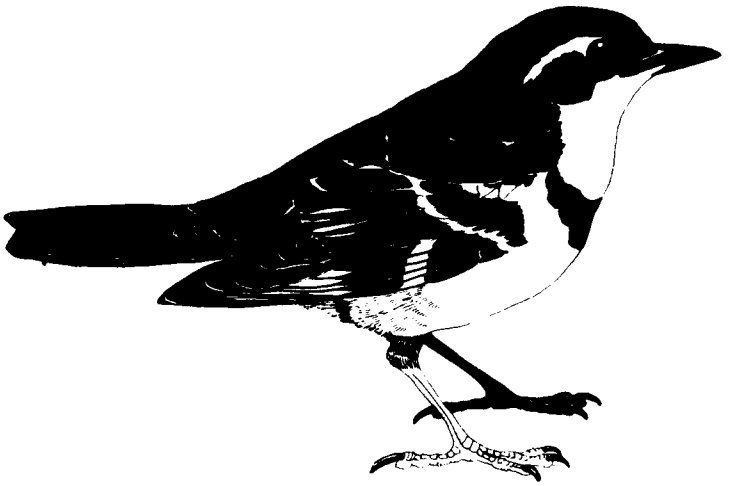
ABIOTIC AND BIOTIC CHARACTERISTICS OF WETLANDS AT RISKE CREEK, BRITISH COLUMBIA - A DATA REPORT

W. Sean Boyd
Jean-Pierre L. Savard



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ABSTRACT

In this report, we present abiotic and biotic characteristics of 118 wetlands located at Riske Creek, British Columbia. The data were collected between 1980 and 1984. For each wetland, measurements on the following are presented: 1) physical (morphometric) characteristics, 2) water chemistry, 3) aquatic birds, and 4) aquatic plants. In addition, bottom contour and plant association maps are appended. The data are being analysed to identify relationships between bird abundance and selected abiotic and biotic variables. The results of those analyses will be presented in subsequent reports. By making these data available we hope to encourage and facilitate future research. The data also provide a baseline for documenting future change and for managing individual wetlands or wetland complexes at Riske Creek.

RÉSUMÉ

Nous présentons dans ce rapport certaines caractéristiques biotiques et abiotiques de 118 étangs et lacs localisés près du village de Riske Creek en Colombie Britannique. Ces données furent receuillies entre 1980 et 1984. Les données présentées incluent pour chaque étang: 1) les caractéristiques physiques (morphométriques), 2) la composition chimique de l'eau, 3) l'abondance des oiseaux aquatiques, 4) la distribution et l'abondance de la végétation aquatique. Ces données sont présentement analysées afin d'identifier les relations qui existent entre les oiseaux aquatiques et les caractéristiques biotiques et abiotiques des étangs etudiés. En rendant ces données disponibles, nous espérons encourager et faciliter la planification de recherches ultérieures. Ces données constituent aussi une source de référence pour juger les changements futurs et devraient faciliter l'aménagement d'étangs individuels ou de groupes d'étangs près de Riske Creek.

TABLE OF CONTENTS

	Page
ABSTRACT	i
RESUME	i
LIST OF FIGURES	iii
LIST OF TABLES	iii
LIST OF APPENDICES	iv
ACKNOWLEDGEMENTS	v
INTRODUCTION	1
STUDY AREA	2
METHODS	2
1. Physical Characteristics	2
2. Chemical Characteristics	3
3. Biological Characteristics	3
RESULTS	5
LITERATURE CITED	6
APPENDICES	49

LIST OF FIGURES

Page

1. Wetlands of the Riske Creek study area 10
2. Stack Valley Rd. wetlands 11
3. Becher's Prairie wetlands 12
4. Farwell Canyon Rd. wetlands 13
5. Meldrum Creek Rd. wetlands 14

LIST OF TABLES

1. Dates of aquatic bird surveys at Riske Creek 15
2. Mean value and variability of eight major variables measured for wetlands at Riske Creek, 1983-1984. 16
3. Morphometric data and other physical characteristics recorded for each wetland at Riske Creek, 1983-1984. 17
4. Water chemistry data recorded for each wetland at Riske Creek, 1983-1984 26
5. Relative abundance of aquatic bird species on the Riske Creek study area, 1980-1984. 30
6. Mean number of aquatic birds on each wetland at Riske Creek, 1980-1984 31
7. Relative abundance of waterfowl broods on the Riske Creek study area, 1980-1984, based on the total number of broods 39
8. Total number of waterfowl broods recorded on each wetland at Riske Creek, 1980-1984. 40
9. Relative abundance of waterfowl broods on the Riske Creek study area, 1980-1984, based on the maximum number of broods 41
10. Maximum number of waterfowl broods recorded on each wetland at Riske Creek, 1980-1984. 42
11. Area occupied by the major submergent plant species recorded for each wetland at Riske Creek, 1983 43
12. Area occupied by the major emergent plant species recorded for each wetland at Riske Creek, 1983 46

LIST OF APPENDICES

Page

1. Bottom contour maps for each wetland at Riske Creek, 1983 49

2. Plant association maps for each wetland at Riske Creek, 1983. 137

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Introduction

In 1980, the Canadian Wildlife Service initiated a study on the breeding ecology of Barrow's Goldeneye (Bucephala islandica) at Riske Creek, British Columbia (Savard 1986a). During that study, 118 wetlands were surveyed annually from 1980 to 1985 to determine the number and diversity of aquatic birds on each wetland. During a wetland habitat inventory from 1983 to 1985 (Boyd 1982), the same 118 wetlands were surveyed. Data on the depth profiles, the physical and chemical characteristics and the aquatic plants of all wetlands were collected. In addition, the aquatic invertebrates of selected wetlands were sampled. Those studies permitted an exploration into the significance of selected abiotic and biotic habitat variables to aquatic bird species. The results of those analyses will be presented in future reports.

The purpose of this report is to present the physical, chemical and biological data collected during the 1980-1984 period. By making these data available, we hope to encourage and facilitate future research on the ecology of Riske Creek wetlands and their associated wildlife. The data should also provide a good baseline for measuring future changes and for managing individual wetlands or wetland complexes at Riske Creek.

The following data are presented:

1) Physical (morphometric) characteristics (summer 1983)
2) Water chemistry (summers 1983 and 1984)
3) Aquatic bird counts (adults and broods) (springs and summers 1980 to 1984 inclusive)
4) Aquatic plant lists and abundance values (summer 1983)

In addition, maps of each wetland showing their bottom contours and major plant associations are appended. Data on aquatic invertebrate abundance and dry weights (summers 1984 and 1985) will be presented in a future report.

Study Area

Riske Creek is located in south-central British Columbia on the Fraser Plateau approximately 40 km west of Williams Lake (Figure 1). The study area wetlands (Figures 2, 3, 4 and 5) are relatively shallow and small with narrow strips of emergent, submergent and some snag (dead tree) zones around their edges. According to a classification system developed by Runka and Lewis (1981), the predominant wetland classes are shallow open water, marsh and meadow. The wetlands are typically oligosaline and alkaline, however salinities range from fresh to mesosaline and a few wetlands have pHs that are near neutral.

The majority of wetlands studied were located on Becher's Prairie near Riske Creek (Figure 3). That area has one of the highest densities and diversities of water bodies and is recognized as one of the most important breeding areas for waterfowl in British Columbia (McKelvey and Munro 1983). For those reasons, the area has been the center of many biological studies (Scudder and Mann 1968, Topping 1969, Scudder 1969a, b, Cannings 1973, Reynolds and Reynolds 1975, Topping and Scudder 1977, Cannings and Scudder 1978a, b, Reynolds 1979, Spence 1979, Spence and Scudder 1980, Savard 1981, 1982a, b, c, 1986a, b, 1987a, b, and Lancaster 1985).

Methods

1. Physical Characteristics

Colour airphotos (scale 1:5000), taken in September 1983 by the B.C. Ministry of Forests, were used to map each wetland by enlarging the negatives to a scale of 1:1500. An Apple II+ computer and graphics tablet were used to calculate the total wetland area, the areas of plant associations and the lengths of edges between them.

Depth profiles were determined for all wetlands during the June-July 1983 period. That year was average for total precipitation in the area (350mm versus the 1904-1977 mean of 341 mm at Big Creek; Atmospheric Environment Service, Environment Canada, unpubl. data). Water levels were close to ($\pm$0.1 m) what appeared to be the long-term mean as indicated by the position of the water edge relative to the edge between "wetland" (open water, marsh, swamp and fen) and "upland" (grassland, forest, meadow and shrub-carr). Water depth was determined from a canoe, along grids or to/from prominent shoreline features. Depth measurements were taken at intervals along those transects using a weighted rope calibrated every 10cm. Distance from shore was estimated using canoe lengths. Field data were transferred to the 1:1500 scale maps and areas for all contour intervals were calculated.

2. Chemical Characteristics

Water samples were collected from each wetland in July 1982, June 1983 and August 1983. Samples were taken at waist depth by immersing plastic bottles 10 cm under the water surface. Analysis took place at the field lab within 48 hours. Conductivity and salinity were determined using a S-C-T Meter (Yellow Springs Instrument Co.) and calcium, sodium and pH using a Specific Ion Meter (Orion Research Inc.). In September 1984, 92 wetlands were sampled in the same manner, using sterilized bottles. Those samples were shipped on ice to the Inland Waters Directorate (Environment Canada, N. Vancouver, B.C.) where they were analyzed, using standard methods, for the following: phenol alkalinity, total alkalinity, hardness, magnesium, chloride, sulphate, nitrate nitrogen, total dissolved nitrogen, total phosphorus and turbidity.

3. Biological Characteristics

A total of 24 surveys of aquatic birds were conducted over five years (1980-1984) from late April to late May (Table 1). Data from only 21 surveys

are presented here because, during three late April surveys, several wetlands were frozen. That affected bird distribution among wetlands and, as a result, would have biased our calculations of the average number of birds per wetland. For each wetland, all birds present were counted from nearby vantage points using binoculars and telescopes. Numbers for each species for each wetland were totalled and then averaged for the 21 surveys.

At least four waterfowl brood surveys were conducted for each of the five years during the June-July period. From those surveys, the number of broods of each species using a given wetland was estimated for each year and then totalled for the five years. That gave an estimate of the "average" number of broods using each wetland. In addition, the maximum number of broods seen on a given wetland in any of the five years was determined for each species. That provided, for each species, a minimum estimate of the carrying capacity of each wetland during that period, in terms of the number of broods it could support.

The physical dimensions of emergent and submergent plant associations were outlined on rough maps in the June-July 1983 period, during canoe and ground surveys. All plant species present within each association were identified and their cover-abundance values estimated using the Braun-Blanquet scale (Mueller-Dombois and Ellenberg 1974) as follows:

Cover-Abundance	Interval Mean
+ - <1%	0.5%
1 - 1-5%	3%
2 - 6-25%	15%
3 - 26-50%	38%
4 - 51-75%	63%
5 - 76-100%	88%

Plant species were identified using Hitchock and Cronquist (1973). Submergent plant species were those normally found at or below the water surface; emergent plant species generally stood above. Plant species seen on one or only a very few wetlands were not considered.

Once plant associations were mapped using field maps and airphotos, the total coverage (in m^2) for each species for each wetland was calculated using the mean value for each Braun-Blanquet interval.

Results

All data collected for each wetland at Riske Creek are presented below, in Tables 2 through 12. Summary tables (Tables 2, 5, 7 and 9) describe the mean values and variability of certain parameters for the study area. Appendices 1 and 2 present bottom contour and plant association maps for each wetland, respectively.

Tables 3, 4 and 6 present numbers with a precision of two decimal places. That was done for practical reasons only (ease of printing from computer) and does not reflect actual precision.

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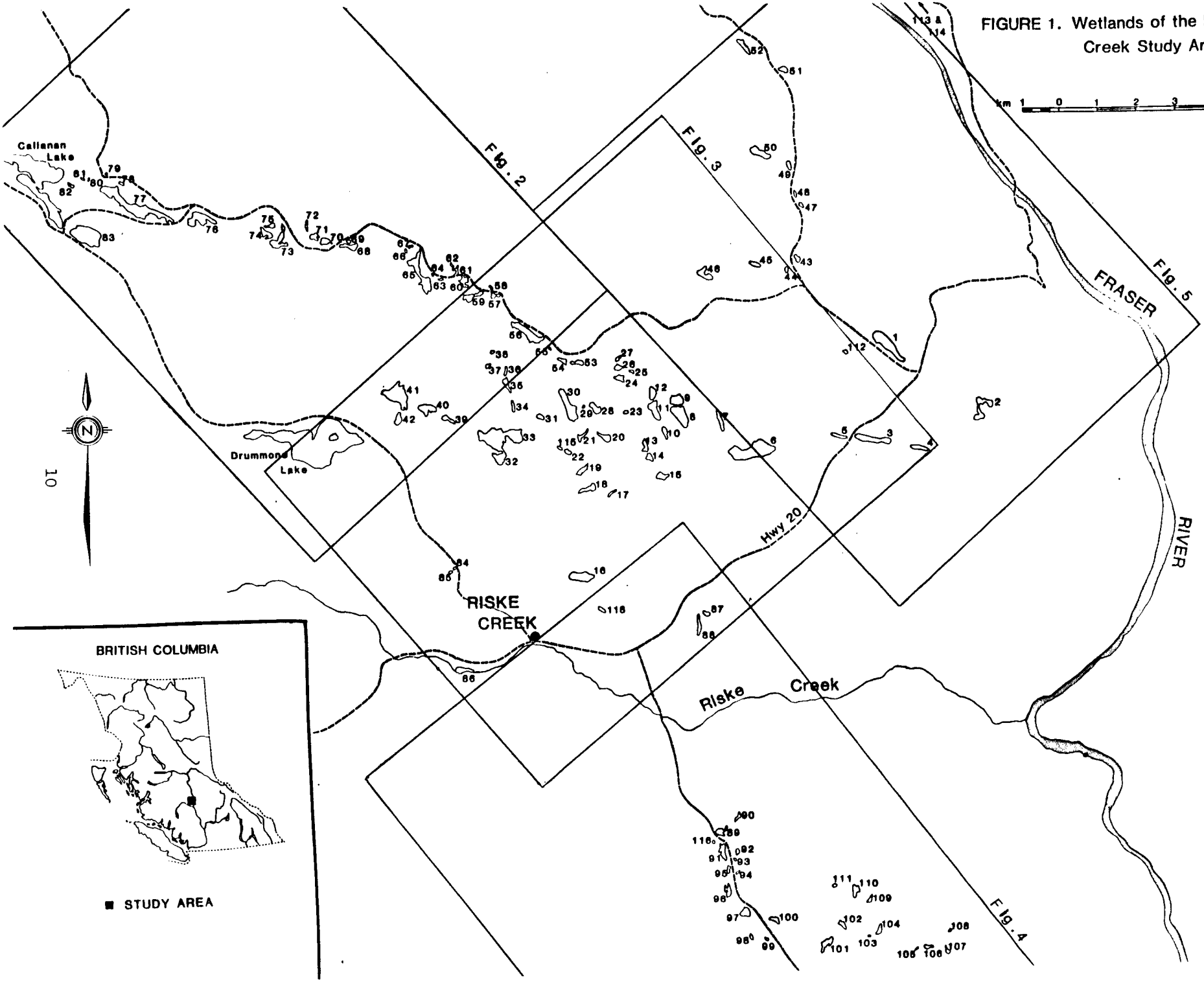


FIGURE 1. Wetlands of the Riske Creek Study Area

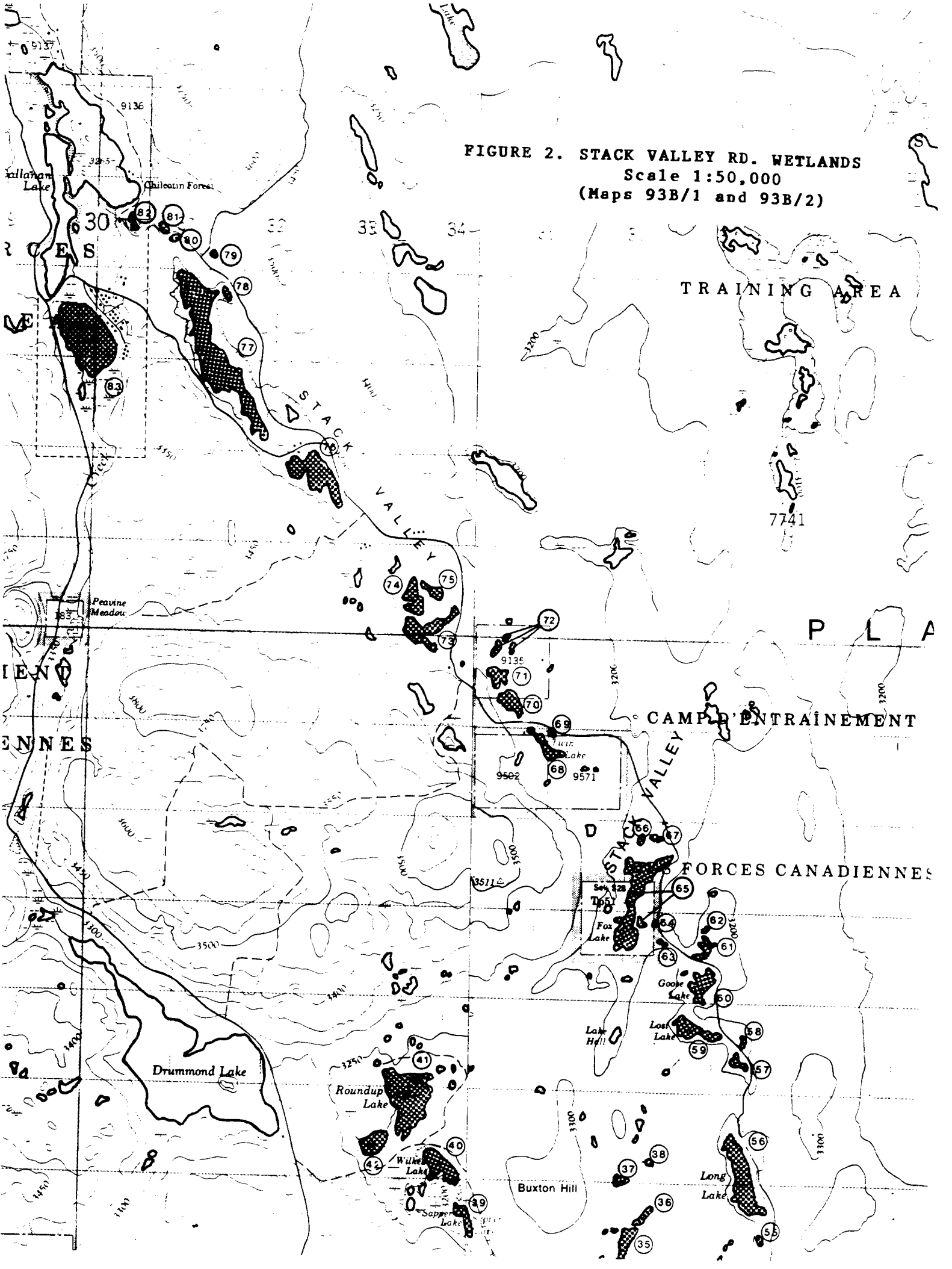


FIGURE 2. STACK VALLEY RD. WETLANDS
Scale 1:50,000
(Maps 93B/1 and 93B/2)

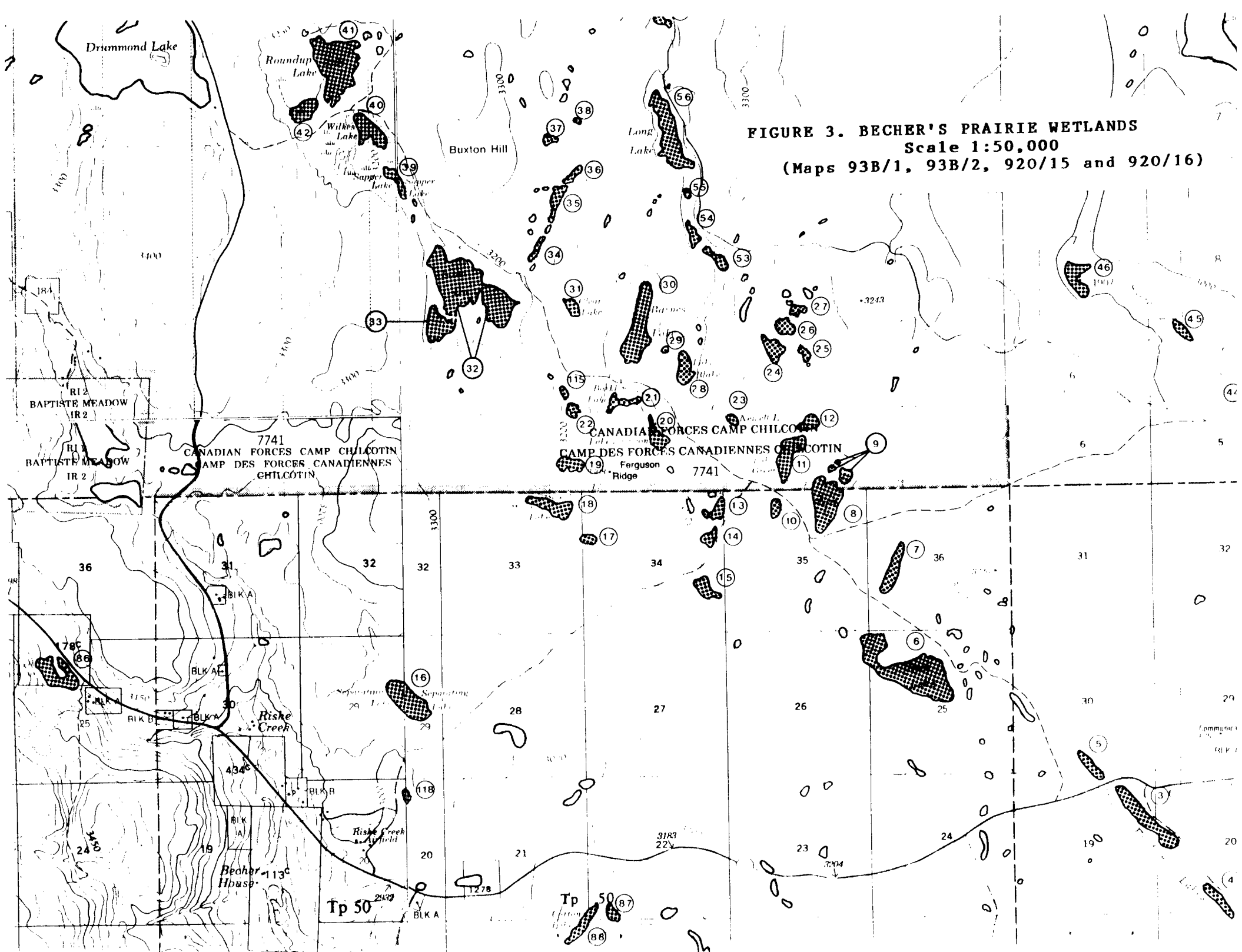


FIGURE 3. BECHER'S PRAIRIE WETLANDS
Scale 1:50,000
(Maps 93B/1, 93B/2, 920/15 and 920/16)

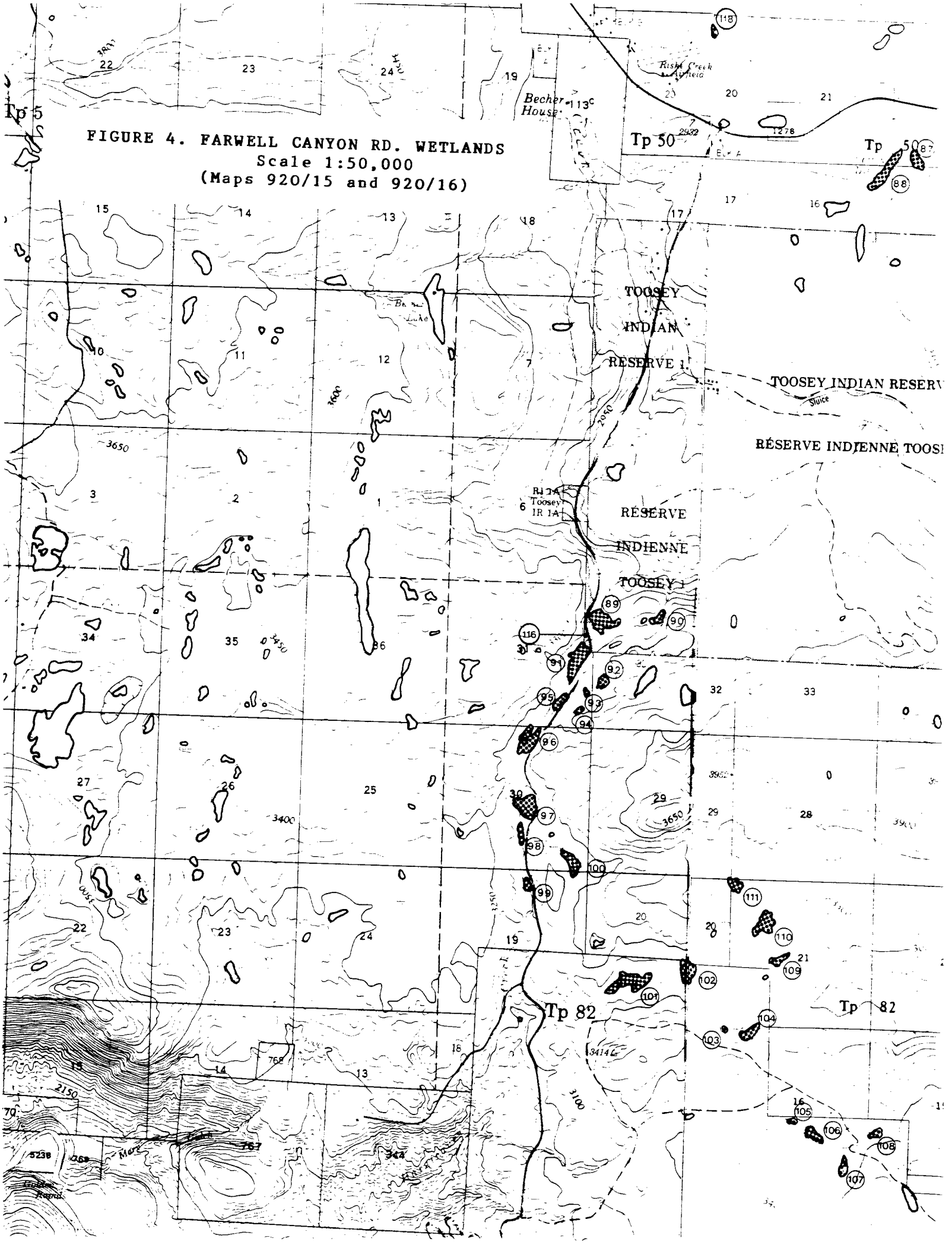


FIGURE 4. FARWELL CANYON RD. WETLANDS
Scale 1:50,000
(Maps 920/15 and 920/16)

FIGURE 5. MELDRUM CREEK RD. WETLANDS
Scale 1:50,000
(Maps 920/16 and 93B/1)

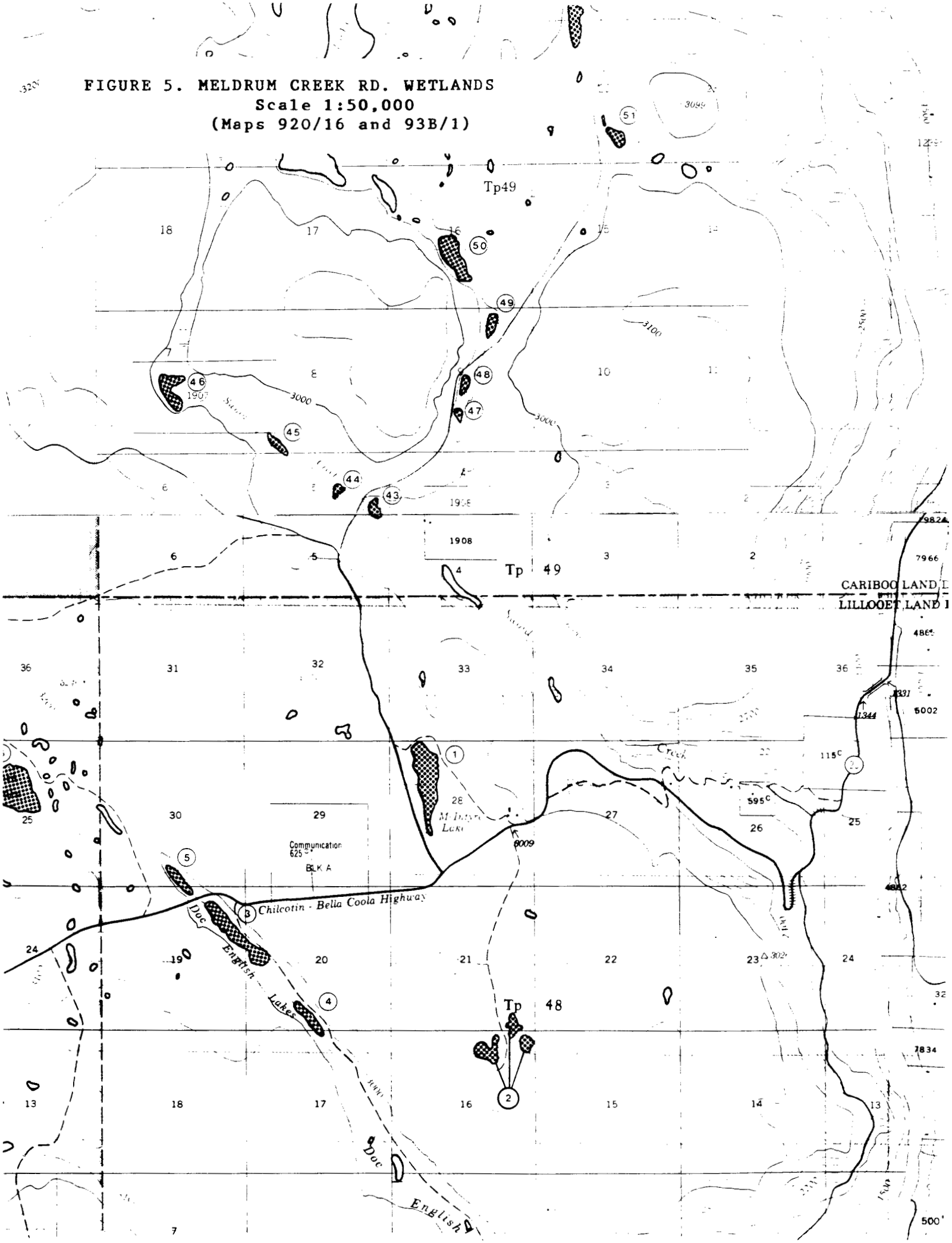


Table 1. Dates of aquatic bird surveys at Riske Creek. ("*" denotes ice on wetlands.)

Survey No.	Survey Date		
	Year	Month	Day
1	1980	April	24*
2			25
3		May	7
4			11
5			21
6			23
7	1981	April	27
8			30
9		May	10
10			16
11	1982	April	27*
12			29*
13		May	9
14			15
15			25
16	1983	April	27
17			29
18		May	7
19			9
20	1984	April	29
21		May	3
22			10
23			14
24			27

Table 2. Mean value and variability of eight major variables measured for wetlands at Riske Creek, 1983-1984 (n=112; variable definitions are given at the bottom of Table 3).

VARIABLE	MEAN	STANDARD DEVIATION	MINIMUM	PERCENTILE 25%	50%	75%	MAXIMUM
MEAN DEPTH (m)	1.2	0.6	0.1	0.8	0.9	1.4	3.6
AREA OF OPEN WATER (ha)	4.2	6.5	0.2	0.7	2.1	4.5	40.8
AREA OF MARSH (ha)	0.4	0.6	0.0	0.1	0.2	0.6	3.5
AREA OF SNAG (ha)	0.1	0.3	0.0	0.0	0.0	0.1	2.8
LENGTH CLOSED (m)	287	518	0.0	24	93	308	4055
CONDUCTIVITY (umhos/cm)	2132	2694	42	664	1240	2247	17050
CALCIUM (ppm)	95	91	0.0	31	75	125	563
PH	9.1	0.6	7.0	8.8	9.2	9.5	10.1

Table 3. Morphometric data and other physical characteristics recorded for each wetland at Riske Creek, 1983-1984. (variable definitions are given below).

VARIABLE	WETLAND NUMBER														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TOTAL AREA(sq. m)	138343.00	14132.00	110419.00	62380.00	30979.00	271916.00	22034.00	101531.00	16295.00	20430.00	70433.00	30051.00	24911.00	17480.00	29558.00
AREA 0-1M(sq. m)	34561.00	14132.00	32901.00	7260.00	30979.00	114517.00	22034.00	23264.00	13204.00	5750.00	23397.00	16968.00	7971.00	5537.00	5750.00
AREA 1-2M(sq. m)	30208.00	0.00	37909.00	12676.00	0.00	120149.00	0.00	22821.00	5353.00	5744.00	47417.00	13146.00	12069.00	9600.00	8058.00
AREA 2-3M(sq. m)	34442.00	0.00	34841.00	7909.00	0.00	38452.00	0.00	22851.00	0.00	8992.00	0.00	0.00	4497.00	2137.00	15898.00
AREA 3-4M(sq. m)	20765.00	0.00	4134.00	26257.00	0.00	0.00	0.00	27632.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA 4-5M(sq. m)	15503.00	0.00	0.00	9131.00	0.00	0.00	0.00	5373.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VOLUME(cu. m)	292990.00	14132.00	214896.00	162280.00	24783.20	374041.00	19830.60	248524.00	13739.30	24431.60	66072.30	23541.00	32558.70	24950.70	29815.00
MAXIMUM DEPTH(m)	4.80	1.00	3.40	4.10	0.80	2.50	0.90	4.00	1.10	2.80	1.90	1.50	2.00	2.10	2.50
MEAN DEPTH(m)	2.15	1.00	1.95	2.60	0.80	1.38	0.90	2.45	0.75	1.20	0.94	0.78	1.31	1.43	1.01
RELATIVE DEPTH	1.14	0.75	0.91	1.45	0.40	0.42	0.54	1.14	0.72	1.74	0.83	0.77	1.18	1.41	1.29
VOLUME DEVELOPMENT	1.38	3.00	1.72	1.90	3.00	1.65	3.00	1.79	2.05	1.28	1.48	1.57	1.87	2.04	1.21
AREA SHALLOW OPEN WATER(sq. m)	129648.00	1710.00	101128.00	62381.00	5942.00	255063.00	11160.00	101096.00	15312.00	19088.00	65992.00	23897.00	23454.00	16233.00	28914.00
AREA MARSH(sq. m)	6694.00	12422.00	9332.00	0.00	25038.00	16872.00	10868.00	865.00	2958.00	1382.00	4440.00	7706.00	1444.00	1247.00	643.00
AREA FEN(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SWAMP(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SNAG(sq. m)	0.00	0.00	0.00	2012.00	0.00	5516.00	0.00	0.00	1544.00	815.00	0.00	1552.00	0.00	0.00	38.00
OUTER SHORELINE LENGTH(m)	2182.00	772.00	1997.00	1414.00	1016.00	3248.00	946.00	1567.00	880.00	752.00	1460.00	1089.00	971.00	578.00	767.00
INNER SHORELINE LENGTH(m)	1938.00	158.00	1948.00	1414.00	497.00	4278.00	514.00	1544.00	840.00	729.00	1531.00	848.00	918.00	569.00	756.00
EMERGENT SHORELINE LENGTH(m)	1574.00	158.00	1813.00	0.00	497.00	1695.00	514.00	826.00	840.00	729.00	1408.00	648.00	918.00	452.00	722.00
OUTER SHORELINE DEVELOPMENT	1.87	1.83	1.70	1.80	1.63	1.76	1.80	1.39	1.44	1.48	1.55	1.77	1.74	1.23	1.26
INNER SHORELINE DEVELOPMENT	1.52	1.08	1.73	1.60	1.82	2.39	1.37	1.37	1.46	1.49	1.88	1.18	1.89	1.26	1.25
MORPHOEDAPHIC INDEX[(umhos/cm)/m]	157.28	68.00	214.27	314.05	368.75	1979.68	46.67	384.02	488.72	808.62	3187.34	1531.85	1104.05	1401.18	800.04
COVER FRACTION	0.05	0.88	0.08	0.00	0.81	0.06	0.49	0.01	0.16	0.07	0.08	0.24	0.06	0.07	0.02
EDGE BETWEEN CLASSES(m)	3758.00	930.00	3810.00	1414.00	1513.00	4943.00	1460.00	2193.00	1330.00	1481.00	2868.00	1737.00	1889.00	1030.00	1489.00
EDGE WITHIN CLASSES(m)	2134.00	306.00	1354.00	1804.00	0.00	1981.00	0.00	1049.00	614.00	422.00	0.00	1335.00	775.00	386.00	684.00
TOTAL EDGE(m)	5890.00	1236.00	5164.00	3218.00	1513.00	6924.00	1460.00	3242.00	1944.00	1903.00	2868.00	3072.00	2664.00	1416.00	2173.00
% CLOSED 0-100M(%)	68.67	30.00	31.00	49.33	16.67	41.67	35.00	1.33	35.67	25.67	2.00	4.00	6.00	16.00	25.00
% OPEN 0-100M(%)	33.33	70.00	69.00	50.67	83.33	58.33	65.00	98.67	64.33	74.33	98.00	96.00	94.00	84.00	75.00
LENGTH CLOSED 0-100M(m)	1454.67	231.60	619.07	697.57	169.33	1353.33	331.10	20.89	246.10	183.01	29.20	43.56	58.28	92.48	191.75
LENGTH OPEN 0-100M(m)	727.33	540.40	1377.93	716.43	846.67	1894.67	614.90	1546.11	443.90	558.99	1430.80	1045.44	912.74	485.52	575.25

Table 3 continued...

VARIABLE	WETLAND NUMBER														
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
TOTAL AREA(sq. m)	116028.00	9390.00	75258.00	22233.00	57513.00	29058.00	21670.00	15232.00	33977.00	20475.00	26716.00	11527.00	50872.00	7005.00	179960.00
AREA 0-1M(sq. m)	110902.00	4805.00	10510.00	17138.00	11219.00	12880.00	4493.00	4214.00	13281.00	20161.00	14827.00	8482.00	7527.00	4072.00	19606.00
AREA 1-2M(sq. m)	5322.00	4518.00	10264.00	5068.00	8259.00	16295.00	6393.00	8285.00	14870.00	498.00	12077.00	3043.00	5278.00	2937.00	21693.00
AREA 2-3M(sq. m)	0.00	0.00	29726.00	0.00	37887.00	0.00	11064.00	2983.00	5572.00	0.00	0.00	0.00	37810.00	0.00	30929.00
AREA 3-4M(sq. m)	0.00	0.00	24221.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65891.00
AREA 4-5M(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41658.00
VOLUME(cu. m)	111434.00	7064.00	122838.00	18657.80	61817.30	27545.50	27238.60	21080.30	43178.20	20210.80	20865.50	11220.70	36984.00	5834.20	436006.00
MAXIMUM DEPTH(m)	1.00	1.50	3.00	1.30	2.90	1.90	2.90	2.00	2.10	1.10	1.50	1.90	2.50	1.60	4.50
MEAN DEPTH(m)	0.96	0.75	1.63	0.84	1.07	0.95	1.26	1.38	1.27	0.99	0.78	0.97	0.73	0.83	2.42
RELATIVE DEPTH	0.29	1.37	1.00	0.77	1.07	0.99	1.75	1.51	1.01	0.68	0.81	1.57	0.98	1.69	0.92
VOLUME DEVELOPMENT	2.82	1.50	1.58	1.94	1.11	1.50	1.30	1.98	1.82	2.69	1.56	1.54	0.87	1.56	1.65
AREA SHALLOW OPEN WATER(sq. m)	107498.00	7222.00	75290.00	19343.00	56397.00	25173.00	20933.00	13731.00	29751.00	6070.00	19823.00	5864.00	47850.00	6142.00	177982.00
AREA MARSH(sq. m)	9261.00	2170.00	93.00	2888.00	1116.00	3885.00	738.00	1500.00	4228.00	14404.00	6892.00	5664.00	3022.00	861.00	3362.00
AREA FEN(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SWAMP(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SNAG(sq. m)	0.00	374.00	1616.00	32.00	641.00	0.00	70.00	0.00	0.00	0.00	0.00	0.00	0.00	850.00	8632.00
OUTER SHORELINE LENGTH(m)	1822.00	414.00	1755.00	872.00	1374.00	1151.00	623.00	480.00	904.00	684.00	894.00	505.00	1058.00	433.00	2628.00
INNER SHORELINE LENGTH(m)	1714.00	346.00	1718.00	857.00	1293.00	1112.00	619.00	462.00	832.00	402.00	884.00	420.00	1028.00	427.00	2486.00
EMERGENT SHORELINE LENGTH(m)	1108.00	346.00	340.00	857.00	933.00	1112.00	619.00	462.00	832.00	402.00	664.00	420.00	1028.00	427.00	1174.00
OUTER SHORELINE DEVELOPMENT	1.51	1.21	1.80	1.65	1.62	1.90	1.19	1.10	1.38	1.35	1.20	1.33	1.32	1.46	1.75
INNER SHORELINE DEVELOPMENT	1.47	1.15	1.77	1.74	1.54	1.98	1.21	1.11	1.36	1.46	1.33	1.57	1.33	1.54	1.66
MORPHOEDAPHIC INDEX((umhos/cm)/m)	4583.69	228.84	1933.03	351.53	4133.64	780.83	1153.65	78.04	3554.44	668.63	3691.23	849.58	3971.11	1188.87	5001.25
COVER FRACTION	0.08	0.23	0.00	0.13	0.02	0.13	0.03	0.10	0.12	0.70	0.26	0.51	0.06	0.12	0.02
EDGE BETWEEN CLASSES(m)	2928.00	760.00	2095.00	1729.00	2307.00	2263.00	1242.00	942.00	1736.00	1098.00	1358.00	925.00	2086.00	880.00	3802.00
EDGE WITHIN CLASSES(m)	36.00	182.00	2726.00	31.00	910.00	0.00	498.00	629.00	531.00	1248.00	488.00	49.00	888.00	540.00	2592.00
TOTAL EDGE(m)	2964.00	942.00	4821.00	1760.00	3217.00	2263.00	1740.00	1571.00	2267.00	2334.00	1846.00	974.00	2974.00	1400.00	6394.00
% CLOSED 0-100M(%)	3.33	22.67	6.33	1.67	3.00	0.00	12.33	65.67	1.67	9.67	3.33	7.00	0.33	6.33	11.33
% OPEN 0-100M(%)	96.67	77.33	93.67	98.33	97.00	100.00	87.67	34.33	98.33	90.33	96.67	93.00	99.67	93.67	88.67
LENGTH CLOSED 0-100M(m)	60.73	93.84	111.15	14.53	41.22	0.00	76.84	315.20	15.07	66.12	23.13	35.35	3.53	27.42	297.84
LENGTH OPEN 0-100M(m)	1761.27	320.16	1643.85	857.47	1332.78	1151.00	548.16	164.80	888.93	617.88	670.87	489.65	1054.47	405.58	2330.16

Table 3 continued...

VARIABLE	WETLAND NUMBER														
	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
TOTAL AREA(sq. m)	26120.00	373291.00	65876.00	12662.00	32808.00	14280.00	14201.00	7310.00	29899.00	78906.00	221296.00	47741.00	20647.00	28977.00	91428.00
AREA 0-1M(sq. m)	4554.00	32495.00	17097.00	5670.00	13397.00	7559.00	5934.00	2619.00	18094.00	24943.00	30215.00	19881.00	10695.00	8464.00	91428.00
AREA 1-2M(sq. m)	3418.00	37103.00	50022.00	3938.00	19338.00	6723.00	6259.00	3858.00	10725.00	15991.00	40253.00	27985.00	6978.00	9914.00	0.00
AREA 2-3M(sq. m)	4635.00	46437.00	0.00	2951.00	0.00	0.00	1883.00	728.00	1026.00	23804.00	81478.00	0.00	2618.00	11974.00	0.00
AREA 3-4M(sq. m)	6746.00	86493.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14846.00	60476.00	0.00	0.00	0.00	0.00
AREA 4-5M(sq. m)	5390.00	166693.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VOLUME(cu. m)	79373.50	1348070.00	42108.00	14728.40	23065.00	10920.50	18640.30	10407.80	39954.40	140918.00	361197.00	47826.00	24912.80	38266.00	82285.20
MAXIMUM DEPTH(m)	5.10	5.10	1.50	2.80	1.50	1.50	2.00	2.00	2.40	3.90	3.10	2.00	2.00	3.00	0.90
MEAN DEPTH(m)	3.04	3.81	0.84	1.16	0.70	0.76	1.31	1.42	1.34	1.78	1.63	1.00	1.21	1.32	0.90
RELATIVE DEPTH	2.80	0.74	0.52	1.89	0.73	1.11	1.56	2.18	1.23	1.23	0.58	0.81	1.30	1.56	0.26
VOLUME DEVELOPMENT	1.79	2.12	1.28	1.45	1.41	1.53	1.88	2.03	1.87	1.37	1.58	1.50	1.72	1.32	3.00
AREA SHALLOW OPEN WATER(sq. m)	25631.00	344932.00	63284.00	12681.00	28498.00	10918.00	11867.00	7017.00	21744.00	65218.00	221298.00	32178.00	16962.00	27448.00	18597.00
AREA MARSH(sq. m)	489.00	2131.00	2592.00	0.00	4311.00	3350.00	2538.00	408.00	8155.00	13888.00	0.00	15563.00	3686.00	1134.00	30284.00
AREA FEN(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42563.00
AREA SWAMP(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SNAG(sq. m)	734.00	10638.00	0.00	951.00	0.00	0.00	0.00	0.00	0.00	0.00	408.00	0.00	0.00	1326.00	0.00
OUTER SHORELINE LENGTH(m)	689.00	4798.00	1346.00	942.00	1178.00	707.00	582.00	355.00	1527.00	1599.00	2642.00	896.00	632.00	806.00	2480.00
INNER SHORELINE LENGTH(m)	681.00	4451.00	1306.00	942.00	1018.00	582.00	558.00	342.00	1398.00	1440.00	2642.00	774.00	1015.00	679.00	1070.00
EMERGENT SHORELINE LENGTH(m)	324.00	2699.00	1306.00	0.00	1018.00	582.00	558.00	342.00	1398.00	1440.00	0.00	774.00	711.00	331.00	1070.00
OUTER SHORELINE DEVELOPMENT	1.20	2.22	1.48	2.38	1.83	1.67	1.38	1.17	2.49	1.81	1.58	1.16	1.24	1.34	2.31
INNER SHORELINE DEVELOPMENT	1.20	2.14	1.48	2.38	1.70	1.57	1.46	1.15	2.67	1.59	1.58	1.22	2.20	1.16	2.21
MORPHOEDAPHIC INDEX[(umhos/cm)/m]	109.25	2233.81	12359.20	1177.95	5201.77	2972.25	723.75	580.85	940.65	727.92	6535.40	1520.29	524.61	488.91	577.78
COVER FRACTION	0.02	0.01	0.04	0.00	0.13	0.23	0.18	0.05	0.27	0.17	0.00	0.33	0.18	0.04	0.80
EDGE BETWEEN CLASSES(m)	1013.00	8153.00	2652.00	942.00	2198.00	1289.00	1140.00	697.00	2925.00	3039.00	2842.00	1670.00	1343.00	1137.00	3962.00
EDGE WITHIN CLASSES(m)	1250.00	791.00	0.00	684.00	0.00	444.00	852.00	260.00	702.00	558.00	152.00	895.00	290.00	664.00	1475.00
TOTAL EDGE(m)	2263.00	8944.00	2652.00	1626.00	2196.00	1733.00	1992.00	957.00	3627.00	3597.00	2794.00	2565.00	1633.00	1801.00	5437.00
% CLOSED 0-100M(%)	1.33	7.00	23.00	39.33	2.67	0.00	49.00	47.33	0.67	3.00	2.33	1.00	7.00	31.33	44.67
% OPEN 0-100M(%)	98.67	93.00	77.00	60.67	97.33	100.00	51.00	52.67	99.33	97.00	97.67	99.00	93.00	68.67	55.33
LENGTH CLOSED 0-100M(m)	9.19	335.86	309.58	370.52	31.41	0.00	285.18	188.03	10.18	47.97	61.65	8.96	44.24	252.55	1107.73
LENGTH OPEN 0-100M(m)	679.81	4462.14	1036.42	571.48	1146.59	707.00	298.82	188.97	1516.82	1551.03	2580.35	887.04	587.76	553.45	1372.27

Table 3 continued...

VARIABLE	WETLAND NUMBER														
	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
TOTAL AREA(sq. m)	70298.00	10733.00	12835.00	23964.00	86366.00	22564.00	58942.00	32537.00	26049.00	7038.00	153334.00	18098.00	5479.00	50767.00	64921.00
AREA 0-1M(sq. m)	62742.00	10733.00	12835.00	14227.00	8778.00	8050.00	16177.00	8679.00	8802.00	4125.00	13712.00	8153.00	5479.00	15024.00	20451.00
AREA 1-2M(sq. m)	7196.00	0.00	0.00	9748.00	10989.00	8918.00	21009.00	6238.00	9126.00	2835.00	18350.00	9559.00	0.00	35899.00	18641.00
AREA 2-3M(sq. m)	0.00	0.00	0.00	0.00	12587.00	7977.00	16525.00	13467.00	7532.00	0.00	28610.00	2365.00	0.00	0.00	21283.00
AREA 3-4M(sq. m)	0.00	0.00	0.00	0.00	48703.00	1793.00	4998.00	5628.00	0.00	0.00	94741.00	0.00	0.00	0.00	4575.00
AREA 4-5M(sq. m)	0.00	0.00	0.00	0.00	5311.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VOLUME(cu. m)	64181.20	8586.40	11551.50	18101.00	264922.00	44713.50	109289.00	61806.40	34586.00	8676.50	217508.00	25980.50	4931.10	50923.00	121980.00
MAXIMUM DEPTH(m)	1.00	0.80	0.90	1.50	4.30	3.50	3.30	3.40	3.00	2.10	3.90	2.30	0.90	2.00	3.00
MEAN DEPTH(m)	0.91	0.80	0.90	0.80	3.07	1.98	1.85	1.90	1.33	0.85	1.42	1.44	0.90	1.00	1.88
RELATIVE DEPTH	0.40	0.88	0.70	0.86	1.30	2.06	1.20	1.67	1.65	2.01	0.88	1.52	1.08	0.79	1.08
VOLUME DEVELOPMENT	2.28	3.00	3.00	1.59	2.14	1.70	1.69	1.88	1.33	1.50	1.09	1.87	3.00	1.50	1.82
AREA SHALLOW OPEN WATER(sq. m)	38146.00	8202.00	2914.00	22422.00	85162.00	20464.00	50873.00	29858.00	23089.00	5165.00	152432.00	14404.00	2130.00	48312.00	48707.00
AREA MARSH(sq. m)	23428.00	2530.00	9921.00	1574.00	1052.00	2100.00	8091.00	2678.00	2870.00	1871.00	1250.00	3795.00	3388.00	2455.00	16568.00
AREA FEN(sq. m)	8718.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SWAMP(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SNAG(sq. m)	0.00	0.00	0.00	0.00	1112.00	0.00	3050.00	0.00	0.00	0.00	14448.00	1467.00	0.00	3072.00	2338.00
OUTER SHORELINE LENGTH(m)	1419.00	402.00	536.00	717.00	1483.00	634.00	1308.00	928.00	1119.00	355.00	2338.00	688.00	428.00	1756.00	1915.00
INNER SHORELINE LENGTH(m)	1581.00	352.00	399.00	724.00	1461.00	608.00	1242.00	882.00	1064.00	314.00	2132.00	645.00	333.00	1726.00	2025.00
EMERGENT SHORELINE LENGTH(m)	1581.00	352.00	399.00	724.00	550.00	488.00	934.00	882.00	1064.00	314.00	2070.00	845.00	333.00	1726.00	1980.00
OUTER SHORELINE DEVELOPMENT	1.51	1.09	1.33	1.31	1.40	1.19	1.52	1.45	1.96	1.19	1.68	1.44	1.83	2.20	2.12
INNER SHORELINE DEVELOPMENT	2.28	1.10	2.09	1.38	1.41	1.20	1.55	1.44	1.98	1.23	1.54	1.52	2.04	2.22	2.59
MORPHOEDAPHIC INDEX[(umhos/cm)/m]	852.12	171.25	725.56	188.86	1230.02	34.82	215.77	594.87	687.64	748.23	5169.44	555.89	2177.78	4220.03	1128.73
COVER FRACTION	0.46	0.24	0.77	0.07	0.01	0.09	0.14	0.08	0.11	0.27	0.01	0.21	0.81	0.05	0.25
EDGE BETWEEN CLASSES(m)	3418.00	754.00	935.00	1441.00	2013.00	1120.00	2242.00	1810.00	2183.00	869.00	4408.00	1331.00	761.00	3482.00	3895.00
EDGE WITHIN CLASSES(m)	847.00	0.00	456.00	502.00	1170.00	526.00	2314.00	728.00	648.00	503.00	1898.00	1015.00	382.00	629.00	2186.00
TOTAL EDGE(m)	4265.00	754.00	1391.00	1943.00	3183.00	1646.00	4556.00	2538.00	2831.00	1172.00	6306.00	2346.00	1143.00	4111.00	6081.00
% CLOSED 0-100M(%)	29.67	10.00	3.67	13.00	54.00	43.00	92.67	2.00	4.00	27.33	53.00	59.33	34.67	60.67	61.33
% OPEN 0-100M(%)	70.33	90.00	96.33	87.00	46.00	57.00	7.33	98.00	96.00	72.67	47.00	40.67	65.33	39.33	38.67
LENGTH CLOSED 0-100M(m)	420.97	40.20	19.85	93.21	790.02	272.62	1212.08	18.56	44.78	97.03	1239.14	407.03	148.37	1065.31	1174.53
LENGTH OPEN 0-100M(m)	998.03	361.80	516.35	623.79	672.98	361.38	95.92	909.44	1074.24	257.97	1098.86	278.97	279.63	690.69	740.47

Table 3 continued...

VARIABLE	WETLAND NUMBER														
	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
TOTAL AREA(sq. m)	23647.00	9348.00	6259.00	2651.00	180768.00	14690.00	4816.00	45151.00	3800.00	48876.00	31402.00	32468.00	115087.00	70516.00	37747.00
AREA 0-1M(sq. m)	7848.00	5759.00	6259.00	2651.00	85698.00	14690.00	4358.00	14239.00	3635.00	8652.00	10036.00	21042.00	21867.00	13895.00	7470.00
AREA 1-2M(sq. m)	10854.00	3388.00	0.00	0.00	93624.00	0.00	404.00	12438.00	131.00	9264.00	21423.00	9551.00	33401.00	11773.00	7438.00
AREA 2-3M(sq. m)	4675.00	0.00	0.00	0.00	0.00	0.00	0.00	9787.00	0.00	20684.00	0.00	1454.00	35304.00	15395.00	9273.00
AREA 3-4M(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7537.00	0.00	10164.00	0.00	0.00	20220.00	21572.00	10818.00
AREA 4-5M(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1541.00	0.00	0.00	0.00	0.00	3699.00	9765.00	2444.00
VOLUME(cu. m)	32428.50	7452.00	6259.00	2651.00	169960.00	14690.00	4398.40	98774.10	3648.10	98379.60	31459.00	40871.00	277680.00	177726.00	94659.00
MAXIMUM DEPTH(m)	2.70	1.50	1.00	1.00	1.90	1.00	1.10	4.10	1.00	3.90	2.00	2.50	4.60	4.80	4.50
MEAN DEPTH(m)	1.37	0.80	1.00	1.00	0.94	1.00	0.91	2.19	0.96	2.02	1.00	1.26	2.41	2.52	2.51
RELATIVE DEPTH	1.58	1.37	1.12	1.72	0.40	0.73	1.40	1.71	1.58	1.57	1.00	1.23	1.20	1.60	2.05
VOLUME DEVELOPMENT	1.52	1.59	3.00	3.00	1.48	3.00	2.49	1.60	2.62	1.55	1.50	1.51	1.57	1.58	1.67
AREA SHALLOW OPEN WATER(sq. m)	21734.00	7545.00	4544.00	1484.00	175248.00	3310.00	1685.00	40820.00	3704.00	46275.00	29190.00	14961.00	102805.00	84512.00	35758.00
AREA MARSH(sq. m)	1913.00	1801.00	1715.00	1166.00	3938.00	11381.00	2930.00	4807.00	32.00	2402.00	2211.00	17504.00	12282.00	6008.00	1992.00
AREA FEN(sq. m)	0.00	0.00	0.00	0.00	1648.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SWAMP(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SNAG(sq. m)	303.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1156.00	0.00	0.00	10182.00	3798.00	3273.00
OUTER SHORELINE LENGTH(m)	1203.00	452.00	386.00	224.00	4042.00	628.00	347.00	1638.00	247.00	1111.00	1216.00	1208.00	2720.00	1560.00	1168.00
INNER SHORELINE LENGTH(m)	1182.00	417.00	342.00	178.00	3914.00	432.00	290.00	1614.00	247.00	1003.00	1162.00	1004.00	4698.00	2312.00	1259.00
EMERGENT SHORELINE LENGTH(m)	1182.00	417.00	342.00	178.00	780.00	432.00	290.00	1476.00	66.00	803.00	1100.00	1004.00	3902.00	2006.00	784.00
OUTER SHORELINE DEVELOPMENT	2.21	1.32	1.38	1.23	2.68	1.46	1.41	2.17	1.13	1.42	1.94	1.89	2.26	1.66	1.70
INNER SHORELINE DEVELOPMENT	2.28	1.35	1.43	1.30	2.64	2.12	1.99	2.25	1.14	1.32	1.92	2.32	4.13	2.57	1.88
MORPHOEDAPHIC INDEX((umhos/cm)/m)	984.74	985.70	1013.00	568.00	7144.16	910.00	1198.77	551.74	565.81	735.73	1799.73	810.29	490.22	490.80	525.18
COVER FRACTION	0.08	0.19	0.27	0.44	0.03	0.77	0.83	0.10	0.01	0.05	0.07	0.54	0.11	0.09	0.05
EDGE BETWEEN CLASSES(m)	2385.00	889.00	728.00	402.00	4941.00	1060.00	637.00	3114.00	313.00	1914.00	2318.00	2212.00	6622.00	3566.00	1952.00
EDGE WITHIN CLASSES(m)	668.00	0.00	371.00	0.00	1718.00	426.00	322.00	1797.00	0.00	836.00	0.00	1148.00	3016.00	1608.00	1030.00
TOTAL EDGE(m)	3053.00	889.00	1099.00	402.00	6659.00	1486.00	959.00	4911.00	313.00	2750.00	2318.00	3360.00	9638.00	5174.00	2982.00
% CLOSED 0-100M(%)	50.00	37.33	45.33	14.67	13.67	10.00	18.33	14.00	43.67	16.00	15.33	25.00	68.33	40.33	52.33
% OPEN 0-100M(%)	50.00	62.67	54.67	85.33	86.33	90.00	81.67	86.00	56.33	84.00	84.67	75.00	31.67	59.67	47.67
LENGTH CLOSED 0-100M(m)	601.50	168.75	174.99	32.85	552.41	62.80	63.82	229.32	107.86	177.76	188.45	302.00	1858.67	629.20	611.25
LENGTH OPEN 0-100M(m)	601.50	283.25	211.01	191.15	3489.59	565.20	283.38	1408.68	139.14	933.24	1029.55	906.00	861.33	930.80	556.75

Table 3 continued...

VARIABLE	WETLAND NUMBER														
	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
TOTAL AREA(sq. m)	179143.00	416929.00	6273.00	3108.00	4092.00	6154.00	15168.00	539055.00	6423.00	5244.00	162722.00	22682.00	42112.00	42438.00	12523.00
AREA 0-1M(sq. m)	28508.00	74929.00	6273.00	3108.00	4092.00	6154.00	5808.00	262812.00	5828.00	3638.00	117830.00	22682.00	5553.00	5827.00	8559.00
AREA 1-2M(sq. m)	28622.00	159344.00	0.00	0.00	0.00	0.00	9383.00	43878.00	898.00	1587.00	40377.00	0.00	9013.00	8408.00	5897.00
AREA 2-3M(sq. m)	120213.00	148178.00	0.00	0.00	0.00	0.00	0.00	14877.00	0.00	0.00	4892.00	0.00	27858.00	8137.00	0.00
AREA 3-4M(sq. m)	0.00	22288.00	0.00	0.00	0.00	0.00	0.00	10778.00	0.00	0.00	0.00	0.00	0.00	11836.00	0.00
AREA 4-5M(sq. m)	0.00	8514.00	0.00	0.00	0.00	0.00	0.00	13093.00	0.00	0.00	0.00	0.00	0.00	7684.00	0.00
VOLUME(cu. m)	193944.00	973771.00	5645.70	1554.00	3273.60	6154.00	10021.40	2088180.00	5967.80	4112.10	200541.00	17011.50	43149.60	98230.00	8917.80
MAXIMUM DEPTH(m)	2.80	5.30	0.90	0.50	0.80	0.60	1.50	8.00	1.20	1.30	2.40	0.80	2.70	4.00	1.40
MEAN DEPTH(m)	1.08	2.34	0.90	0.50	0.80	1.00	0.88	3.84	0.93	0.78	1.23	0.75	1.02	2.31	0.71
RELATIVE DEPTH	0.81	0.73	1.01	0.79	1.11	1.13	1.04	0.97	1.33	1.58	0.53	0.44	1.17	1.94	1.11
VOLUME DEVELOPMENT	1.12	1.32	3.00	3.00	3.00	3.00	1.37	1.44	2.32	1.81	1.54	3.00	1.14	1.54	1.53
AREA SHALLOW OPEN WATER(sq. m)	174568.00	408737.00	4184.00	2016.00	3525.00	2394.00	14963.00	133154.00	4112.00	3170.00	94400.00	21828.00	41321.00	42553.00	12522.00
AREA MARSH(sq. m)	4951.00	5088.00	2088.00	1092.00	567.00	3760.00	153.00	67727.00	2312.00	2074.00	35270.00	854.00	792.00	0.00	0.00
AREA FEN(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	141450.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SWAMP(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33134.00	0.00	0.00	0.00	0.00
AREA SNAG(sq. m)	10058.00	28374.00	0.00	0.00	0.00	0.00	2430.00	0.00	0.00	0.00	0.00	0.00	0.00	237.00	0.00
OUTER SHORELINE LENGTH(m)	2717.00	8241.00	402.00	227.00	250.00	335.00	595.00	8158.00	372.00	278.00	2565.00	635.00	1281.00	1196.00	511.00
INNER SHORELINE LENGTH(m)	2838.00	6843.00	358.00	186.00	238.00	510.00	595.00	6740.00	288.00	220.00	3007.00	638.00	1284.00	1198.00	511.00
EMERGENT SHORELINE LENGTH(m)	2838.00	1414.00	358.00	186.00	238.00	510.00	118.00	6204.00	288.00	220.00	3007.00	524.00	1284.00	0.00	0.00
OUTER SHORELINE DEVELOPMENT	1.81	2.73	1.43	1.15	1.10	1.20	1.38	3.13	1.31	1.08	1.79	1.19	1.76	1.64	1.29
INNER SHORELINE DEVELOPMENT	1.82	3.02	1.55	1.17	1.13	2.94	1.37	5.21	1.28	1.10	2.78	1.21	1.78	1.84	1.29
MORPHOEDAPHIC INDEX[(umhos/cm)/m]	7881.81	3288.14	417.78	1354.00	771.25	1100.00	776.36	115.20	1068.74	1980.08	435.73	3280.00	1213.11	2037.87	5037.12
COVER FRACTION	0.03	0.01	0.33	0.35	0.14	0.81	0.01	0.61	0.38	0.40	0.42	0.04	0.02	0.00	0.00
EDGE BETWEEN CLASSES(m)	5555.00	7877.00	758.00	413.00	488.00	845.00	713.00	16992.00	658.00	488.00	6289.00	1159.00	2565.00	1198.00	511.00
EDGE WITHIN CLASSES(m)	1548.00	8273.00	0.00	0.00	137.00	0.00	594.00	8100.00	177.00	154.00	1279.00	600.00	1139.00	1115.00	341.00
TOTAL EDGE(m)	7103.00	14150.00	758.00	413.00	625.00	845.00	1307.00	23092.00	835.00	650.00	7568.00	1759.00	3704.00	2311.00	852.00
% CLOSED 0-100M(%)	48.00	85.00	8.67	42.33	65.33	62.67	60.33	62.33	11.00	18.33	37.33	4.67	1.33	0.67	32.00
% OPEN 0-100M(%)	52.00	35.00	91.33	57.67	34.67	37.33	39.67	37.67	89.00	80.67	62.67	95.33	98.67	99.33	68.00
LENGTH CLOSED 0-100M(m)	1304.18	4058.85	34.84	98.10	163.33	209.93	358.98	5085.15	40.92	53.38	957.80	29.63	17.08	7.97	163.52
LENGTH OPEN 0-100M(m)	1412.84	2184.35	367.16	130.90	86.67	125.07	238.02	3072.85	331.08	222.64	1607.40	605.37	1263.92	1188.03	347.48

Table 3 continued...

VARIABLE	WETLAND NUMBER														
	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
TOTAL AREA(sq. m)	39108.00	8855.00	3688.00	3412.00	12675.00	26628.00	42618.00	2453.00	17860.00	28554.00	70254.00	22415.00	1799.00	16024.00	2078.00
AREA 0-1M(sq. m)	15990.00	3489.00	1454.00	3412.00	12675.00	26628.00	13372.00	2453.00	10291.00	28554.00	11984.00	3995.00	1799.00	4393.00	2078.00
AREA 1-2M(sq. m)	23153.00	5366.00	2241.00	0.00	0.00	0.00	13694.00	0.00	7337.00	0.00	6340.00	5988.00	0.00	11461.00	0.00
AREA 2-3M(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	15977.00	0.00	0.00	0.00	52408.00	12237.00	0.00	0.00	0.00
AREA 3-4M(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA 4-5M(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VOLUME(cu. m)	32197.10	6708.80	1902.20	341.20	10140.00	26628.00	42357.70	1226.50	16894.30	17732.40	66588.80	20861.80	539.70	10352.70	207.80
MAXIMUM DEPTH(m)	1.70	1.80	1.20	1.00	0.80	1.00	2.10	0.50	1.90	0.60	2.80	2.40	0.30	1.50	0.10
MEAN DEPTH(m)	0.82	0.76	0.52	0.10	0.80	1.00	0.99	0.50	0.95	0.60	0.95	0.93	0.30	0.85	0.10
RELATIVE DEPTH	0.76	1.51	1.75	0.15	0.63	0.54	0.90	0.89	1.26	0.31	0.94	1.42	0.83	1.08	0.19
VOLUME DEVELOPMENT	1.45	1.42	1.29	3.00	3.00	3.00	1.42	3.00	1.49	3.00	1.02	1.16	3.00	1.28	3.00
AREA SHALLOW OPEN WATER(sq. m)	39108.00	8854.00	3688.00	1872.00	11356.00	23876.00	42618.00	2453.00	16631.00	28497.00	70254.00	22266.00	0.00	16023.00	2078.00
AREA MARSH(sq. m)	0.00	0.00	0.00	1540.00	1320.00	2752.00	78.00	0.00	1228.00	1058.00	0.00	299.00	1799.00	0.00	0.00
AREA FEN(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SWAMP(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SNAG(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OUTER SHORELINE LENGTH(m)	1113.00	400.00	244.00	278.00	486.00	1048.00	1054.00	340.00	714.00	855.00	1701.00	598.00	172.00	644.00	200.00
INNER SHORELINE LENGTH(m)	1113.00	400.00	244.00	236.00	528.00	1013.00	1054.00	340.00	717.00	842.00	1701.00	598.00	0.00	644.00	200.00
EMERGENT SHORELINE LENGTH(m)	0.00	0.00	0.00	236.00	528.00	1013.00	151.00	0.00	681.00	842.00	0.00	598.00	0.00	0.00	0.00
OUTER SHORELINE DEVELOPMENT	1.59	1.20	1.13	1.35	1.22	1.81	1.44	1.94	1.51	1.40	1.81	1.13	1.14	1.44	1.24
INNER SHORELINE DEVELOPMENT	1.59	1.20	1.13	1.54	1.40	1.85	1.44	1.94	1.57	1.41	1.81	1.13	1.00	1.44	1.24
MORPHOEDAPHIC INDEX((umhos/cm)/m)	2429.16	1938.36	4213.03	4610.00	1312.50	2110.00	3484.18	3600.00	1658.57	4278.33	9144.05	1600.93	473.33	2187.05	30500.00
COVER FRACTION	0.00	0.00	0.00	0.45	0.10	0.10	0.00	0.00	0.07	0.04	0.00	0.01	1.00	0.00	0.00
EDGE BETWEEN CLASSES(m)	1113.00	400.00	244.00	515.00	1014.00	2061.00	1205.00	340.00	1395.00	1697.00	1701.00	1198.00	172.00	644.00	200.00
EDGE WITHIN CLASSES(m)	886.00	198.00	216.00	0.00	0.00	0.00	1220.00	0.00	356.00	98.00	2883.00	499.00	0.00	587.00	0.00
TOTAL EDGE(m)	1999.00	598.00	460.00	515.00	1014.00	2061.00	2425.00	340.00	1751.00	1795.00	4584.00	1695.00	172.00	1231.00	200.00
% CLOSED 0-100M(%)	3.33	1.00	0.00	2.00	1.33	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00
% OPEN 0-100M(%)	96.67	99.00	100.00	98.00	98.67	98.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00
LENGTH CLOSED 0-100M(m)	37.10	4.00	0.00	5.58	6.48	17.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.40	0.00
LENGTH OPEN 0-100M(m)	1075.90	398.00	244.00	273.42	479.52	1030.53	1054.00	340.00	714.00	855.00	1701.00	598.00	172.00	579.60	200.00

Table 3 continued...

VARIABLE	WETLAND NUMBER											
	106	107	108	109	110	111	112	113	114	115	116	118
TOTAL AREA(sq. m)	15456.00	11043.00	3926.00	9602.00	40484.00	17378.00	5644.00	17010.00	32203.00	9651.00	950.00	13442.00
AREA 0-1M(sq. m)	14640.00	11043.00	3926.00	9602.00	19316.00	17392.00	5644.00	17010.00	19807.00	2228.00	950.00	13442.00
AREA 1-2M(sq. m)	670.00	0.00	0.00	0.00	21164.00	0.00	0.00	0.00	12386.00	4882.00	0.00	0.00
AREA 2-3M(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2485.00	0.00	0.00
AREA 3-4M(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA 4-5M(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VOLUME(cu. m)	14707.00	11043.00	785.20	4801.00	25665.20	12174.40	3388.40	15309.00	29899.80	13891.50	475.00	9409.40
MAXIMUM DEPTH(m)	1.10	1.00	0.20	0.50	1.30	0.70	0.70	0.90	1.80	2.70	0.50	0.70
MEAN DEPTH(m)	0.85	1.00	0.20	0.50	0.63	0.70	0.60	0.90	0.92	1.42	0.50	0.70
RELATIVE DEPTH	0.78	0.84	0.28	0.45	0.57	0.47	0.71	0.61	0.89	2.44	1.44	0.54
VOLUME DEVELOPMENT	2.80	3.00	3.00	3.00	1.46	3.00	3.00	3.00	1.54	1.58	3.00	3.00
AREA SHALLOW OPEN WATER(sq. m)	15146.00	5082.00	0.00	9602.00	40485.00	16518.00	3434.00	5704.00	25758.00	9055.00	820.00	6023.00
AREA MARSH(sq. m)	310.00	5952.00	3926.00	0.00	0.00	860.00	2210.00	11310.00	6448.00	596.00	130.00	7419.00
AREA FEN(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SWAMP(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AREA SNAG(sq. m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OUTER SHORELINE LENGTH(m)	573.00	524.00	254.00	520.00	1116.00	572.00	376.00	718.00	880.00	450.00	115.00	542.00
INNER SHORELINE LENGTH(m)	555.00	347.00	0.00	520.00	1116.00	564.00	278.00	611.00	840.00	441.00	110.00	404.00
EMERGENT SHORELINE LENGTH(m)	314.00	347.00	0.00	0.00	0.00	358.00	278.00	611.00	840.00	441.00	82.00	404.00
OUTER SHORELINE DEVELOPMENT	1.30	1.41	1.14	1.50	1.56	1.22	1.41	1.55	1.38	1.28	1.05	1.32
INNER SHORELINE DEVELOPMENT	1.27	1.37	1.00	1.50	1.56	1.28	1.34	2.28	1.48	1.31	1.08	1.47
MORPHOEDAPHIC INDEX[(umhos/cm)/m]	2073.48	1607.00	10000.00	2614.00	26894.50	5017.39	103.33	903.33	1894.24	1115.84	15734.00	237.14
COVER FRACTION	0.02	0.54	1.00	0.00	0.00	0.05	0.39	0.66	0.20	0.08	0.14	0.55
EDGE BETWEEN CLASSES(m)	887.00	871.00	254.00	520.00	1116.00	930.00	654.00	1329.00	1720.00	881.00	197.00	946.00
EDGE WITHIN CLASSES(m)	298.00	536.00	0.00	0.00	1002.00	0.00	0.00	396.00	540.00	370.00	0.00	111.00
TOTAL EDGE(m)	1185.00	1407.00	254.00	520.00	2118.00	930.00	654.00	1725.00	2260.00	1251.00	197.00	1057.00
% CLOSED 0-100M(%)	14.33	14.87	31.87	0.00	0.00	0.00	19.87	90.33	70.33	26.87	0.00	28.00
% OPEN 0-100M(%)	85.87	85.33	68.33	100.00	100.00	100.00	80.33	9.67	29.87	73.33	100.00	72.00
LENGTH CLOSED 0-100M(m)	82.13	78.85	80.43	0.00	0.00	0.00	73.95	648.59	618.93	120.00	0.00	151.78
LENGTH OPEN 0-100M(m)	490.87	447.15	173.57	520.00	1116.00	572.00	302.05	69.41	261.07	330.00	115.00	390.24

Table 3 continued...

VARIABLE DEFINITIONS:

TOTAL AREA	For this study, "wetland" includes the classes Marsh, Fen, Swamp and Shallow Open Water but not the classes Meadow and Shrub-Carr (Runka and Lewis 1981). Total Area was calculated by digitizing the entire wetland as defined above and averaging that number with the sum of individual bottom contour area measurements. Hence, there are small descrepancies between Total Area and the sum of all contour areas.
AREA 0-1M	Bottom area between 0 and 1 m depths.
AREA 1-2M	Bottom area between 1 and 2 m depths.
AREA 2-3M	Bottom area between 2 and 3 m depths.
AREA 3-4M	Bottom area between 3 and 4 m depths.
AREA 4-5M	Bottom area between 4 and 5 m depths.
VOLUME	Water volume calculated from the bottom contour data.
MAXIMUM DEPTH	Maximum water depth determined in the field.
MEAN DEPTH	Equals... (Volume)/(Total Area).
RELATIVE DEPTH	Equals... (50 * Maximum Depth * 1.7723)/(SQR(Total Area)).
VOLUME DEVELOPMENT	Equals... (3 * Mean Depth)/(Maximum Depth).
AREA SHALLOW OPEN WATER	Area of wetland comprised of permanent standing water lacking extensive (<10%) emergent plant cover (after Runka and Lewis 1981). Runka and Lewis (1981) define "shallow" as <2m, but in this study, depths >2m (but generally <5m) were considered "shallow".
AREA MARSH	Area of wetland that is permanently or seasonally inundated and supports an extensive (>10%) cover of emergent, non-woody vegetation rooting in mineral-rich substrate (after Runka and Lewis 1981).
AREA FEN	Area of wetland comprised of in-situ accumulations of well to poorly decomposed non-Sphagnic peats (after Runka and Lewis 1981).
AREA SWAMP	Area of wetland comprised of trees or tall shrubs and characterized by periodic flooding and nearly permanent subsurface water flow through various mixtures of mineral and organic substrates (after Runka and Lewis 1981).
AREA SNAG	Area of wetland comprised of standing or lying dead trees in shallow water.
OUTER SHORELINE LENGTH	Total length of edge between wetland, as defined above, and upland (including Meadow and Shrub-Carr).
INNER SHORELINE LENGTH	Total length of edge between Shallow Open Water and all other wetland classes or upland.
EMERGENT SHORELINE LENGTH	Total length of edge between Shallow Open Water and Marsh, Fen or Swamp (classes containing emergent plants).
OUTER SHORELINE DEVELOPMENT	Equals... (Outer Shoreline Length)/(2 * SQR(3.141 * Total Area).
INNER SHORELINE DEVELOPMENT	Equals... (Inner Shoreline Length)/(2 * SQR(3.141 * Total Area).
MORPHOEDAPHIC INDEX	Equals... (Conductivity)/(Mean Depth).
COVER FRACTION	Equals... [(Area Marsh) + (Area Fen) + (Area Swamp)] /(Total Area).
EDGE BETWEEN CLASSES	Total length of edge between wetland classes plus length of edge between wetland and upland.
EDGE WITHIN CLASSES	Total length of edge within wetland classes (ie. between plant associations).
TOTAL EDGE	Equals... (Edge Between Classes) + (Edge Within Classes).
% CLOSED 0-100M	Percent of habitat surrounding a wetland which is Forest (deciduous, coniferous or mixed) averaged over 25m, 50m and 100m distances from the wetland edge.
% OPEN 0-100M	Percent of habitat surrounding a wetland which is Grassland (or other open habitat) averaged over 25m, 50m and 100m distances from the wetland edge.
LENGTH CLOSED 0-100M	Length of habitat surrounding a wetland which is Forest (deciduous, coniferous or mixed) averaged over 25m, 50m and 100m distances from the wetland edge.
LENGTH OPEN 0-100M	Length of habitat surrounding a wetland which is Grassland (or other open habitat) averaged over 25m, 50m and 100m distances from the wetland edge.

