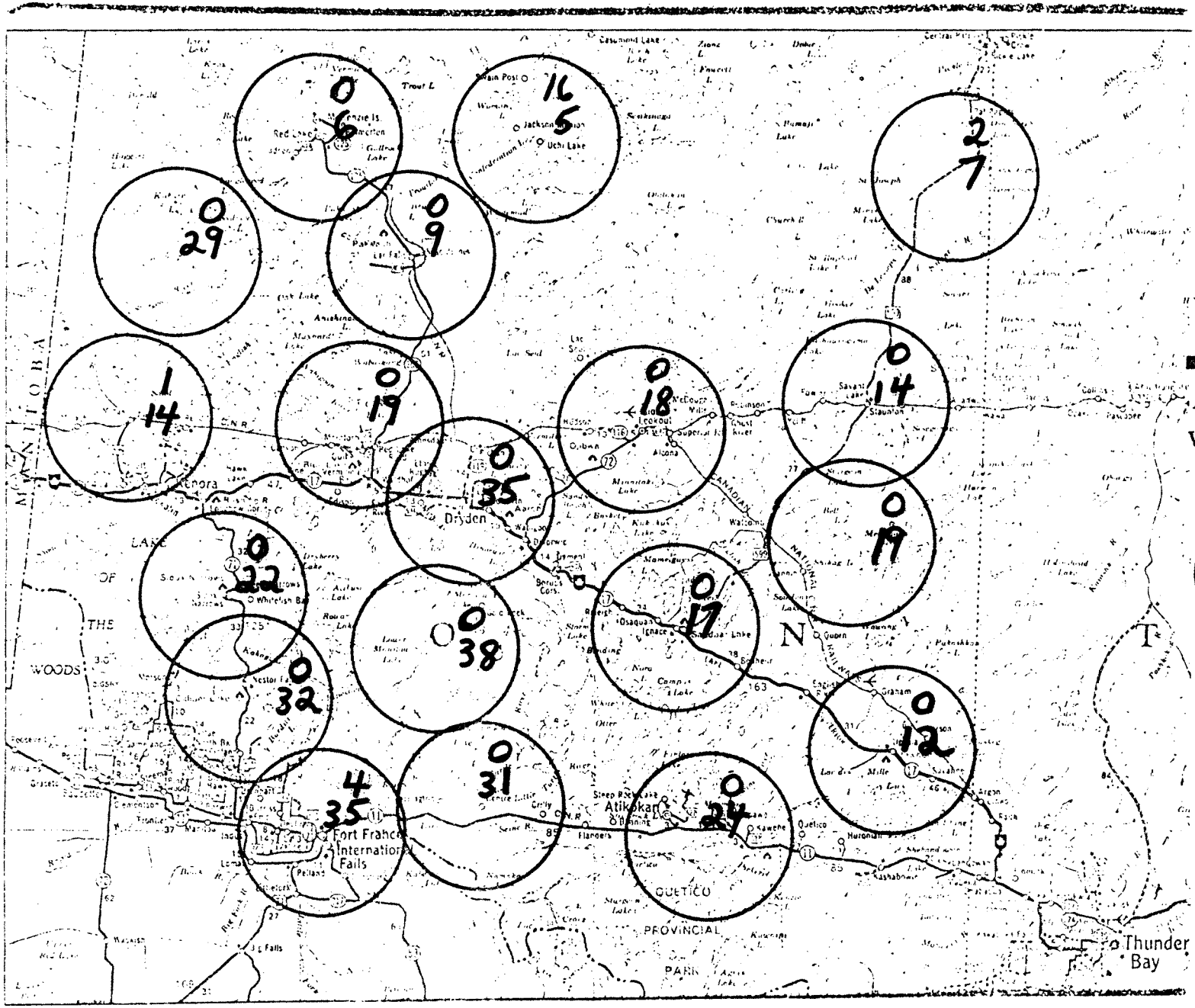
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 29 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