TABLE 4. Water chemistry data recorded for each wetland at Risko Creek, 1983-1984. ("N/D" indicates No Data ; " * " indicates a mean of 3 samples).

VARIABLE	WETLAND NUMBER														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PH *	9.20	7.20	8.80	8.20	7.70	10.10	7.10	9.20	9.10	8.70	8.80	8.80	9.20	9.00	9.80
CONDUCTIVITY(umhos/cm) *	338.00	68.00	417.00	817.00	295.00	2723.00	42.00	940.00	352.00	987.00	2990.00	1200.00	1443.00	2000.00	807.00
SALINITY(ppt) *	0.20	0.00	0.20	0.40	0.20	1.90	0.00	0.60	0.20	0.60	2.10	0.80	1.00	1.30	0.50
CALCIUM(ppm) *	48.00	0.00	68.00	96.00	64.00	1.00	0.00	35.00	28.00	60.00	20.00	41.00	81.00	171.00	24.00
SODIUM(ppm) *	1.00	0.00	1.00	19.00	1.00	533.00	0.00	147.00	40.00	127.00	597.00	210.00	200.00	207.00	163.00
PHEN. ALKALINITY(ppm)	N/D	N/D	56.20	0.00	12.70	227.00	0.00	27.30	74.40	40.50	88.10	191.00	81.00	44.50	108.00
TOT. ALKALINITY(ppm)	234.00	N/D	330.00	336.00	324.00	2130.00	11.50	633.00	333.00	738.00	1690.00	808.00	680.00	545.00	684.00
HARDNESS(ppm)	212.00	N/D	245.00	272.00	255.00	137.00	10.50	183.00	103.00	322.00	270.00	142.00	416.00	936.00	190.00
MAGNESIUM(ppm)	23.70	N/D	35.90	40.80	43.60	22.50	1.80	28.40	11.40	84.80	53.50	14.50	87.70	199.00	33.80
CHLORIDE(ppm)	2.00	N/D	3.40	2.30	5.00	40.00	0.40	7.80	4.60	5.60	48.00	25.00	6.60	6.00	16.40
SULPHATE(ppm)	0.90	N/D	0.90	1.50	0.90	89.00	0.50	35.70	3.30	11.20	685.00	220.00	375.00	1040.00	35.70
NITRATE NITROGEN(ppm)	0.00	N/D	0.08	0.05	0.03	0.03	0.02	0.01	0.02	0.13	0.01	0.01	0.01	0.02	0.05
TOT. DISSOLVED NITROGEN(ppm)	1.29	N/D	0.73	2.42	0.54	4.05	0.70	5.08	3.03	4.42	5.63	3.97	3.84	3.41	8.30
TOT. PHOSPHORUS(ppm)	0.54	N/D	0.62	0.17	0.06	1.70	0.16	1.32	0.26	0.24	2.62	1.01	0.33	0.19	0.59
TURBIDITY(turb. units)	6.30	N/D	2.20	2.10	1.00	3.80	4.20	4.60	9.21	8.21	8.10	2.50	23.00	3.00	36.00

VARIABLE	WETLAND NUMBER														
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
PH *	9.40	8.40	9.30	10.00	8.90	10.00	9.20	9.00	9.10	8.10	8.90	8.30	9.40	9.40	9.50
CONDUCTIVITY(umhos/cm) *	4383.00	172.00	3150.00	295.00	4443.00	740.00	1450.00	108.00	4517.00	660.00	2883.00	827.00	2887.00	990.00	12117.00
SALINITY(ppt) *	3.20	0.00	2.20	0.00	3.30	0.20	1.10	0.00	3.30	0.30	2.40	0.60	1.80	0.50	8.30
CALCIUM(ppm) *	6.00	31.00	17.00	31.00	236.00	56.00	31.00	17.00	237.00	83.00	123.00	121.00	21.00	103.00	26.00
SODIUM(ppm) *	1200.00	0.00	673.00	17.00	587.00	60.00	277.00	0.00	620.00	52.00	453.00	58.00	587.00	113.00	3300.00
PHEN. ALKALINITY(ppm)	658.00	0.00	194.00	86.40	123.00	189.00	64.80	1.08	204.00	182.00	99.70	18.30	164.00	162.00	1562.00
TOT. ALKALINITY(ppm)	3210.00	127.00	3520.00	281.00	632.00	533.00	918.00	56.50	858.00	555.00	1560.00	896.00	1450.00	979.00	6230.00
HARDNESS(ppm)	198.00	107.00	167.00	172.00	1640.00	325.00	209.00	49.60	2070.00	341.00	896.00	578.00	208.00	460.00	208.00
MAGNESIUM(ppm)	40.30	11.60	25.20	24.30	329.50	60.00	33.20	7.30	349.00	83.40	190.70	118.10	35.20	73.30	31.10
CHLORIDE(ppm)	110.00	2.10	70.00	2.00	75.00	4.10	7.40	0.30	8.50	7.00	16.60	6.00	220.00	9.20	580.00
SULPHATE(ppm)	400.00	1.90	510.00	2.40	2660.00	96.00	189.00	9.80	3600.00	182.00	980.00	28.20	365.00	92.00	3500.00
NITRATE NITROGEN(ppm)	0.04	0.05	0.03	0.02	0.04	0.01	0.01	0.00	0.11	0.04	0.09	0.08	0.01	0.00	0.00
TOT. DISSOLVED NITROGEN(ppm)	4.30	0.23	3.46	2.28	2.53	3.08	3.83	0.42	3.21	2.41	3.77	1.88	3.33	3.30	3.69
TOT. PHOSPHORUS(ppm)	19.40	0.04	0.94	0.54	0.23	0.54	2.10	0.24	0.13	0.11	0.67	0.19	2.47	1.07	2.85
TURBIDITY(turb. units)	19.00	2.50	5.20	1.20	34.00	5.20	3.60	2.50	7.30	1.00	1.50	1.20	4.00	6.00	4.20

Table 4 continued...

VARIABLE	WETLAND NUMBER														
	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
PH *	8.70	9.70	9.60	8.50	9.50	9.00	8.80	9.20	9.20	9.20	9.60	8.90	9.10	9.40	9.30
CONDUCTIVITY(umhos/cm) *	332.00	8087.00	7900.00	1370.00	3657.00	2273.00	950.00	827.00	1257.00	1300.00	10887.00	1523.00	833.00	843.00	520.00
SALINITY(ppt) *	0.00	5.20	5.00	1.00	2.60	1.60	0.40	0.50	0.70	0.70	7.00	1.00	0.20	0.20	0.20
CALCIUM(ppm) *	61.00	24.00	23.00	87.00	113.00	147.00	137.00	72.00	83.00	59.00	31.00	91.00	100.00	109.00	88.00
SODIUM(ppm) *	0.00	2000.00	2050.00	197.00	617.00	345.00	58.00	87.00	151.00	202.00	2700.00	223.00	29.00	24.00	21.00
PHEN. ALKALINITY(ppm)	1.29	738.00	743.00	N/D	224.00	200.00	137.00	0.00	109.00	0.00	903.00	53.80	N/D	N/D	94.00
TOT. ALKALINITY(ppm)	214.00	3760.00	3700.00	667.00	1490.00	1110.00	672.00	700.00	762.00	835.00	3410.00	1230.00	N/D	N/D	355.00
HARDNESS(ppm)	174.00	230.00	228.00	445.00	1050.00	661.00	556.00	428.00	510.00	372.00	311.00	524.00	N/D	N/D	277.00
MAGNESIUM(ppm)	24.40	48.20	45.70	71.20	239.00	141.60	119.00	85.10	92.30	70.90	85.90	113.00	N/D	N/D	46.90
CHLORIDE(ppm)	2.00	388.00	382.00	17.20	38.00	14.10	3.50	4.50	19.20	41.50	570.00	22.50	N/D	N/D	2.50
SULPHATE(ppm)	2.90	1760.00	1780.00	465.00	1420.00	490.00	70.00	12.00	205.00	98.00	3050.00	17.00	N/D	N/D	13.20
NITRATE NITROGEN(ppm)	0.00	0.05	0.03	0.01	0.04	0.01	0.01	0.01	0.09	0.04	0.07	0.07	N/D	N/D	0.01
TOT. DISSOLVED NITROGEN(ppm)	0.13	2.99	2.98	2.70	3.50	2.53	1.85	3.53	2.80	3.47	4.13	3.68	N/D	N/D	1.61
TOT. PHOSPHORUS(ppm)	0.48	2.92	2.80	1.10	0.19	0.18	0.23	0.18	0.55	0.13	4.00	0.13	N/D	N/D	0.39
TURBIDITY(turb. units)	1.80	2.00	6.30	1.50	1.70	1.20	1.80	2.10	1.20	1.60	4.40	1.50	N/D	N/D	3.50

VARIABLE	WETLAND NUMBER														
	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PH *	8.90	8.00	7.70	8.30	9.60	8.00	9.30	9.50	8.80	9.50	9.60	9.10	8.60	9.90	9.00
CONDUCTIVITY(umhos/cm) *	778.00	137.00	653.00	133.00	3773.00	89.00	400.00	1130.00	913.00	710.00	7333.00	798.00	1980.00	4233.00	2117.00
SALINITY(ppt) *	0.40	0.00	0.20	0.00	2.40	0.00	0.20	0.70	0.60	0.20	4.60	0.30	1.10	2.70	1.10
CALCIUM(ppm) *	135.00	21.00	99.00	21.00	14.00	5.00	81.00	32.00	96.00	89.00	25.00	130.00	96.00	16.00	122.00
SODIUM(ppm) *	38.00	0.00	31.00	0.00	790.00	0.00	12.00	180.00	385.00	58.00	1600.00	25.00	313.00	820.00	273.00
PHEN. ALKALINITY(ppm)	35.50	0.00	6.10	0.00	363.00	0.00	0.00	124.00	0.00	57.30	477.00	23.30	78.10	254.00	12.70
TOT. ALKALINITY(ppm)	659.00	173.00	768.00	108.00	2389.00	35.70	322.00	809.00	840.00	574.00	3181.00	814.00	1590.00	2400.00	1310.00
HARDNESS(ppm)	544.00	131.00	528.00	93.00	165.00	27.90	288.00	247.00	363.00	378.00	235.00	540.00	519.00	212.00	654.00
MAGNESIUM(ppm)	104.00	13.50	107.00	10.30	31.40	3.80	48.30	51.20	63.30	72.70	47.40	108.00	108.00	34.50	143.00
CHLORIDE(ppm)	3.80	8.50	14.30	2.30	98.00	1.80	1.80	7.00	4.10	4.40	172.00	4.10	11.20	177.00	28.50
SULPHATE(ppm)	11.00	18.50	0.30	0.30	23.30	0.20	0.20	23.50	23.00	0.40	1180.00	5.30	8.10	41.00	82.00
NITRATE NITROGEN(ppm)	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.01	0.13	0.01	0.02	0.01	0.01	0.01	0.01
TOT. DISSOLVED NITROGEN(ppm)	1.79	0.38	1.80	0.33	3.24	0.27	0.77	2.68	3.10	2.14	2.77	1.73	2.68	4.13	2.29
TOT. PHOSPHORUS(ppm)	0.03	0.12	0.08	0.89	0.21	0.09	0.14	0.09	0.23	0.22	0.07	0.11	0.20	0.05	0.05
TURBIDITY(turb. units)	1.50	2.20	1.00	2.90	1.80	0.50	3.20	3.50	7.80	2.40	1.70	2.10	5.50	2.20	5.10

Table 4 continued...

VARIABLE	WETLAND NUMBER														
	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
PH *	9.70	9.30	9.30	8.50	9.60	8.00	8.10	9.40	8.00	9.50	9.20	8.70	9.00	8.90	9.10
CONDUCTIVITY(umhos/cm) *	1323.00	770.00	1013.00	568.00	6717.00	910.00	1093.00	1207.00	543.00	1487.00	1803.00	1020.00	1183.00	1237.00	1317.00
SALINITY(ppt) *	0.70	0.50	0.40	0.10	4.40	0.40	0.50	0.50	0.20	0.90	1.00	0.40	0.60	0.40	0.70
CALCIUM(ppm) *	107.00	125.00	154.00	108.00	197.00	155.00	183.00	138.00	103.00	173.00	178.00	187.00	187.00	220.00	166.00
SODIUM(ppm) *	108.00	21.00	43.00	25.00	1300.00	30.00	30.00	80.00	18.00	108.00	182.00	34.00	50.00	56.00	106.00
PHEN. ALKALINITY(ppm)	213.00	N/D	77.10	54.80	279.00	N/D	N/D	146.00	0.00	223.00	338.00	78.20	68.10	N/D	N/D
TOT. ALKALINITY(ppm)	1080.00	N/D	797.00	492.00	1260.00	N/D	N/D	828.00	330.00	1080.00	1305.00	729.00	808.00	N/D	N/D
HARDNESS(ppm)	722.00	N/D	662.00	345.00	1620.00	N/D	N/D	698.00	283.00	888.00	892.00	835.00	733.00	N/D	N/D
MAGNESIUM(ppm)	150.00	N/D	132.00	68.80	290.00	N/D	N/D	162.00	45.80	207.00	205.00	135.00	164.00	N/D	N/D
CHLORIDE(ppm)	10.10	N/D	5.30	7.00	90.00	N/D	N/D	9.10	3.80	12.80	13.90	4.30	10.40	N/D	N/D
SULPHATE(ppm)	0.70	N/D	0.50	1.20	3950.00	N/D	N/D	170.00	1.80	169.00	109.00	10.00	75.00	N/D	N/D
NITRATE NITROGEN(ppm)	0.02	N/D	0.00	0.00	0.01	N/D	N/D	0.01	0.00	0.01	0.01	0.01	0.01	N/D	N/D
TOT. DISSOLVED NITROGEN(ppm)	2.72	N/D	1.87	1.87	1.63	N/D	N/D	4.94	0.97	1.87	1.82	0.97	2.78	N/D	N/D
TOT. PHOSPHORUS(ppm)	0.03	N/D	0.04	0.05	0.05	N/D	N/D	0.04	0.14	0.04	0.15	0.03	0.08	N/D	N/D
TURBIDITY(turb. units)	1.50	N/D	0.80	1.40	2.10	N/D	N/D	0.70	1.60	0.80	1.50	1.00	3.80	N/D	N/D

VARIABLE	WETLAND NUMBER														
	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PH *	9.60	9.00	8.80	9.00	8.90	8.20	9.20	8.40	9.20	8.70	9.20	9.30	9.50	9.40	9.50
CONDUCTIVITY(umhos/cm) *	8533.00	7833.00	378.00	677.00	617.00	1100.00	513.00	442.00	993.00	1537.00	537.00	2480.00	1243.00	4717.00	3587.00
SALINITY(ppt) *	5.30	4.80	0.00	0.20	0.10	0.50	0.00	0.00	0.40	0.80	0.00	1.70	0.90	3.20	2.20
CALCIUM(ppm) *	47.00	505.00	71.00	115.00	110.00	198.00	92.00	90.00	40.00	51.00	101.00	8.00	20.00	31.00	20.00
SODIUM(ppm) *	2000.00	839.00	0.00	18.00	19.00	42.00	14.00	6.00	150.00	258.00	18.00	553.00	250.00	1090.00	788.00
PHEN. ALKALINITY(ppm)	483.00	185.00	21.30	N/D	92.50	9.65	6.30	0.00	175.00	95.50	25.40	279.00	99.60	457.00	335.00
TOT. ALKALINITY(ppm)	2130.00	983.00	177.00	N/D	338.00	828.00	349.00	265.00	765.00	1280.00	429.00	2290.00	745.00	2250.00	1810.00
HARDNESS(ppm)	448.00	3740.00	178.00	N/D	344.00	789.00	344.00	282.00	241.00	351.00	395.00	115.00	133.00	299.00	200.00
MAGNESIUM(ppm)	102.00	878.00	26.00	N/D	67.10	173.00	52.00	38.60	42.00	71.40	68.70	10.70	21.40	63.90	36.50
CHLORIDE(ppm)	340.00	120.00	3.00	N/D	4.90	9.10	3.70	1.30	26.00	30.00	3.90	61.00	27.00	32.50	25.00
SULPHATE(ppm)	3000.00	5150.00	12.70	N/D	57.00	121.00	38.00	20.20	32.20	85.00	11.50	20.30	85.00	1340.00	1500.00
NITRATE NITROGEN(ppm)	0.01	0.00	0.00	N/D	0.00	0.01	0.01	0.00	0.01	0.03	0.01	0.07	0.01	0.06	0.01
TOT. DISSOLVED NITROGEN(ppm)	1.84	3.00	1.92	N/D	2.97	2.12	2.12	0.34	2.61	2.60	0.73	4.28	2.92	3.27	4.13
TOT. PHOSPHORUS(ppm)	0.04	0.04	0.08	N/D	0.14	0.08	0.13	0.02	1.05	2.17	0.10	15.60	0.71	0.29	0.91
TURBIDITY(turb. units)	1.80	2.20	1.90	N/D	4.60	13.00	3.70	0.80	1.90	5.00	2.60	51.00	7.50	1.30	3.20

Table 4 continued...

VARIABLE	WETLAND NUMBER														
	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
PH *	9.80	9.70	9.30	8.70	9.60	9.90	9.90	10.00	9.80	9.40	8.90	9.30	7.20	9.00	10.10
CONDUCTIVITY(umhos/cm) *	2000.00	1487.00	2173.00	461.00	1050.00	2110.00	3443.00	1800.00	1587.00	2587.00	8887.00	1490.00	142.00	1413.00	3050.00
SALINITY(ppt) *	1.10	0.90	1.20	0.00	0.50	1.30	2.20	1.10	1.00	1.40	5.80	1.00	0.00	0.90	2.00
CALCIUM(ppm) *	51.00	50.00	98.00	47.00	78.00	24.00	40.00	67.00	31.00	14.00	563.00	168.00	8.00	98.00	420.00
SODIUM(ppm) *	388.00	215.00	342.00	28.00	127.00	422.00	629.00	280.00	274.00	478.00	1097.00	100.00	0.00	165.00	150.00
PHEN. ALKALINITY(ppm)	201.00	26.40	58.40	N/D	55.90	368.00	193.00	N/D	35.80	438.00	482.00	71.00	N/D	68.00	N/D
TOT. ALKALINITY(ppm)	1120.00	253.00	577.00	N/D	871.00	1830.00	1130.00	N/D	783.00	2030.00	1280.00	512.00	N/D	809.00	N/D
HARDNESS(ppm)	474.00	285.00	605.00	N/D	521.00	239.00	365.00	N/D	245.00	84.80	4830.00	884.00	N/D	494.00	N/D
MAGNESIUM(ppm)	108.00	37.60	121.00	N/D	108.00	45.90	78.50	N/D	41.80	3.80	1070.00	191.00	N/D	107.00	N/D
CHLORIDE(ppm)	24.50	7.60	10.80	N/D	38.00	31.00	28.00	N/D	22.50	49.50	680.00	13.10	N/D	17.60	N/D
SULPHATE(ppm)	890.00	690.00	1400.00	N/D	260.00	295.00	1720.00	N/D	550.00	1030.00	7000.00	740.00	N/D	340.00	N/D
NITRATE NITROGEN(ppm)	0.02	0.02	0.01	N/D	0.01	0.03	0.01	N/D	0.12	0.01	0.02	0.00	N/D	0.00	N/D
TOT. DISSOLVED NITROGEN(ppm)	2.67	4.76	3.55	N/D	4.27	10.80	3.63	N/D	4.23	3.62	3.77	4.10	N/D	4.25	N/D
TOT. PHOSPHORUS(ppm)	0.07	0.99	0.95	N/D	0.33	0.75	0.26	N/D	0.84	0.88	1.67	0.54	N/D	0.40	N/D
TURBIDITY(turb. units)	1.80	36.00	33.00	N/D	15.00	67.00	3.30	N/D	28.00	18.00	16.00	19.00	N/D	17.00	N/D

VARIABLE	WETLAND NUMBER											
	106	107	108	109	110	111	112	113	114	115	116	118
PH *	9.40	9.50	8.90	9.50	9.10	9.40	7.60	8.80	9.80	9.30	9.70	7.00
CONDUCTIVITY(umhos/cm) *	1973.00	1607.00	2000.00	1307.00	17050.00	3515.00	62.00	813.00	1747.00	1583.00	7867.00	166.00
SALINITY(ppt) *	1.20	1.00	1.20	0.80	10.80	1.80	0.00	0.40	1.00	1.00	5.00	0.00
CALCIUM(ppm) *	215.00	220.00	360.00	59.00	350.00	66.00	4.00	220.00	257.00	37.00	21.00	22.00
SODIUM(ppm) *	160.00	78.00	33.50	184.00	3900.00	608.00	0.00	1.00	152.00	282.00	2100.00	0.00
PHEN. ALKALINITY(ppm)	N/D	N/D	N/D	N/D	518.00	178.00	N/D	N/D	N/D	76.10	N/D	N/D
TOT. ALKALINITY(ppm)	N/D	N/D	N/D	N/D	2130.00	1690.00	N/D	N/D	N/D	897.00	N/D	N/D
HARDNESS(ppm)	N/D	N/D	N/D	N/D	4730.00	1250.00	N/D	N/D	N/D	188.00	N/D	N/D
MAGNESIUM(ppm)	N/D	N/D	N/D	N/D	1130.00	257.00	N/D	N/D	N/D	29.90	N/D	N/D
CHLORIDE(ppm)	N/D	N/D	N/D	N/D	9.10	127.00	N/D	N/D	N/D	8.20	N/D	N/D
SULPHATE(ppm)	N/D	N/D	N/D	N/D	19100.00	6850.00	N/D	N/D	N/D	170.00	N/D	N/D
NITRATE NITROGEN(ppm)	N/D	N/D	N/D	N/D	0.01	0.02	N/D	N/D	N/D	0.09	N/D	N/D
TOT. DISSOLVED NITROGEN(ppm)	N/D	N/D	N/D	N/D	9.63	18.40	N/D	N/D	N/D	6.23	N/D	N/D
TOT. PHOSPHORUS(ppm)	N/D	N/D	N/D	N/D	0.91	3.60	N/D	N/D	N/D	1.42	N/D	N/D
TURBIDITY(turb. units)	N/D	N/D	N/D	N/D	16.00	38.00	N/D	N/D	N/D	6.80	N/D	N/D

Table 5. Relative abundance of aquatic bird species on the Riske Creek study area, 1980-1984 (total number of birds over 21 surveys).

SPECIES	TOTAL COUNT	PERCENT OF TOTAL
DABBLING DUCKS		
1. Mallard (*Anas platyrhynchos*)	4078	4.5
2. Northern Pintail (*A. acuta*)	2028	2.3
3. Green-winged Teal (*A. crecca*)	4392	4.9
4. Blue-winged Teal (*A. discors*)	3804	4.2
5. Cinnamon Teal (*A. cyanoptera*)	396	0.4
6. American Wigeon (*A. americana*)	6779	7.6
7. Northern Shoveler (*A. clypeata*)	2446	2.7
8. Gadwall (*A. strepera*)	623	0.7
GEESE		
9. Canada Goose (*Branta canadensis*)	1073	1.2
DIVING DUCKS		
10. Redhead (*Aythya americana*)	1468	1.6
11. Ring-necked Duck (*A. collaris*)	2909	3.3
12. Canvasback (*A. valisineria*)	2642	3.0
13. Scaup Sp. (*A. marilla* and *A. affinis*)	19241	21.6
14. Barrow's Goldeneye (*Bucephala islandica*)	14737	16.5
15. Bufflehead (*B. albeola*)	8873	10.0
16. Ruddy Duck (*Oxyura jamaicensis*)	3154	3.5
17. Surf Scoter (*Melanitta perspicillata*)	991	1.1
GREBES		
18. Eared Grebe (*Podiceps nigricollis*)	2595	2.9
19. Horned Grebe (*P. auritus*)	632	0.7
20. Pied-billed Grebe (*Podilymbus podiceps*)	119	0.1
21. Red-necked Grebe (*Podiceps grisegena*)	176	0.2
COOTS		
22. American Coot (*Fulica americana*)	5487	6.2
LOONS		
23. Common Loon (*Gavia immer*)	151	0.2
OTHER SPECIES NOT CONSIDERED		
24. Eurasian Wigeon (*Anas penelope*)	5	-
25. Swan Sp. (*Olor* sp.)	9	-
26. Oldsquaw (*Clangula hyemalis*)	54	0.1
27. White-winged Scoter (*Melanitta deglandi*)	90	0.1
28. Common Goldeneye (*Bucephala clangula*)	88	0.1
29. Hooded Merganser (*Lophodytes cucullatus*)	71	0.1
30. Western Grebe (*Aechmorphorus occidentalis*)	2	-
TOTAL	89113	100

Table 6 . Mean number of aquatic birds on each wetland at Riske Creek, 1980-1984. (n = 21 surveys over 5 years; standard deviations are in brackets; names of bird species are given below).

WETLAND NUMBER	AQUATIC BIRD SPECIES																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.71	1.33	1.24	6.52	0.24	2.95	2.05	0.10	0.19	0.00	1.48	0.05	49.62	6.38	5.52	0.43	0.95	0.14	1.57	0.00	0.29	0.19	0.29
	(2.22)	(2.39)	(1.67)	(7.57)	(0.89)	(5.34)	(3.04)	(0.44)	(0.68)	(0.00)	(3.16)	(0.22)	(47.78)	(2.96)	(4.03)	(1.08)	(3.34)	(0.48)	(2.44)	(0.00)	(0.46)	(0.60)	(0.56)
2	1.29	2.62	5.29	0.76	0.00	2.62	1.14	0.00	0.00	0.00	0.76	0.00	0.00	0.14	0.29	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00
	(1.19)	(5.37)	(15.26)	(2.26)	(0.00)	(2.44)	(1.77)	(0.00)	(0.00)	(0.00)	(2.41)	(0.00)	(0.00)	(0.48)	(0.72)	(0.00)	(0.00)	(0.00)	(0.62)	(0.00)	(0.00)	(0.00)	(0.00)
3	1.05	0.00	0.00	0.81	0.00	1.10	0.00	0.00	0.19	0.10	0.19	0.00	1.57	0.62	1.33	0.00	0.24	0.00	0.29	0.00	0.00	0.00	0.48
	(1.50)	(0.00)	(0.00)	(1.57)	(0.00)	(1.61)	(0.00)	(0.00)	(0.60)	(0.44)	(0.60)	(0.00)	(2.93)	(1.86)	(1.80)	(0.00)	(0.77)	(0.00)	(0.90)	(0.00)	(0.00)	(0.00)	(0.60)
4	5.14	0.81	8.52	9.10	1.00	9.52	0.76	0.33	0.19	1.38	4.33	0.05	20.95	39.24	6.95	0.43	0.33	0.05	0.19	0.00	0.00	0.19	0.19
	(5.28)	(1.25)	(10.10)	(12.05)	(1.22)	(8.74)	(1.70)	(0.97)	(0.60)	(1.99)	(8.81)	(0.22)	(18.82)	(30.47)	(7.42)	(0.60)	(0.86)	(0.22)	(0.51)	(0.00)	(0.00)	(0.68)	(0.40)
5	0.71	0.19	0.10	0.76	0.00	0.14	0.10	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.10	0.00	0.00	0.95	0.00
	(0.90)	(0.60)	(0.44)	(1.37)	(0.00)	(0.48)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.22)	(0.00)	(0.22)	(0.00)	(0.00)	(0.00)	(0.44)	(0.00)	(0.00)	(1.69)	(0.00)
6	5.05	5.48	7.71	3.86	0.24	37.43	5.71	4.33	2.33	11.14	9.10	2.52	67.38	10.87	17.33	11.71	1.62	71.10	0.52	0.00	0.38	28.29	0.10
	(5.42)	(9.78)	(10.83)	(4.94)	(0.77)	(38.52)	(5.65)	(5.63)	(4.85)	(7.79)	(18.51)	(2.60)	(81.42)	(12.00)	(14.16)	(7.34)	(2.85)	(42.14)	(1.12)	(0.00)	(1.53)	(21.83)	(0.44)
7	1.33	0.14	3.38	0.52	0.00	1.48	0.00	0.00	0.38	0.10	1.48	0.00	0.10	1.05	2.90	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
	(1.46)	(0.48)	(3.81)	(1.17)	(0.00)	(2.02)	(0.00)	(0.00)	(1.24)	(0.44)	(4.24)	(0.00)	(0.44)	(1.24)	(2.05)	(0.00)	(0.00)	(0.00)	(0.87)	(0.00)	(0.00)	(0.00)	(0.00)
8	9.86	8.19	11.87	6.52	0.71	6.95	11.10	3.19	3.43	2.29	1.52	4.90	98.29	13.52	21.48	34.38	1.24	10.48	1.00	0.00	0.33	1.05	0.00
	(14.87)	(9.87)	(8.88)	(12.39)	(1.42)	(9.58)	(13.14)	(3.50)	(8.78)	(3.30)	(2.23)	(14.42)	(62.12)	(9.52)	(13.95)	(12.98)	(3.35)	(15.84)	(1.87)	(0.00)	(1.32)	(2.87)	(0.00)
9	1.62	0.38	5.57	1.29	0.05	3.48	1.52	0.86	0.00	0.00	0.00	0.00	0.00	0.86	1.90	0.14	0.00	0.10	0.00	0.00	0.00	0.00	0.00
	(2.16)	(0.97)	(9.10)	(2.70)	(0.22)	(5.95)	(3.14)	(1.68)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(1.01)	(1.30)	(0.85)	(0.00)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
10	1.43	0.00	0.48	1.38	0.00	1.19	0.10	0.10	0.00	0.33	0.19	0.43	7.19	2.81	1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.83)	(0.00)	(1.12)	(2.58)	(0.00)	(1.47)	(0.44)	(0.44)	(0.00)	(0.73)	(0.60)	(1.57)	(16.14)	(2.38)	(1.86)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
11	4.81	3.43	2.90	3.14	0.24	31.87	4.14	1.19	0.33	2.10	4.52	8.57	54.29	9.43	12.38	9.86	0.10	5.43	0.19	0.00	0.00	7.00	0.00
	(8.19)	(6.91)	(6.41)	(4.48)	(0.54)	(59.56)	(6.24)	(2.02)	(0.86)	(3.11)	(4.83)	(28.06)	(40.73)	(9.69)	(9.42)	(11.26)	(0.44)	(4.53)	(0.51)	(0.00)	(0.00)	(15.18)	(0.00)
12	2.48	0.57	0.86	1.33	0.29	1.57	0.76	0.24	0.81	0.10	2.00	0.81	7.24	1.19	5.33	1.86	0.00	0.48	0.00	0.00	0.00	1.76	0.00
	(4.13)	(1.21)	(1.53)	(2.69)	(0.72)	(2.18)	(1.51)	(0.62)	(1.81)	(0.44)	(5.49)	(3.71)	(13.52)	(0.93)	(3.78)	(2.73)	(0.00)	(1.08)	(0.00)	(0.00)	(0.00)	(2.98)	(0.00)
13	1.62	0.67	2.43	1.86	0.29	2.00	0.10	0.43	0.00	1.38	1.05	2.81	25.52	16.29	4.05	0.05	0.05	0.10	0.00	0.00	0.00	0.00	0.00
	(2.06)	(1.68)	(5.60)	(2.76)	(0.72)	(1.45)	(0.30)	(0.93)	(0.00)	(3.57)	(2.44)	(6.68)	(23.68)	(10.14)	(2.84)	(0.22)	(0.22)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
14	2.67	1.33	1.38	2.29	0.00	1.67	0.00	0.19	0.00	1.00	0.24	1.67	7.14	4.14	2.29	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(4.08)	(2.82)	(2.48)	(3.55)	(0.00)	(1.35)	(0.00)	(0.60)	(0.00)	(2.68)	(0.54)	(4.31)	(7.83)	(3.41)	(2.15)	(0.22)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Table 6 continued...

WETLAND NUMBER	AQUATIC BIRD SPECIES																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
15	2.76	1.48	4.67	2.19	0.00	6.90	0.00	0.48	0.29	1.00	0.14	0.00	0.19	5.29	0.95	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(4.49)	(1.97)	(8.15)	(4.15)	(0.00)	(4.88)	(0.00)	(1.08)	(0.96)	(2.26)	(0.65)	(0.00)	(0.68)	(4.82)	(1.12)	(0.22)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
16	0.88	2.57	7.24	0.95	0.14	1.52	3.67	0.29	1.24	0.86	0.62	0.24	9.05	0.48	5.48	10.19	2.76	15.62	0.43	0.00	0.43	7.43	0.05
	(1.74)	(5.21)	(8.94)	(1.99)	(0.48)	(2.87)	(3.72)	(0.72)	(3.65)	(1.85)	(1.43)	(0.89)	(7.70)	(0.98)	(4.39)	(9.34)	(8.07)	(12.22)	(0.75)	(0.00)	(1.75)	(13.21)	(0.22)
17	0.62	0.00	0.86	0.29	0.00	1.71	0.00	0.10	1.52	0.00	0.10	0.00	0.00	0.52	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.07)	(0.00)	(1.46)	(0.96)	(0.00)	(4.21)	(0.00)	(0.44)	(6.54)	(0.00)	(0.44)	(0.00)	(0.00)	(0.87)	(1.45)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
18	3.00	2.19	5.48	2.57	0.00	7.95	1.38	1.62	1.29	2.95	2.62	2.52	8.62	12.90	7.33	0.14	0.38	0.24	0.14	0.00	0.05	0.00	0.05
	(2.95)	(3.44)	(8.33)	(3.84)	(0.00)	(5.31)	(3.07)	(1.86)	(4.14)	(4.85)	(3.80)	(3.53)	(10.03)	(7.02)	(5.78)	(0.48)	(1.16)	(0.54)	(0.48)	(0.00)	(0.22)	(0.00)	(0.22)
19	1.86	0.57	2.62	4.81	0.19	0.95	0.43	0.10	0.90	0.00	0.62	0.00	1.05	1.38	3.81	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(4.37)	(1.99)	(5.76)	(6.97)	(0.60)	(1.50)	(0.93)	(0.44)	(2.68)	(0.00)	(1.66)	(0.00)	(2.82)	(1.28)	(4.00)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
20	4.19	2.05	1.62	4.52	0.19	8.05	0.86	0.48	0.00	3.48	5.67	1.38	33.62	20.43	4.10	0.29	0.00	0.10	0.00	0.00	0.00	0.10	0.00
	(6.99)	(3.25)	(2.33)	(5.42)	(0.60)	(9.76)	(1.85)	(1.08)	(0.00)	(5.85)	(9.90)	(4.28)	(38.24)	(12.90)	(2.28)	(0.90)	(0.00)	(0.44)	(0.00)	(0.00)	(0.00)	(0.30)	(0.00)
21	0.90	0.38	1.43	1.14	0.00	1.10	0.95	0.00	0.05	0.00	0.05	0.00	0.10	2.00	1.48	0.00	0.00	0.00	0.24	0.00	0.00	0.14	0.00
	(1.18)	(1.02)	(3.17)	(2.08)	(0.00)	(1.70)	(1.24)	(0.00)	(0.22)	(0.00)	(0.22)	(0.00)	(0.44)	(1.58)	(1.17)	(0.00)	(0.00)	(0.00)	(0.62)	(0.00)	(0.00)	(0.48)	(0.00)
22	2.14	1.48	4.14	2.38	0.00	1.90	1.14	0.43	0.00	0.38	2.43	0.10	5.82	21.90	4.00	0.05	0.81	0.00	0.00	0.00	0.00	0.00	0.00
	(3.07)	(2.27)	(6.20)	(3.92)	(0.00)	(2.17)	(1.35)	(0.81)	(0.00)	(1.02)	(2.96)	(0.44)	(6.07)	(16.63)	(3.62)	(0.22)	(1.57)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
23	0.52	0.00	0.29	1.00	0.00	0.48	0.10	0.00	0.00	0.00	0.00	0.00	0.33	1.48	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
	(0.87)	(0.00)	(0.96)	(1.95)	(0.00)	(1.08)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(1.15)	(0.98)	(1.04)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.22)
24	2.48	0.82	2.82	4.10	0.43	6.81	3.81	0.43	0.10	0.52	1.86	0.67	21.76	1.62	5.38	0.24	0.00	0.38	0.24	0.00	0.00	2.43	0.00
	(3.56)	(2.20)	(3.80)	(7.25)	(1.12)	(19.00)	(4.84)	(0.93)	(0.44)	(2.18)	(2.78)	(1.59)	(20.92)	(1.02)	(4.97)	(0.62)	(0.00)	(0.80)	(0.77)	(0.00)	(0.00)	(4.52)	(0.00)
25	0.76	0.00	0.10	0.67	0.10	0.52	0.48	0.00	0.14	0.76	1.14	0.14	1.52	0.33	0.76	0.81	0.05	0.00	0.00	0.29	0.00	4.76	0.00
	(1.09)	(0.00)	(0.44)	(1.53)	(0.44)	(0.98)	(1.08)	(0.00)	(0.36)	(2.02)	(4.16)	(0.65)	(3.33)	(0.73)	(1.14)	(1.36)	(0.22)	(0.00)	(0.00)	(0.58)	(0.00)	(4.72)	(0.00)
26	1.00	0.00	0.71	0.00	0.00	1.43	0.67	0.29	0.10	0.14	0.43	1.33	3.95	0.43	3.62	6.71	0.00	0.43	0.00	0.10	0.00	21.86	0.00
	(2.47)	(0.00)	(1.68)	(0.00)	(0.00)	(4.79)	(1.80)	(0.72)	(0.44)	(0.65)	(0.93)	(2.31)	(5.86)	(0.81)	(3.50)	(8.43)	(0.00)	(0.87)	(0.00)	(0.30)	(0.00)	(17.98)	(0.00)
27	0.19	0.00	0.10	0.10	0.14	0.00	0.00	0.00	0.14	0.00	0.00	0.05	0.00	0.24	0.29	0.82	0.00	0.00	0.00	0.14	0.00	4.19	0.00
	(0.60)	(0.00)	(0.44)	(0.44)	(0.65)	(0.00)	(0.00)	(0.00)	(0.48)	(0.00)	(0.00)	(0.22)	(0.00)	(0.62)	(0.64)	(1.47)	(0.00)	(0.00)	(0.00)	(0.36)	(0.00)	(2.82)	(0.00)
28	2.76	0.78	0.81	0.57	0.05	2.38	0.71	0.76	0.71	0.38	1.67	6.62	17.90	4.67	7.05	0.14	0.00	0.05	0.00	0.00	0.00	0.33	0.00
	(4.89)	(3.49)	(1.25)	(1.54)	(0.22)	(3.23)	(1.45)	(1.34)	(3.05)	(0.87)	(2.58)	(15.02)	(27.88)	(2.83)	(5.71)	(0.48)	(0.00)	(0.22)	(0.00)	(0.00)	(0.00)	(0.88)	(0.00)
29	0.29	0.00	1.24	0.52	0.05	0.90	0.43	0.24	0.05	0.00	0.00	0.00	0.95	1.33	0.90	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
	(0.72)	(0.00)	(1.87)	(0.87)	(0.22)	(1.41)	(0.81)	(0.62)	(0.22)	(0.00)	(0.00)	(0.00)	(2.48)	(0.91)	(0.89)	(0.00)	(0.00)	(0.00)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)

Table 6 continued...

WETLAND NUMBER	AQUATIC BIRD SPECIES																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
30	2.00	0.43	2.14	1.10	0.00	1.76	0.86	0.10	0.19	0.29	0.05	0.00	14.24	5.52	15.33	0.38	0.10	0.90	0.86	0.00	0.14	0.05	0.19
	(1.64)	(0.93)	(5.15)	(2.28)	(0.00)	(1.61)	(1.62)	(0.44)	(0.51)	(1.31)	(0.22)	(0.00)	(11.91)	(4.55)	(5.85)	(1.24)	(0.44)	(3.08)	(1.20)	(0.00)	(0.48)	(0.22)	(0.40)
31	0.71	0.00	0.33	0.81	0.00	1.76	0.00	0.00	0.14	0.05	0.05	0.00	5.19	3.38	1.48	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.10
	(1.01)	(0.00)	(0.73)	(1.72)	(0.00)	(2.19)	(0.00)	(0.00)	(0.48)	(0.22)	(0.22)	(0.00)	(13.72)	(2.44)	(3.16)	(0.00)	(3.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.30)
32	0.86	0.19	4.76	0.19	0.10	2.24	4.57	0.71	0.52	0.05	0.10	0.71	33.48	14.19	24.00	0.90	5.33	3.57	2.38	0.00	0.14	0.19	0.19
	(2.73)	(0.51)	(8.91)	(0.60)	(0.44)	(6.47)	(5.98)	(1.27)	(1.08)	(0.22)	(0.44)	(2.39)	(19.43)	(6.84)	(9.82)	(1.58)	(7.98)	(4.90)	(2.84)	(0.00)	(0.48)	(0.51)	(0.51)
33	1.05	0.33	3.52	0.57	0.00	1.19	4.14	1.19	0.67	0.00	0.05	0.10	14.24	2.76	5.14	0.48	0.57	0.24	1.29	0.00	0.00	0.10	0.00
	(1.56)	(1.11)	(3.88)	(1.25)	(0.00)	(2.73)	(5.84)	(1.69)	(2.24)	(0.00)	(0.22)	(0.44)	(13.09)	(3.08)	(4.19)	(0.98)	(1.43)	(0.77)	(1.82)	(0.00)	(0.00)	(0.30)	(0.00)
34	0.24	0.00	0.71	0.19	0.05	1.48	0.00	0.10	0.00	0.10	0.38	0.00	0.00	0.38	2.38	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00
	(0.54)	(0.00)	(1.82)	(0.60)	(0.22)	(1.97)	(0.00)	(0.44)	(0.00)	(0.44)	(1.36)	(0.00)	(0.00)	(0.74)	(2.65)	(0.00)	(0.00)	(0.00)	(0.73)	(0.00)	(0.00)	(0.00)	(0.00)
35	1.67	0.48	0.90	3.10	0.05	6.10	1.00	0.19	0.00	0.38	1.19	0.00	3.52	5.14	2.10	0.33	0.00	0.19	1.71	0.00	0.05	1.48	0.00
	(1.88)	(1.40)	(1.51)	(6.71)	(0.22)	(6.36)	(2.41)	(0.60)	(0.00)	(1.16)	(2.62)	(0.00)	(8.85)	(5.38)	(3.24)	(1.08)	(0.00)	(0.68)	(2.49)	(0.00)	(0.22)	(2.48)	(0.00)
36	1.33	0.14	0.43	0.90	0.00	2.38	0.62	0.00	0.00	1.95	4.43	1.38	2.90	1.05	1.43	1.88	0.00	0.00	0.67	0.10	0.00	1.52	0.00
	(1.24)	(0.48)	(1.36)	(1.92)	(0.00)	(2.64)	(1.20)	(0.00)	(0.00)	(2.58)	(7.17)	(2.98)	(4.27)	(1.94)	(1.47)	(3.21)	(0.00)	(0.00)	(1.02)	(0.30)	(0.00)	(1.75)	(0.00)
37	1.10	0.57	3.38	2.67	0.00	1.29	0.57	0.00	0.00	1.57	0.76	0.00	0.57	2.38	1.62	0.10	0.00	0.00	0.00	0.00	0.00	0.67	0.00
	(1.00)	(1.57)	(4.85)	(4.58)	(0.00)	(1.38)	(1.57)	(0.00)	(0.00)	(5.17)	(1.87)	(0.00)	(1.78)	(1.69)	(1.20)	(0.30)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(1.11)	(0.00)
38	2.00	0.29	2.24	2.10	0.00	1.33	0.86	0.24	0.10	0.00	0.90	0.00	0.19	3.19	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00
	(2.00)	(1.31)	(2.96)	(3.43)	(0.00)	(0.97)	(1.20)	(0.62)	(0.44)	(0.00)	(1.78)	(0.00)	(0.60)	(2.25)	(1.31)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.54)	(0.00)
39	3.05	0.00	2.29	2.00	0.43	0.38	0.90	0.29	0.00	0.67	0.19	0.19	9.14	1.05	3.48	1.88	0.00	0.33	0.48	0.19	0.00	9.43	0.00
	(6.20)	(0.00)	(3.85)	(3.05)	(1.36)	(0.80)	(2.00)	(0.72)	(0.00)	(1.15)	(0.60)	(0.87)	(8.53)	(1.07)	(3.30)	(2.94)	(0.00)	(0.86)	(0.87)	(0.51)	(0.00)	(8.59)	(0.00)
40	2.86	0.86	1.81	2.14	0.33	14.71	1.33	0.67	0.00	2.52	4.46	0.57	52.14	6.57	17.52	12.19	0.38	1.81	0.29	0.29	0.29	36.24	0.00
	(4.00)	(2.48)	(4.25)	(4.39)	(0.80)	(34.09)	(2.08)	(1.32)	(0.00)	(3.47)	(5.29)	(1.16)	(38.65)	(3.53)	(11.32)	(10.20)	(1.07)	(2.25)	(0.56)	(0.72)	(0.56)	(21.06)	(0.00)
41	1.05	0.05	2.38	0.38	0.24	0.71	1.19	0.19	0.57	0.19	0.19	0.00	16.90	13.29	11.24	0.52	3.82	6.00	2.24	0.00	0.24	0.00	0.24
	(1.32)	(0.22)	(4.08)	(1.75)	(0.89)	(2.85)	(1.81)	(0.60)	(0.98)	(0.87)	(0.87)	(0.00)	(16.68)	(18.89)	(6.55)	(1.97)	(5.14)	(7.81)	(2.23)	(0.00)	(0.62)	(0.00)	(1.09)
42	3.52	0.14	0.38	1.05	0.86	0.90	0.71	0.43	0.00	4.52	3.10	6.81	19.71	2.71	7.05	13.90	0.00	1.48	0.19	0.38	0.00	38.88	0.00
	(5.28)	(0.65)	(0.74)	(1.96)	(1.59)	(1.79)	(1.35)	(1.03)	(0.00)	(3.12)	(4.25)	(10.68)	(19.14)	(2.17)	(8.06)	(8.47)	(0.00)	(3.30)	(0.60)	(0.88)	(0.00)	(23.19)	(0.00)
43	0.71	0.62	1.29	1.29	0.33	6.14	0.19	0.19	0.52	0.62	0.10	0.19	0.95	1.43	1.76	0.00	0.00	0.00	0.24	0.05	0.00	0.00	0.00
	(0.90)	(1.16)	(1.98)	(1.76)	(0.86)	(11.77)	(0.68)	(0.60)	(1.17)	(2.84)	(0.44)	(0.87)	(1.83)	(1.08)	(1.92)	(0.00)	(0.00)	(0.00)	(0.82)	(0.22)	(0.00)	(0.00)	(0.00)
44	1.14	0.86	0.52	3.24	1.14	1.52	1.33	0.29	1.10	0.62	1.10	0.10	4.52	2.24	3.86	0.05	0.29	0.00	0.05	0.05	0.00	1.90	0.00
	(1.85)	(1.82)	(0.87)	(4.70)	(2.24)	(1.63)	(1.53)	(0.78)	(1.73)	(2.01)	(2.68)	(0.44)	(8.56)	(2.47)	(4.14)	(0.22)	(0.56)	(0.00)	(0.22)	(0.22)	(0.00)	(3.85)	(0.00)

Table 6 continued...

WETLAND NUMBER	AQUATIC BIRD SPECIES																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
45	0.29	0.00	0.33	1.19	0.38	0.48	0.38	0.00	0.57	1.33	1.52	2.81	1.71	0.43	0.43	0.86	0.00	0.00	0.00	0.33	0.05	5.62	0.00
	(0.56)	(0.00)	(0.97)	(1.83)	(0.80)	(0.87)	(1.02)	(0.00)	(1.83)	(1.80)	(3.27)	(3.54)	(3.94)	(0.98)	(0.75)	(1.42)	(0.00)	(0.00)	(0.00)	(0.58)	(0.22)	(4.71)	(0.00)
46	2.33	0.38	1.76	4.52	0.90	2.00	1.33	0.10	3.48	4.62	4.43	5.76	7.14	0.88	4.00	5.57	0.19	0.00	0.10	0.62	0.05	23.05	0.00
	(1.83)	(1.02)	(2.23)	(8.74)	(1.58)	(1.30)	(2.87)	(0.44)	(1.83)	(3.12)	(3.75)	(8.86)	(7.78)	(0.96)	(4.28)	(4.39)	(0.80)	(0.00)	(0.44)	(0.92)	(0.22)	(10.44)	(0.00)
47	1.57	0.14	0.71	2.05	0.29	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00
	(2.38)	(0.48)	(1.19)	(4.33)	(0.64)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.87)	(0.00)	(0.00)	(0.00)	(0.51)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.30)	(0.00)
48	0.29	0.29	0.71	1.10	0.19	0.10	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00
	(0.72)	(0.72)	(1.10)	(2.07)	(0.80)	(0.44)	(0.98)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.74)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(1.39)	(0.00)
49	1.57	0.10	1.00	0.48	0.00	1.14	0.00	0.00	0.67	0.00	1.43	0.00	0.19	0.29	3.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.50)	(0.44)	(1.26)	(1.08)	(0.00)	(1.71)	(0.00)	(0.00)	(1.93)	(0.00)	(2.23)	(0.00)	(0.68)	(0.64)	(2.39)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
50	1.86	1.00	2.67	0.76	0.14	5.85	0.76	0.10	0.52	0.24	1.14	0.00	3.48	75.14	14.48	0.00	9.05	0.00	0.38	0.00	0.10	0.00	0.00
	(1.31)	(1.14)	(3.18)	(1.14)	(0.36)	(8.16)	(1.51)	(0.44)	(1.17)	(1.09)	(2.08)	(0.00)	(3.74)	(17.85)	(6.44)	(0.00)	(10.89)	(0.00)	(0.74)	(0.00)	(0.44)	(0.00)	(0.00)
51	2.10	0.81	0.76	1.67	0.00	1.52	0.00	0.00	0.19	0.00	0.62	0.05	0.19	2.43	2.19	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
	(1.61)	(0.93)	(1.00)	(2.61)	(0.00)	(1.03)	(0.00)	(0.00)	(0.60)	(0.00)	(1.28)	(0.22)	(0.60)	(1.83)	(1.91)	(0.00)	(0.00)	(0.00)	(0.80)	(0.00)	(0.00)	(0.00)	(0.00)
52	2.95	0.81	0.14	1.76	0.00	1.86	0.14	0.00	0.10	0.38	0.33	0.05	1.05	1.76	4.33	0.00	0.87	0.00	0.10	0.00	0.19	0.00	0.24
	(2.48)	(0.93)	(0.48)	(3.32)	(0.00)	(2.59)	(0.48)	(0.00)	(0.44)	(1.24)	(0.97)	(0.22)	(1.88)	(1.30)	(2.18)	(0.00)	(2.11)	(0.00)	(0.44)	(0.00)	(0.80)	(0.00)	(0.54)
53	1.24	0.10	0.29	1.87	0.14	1.38	1.19	0.00	0.29	0.10	1.71	3.52	18.29	4.52	4.10	3.10	0.10	0.57	0.10	0.05	0.00	3.57	0.00
	(1.61)	(0.44)	(0.84)	(2.76)	(0.48)	(2.64)	(3.08)	(0.00)	(1.31)	(0.44)	(3.38)	(8.47)	(17.61)	(2.48)	(2.32)	(3.24)	(0.30)	(1.21)	(0.44)	(0.22)	(0.00)	(4.41)	(0.00)
54	2.38	0.00	0.48	3.00	0.14	0.95	0.43	0.00	0.19	0.14	3.33	0.00	10.86	4.43	3.48	1.52	0.00	0.19	0.10	0.24	0.00	6.38	0.14
	(2.48)	(0.00)	(0.81)	(3.98)	(0.48)	(1.50)	(1.12)	(0.00)	(0.60)	(0.65)	(6.26)	(0.00)	(17.90)	(3.08)	(4.47)	(2.52)	(0.00)	(0.60)	(0.44)	(0.54)	(0.00)	(6.45)	(0.36)
55	0.67	0.10	0.24	1.24	0.29	0.90	0.19	0.00	0.00	0.19	0.62	0.00	0.81	0.48	1.62	0.19	0.00	0.00	0.00	0.05	0.00	1.81	0.00
	(1.02)	(0.44)	(0.62)	(1.92)	(0.72)	(1.26)	(0.87)	(0.00)	(0.00)	(0.87)	(1.86)	(0.00)	(3.71)	(0.81)	(1.47)	(0.60)	(0.00)	(0.00)	(0.00)	(0.22)	(0.00)	(2.23)	(0.00)
56	3.38	0.24	1.43	0.48	0.00	1.71	0.62	0.33	0.38	0.00	1.67	0.29	17.90	46.48	23.38	0.00	5.29	0.52	1.52	0.00	0.00	0.05	0.00
	(4.58)	(0.62)	(1.78)	(2.18)	(0.00)	(1.74)	(1.43)	(0.86)	(0.86)	(0.00)	(3.67)	(1.31)	(18.70)	(24.73)	(10.17)	(0.00)	(7.50)	(1.21)	(1.75)	(0.00)	(0.00)	(0.22)	(0.00)
57	0.81	0.00	0.81	1.67	0.00	0.29	0.00	0.00	0.19	0.00	0.33	0.10	0.48	2.10	1.14	0.24	0.00	0.00	0.24	0.10	0.10	1.05	0.00
	(1.40)	(0.00)	(2.04)	(3.61)	(0.00)	(0.78)	(0.00)	(0.00)	(0.60)	(0.00)	(1.06)	(0.44)	(1.40)	(1.34)	(1.80)	(0.89)	(0.00)	(0.00)	(0.62)	(0.44)	(0.44)	(2.56)	(0.00)
58	0.87	0.00	0.48	0.14	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.67	0.62	0.00	0.00	0.00	0.10	0.10	0.00	0.29	0.00
	(0.97)	(0.00)	(0.81)	(0.65)	(0.00)	(0.00)	(0.00)	(0.00)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)	(0.91)	(1.40)	(0.00)	(0.00)	(0.00)	(0.44)	(0.44)	(0.00)	(0.64)	(0.00)
59	0.95	0.00	2.10	0.57	0.00	1.14	0.00	0.00	0.76	0.00	0.00	0.00	0.10	3.57	4.81	0.00	0.19	0.00	0.57	0.00	0.00	0.10	0.00
	(1.43)	(0.00)	(5.04)	(1.43)	(0.00)	(1.49)	(0.00)	(0.00)	(1.26)	(0.00)	(0.00)	(0.00)	(0.44)	(2.31)	(2.29)	(0.00)	(0.87)	(0.00)	(0.93)	(0.00)	(0.00)	(0.44)	(0.00)

Table 6 continued...

WETLAND NUMBER	AQUATIC BIRD SPECIES																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
60	1.52	0.10	0.00	0.14	0.00	0.19	0.00	0.00	2.38	0.57	1.71	0.86	1.95	12.81	1.71	0.67	0.95	0.00	0.00	0.71	0.29	3.10	0.10
	(1.57)	(0.44)	(0.00)	(0.65)	(0.00)	(0.51)	(0.00)	(0.00)	(2.71)	(1.25)	(2.83)	(1.01)	(2.87)	(9.62)	(3.70)	(1.20)	(3.28)	(0.00)	(0.00)	(0.96)	(0.56)	(3.43)	(0.30)
61	0.43	0.00	0.90	0.57	0.05	0.57	0.00	0.00	0.43	0.00	0.00	0.00	0.00	3.76	0.71	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
	(0.81)	(0.00)	(1.22)	(1.16)	(0.22)	(0.83)	(0.00)	(0.00)	(0.81)	(0.00)	(0.00)	(0.00)	(0.00)	(2.05)	(1.10)	(0.00)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
62	0.38	0.00	0.24	0.14	0.00	0.05	0.00	0.05	0.19	0.00	0.19	0.00	0.62	1.05	0.76	0.00	0.00	0.00	0.00	0.10	0.00	0.14	0.00
	(0.80)	(0.00)	(0.89)	(0.48)	(0.00)	(0.22)	(0.00)	(0.22)	(0.60)	(0.00)	(0.60)	(0.00)	(2.20)	(0.92)	(1.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.30)	(0.00)	(0.48)	(0.00)
63	0.52	0.00	0.52	0.52	0.00	0.38	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.76	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00
	(0.93)	(0.00)	(0.81)	(1.78)	(0.00)	(0.80)	(0.00)	(0.00)	(1.09)	(0.00)	(0.00)	(0.00)	(0.00)	(0.94)	(0.75)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.30)	(0.00)
64	0.10	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.19	0.00	0.10	0.00	0.00	0.48	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.44)	(0.00)	(0.44)	(0.44)	(0.00)	(0.44)	(0.00)	(0.00)	(0.87)	(0.00)	(0.44)	(0.00)	(0.00)	(1.08)	(0.38)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
65	4.48	5.67	14.57	7.78	0.33	1.33	2.71	0.00	2.57	0.24	1.43	0.00	1.81	7.19	12.81	0.00	0.00	0.29	0.38	0.05	0.00	0.19	0.00
	(5.43)	(7.59)	(11.05)	(15.86)	(0.86)	(2.52)	(4.30)	(0.00)	(2.40)	(0.88)	(3.33)	(0.00)	(2.68)	(5.18)	(8.44)	(0.00)	(0.00)	(0.90)	(0.67)	(0.22)	(0.00)	(0.51)	(0.00)
66	0.48	0.00	0.24	0.14	0.14	0.14	0.57	0.00	0.33	1.05	0.86	0.19	0.14	0.29	1.52	1.81	0.00	0.00	0.00	0.29	0.00	2.19	0.00
	(0.81)	(0.00)	(0.82)	(0.65)	(0.36)	(0.48)	(0.93)	(0.00)	(0.97)	(1.88)	(1.56)	(0.51)	(0.48)	(0.72)	(1.40)	(2.44)	(0.00)	(0.00)	(0.00)	(0.56)	(0.00)	(1.38)	(0.00)
67	0.10	0.00	0.05	0.10	0.10	0.00	0.00	0.00	0.00	0.38	0.05	0.19	0.00	0.24	0.29	0.33	0.00	0.00	0.00	0.05	0.00	0.76	0.00
	(0.44)	(0.00)	(0.22)	(0.44)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)	(1.02)	(0.22)	(0.60)	(0.00)	(0.82)	(0.72)	(1.08)	(0.00)	(0.00)	(0.00)	(0.22)	(0.00)	(0.70)	(0.00)
68	2.10	0.00	0.71	2.00	0.86	2.43	0.19	0.00	0.19	0.38	2.38	4.67	8.71	6.10	8.00	2.95	0.81	0.10	0.57	0.19	0.05	3.19	0.00
	(3.13)	(0.00)	(1.31)	(3.79)	(1.35)	(3.14)	(0.80)	(0.00)	(0.60)	(1.02)	(5.38)	(7.25)	(15.66)	(4.01)	(2.95)	(2.98)	(3.71)	(0.44)	(1.29)	(0.51)	(0.22)	(2.79)	(0.00)
69	0.14	0.00	1.90	1.19	0.62	9.48	0.38	0.00	0.00	0.00	0.76	0.00	0.00	0.90	1.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.48)	(0.00)	(2.74)	(2.75)	(1.20)	(10.35)	(0.80)	(0.00)	(0.00)	(0.00)	(3.49)	(0.00)	(0.00)	(1.09)	(1.59)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
70	1.10	0.00	0.05	0.29	0.00	1.10	0.00	0.00	1.29	0.19	1.05	0.10	0.90	5.71	3.76	0.14	0.33	0.24	0.43	0.00	1.05	1.19	0.19
	(1.70)	(0.00)	(0.22)	(0.72)	(0.00)	(1.92)	(0.00)	(0.00)	(2.90)	(0.60)	(1.96)	(0.44)	(2.45)	(3.57)	(5.34)	(0.48)	(0.97)	(0.77)	(1.25)	(0.00)	(1.07)	(1.78)	(0.40)
71	4.43	0.10	1.67	1.76	0.18	12.14	0.95	0.10	2.05	2.38	4.95	0.48	8.90	12.52	6.71	0.67	0.00	0.00	0.14	0.05	0.00	0.57	0.00
	(4.80)	(0.44)	(2.35)	(2.77)	(0.51)	(11.52)	(2.31)	(0.30)	(4.09)	(4.17)	(13.26)	(1.03)	(12.21)	(8.84)	(4.60)	(1.59)	(0.00)	(0.00)	(0.48)	(0.22)	(0.00)	(1.26)	(0.00)
72	0.62	0.00	0.48	1.38	0.10	0.67	0.29	0.00	0.81	1.86	2.81	4.43	2.24	2.19	3.19	3.29	0.00	0.00	0.00	0.33	0.00	9.00	0.00
	(1.02)	(0.00)	(1.78)	(1.88)	(0.30)	(0.87)	(0.64)	(0.00)	(2.23)	(2.63)	(4.48)	(3.65)	(4.45)	(1.81)	(2.58)	(3.55)	(0.00)	(0.00)	(0.00)	(0.66)	(0.00)	(5.74)	(0.00)
73	2.38	0.00	0.52	0.81	0.10	1.24	0.10	0.00	1.29	1.14	3.24	0.90	8.86	6.10	5.76	0.19	0.05	0.00	0.19	0.19	0.76	2.52	0.48
	(2.29)	(0.00)	(1.17)	(1.78)	(0.44)	(2.05)	(0.44)	(0.00)	(2.45)	(3.00)	(3.43)	(1.97)	(12.90)	(3.94)	(3.08)	(0.51)	(0.22)	(0.00)	(0.60)	(0.51)	(1.04)	(3.84)	(0.81)
74	1.86	0.00	0.10	0.67	0.05	0.86	0.00	0.00	2.71	0.82	3.05	0.29	9.05	9.95	6.86	0.76	0.19	0.00	0.14	0.10	0.57	1.62	0.14
	(1.80)	(0.00)	(0.30)	(1.43)	(0.22)	(1.20)	(0.00)	(0.00)	(3.90)	(2.01)	(4.83)	(0.64)	(12.83)	(12.18)	(4.28)	(2.12)	(0.68)	(0.00)	(0.48)	(0.30)	(0.75)	(2.13)	(0.36)

Table 6 continued...

WETLAND NUMBER	AQUATIC BIRD SPECIES																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
75	2.95	0.14	3.71	2.82	0.33	4.82	0.10	0.05	3.57	0.95	3.24	0.05	5.29	9.81	3.71	0.00	0.52	0.00	0.00	0.00	0.05	0.00	0.10
	(2.60)	(0.48)	(3.30)	(3.61)	(0.87)	(4.65)	(0.44)	(0.22)	(4.02)	(1.86)	(4.37)	(0.22)	(7.80)	(8.01)	(1.87)	(0.00)	(1.83)	(0.00)	(0.00)	(0.00)	(0.22)	(0.00)	(0.30)
76	2.10	0.00	1.24	1.05	0.00	2.19	0.19	0.00	0.62	0.00	0.19	0.62	22.57	34.90	12.29	0.24	3.38	0.05	2.43	0.00	0.19	0.00	0.14
	(2.12)	(0.00)	(1.70)	(2.06)	(0.00)	(2.56)	(0.60)	(0.00)	(0.92)	(0.00)	(0.60)	(2.84)	(25.05)	(23.15)	(7.80)	(0.89)	(9.82)	(0.22)	(2.50)	(0.00)	(0.51)	(0.00)	(0.36)
77	9.71	0.86	3.86	2.81	0.00	3.19	0.95	0.00	5.19	0.00	10.00	2.67	13.24	55.24	14.52	0.00	3.14	0.14	2.38	0.24	1.67	0.10	2.19
	(5.74)	(2.73)	(6.67)	(3.94)	(0.00)	(4.34)	(2.13)	(0.00)	(5.21)	(0.00)	(12.15)	(4.60)	(14.91)	(16.62)	(5.39)	(0.00)	(8.25)	(0.48)	(3.23)	(0.54)	(3.07)	(0.30)	(1.66)
78	0.48	0.00	0.43	0.14	0.10	3.10	0.10	0.00	0.05	0.00	0.00	0.00	1.57	0.57	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.87)	(0.00)	(1.08)	(0.48)	(0.44)	(5.09)	(0.44)	(0.00)	(0.22)	(0.00)	(0.00)	(0.00)	(2.93)	(1.06)	(1.14)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
79	1.14	0.00	0.52	0.29	0.00	0.00	0.10	0.00	0.05	0.00	0.00	0.00	0.10	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(2.26)	(0.00)	(1.33)	(0.72)	(0.00)	(0.00)	(0.44)	(0.00)	(0.22)	(0.00)	(0.00)	(0.00)	(0.44)	(0.36)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
80	0.86	0.00	1.00	0.38	0.05	0.00	0.10	0.00	0.19	0.00	0.00	0.00	0.52	0.86	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.06)	(0.00)	(1.61)	(0.80)	(0.22)	(0.00)	(0.44)	(0.00)	(0.60)	(0.00)	(0.00)	(0.00)	(1.40)	(1.06)	(0.97)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
81	1.19	0.00	1.14	0.43	0.00	1.10	0.00	0.00	0.00	0.00	1.43	0.00	0.10	0.67	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.69)	(0.00)	(2.52)	(0.98)	(0.00)	(1.61)	(0.00)	(0.00)	(0.00)	(0.00)	(2.69)	(0.00)	(0.44)	(0.86)	(0.96)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
82	1.52	0.00	0.29	0.81	0.00	0.43	0.00	0.00	0.00	0.00	0.14	0.00	0.33	2.29	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.60)	(0.00)	(0.90)	(1.47)	(0.00)	(0.81)	(0.00)	(0.00)	(0.00)	(0.00)	(0.48)	(0.00)	(0.97)	(1.01)	(1.33)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
83	0.48	0.00	0.14	0.00	0.00	0.00	0.05	0.00	0.57	0.00	0.05	0.00	0.24	2.05	0.52	0.00	0.19	0.00	0.05	0.00	0.38	0.00	1.57
	(1.12)	(0.00)	(0.48)	(0.00)	(0.00)	(0.00)	(0.22)	(0.00)	(1.12)	(0.00)	(0.22)	(0.00)	(0.77)	(2.04)	(0.81)	(0.00)	(0.87)	(0.00)	(0.22)	(0.00)	(0.97)	(0.00)	(0.87)
84	0.33	0.00	0.62	0.19	0.00	0.38	0.05	0.00	0.00	0.10	0.00	0.00	0.00	0.71	0.29	0.19	0.00	0.00	0.00	0.00	0.00	1.14	0.00
	(0.73)	(0.00)	(2.20)	(0.87)	(0.00)	(0.80)	(0.22)	(0.00)	(0.00)	(0.44)	(0.00)	(0.00)	(0.00)	(0.90)	(0.72)	(0.60)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(1.35)	(0.00)
85	0.33	0.00	0.10	0.43	0.00	0.19	0.52	0.19	0.00	0.00	0.00	0.00	0.00	0.62	0.29	0.05	0.00	0.00	0.00	0.00	0.00	0.62	0.00
	(0.86)	(0.00)	(0.30)	(0.98)	(0.00)	(0.51)	(1.03)	(0.60)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.86)	(0.56)	(0.22)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(1.02)	(0.00)
86	7.43	0.05	0.48	4.05	1.38	2.43	0.86	0.00	0.00	0.10	2.29	0.00	7.14	12.00	2.57	0.00	0.19	0.00	0.00	0.10	0.00	1.86	0.00
	(5.12)	(0.22)	(0.87)	(5.30)	(1.32)	(2.69)	(1.88)	(0.00)	(0.00)	(0.44)	(4.46)	(0.00)	(23.62)	(5.45)	(3.84)	(0.00)	(0.87)	(0.00)	(0.00)	(0.30)	(0.00)	(3.24)	(0.00)
87	0.95	2.86	4.43	4.67	0.33	2.14	7.14	1.14	0.19	0.19	0.71	0.38	5.29	3.00	2.57	0.24	0.14	0.00	0.00	0.00	0.00	0.10	0.00
	(1.20)	(2.95)	(3.99)	(8.79)	(0.86)	(1.74)	(9.48)	(1.96)	(0.60)	(0.87)	(1.35)	(1.20)	(8.17)	(5.30)	(2.09)	(0.54)	(0.65)	(0.00)	(0.00)	(0.00)	(0.00)	(0.30)	(0.00)
88	1.52	1.86	2.14	4.05	0.19	5.81	1.43	0.57	0.29	1.90	1.86	3.76	48.76	17.48	3.36	2.57	0.43	0.10	0.00	0.05	0.00	0.00	0.00
	(2.29)	(2.39)	(1.58)	(6.74)	(0.51)	(4.94)	(2.48)	(1.12)	(0.78)	(3.48)	(4.68)	(5.42)	(48.50)	(9.29)	(4.84)	(3.11)	(1.43)	(0.44)	(0.00)	(0.22)	(0.00)	(0.00)	(0.00)
89	1.10	2.33	1.87	2.71	0.43	15.48	2.76	0.90	0.00	0.52	0.90	0.24	4.14	13.81	5.76	1.95	0.38	0.24	0.57	0.00	0.05	0.10	0.00
	(1.55)	(1.68)	(2.15)	(4.96)	(1.12)	(24.82)	(3.36)	(1.14)	(0.00)	(0.98)	(1.95)	(1.09)	(5.14)	(7.09)	(3.94)	(4.42)	(1.02)	(0.89)	(1.80)	(0.00)	(0.22)	(0.30)	(0.00)

Table 6 continued...

WETLAND NUMBER	AQUATIC BIRD SPECIES																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
90	0.90	1.71	1.57	1.05	0.00	1.86	0.86	0.71	0.00	0.00	1.38	0.14	0.48	4.76	0.19	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.18)	(1.76)	(2.64)	(1.88)	(0.00)	(0.79)	(1.15)	(0.96)	(0.00)	(0.00)	(5.44)	(0.48)	(1.40)	(1.18)	(0.51)	(0.22)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
91	1.86	0.95	0.43	1.24	0.19	1.57	0.29	0.05	0.00	0.57	2.05	6.95	9.62	5.38	4.87	0.14	0.00	0.05	0.24	0.00	0.10	0.05	0.00
	(2.06)	(1.80)	(0.75)	(2.95)	(0.60)	(1.83)	(0.78)	(0.22)	(0.00)	(2.20)	(3.43)	(23.71)	(13.52)	(4.40)	(3.53)	(0.48)	(0.00)	(0.22)	(0.89)	(0.00)	(0.30)	(0.22)	(0.00)
92	1.71	2.14	0.57	1.00	0.00	0.86	1.05	0.05	0.00	0.00	0.00	0.00	1.67	2.52	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(3.51)	(4.33)	(0.98)	(1.79)	(0.00)	(1.01)	(1.32)	(0.22)	(0.00)	(0.00)	(0.00)	(0.00)	(4.37)	(1.60)	(1.08)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
93	0.86	0.29	0.76	1.57	0.29	0.57	0.48	0.14	0.00	0.00	0.10	0.00	1.33	0.71	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.31)	(0.78)	(1.30)	(2.93)	(0.72)	(1.12)	(0.81)	(0.65)	(0.00)	(0.00)	(0.44)	(0.00)	(2.03)	(0.96)	(0.60)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
94	0.48	0.33	0.81	0.24	0.00	0.29	0.57	0.10	0.00	0.00	0.19	0.05	0.29	0.76	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.87)	(0.73)	(1.17)	(0.89)	(0.00)	(0.72)	(1.08)	(0.44)	(0.00)	(0.00)	(0.87)	(0.22)	(0.96)	(1.00)	(0.73)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
95	0.62	0.19	0.10	0.81	0.19	0.38	0.38	0.00	0.00	0.00	0.43	6.19	0.52	0.81	1.33	0.48	0.00	0.00	0.19	0.00	0.00	1.62	0.00
	(1.02)	(0.60)	(0.44)	(1.69)	(0.87)	(0.86)	(0.86)	(0.00)	(0.00)	(0.00)	(1.57)	(16.91)	(1.63)	(0.93)	(1.35)	(1.12)	(0.00)	(0.00)	(0.60)	(0.00)	(0.00)	(1.88)	(0.00)
96	1.57	1.19	2.67	2.43	0.48	3.43	3.24	0.52	0.00	0.10	3.57	8.57	2.14	2.43	1.43	1.48	0.05	0.00	0.19	0.00	0.00	1.48	0.00
	(1.50)	(1.69)	(3.55)	(3.36)	(0.98)	(5.38)	(4.47)	(1.17)	(0.00)	(0.44)	(13.46)	(16.98)	(5.80)	(1.60)	(2.06)	(3.38)	(0.22)	(0.00)	(0.60)	(0.00)	(0.00)	(2.56)	(0.00)
97	1.38	4.52	2.76	2.05	0.38	4.14	1.43	1.29	0.00	0.10	2.05	2.48	15.43	15.38	4.57	2.24	0.10	1.29	0.10	0.00	0.10	0.90	0.00
	(2.01)	(4.31)	(3.51)	(3.08)	(0.97)	(3.65)	(2.11)	(1.93)	(0.00)	(0.30)	(2.65)	(6.10)	(16.91)	(18.10)	(5.68)	(3.82)	(0.44)	(1.65)	(0.44)	(0.00)	(0.44)	(3.06)	(0.00)
98	0.33	0.33	0.57	0.38	0.00	0.14	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.73)	(0.73)	(1.66)	(0.86)	(0.00)	(0.48)	(0.72)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.87)	(0.93)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
99	2.24	2.00	2.24	2.71	0.33	2.00	0.90	0.33	0.00	0.00	0.57	0.29	1.76	3.43	0.29	0.33	0.00	0.05	0.05	0.00	0.00	0.05	0.00
	(2.00)	(1.87)	(3.48)	(3.72)	(0.80)	(1.73)	(1.37)	(0.97)	(0.00)	(0.00)	(1.16)	(0.96)	(5.28)	(3.82)	(0.72)	(0.91)	(0.00)	(0.22)	(0.22)	(0.00)	(0.00)	(0.22)	(0.00)
100	0.95	2.10	2.19	1.10	0.10	2.67	3.10	0.48	0.00	0.10	0.29	6.52	1.29	2.10	0.52	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.02)	(2.81)	(3.56)	(2.07)	(0.44)	(2.24)	(2.47)	(0.87)	(0.00)	(0.30)	(0.84)	(14.90)	(1.90)	(2.88)	(1.03)	(3.81)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
101	1.90	3.48	3.95	1.76	0.14	3.19	3.14	0.24	0.00	0.10	0.48	9.14	4.71	10.86	1.10	2.76	0.00	0.33	0.10	0.00	0.33	0.00	0.00
	(2.41)	(4.25)	(7.03)	(2.98)	(0.48)	(2.32)	(2.76)	(0.62)	(0.00)	(0.44)	(1.08)	(29.11)	(7.47)	(4.99)	(3.14)	(3.88)	(0.00)	(0.97)	(0.44)	(0.00)	(1.32)	(0.00)	(0.00)
102	0.43	0.43	0.52	0.76	0.10	0.38	1.00	0.00	0.00	0.00	0.33	0.00	20.43	2.43	0.76	0.14	0.10	0.00	0.14	0.00	0.00	0.00	0.00
	(0.81)	(0.75)	(1.08)	(1.67)	(0.44)	(0.74)	(1.76)	(0.00)	(0.00)	(0.00)	(1.11)	(0.00)	(43.78)	(1.96)	(1.41)	(0.48)	(0.44)	(0.00)	(0.48)	(0.00)	(0.00)	(0.00)	(0.00)
103	0.33	0.67	0.57	0.43	0.10	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.06)	(2.42)	(1.57)	(1.12)	(0.44)	(0.00)	(1.03)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.60)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
104	0.95	2.05	0.10	0.43	0.00	1.71	0.62	0.00	0.00	0.00	0.43	0.95	1.48	5.19	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
	(1.36)	(4.38)	(0.44)	(0.81)	(0.00)	(1.85)	(1.16)	(0.00)	(0.00)	(0.00)	(1.43)	(3.28)	(3.91)	(2.36)	(0.91)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.22)	(0.00)

Table 6 continued...

WETLAND NUMBER	AQUATIC BIRD SPECIES																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
106	1.95	1.86	2.10	1.33	0.29	1.43	2.86	0.19	0.00	0.00	0.43	1.81	0.33	2.95	0.52	0.05	0.00	0.05	0.43	0.00	0.00	0.10	0.00
	(2.75)	(2.74)	(3.77)	(2.15)	(0.64)	(1.80)	(2.85)	(0.60)	(0.00)	(0.00)	(1.21)	(7.84)	(1.53)	(1.86)	(0.87)	(0.22)	(0.00)	(0.22)	(0.81)	(0.00)	(0.00)	(0.44)	(0.00)
107	0.67	2.38	2.33	0.95	0.00	3.10	1.29	0.00	0.10	0.00	0.24	0.86	0.19	1.57	0.24	0.00	0.00	0.00	0.43	0.00	0.00	1.33	0.00
	(1.11)	(5.15)	(4.76)	(2.22)	(0.00)	(5.79)	(1.49)	(0.00)	(0.44)	(0.00)	(0.62)	(3.93)	(0.87)	(0.93)	(0.62)	(0.00)	(0.00)	(0.00)	(0.81)	(0.00)	(0.00)	(1.62)	(0.00)
108	0.14	0.90	2.33	1.90	0.24	0.38	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.48)	(2.64)	(5.89)	(3.03)	(0.62)	(0.87)	(2.24)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
109	1.33	1.81	2.33	1.33	0.24	1.71	2.05	0.38	0.00	0.00	0.43	1.71	0.19	1.14	0.29	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00
	(1.68)	(1.69)	(2.35)	(2.20)	(0.77)	(1.62)	(3.41)	(0.80)	(0.00)	(0.00)	(1.12)	(8.14)	(0.60)	(1.28)	(0.84)	(0.00)	(0.00)	(0.00)	(0.22)	(0.00)	(0.00)	(0.00)	(0.00)
110	0.48	4.57	2.05	0.33	0.10	3.82	2.00	0.10	0.00	0.00	0.43	0.18	14.33	9.43	1.19	0.43	0.14	0.00	0.05	0.00	0.00	0.00	0.00
	(1.21)	(4.59)	(2.82)	(0.86)	(0.44)	(3.12)	(1.90)	(0.44)	(0.00)	(0.00)	(1.03)	(0.87)	(11.50)	(8.16)	(1.63)	(1.36)	(0.48)	(0.00)	(0.22)	(0.00)	(0.00)	(0.00)	(0.00)
111	1.29	1.00	1.33	0.76	0.00	1.05	1.76	0.29	0.00	0.00	0.24	0.86	0.95	2.52	0.38	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00
	(2.10)	(1.41)	(2.92)	(1.81)	(0.00)	(1.02)	(2.00)	(0.72)	(0.00)	(0.00)	(0.77)	(2.43)	(2.18)	(1.33)	(0.74)	(0.00)	(0.00)	(0.00)	(0.62)	(0.00)	(0.00)	(0.00)	(0.00)
112	1.10	0.19	0.95	0.38	0.00	0.24	0.10	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
	(1.67)	(0.60)	(0.97)	(0.74)	(0.00)	(0.89)	(0.44)	(0.00)	(0.00)	(0.00)	(0.96)	(0.00)	(0.00)	(0.00)	(0.96)	(0.00)	(0.00)	(0.00)	(0.44)	(0.00)	(0.00)	(0.00)	(0.00)
113	1.24	0.00	0.76	1.29	0.00	1.62	0.00	0.00	0.00	0.52	0.00	0.24	0.43	1.52	0.05	0.14	0.00	0.00	0.19	0.05	0.00	1.19	0.00
	(1.45)	(0.00)	(1.22)	(4.14)	(0.00)	(1.53)	(0.00)	(0.00)	(0.00)	(0.87)	(0.00)	(0.89)	(1.03)	(1.08)	(0.22)	(0.36)	(0.00)	(0.00)	(0.80)	(0.22)	(0.00)	(0.93)	(0.00)
114	2.38	0.00	0.67	1.10	0.00	3.87	0.10	0.00	0.00	4.38	0.29	2.29	0.62	3.90	1.29	2.48	0.00	0.00	0.38	0.14	0.00	11.19	0.00
	(2.09)	(0.00)	(1.15)	(2.10)	(0.00)	(5.11)	(0.44)	(0.00)	(0.00)	(4.38)	(0.78)	(2.24)	(1.53)	(3.49)	(1.68)	(2.18)	(0.00)	(0.00)	(1.02)	(0.36)	(0.00)	(3.54)	(0.00)
115	0.86	1.00	2.29	0.78	0.00	1.10	0.10	0.48	0.00	0.57	1.48	0.00	1.52	7.62	0.90	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.00
	(1.82)	(2.45)	(2.99)	(1.45)	(0.00)	(1.18)	(0.44)	(0.87)	(0.00)	(1.78)	(3.08)	(0.00)	(2.46)	(10.93)	(1.73)	(0.00)	(2.30)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
118	1.10	0.38	1.95	0.90	0.05	0.28	1.90	0.10	0.00	0.00	0.90	0.29	0.14	0.00	0.00	0.05	0.00	0.19	0.00	0.00	0.00	0.86	0.00
	(1.22)	(0.80)	(3.72)	(1.76)	(0.22)	(0.84)	(1.95)	(0.44)	(0.00)	(0.00)	(1.73)	(0.90)	(0.48)	(0.00)	(0.00)	(0.22)	(0.00)	(0.80)	(0.00)	(0.00)	(0.00)	(1.77)	(0.00)

Aquatic Bird Species:

1	Mallard	7	Northern Shoveler	13	Scaup sp.	19	Horned Grebe
2	Northern Pintail	8	Gadwall	14	Barrow's Goldeneye	20	Pied-billed Grebe
3	Green-winged Teal	9	Canada Goose	15	Bufflehead	21	Red-necked Grebe
4	Blue-winged Teal	10	Redhead	16	Ruddy Duck	22	American Coot
5	Cinnamon Teal	11	Ring-necked Duck	17	Surf Scoter	23	Common Loon
6	American Wigeon	12	Canvasback	18	Eared Grebe		

Table 7. Relative abundance of waterfowl broods on the Riske Creek study area, 1980-1984, based on the total number of broods (total number of broods recorded over 5 years).

SPECIES	TOTAL NUMBER OF BROODS	PERCENT OF TOTAL
1. Mallard	195	9.5
2. Northern Pintail	20	1.0
3. Green-winged Teal	118	5.7
4. Blue-winged Teal	227	11.0
5. Cinnamon Teal	3	0.2
6. American Wigeon	177	8.6
7. Northern Shoveler	64	3.1
8. Gadwall	34	1.7
9. Canada Goose	65	3.1
10. Redhead	50	2.4
11. Ring-necked Duck	24	1.2
12. Canvasback	41	2.0
13. Scaup Sp.	108	5.2
14. Barrow's Goldeneye	459	22.3
15. Bufflehead	367	17.8
16. Ruddy Duck	108	5.2
TOTAL	2060	100

Table 8. Total number of waterfowl broods recorded on each wetland at Riske Creek, 1980-1984. (n = 5 years; " - " indicates the species was not present).

WETLAND NUMBER	WATERFOWL SPECIES															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	-	1	5	-	2	2	-	-	-	-	-	1	13	4	-
2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
3	1	-	-	-	-	1	-	-	-	-	-	-	-	5	1	-
4	12	1	2	3	-	5	-	-	-	-	-	-	2	11	3	-
5	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
6	8	-	2	4	-	13	-	3	1	5	-	4	3	7	11	4
7	-	-	2	2	-	1	-	1	-	-	-	-	-	3	1	-
8	1	-	1	2	-	1	2	-	1	1	-	-	-	3	16	-
9	1	-	-	2	-	1	-	-	-	-	-	-	-	-	4	-
10	-	-	-	1	-	4	-	-	-	-	-	-	-	-	4	-
11	-	-	-	3	-	2	1	2	-	2	-	-	-	5	5	-
12	1	-	1	4	-	-	1	1	-	1	-	-	-	1	5	1
13	1	-	1	2	-	1	-	-	-	1	-	-	2	8	-	1
14	-	-	1	1	-	3	-	-	-	-	-	-	2	4	3	-
15	1	-	2	2	-	6	-	1	-	1	-	-	-	2	1	-
16	-	-	-	1	-	-	-	1	-	3	-	-	-	-	1	2
17	-	-	-	3	-	1	-	-	-	-	-	-	-	-	1	-
18	4	-	2	2	-	6	-	-	-	1	-	-	1	6	10	-
19	1	-	-	6	-	-	1	2	-	-	-	-	-	-	3	-
20	2	-	1	4	-	-	1	1	-	-	-	-	1	12	4	-
21	2	-	-	5	-	4	-	1	-	-	-	-	-	1	9	-
22	1	-	4	3	-	3	-	-	-	-	-	-	3	4	1	-
23	-	-	-	5	-	-	-	-	-	-	-	-	-	1	4	-
24	-	-	-	-	-	-	-	-	1	2	1	1	-	5	5	2
25	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
26	-	-	-	1	-	1	-	1	-	1	-	-	1	1	8	5
27	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2
28	2	-	-	2	-	1	3	1	-	-	-	-	1	8	5	1
29	-	-	-	1	-	2	-	-	-	-	-	-	1	-	4	-
30	6	-	4	4	-	-	-	-	-	-	-	-	2	12	22	-
31	-	-	2	1	-	-	-	-	-	-	-	-	-	5	-	-
32	3	-	5	1	-	-	-	-	1	-	-	-	1	14	9	-
33	2	-	3	1	-	-	-	1	-	-	-	-	-	-	5	1
34	-	-	3	2	-	-	-	-	-	-	-	-	-	-	1	-
35	5	-	4	2	-	2	-	-	-	1	-	-	1	2	8	1
36	1	-	1	2	-	4	2	2	-	2	-	-	1	-	3	3
37	1	-	-	4	-	1	-	-	-	-	-	-	-	3	5	-
38	1	-	3	5	-	1	-	1	-	-	-	-	-	1	1	-
39	3	-	1	3	-	3	1	-	-	1	-	2	1	1	2	3
40	4	-	1	-	-	2	1	-	-	3	-	1	5	4	1	7
41	-	-	-	-	-	-	-	-	-	-	-	1	-	18	1	-
42	1	-	-	-	-	1	-	-	-	5	-	-	5	1	1	5
43	3	1	1	8	-	1	1	-	-	-	-	-	-	4	1	-
44	2	-	1	5	-	1	1	-	-	1	-	1	1	2	2	-
45	-	-	-	-	-	1	-	-	-	-	-	-	1	-	1	2
46	-	-	-	-	-	3	-	-	1	4	-	1	4	-	1	14
47	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-
48	-	-	1	1	-	1	1	-	-	-	-	-	-	-	-	-
49	2	-	3	6	-	2	-	1	-	-	2	-	-	2	5	-
50	7	-	2	3	-	8	-	1	9	1	1	-	-	16	10	-
51	2	-	-	2	-	3	-	-	-	-	-	-	-	6	3	-
52	5	-	1	5	-	1	-	-	-	-	-	-	-	6	7	-
53	3	-	3	-	-	8	-	1	-	1	-	1	-	4	6	2
54	1	-	-	2	-	4	-	-	-	-	-	-	1	2	2	4
55	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	2
56	4	-	5	5	-	5	2	-	1	-	-	-	1	11	29	-
57	1	-	1	2	-	-	-	-	-	-	1	2	3	1	3	4
58	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
59	2	-	1	-	-	1	-	-	4	1	-	-	-	3	5	-
60	2	-	-	-	-	-	-	-	3	-	-	-	-	3	3	-
61	-	-	1	3	-	-	-	-	-	-	1	-	-	5	3	-
62	-	-	-	1	-	-	-	-	-	-	-	-	3	-	1	-
63	1	-	-	3	-	1	1	-	-	-	1	-	-	-	2	-
64	-	-	1	1	-	1	1	-	-	-	-	-	-	-	1	1
65	4	-	3	4	-	-	-	-	-	1	1	1	-	18	5	1
66	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	6
67	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
68	2	-	-	4	-	3	-	-	-	-	-	3	3	5	11	11
69	1	-	1	2	1	-	1	-	-	-	-	-	-	-	1	-
70	5	-	-	-	-	2	1	-	-	3	1	2	1	3	3	-
71	2	-	1	1	1	6	1	-	-	3	-	4	2	9	10	4
72	-	-	-	1	-	1	-	-	-	-	-	2	2	-	1	1
73	3	-	-	1	-	3	-	-	9	1	2	2	7	2	2	-
74	3	-	1	-	-	-	-	-	11	-	-	-	2	4	2	-
75	5	-	6	6	-	5	-	-	-	-	2	-	1	-	18	-
76	9	-	2	2	-	-	-	-	-	-	1	1	2	15	13	-
77	16	-	5	7	-	7	-	1	22	1	5	2	12	46	9	-
78	-	-	-	2	-	-	1	-	-	-	-	-	1	-	2	-
79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	1	-	-	4	-	-	-	-	-	-	2	-	-	-	-	-
81	2	-	-	1	-	-	-	-	-	-	1	-	-	2	3	-
82	-	-	-	-	-	-	-	-	-	-	2	-	2	3	5	-
84	5	1	-	-	-	1	2	-	-	-	-	-	-	2	-	1
85	1	-	-	1	-	1	1	-	-	-	-	-	-	1	-	3
86	10	1	-	11	-	1	-	-	-	-	-	-	-	12	-	-
87	-	1	4	1	-	1	1	-	-	-	-	-	-	4	1	1
88	1	1	3	3	-	6	1	2	1	-	-	1	1	9	-	-
89	2	4	1	5	-	3	1	1	-	-	-	-	1	11	1	-
90	1	-	-	-	-	1	-	1	-	-	-	-	1	5	1	-
91	3	1	-	1	-	-	-	1	-	-	-	-	3	9	8	-
92	-	1	-	1	-	-	-	-	-	-	-	-	-	4	1	-
93	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-
94	-	-	1	5	-	1	-	-	-	-	-	-	-	-	-	-
95	-	-	-	1	-	-	-	-	-	-	-	-	2	1	2	2
96	2	-	3	2	-	3	4	-	-	-	-	-	1	4	5	2
97	2	-	-	1	-	4	3	1	-	1	-	3	-	2	5	1
98	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
99	3	1	2	2	-	1	5	3	-	-	-	-	2	5	-	-
100	1	-	-	2	-	2	2	1	-	-	-	-	-	5	-	-
101	1	1	1	2	-	1	3	1	-	-	-	-	4	14	-	-
102	-	1	-	4	-	1	-	-	-	-	-	-	-	4	-	-
104	-	-	-	-	-	1	1	-	-	-	-	-	1	10	-	-
106	1	-	1	1	-	1	2	-	-	-	-	-	-	5	-	-
107	1	-	-	1	-	1	2	-	-	-	-	-	-	2	-	1
109	-	-	1	-	-	-	1	-	-	-	-	-	-	2	-	-
110	-	3	3	-	-	-	3	-	-	-	-	-	-	6	-	-
111	1	-	1	1	-	1	4	-	-	-	-	-	-	5	-	-
112	1	-	2	-	-	-	-	-	-	-	-	-	-	-	1	-
113	-	-	2	2	-	1	-	-	-	-	-	2	1	-	-	2
114	1	-	1	1	-	3	1	-	-	2	-	3	3	3	-	3
115	1	-	-	-	-	1	-	-	-	-	-	-	4	-	1	-
118	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-

Waterfowl Species:

1	Mallard	9	Canada Goose
2	Northern Pintail	10	Redhead
3	Green-winged Teal	11	Ring-necked Duck
4	Blue-winged Teal	12	Canvasback
5	Cinnamon Teal	13	Scaup sp.
6	American Wigeon	14	Barrow's Goldeneye
7	Northern Shoveler	15	Bufflehead
8	Gadwall	16	Ruddy Duck

Table 9. Relative abundance of waterfowl broods on the Riske Creek study area, 1980-1984, based on the maximum number of broods (highest number of broods on each wetland recorded in any one of the 5 years, summed over all wetlands).

	SPECIES	TOTAL OF MAXIMUM NUMBER OF BROODS	PERCENT OF TOTAL
1.	Mallard	95	9.5
2.	Northern Pintail	15	1.5
3.	Green-winged Teal	63	6.3
4.	Blue-winged Teal	121	12.1
5.	Cinnamon Teal	3	0.3
6.	American Wigeon	93	9.3
7.	Northern Shoveler	48	4.8
8.	Gadwall	26	2.6
9.	Canada Goose	23	2.3
10.	Redhead	33	3.3
11.	Ring-necked Duck	17	1.7
12.	Canvasback	22	2.2
13.	Scaup Sp.	66	6.6
14.	Barrow's Goldeneye	167	16.8
15.	Bufflehead	143	14.4
16.	Ruddy Duck	61	6.1
	TOTAL	996	100

Table 10. Maximum number of waterfowl broods recorded on each wetland at Riske Creek, 1980-1984. (n = 5 years; maximum is equivalent to the highest number in any of the 5 years; " - " indicates the species was not present).

WETLAND NUMBER	WATERFOWL SPECIES															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	-	1	2	-	1	1	-	-	-	-	-	1	5	2	-
2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
3	1	-	-	-	-	1	-	-	-	-	-	-	-	2	1	-
4	4	1	1	1	-	2	-	-	-	-	-	-	1	3	2	-
5	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
6	2	-	1	1	-	3	-	1	1	2	-	2	2	3	3	1
7	-	-	1	1	-	1	-	1	-	-	-	-	-	1	1	-
8	1	-	1	1	-	1	1	-	1	1	-	-	-	2	4	-
9	1	-	-	1	-	1	-	-	-	-	-	-	-	-	1	-
10	-	-	-	1	-	2	-	-	-	-	-	-	-	-	2	-
11	-	-	-	2	-	2	1	1	-	2	-	-	-	3	2	-
12	1	-	-	2	-	-	1	1	-	1	-	-	-	1	2	1
13	1	-	1	1	-	1	-	-	-	1	-	-	2	4	-	1
14	-	-	1	1	-	1	-	-	-	-	-	-	2	2	1	-
15	1	-	1	1	-	2	-	1	-	1	-	-	-	1	1	-
16	-	-	-	1	-	-	-	1	-	1	-	-	-	-	1	1
17	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-
18	2	-	1	1	-	2	-	-	-	1	-	-	1	3	3	-
19	1	-	-	2	-	-	1	1	-	-	-	-	-	-	2	-
20	1	-	1	2	-	-	1	1	-	-	-	-	1	4	3	-
21	1	-	-	2	-	4	-	-	-	-	-	-	-	1	3	-
22	1	-	2	1	-	1	-	-	-	-	-	-	2	1	1	-
23	-	-	-	2	-	-	-	-	-	-	-	-	-	1	1	-
24	-	-	-	-	-	-	-	-	1	1	1	-	-	1	4	2
25	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
26	-	-	-	1	-	1	-	1	-	1	-	-	1	1	2	2
27	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
28	1	-	-	1	-	1	2	1	-	-	-	-	1	2	2	1
29	-	-	-	1	-	1	-	-	-	-	-	-	1	-	1	-
30	3	-	1	2	-	-	-	-	-	-	-	-	2	4	5	-
31	-	-	1	1	-	-	-	-	-	-	-	-	-	1	-	-
32	1	-	2	1	-	-	-	-	1	-	-	-	1	6	4	-
33	2	-	1	1	-	-	-	1	-	-	-	-	-	-	1	1
34	-	-	1	1	-	-	-	-	-	-	-	-	-	-	1	-
35	3	-	1	1	-	1	-	-	-	1	-	-	1	1	3	1
36	1	-	1	1	-	1	1	1	-	1	-	-	1	-	1	1
37	1	-	-	2	-	1	-	-	-	-	-	-	-	2	1	-
38	1	-	1	2	-	1	-	1	-	-	-	-	-	1	1	-
39	2	-	1	1	-	1	1	-	-	1	-	1	1	1	2	2
40	3	-	1	-	-	2	1	-	-	1	-	1	2	1	1	4
41	-	-	-	-	-	-	-	-	-	-	-	1	-	4	1	-
42	1	-	-	-	-	1	-	-	-	2	-	-	3	1	1	2
43	2	1	1	3	-	1	1	-	-	-	-	-	-	1	1	-
44	1	-	1	2	-	1	1	-	-	1	-	1	1	1	1	-
45	-	-	-	-	-	1	-	-	-	-	-	-	1	-	1	1
46	-	-	-	-	-	1	-	-	1	2	-	1	2	-	1	5
47	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-
48	-	-	1	1	-	1	1	-	-	-	-	-	-	-	-	-
49	1	-	1	2	-	1	-	1	-	-	1	-	-	1	2	-
50	2	-	1	2	-	3	-	1	3	1	1	-	-	5	2	-
51	1	-	-	1	-	1	-	-	-	-	-	-	-	2	2	-
52	2	-	1	2	-	1	-	-	-	-	-	-	-	2	2	-
53	1	-	1	-	-	3	-	1	-	1	-	-	-	1	2	2
54	1	-	-	1	-	2	-	-	-	-	-	-	1	1	1	2
55	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
56	1	-	2	2	-	2	1	-	-	-	-	-	1	3	8	-
57	1	-	1	1	-	-	-	-	-	-	1	1	1	1	2	3
58	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
59	1	-	1	-	-	1	-	-	2	1	-	-	-	1	1	-
60	1	-	-	-	-	-	-	-	2	-	-	-	-	2	1	-
61	-	-	1	2	-	-	-	-	-	-	1	-	-	2	1	-
62	-	-	-	1	-	-	-	-	-	-	-	-	1	-	1	-
63	1	-	-	1	-	1	1	-	-	-	1	-	-	-	1	-
64	-	-	1	1	-	1	1	-	-	-	-	-	-	-	1	1
65	2	-	1	2	-	-	-	-	-	1	1	1	-	4	3	2
66	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2
67	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
68	1	-	-	1	-	1	-	-	-	-	-	1	2	2	3	4
69	1	-	1	1	1	-	1	-	-	-	-	-	-	-	1	-
70	1	-	-	-	-	1	1	-	-	1	1	1	1	2	2	-
71	1	-	1	1	1	3	1	-	-	2	-	1	1	2	4	2
72	-	-	-	1	-	1	-	-	-	-	-	1	2	-	-	1
73	1	-	-	1	-	1	-	-	-	1	1	1	2	1	1	-
74	1	-	1	-	-	-	-	-	4	-	-	-	1	3	1	-
75	2	-	2	2	-	2	-	-	-	-	1	-	1	-	6	-
76	2	-	1	2	-	-	-	-	-	-	1	1	1	4	3	-
77	4	-	2	3	-	3	-	1	6	1	2	1	4	13	3	-
78	-	-	-	1	-	-	1	-	-	-	-	-	1	-	1	-
79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	1	-	-	3	-	-	-	-	-	-	2	-	-	-	-	-
81	1	-	-	1	-	-	-	-	-	-	1	-	-	1	2	-
82	-	-	-	-	-	-	-	-	-	-	1	-	1	1	1	-
84	2	1	-	-	-	1	2	-	-	-	-	-	-	1	-	1
85	1	-	-	1	-	1	1	-	-	-	-	-	-	1	-	2
86	3	1	-	4	-	1	-	-	-	-	-	-	-	3	-	-
87	-	1	1	1	-	1	1	-	-	-	-	-	-	3	1	1
88	1	1	1	1	-	1	1	1	1	-	-	1	1	3	-	-
89	1	1	1	4	-	1	1	1	-	-	-	-	1	3	1	-
90	1	-	-	-	-	1	-	1	-	-	-	-	1	2	1	-
91	1	1	-	1	-	-	-	1	-	-	-	-	2	4	2	-
92	-	1	-	1	-	-	-	-	-	-	-	-	-	2	1	-
93	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-
94	-	-	1	3	-	1	-	-	-	-	-	-	-	-	-	-
95	-	-	-	1	-	-	-	-	-	-	-	-	1	1	1	1
96	1	-	1	1	-	1	2	-	-	-	-	-	1	1	3	2
97	1	-	-	1	-	2	3	1	-	1	-	1	-	1	1	1
98	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
99	1	1	1	1	-	1	3	2	-	-	-	-	1	2	-	-
100	1	-	-	1	-	1	1	1	-	-	-	-	-	2	-	-
101	1	1	1	2	-	1	1	1	-	-	-	-	1	4	-	-
102	-	1	-	2	-	1	-	-	-	-	-	-	-	2	-	-
104	-	-	-	-	-	1	1	-	-	-	-	-	1	4	-	-
106	1	-	1	1	-	1	1	-	-	-	-	-	-	2	-	-
107	1	-	-	1	-	1	1	-	-	-	-	-	-	1	-	1
109	-	-	1	-	-	-	1	-	-	-	-	-	-	1	-	-
110	-	1	1	-	-	-	1	-	-	-	-	-	-	2	-	-
111	1	-	1	1	-	1	4	-	-	-	-	-	-	2	-	-
112	1	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-
113	-	-	1	2	-	1	-	-	-	-	-	1	1	-	-	2
114	1	-	1	1	-	2	1	-	-	2	-	2	1	1	-	1
115	1	-	-	-	-	1	-	-	-	-	-	-	2	-	1	-
118	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-

Waterfowl Species:

1	Mallard	9	Canada Goose
2	Northern Pintail	10	Redhead
3	Green-winged Teal	11	Ring-necked Duck
4	Blue-winged Teal	12	Canvasback
5	Cinnamon Teal	13	Scaup sp.
6	American Wigeon	14	Barrow's Goldeneye
7	Northern Shoveler	15	Bufflehead
8	Gadwall	16	Ruddy Duck

Table 11. Area occupied by the major submergent plant species recorded for each wetland at Riske Creek, 1983. [area is presented on a m^2 basis; " - " indicates the species was not present; names of plant species are given below].

WETLAND NUMBER	TOTAL AREA	SUBMERGENT PLANT SPECIES																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	136343	-	456	-	4217	11289	-	-	-	571	57617	1180	-	-	-	-	1695	-	33	-	-	-
2	14132	-	-	31	1214	517	-	-	-	-	-	-	319	4084	-	281	-	-	71	62	62	-
3	110419	-	30940	-	1400	46027	-	-	-	25989	7400	10817	-	-	-	-	1979	-	376	-	-	-
4	62380	6978	551	-	-	-	-	-	6978	-	-	-	551	-	-	-	92	-	-	-	-	-
5	30979	-	-	-	14743	-	-	-	-	-	-	-	-	125	-	-	155	-	30	-	303	-
6	271936	-	-	-	-	-	36428	-	-	-	-	-	-	-	5853	-	-	154830	-	-	-	-
7	22034	-	-	-	1830	-	-	-	-	-	-	-	-	5871	-	-	110	-	326	56	56	-
8	101531	1163	14728	-	-	-	5814	-	-	24418	-	-	1163	-	1163	-	-	194	-	-	-	-
9	16295	-	2297	-	15	-	5819	89	4900	9647	-	-	2297	-	-	-	-	-	-	-	-	-
10	20430	-	-	-	-	-	-	-	7	231	-	-	2925	-	4850	-	7	-	-	-	-	-
11	70433	-	-	-	-	-	9899	-	-	-	-	-	-	-	330	-	-	41575	-	-	-	-
12	30051	-	69	-	-	-	5258	-	3343	415	-	-	2076	-	8717	-	-	-	-	-	-	-
13	24911	701	-	-	-	-	23	-	-	23	-	-	140	-	1775	-	-	-	-	-	-	-
14	17480	-	-	-	-	-	210	-	-	1050	-	-	-	-	2880	-	6	-	-	-	-	-
15	29558	25444	-	-	-	-	-	-	-	22	-	-	-	-	3925	-	-	-	-	-	-	-
16	116028	-	-	-	-	-	177	-	-	-	-	-	-	-	537	-	-	-	-	-	-	-
17	9390	-	217	-	5374	-	-	-	-	-	-	38	36	228	-	-	-	-	11	65	2755	-
18	75258	-	-	-	-	-	45	-	-	-	-	-	-	-	3530	-	-	371	-	-	-	-
19	22233	-	97	-	-	-	-	-	14	17022	-	97	580	-	-	-	-	-	-	-	-	-
20	57513	10978	-	-	-	-	10453	-	-	-	-	-	-	-	825	-	-	825	-	-	-	-
21	29058	-	755	-	-	-	126	-	145	15859	-	126	3778	-	3778	-	117	-	-	-	-	-
22	21670	27	-	-	-	-	-	-	-	-	-	-	161	-	805	-	-	-	-	-	-	-
23	15232	-	1819	-	225	325	-	-	-	-	-	2096	-	91	-	-	-	-	640	8	-	-
24	33977	-	-	-	-	-	18743	-	-	-	-	-	-	-	6450	-	-	21062	-	-	-	-
25	20475	-	1716	-	280	-	1265	43	65	649	-	-	-	-	911	-	65	-	-	21	649	-
26	26715	-	-	-	-	-	5924	-	-	-	-	-	-	-	-	-	-	5177	-	-	-	-
27	11527	-	3720	-	29	-	176	-	29	-	-	-	66	-	7	-	176	-	-	-	-	-
28	50872	239	-	-	-	-	7982	-	-	-	-	-	-	-	3666	-	-	-	-	-	-	-
29	7005	-	3761	-	99	-	26	21	1791	1263	-	-	1249	-	-	-	16	-	4	-	-	-
30	179980	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4120	-	-	-	-
31	26120	-	-	-	2091	171	-	-	-	56	-	2166	-	-	-	-	-	-	29	-	-	-
32	373291	-	-	-	-	-	10348	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	65876	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	12662	-	283	-	-	-	-	-	1417	47	-	-	-	-	-	-	-	-	-	-	-	-
35	32808	-	-	-	-	-	855	-	-	-		-	-	-	855	-	-	25078	-	-	-	-
36	14280	-	-	-	17	-	1698	-	-	-	-	-	-	-	3248	-	-	2676	-	-	-	-
37	14201	-	-	-	-	-	33	-	-	-	-	33	33	-	33	-	-	-	-	-	-	-
38	7310	-	-	-	-	-	-	-	-	-	-	-	-	-	86	-	-	-	-	-	-	-
39	29899	109	8019	-	227	-	2322	38	303	2480	-	-	457	-	457	-	-	-	-	-	-	-
40	78908	328	-	-	68	-	29276	-	-	-	-	-	-	-	-	-	-	29276	-	-	-	-
41	221296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	47741	965	-	-	-	-	12293	-	-	-	-	-	-	-	161	-	-	20272	-	-	-	-

Table 11 continued...

WETLAND NUMBER	TOTAL AREA	SUBMERGENT PLANT SPECIES																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
43	20647	338	-	-	891	-	891	167	-	7214	-	56	338	-	56	-	449	-	56	-	-	-
44	28977	76	-	-	14222	-	61	6	6	4742	-	-	4742	-	-	-	522	-	-	-	-	-
45	91428	-	76	5754	3395	-	5808	373	-	2271	-	-	2271	-	454	-	54	-	-	-	17	-
46	70298	-	6323	152	20617	-	10658	16	44	3526	-	-	4600	-	4600	-	-	-	-	-	689	-
47	10733	-	-	-	9444	-	-	-	-	-	-	-	-	1306	-	1610	1306	-	76	-	259	-
48	12835	-	-	-	598	-	892	-	178	-	-	-	-	-	-	-	44	-	-	-	2743	-
49	23964	-	-	-	9598	-	428	-	-	-	-	-	-	6318	-	4332	98	-	57	8	57	-
50	86366	-	-	-	5	-	5	-	-	-	-	-	-	-	65	-	-	2492	-	-	-	-
51	22564	-	-	-	315	83	-	-	-	20	-	6343	-	-	-	11	63	-	4075	-	-	-
52	58942	-	16323	-	378	817	-	-	-	7041	-	17164	40	4127	-	-	2031	-	379	-	-	-
53	32537	-	-	-	-	-	38	-	-	-	-	-	-	-	2873	-	-	38	-	-	-	-
54	26049	10901	-	-	-	-	-	-	86	54	-	54	321	-	54	-	14	-	-	-	-	-
55	7036	-	-	-	-	-	18	-	-	1401	-	-	595	-	-	-	24	-	-	-	-	-
56	153334	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57	18098	-	22	-	668	-	1492	7	-	6267	-	-	2161	-	298	-	-	298	-	-	62	-
58	5479	-	-	-	64	-	64	-	-	-	-	-	64	-	64	-	-	-	-	-	-	64
59	50767	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60	64921	-	-	35272	-	-	7690	-	-	-	-	-	-	-	137	-	-	11848	-	-	-	-
61	23647	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1147	-	-	-	-
62	9348	-	-	-	54	-	-	-	-	6640	-	-	-	-	228	-	-	-	-	-	-	-
63	8259	-	-	-	70	-	70	-	-	3338	-	-	136	-	136	-	-	-	-	-	-	-
64	2651	-	-	-	738	-	-	13	6	935	-	-	-	-	-	-	228	-	-	-	-	-
65	180768	-	-	-	628	-	-	-	8	-	-	-	-	-	-	-	-	8674	-	-	-	-
66	14690	-	99	-	-	-	-	18	18	17	-	-	1258	-	1258	-	-	-	-	-	3442	-
67	4816	-	-	-	715	-	-	85	-	253	-	-	640	-	640	-	8	-	-	-	-	-
68	45151	-	-	-	-	-	10366	-	-	-	-	-	-	-	990	-	-	15714	-	-	-	-
69	3800	-	-	-	19	-	-	-	2334	-	-	-	-	-	-	-	19	-	-	-	-	-
70	48676	-	-	-	-	-	13483	-	-	-	-	-	-	-	1441	-	-	21594	-	-	-	-
71	31402	-	-	-	-	-	11424	-	-	-	-	-	-	-	4379	-	-	16390	-	-	-	-
72	32468	-	63	4772	1328	-	377	-	-	63	-	-	-	-	1884	-	-	7911	-	-	1871	-
73	115067	-	-	-	332	-	1678	-	-	-	-	-	-	-	1865	-	-	2051	-	-	-	-
74	70516	-	-	-	434	-	997	-	-	-	-	-	-	-	4694	-	-	1935	-	-	14	-
75	37747	2750	-	-	2750	-	-	-	-	-	-	-	-	-	-	-	-	6965	-	-	-	-
76	179143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
77	418929	-	-	-	25	-	52229	-	-	-	-	-	-	-	32064	-	-	220807	-	-	-	-
78	6273	-	3882	-	793	-	-	10	1903	21	-	-	21	-	-	-	-	-	-	-	-	-
79	3108	-	-	-	33	-	10	5	164	1807	-	-	-	-	-	-	5	-	-	5	-	-
80	4092	-	-	-	85	-	-	-	279	957	-	-	323	-	-	-	-	-	-	-	-	-
81	6154	-	-	-	1023	-	91	-	-	-	-	-	12	-	72	-	-	72	-	-	-	-
82	15186	-	-	52	58	-	-	-	-	-	-	-	4397	-	-	-	-	-	-	-	-	-
83	539055	-	-	24151	20618	-	1810	302	-	302	-	-	-	-	302	-	302	-	-	302	26528	-
84	6423	-	1694	-	-	-	11	-	890	2270	-	-	349	-	-	-	-	-	-	-	-	11
85	5244	-	46	-	-	-	-	-	10	631	-	-	476	-	8	-	-	-	-	-	-	-
86	182722	-	35483	-	-	-	10691	361	648	47785	-	2214	26239	-	2072	-	490	-	-	-	-	-
87	22682	-	-	-	-	-	770	-	-	-	-	-	-	-	8	-	-		-	-	-	573

Table 11 continued...

WETLAND NUMBER	TOTAL AREA	SUBMERGENT PLANT SPECIES																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
88	42112	-	-	-	-	-	230	-	-	-	-	-	2908	-	2908	-	-	-	-	-	-	-
89	42438	-	-	-	-	-	6510	-	-	-	-	-	-	-	310	-	-	3927	-	-	-	-
90	12523	-	-	-	-	-	-	-	-	-	-		-	-	737	-	-	-	-	-	-	-
91	39106	-	-	-	-	-	14860	-	-	-	-	-	-	-	5394	-	-	26879	-	-	-	-
92	8855	-	-	-	-	-	-	-	-	3868	-	-	31	-	-	-	-	-	-	-	-	-
93	3888	-	-	-	-	-	-	-	-	713	-	-	-	-	122	-	-	-	-	-	-	-
94	3412	9	-	-	-	-	56	-	-	-	-	-	711	-	56	8	-	-	-	8	-	-
95	12675	-	-	-	-	-	7154	-	-	-	-	-	57	-	7154	-	-	-	-	-	-	-
96	26628	-	-	-	-	-	-	-	-	-	-	-	-	-	15042	-	-	3581	-	-	-	716
97	42618	-	-	-	-	-	-	-	-	-	-	-	-	-	5887	-	-	12460	-	-	-	-
98	2453	-	-	-	-	-	1545	-	-	74	-	-	-	-	2159	-	-	-	-	-	-	-
99	17860	-	-	-	-	-	3615	-	-	1427	-	-	1427	-	3615	-	-	-	-	-	-	-
100	29554	-	-	-	-	-	4650	-	-	-	-	-	-	-	4248	-	-	-	-	-	-	154
101	70254	-	-	-	-	-	3094	-	-	-	-	-	-	-	3094	-	-	2063	-	-	-	-
102	22415	196	-	-	-	-	-	-	-	5759	-	-	980	-	33	-	34	-	-	-	-	-
103	1799	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	270	-	-
104	16024	112	-	-	-	-	1419	-	-	-	-		3285	-	1419	-	-	-	-	-	-	-
106	15456	-	-	3887	-	-	8788	-	-	-	-	-	-	-	5751	-	-	-	-	-	-	55
107	11043	-	-	1657	-	-	1304	13	-	-	-	-	-	-	423	-	-	-	-	-	-	5435
108	3926	-	-	-	-	-	589	-	-	20	-	-	-	-	-	-	20	-	118	-	-	-
109	9602	-	-	-	-	-	288	-	-	1440	-	-	288	-	8049	-	-	-	-	-	-	288
110	40484	-	-	-	-	-	3667	-	-	-	-	-	-	-	-	-	-	8492	-	-	-	-
111	17378	-	-	-	-	-	-	-	-	6277	-	-	-	-	10408	-	-	496	-	-	-	50-
112	5644	-	-	-	847	-	-	-	-	-	-	-	-	1638	-	-	28	-	28	28	28	-
113	17010	-	-	-	114	-	171	-	3860	5020	-	-	29	-	29	-	-	-	-	-	-	-
114	32203	-	-	-	-	-	8223	-	-	-	-	-	-	-	3248	-	-	13633	-	-	-	-
115	9651	45	-	-	-	-	-	-	-	-	-	-	378	-	1588	-	-	-	-	-	-	-
118	13442	-	-	-	38	-	-	-	58	-	-	-	670	-	-	-	218	-	1684	635	140	-

Submergent Plant Species:

1 Aphanizomenon flos-aquae (L.) Ralfs.
2 Ceratophyllum demersum L.
3 Chara sp.
4 Drepanocladus aduncus
5 Eleocharis acicularis (L.) R. & S.
6 Filamentous algae
7 Hippuris vulgaris L.
8 Lemna minor L.
9 Myriophyllum exalbescens (Fern.) Jeps.
10 Potamogeton zosteriformis Fern.
11 Potamogeton richardsonii (Benett) Rydb.
12 Potamogeton pusillus L.
13 Potamogeton natans L.
14 Potamogeton pectinatus L.
15 Potamogeton gramineus L.
16 Polygonum amphibium L.
17 Ruppia occidentalis L.
18 Sagittaria cuneata Sheld.
19 Sparganium sp. L.
20 Utricularia vulgaris L.
21 Zanichellia palustris L.

Table 12. Area occupied by the major emergent plant species recorded for each wetland at Riske Creek, 1983. (area is presented on a m^2 basis; " - " indicates the species was not present; names of plant species are given below).

WETLAND NUMBER	TOTAL AREA	EMERGENT PLANT SPECIES																										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	136343	-	-	-	-	-	-	-	-	-	1004	2544	-	33	33	-	33	-	-	-	33	-	33	-	-	-	-	33
2	14132	-	-	-	-	-	-	-	-	-	1214	1863	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-
3	110419	-	-	-	47	-	-	-	-	-	1400	1400	-	280	-	-	47	-	-	-	-	-	-	-	-	-	-	-
4	62380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	30979	-	-	-	9514	751	751	-	-	-	125	-	-	125	125	-	125	-	-	-	-	-	125	-	-	-	-	-
6	271936	-	-	-	-	-	-	-	-	-	-	-	-	84	-	-	-	-	-	-	-	-	6411	506	-	-	-	-
7	22034	-	-	-	54	-	-	-	-	328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	101531	-	-	-	-	-	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	4	-	-	-	-	-
9	18295	-	89	-	15	-	-	-	-	-	15	-	-	-	89	-	89	-	-	-	-	-	15	-	-	-	-	-
10	20430	-	-	7	7	41	-	-	-	-	41	-	-	7	-	-	7	-	-	-	-	-	204	-	-	-	-	-
11	70433	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1687	-	22	-	-	-
12	30051	-	-	-	39	-	39	-	-	-	231	-	-	39	-	-	-	-	-	-	-	-	2928	-	-	-	-	-
13	24911	-	-	-	-	7	7	-	-	-	43	-	-	217	-	-	-	-	-	-	-	-	549	-	-	-	-	-
14	17480	-	-	-	-	-	-	-	-	-	6	-	6	187	-	-	-	-	-	-	-	-	8	-	-	-	-	-
15	29558	-	-	-	-	-	-	-	-	-	96	-		96	-	-	-	-	-	-	-	-	19	-	-	-	-	-
16	116028	-	-	-	294	-	-	-	294	-	-	-	-	-	-	-	-	-	-	-	-	-	3125	177	177	-	-	294
17	9390	-	-	-	-	-	-	-	-	-	11	-	-	11	-	-	-	-	-	-	11	-	-	-	-	-	-	-
18	75258	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	22233	14	14	-	-	-	-	-	-	-	14	1097	-	14	14	-	14	-	-	-	-	-	14	-	14	-	-	-
20	57513	-	-	-	-	-	-	-	-	-	-	-	-	167	-	-	-	-	-	-	-	-	33	-	-	-	-	-
21	29058	-	117	-	-	-	-	-	-	-	583	-	-	19	-	-	-	-	-	-	-	-	583	-	-	-	-	-
22	21670	-	-	-	-	-	-	4	-	-	110	-	-	464	-	-	-	-	-	-	-	-	4	-	-	-	-	-
23	15232	-	-	-	-	-	-	-	-	-	8	225	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
24	33977	-	-	-	-	-	-	-	-	-	21	-	-	127	-	-	-	-	-	-	-	-	1606	-	127	-	-	-
25	20475	-	-	-	1474	43	1474	-	-	-	-	-	-	-	43	-	-	-	-	-	-	-	2435	-	-	-	-	29
26	26715	-	-	-	-	-	-	-	-	-	-	-	-	34	-	-	-	-	-	-	-	-	4342	-	-	-	-	-
27	11527	-	-	-	-	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2228	-	-	-	-	-
28	50872	-	-	-	-	-	-	-	-	-	91	-	-	91	-	-	-	-	-	-	-	-	1148	15	15	-	-	-
29	7005	-	-	-	26	26	-	-	-	-	-	-	-	129	-	-	4	-	26	-	-	-	4	-	-	-	-	-
30	179960	-	-	-	-	-	-	-	-	504	-	-	17	1278	-	-	-	-	-	-	-	-	17	-	-	-	-	-
31	26120	-	-	-	2	2	-	-	-	-	73	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	373291	-	-	-	-	-	-	-	-	-	-	-	-	320	-	-	-	-	-	-	-	-	11	-	-	-	-	-
33	65876	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-		-	-	-	-	-	389	-	-	-	13	-
34	12662	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	32808	-	-	-	-	-	-	-	-	-	-	-	-	1638	-	22	-	-	-	-	-	-	1638	22	-	-	-	-
36	14280	-	-	-	17	-	-	-	-	-	-	-	-	1273	-	-		-	-	-	-	-	1273	-	-	-	-	-
37	14201	-	-	-	8	-	-	-	-	-	8	-	-	583	-	-	-	-	-	-	-	-	38	-	-	-	-	-
38	7310	-	-	2	-	-	-	-	-	-	12	-	12	61	-	-	-		-	-	-	-	61	-	-	-	-	
39	29899	-	367	-	227	-	-	-	-	-	227	-	38	227	227	-	-	-	-	-	-	-	2878	-	-			-
40	78906	-	-	-	-	68	-	-	68	-	-	-	68	411	68	-	-	-	-	-	-	-	5201	-	-	-	-	-
41	221296	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-		-	-	-	-
42	47741		-	-	-	-	-	-	-	-	-	-	-	2249	-	-	-	-	-	-	-		1962		-	-	-	-

Table 12 continued...

WETLAND NUMBER	TOTAL AREA	EMERGENT PLANT SPECIES																										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
43	20847	-	-	-	-	111	-	-	-	-	111	-	-	18	18	18	18	-	-	-	-	-	18	111	-	18	18	-
44	28977	-	34	-	-	-	-	-	-	-	34	8	-	170	-		8	-	-	-	-	-	34	-	-	-	-	-
45	91428	-	54	-	14209	-	6844	-	13883	-	54	-	-	-	54	-	54	54	-	-	-	4166	17218	-	-	54	44	5498
46	70296	-	-	-	2117	-	836	117	-	-	117	-	-	117	-	-	-	-	-	-	-	-	8903	-	-	-	-	2098
47	10733	-	-	-	76	76	-	-	-	-	76	54	-	13	76	-	-	-	-	-	-	13	-	-	-	-	-	-
48	12835	-	-	-	-	-	7736	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	149	-	-	-	-	-
49	23964	-	-	236	8	47	-	-	-	-	236	47	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
50	86368	-	-	-	-	-	-	-	-	32	-	-	-	32	-	-	-	-	-	5	-	-	5	400	-	-	-	-
51	22564	83	-	-	-	63	11	-	-	-	315	63	-	11	11	-	11	-	-	11	-	-	11	-	-	-	-	11
52	58942	-	-	-	40	1214	-	-	-	-	1214	1214	-	40	40	-	-	40	-	40	-	-	243	-	-	-	-	40
53	32537	-	-	-	-	-	-	-	-	-	13	-	-	80	13	-	-	-	-	-	-	-	402	-	-	-	-	-
54	28049	-	-	-	14	14	-	-	-	-	86	-	-	86	-	-	-	-	-	-	-	-	431	-	-	-	-	-
55	7036	-	-	-	-	3	-	-	-	-	-	-	-	289	3	-	-	-	-	-	-	-	459	-	-	-	-	-
56	153334	-	-	-	-	-	-	-	-	-	-	-	38	475	-	-	-	-	-	-	-	-	6	-	-	-	-	-
57	18098	-	-	55	12	7	615	-	7	-	215	-	-	215	-	-	-	-	-	7	-	-	905	-	-	-	-	12
58	5479	-	-	-	-	-	-	-	-	41	-	-	7	864	-	-	-	-	-	-	-	-	779	-	-	-	-	-
59	50767	-	-	-	12	-	-	-	-	368	-	-	-	933	-	-	-	-	-	-	-	-	12	-	-	-	368	-
60	84921	-	-	103	-	17	-	-	-	-	-	-	103	1695	-	-	-	17	-	103	-	-	5098	-	-	-	103	-
61	23647	-	-	-	-	10	-	-	-	-	-	-	-	727	-	-	-	-	-	-	-	-	10	-	-	-	-	-
62	9348	-	-	54	54	884	9	-	54	-	9	-	-	884	-	9	-	9	-	-	-	-	54	-	-	-	-	-
63	6259	-	-	14	2	14	-	-	-	-	-	-	2	292	-	-	-	-	-	2	-	-	802	-	-	-	-	-
64	2651	-	-	6	-	35	175	-	-	-	-	-	-	35	-	6	6	-	-	-	-	-	735	-	-	13	-	6
65	180788	-	-	-	-	-	-	-	626	118	8	-	20	118	-	-	-	-	118	-	-	8	599	-	-	-	-	8
66	14690	-	-	-	544	-	-	-	544	-	-	-	-	1379	-	-	18	-	-	-	-	-	3154	-	-	39	-	-
67	4816	-	5	31	158	31	31	-	-	-	165	-	5	395	31	-	31	5	-	5	-	-	1347	-	-	5	-	-
68	45151	-	-	-	90	-	-	-	-	-	15	-	-	1887	-	-	-	-	-	-	-	-	1105	-	-	-	-	-
69	3800	-	-	-	5	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70	48676	-	-	-	-	-	-	-	-	-	-	-	-	1513	-	-	-	-	-	-	-	-	360	-	-	-	-	-
71	31402	-	-	-	-	-	-	-	-	-	-	-	11	840	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72	32468	-	-	-	740	27	292	-	740	-	-	-	292	2568	-	-	-	-	-	-	-	-	4590	-	-	-	-	-
73	115087	-	-	-	66	66	-	11	-	-	-	-	-	842	-	-	-	-	-	-	-	-	3891	-	-	-	-	50
74	70516	-	-	14	87	87	-	14	-	-	-	-	-	1099	-	-	-	-	-	-	-	-	1199	-	-	-	-	16
75	37747	-	-	-	-	-	-	-	-	-	-	-	10	1255	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76	179143	-	-	-	-	-	-	-	-	148	-	-	-	1881	-	-	-	-	-	-	-	-	148	-	-	-	-	-
77	418929	-	-	25	25	-	-	-	25	-	-	-	25	1933	-	-	-	-	-	25	-	-	153	-	-	-	-	-
78	6273	63	10	63	1315	-	-	-	10	-	63	-	-	-	313	63	-	-	-	-	63	-	63	-	-	10	-	10
79	3108	-	415	-	33	-	-	-	-	-	33	-	-	33	-	-	-	-	-	-	-	-	33	-	-	-	-	5
80	4082	-	-	-	215	-	3	-	85	-	17	-	-	-	17	-	-	-	-	-	-	-	17	-	-	-	-	-
81	6154	-	-	19	-	-	-	-	19	-	19	-	-	19	-	-	-	-	-	-	-	-	1429	-	-	-	-	-
82	15186	-	-	-	96	1	-	-	5	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-
83	539055	-	-	-	1122	-	-	-	88638	-	-	-	-	302	-	-	-	-	-	-	-	20920	9052	-	-	-	-	302
84	8423	-	-	-	-	-	-	-	-	-	69	-	-	12	-	-	-	-	-	-	-	-	879	-	-	-	-	-
85	5244	-	-	-	-	-	-	-	-	-	10	-	-	10	-	-	-	10	-	-	-	-	788	-	-	-	-	-
86	162722	-	-	-	28987	-	-	-	485	-	32	-	-	190	32	-	-	-	-	-	-	12591	1536	-	-	-	-	962
87	22682	-	-	-	-	-	-	-	-	-	26	-	4	-	-	-	-	-	-	-	-	-	325	-	-	-	-	-

Table 12 continued...

WETLAND NUMBER	TOTAL AREA	EMERGENT PLANT SPECIES																										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
88	42112	-	-	-	-	-	-	-	-	-	499	-	-	-	-	-	-	-	-	-	-	-	4	24	-	-	-	-
89	42438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	12523	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
91	39106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
92	8855	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93	3688	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
94	3412	8	8	-	-	-	-	-	-	-	231	585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95	12675	-	-	-	-	7	-	-	7	-	7	-	-	7	-	-	-	-	-	-	-	-	7	-	-	-	-	-
96	26828	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	1046	-	-	-	-	-
97	42618	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
98	2453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99	17880	-	-	-	-	-	-	-	-	-	774	-	6	-	-	-	-	-	-	37	6	-	37	-	6	-	-	-
100	29554	-	-	-	-	-	-	-	-	-	402	-	5	32	-	-	-	-	5	-	-	-	-	-	5	-	-	-
101	70254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102	22415	-	-	-	-	-	-	-	-	-	114	-	-	-	-	-	-	-	-	-	1	-	34	-	-	-	-	-
103	1799	54	9	-	-	-	-	-	-	-	54	684	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-
104	16024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
106	15456	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	9	-	47	-	-	-	-	-
107	11043	-	-	-	-	-	-	-	-	-	378	-	378	-	-	-	-	-	13	76	76	-	2262	-	-	-	-	-
108	3926	589	589	-	-	-	20	-	-	-	20	-	118	-	-	-	-	-	-	-	20	-	20	-	118	20	-	20
109	9802	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110	40484	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111	17378	-	-	-	-	-	-	-	-	-	327	-	-	-	-	-	-	-	129	-	4	-	129	-	4	-	-	-
112	5644	-	-	-	28	-	-	-	-	-	83	83	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-
113	17010	-	-	-	114	-	3333	-	19	-	-	-	-	1867	-	-	-	-	-	-	-	19	42	-	-	-	-	2890
114	32203	-	-	-	-	-	-	16	-	-	94	-	16	1295	-	-	-	-	-	-	-	-	1270	-	16	-	-	-
115	9651	-	-	-	-	-	-	-	-	-	18	-	18	89	-	-	-	-	-	-	-	-	3	-	-	-	-	-
118	13442	-	228	-	2764	218	218	-	-	-	85	240	-	36	218	-	38	-	-	-	-	-	58	-	-	8	-	-

Emergent Plant Species:

1 Alopecurus geniculatus L.
2 Beckmannia syzigachne (Steud.) Fern.
3 Calamagrostis canadensis (Michx.) Beauv.
4 Carex rostrata Stokes
5 Carex lanuginosa Michx.
6 Carex atherodes Spreng.
7 Carex praegracilis W. Boott
8 Carex aquatilis Wahl.
9 Distichlis stricta (Torr.) Rydb.
10 Eleocharis palustris (L.) R. & S.
11 Glyceria borealis (Nash) Batch.
12 Hordeum jubatum L.
13 Juncus balticus Willd.
14 Mentha arvensis L.
15 Poa pratensis L.
16 Polygonum coccineum Muhl.
17 Potentilla anserina L.
18 Puccinellia nuttalliana (Schult.) Hitchc.
19 Ranunculus cymbalaria Pursh
20 *Rumex maritimus L.*
21 Salix sp. L.
22 Scirpus lacustris Vahl
23 *Scirpus americanus Pers.*
24 Scirpus maritimus L.
25 Sium suave Walt.
26 *Triglochin maritimum L.*
27 Typha latifolia L.

Appendix 1

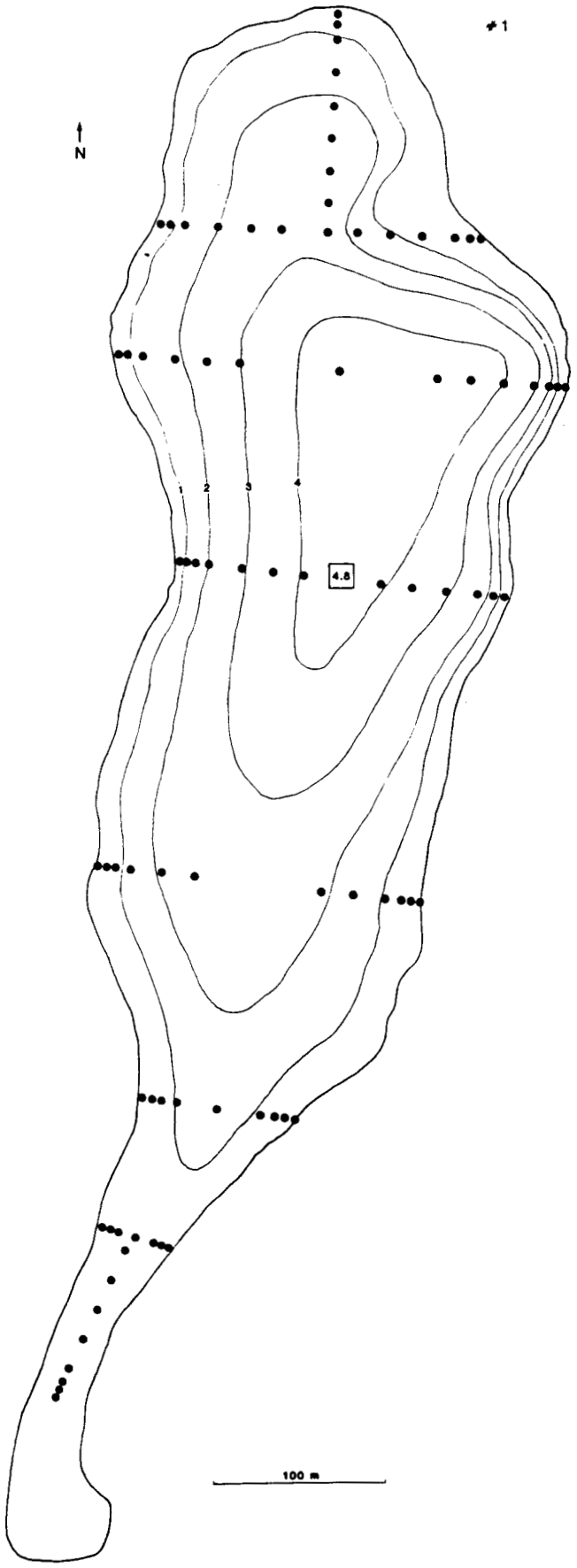
Bottom contour maps for each wetland at Riske Creek

Legend:

●	Station
——|——	Contour line
1.0	Maximum depth

Notes:

- The zero contour line was sharply defined as the edge between forest, grassland, shrub-carr or (wet) meadow (all considered "upland" for this study) and marsh, fen, swamp or (shallow) open water (all considered "wetland" for this study). Precipitation for 1983 was average and that was reflected in the fact that, for most wetlands, the water edge was at or very close to the upland/wetland edge ($\pm$0.1m).
- Contours were drawn and maximum depths were estimated on the basis of the depth measurements taken for each wetland. For large wetlands, they may be less accurate where large distances between depth stations occurred.
- Contour maps for wetlands 83 and 117 are not presented.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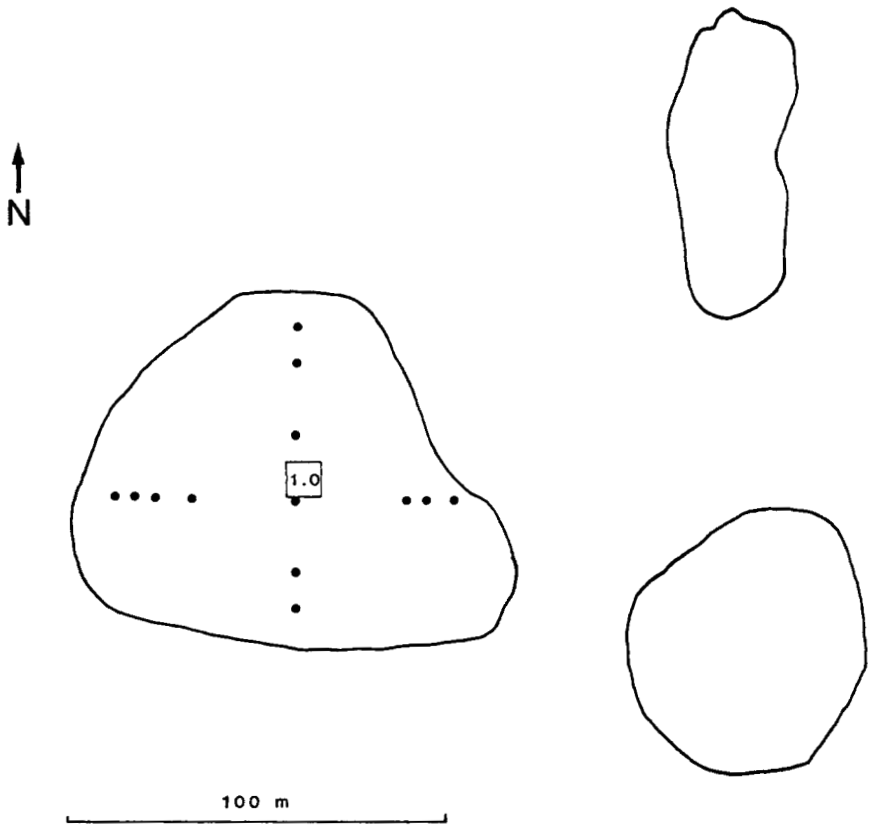
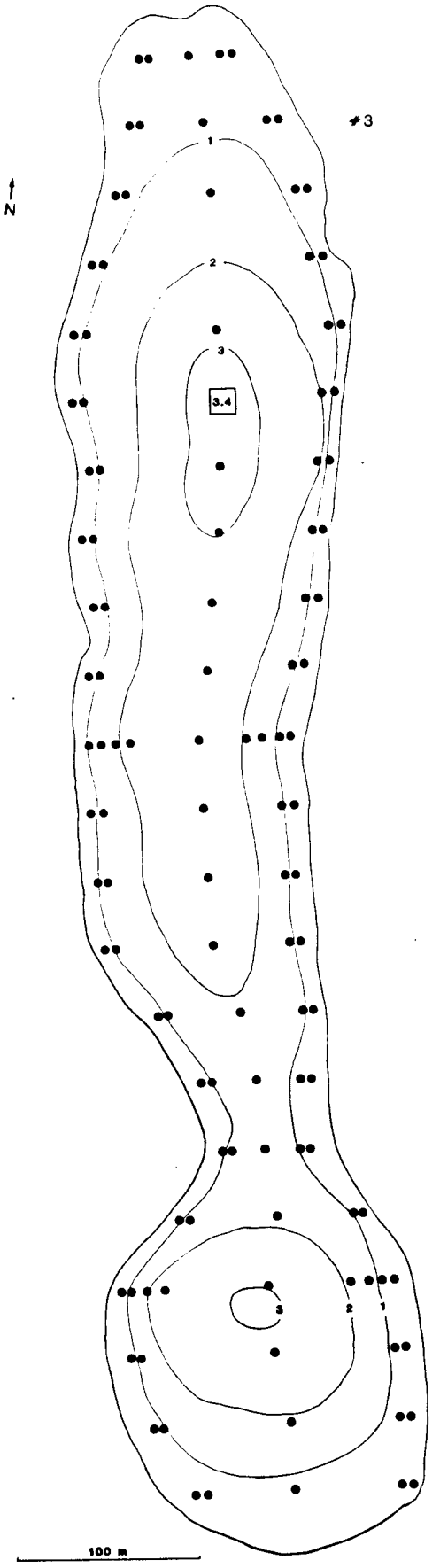
2
3
4
4.8
100 m

#2




N
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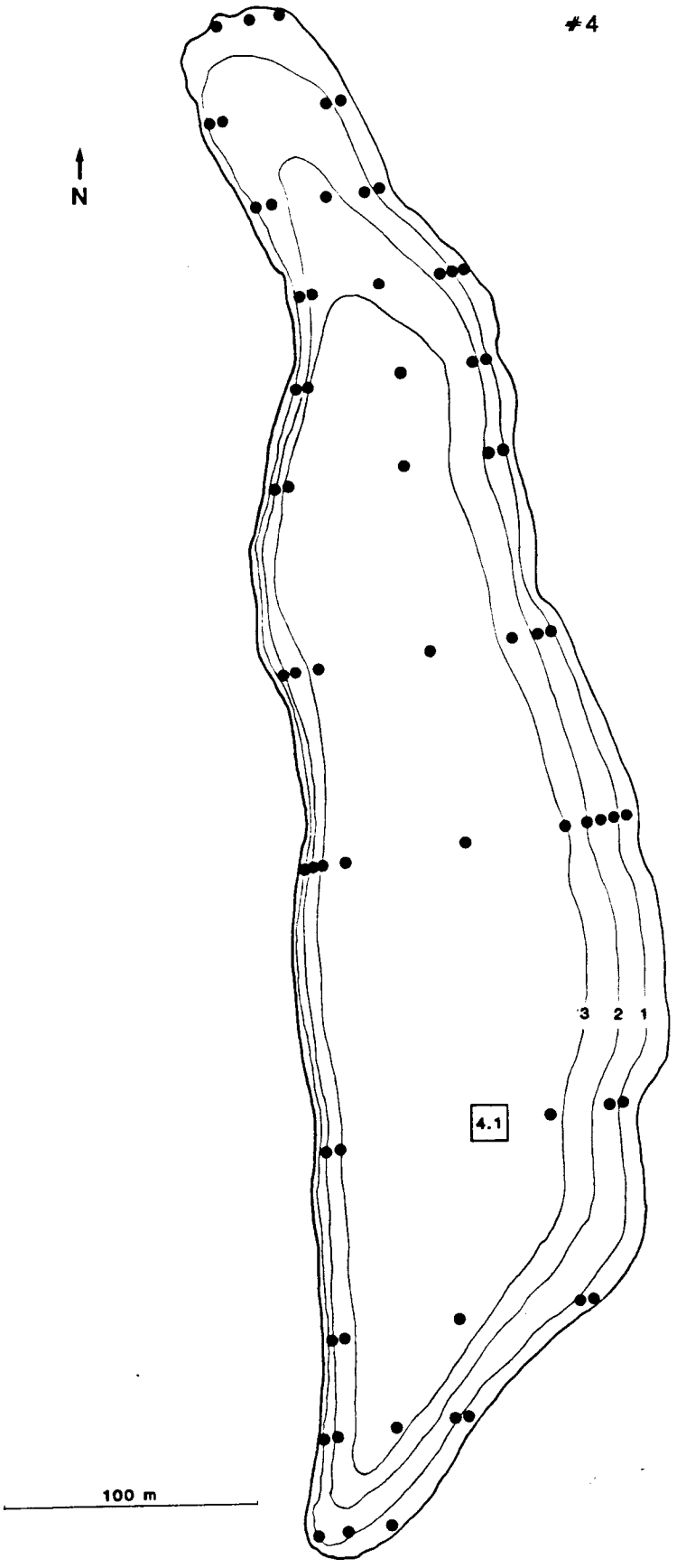
1
2
3
3.4
3
2
1
100 m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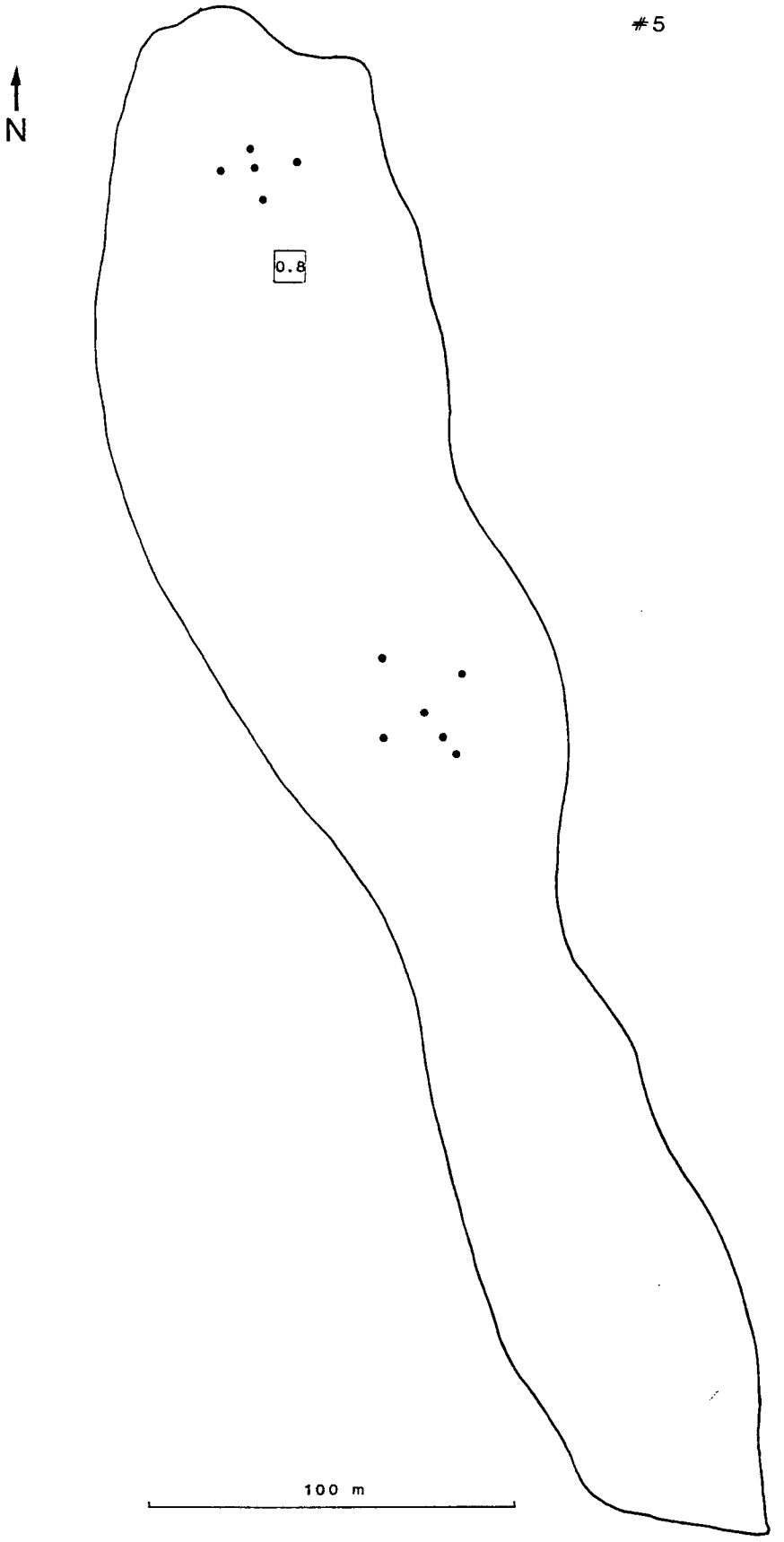
N
3
2
1
4.1
100 m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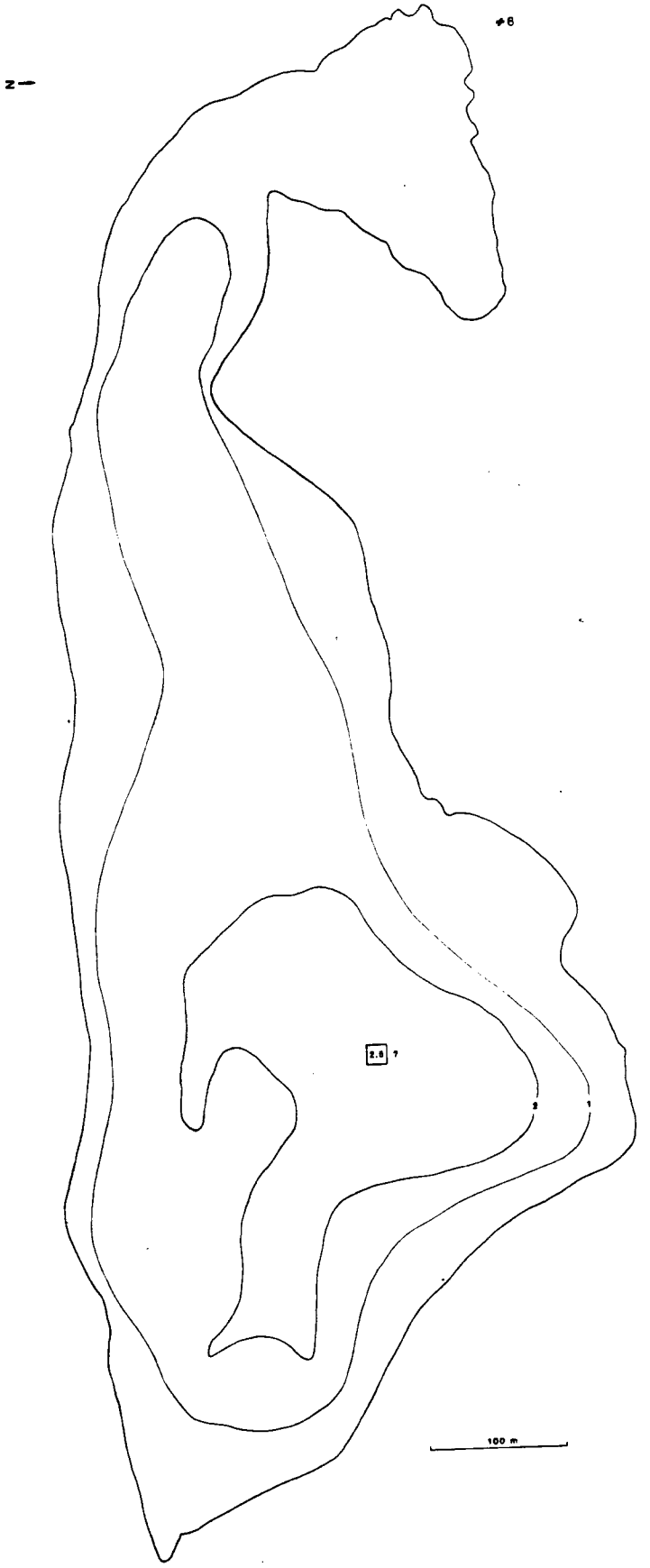
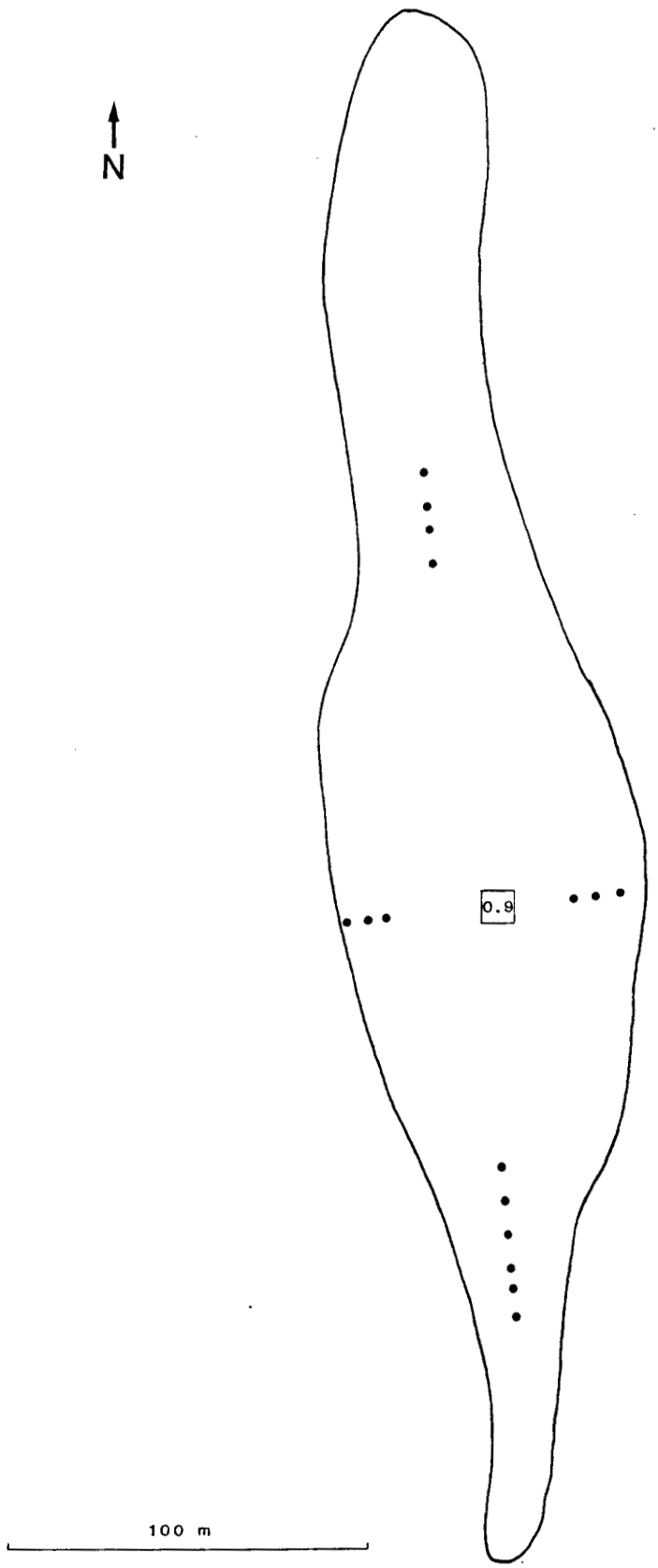
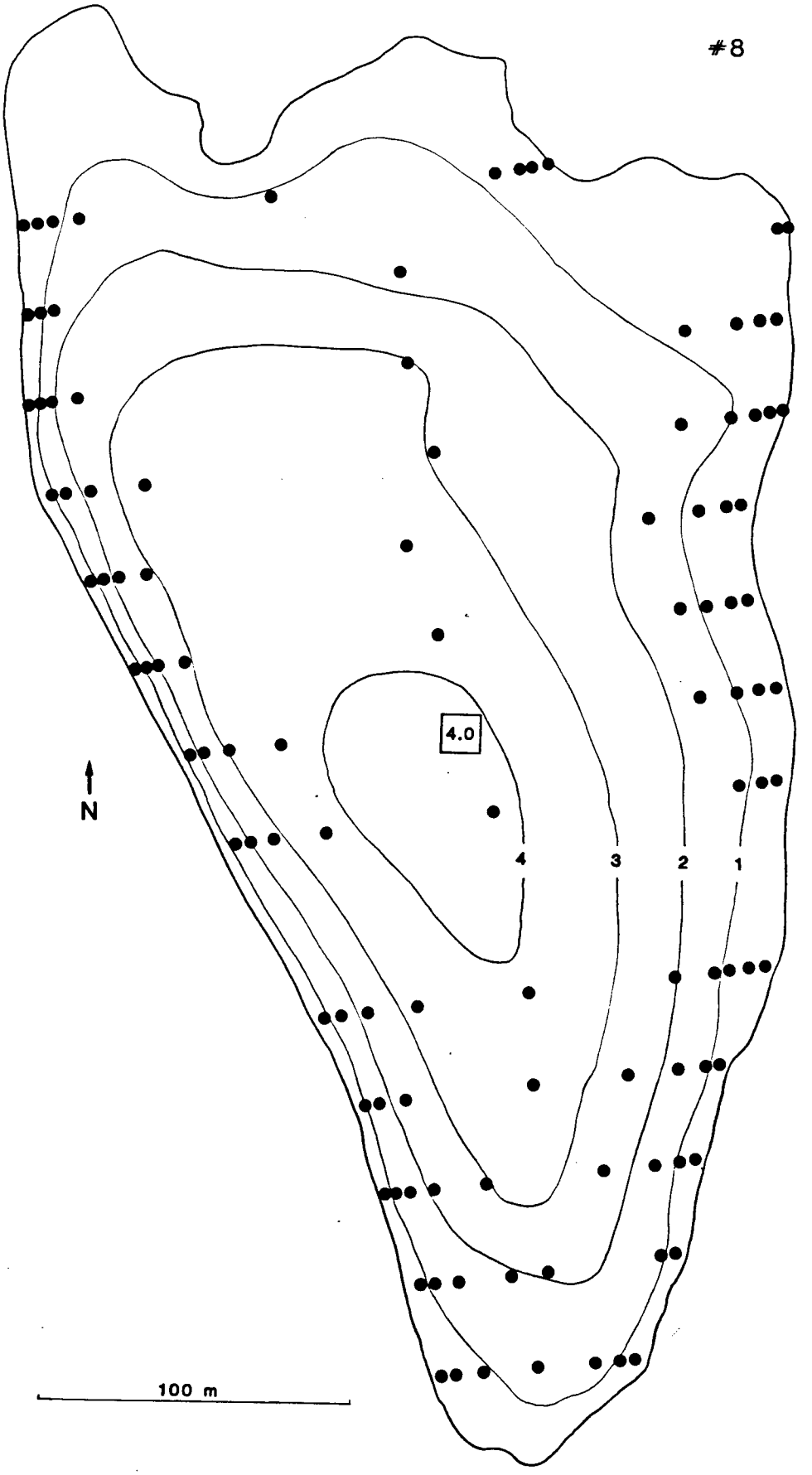
N
0.8
100 m