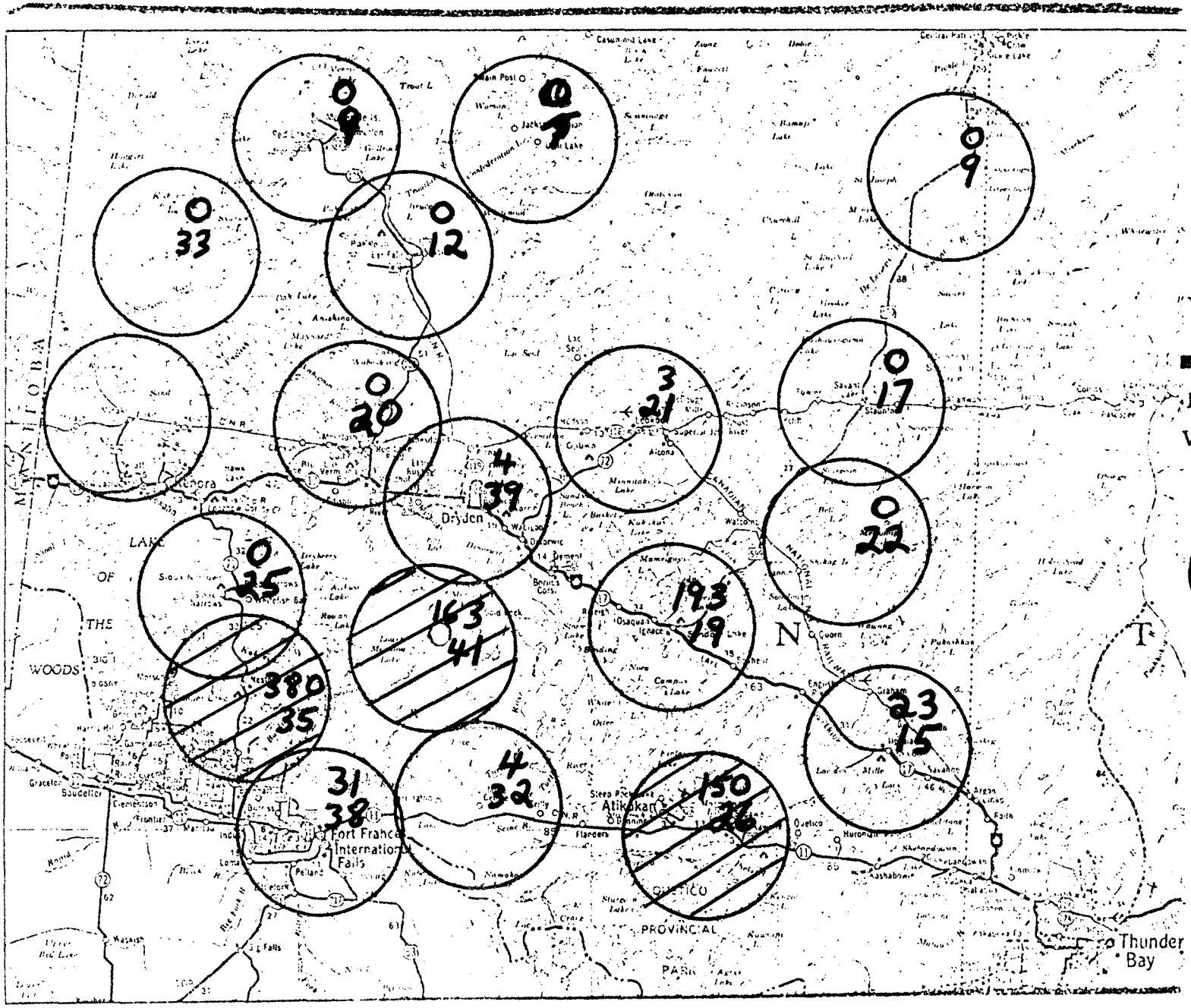
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 30 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