#6
2.6
7
2
1
100 m

#7

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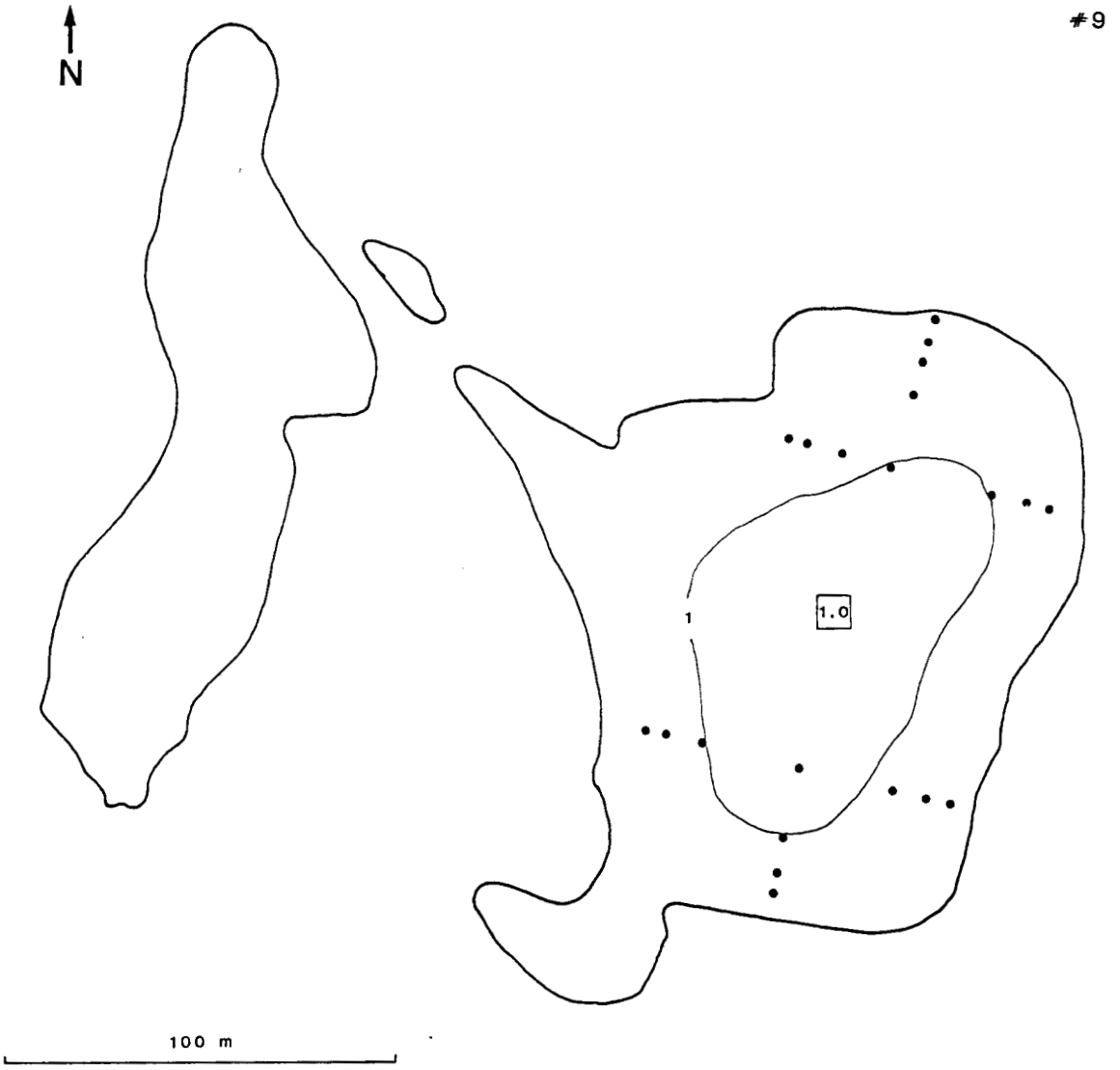
4.0
N
4
3
2
1
100 m


N
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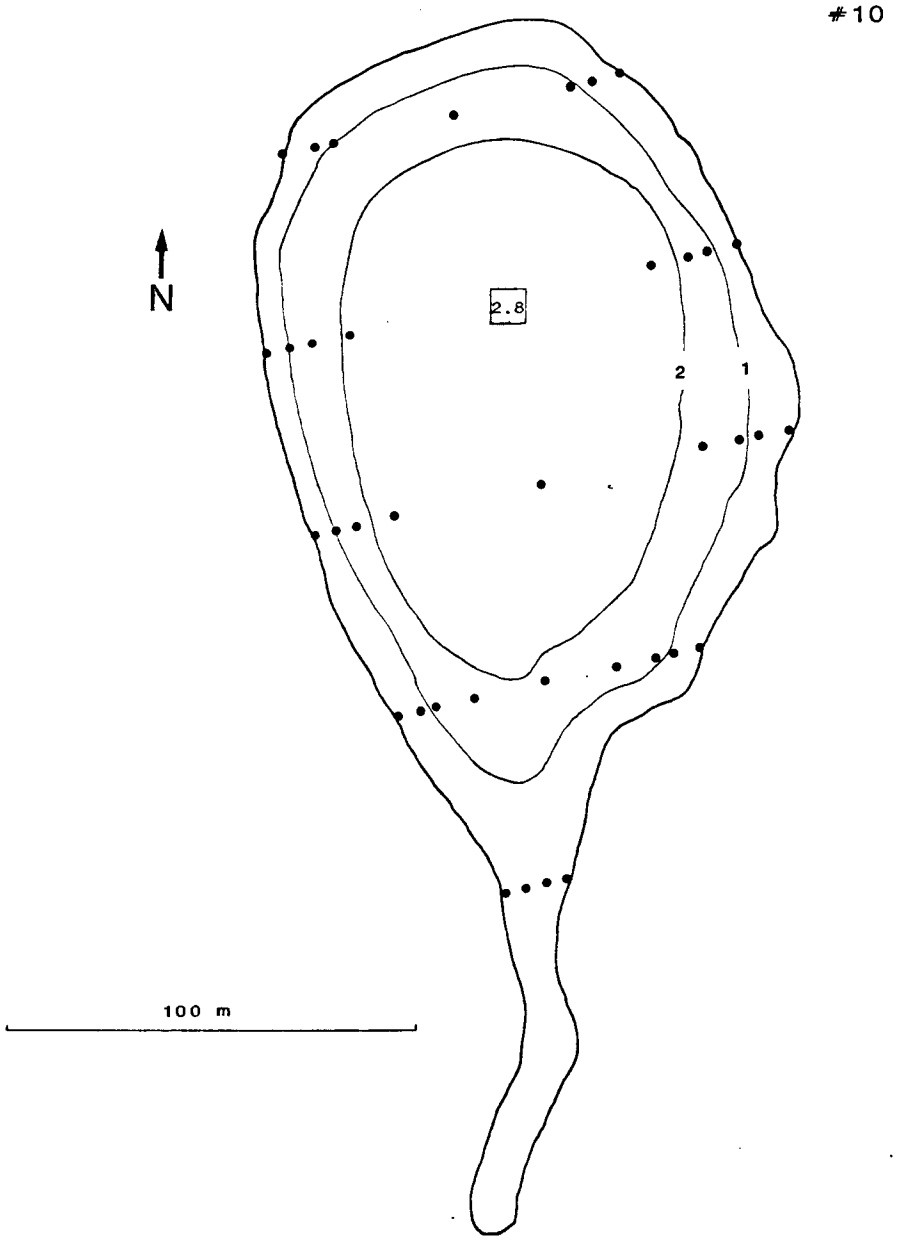
1
1.0
100 m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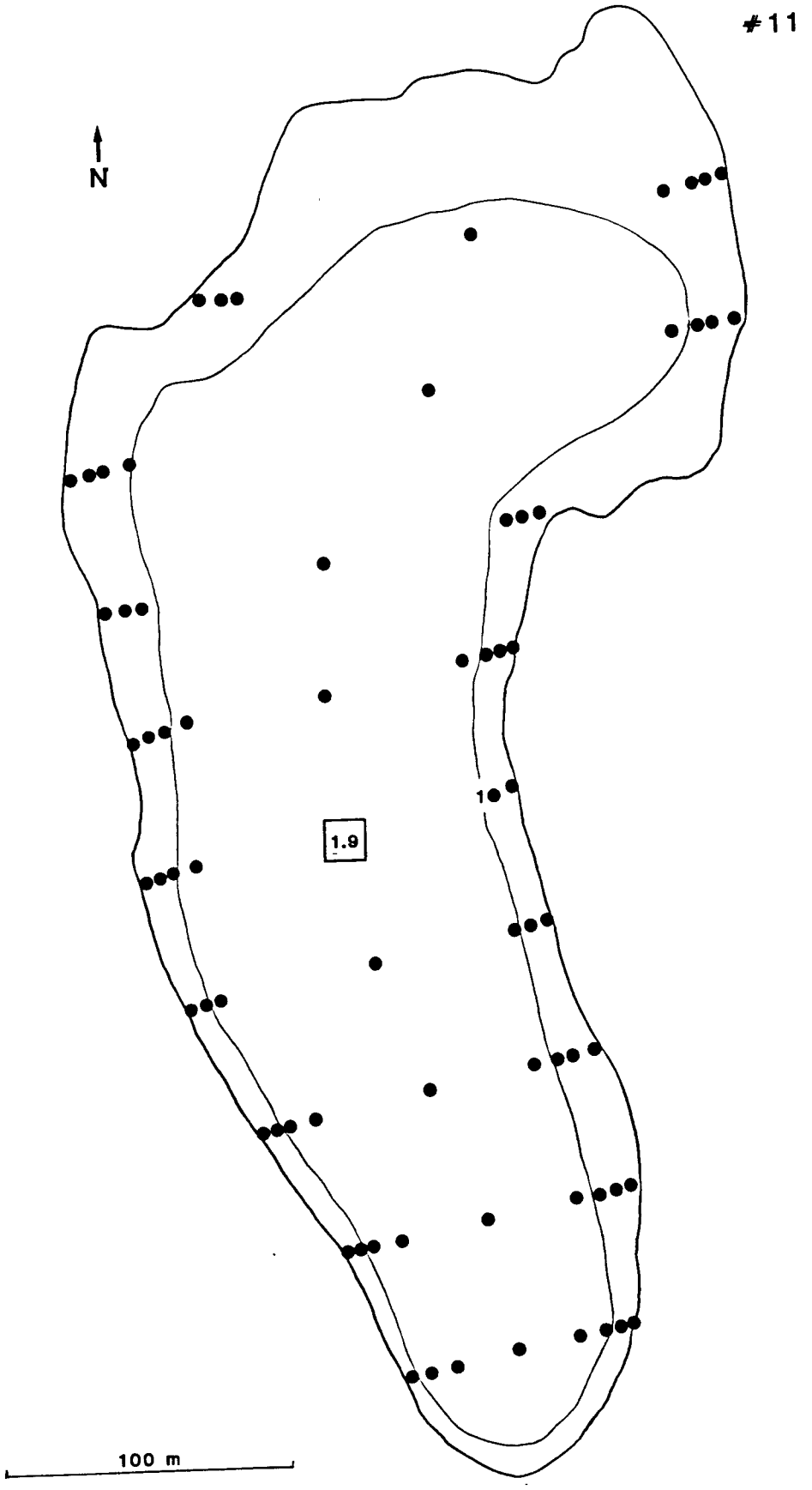
N
2.8
2
1
100 m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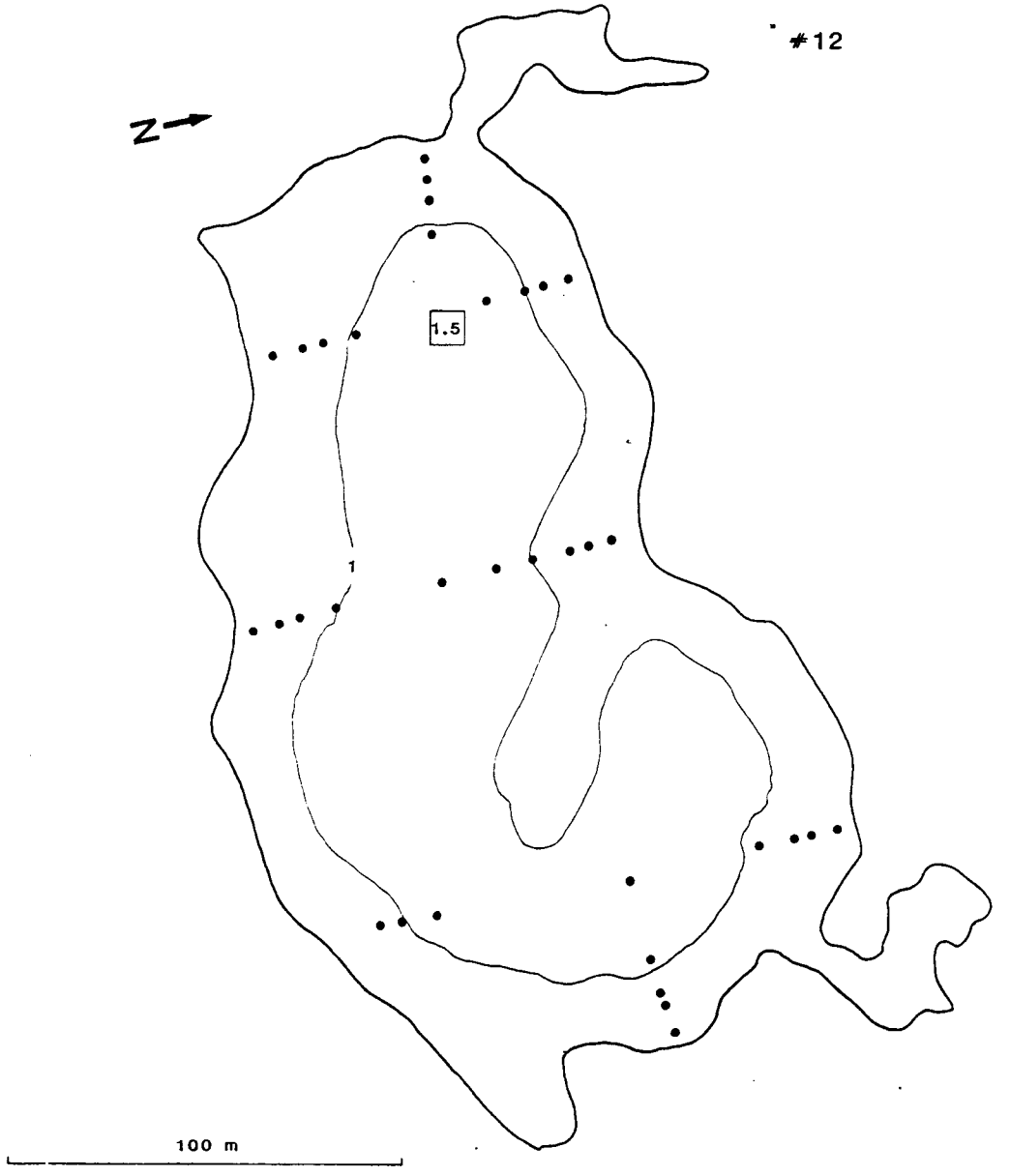
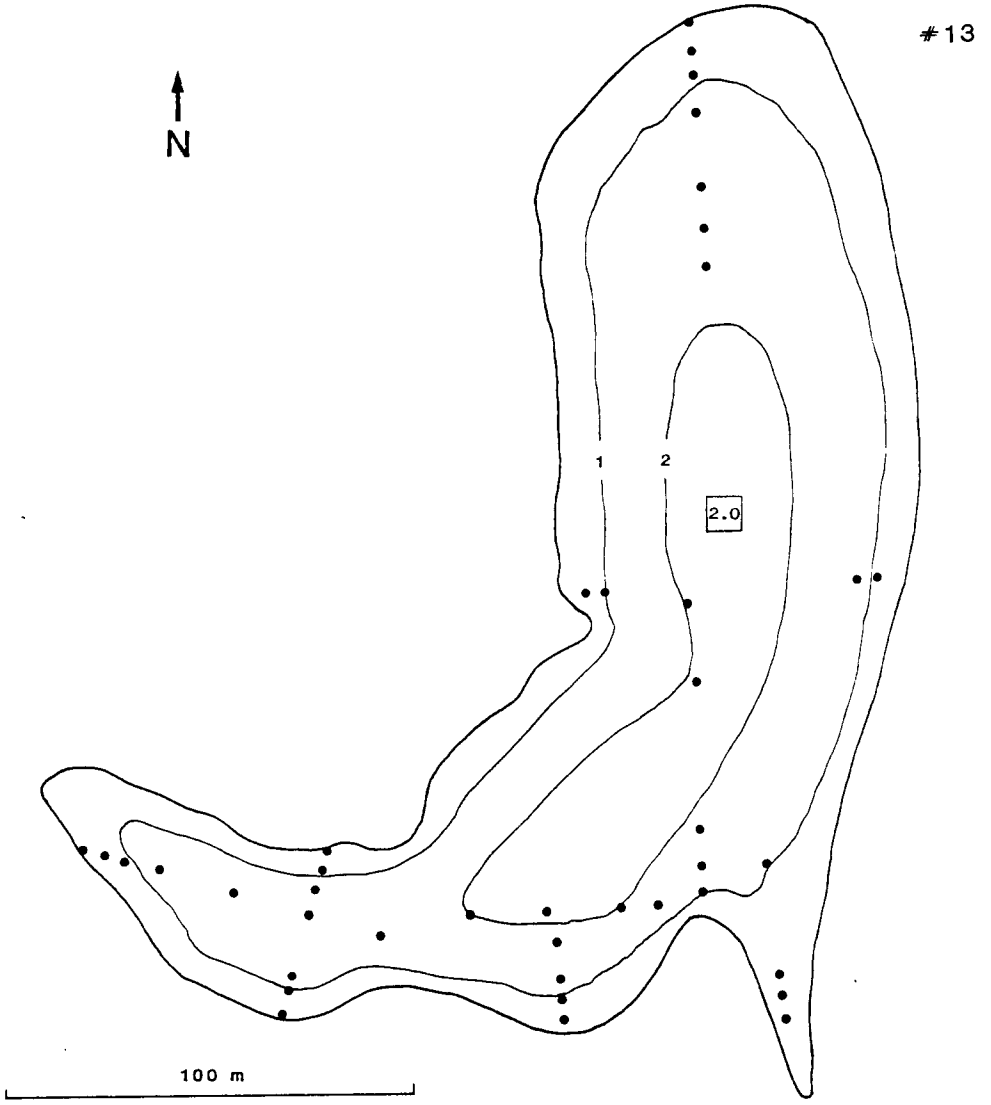
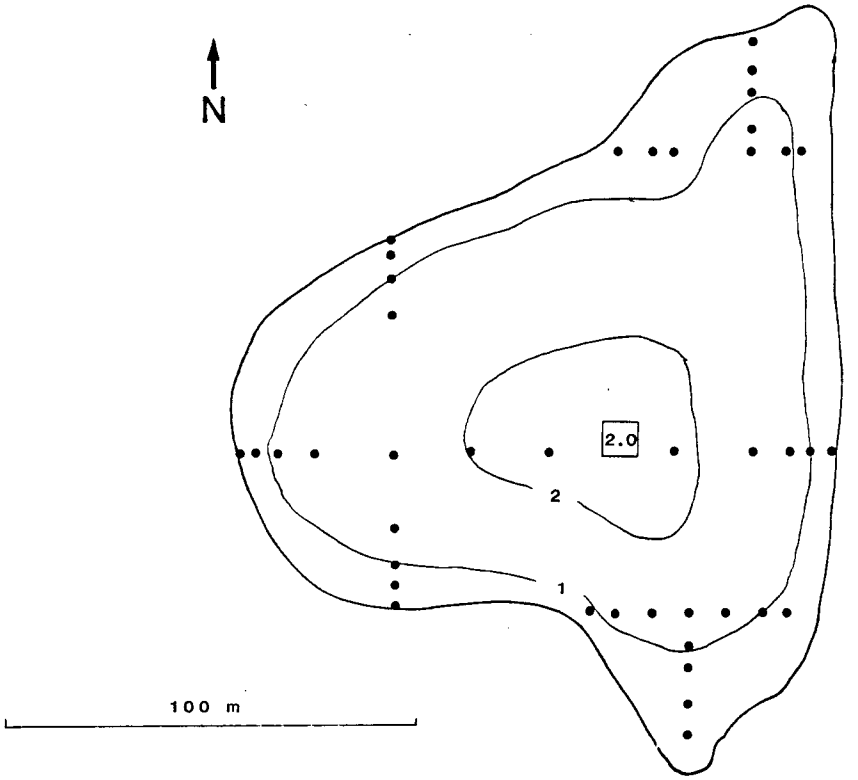
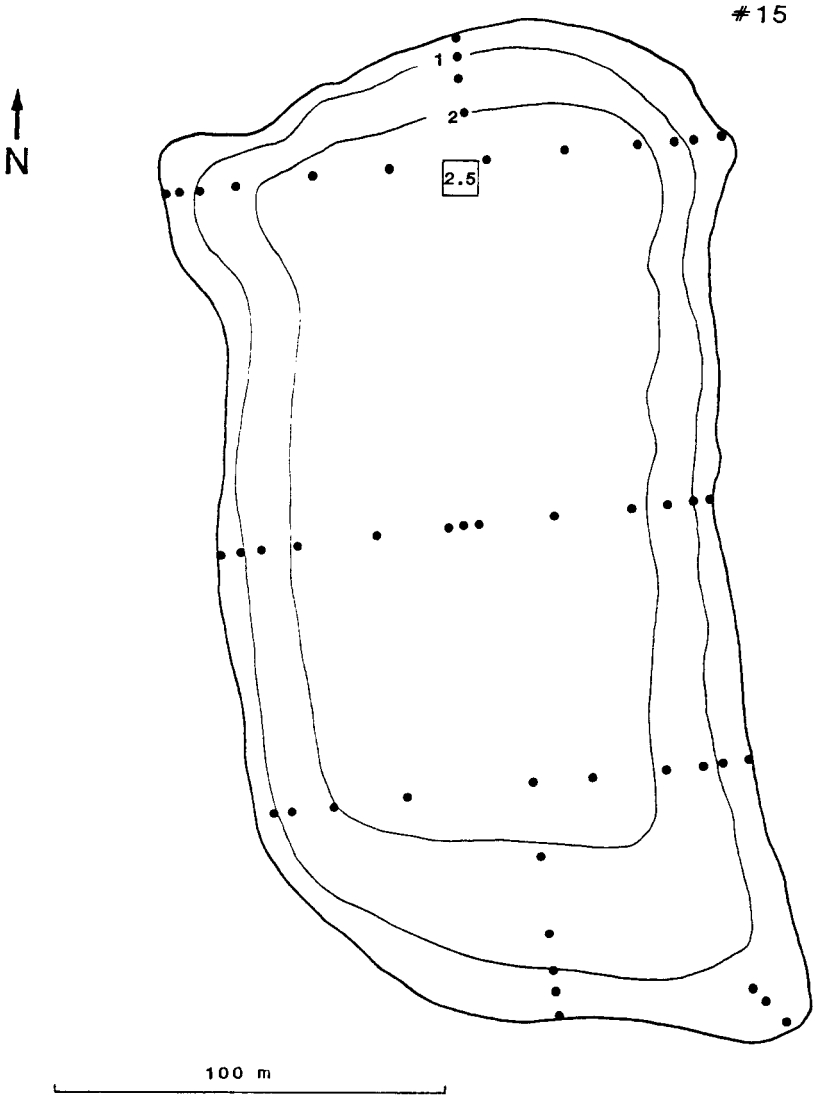
N
1.9
100 m

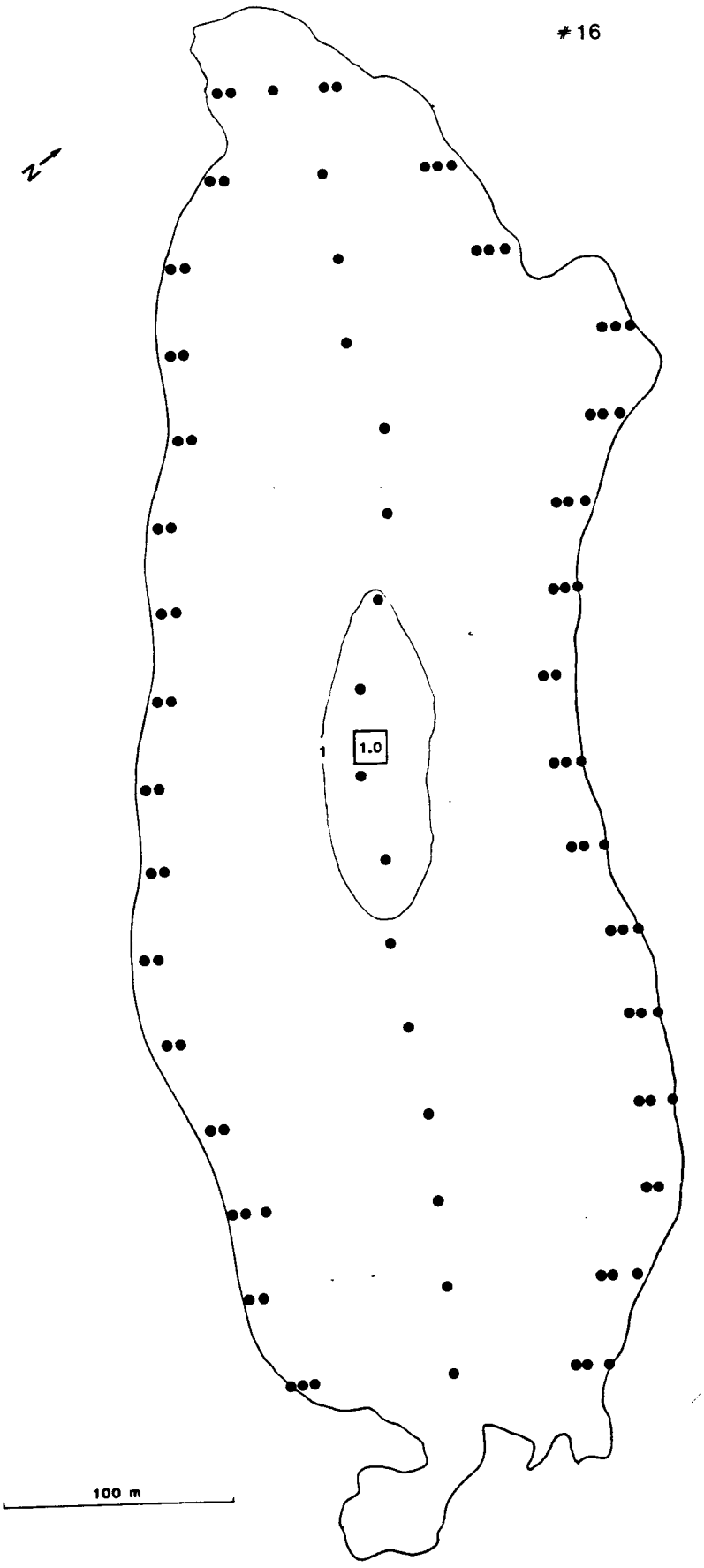

#12
N
1.5
1
100 m


#13
N
1
2
2.0
100 m

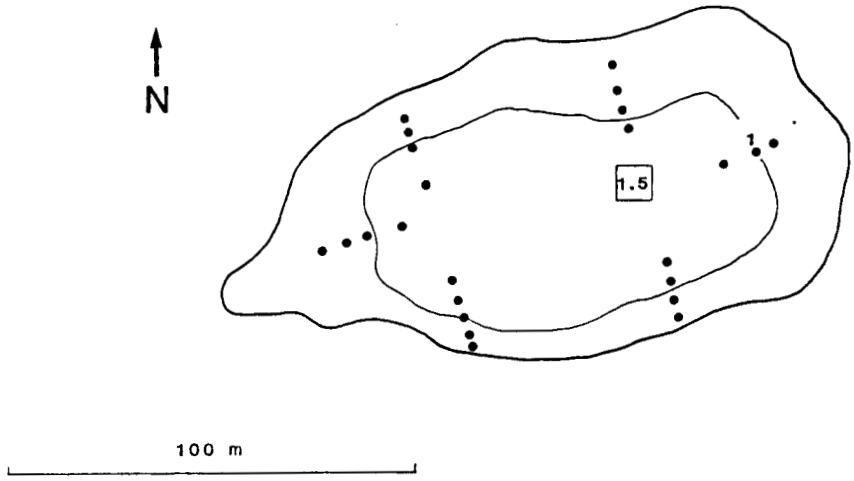
#14




#15
N
1
2
2.5
100 m


#16
N
1.0
100 m

#17



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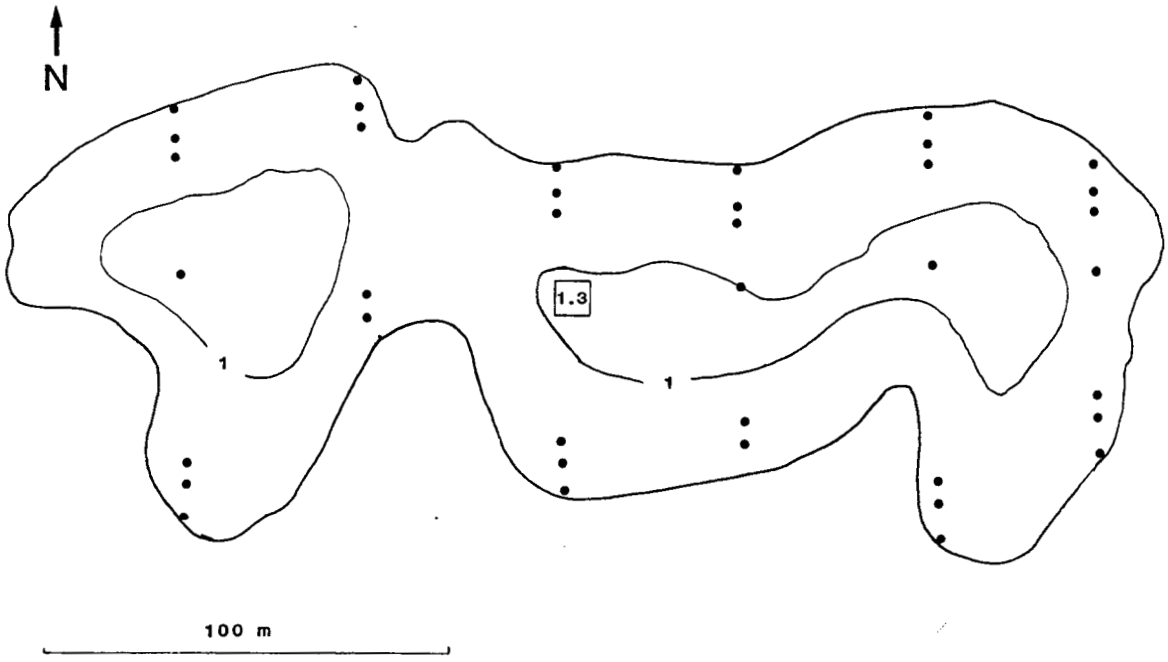
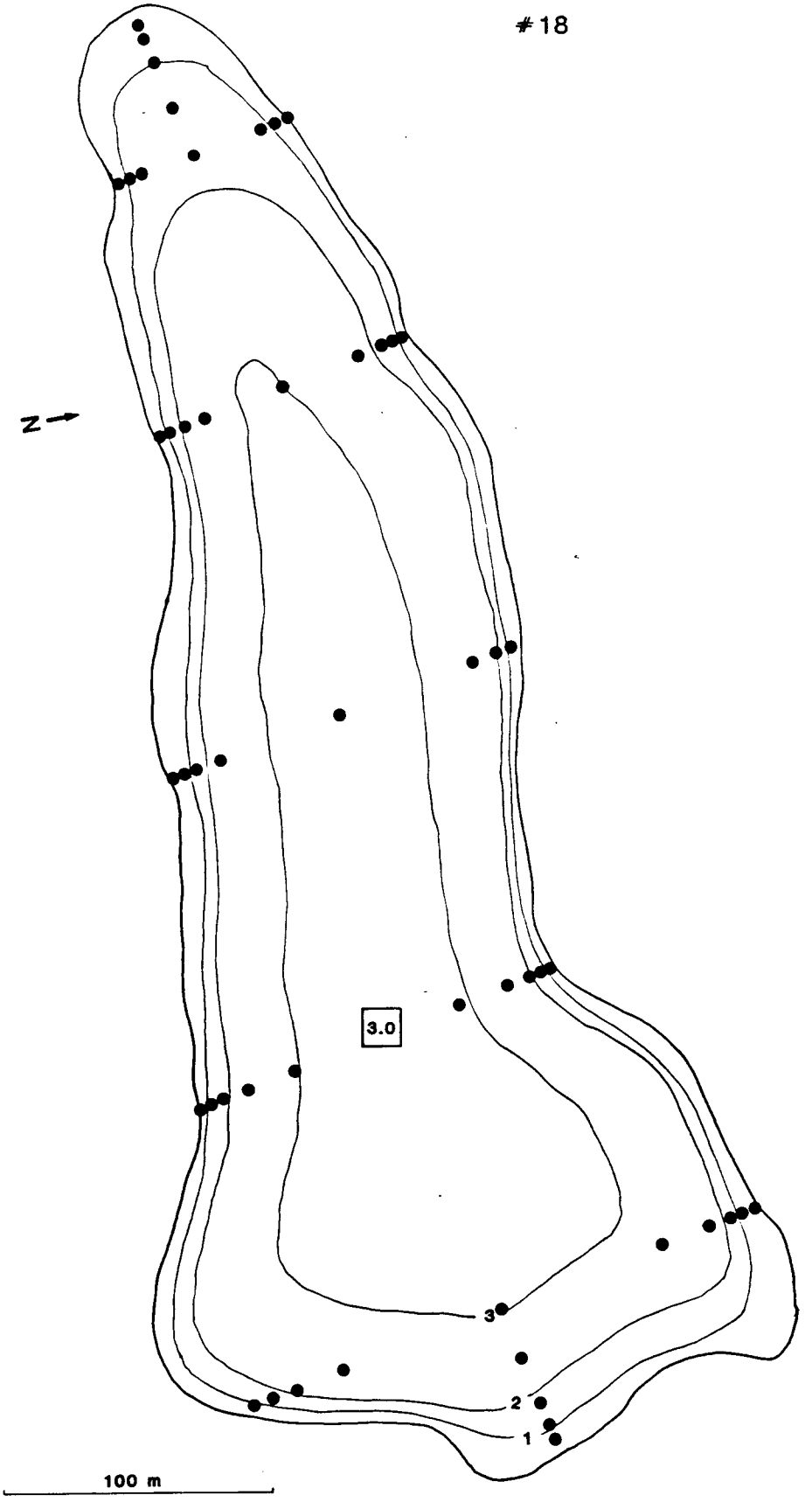
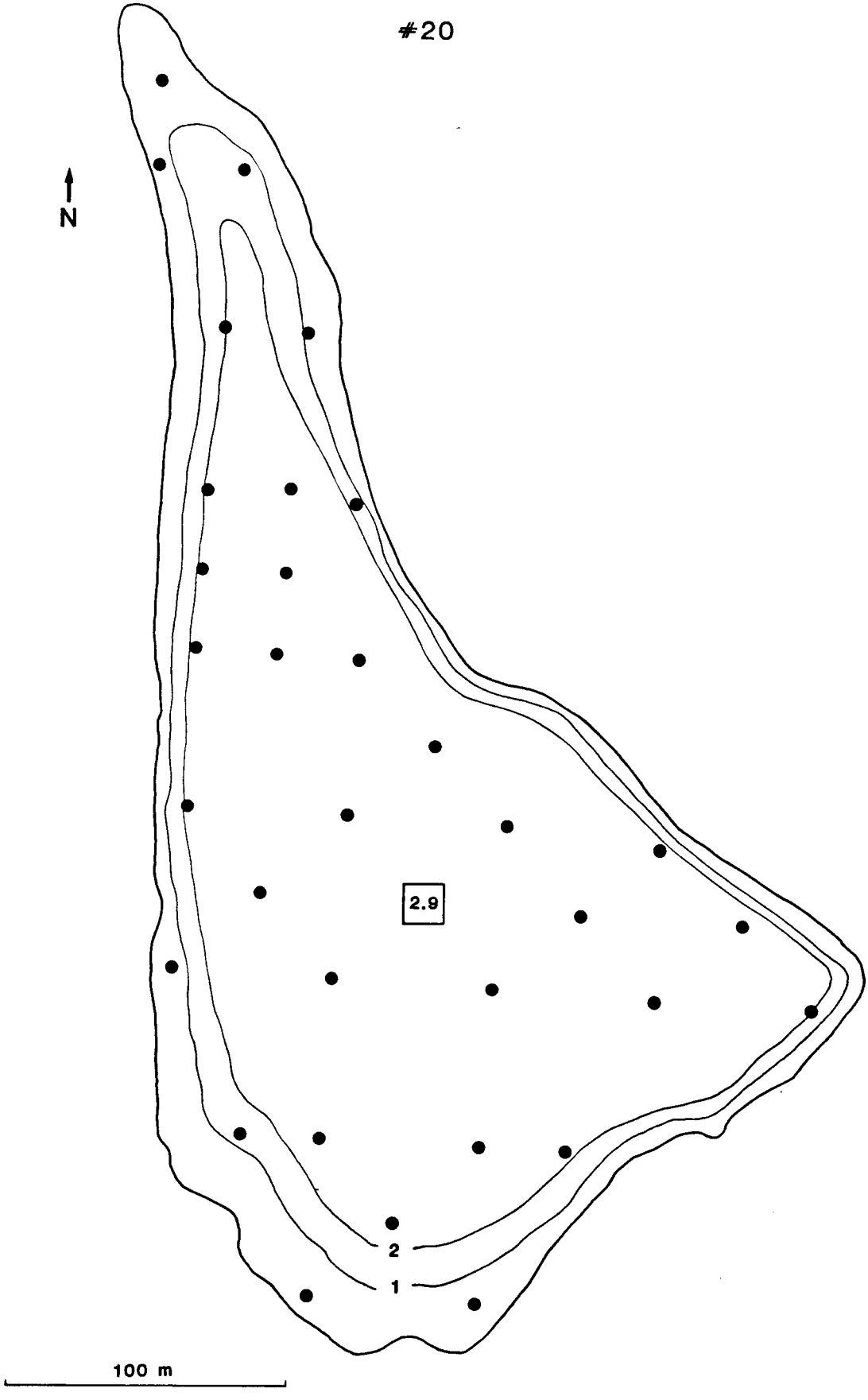



#18
N
3.0
3
2
1
100 m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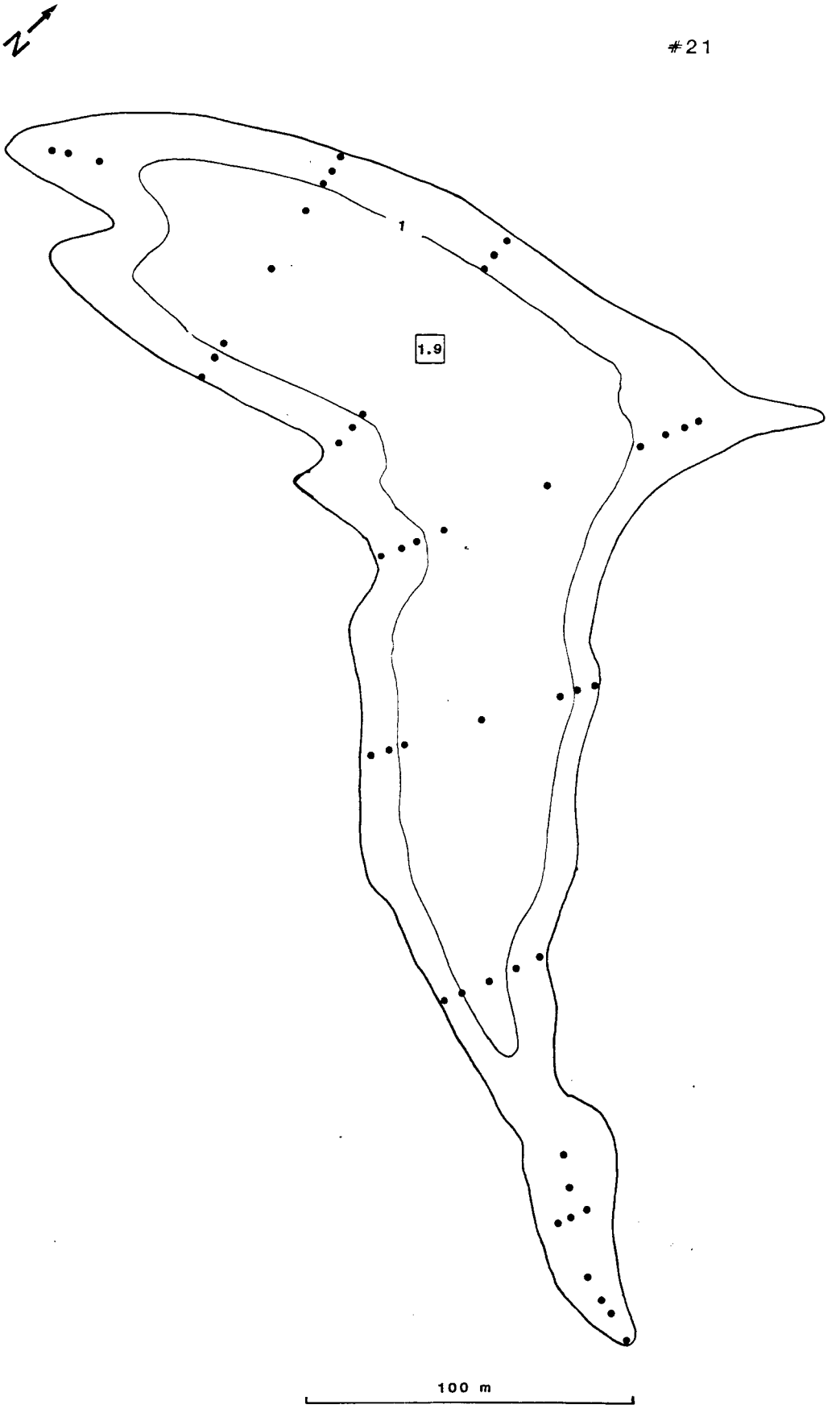
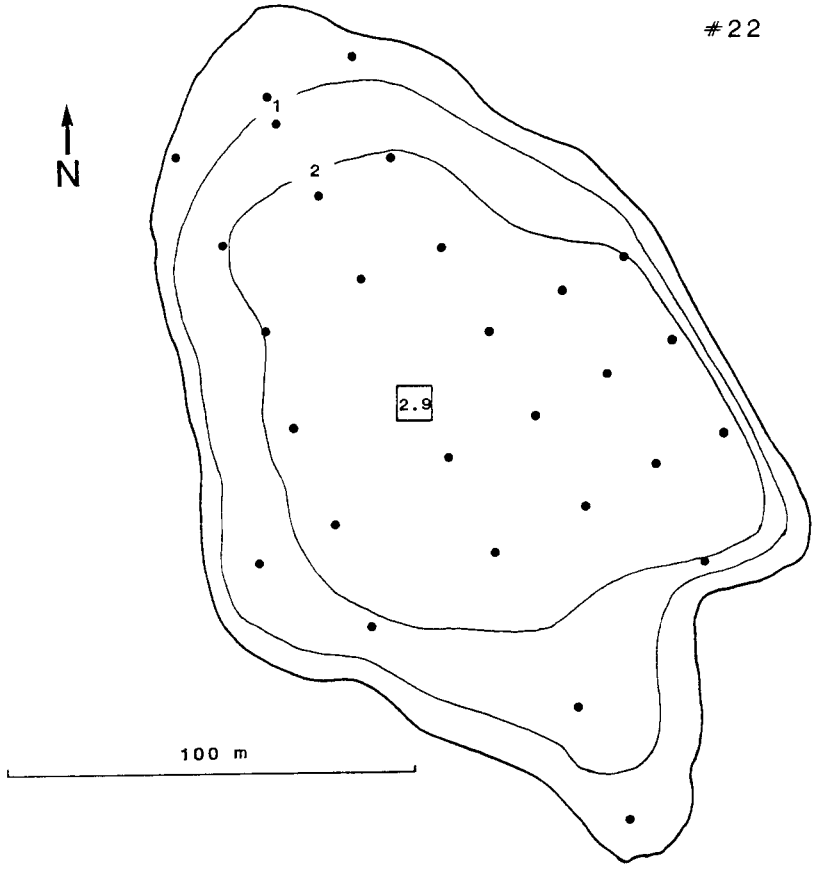
N
2.9
2
1
100 m


N
#21
1
1.9
100 m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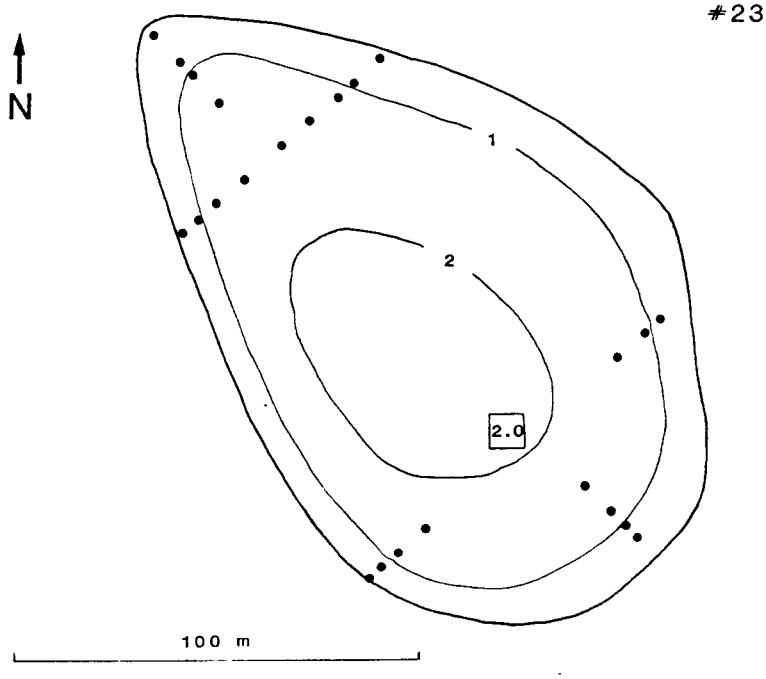
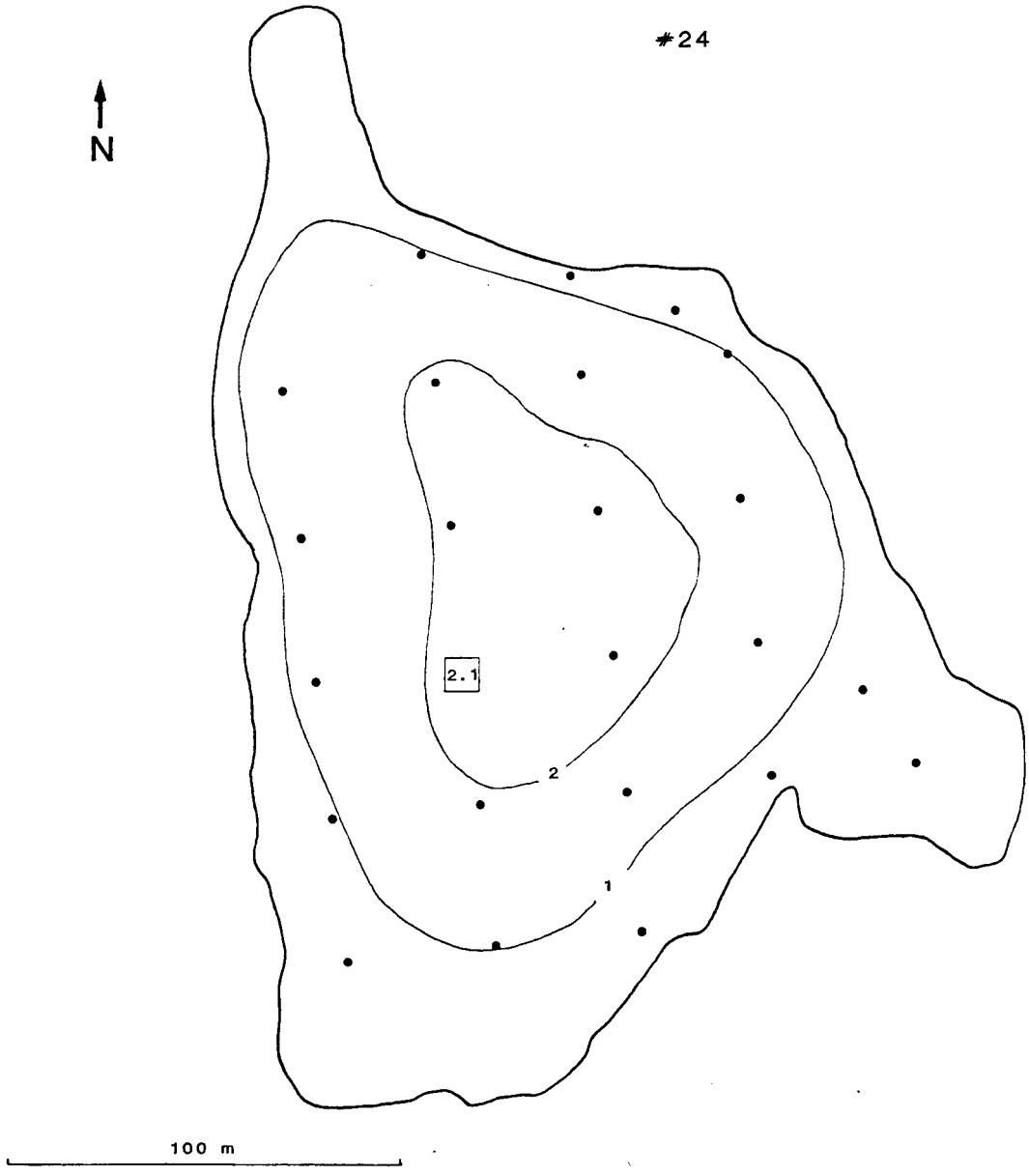
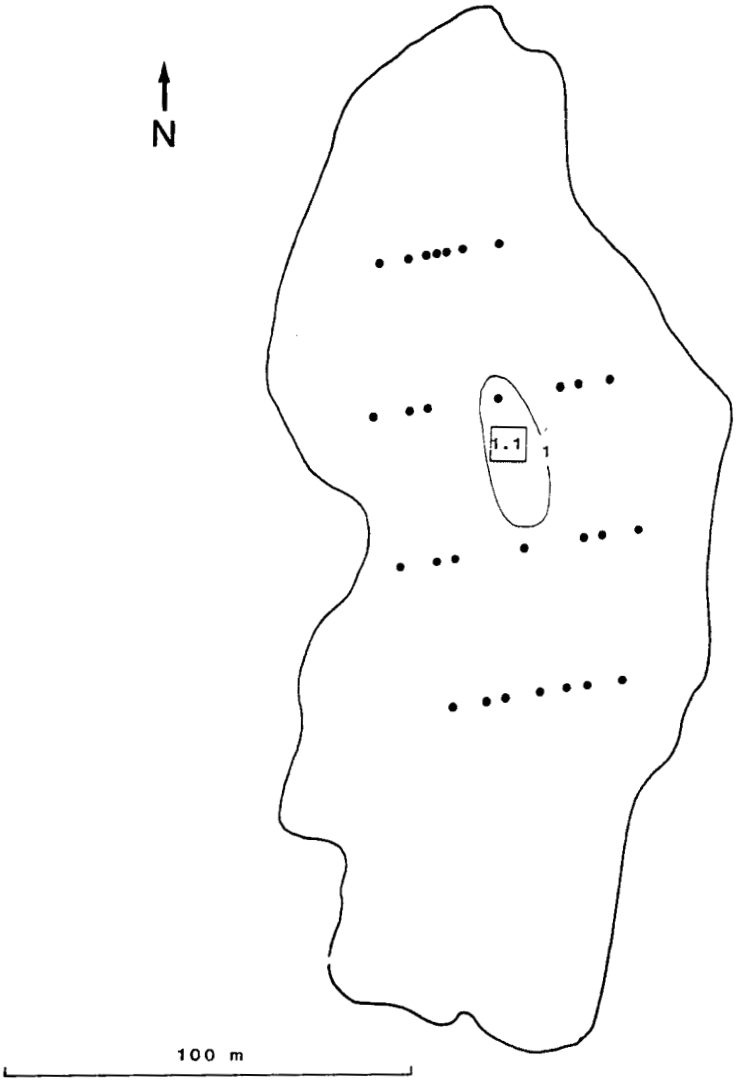
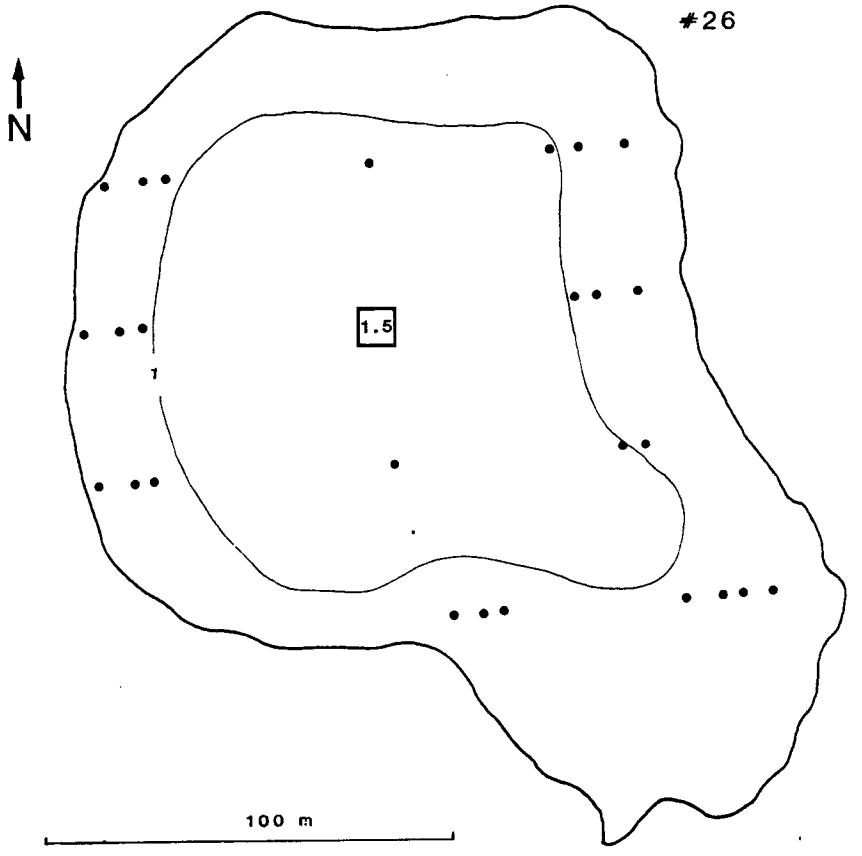
N
1
2
2.9
100 m


#23
N
1
2
2.0
100 m

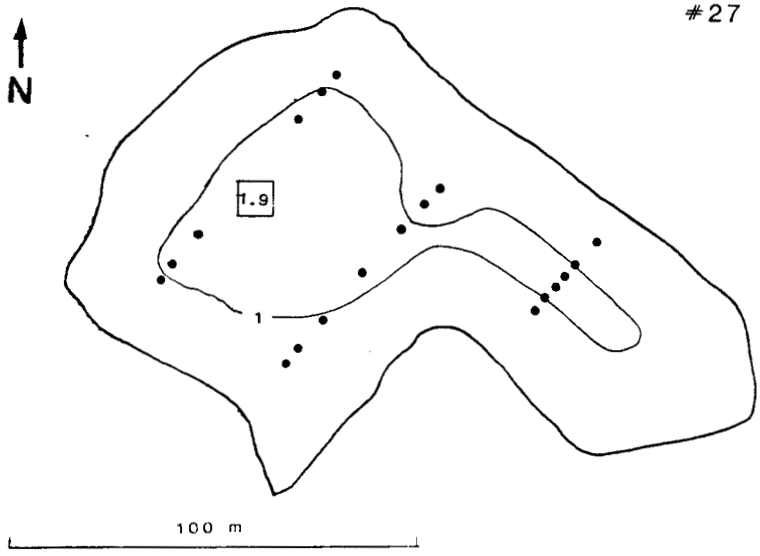

#24
N
2.1
2
1
100 m

#25

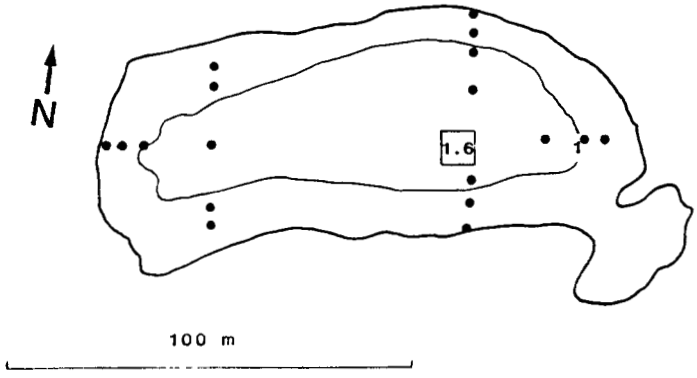


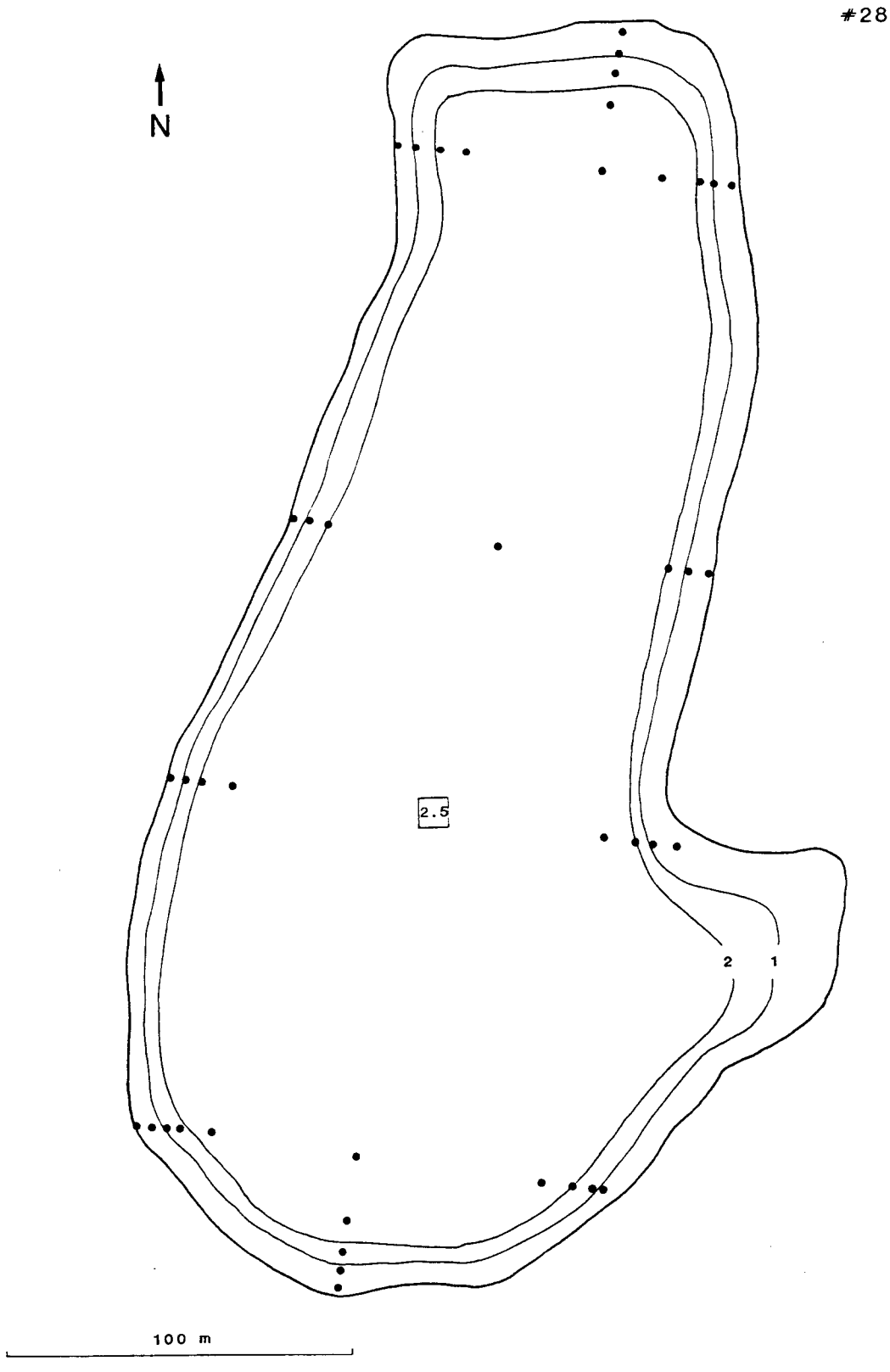

#26
N
1.5
1
100 m

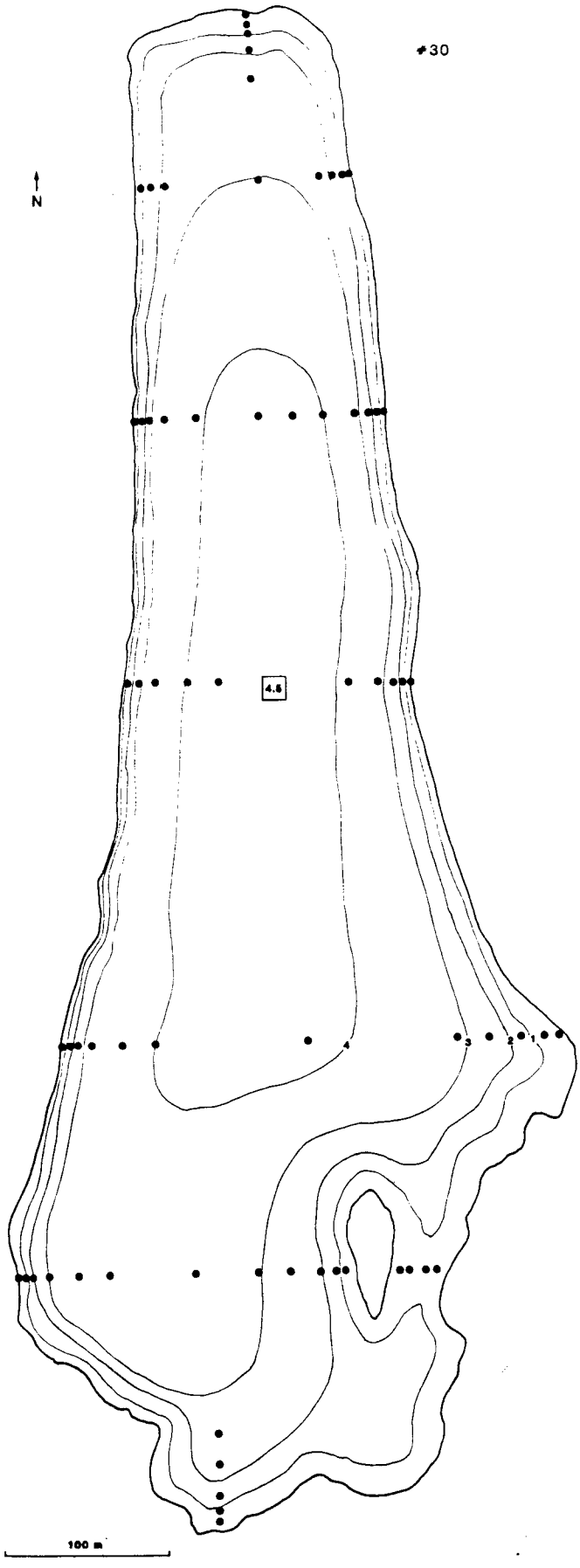
#27

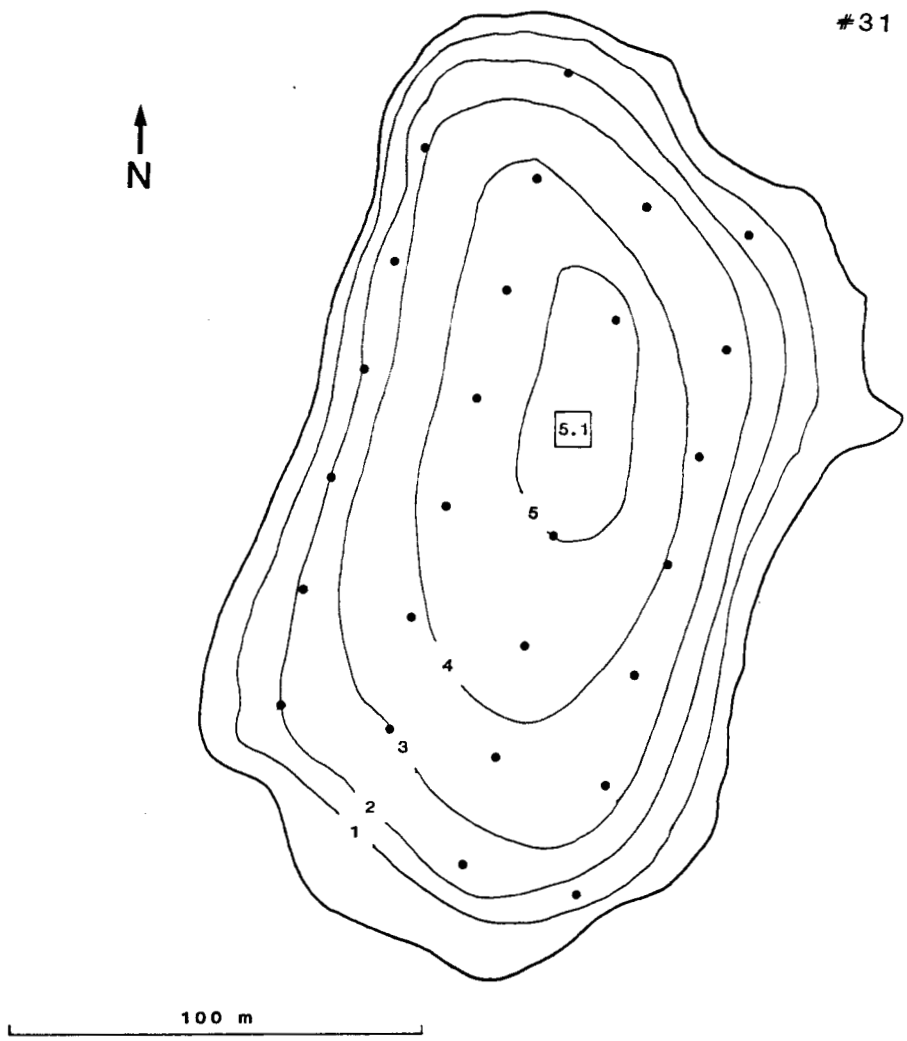


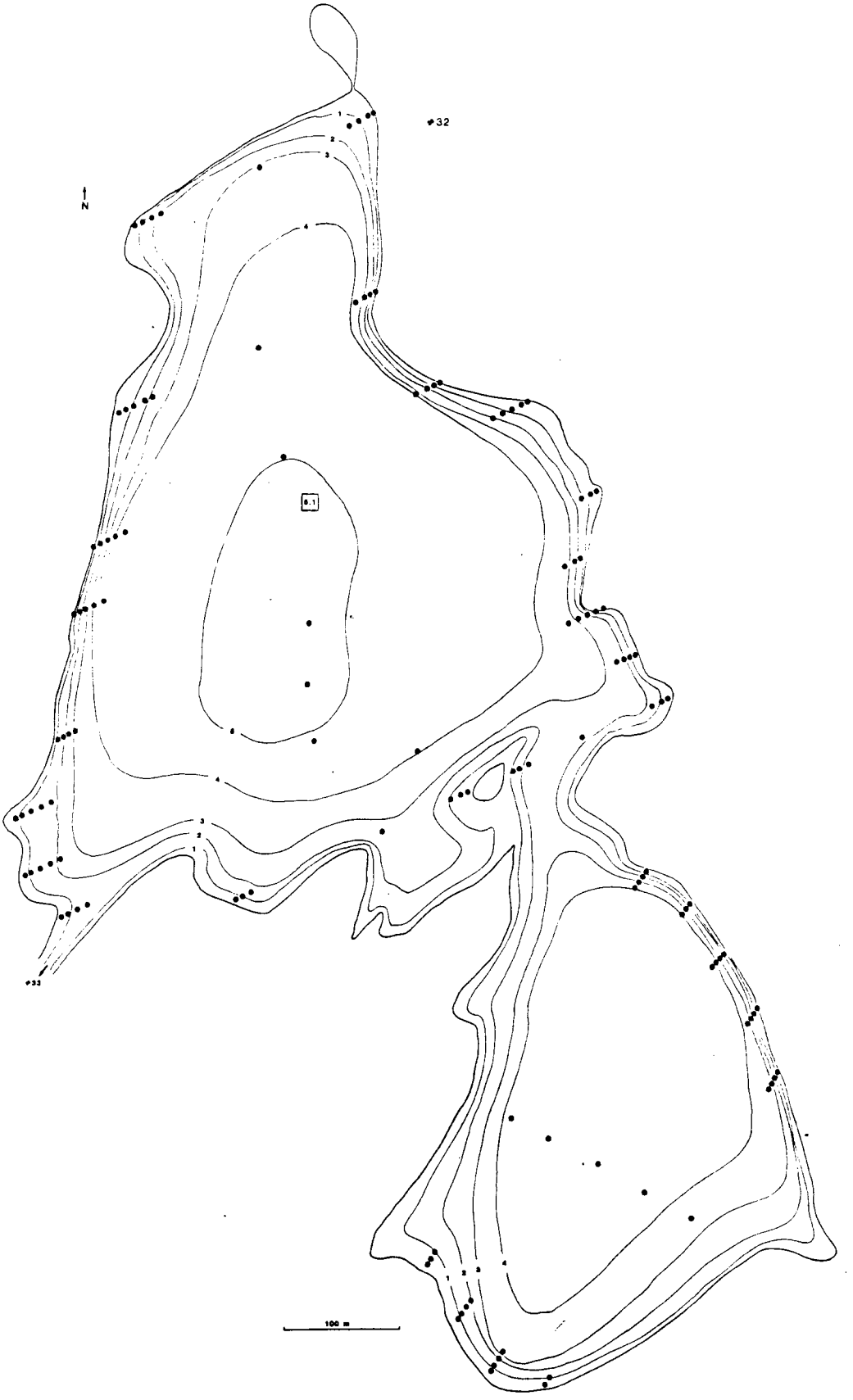
#29

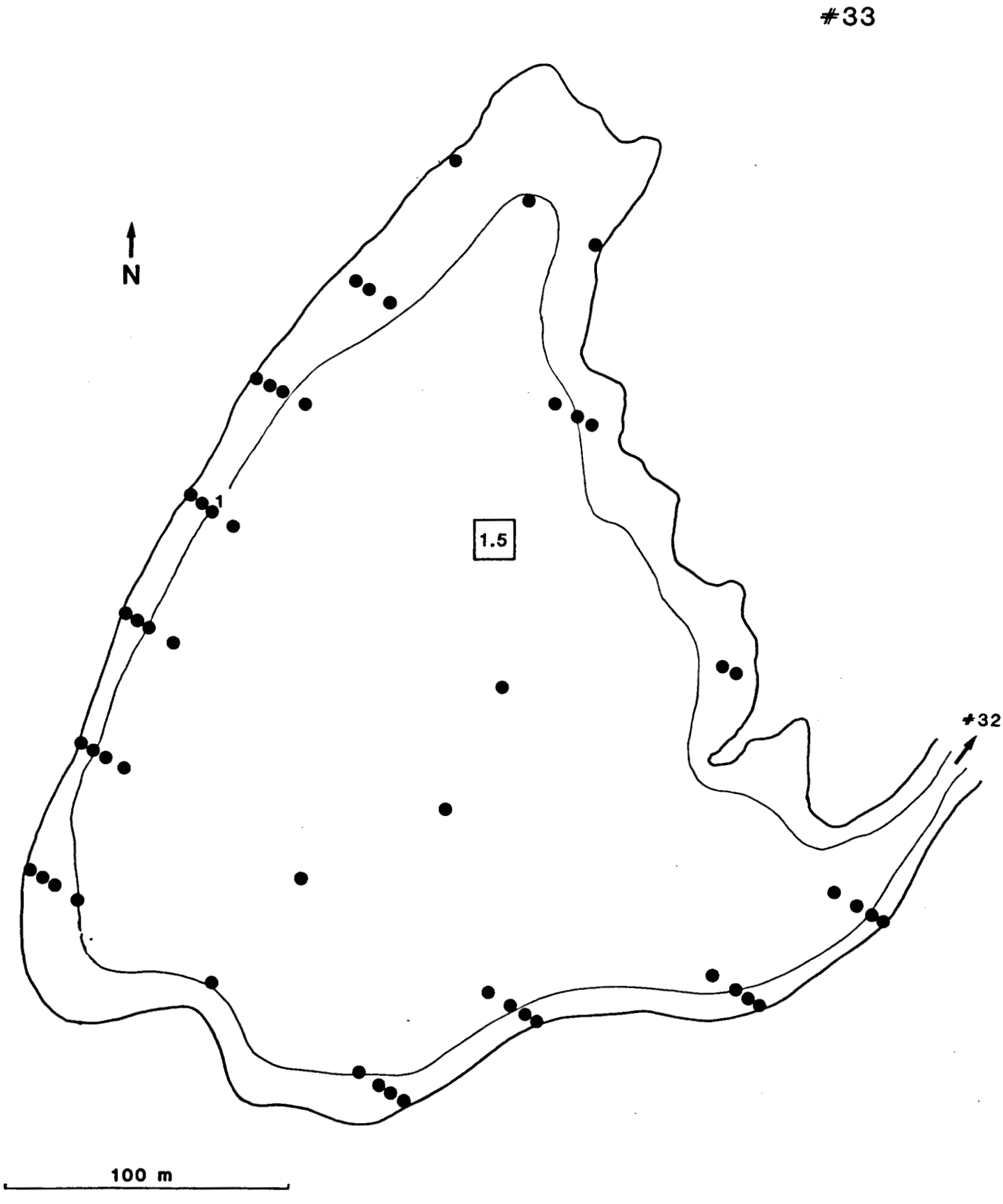


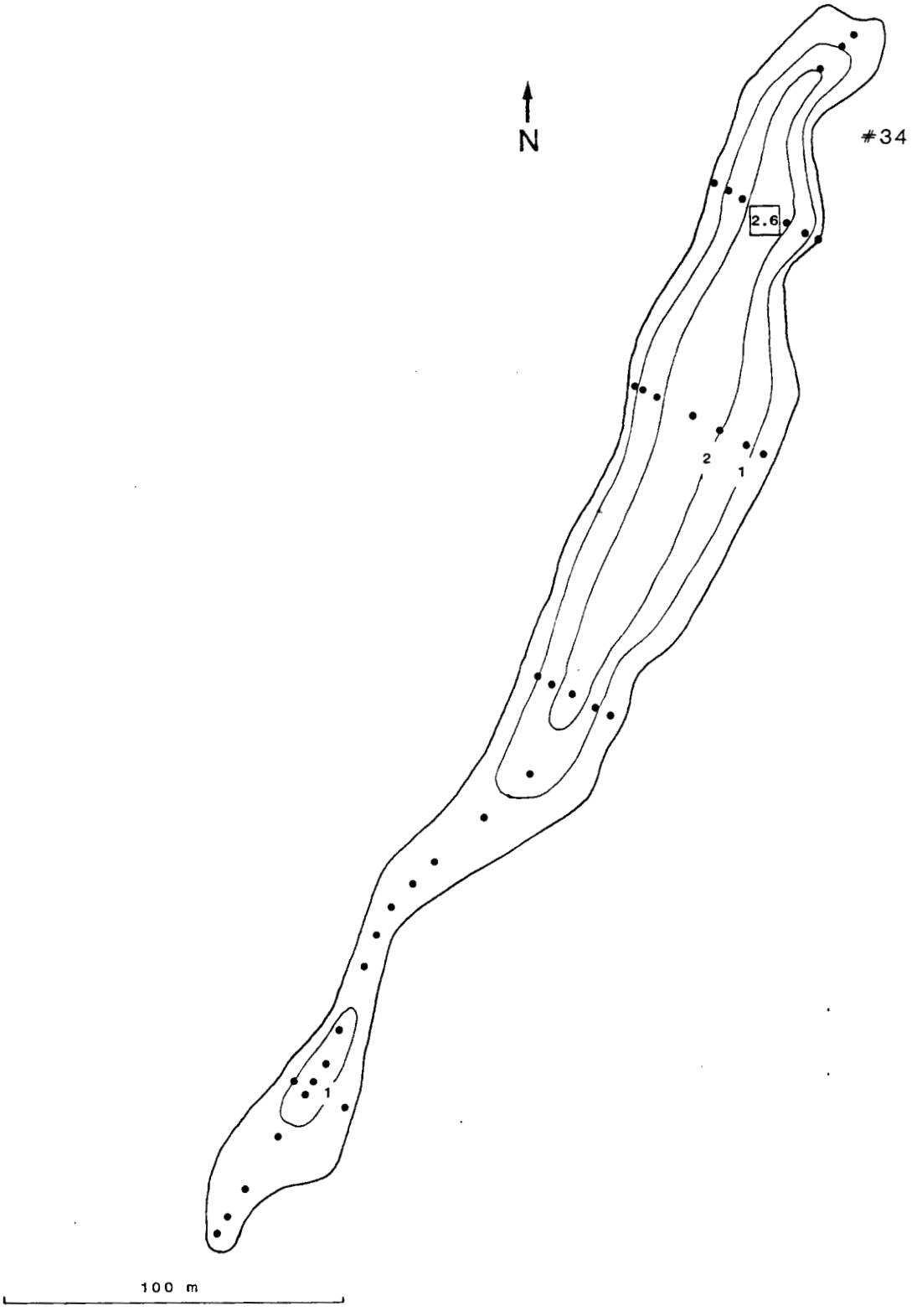

#28
N
2.5
2
1
100 m

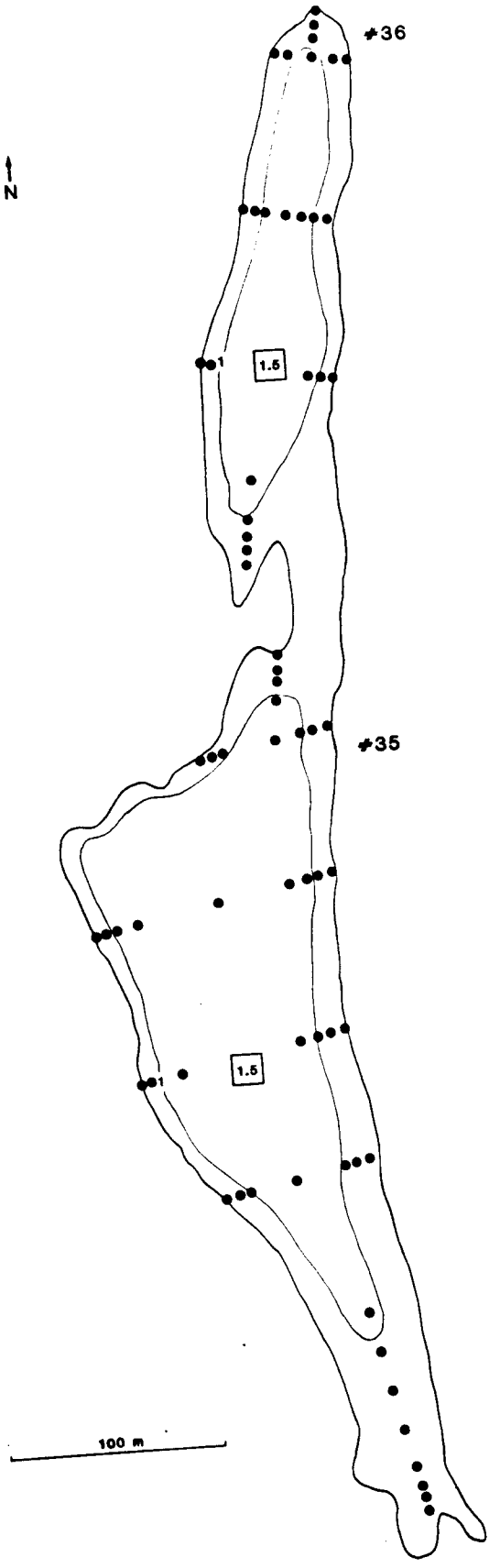

#30
N
4.5
100 m

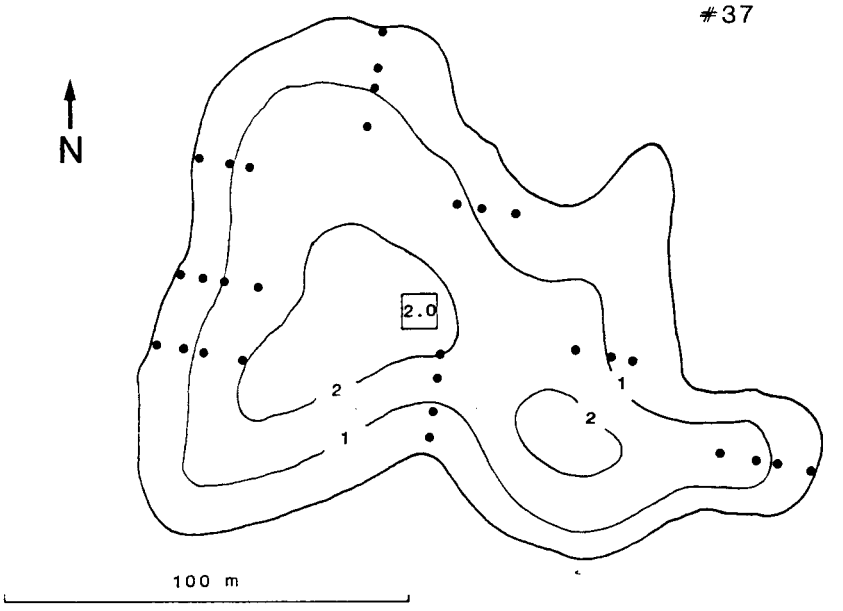

#31
N
5.1
5
4
3
2
1
100 m

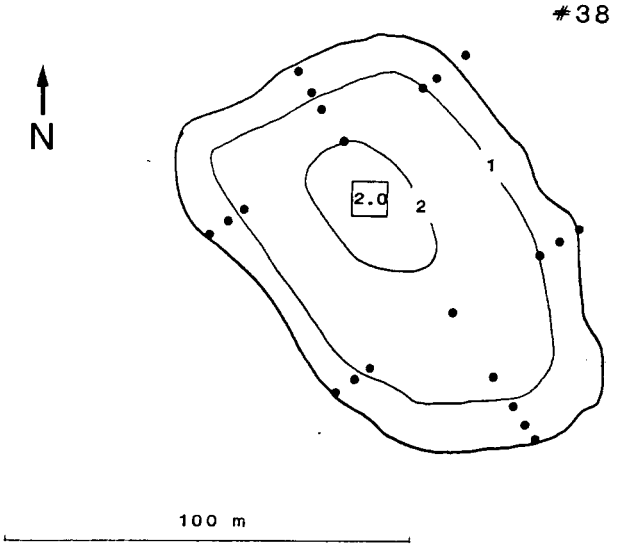

#32
N
6.1
#33
100 m

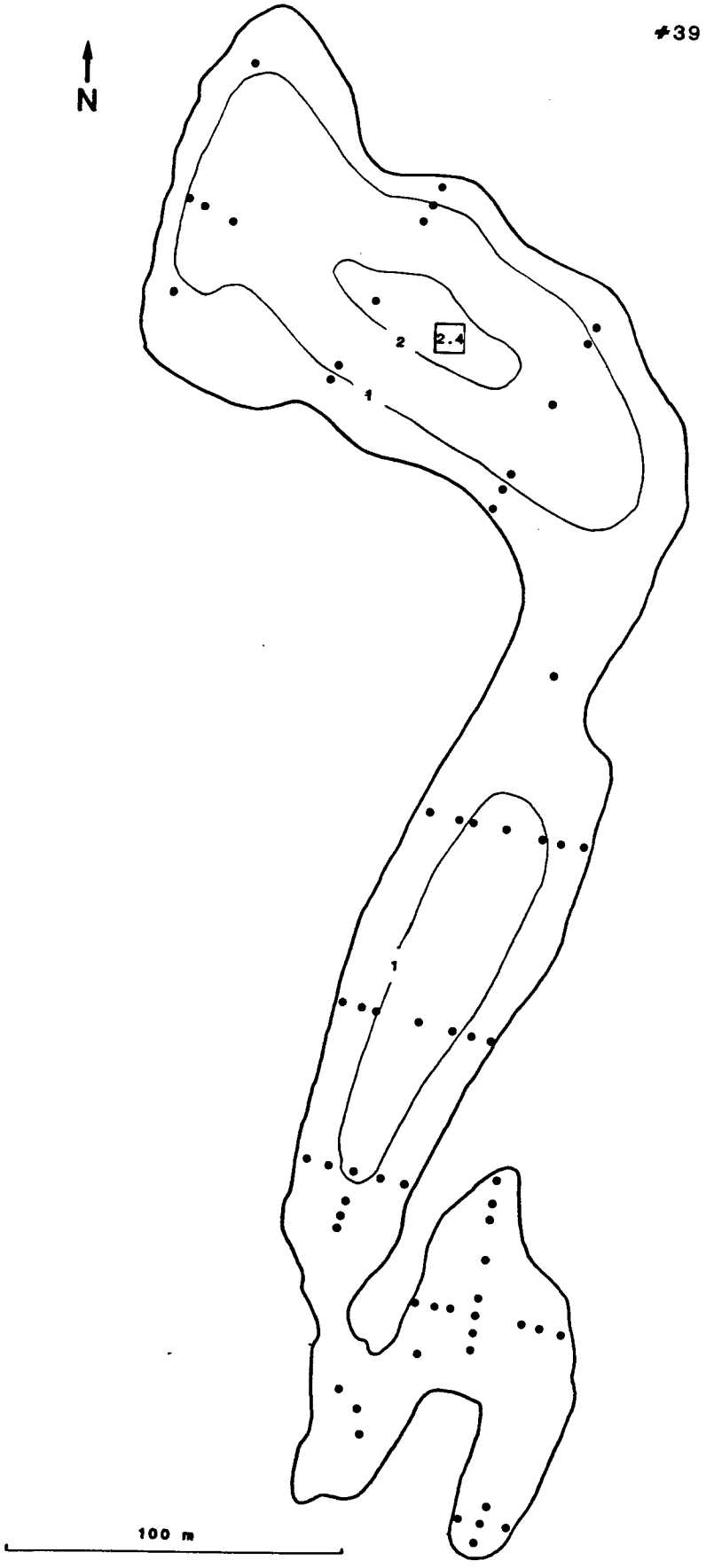

#33
N
1
1.5
#32
100 m

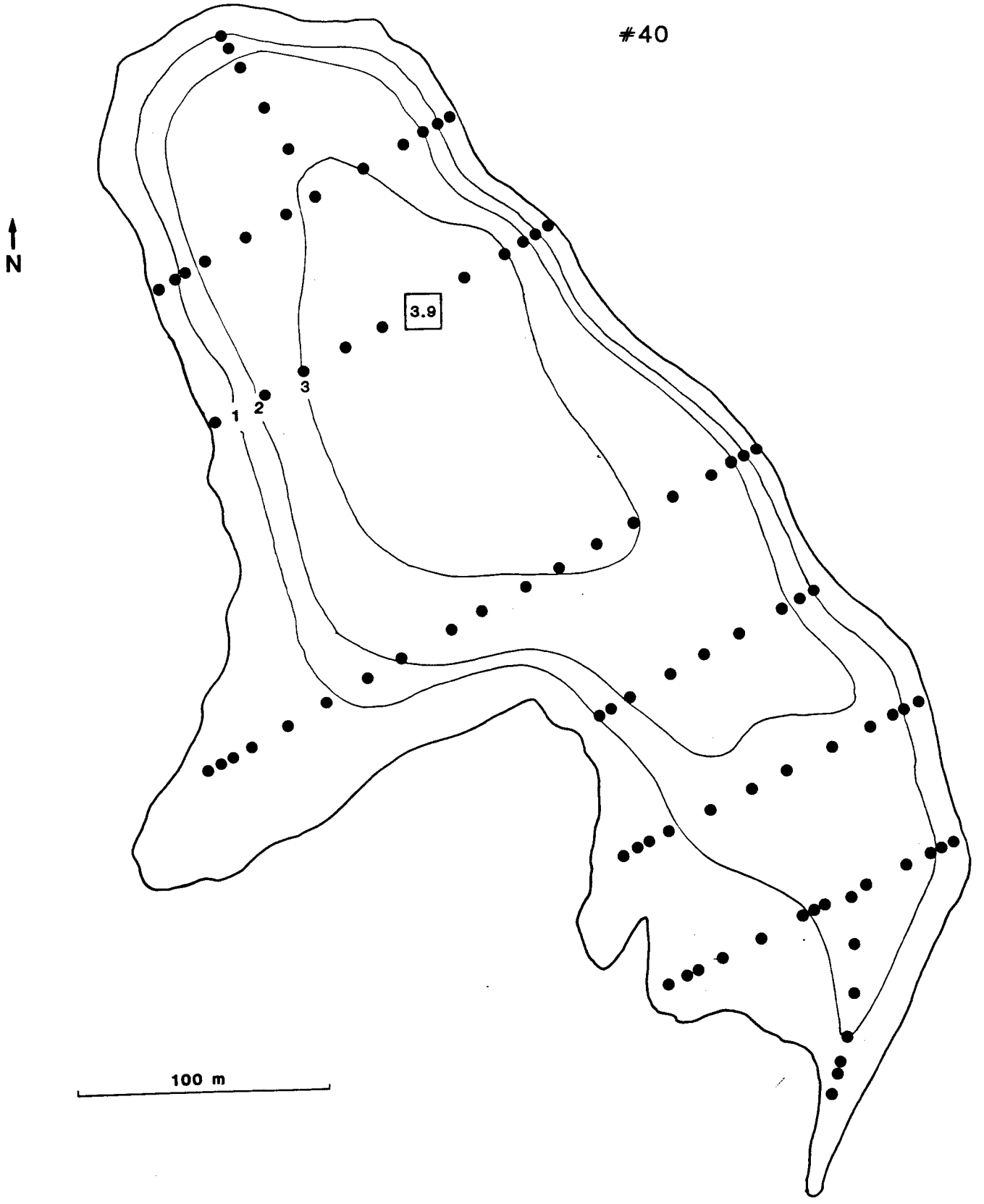

N
#34
2.6
2
1
1
100 m

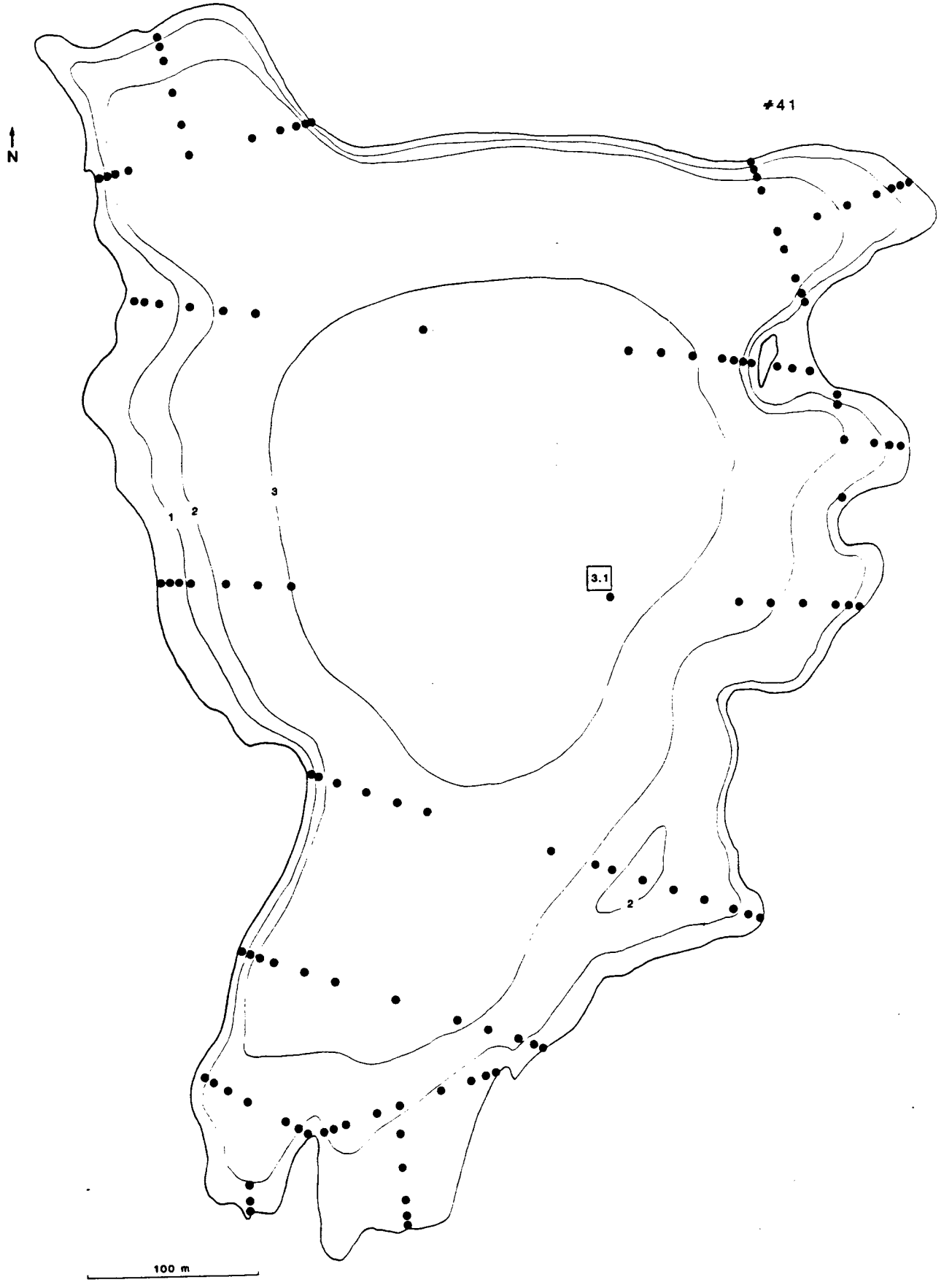

#36
N
1.5
1
#35
1.5
1
100 m

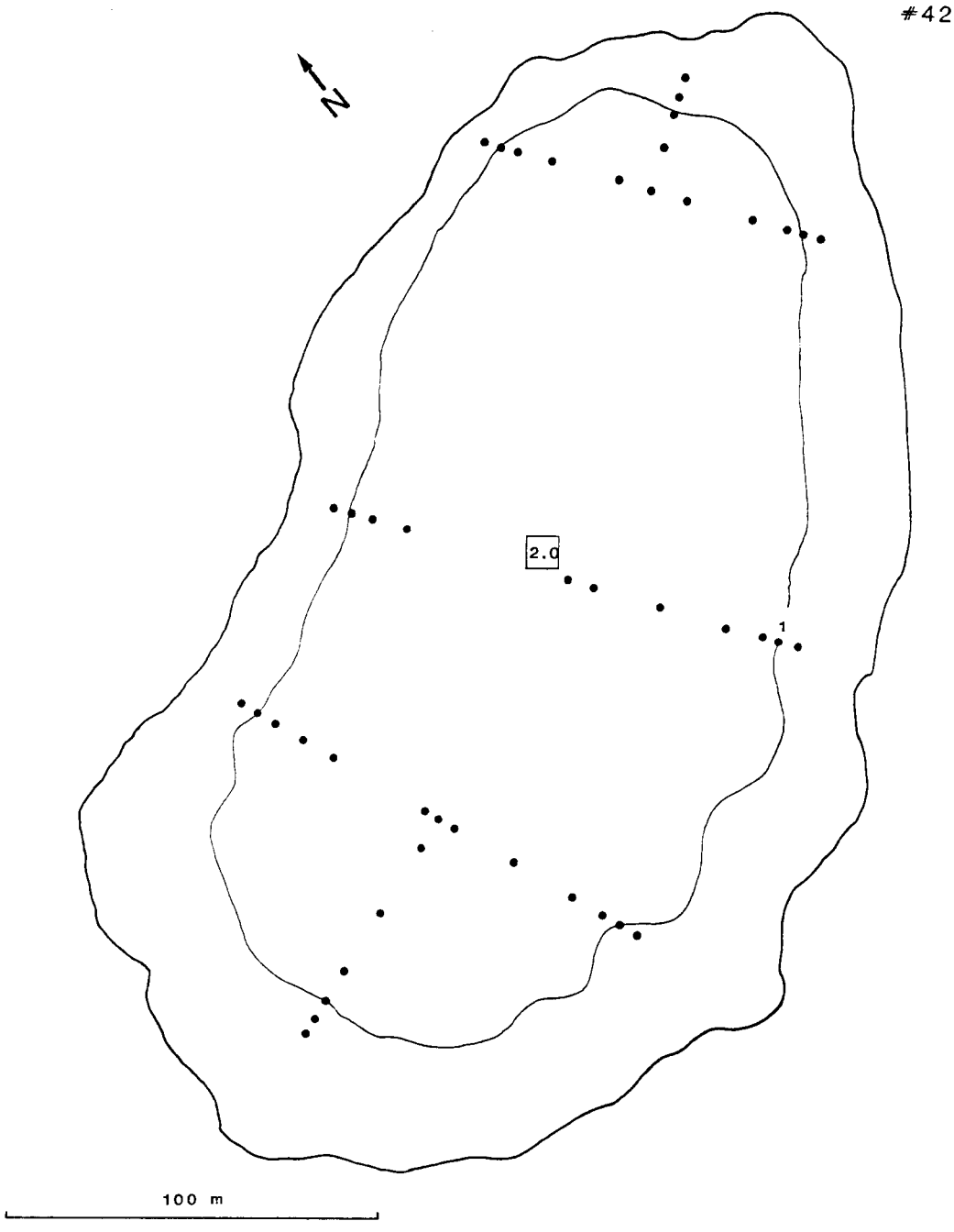

#37
N
2.0
2
1
1
2
100 m


#38
N
2.0
2
1
100 m

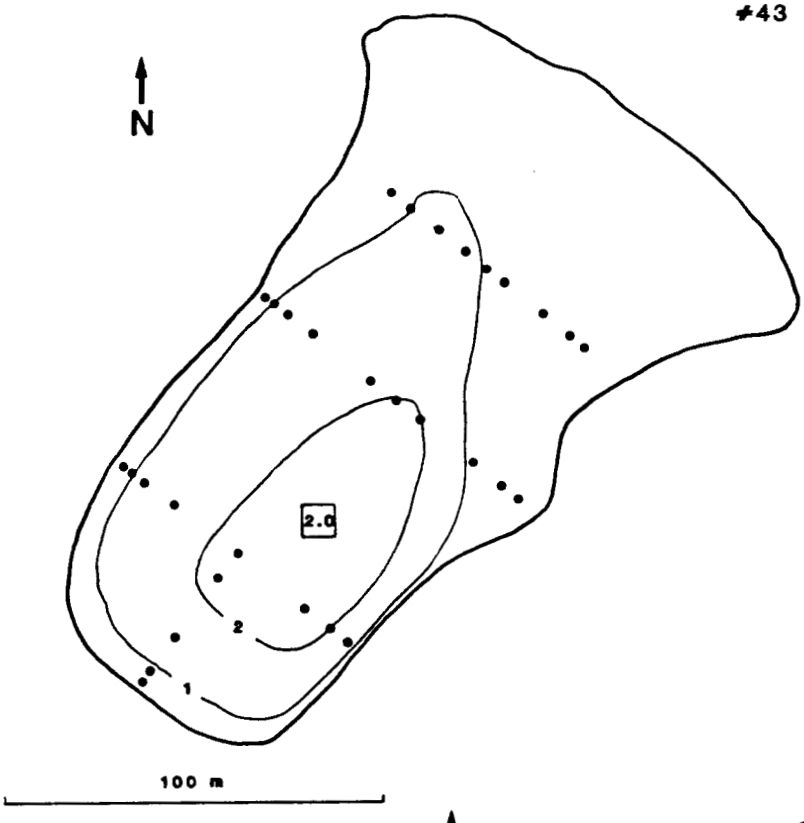

#39
N
2
2.4
1
1
100 m


#40
N
3.9
1
2
3
100 m

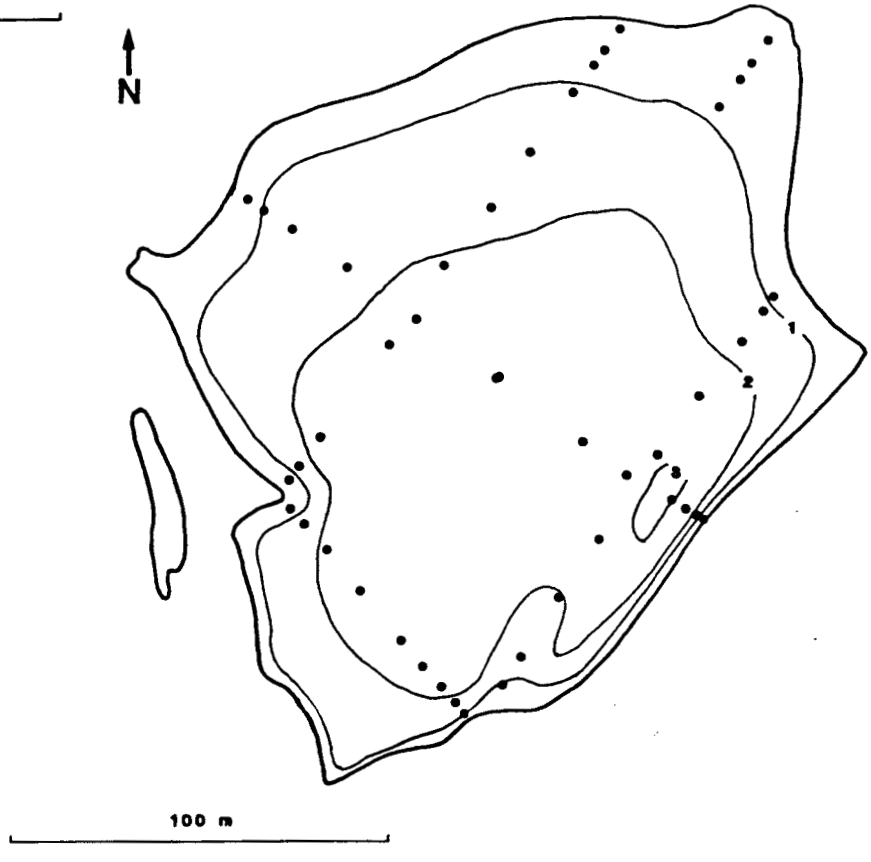

#41
N
1
2
3
3.1
2
100 m

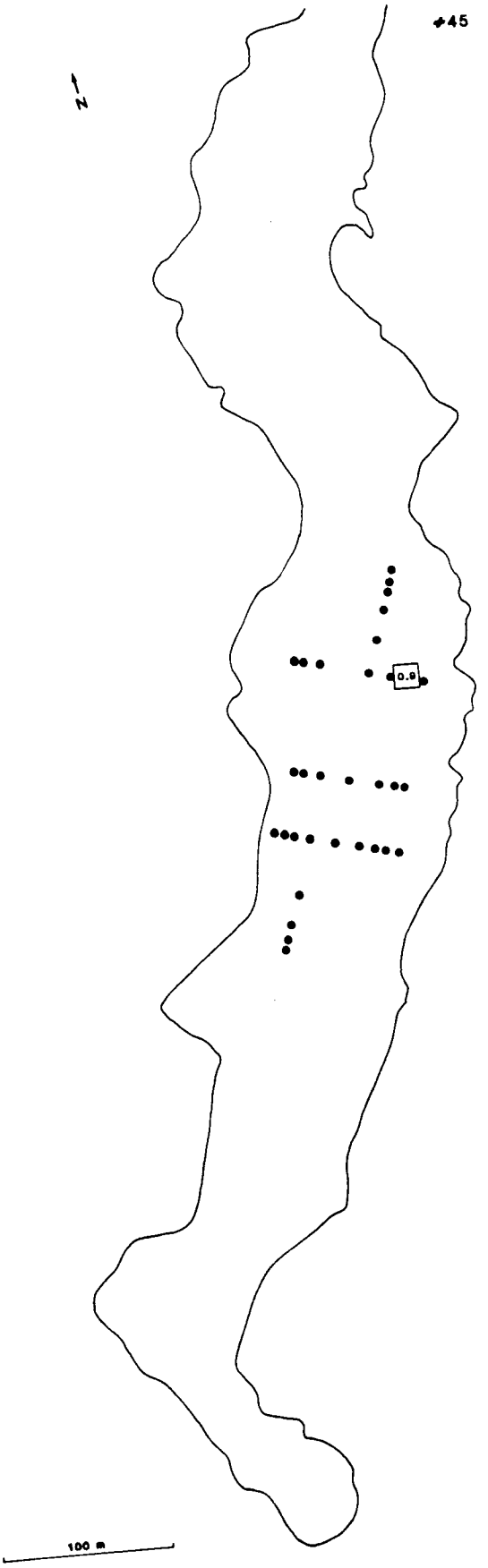

#42
N
2.0
1
100 m

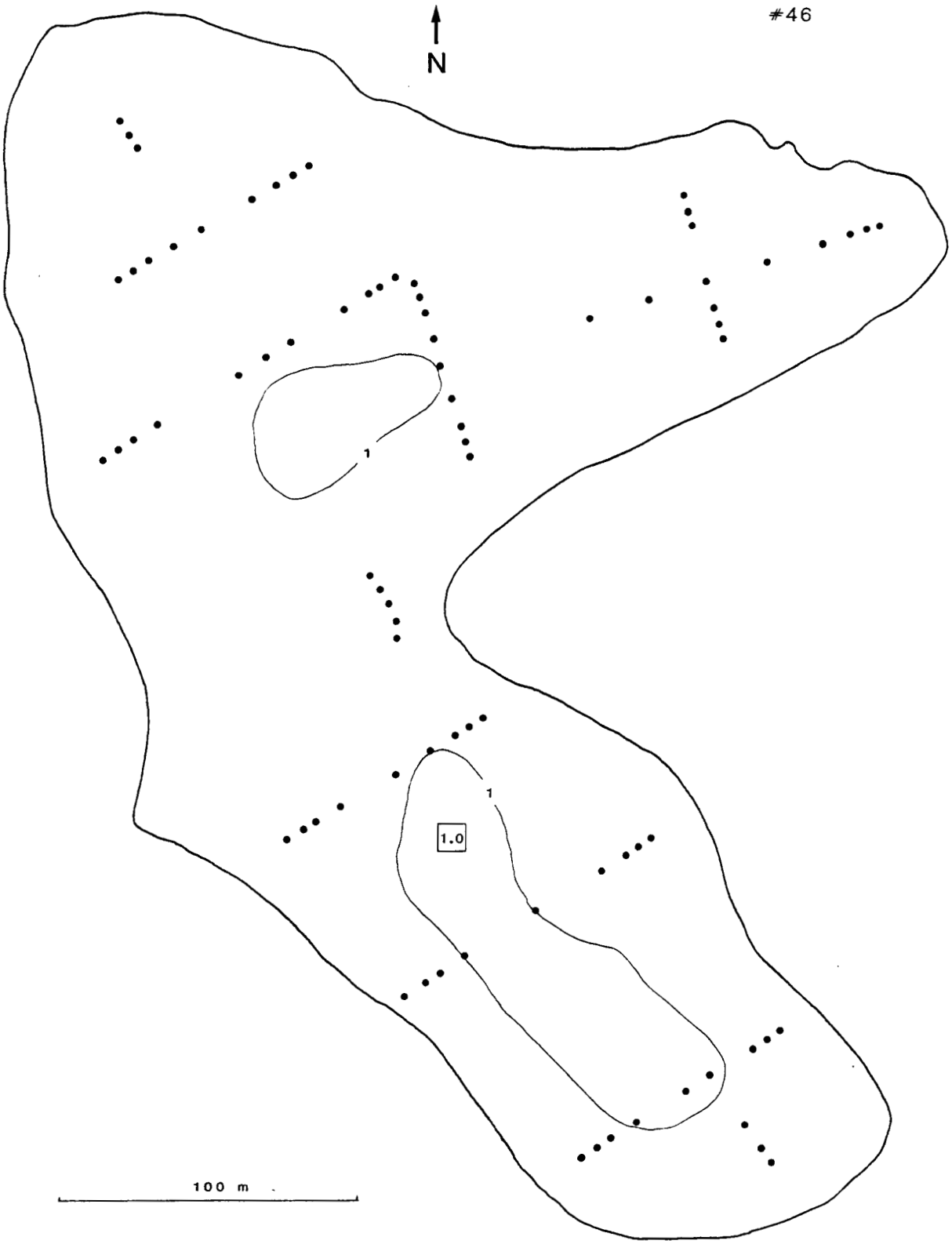
#43



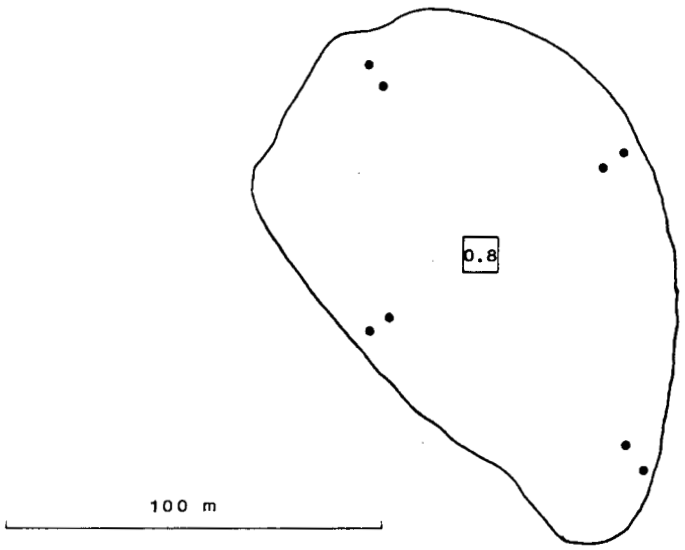
#44



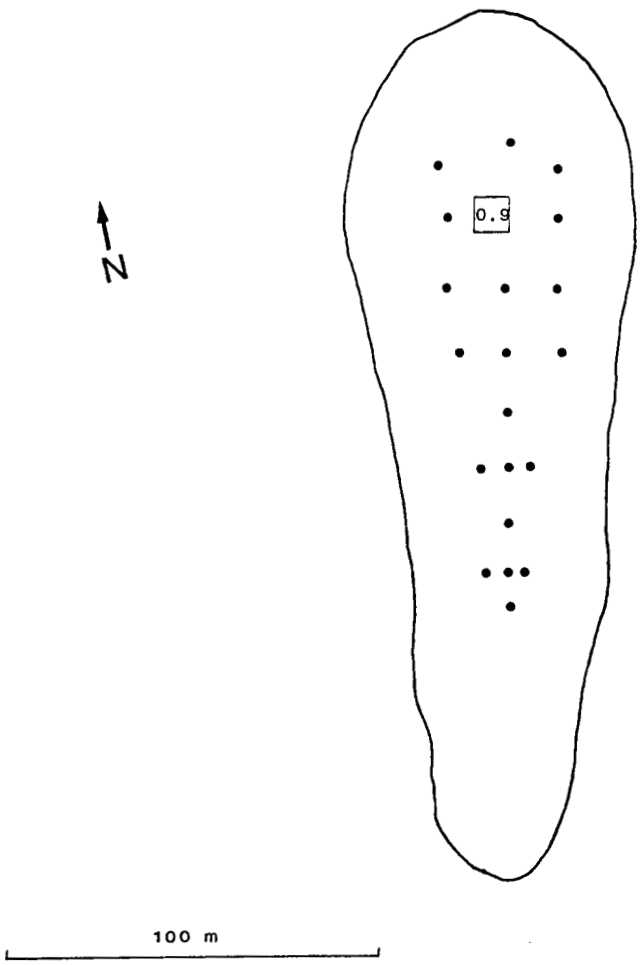

#45
N
0.9
100 m

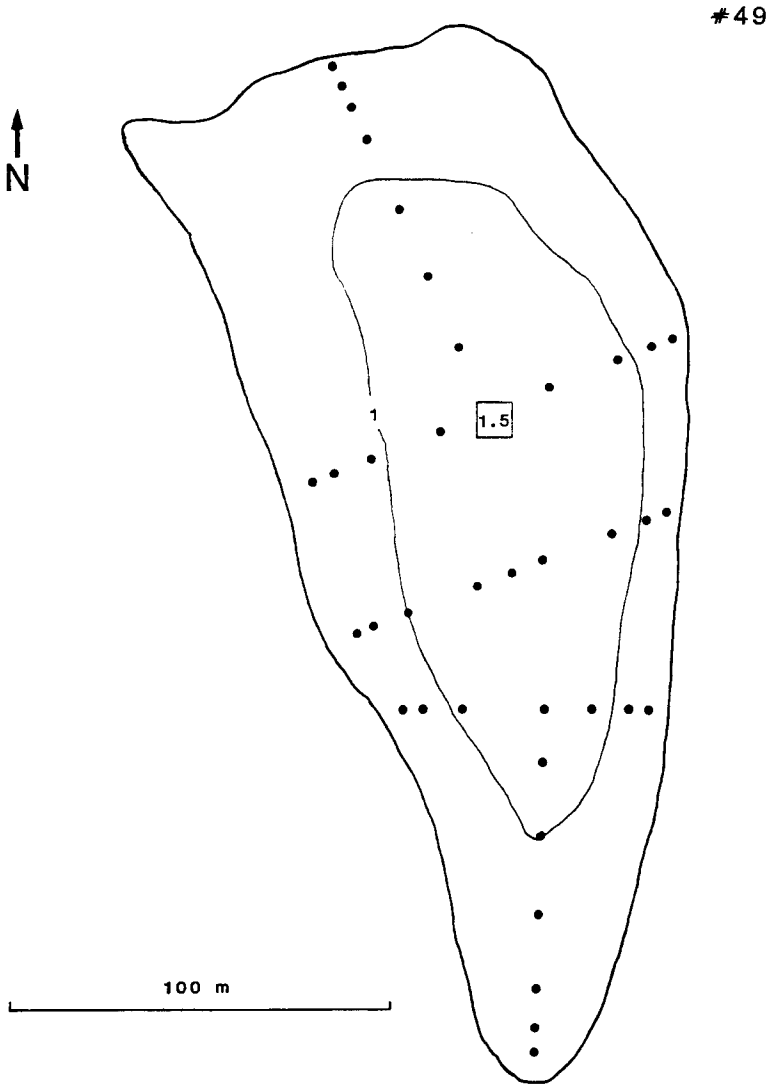

#46
N
1
1
1.0
100 m

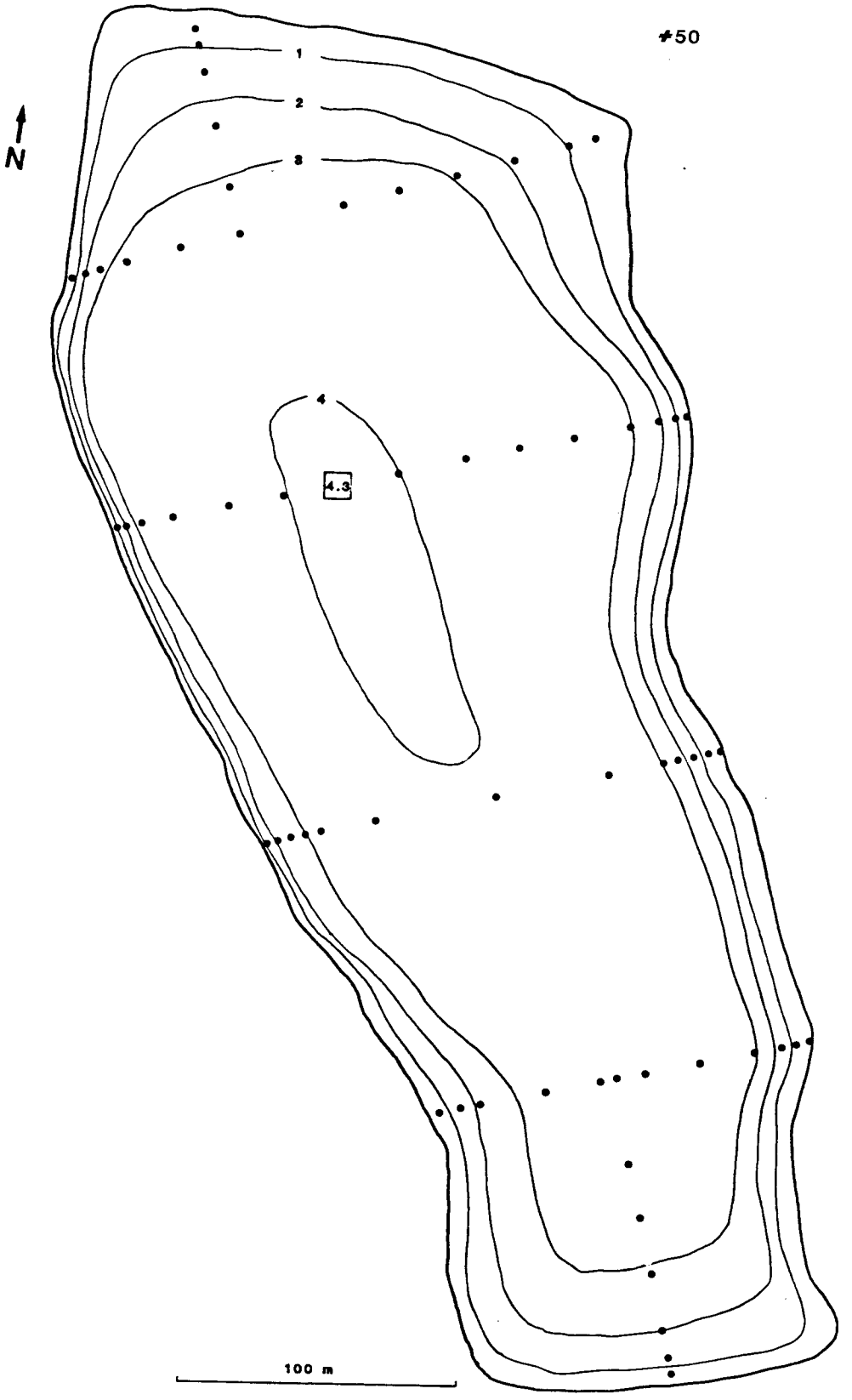
#47

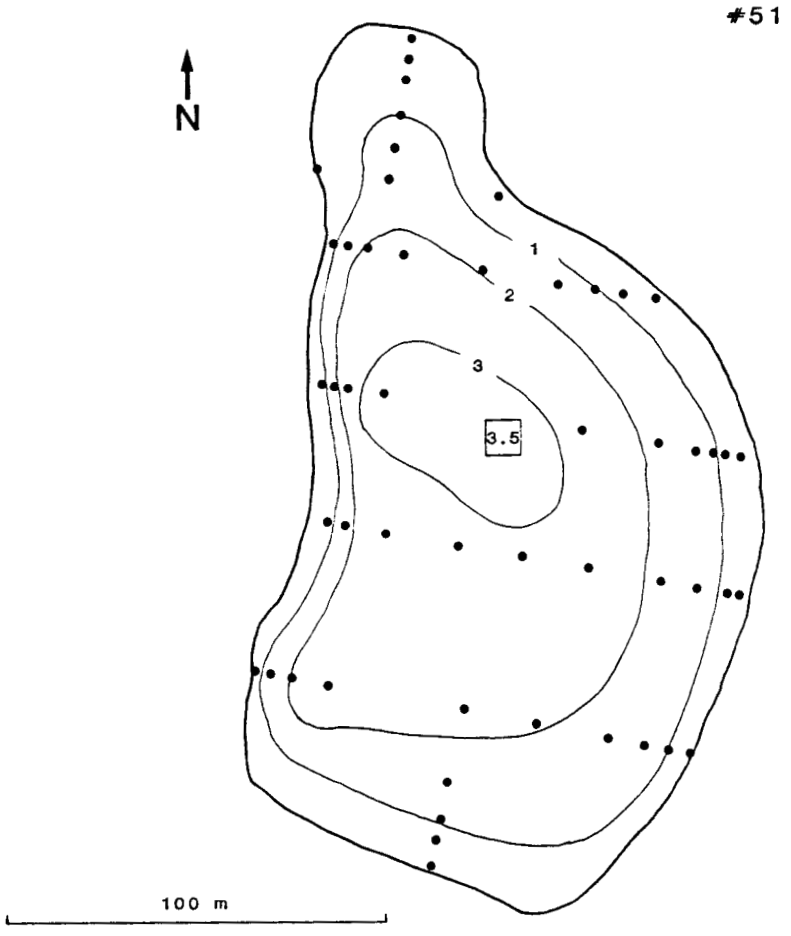


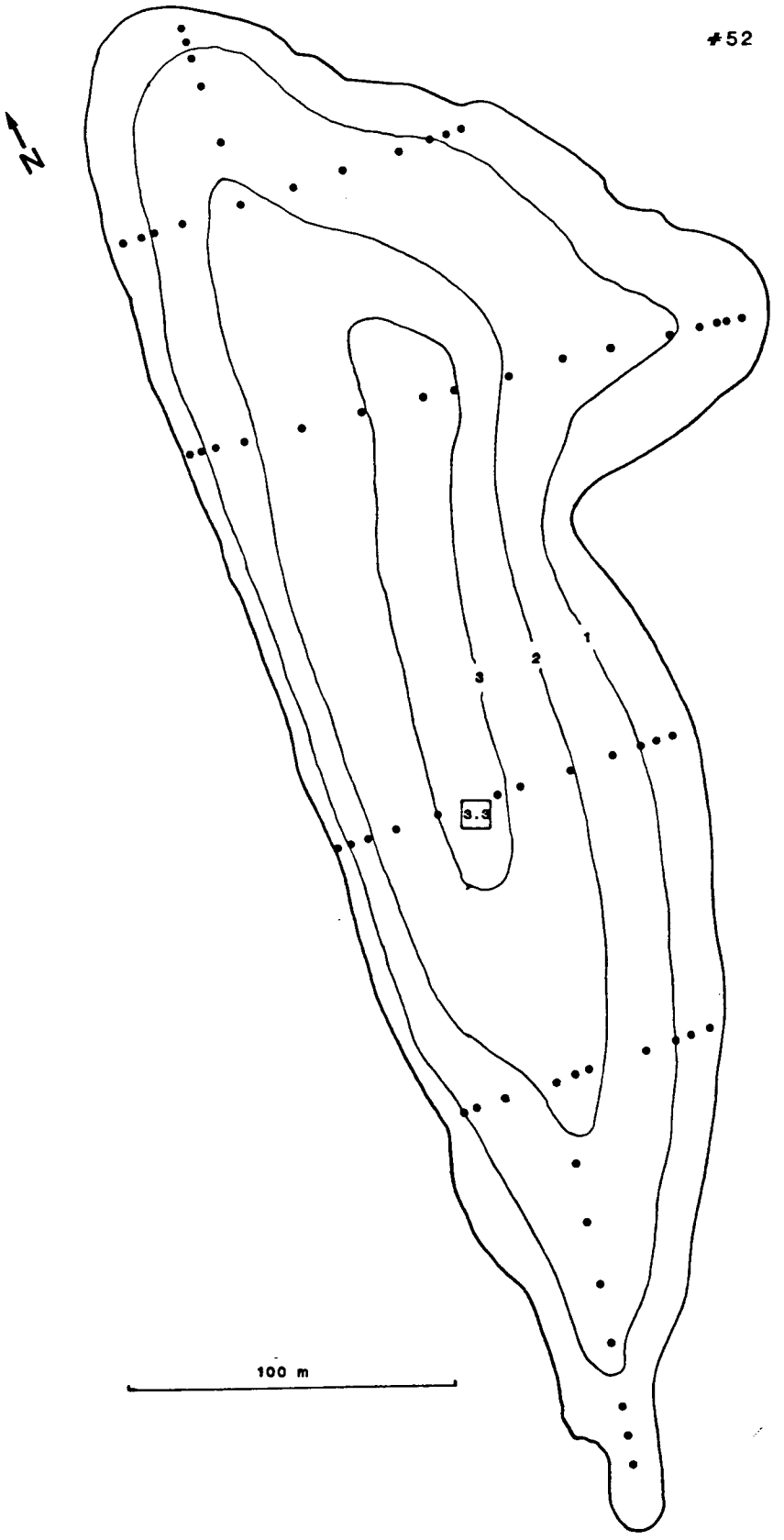
#48

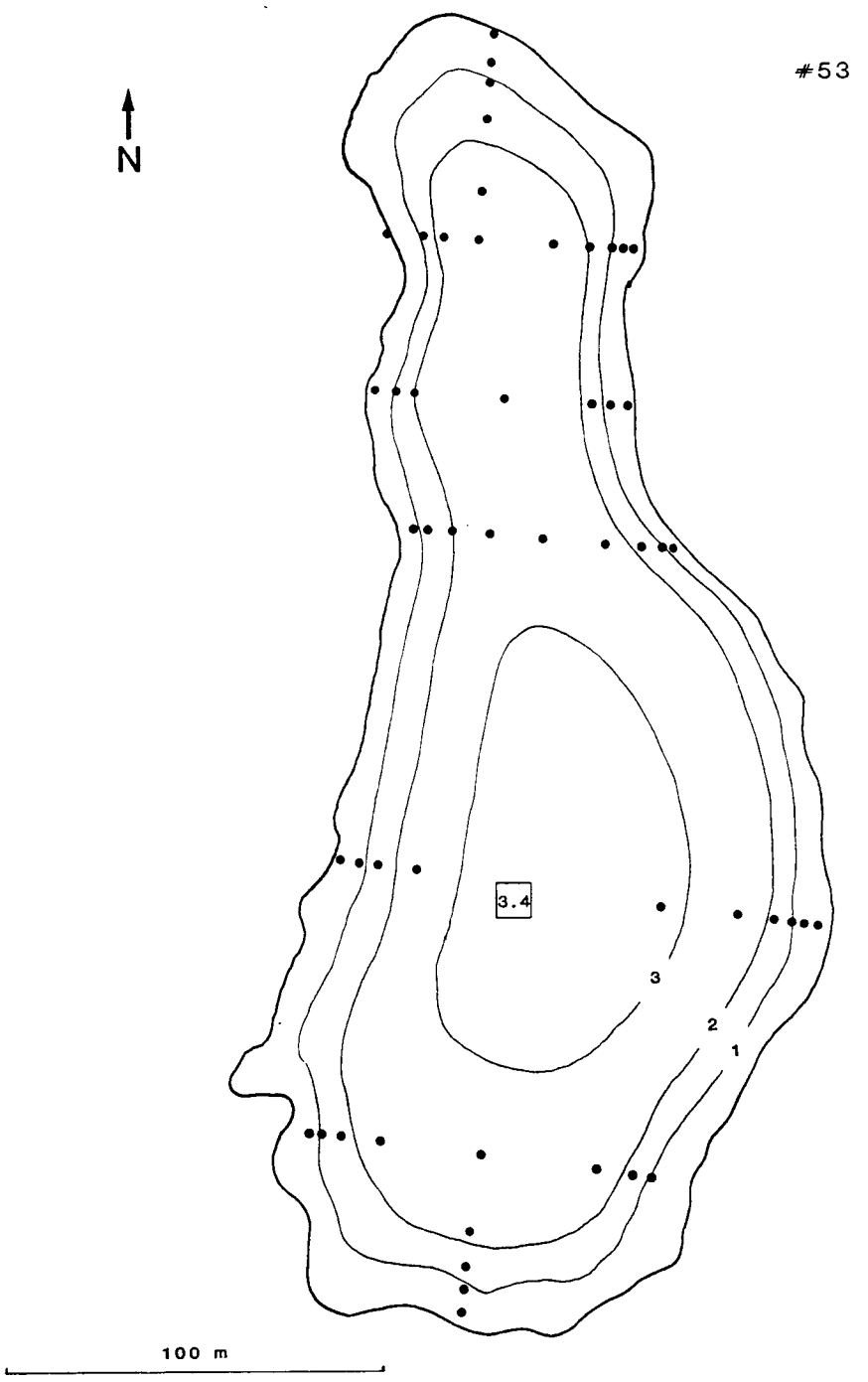


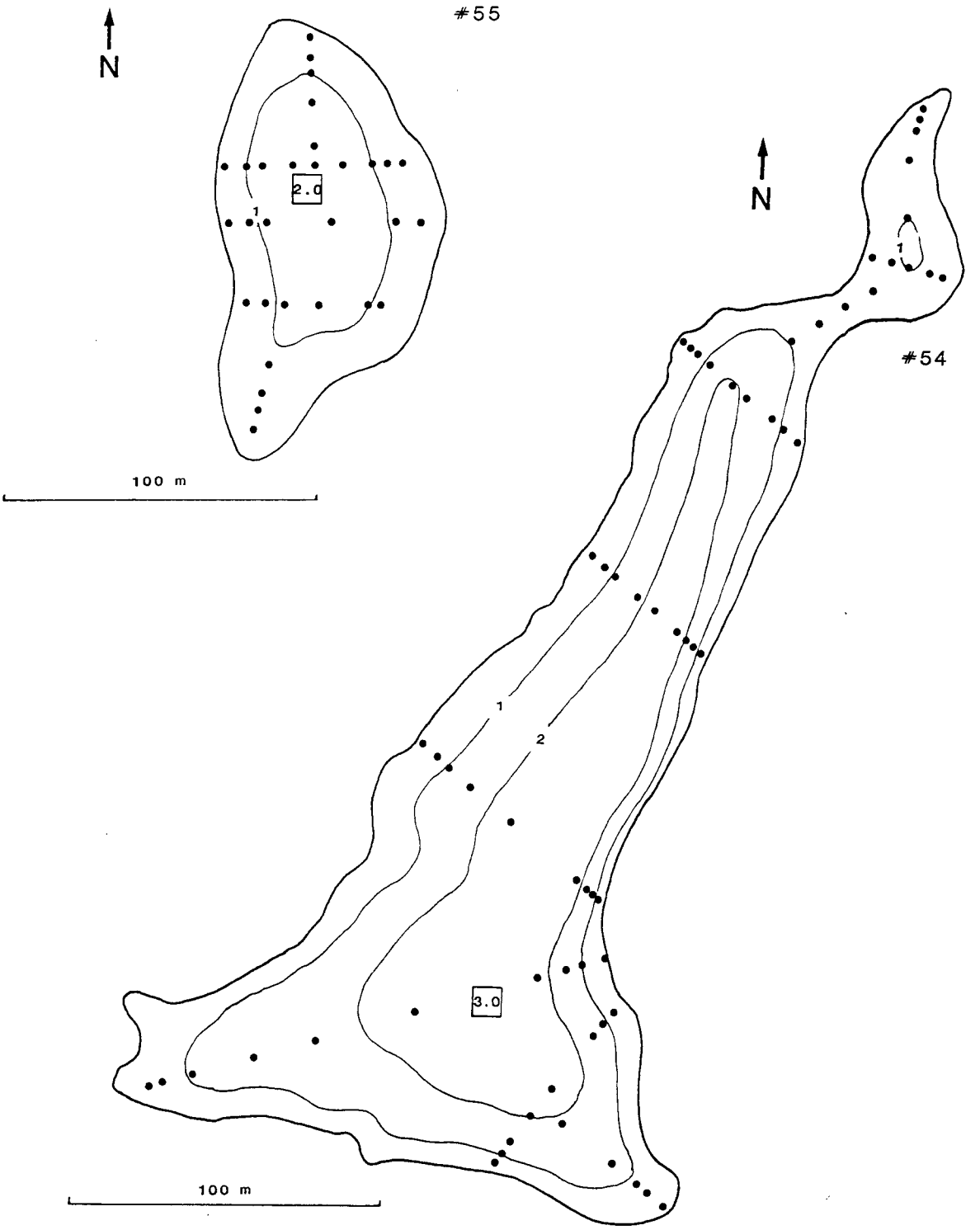

#49
N
1
1.5
100 m

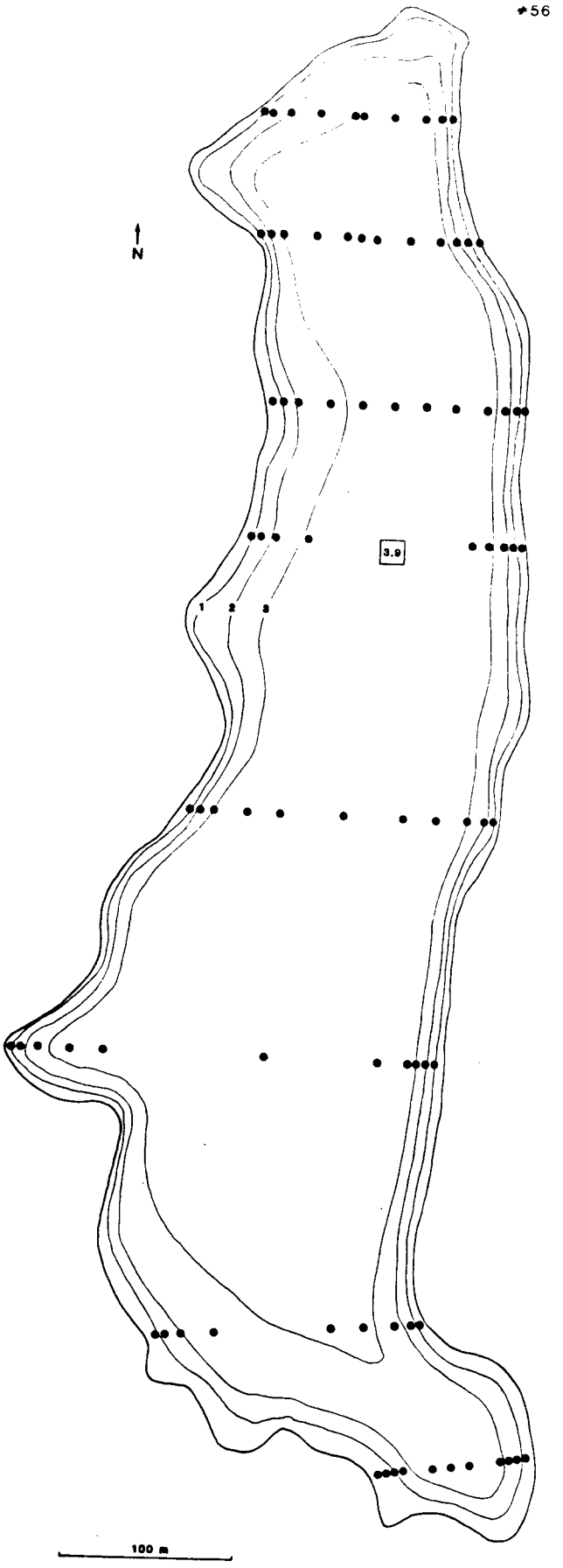

#50
N
1
2
3
4
4.3
100 m

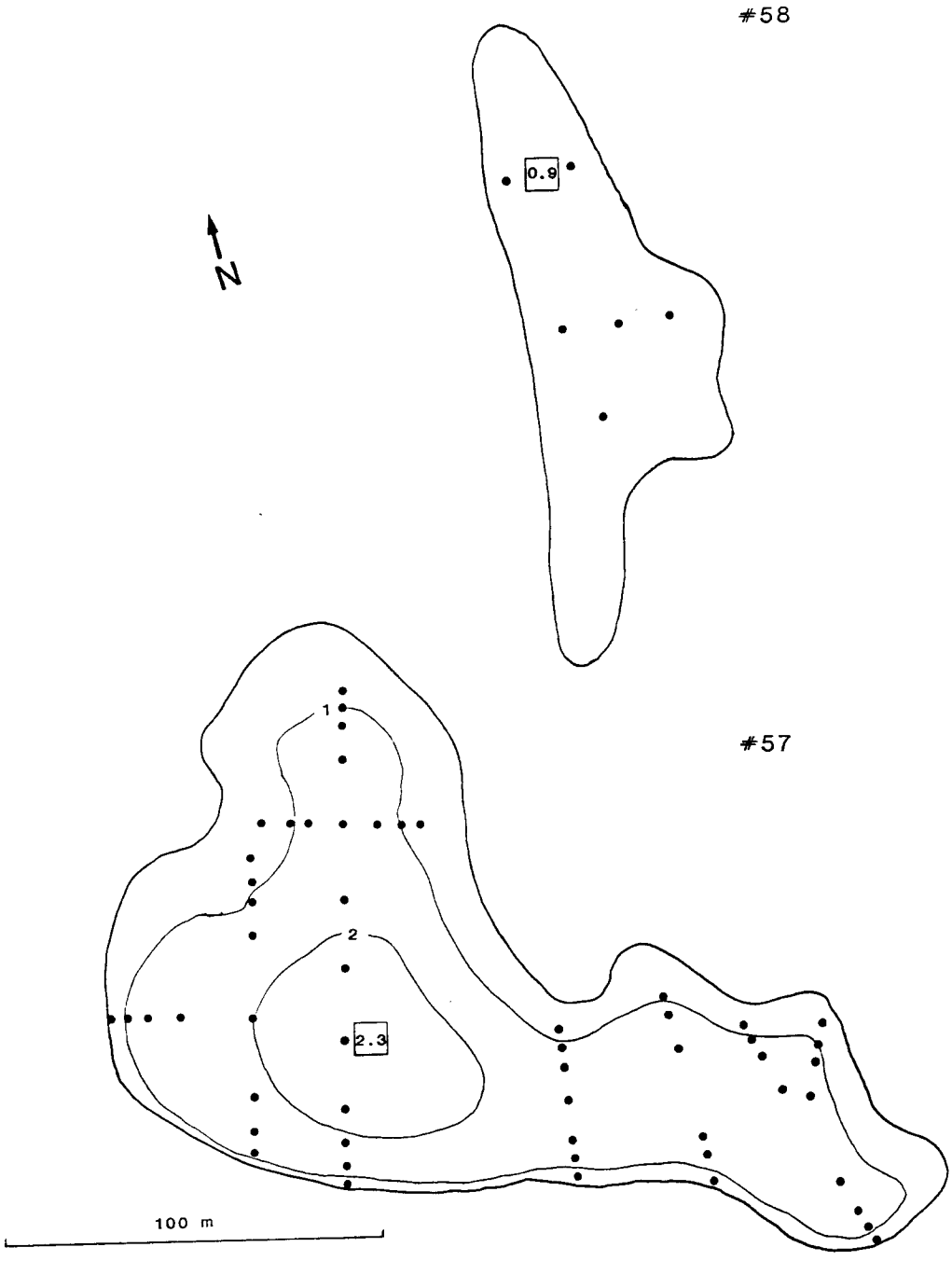

#51
N
1
2
3
3.5
100 m


#52
N
1
2
3
3.3
100 m

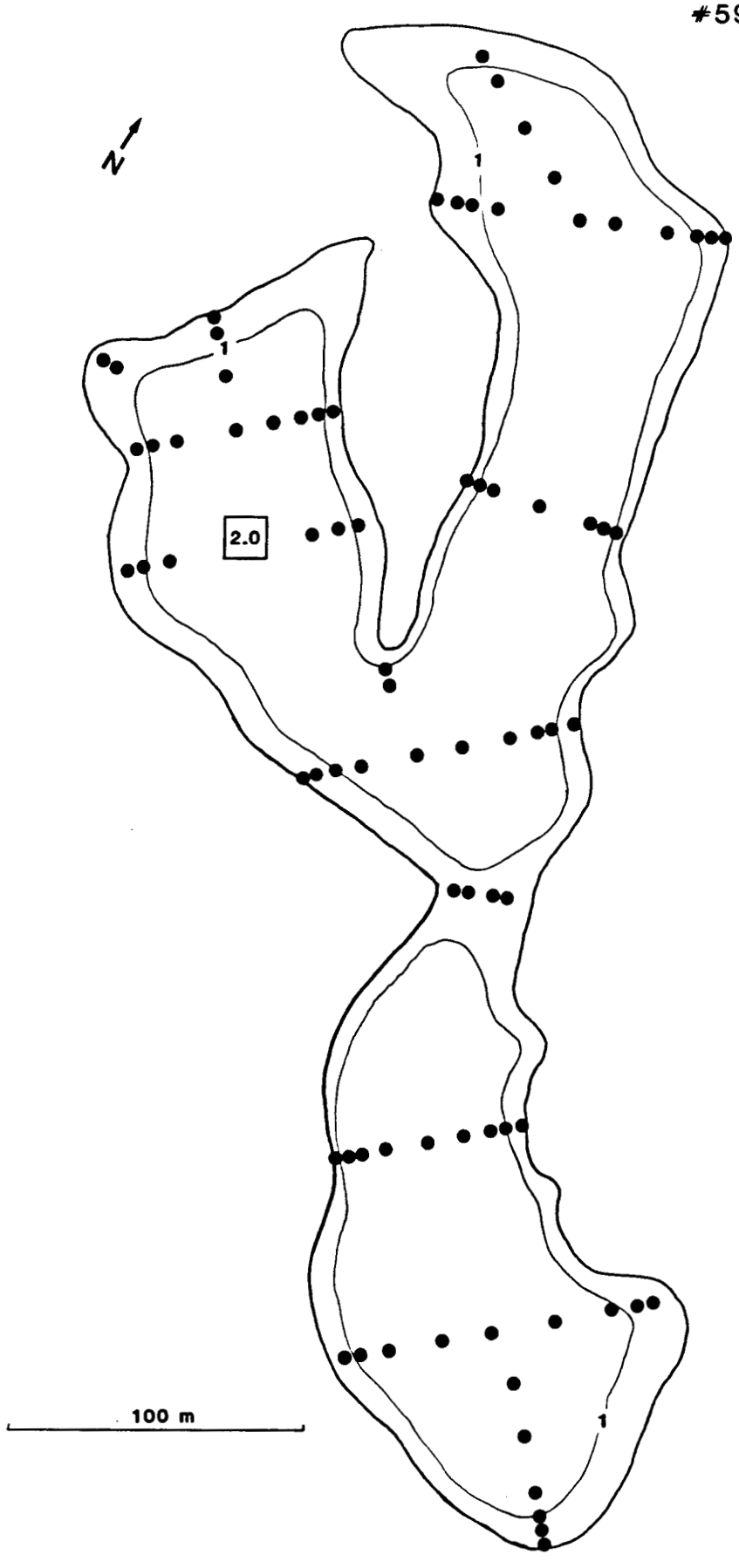

#53
N
3.4
3
2
1
100 m

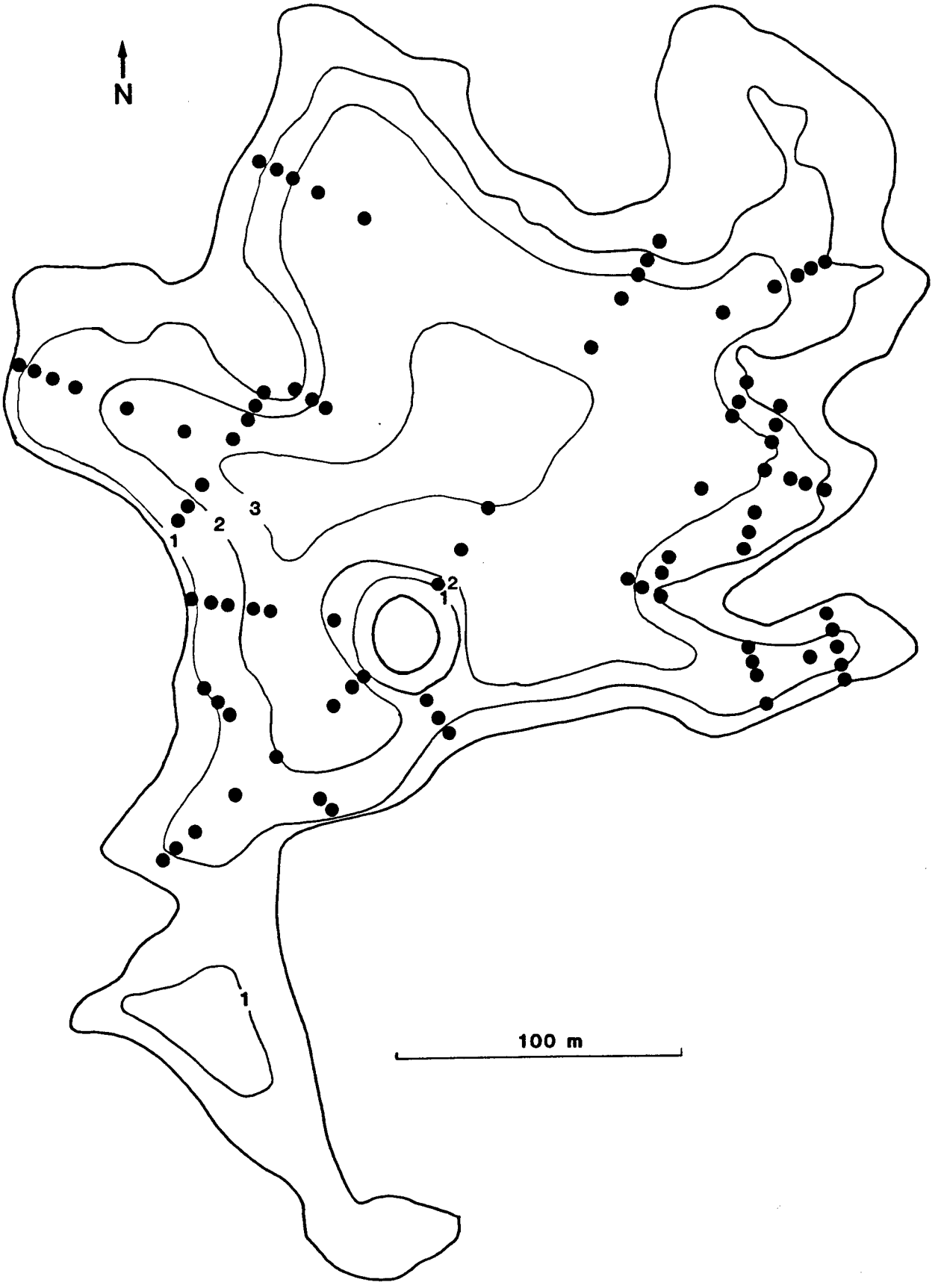

#55
N
2.0
1
100 m
N
#54
1
1
2
3.0
100 m


#56
N
3.9
1
2
3
100 m


#58
0.9
N
#57
1
2
2.3
100 m

#59

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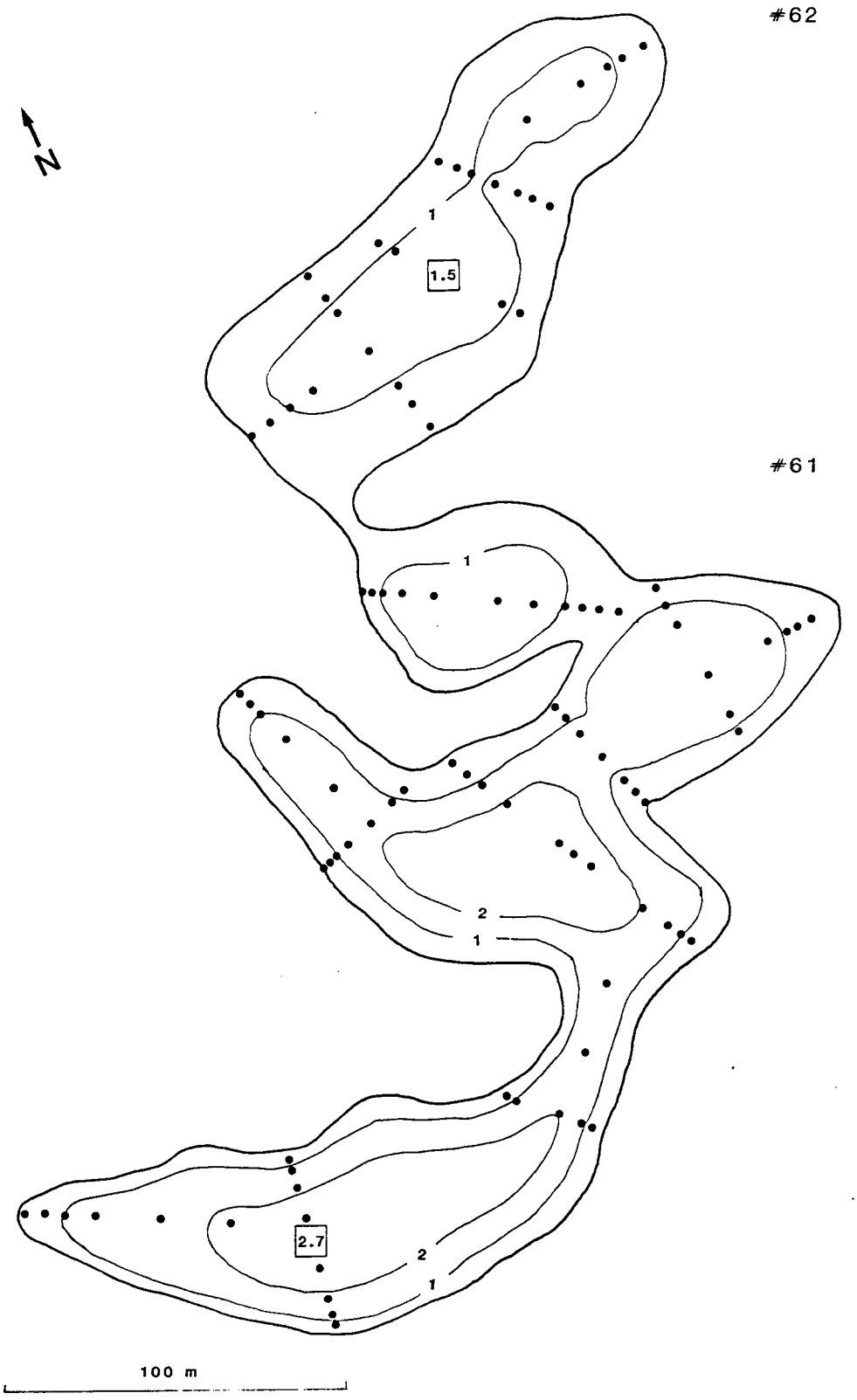
1
2
3
2
1
1
100 m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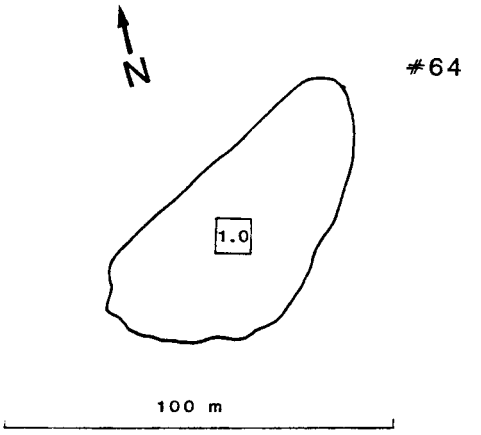
N
1
1.5
#61
1
2
1
2.7
2
1
100 m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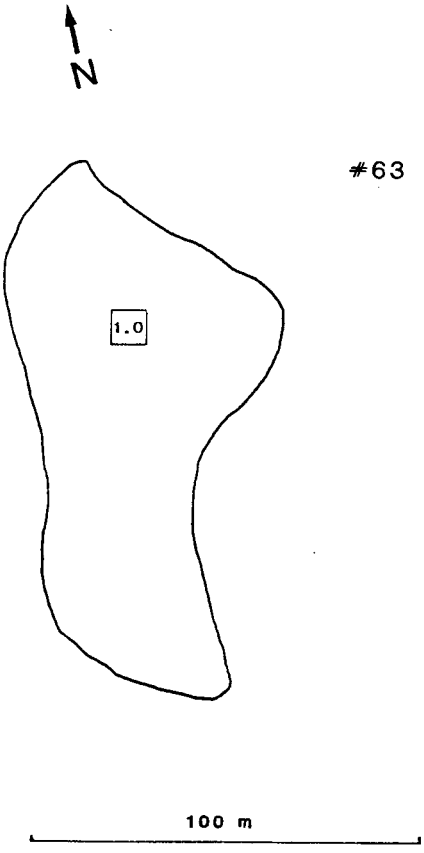