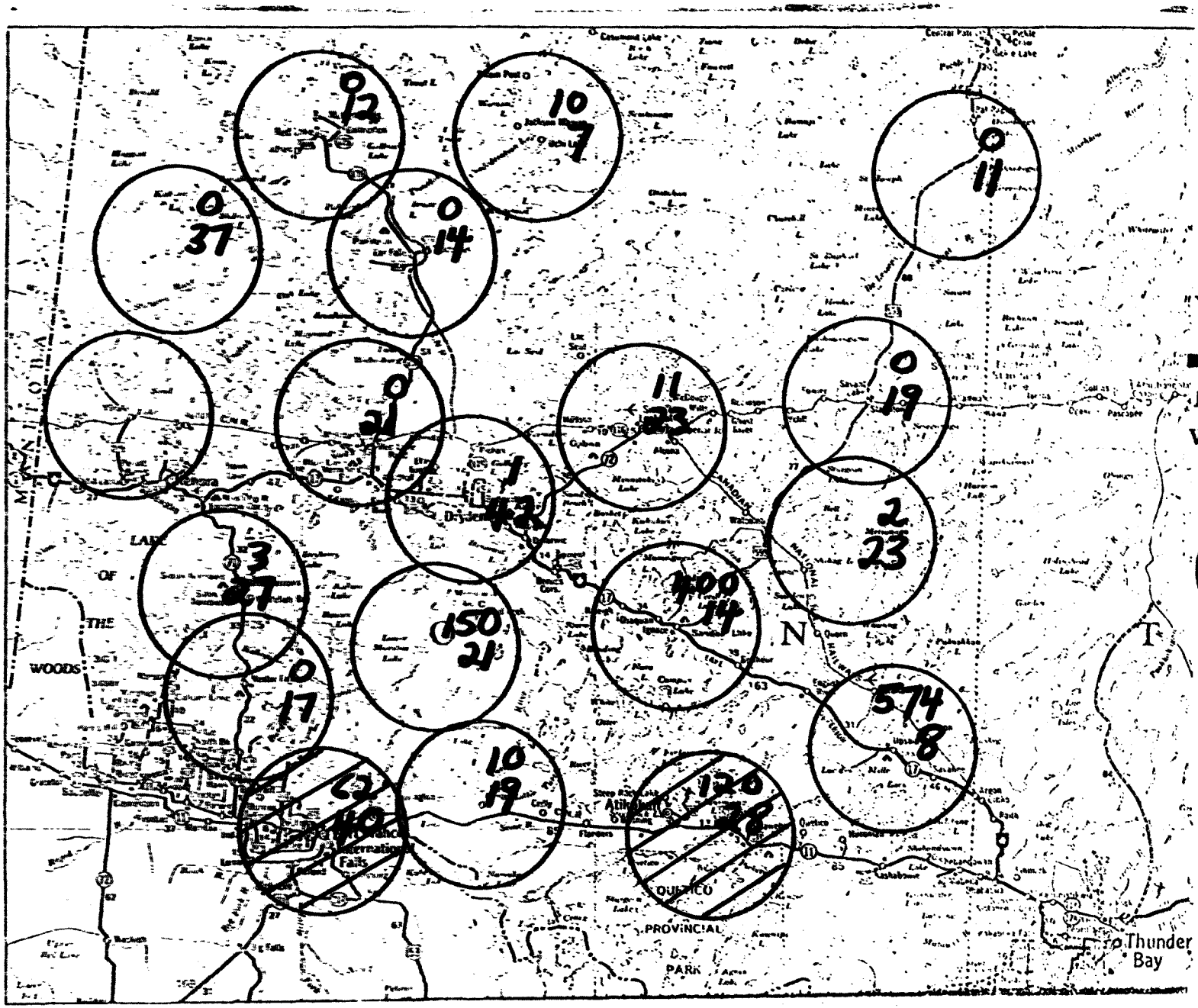
LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.



LIGHTNING FIRE FORECAST DATA

Aug 31 1973
8:00 a.m.

UPPER NO. IS LIGHTNING COUNT

LOWER NO. IS YESTERDAYS DMC

■ LIGHTNING FIRE ESTIMATE START WITHIN PREVIOUS 24 Hrs.

AREAS IN WHICH SENSOR COUNTS ≥ 50 AND DMC ≥ 20

SEE FIG. 1 FOR STATION NAMES

CIRCLE RADIUS IS 20 Mi.