100 m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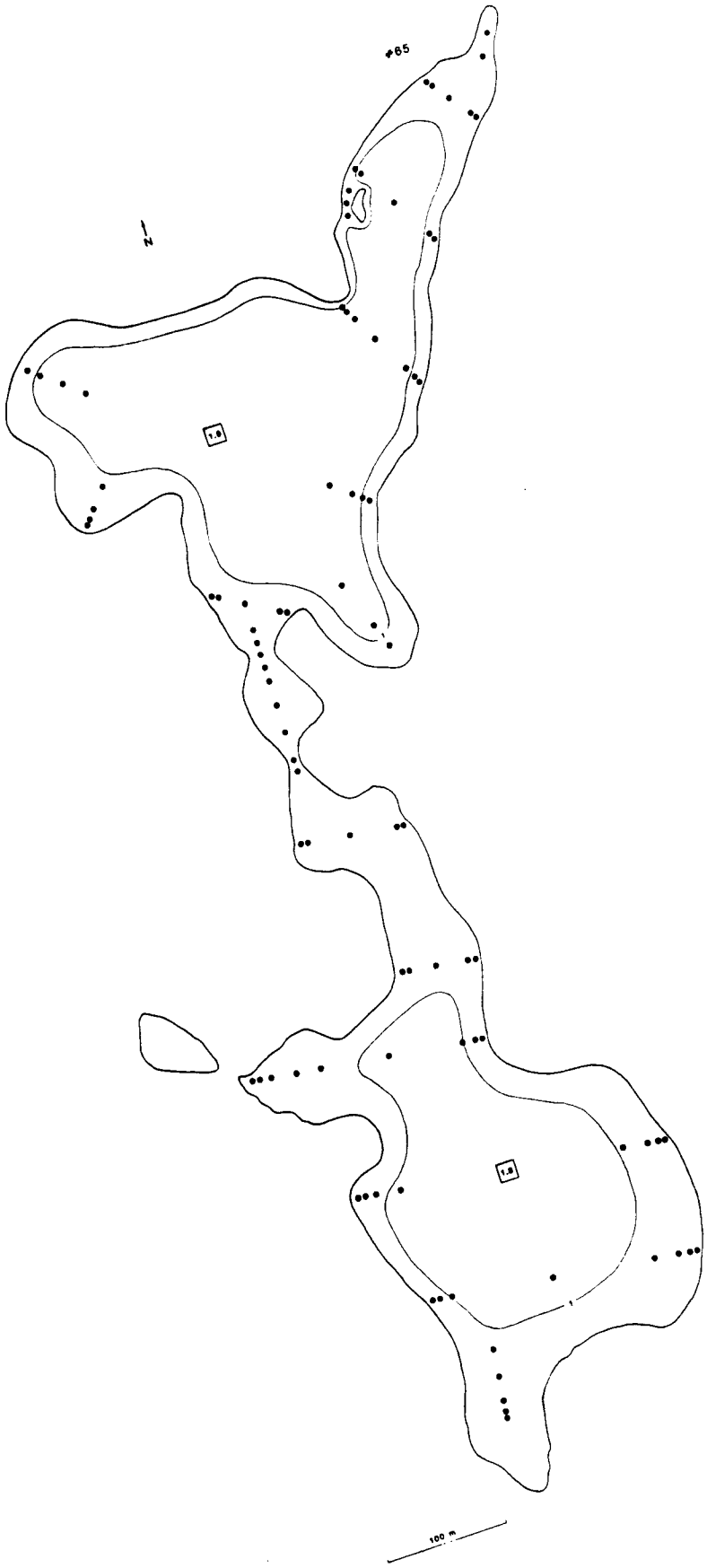
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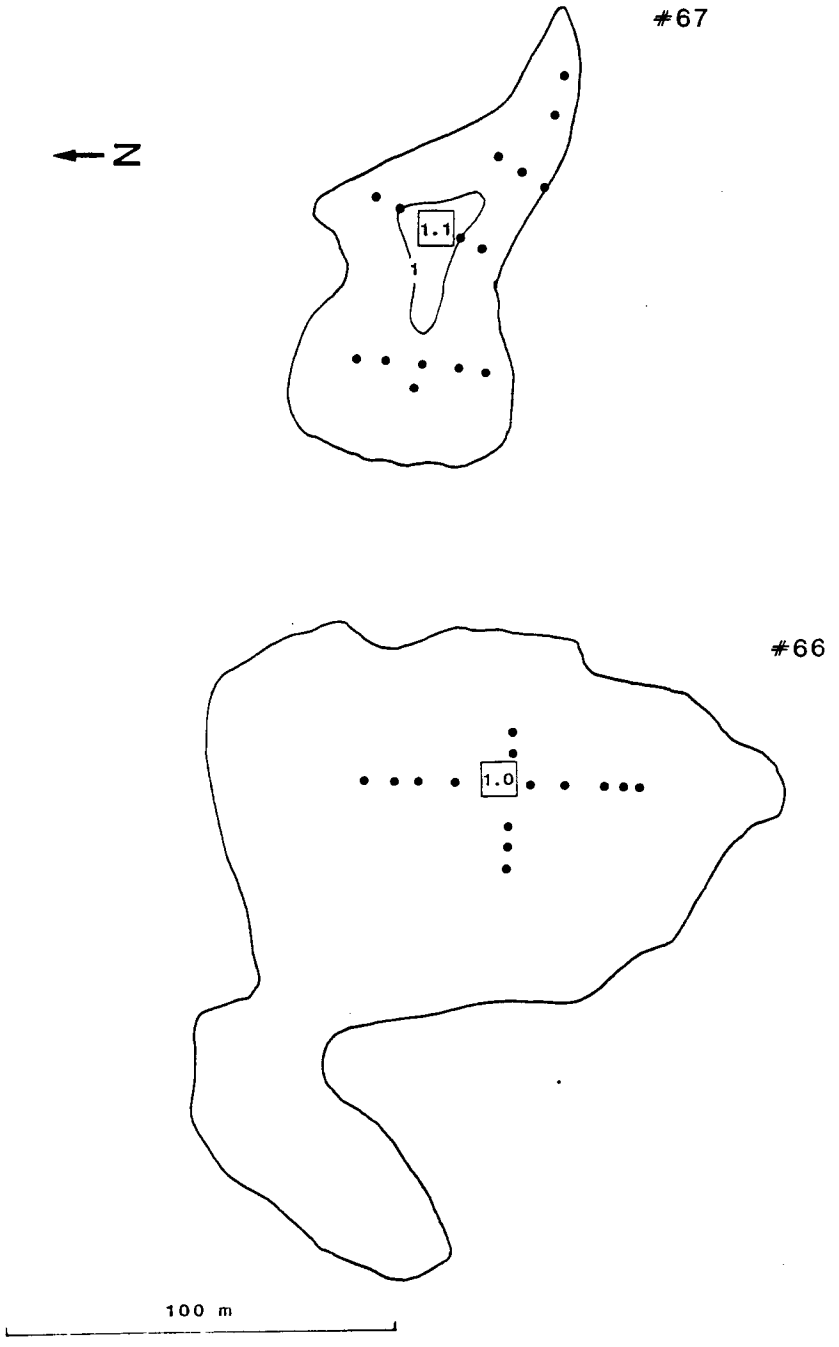
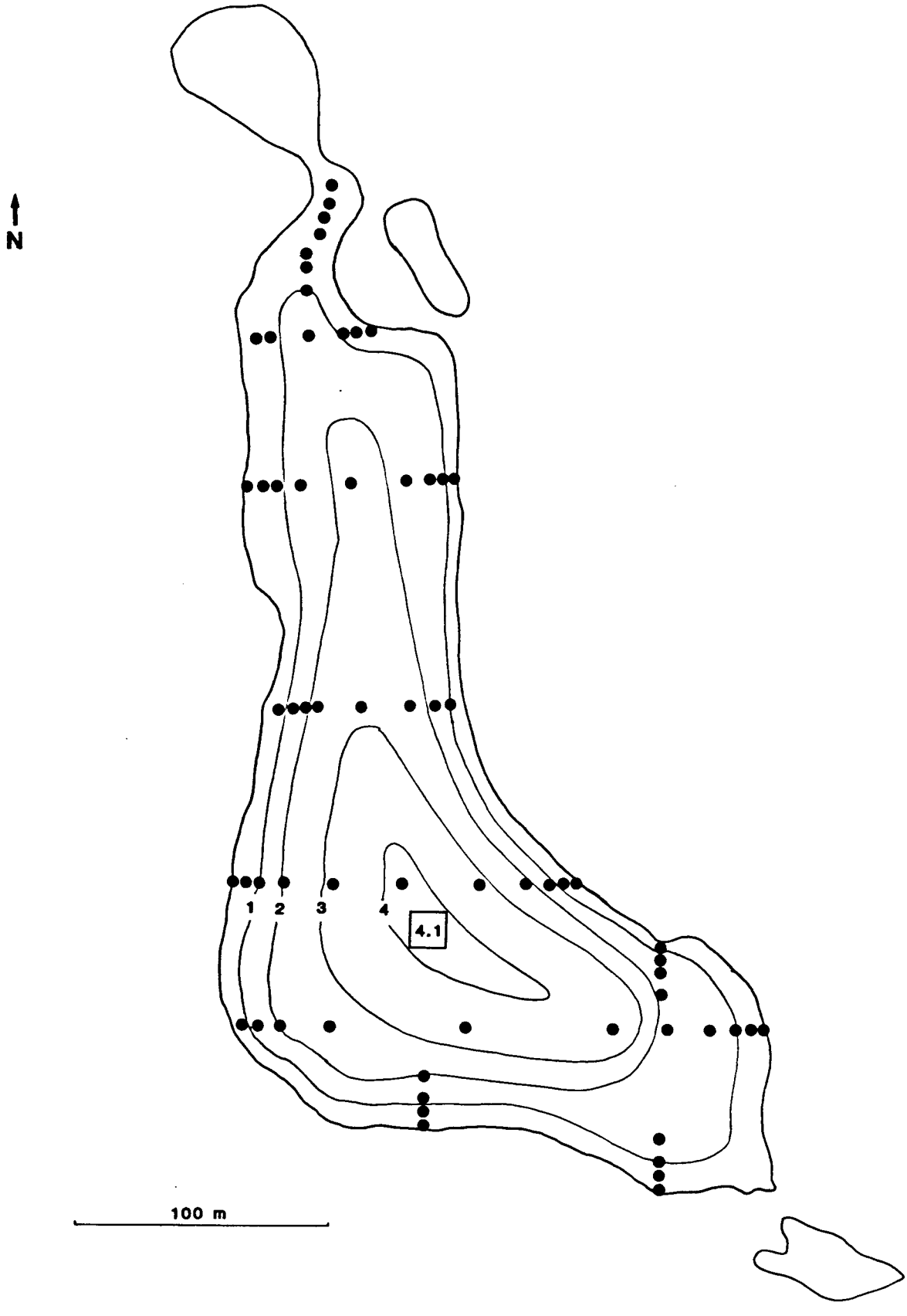
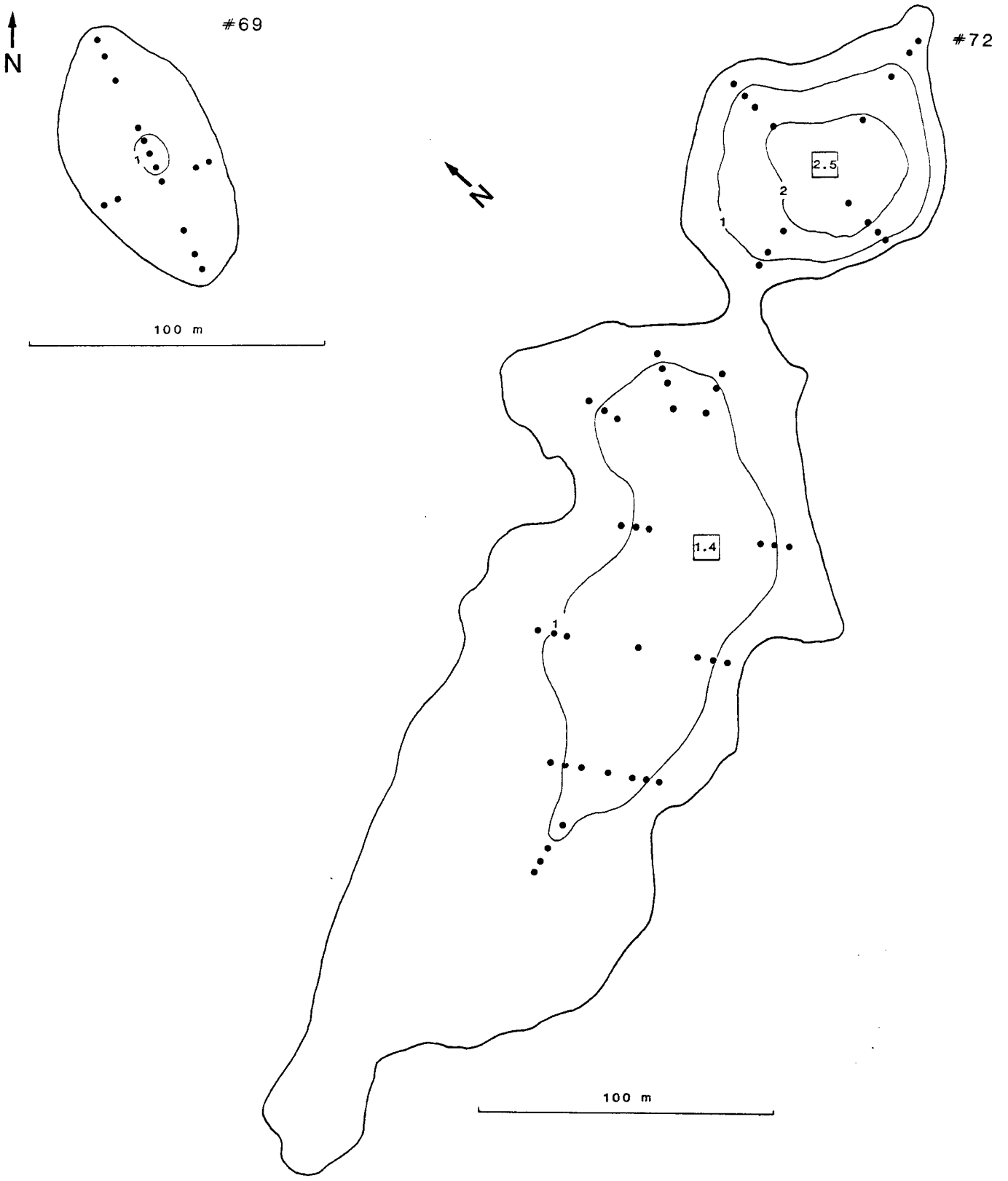
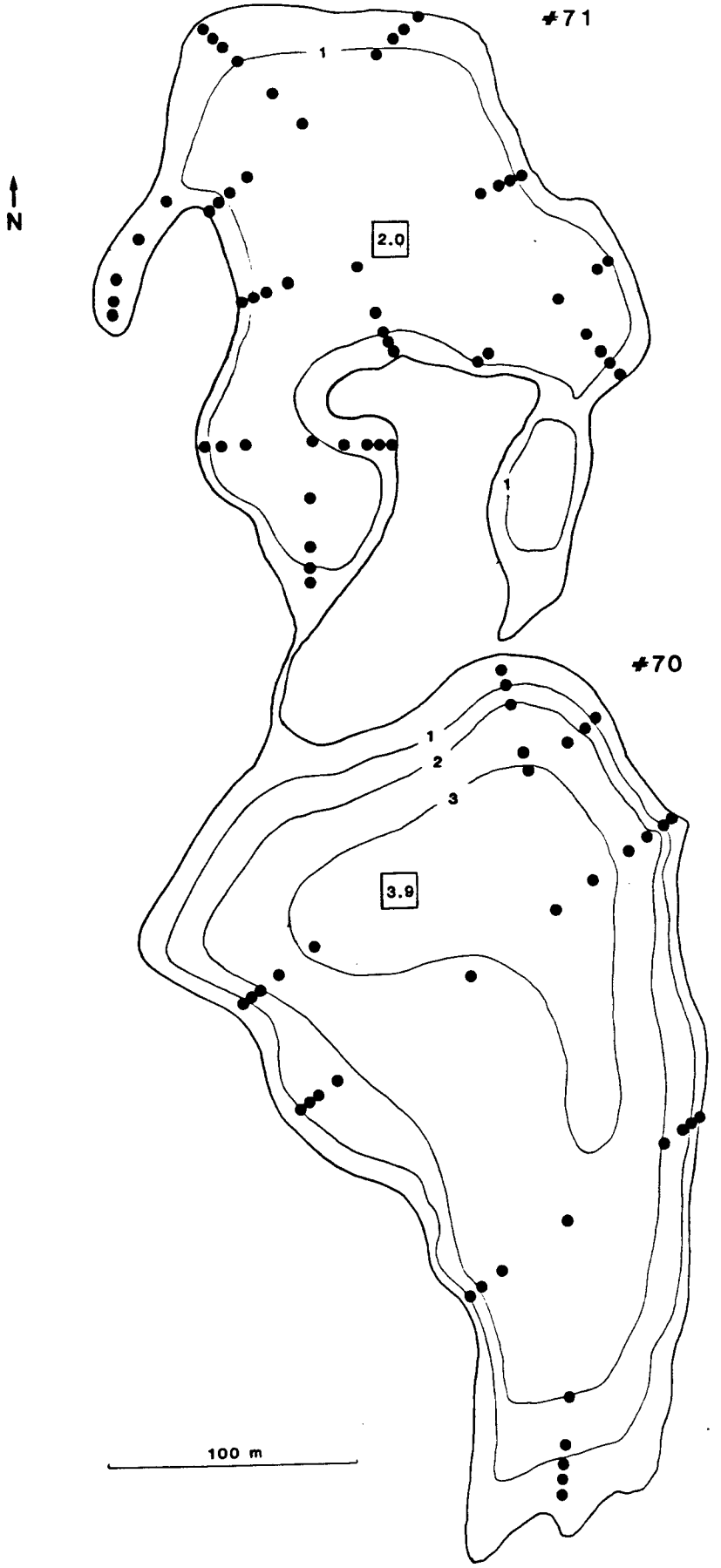
1.9
1.8
100 m


#67
N
1.1
1
#66
1.0
100 m

#68




N
#69
1
100 m
N
#72
2.5
2
1
1.4
1
100 m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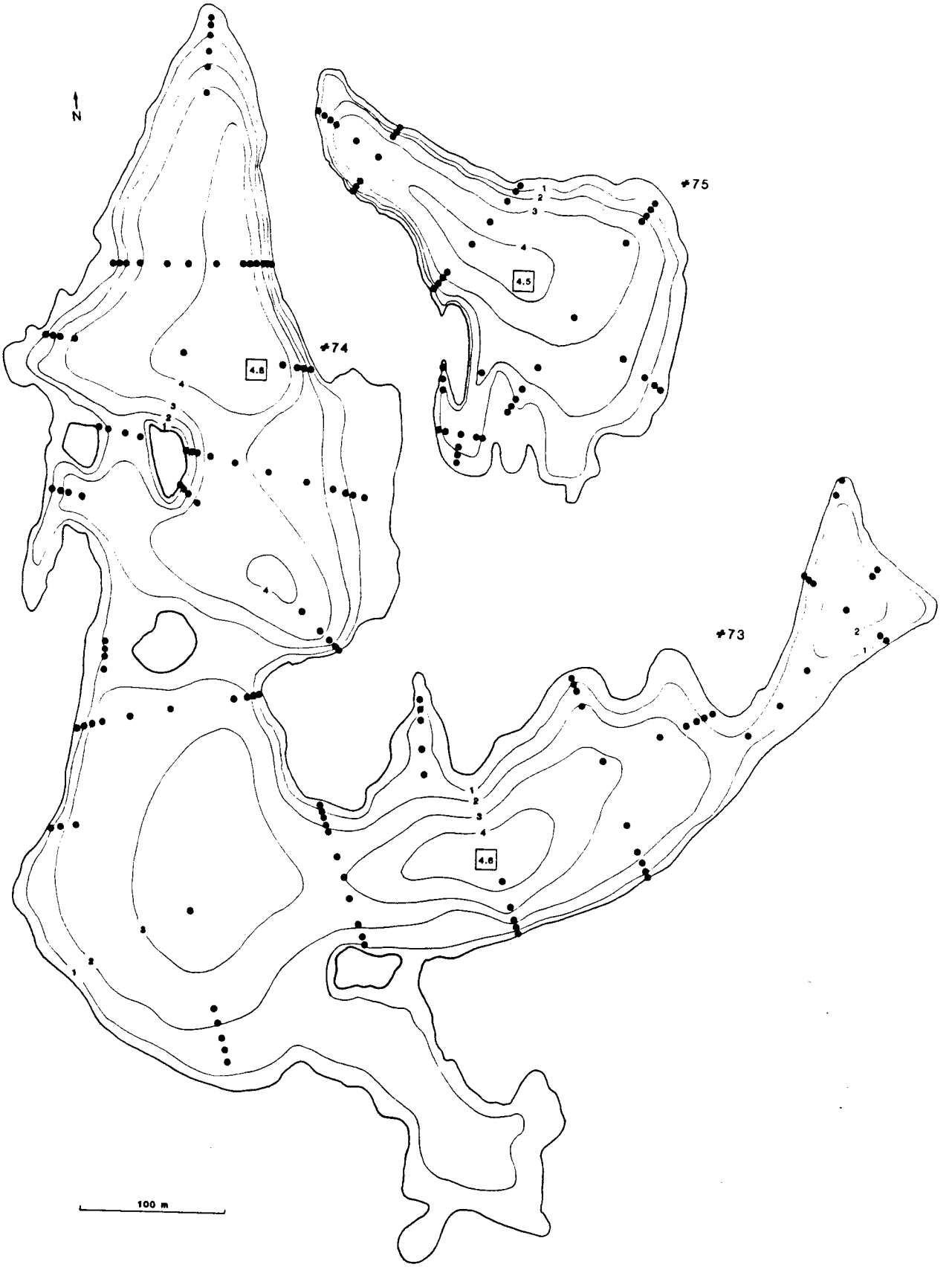
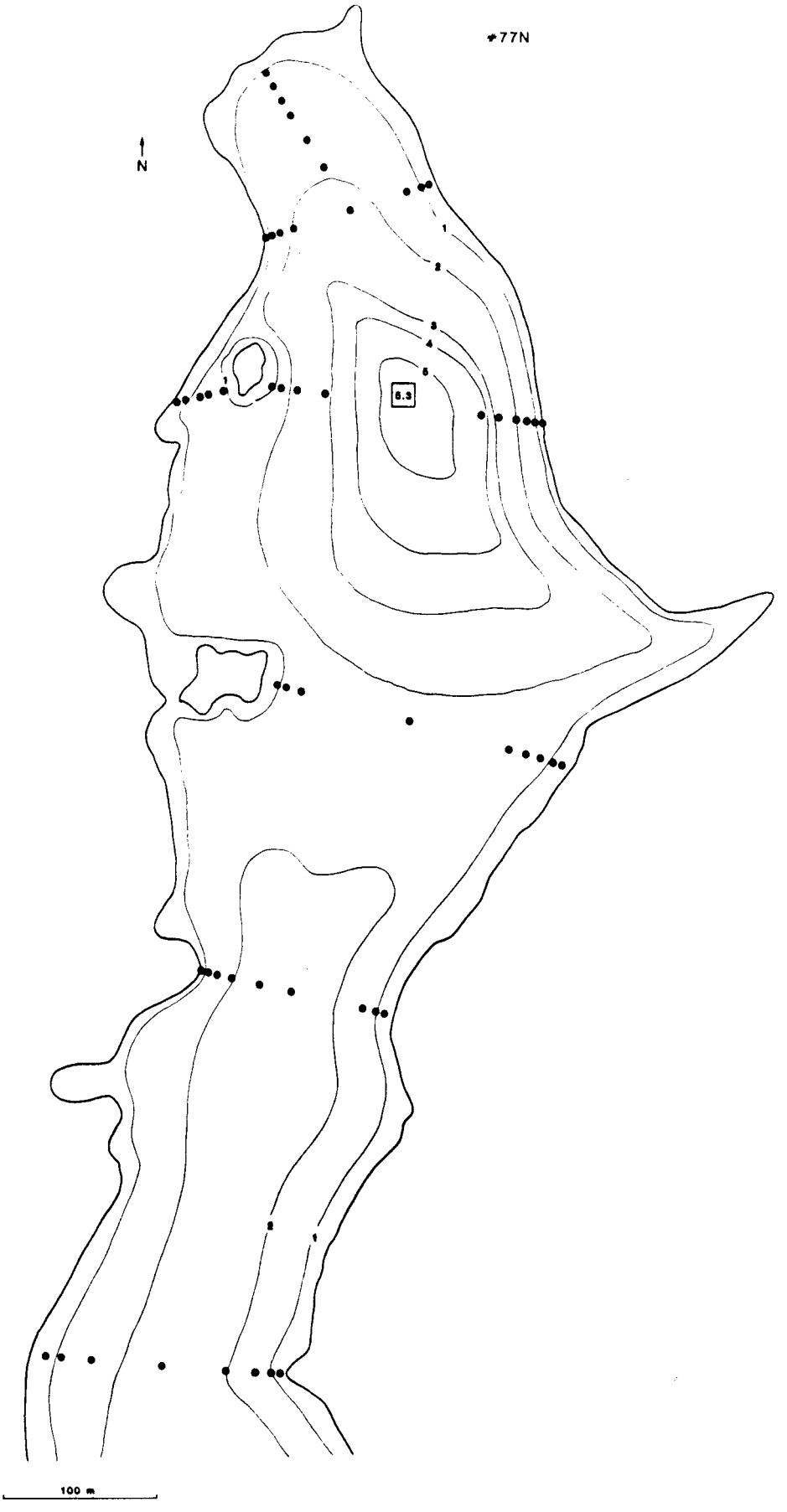
1
N
2.0
1
#70
1
2
3
3.9
100 m


N
#75
#74
#73
4.5
4.8
4.6
100 m

N
*76
1
2
2.0
100 m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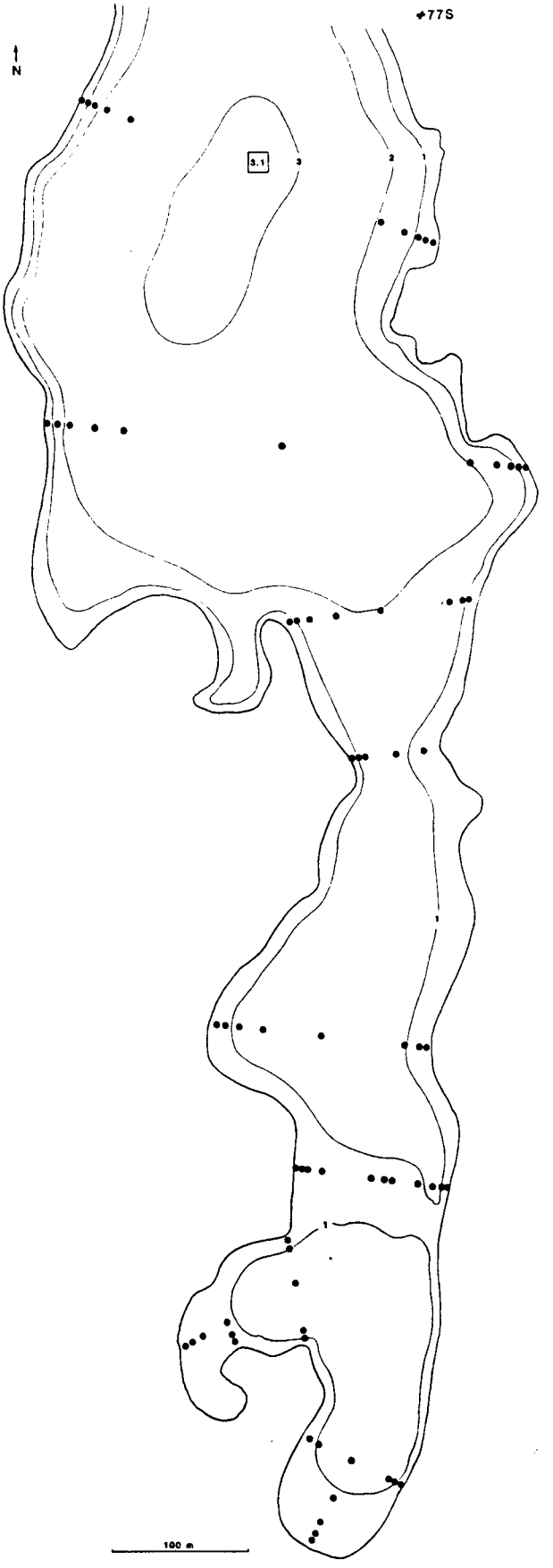
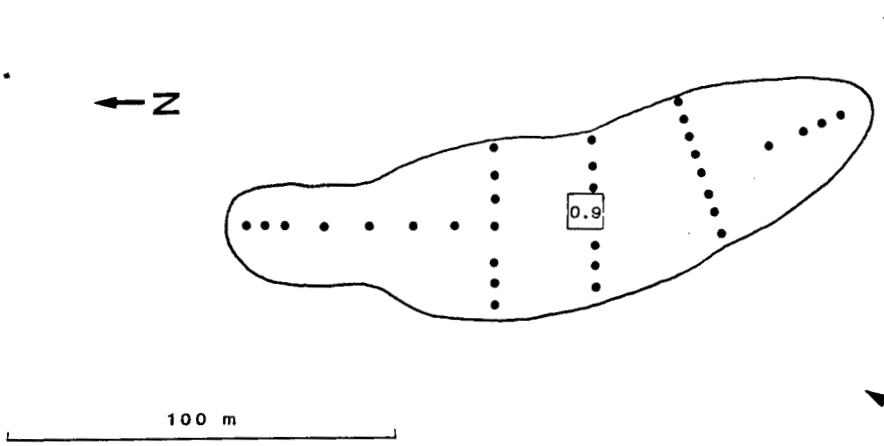
N
1
2
3
4
5
6.3
1
2
1
100 m


+77S
N
3.1
3
2
1
1
100 m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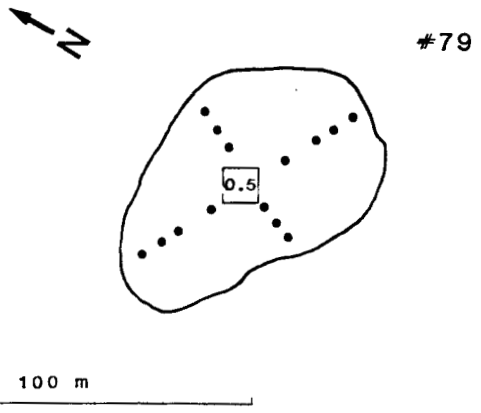
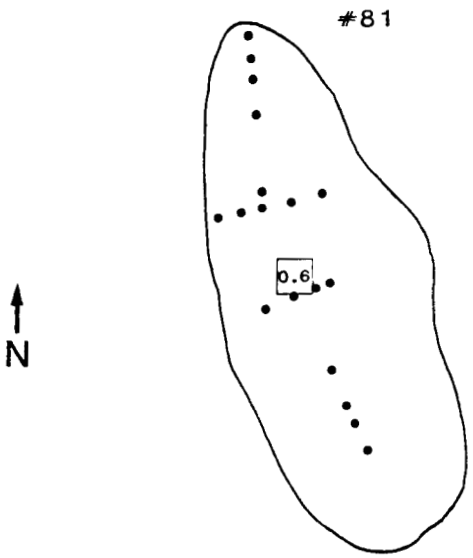
N
0.9
100 m


N
#79
0.5
100 m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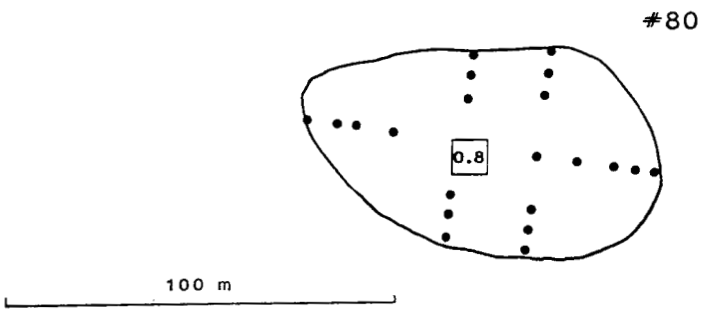
0.6
N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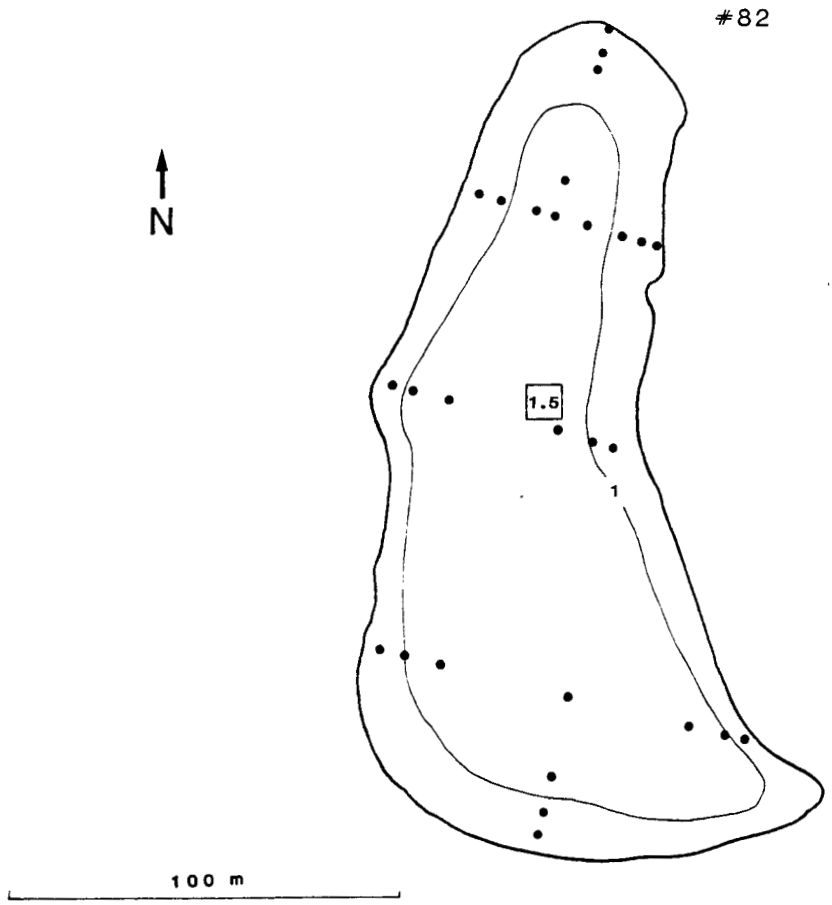
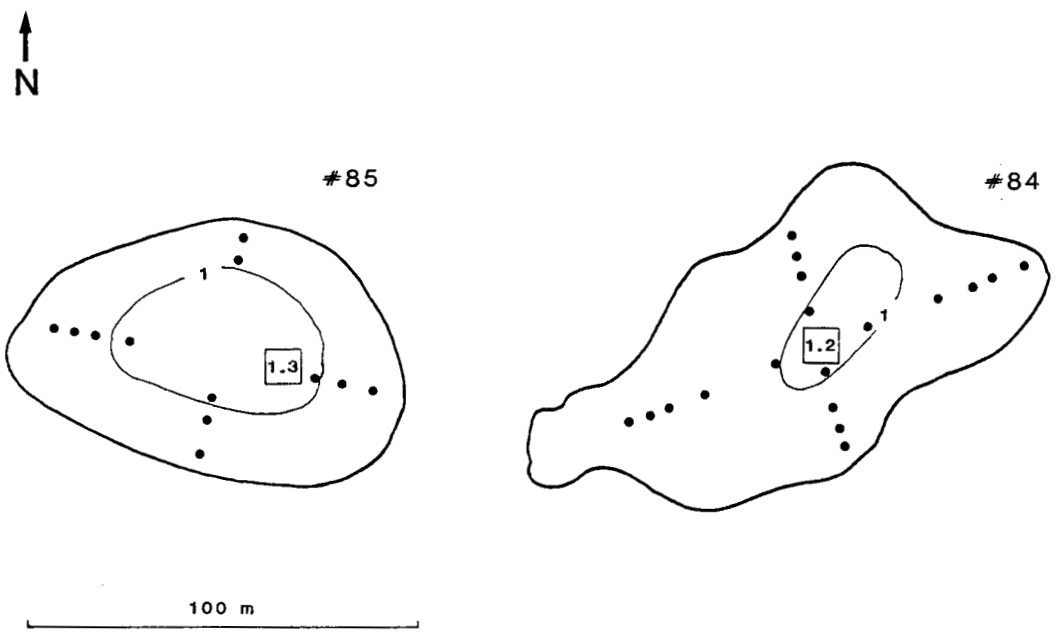
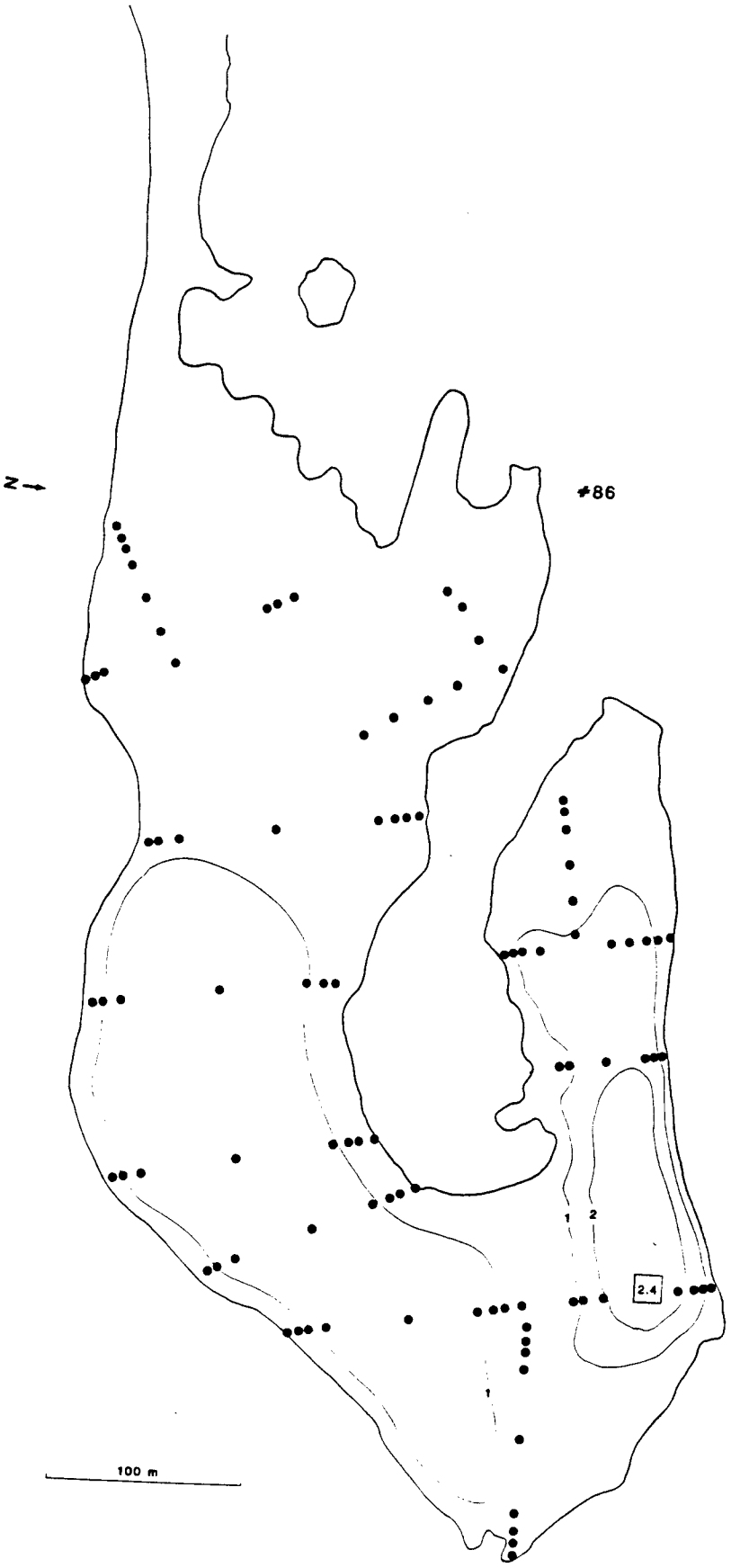
100 m


#82
N
1.5
1
100 m


N
#85
1
1.3
#84
1
1.2
100 m


N
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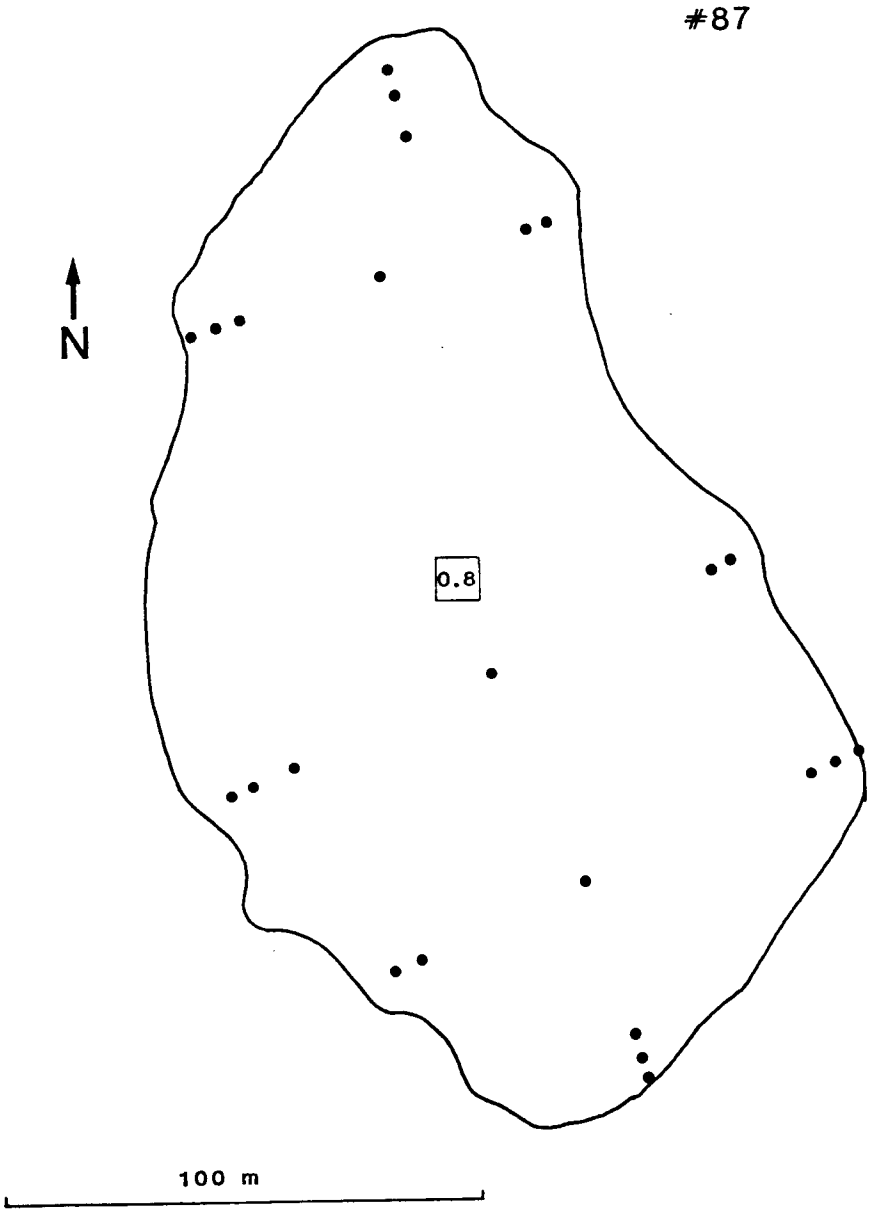
1
2
2.4
100 m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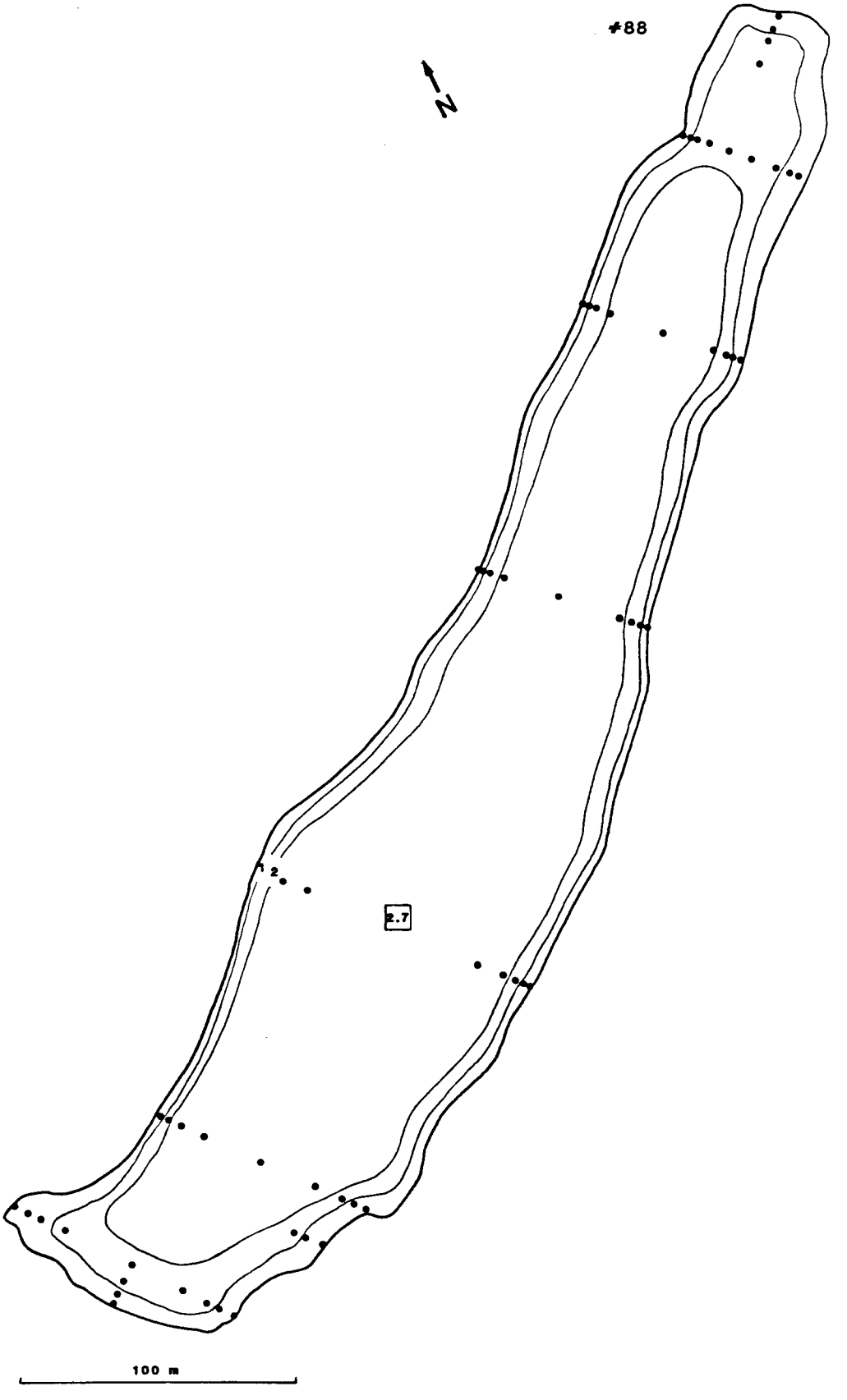
N
0.8
100 m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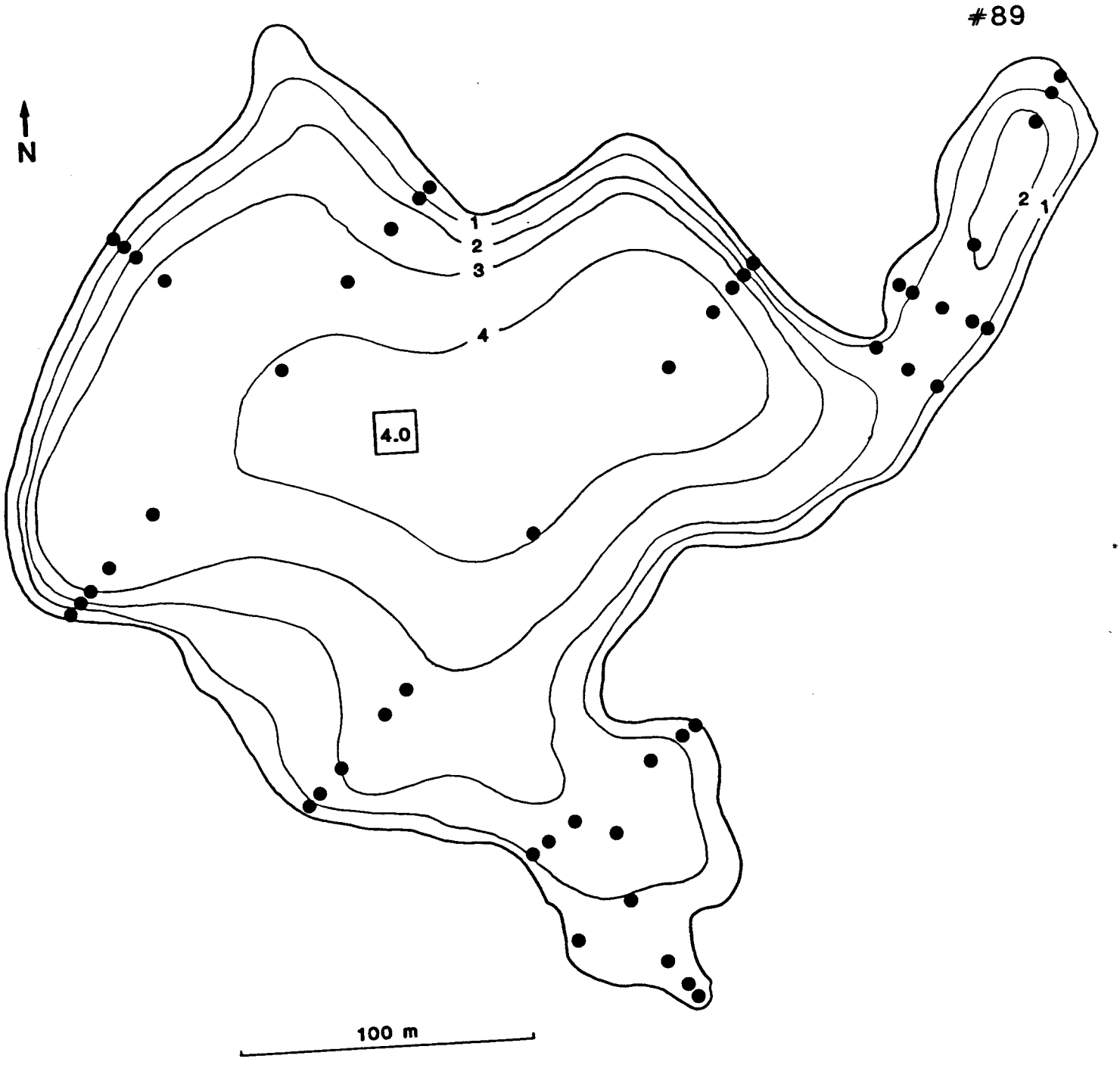
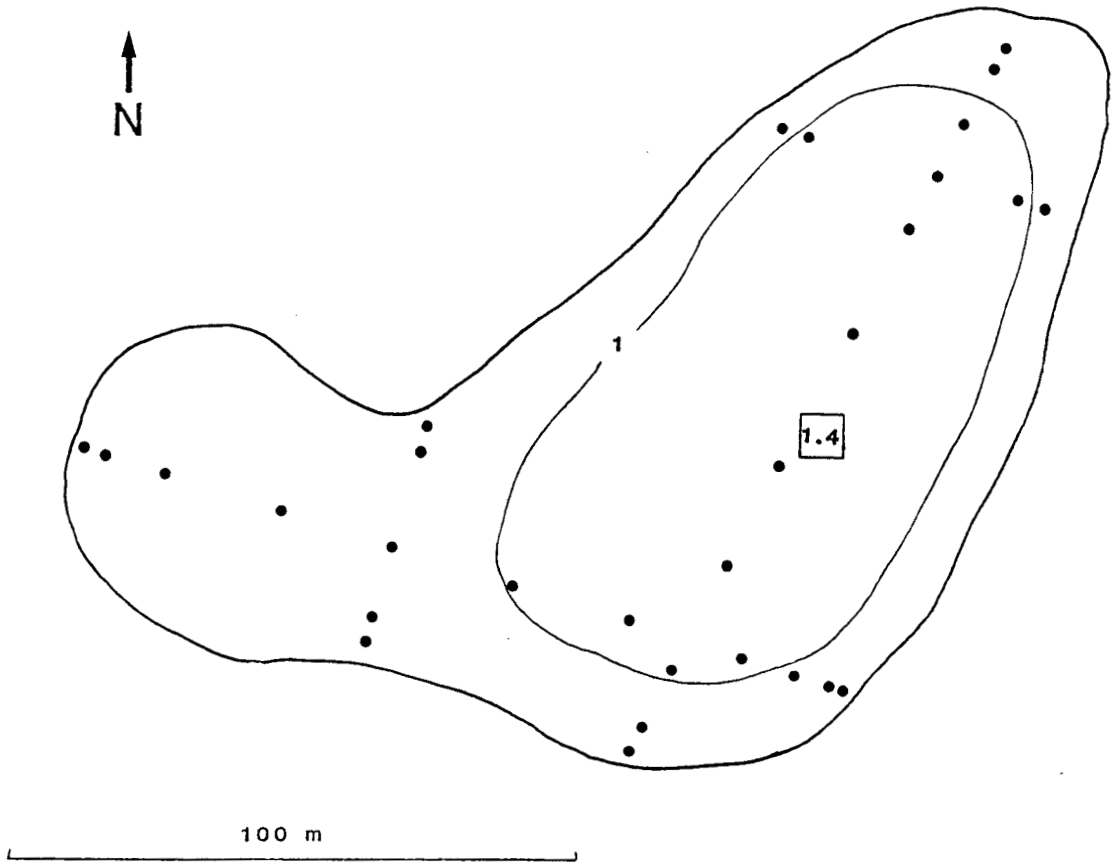
N
2
2.7
100 m


#89
N
1
2
3
4
4.0
2
1
100 m

#90



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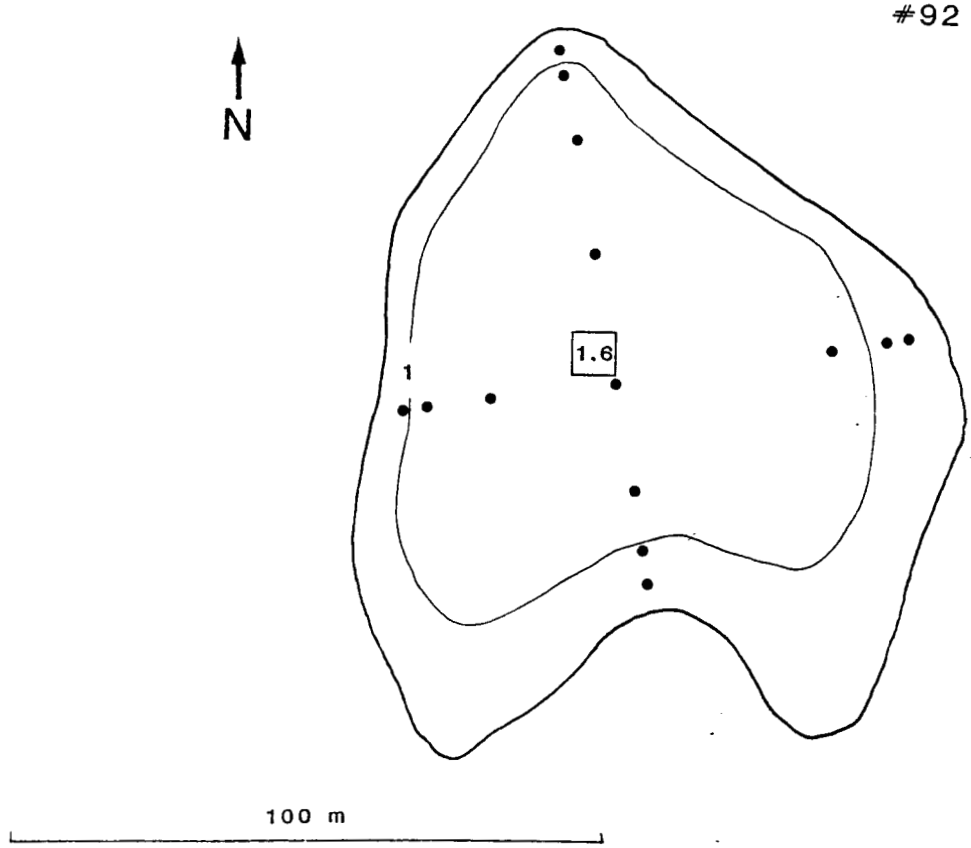

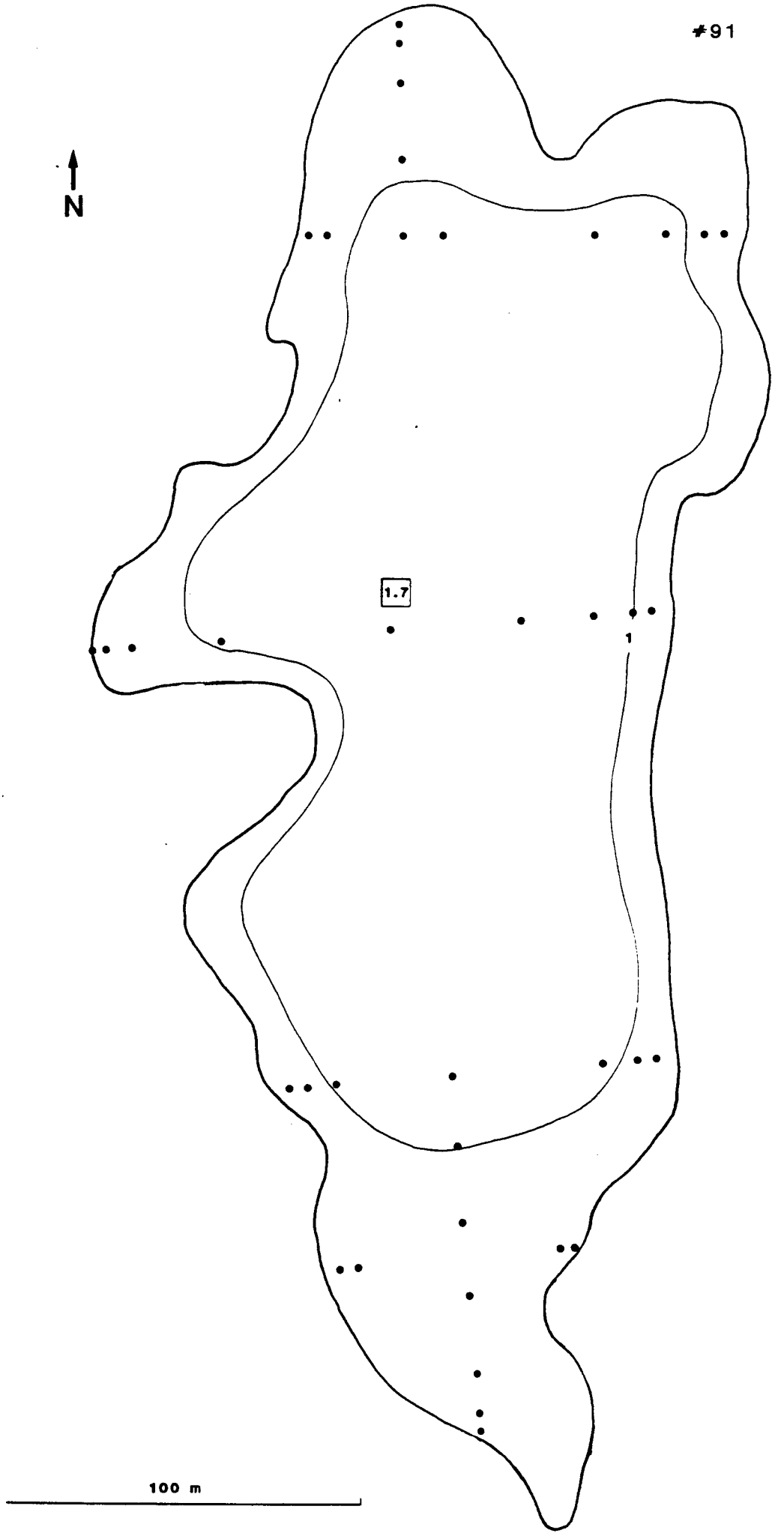
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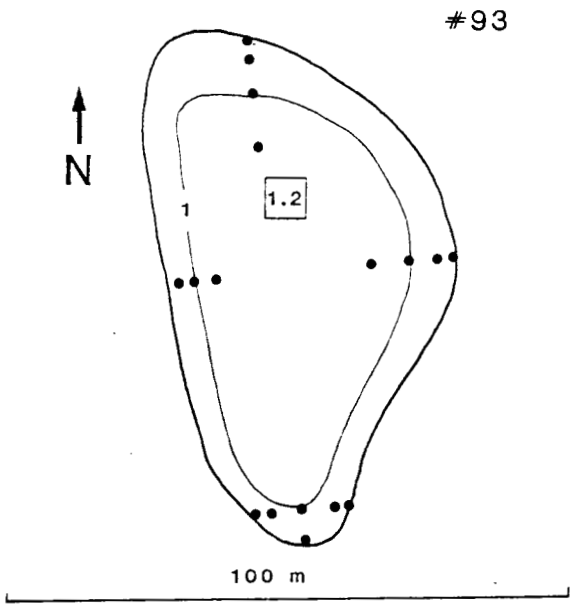
N
1.7
1
100 m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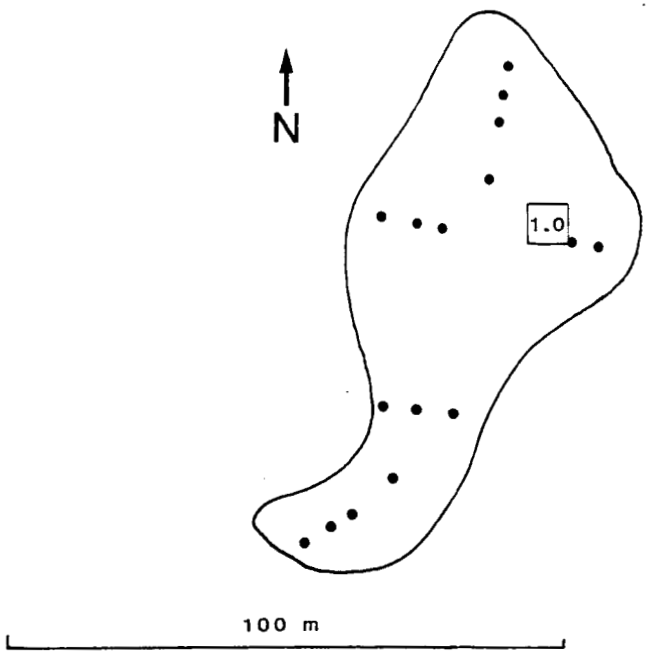
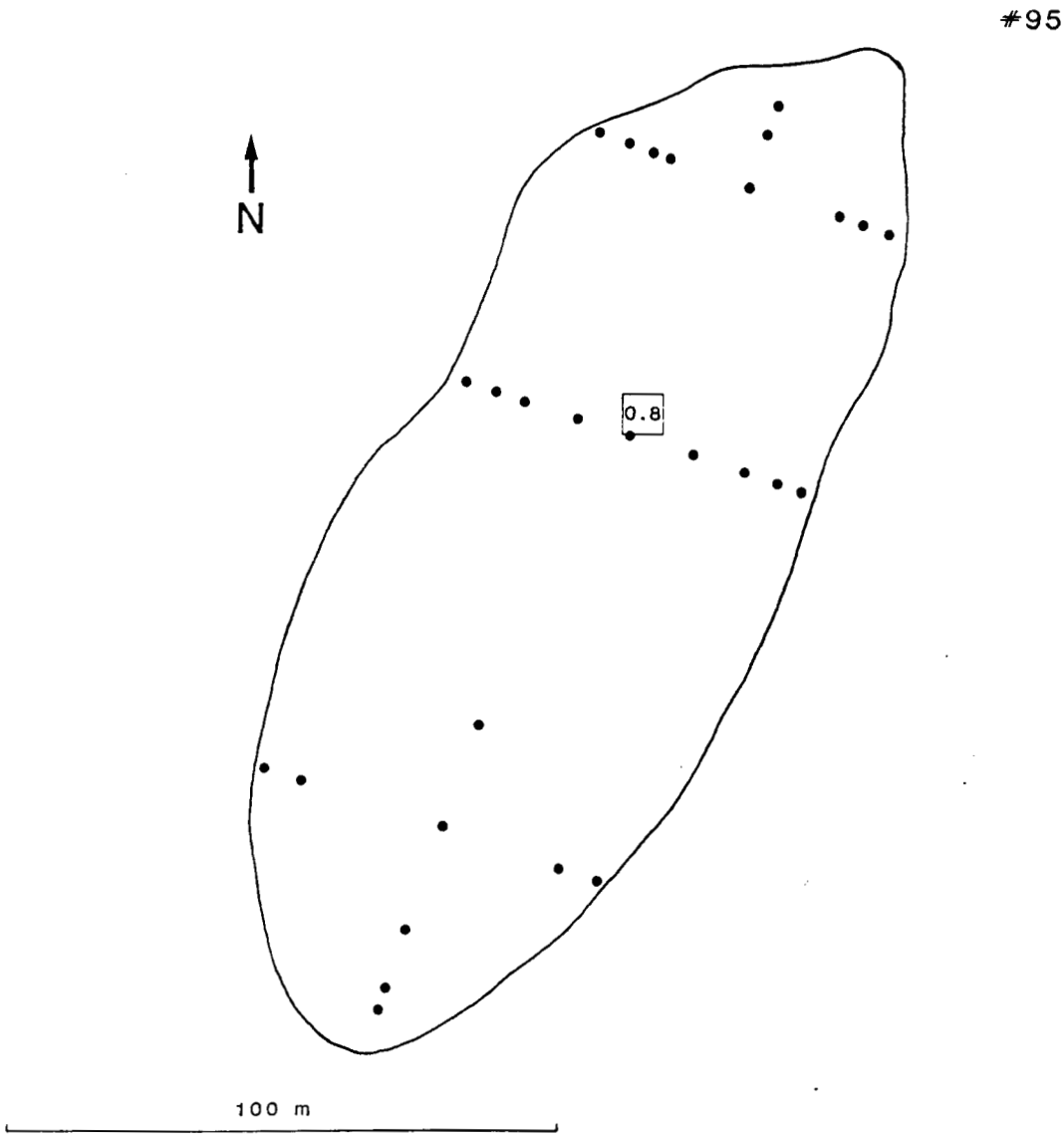
N
1
1.2
100 m


N
1.0
100 m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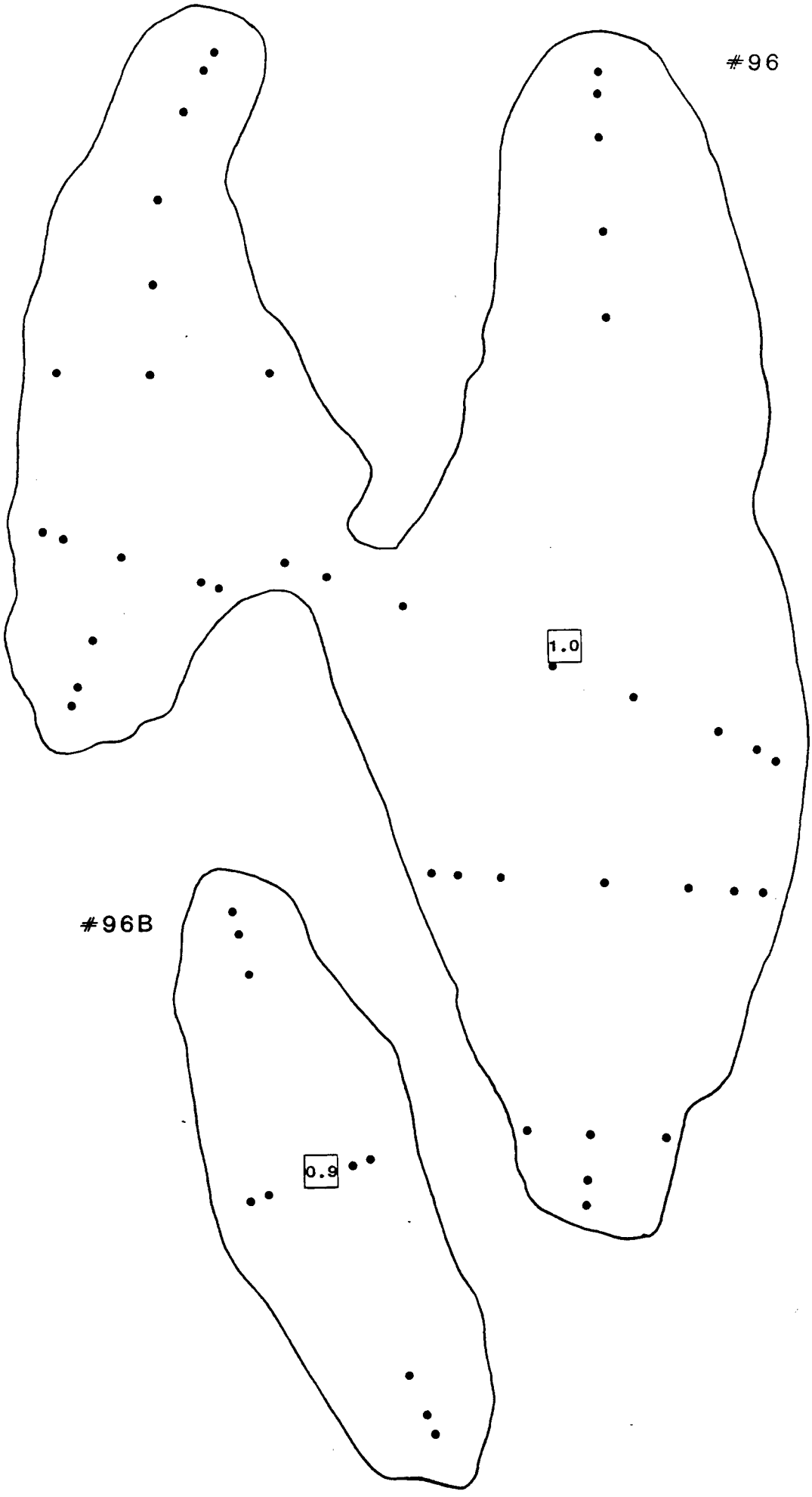
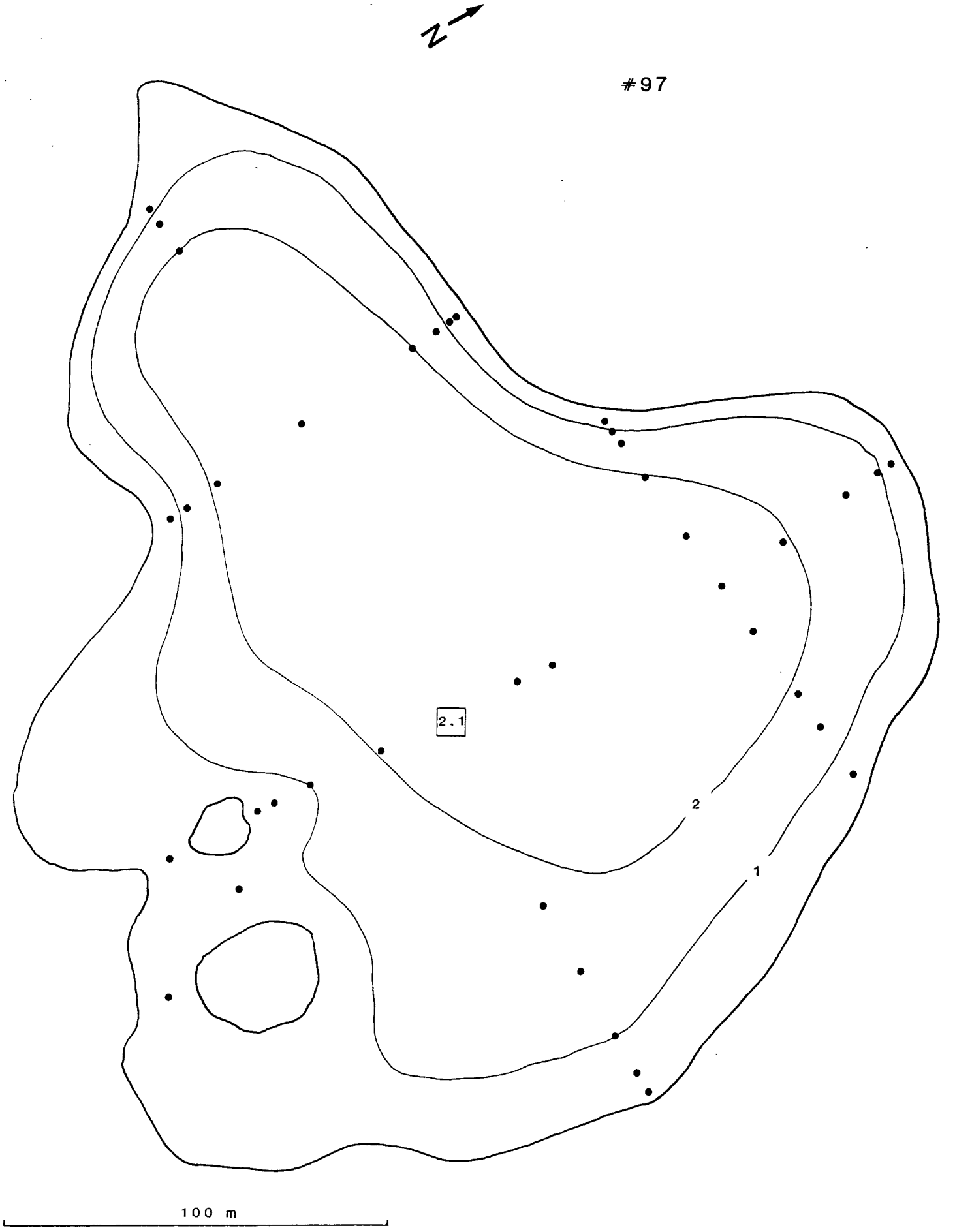
N
0.8
100 m


#96
1.0
#96B
0.9


N
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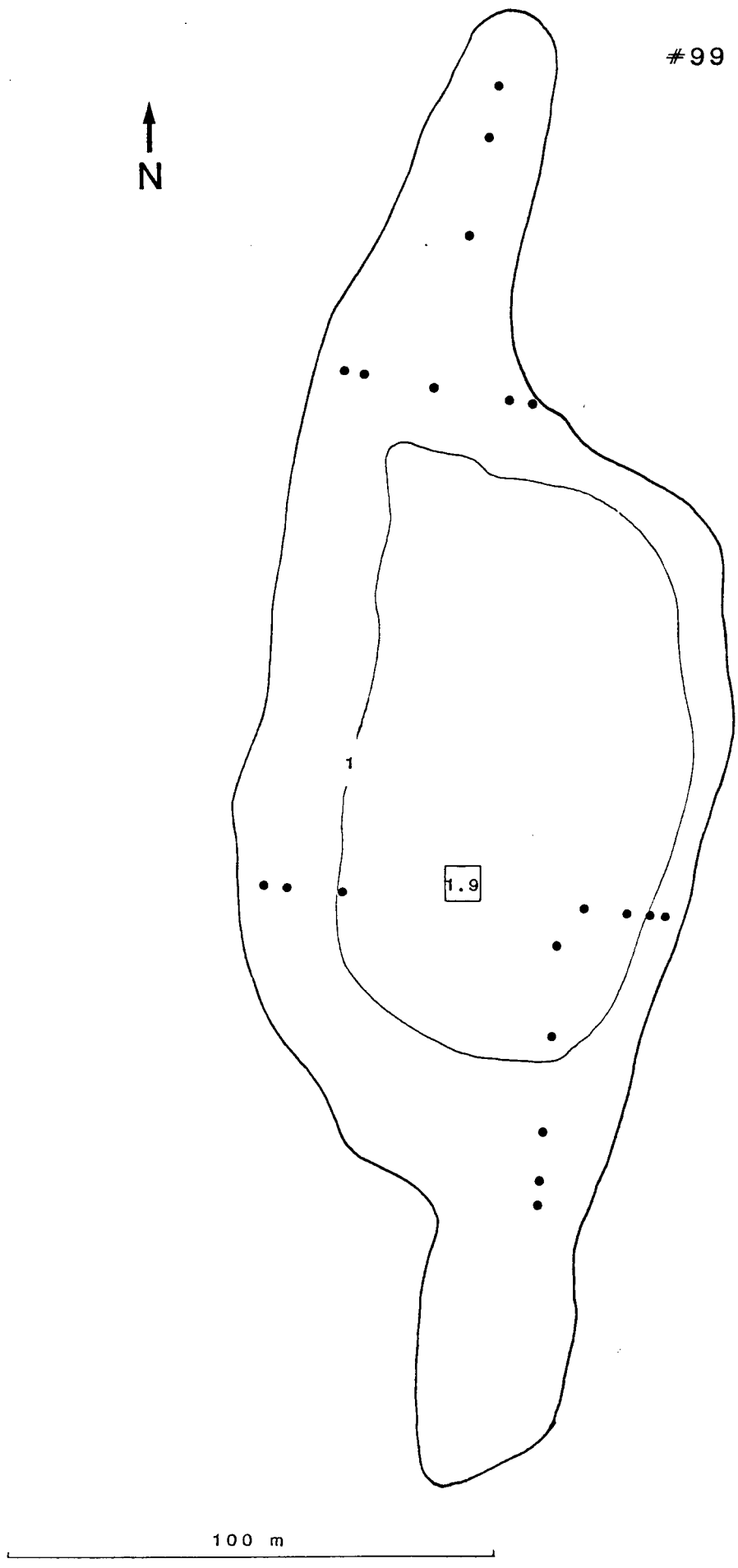
2.1
2
1
100 m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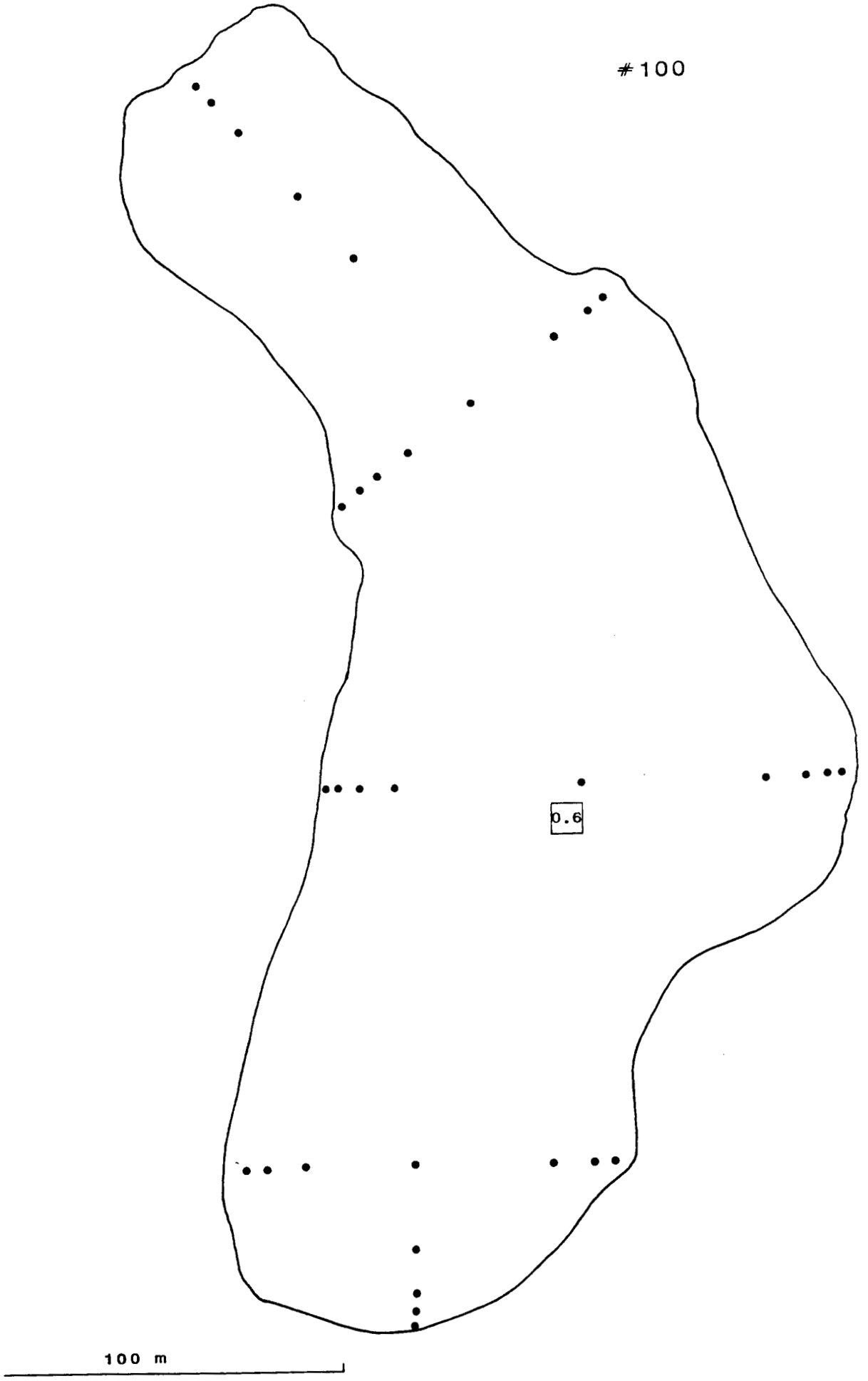
1
1.9
100 m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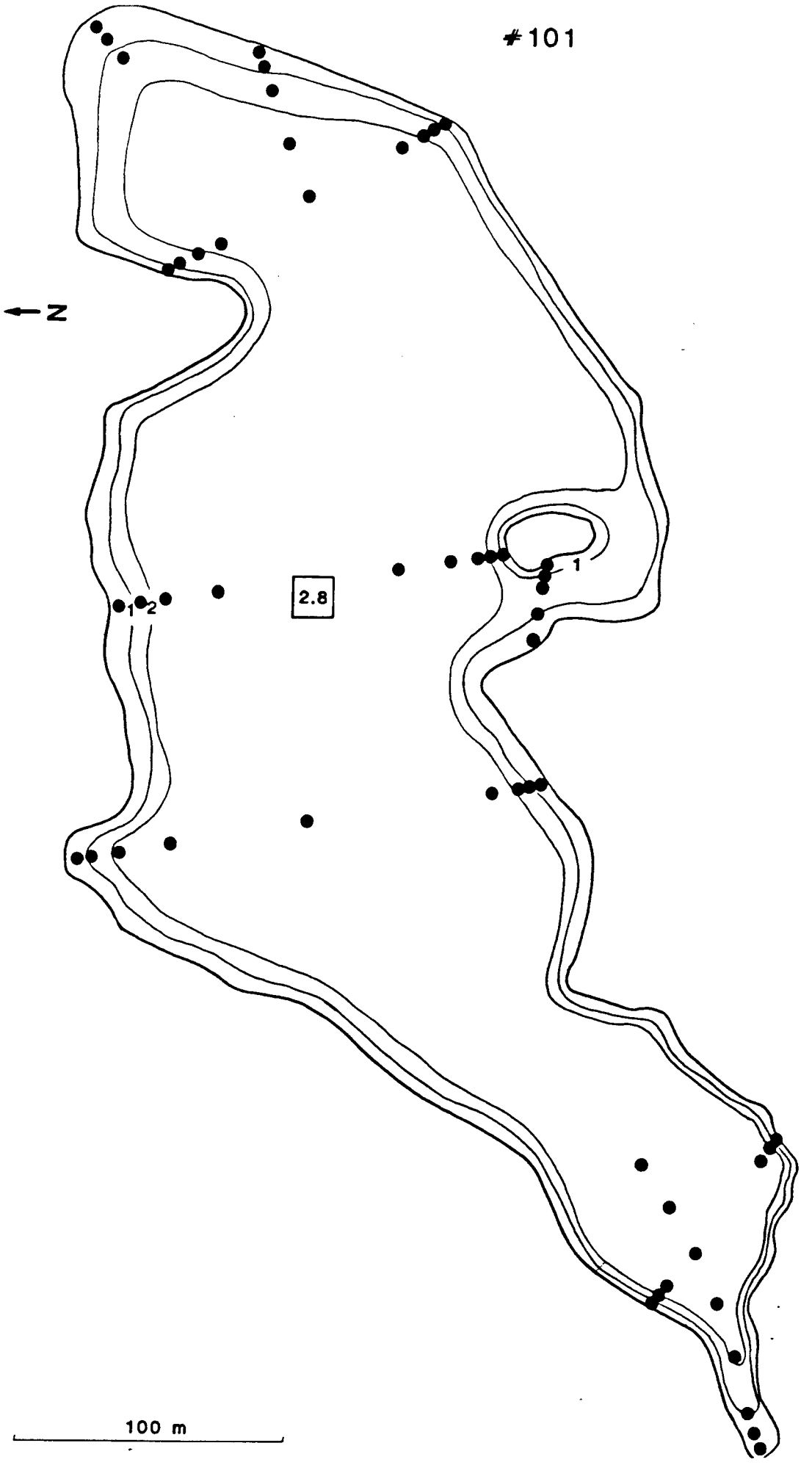
0.6
100 m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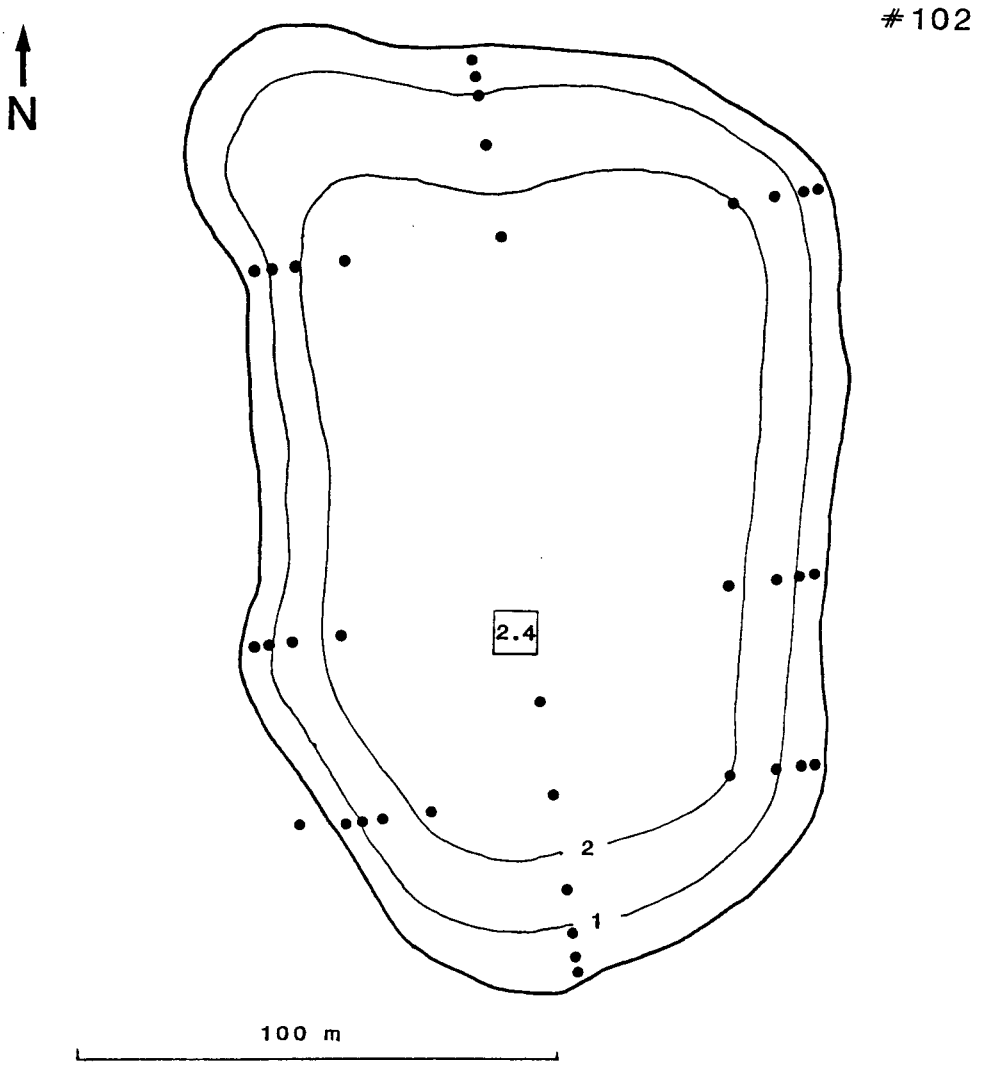
2.8
1
1
2
100 m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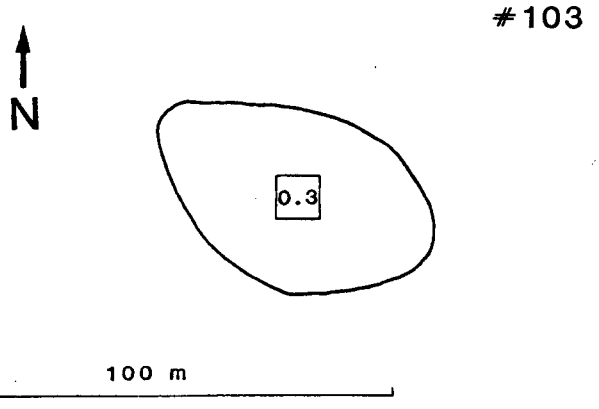
N
2.4
2
1
100 m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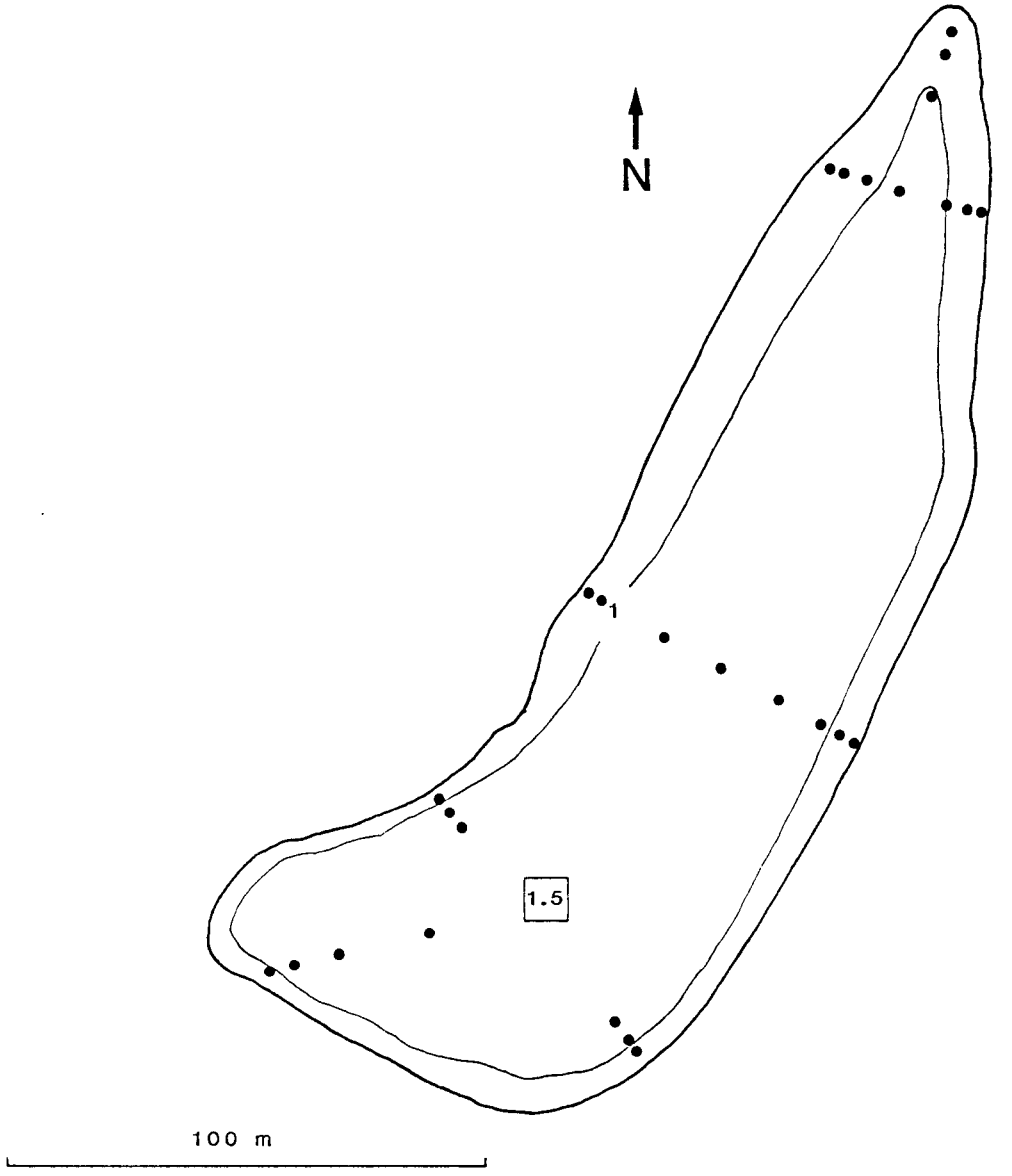
N
0.3
100 m

#104



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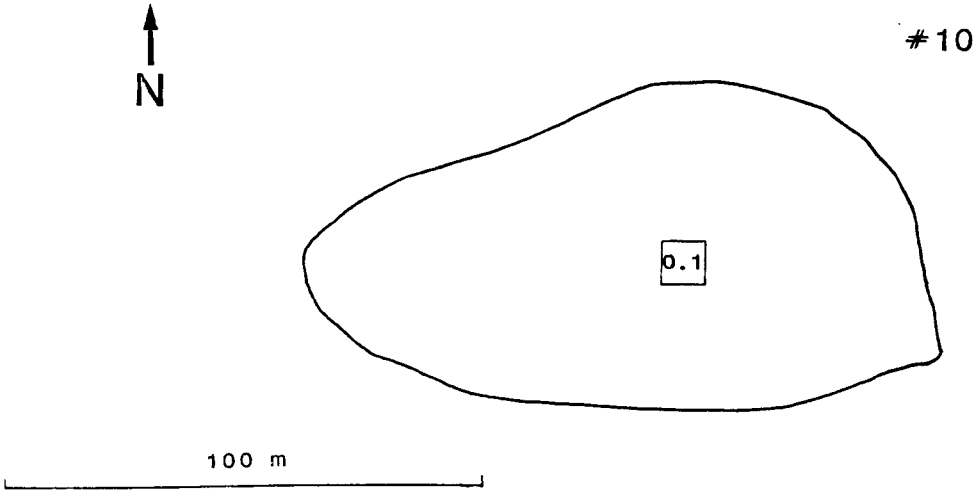

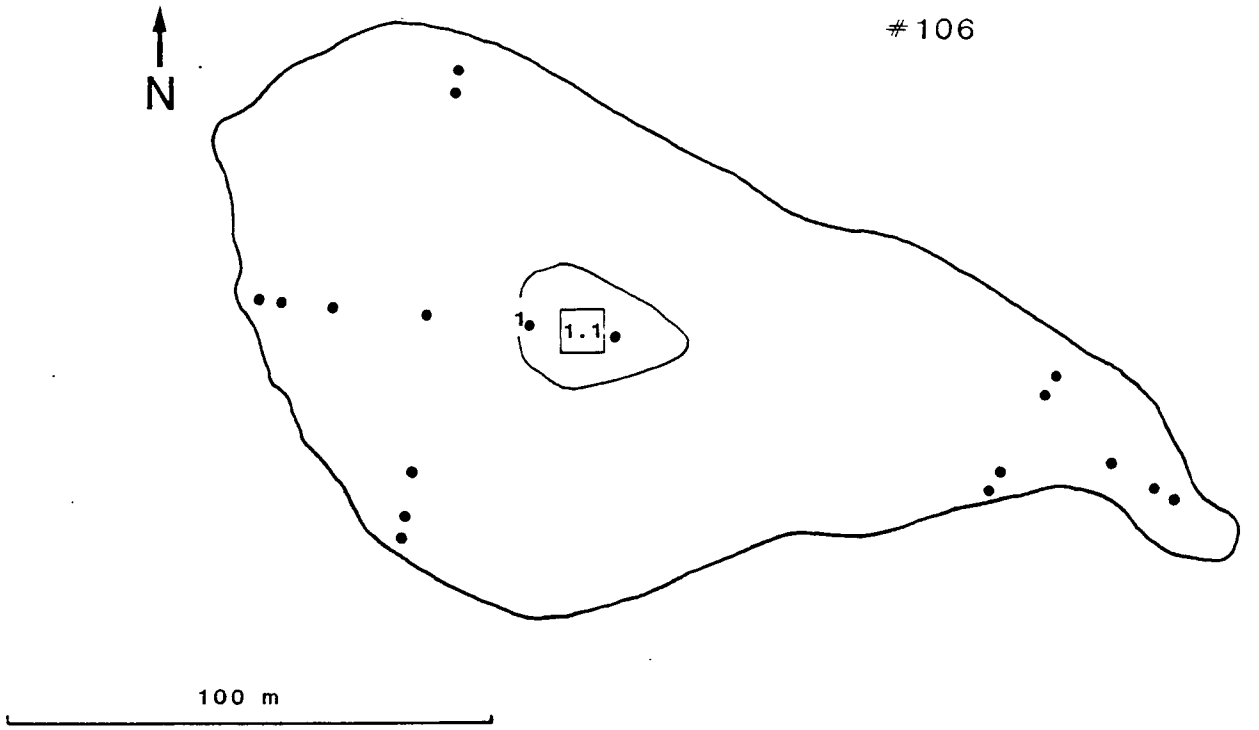
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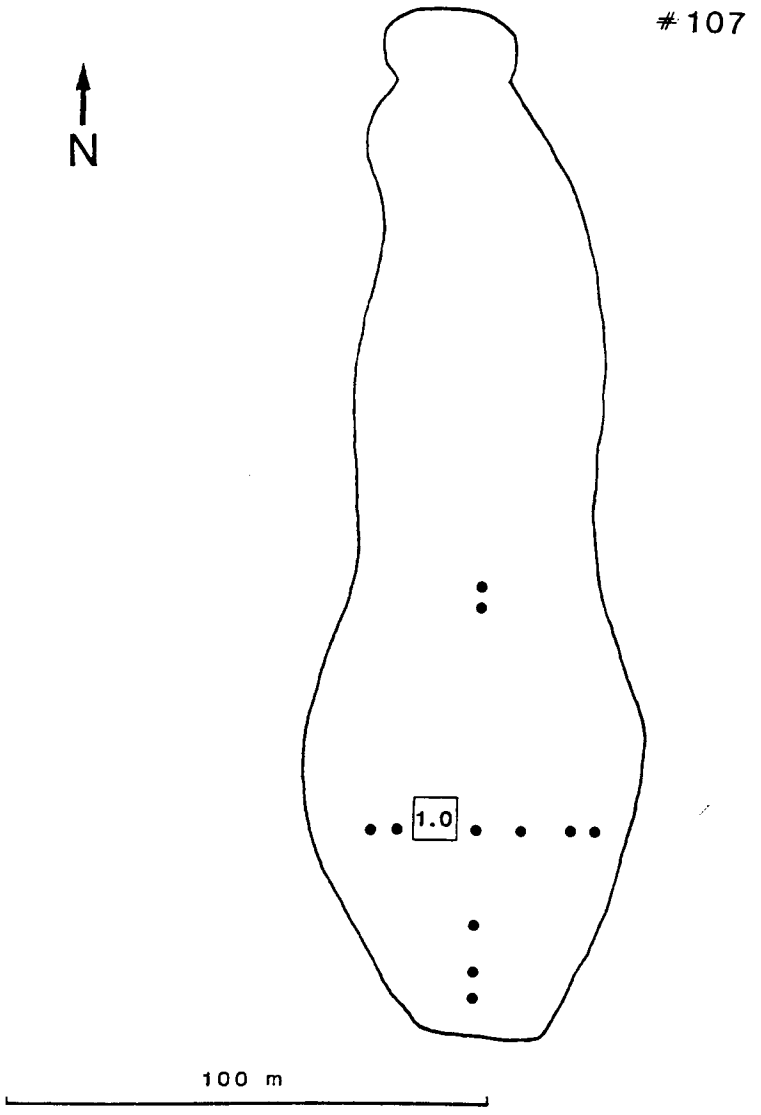
1
1.1
100 m


N
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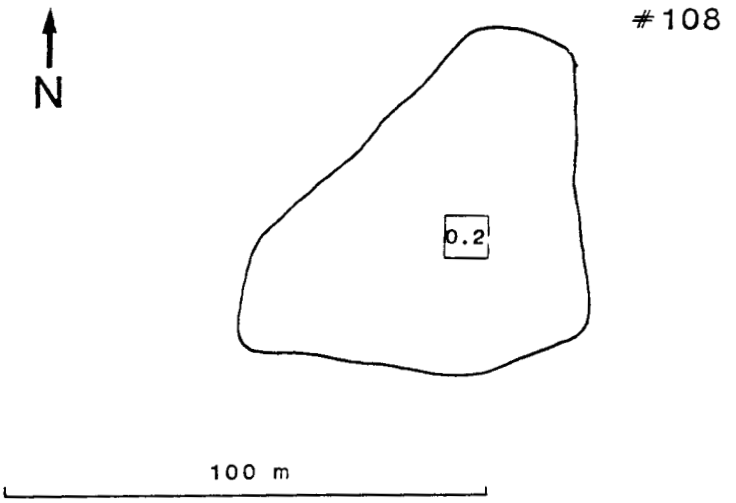
1.0
100 m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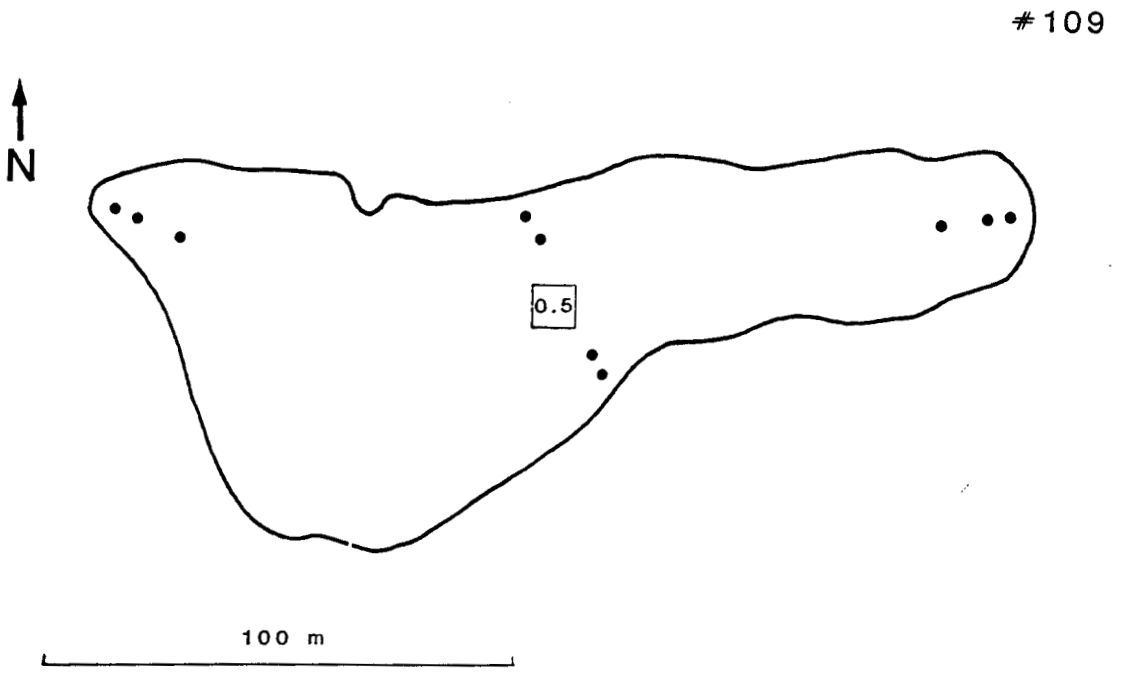
N
0.2
100 m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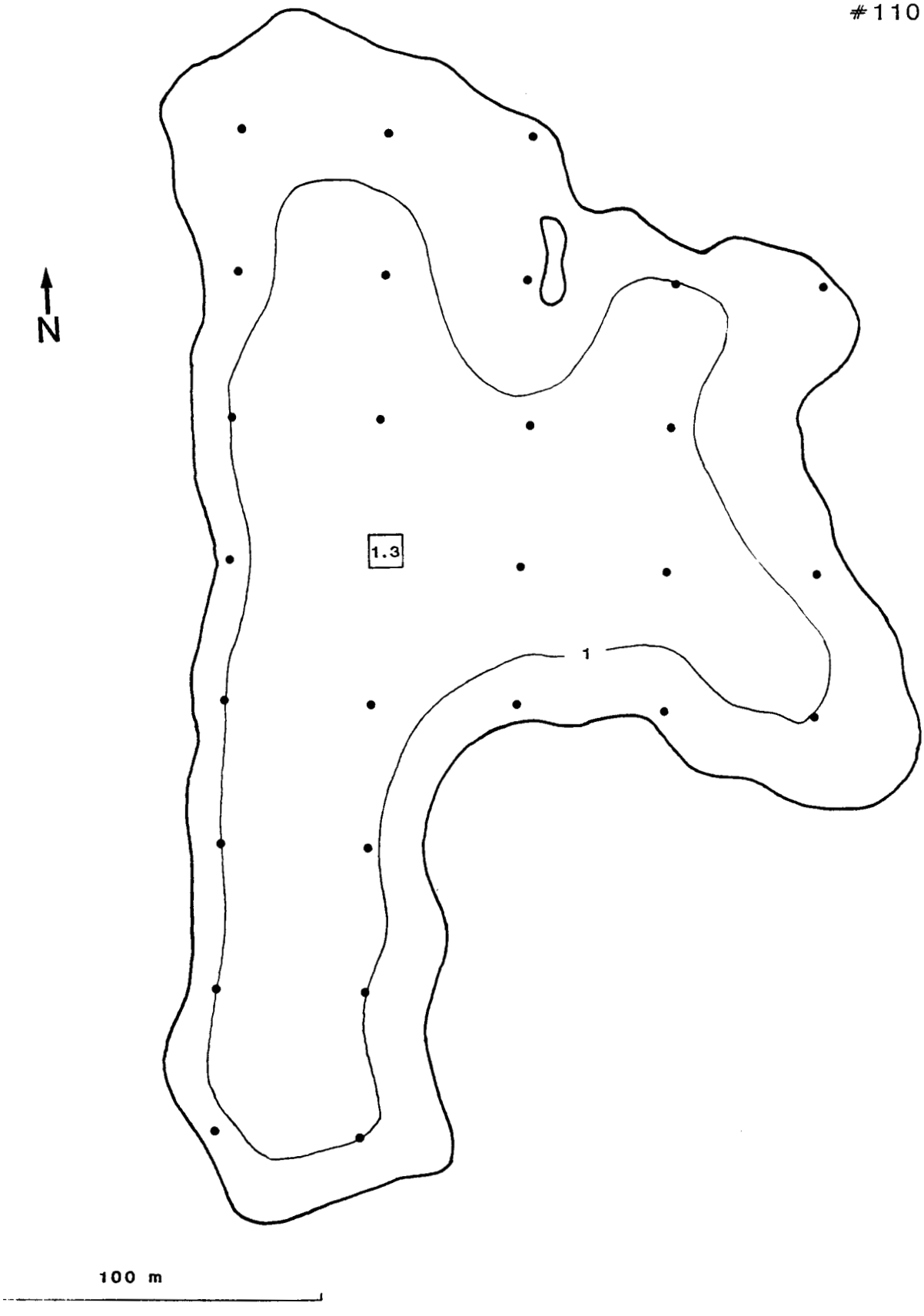
N
0.5
100 m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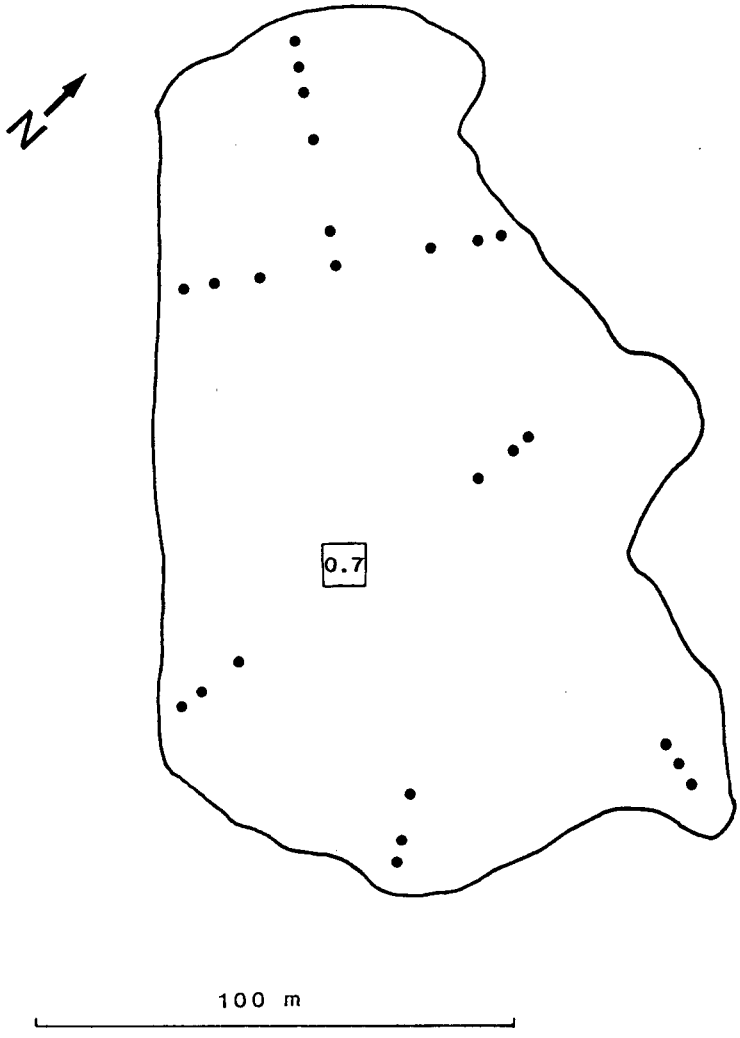
N
1.3
1
100 m

#111



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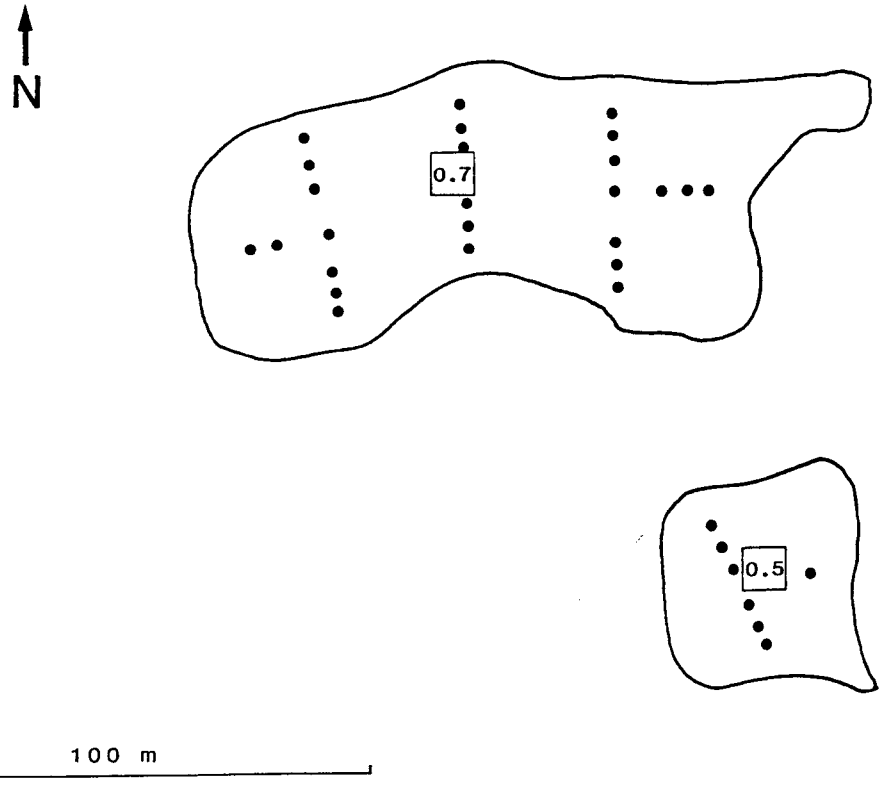

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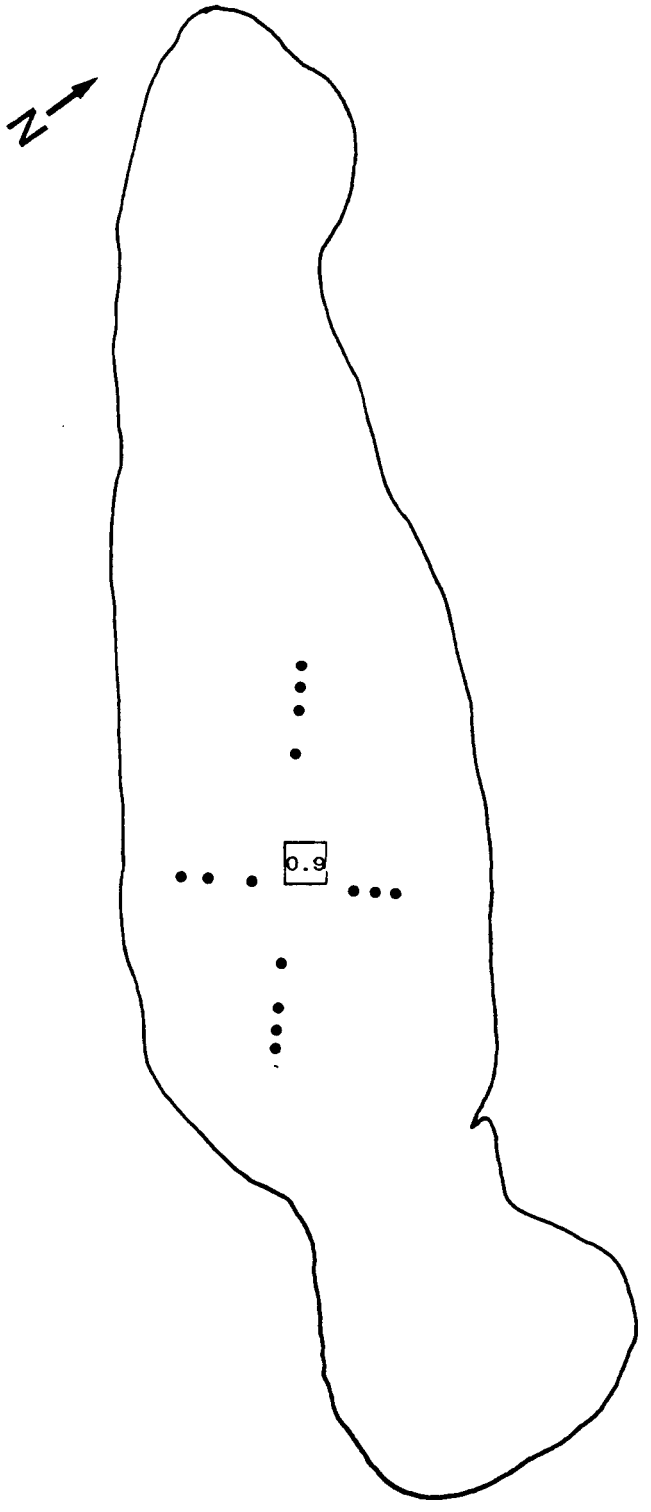
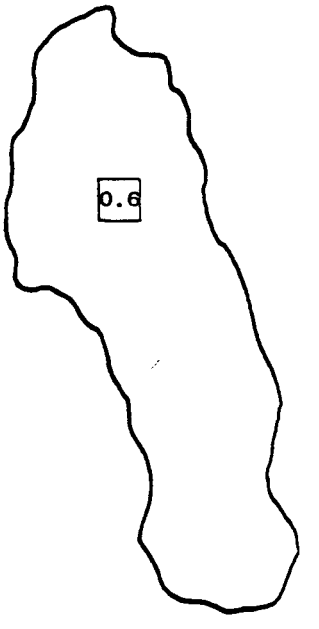
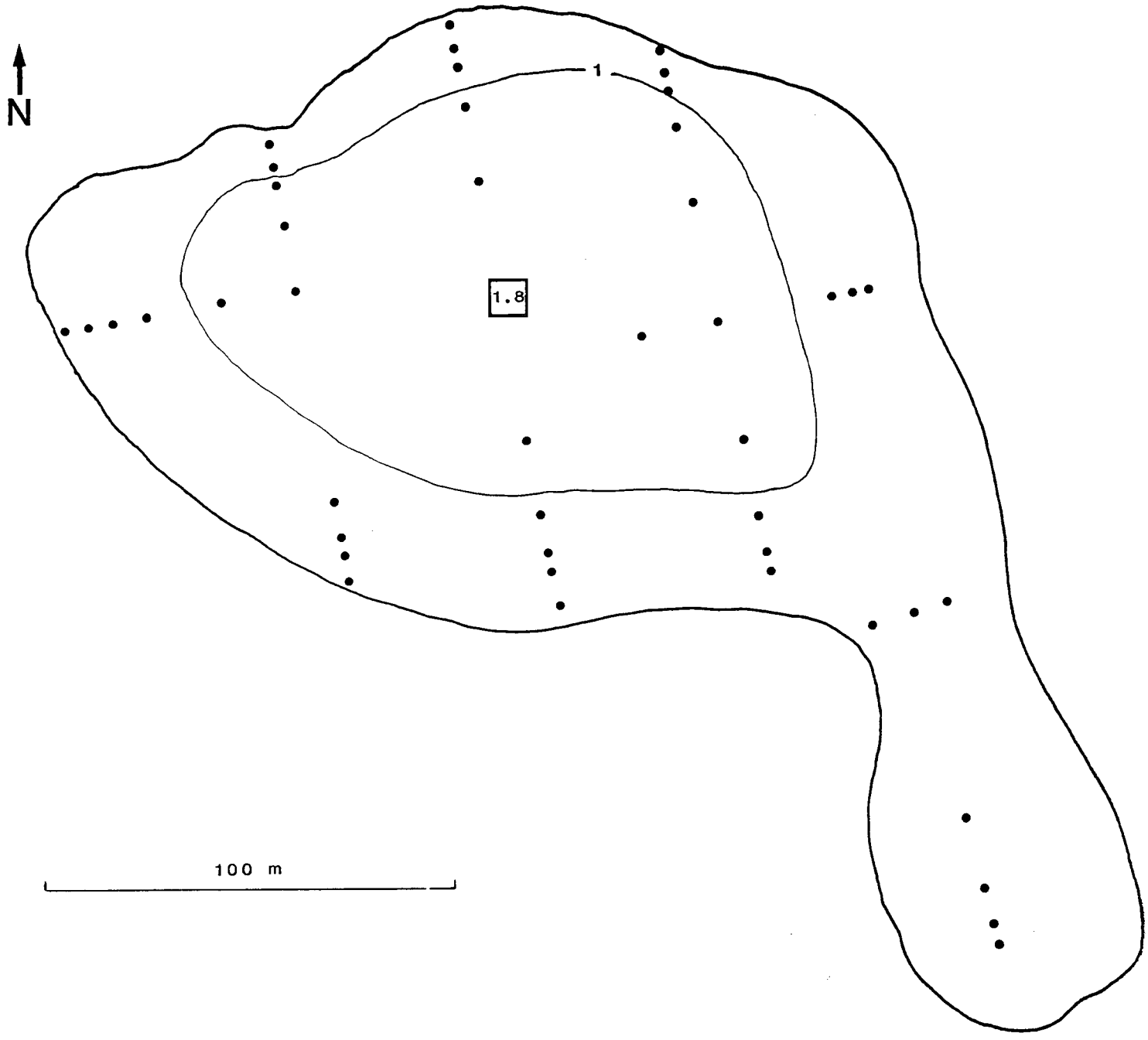
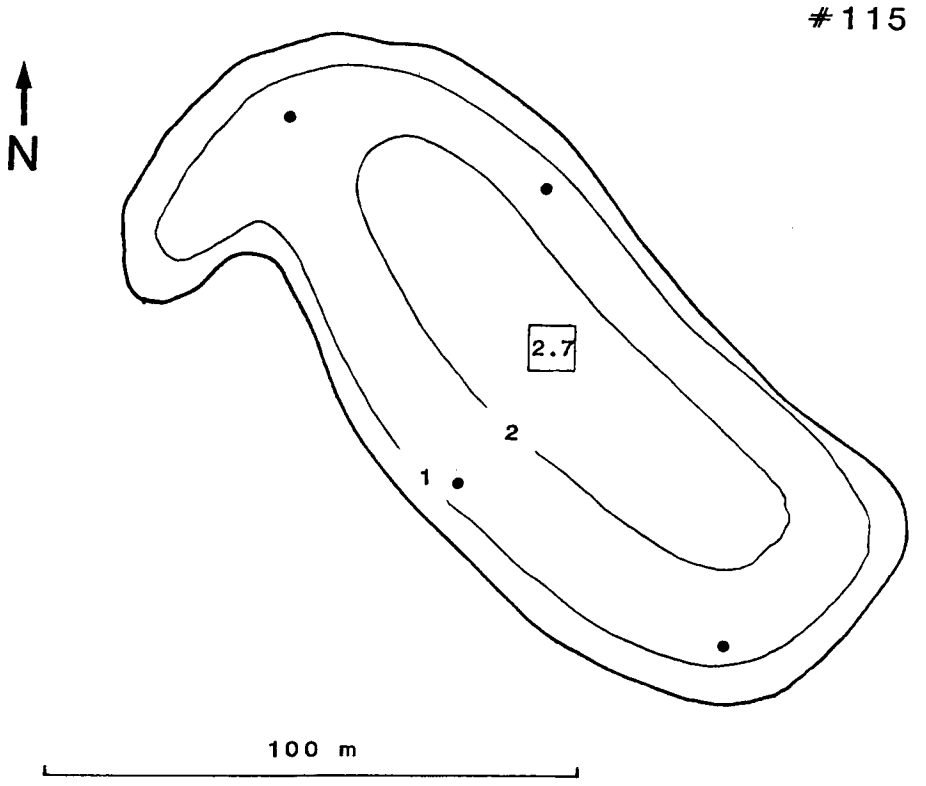


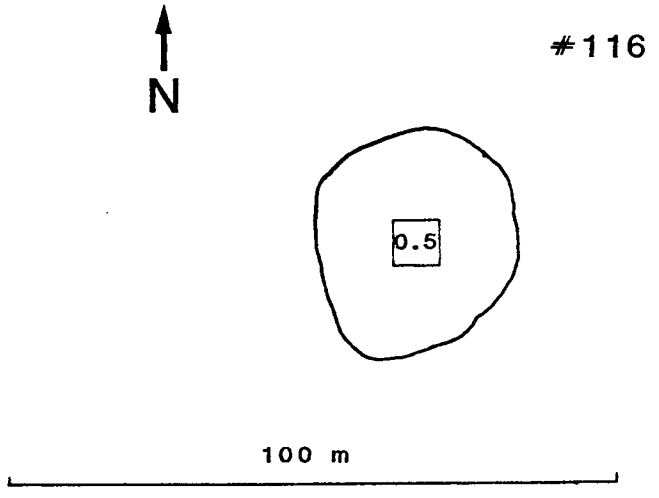


100 m

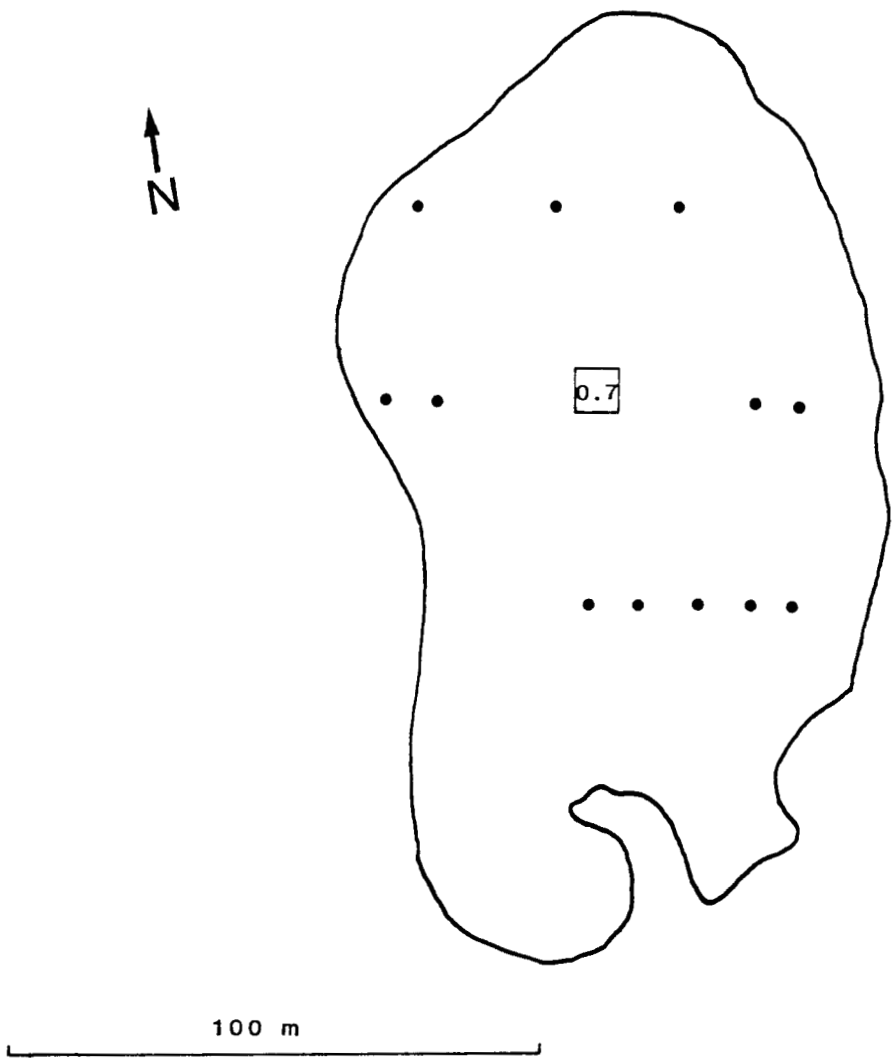
#114




#115
N
2.7
2
1
100 m


#116
N
0.5
100 m

#118



Appendix 2

Plant association maps for each wetland at Riske Creek

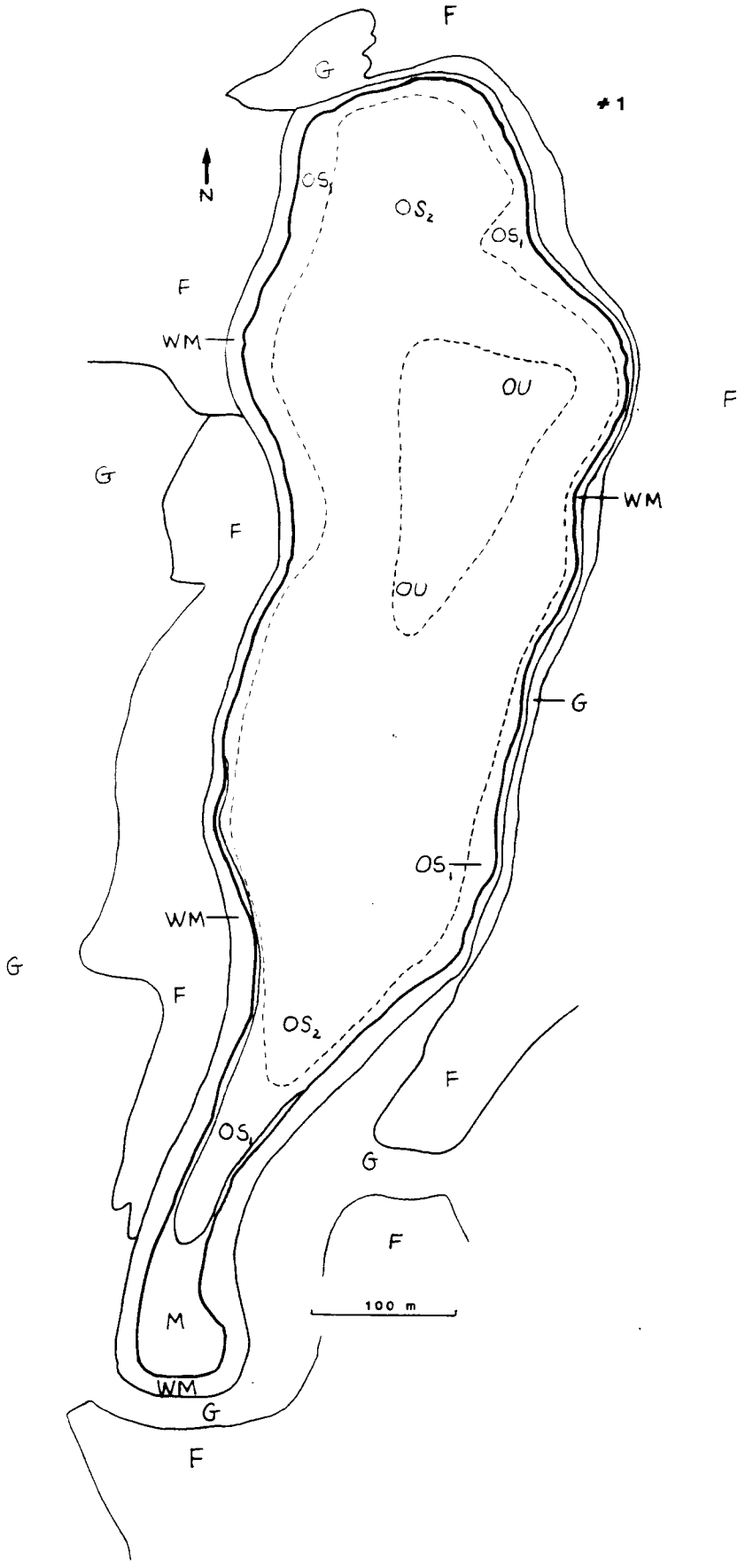
Legend:

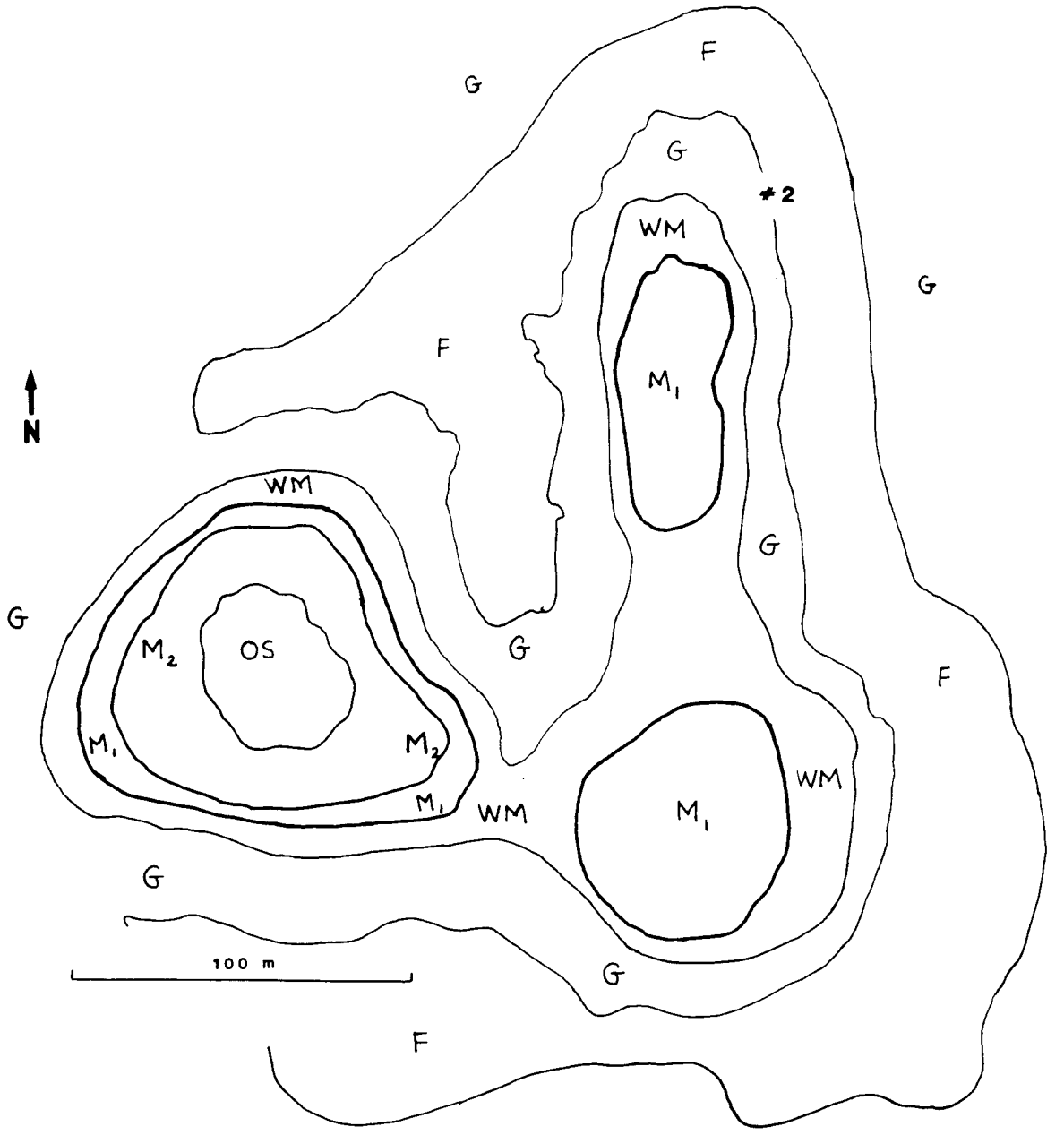
OU	Open Water - Unvegetated
OS	Open Water - with Submergent Vegetation
S	Snags
M	Marsh
WM	Wet Meadow
Fs	Fen - with Shrubs
Fe	Fen - with Emergents
SS	Shrub Swamp
SC	Shrub - Carr
G	Grassland
F	Forest - Deciduous, Coniferous or Mixed

Notes:

- Open water, marsh, meadow, fen, swamp and shrub-carr classes are defined at the bottom of Table 3.
- Plant associations were distinguished on the basis of species present and their cover-abundance values. Rough dimension measurements of each association were made along a number of transects across each wetland. Larger wetlands had correspondingly more transects. That information, the data collected on the water depth defining the limits of each association, the bottom contour maps, and the air-photo enlargements were used to map each association as accurately as possible.
- Marsh (M) and open water with submergent vegetation (OS) associations vary from wetland to wetland with respect to plant species present and their cover-abundance values. Within each wetland, dissimilar M or OS associations were divided further into M_1, M_2 etc. and OS_1, OS_2, etc. sub-associations. The information used to delineate those sub-associations was somewhat subjective in nature, consisting of an average of two, independent, visual estimates of plant species cover-abundance.

- Matrices of plant species lists and their cover-abundance values for each association were used to calculate the total area occupied by each species for each wetland. Those matrices were too large (63 species X 12 possible plant associations) and too numerous (118 wetlands) to be included in this report. However they are available from the authors.
- Due to the different sizes of the wetlands, scales vary from wetland to wetland. For the larger wetlands with correspondingly smaller scales, very narrow plant associations (eg. fringe marshes) were difficult to map accurately. Those <2m wide were ommitted, whereas those >2m wide may have been exaggerated in width.
- Plant association maps for wetlands 83 and 117 are not presented.


F
G
#1
N
OS1
OS2
OS1
F
WM
OU
F
G
WM
F
OU
G
OS1
WM
G
F
OS2
F
OS1
G
F
100 m
M
WM
G
F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G
G
#2
WM
G
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M1
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WM
G
G
M2
OS
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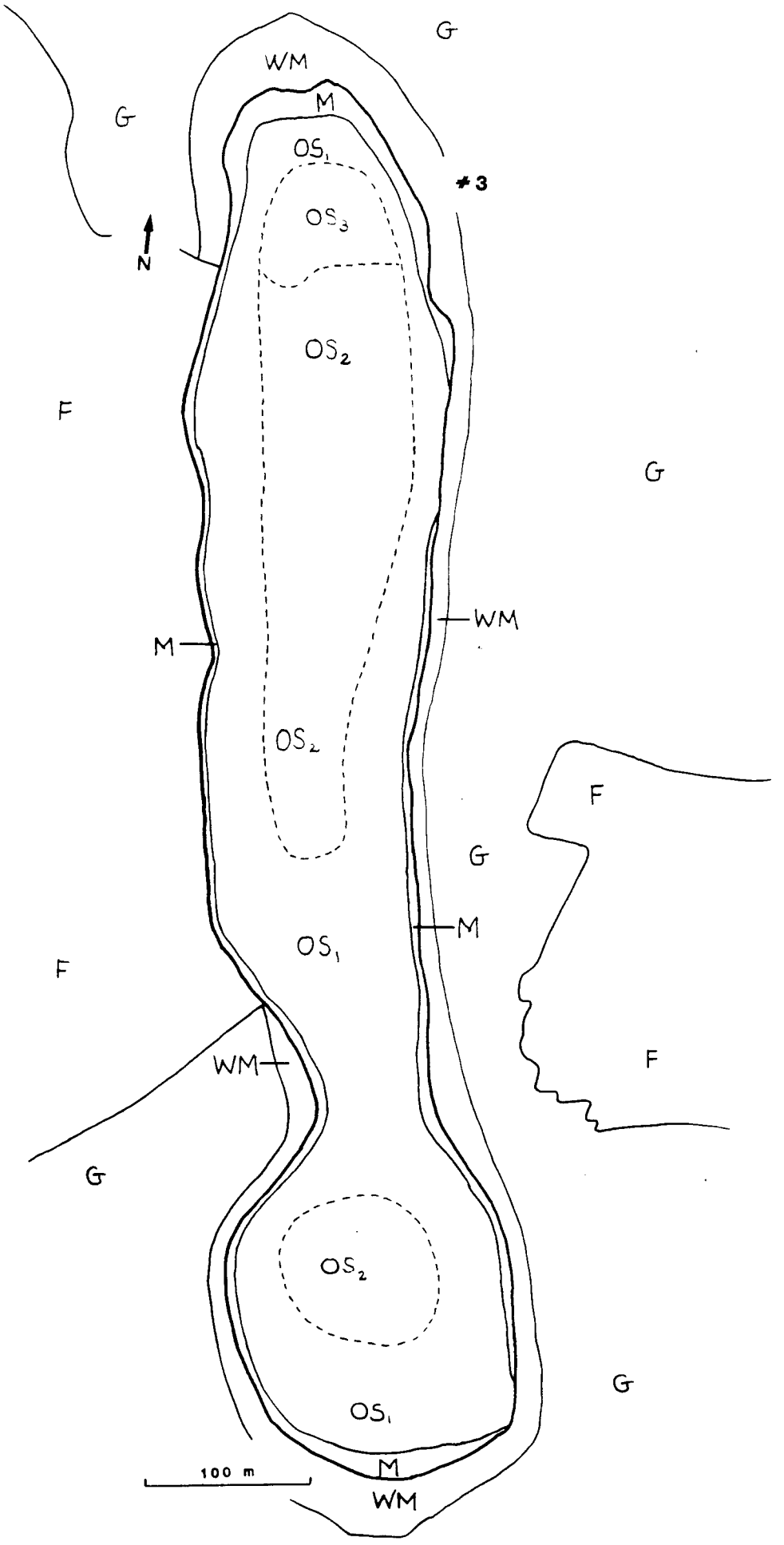
F
M1
M2
M1
WM
WM
M1
G
100 m
G
F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WM
M
G
OS1
#3
OS3
N
OS2
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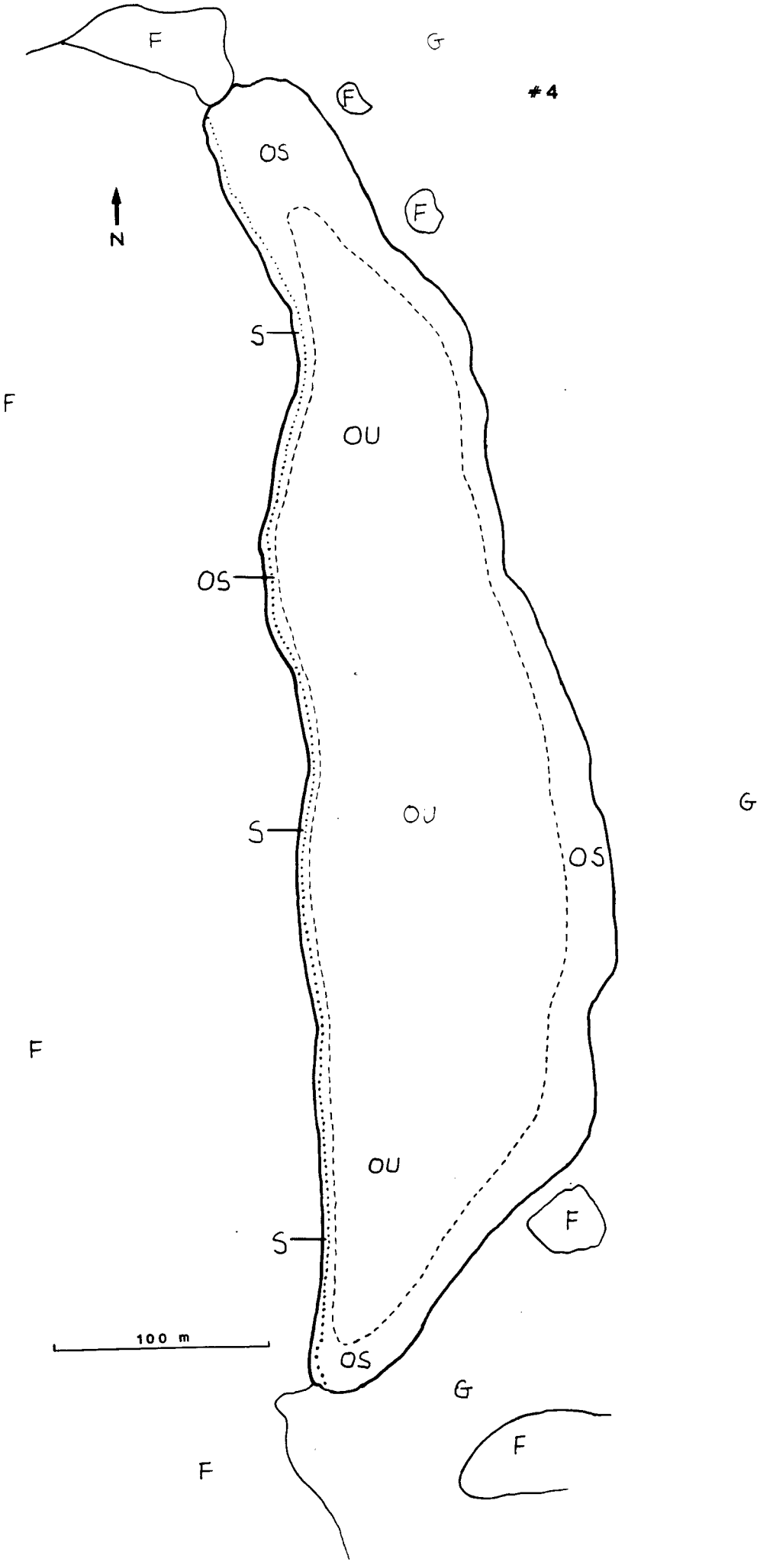
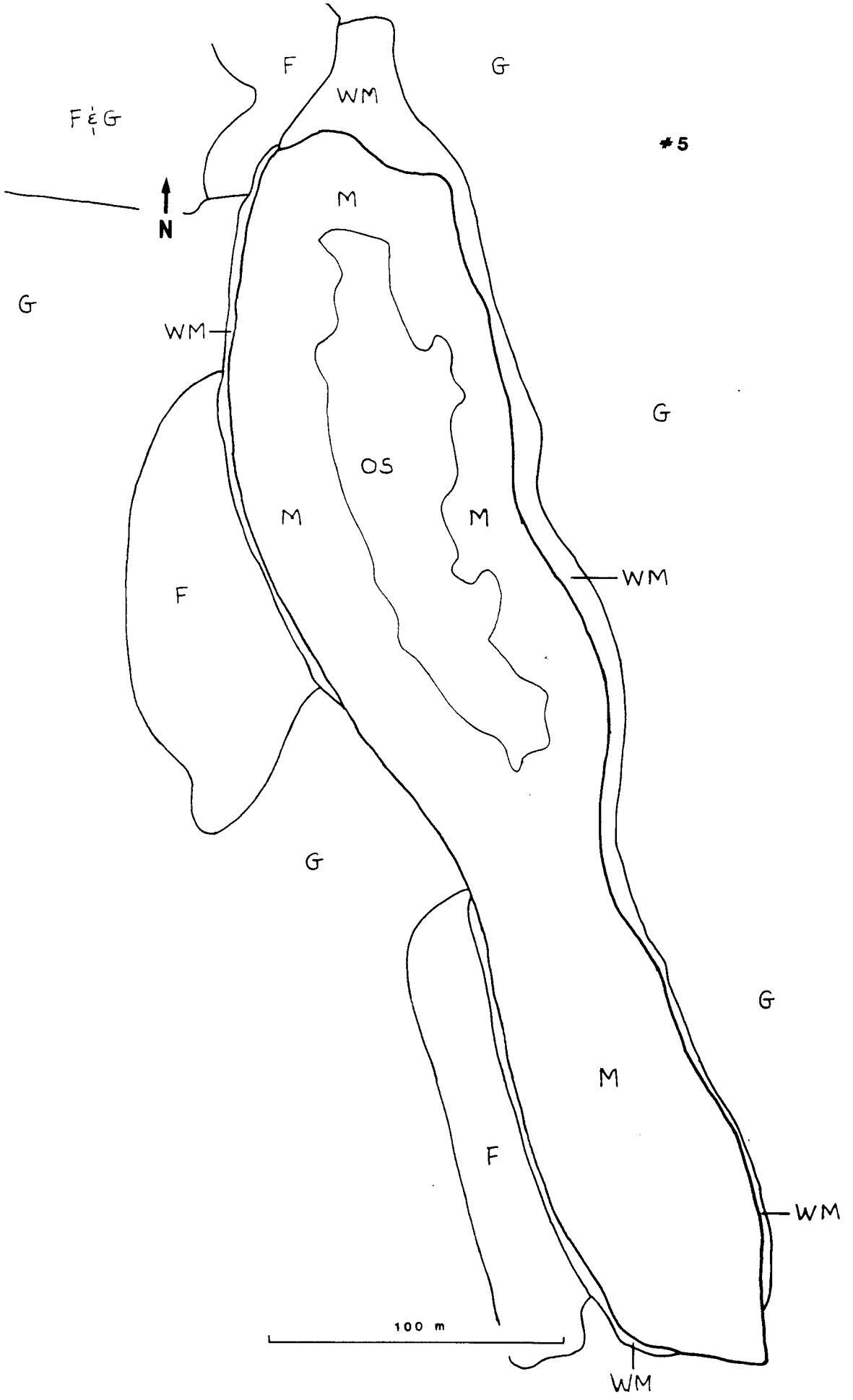
G
WM
M
OS2
F
G
M
OS1
F
WM
F
G
OS2
G
OS1
M
100 m
WM


#4
N
F
G
OS
OU
S
100 m


F
G
WM
F & G
#5
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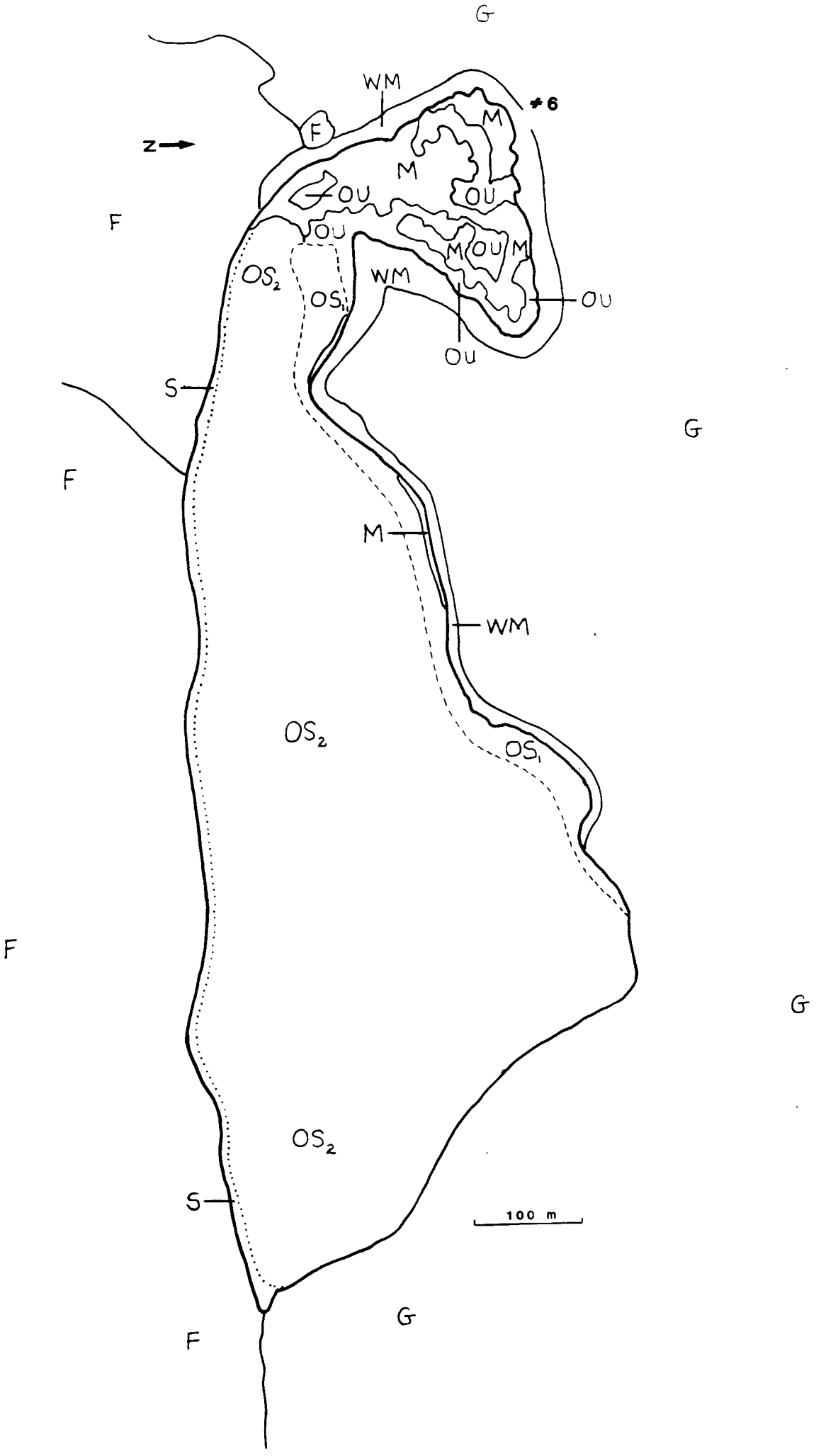
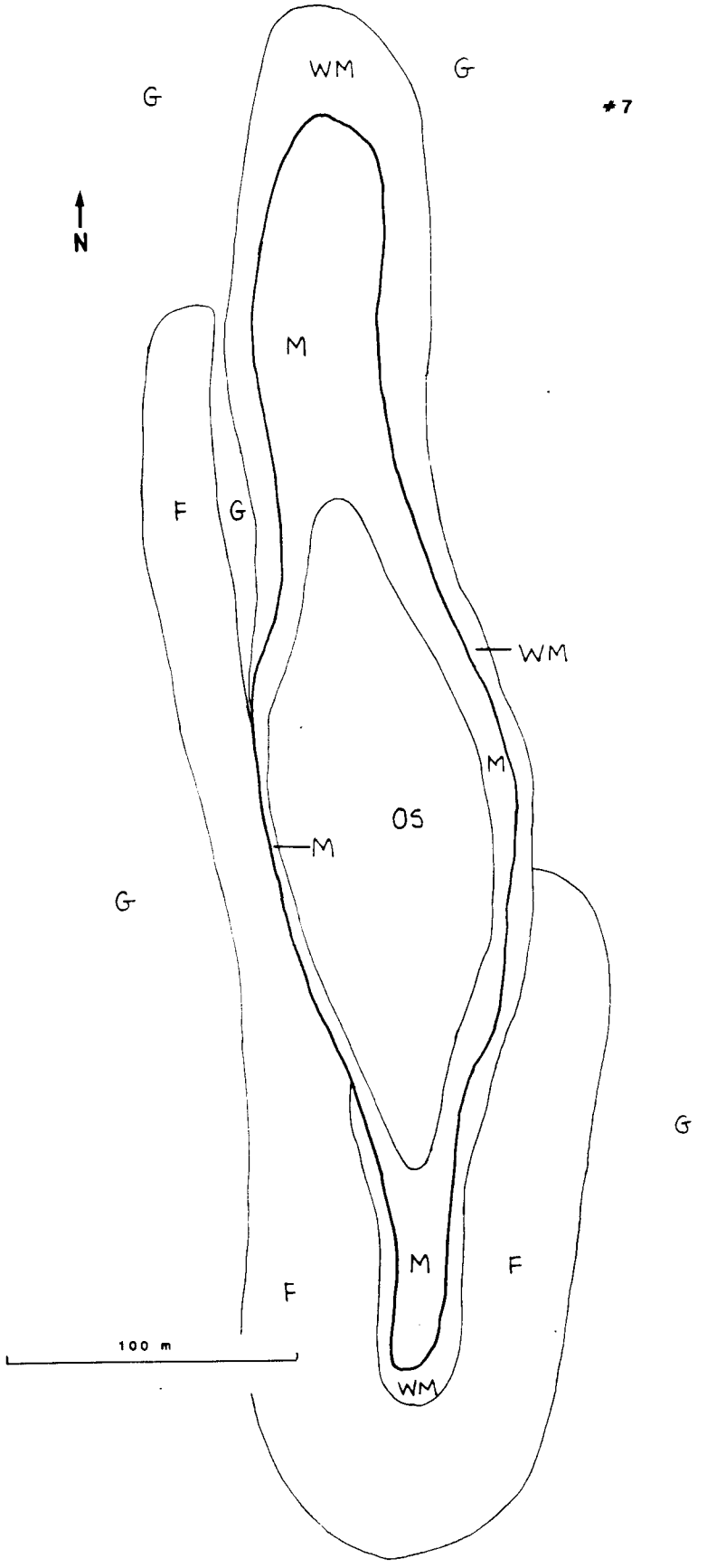
G
WM
G
OS
M
M
WM
F
G
G
M
F
WM
100 m
WM


G
WM
#6
F
z
M
M
OU
OU
F
OU
M
OU
M
OS2
WM
OS1
OU
OU
S
G
F
M
WM
OS2
OS1
F
G
OS2
S
100 m
G
F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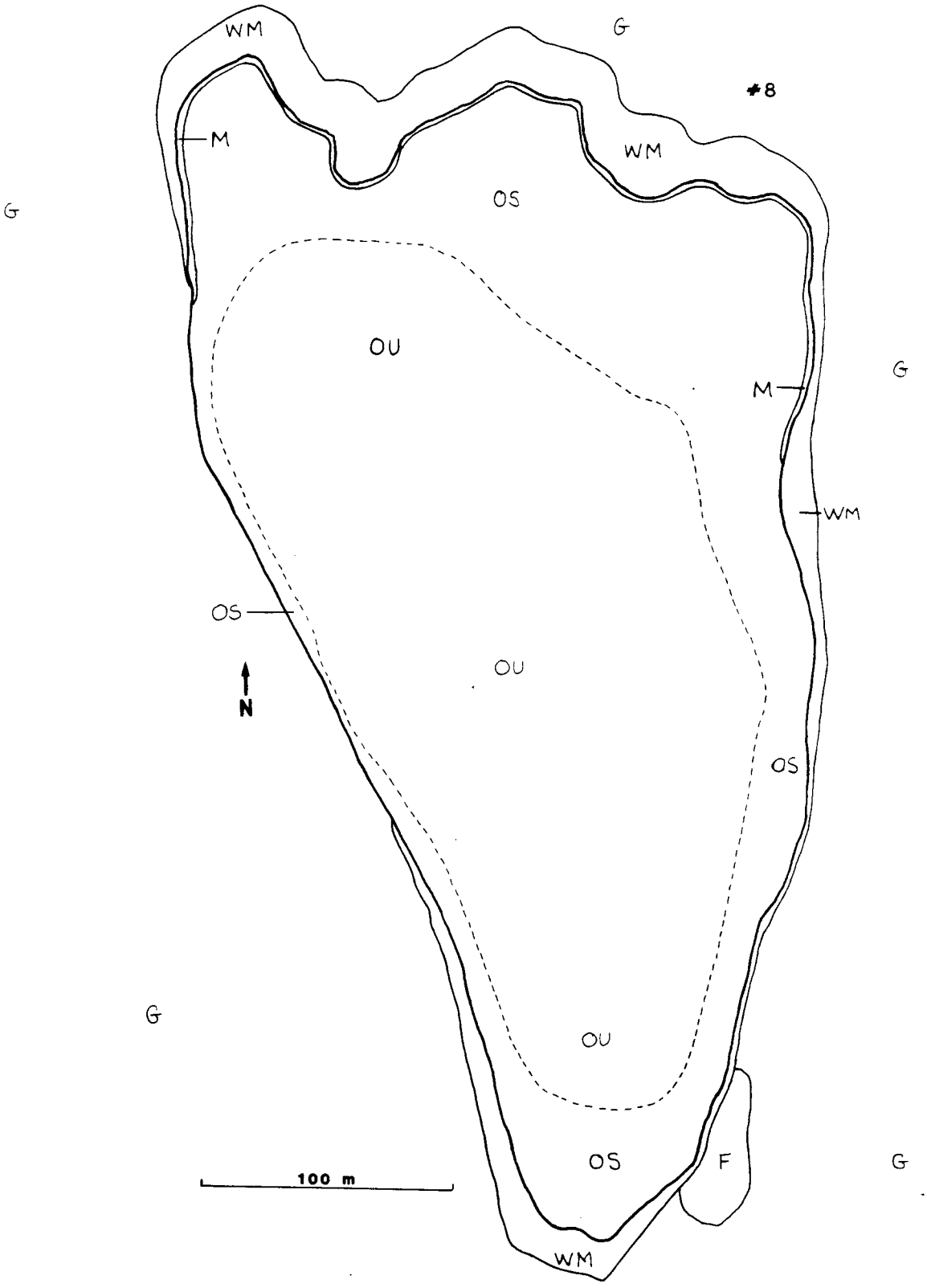
WM
G
G
M
F
G
WM
M
OS
M
G
G
M
F
F
100 m
WM


WM
G
#8
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WM
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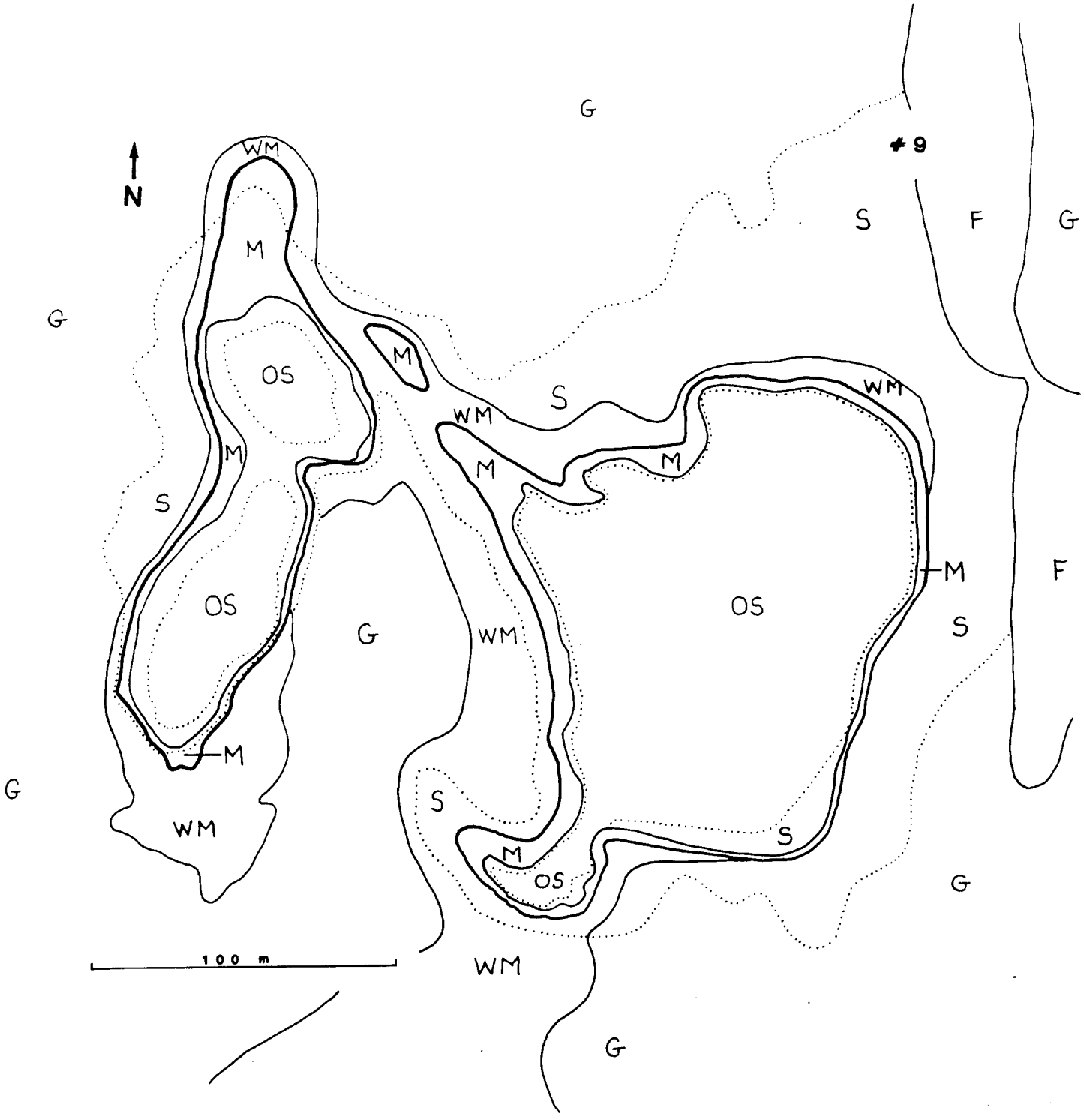
OU
G
M
WM
OS
OU
N
OS
G
OU
OS
F
G
100 m
WM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#9
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F
G
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M
OS
M
S
WM
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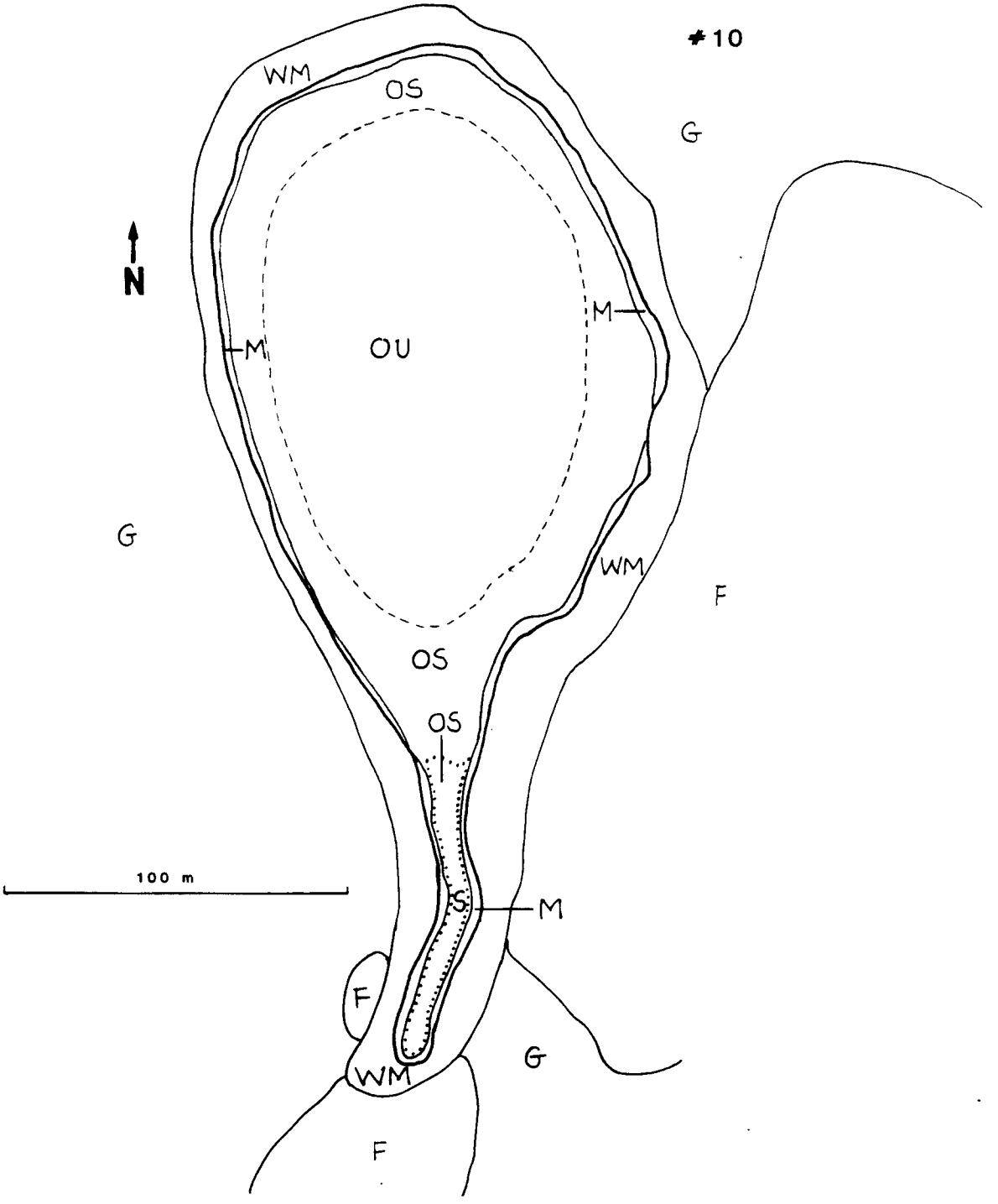
S
G
M
WM
S
M
OS
S
G
100 m
WM
G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WM
OS
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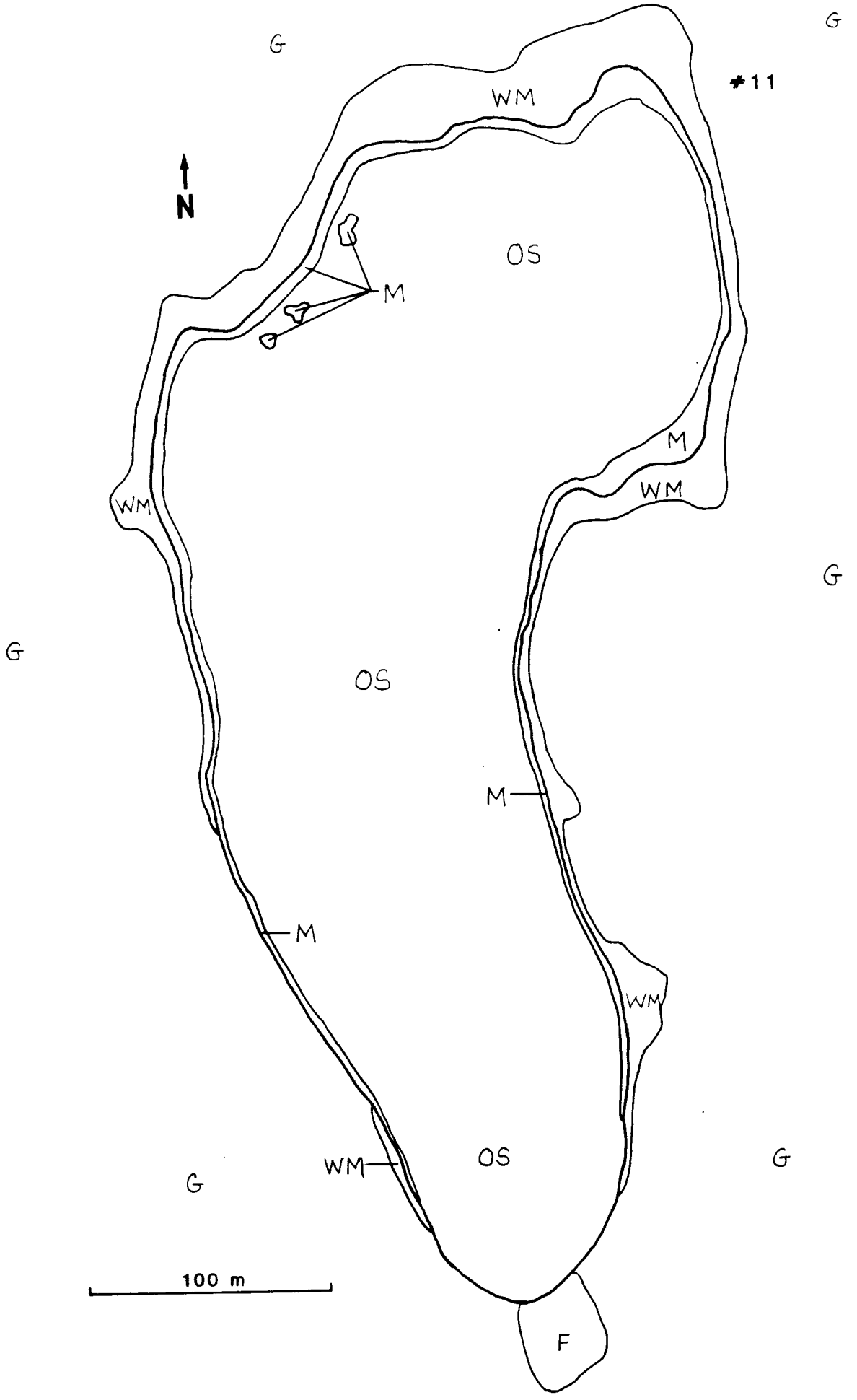
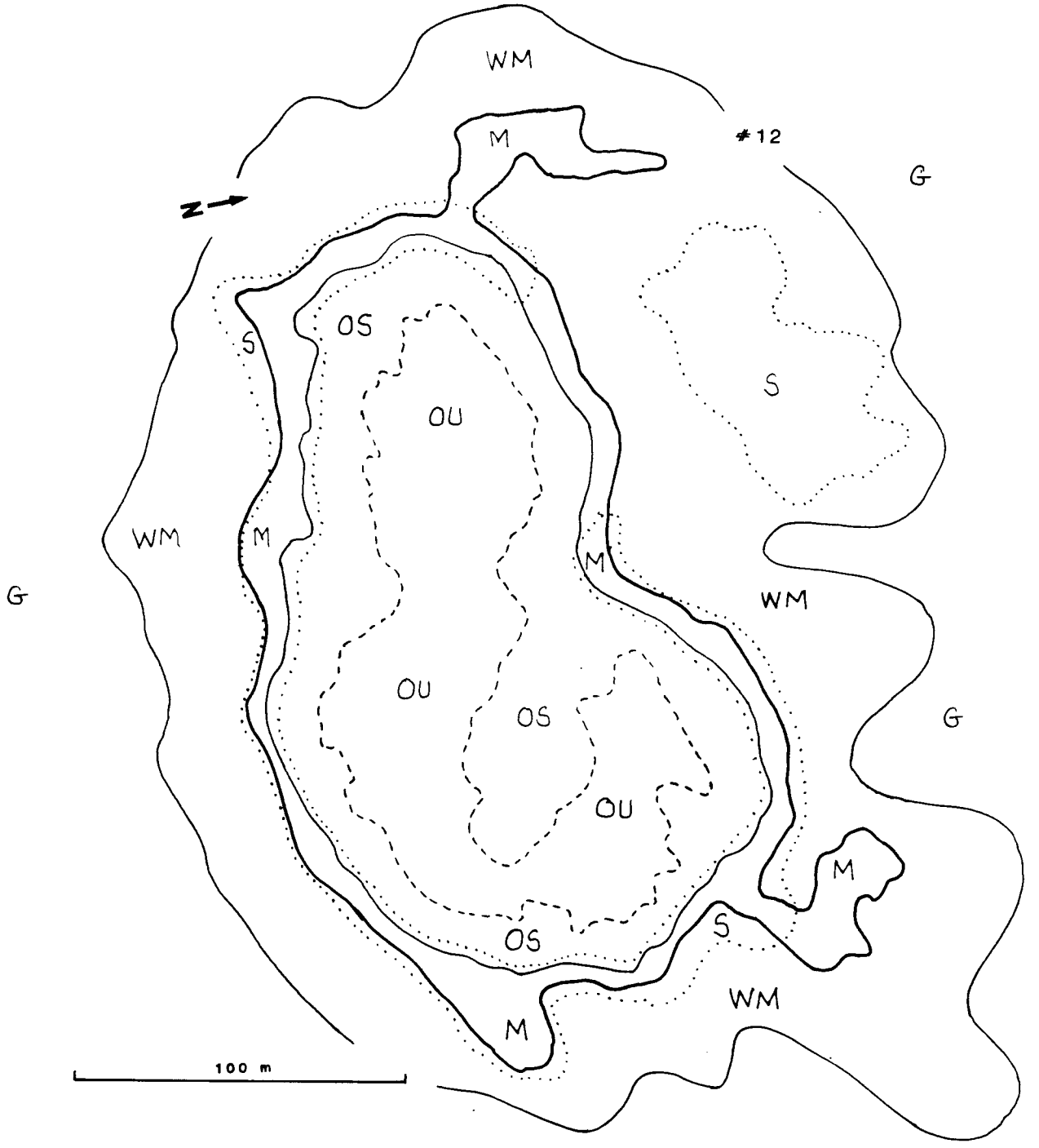
N
M
OU
M
G
WM
F
OS
OS
100 m
S
M
F
WM
G
F


G
G
#11
WM
N
OS
M
M
WM
WM
G
G
OS
M
M
WM
WM
OS
G
G
100 m
F


WM
M
#12
G
N
S
OS
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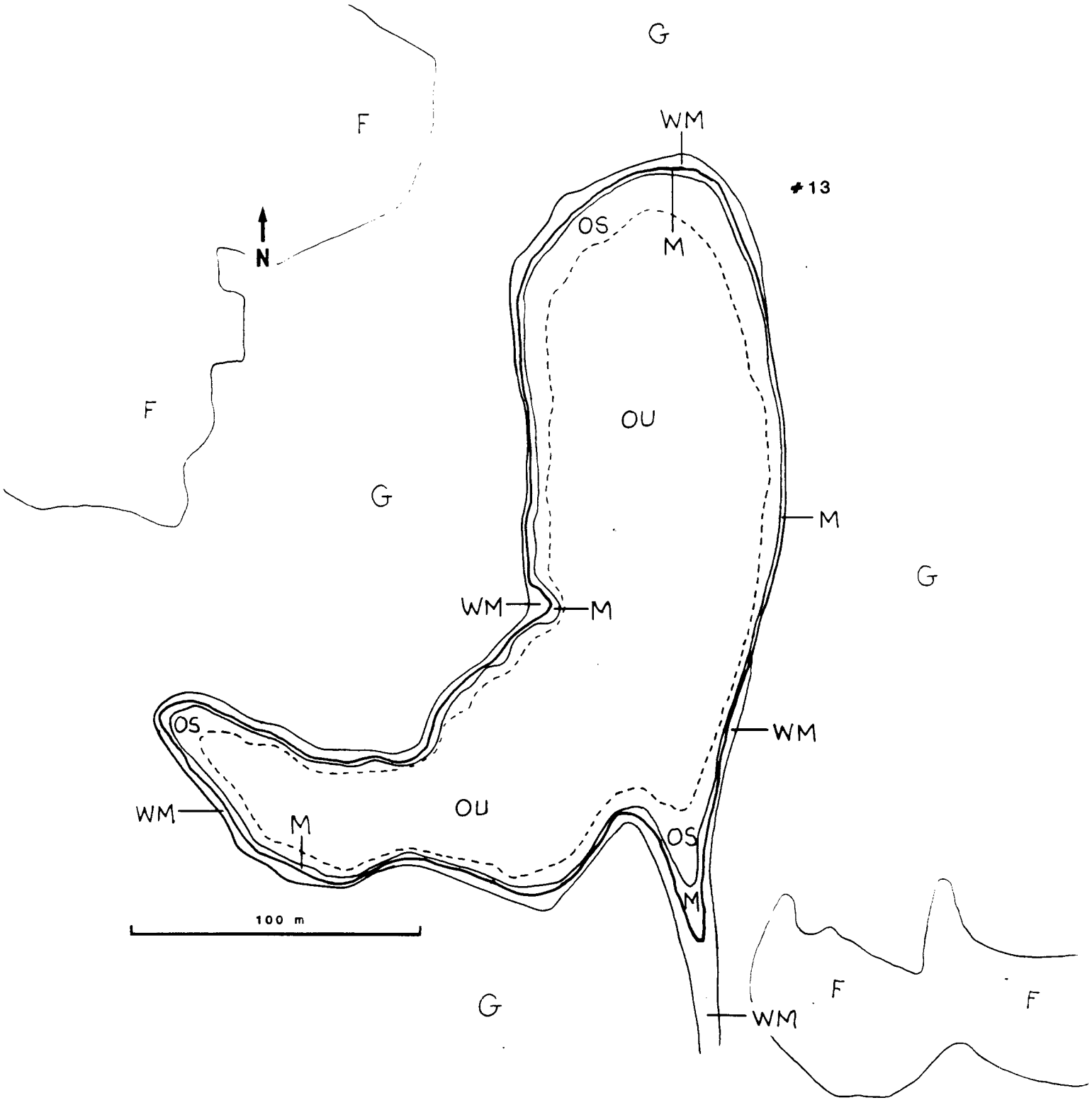
OU
WM
M
M
G
WM
OU
OS
G
OU
M
OS
S
WM
M
100 m


G
F
WM
#13
OS
M
N
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OS
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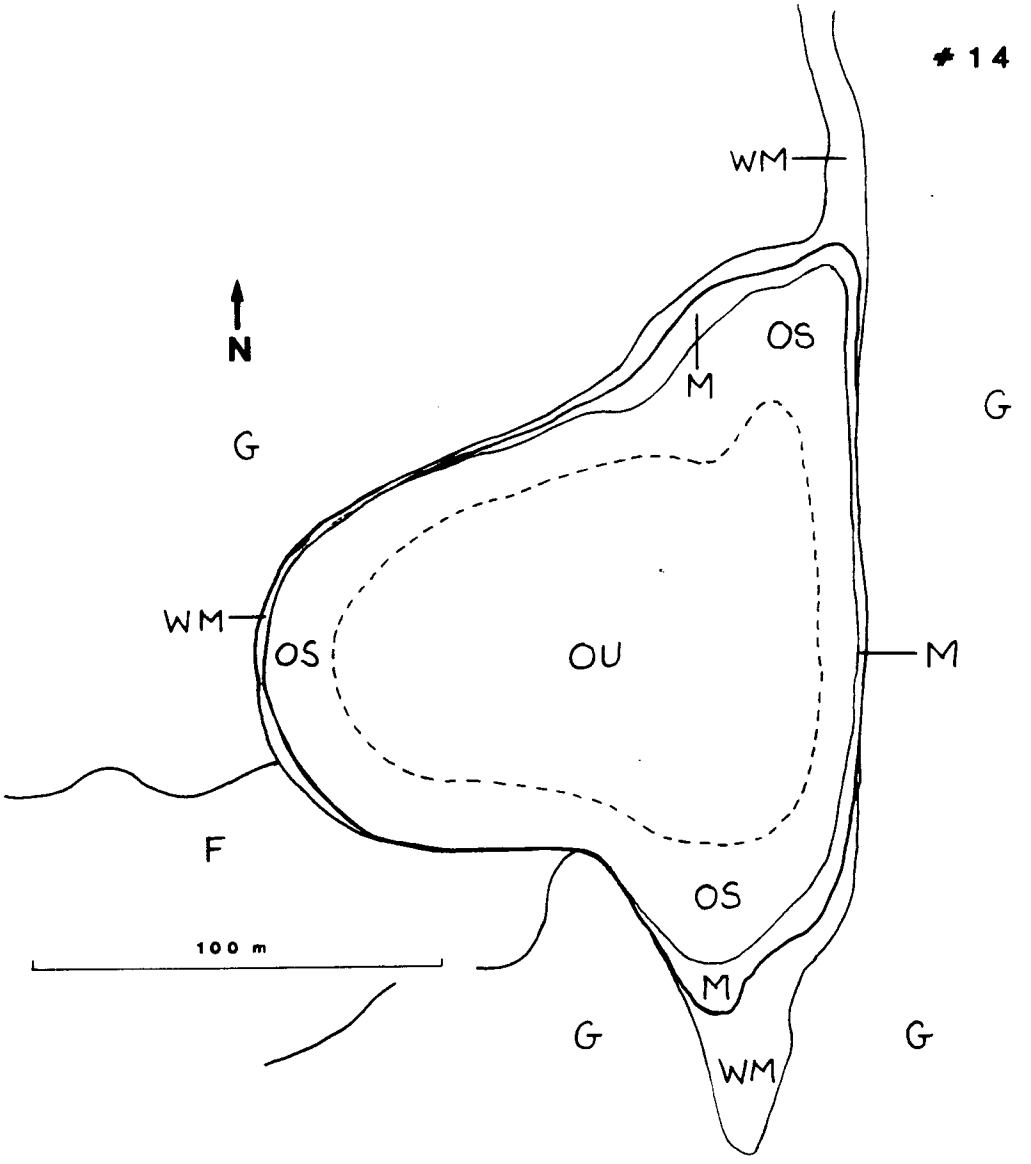
G
F
F
WM


#14
WM
N
OS
M
G
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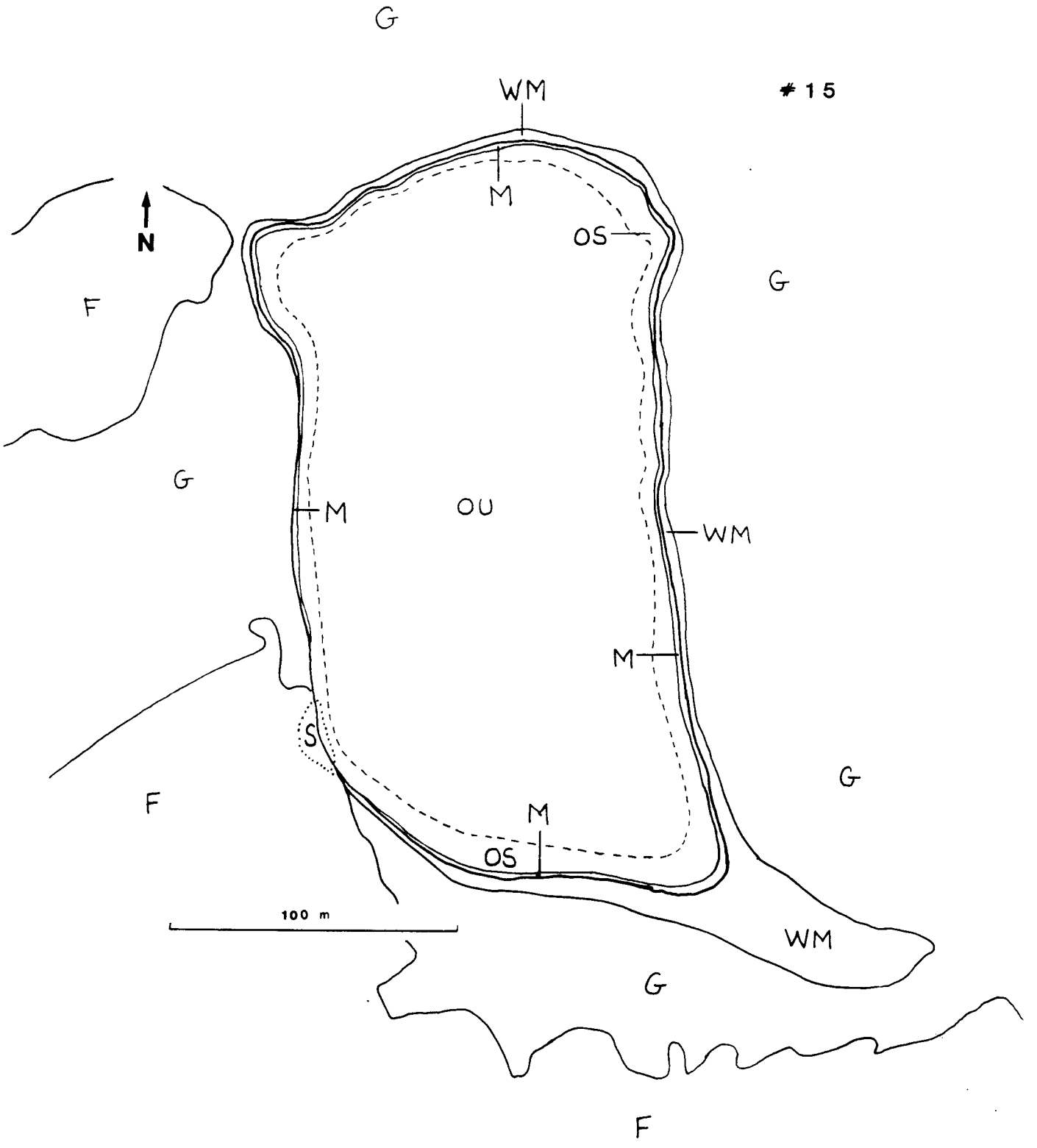
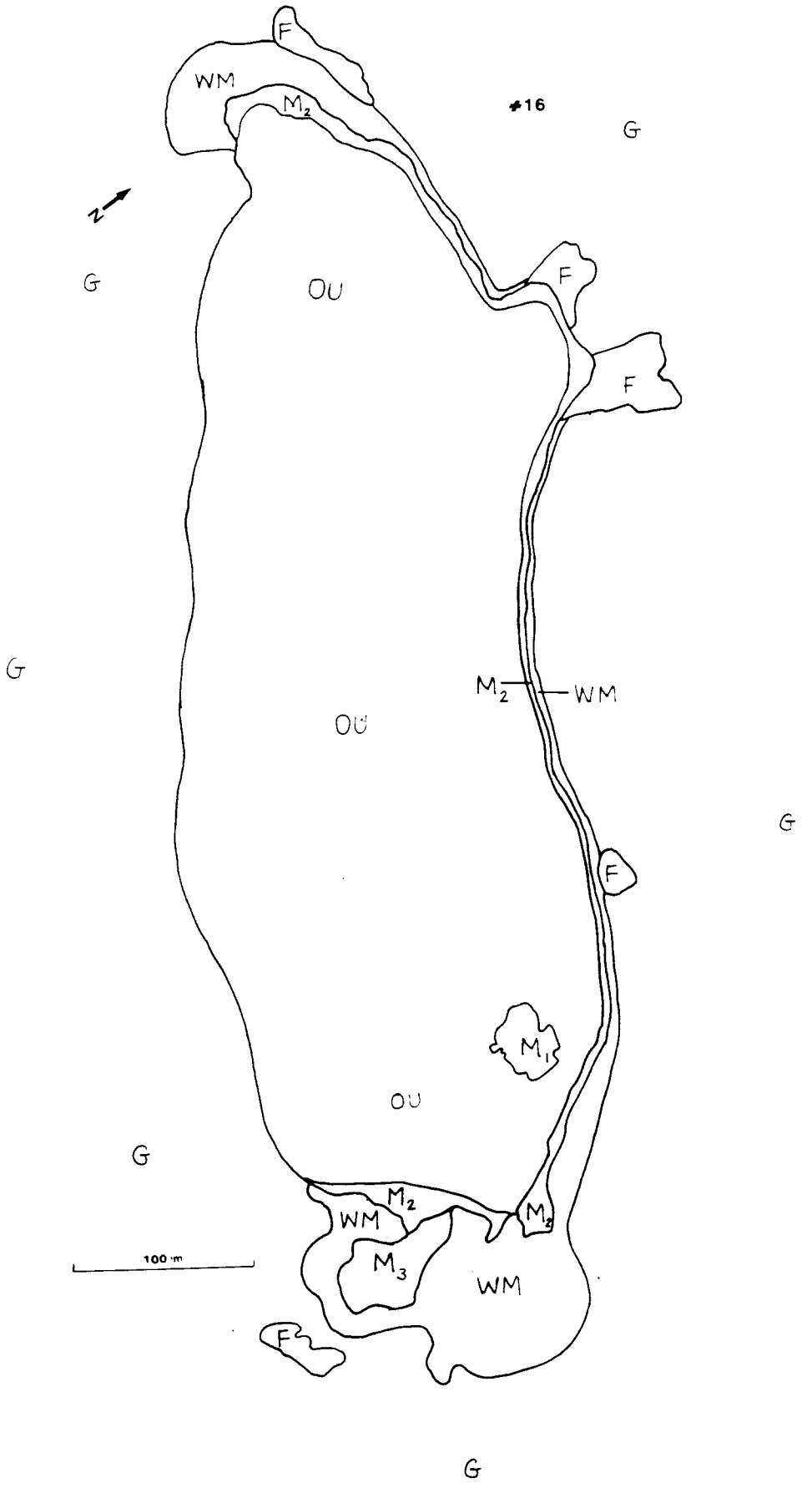
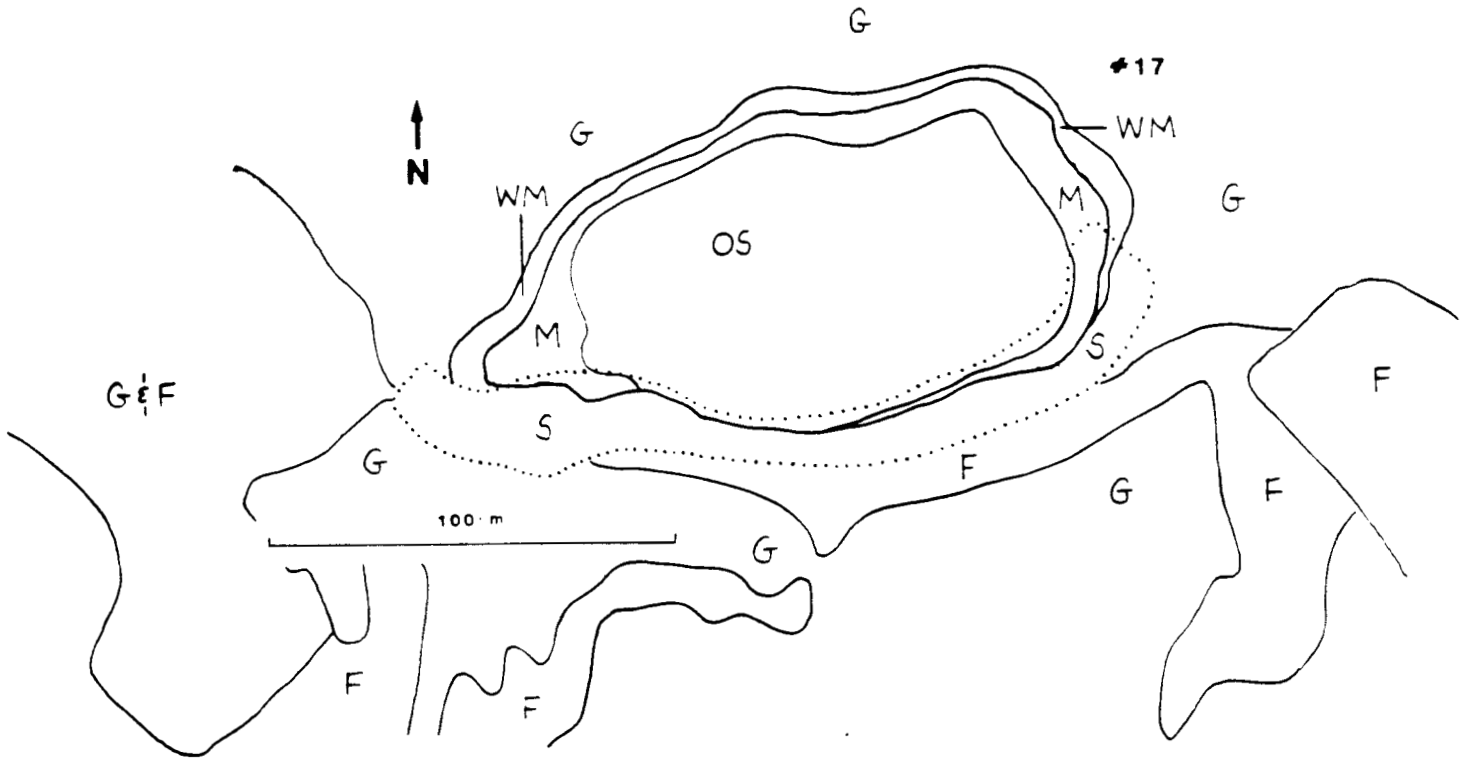
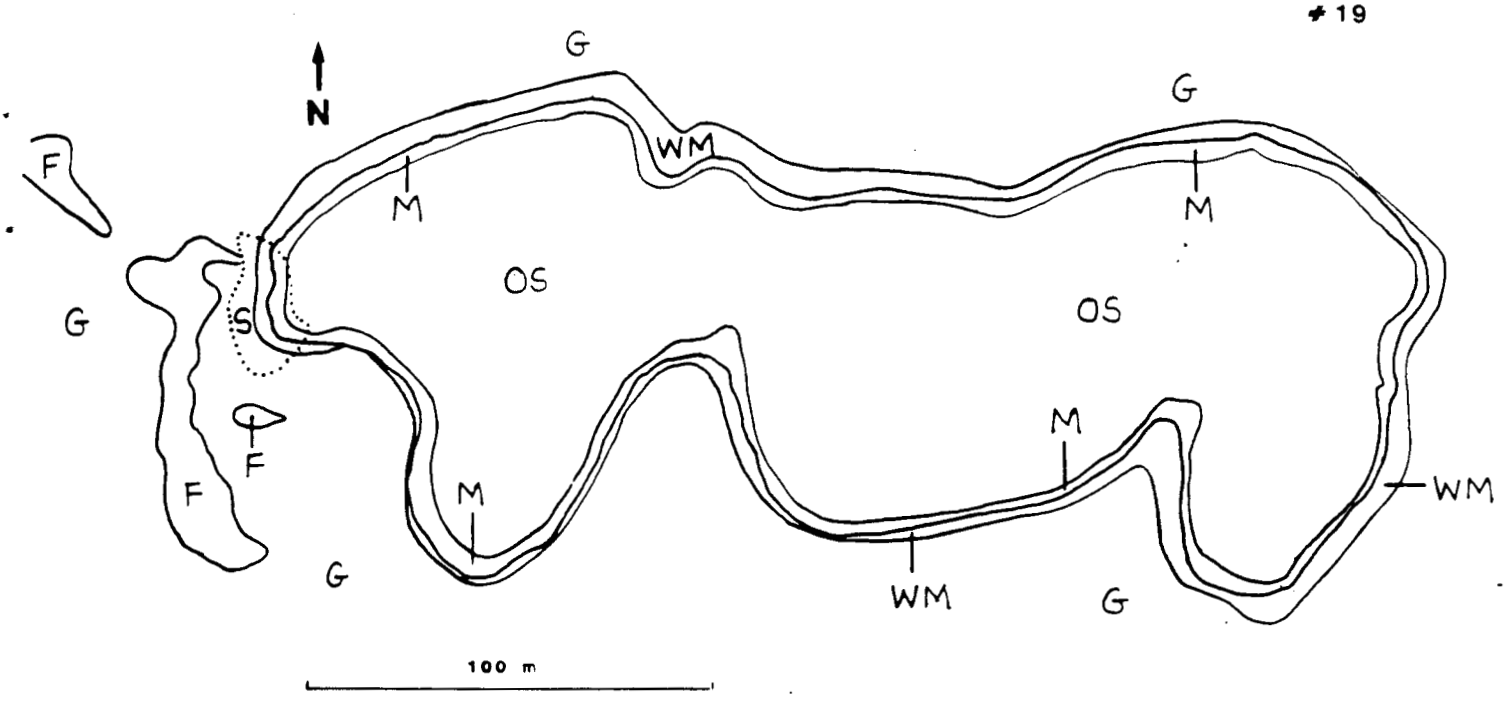
WM
OS
OU
M
F
OS
100 m
M
G
G
WM


G
WM
#15
M
N
OS
G
F
G
M
OU
WM
M
S
G
F
M
OS
100 m
WM
G
F


#16
N
F
WM
M_2
G
OU
F
F
G
M_2
WM
OU
G
F
M_1
OU
G
M_2
WM
M_2
M_3
WM
100 m
F
G


#17
N
G
WM
M
OS
S
G & F
F
100 m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N
G
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OS
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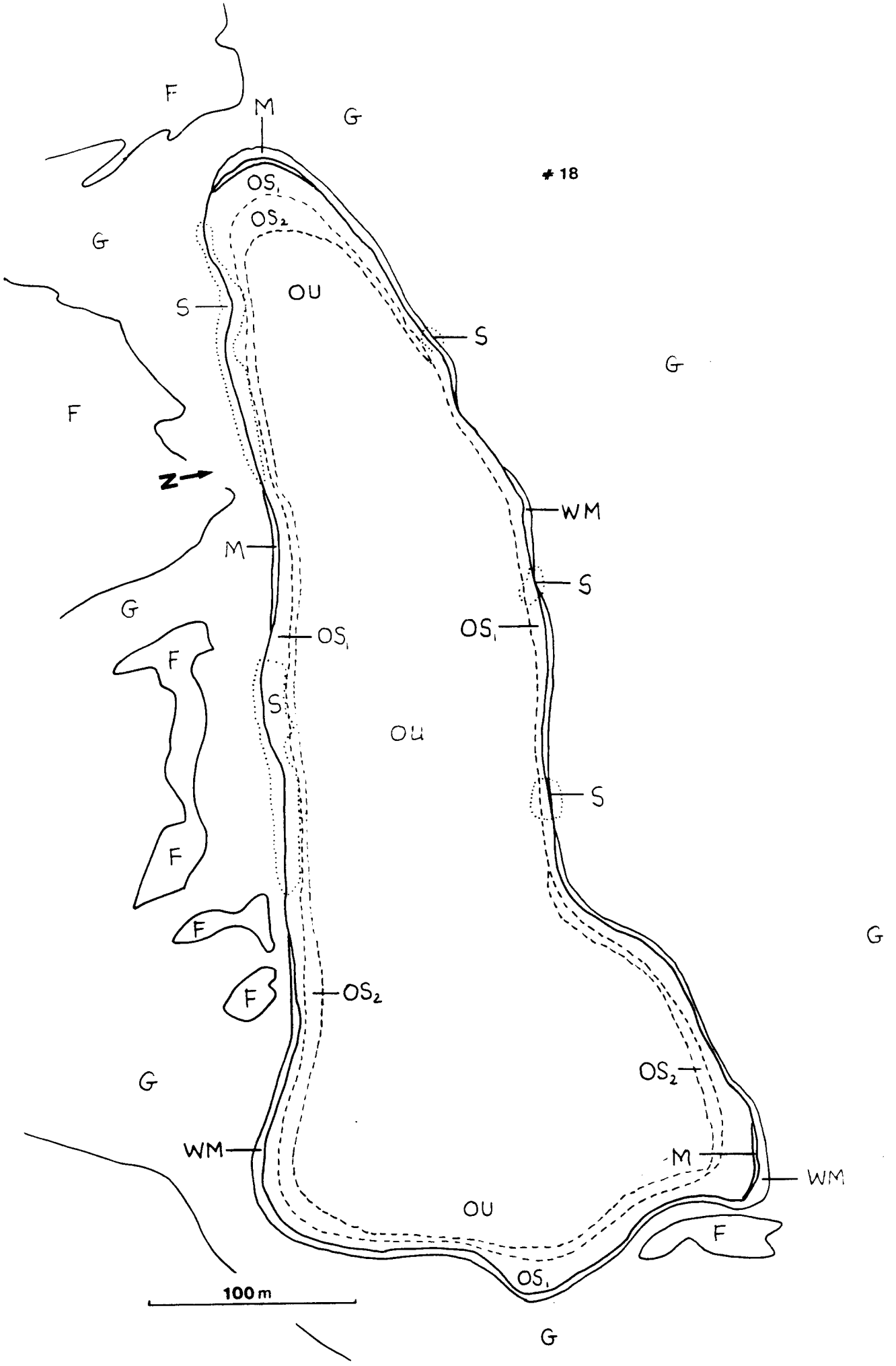
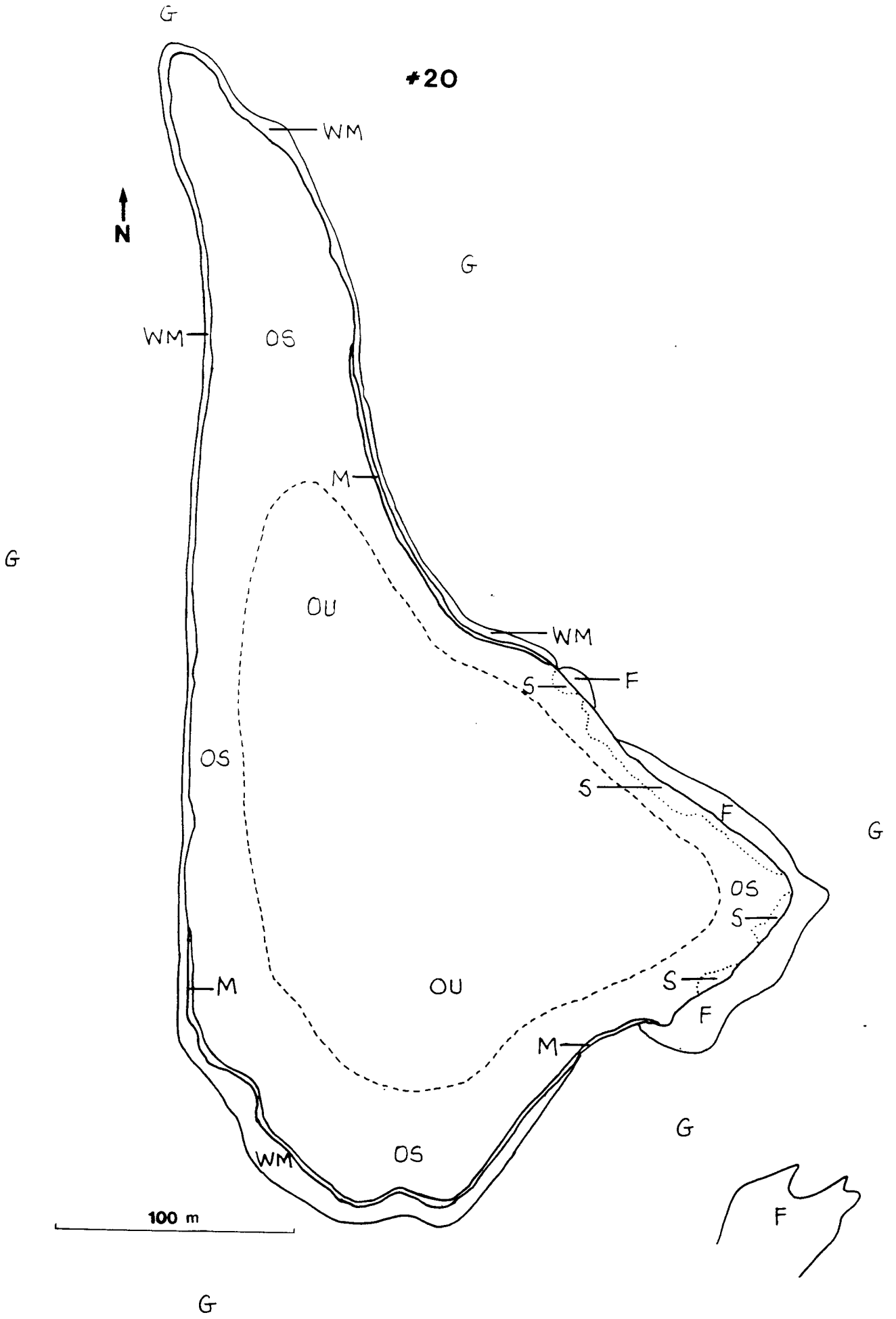
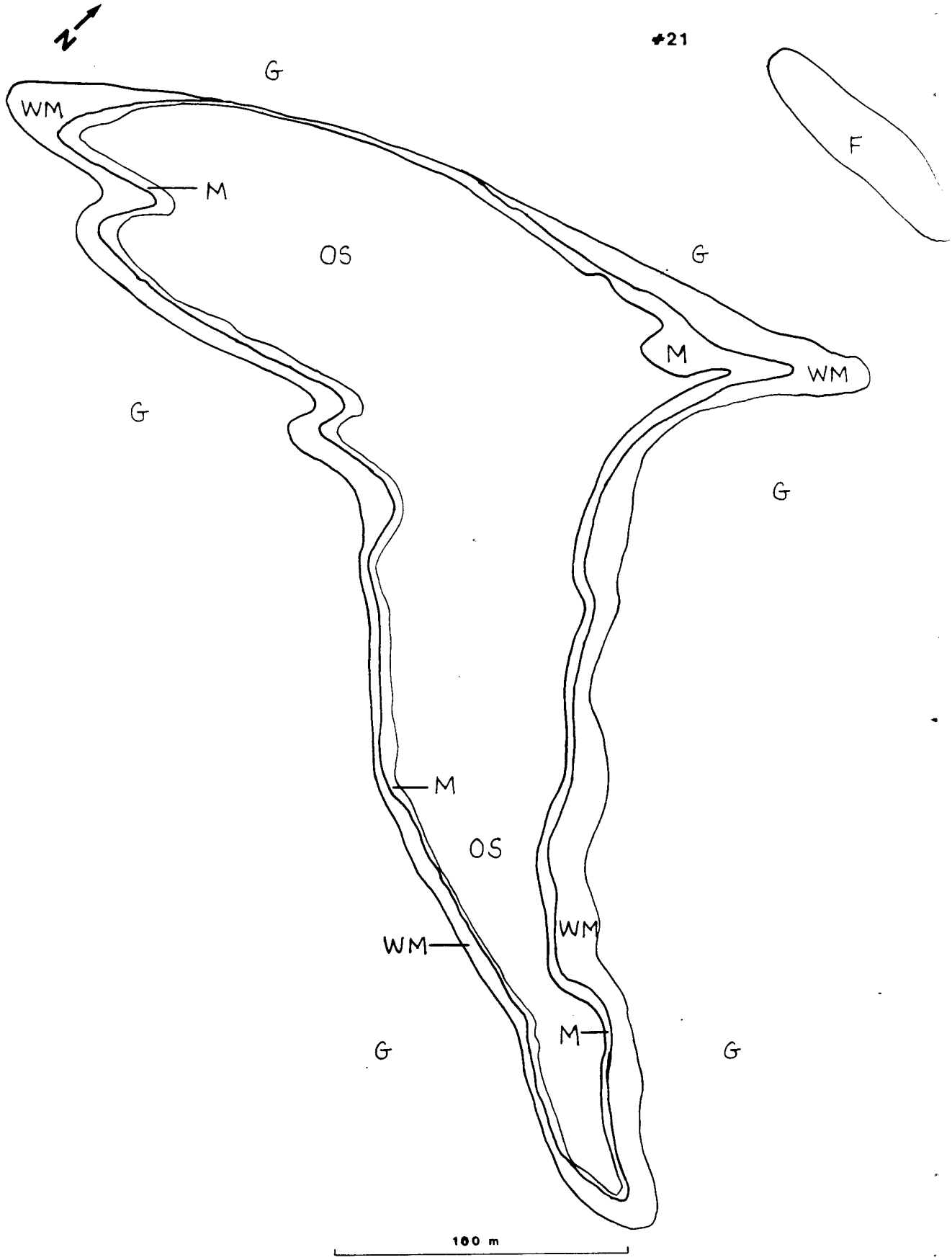
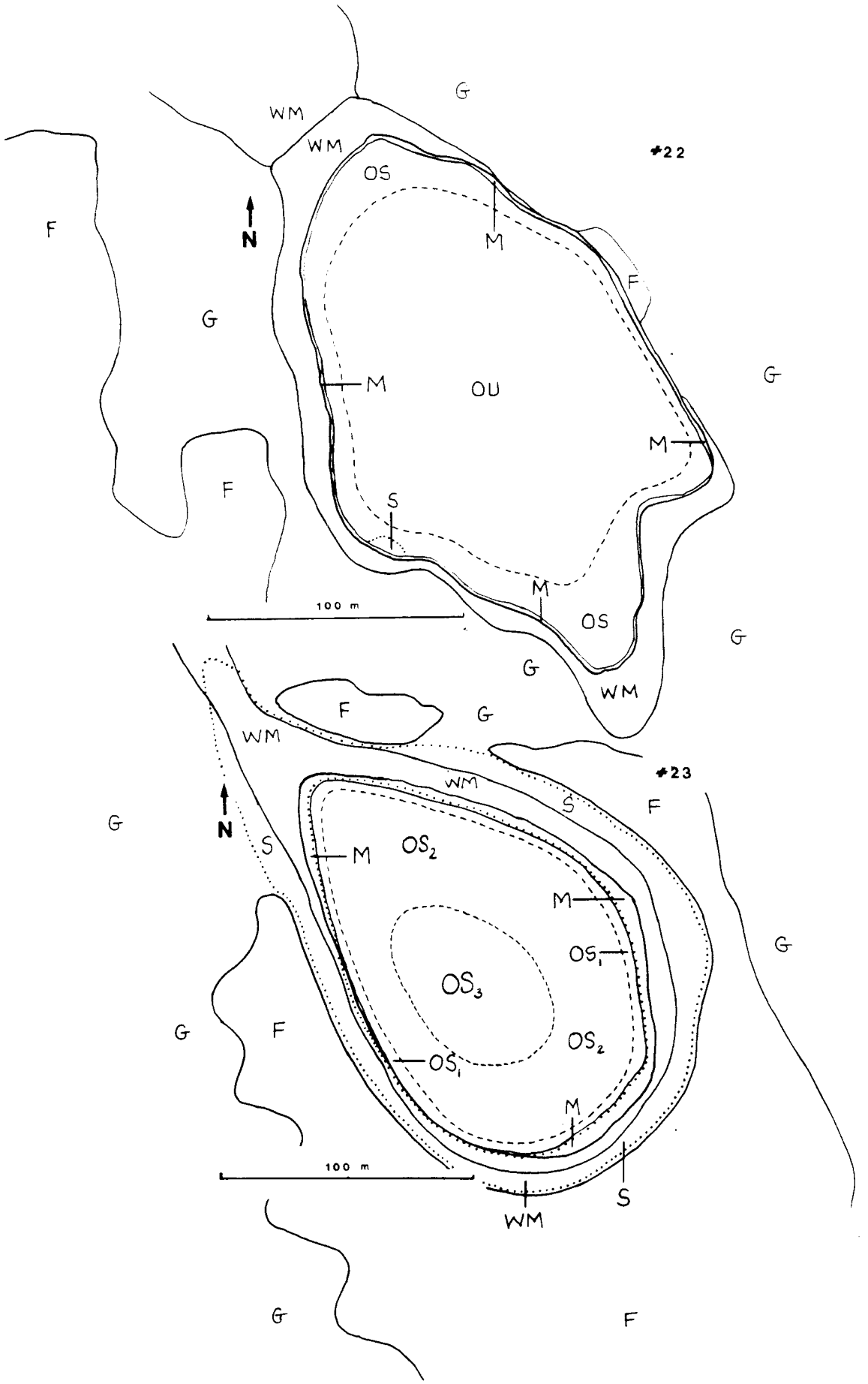
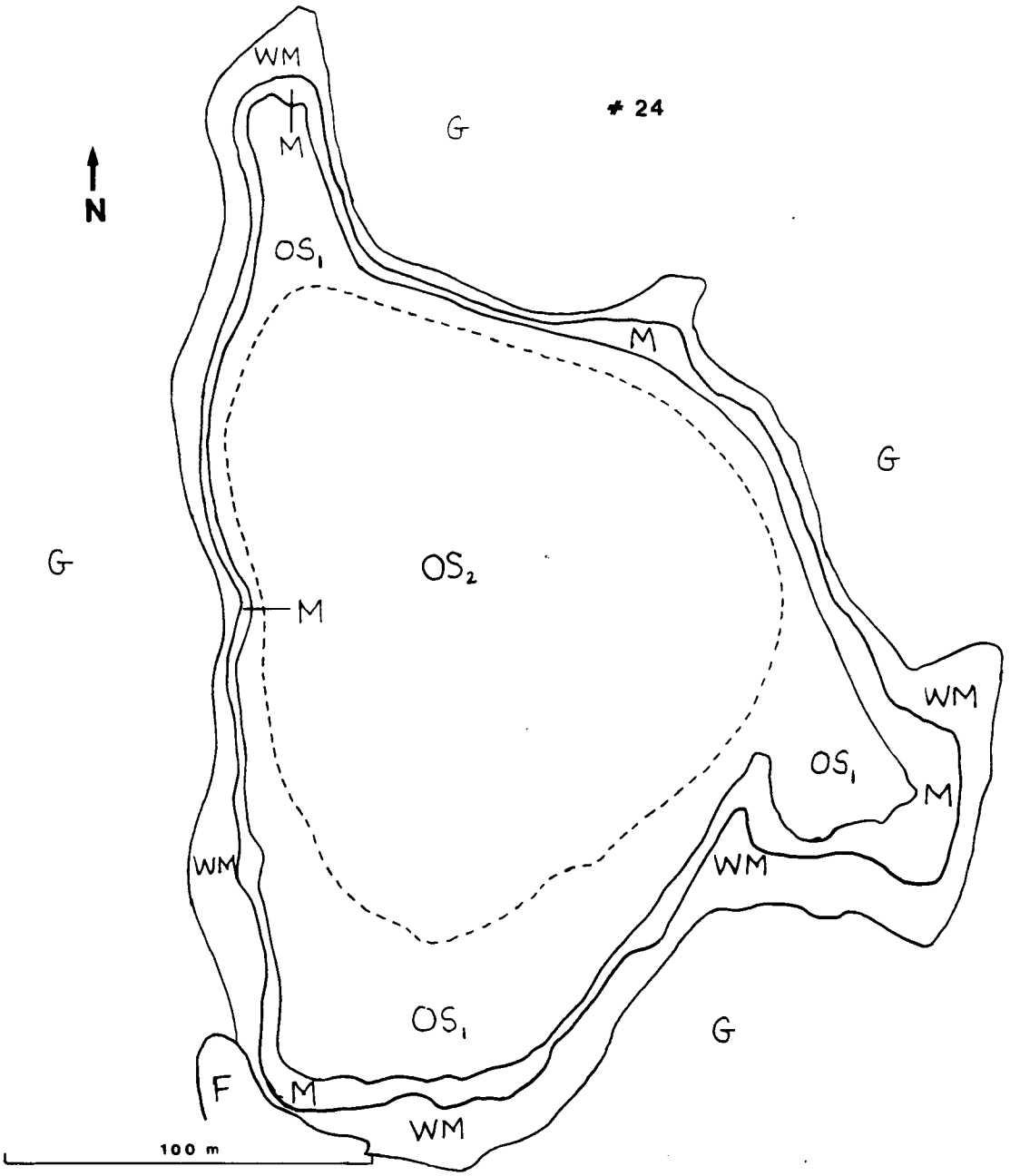
F
100 m

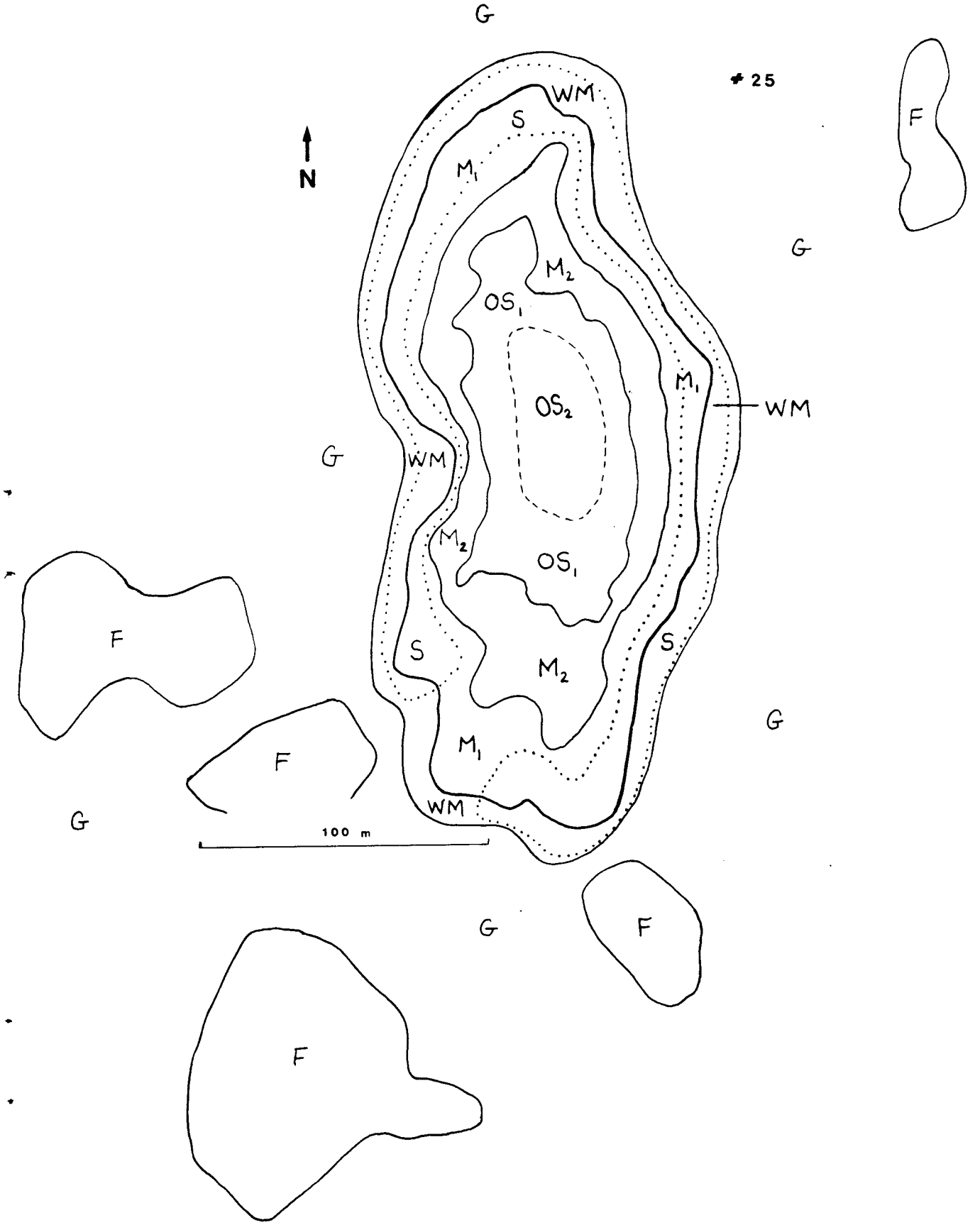

F
M
G
18
OS1
OS2
G
OU
S
S
G
F
N
WM
M
S
G
OS1
OS1
F
S
OU
S
F
F
G
F
OS2
G
OS2
WM
M
WM
OU
F
OS1
100 m
G


#20
N
G
WM
OS
M
OU
S
F
100 m


N
#21
G
WM
M
OS
G
M
WM
G
G
F
M
OS
WM
WM
M
G
G
100 m


#22
N
G
WM
WM
OS
M
F
G
M
OU
M
F
S
M
OS
100 m
G
G
WM
F
G
WM
#23
WM
S
F
N
S
M
OS2
M
OS1
OS3
G
F
OS2
OS1
M
100 m
S
WM
G
F


WM
M
G
24
N
OS1
M
G
G
OS2
M
WM
OS1
M
WM
WM
OS1
G
F
M
WM
100 m


G
25
F
WM
S
N
M1
G
M2
OS1
OS2
M1
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G
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M2
OS1
F
S
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M1
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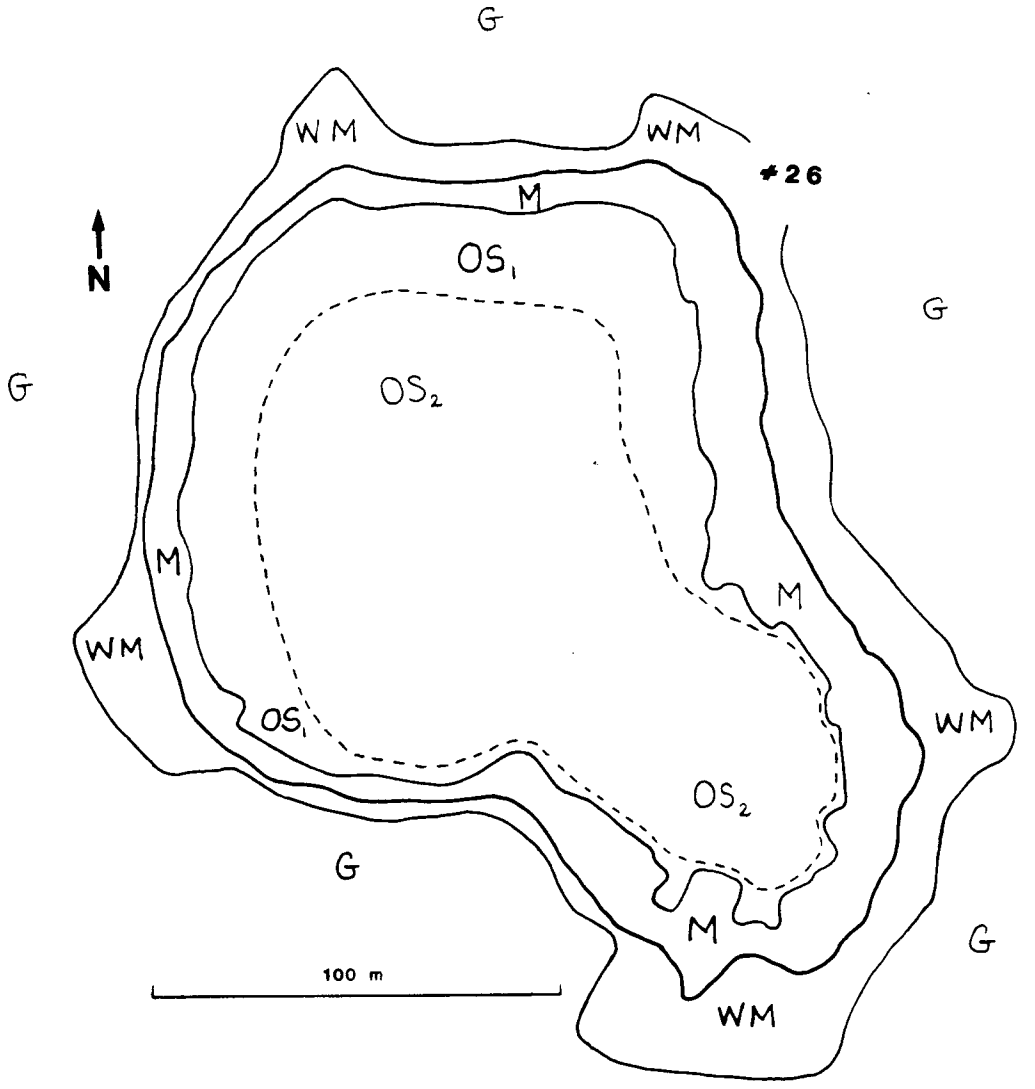
100 m
G
F
F


G
WM
WM
#26
M
N
OS1
G
G
OS2
M
M
WM
OS1
WM
OS2
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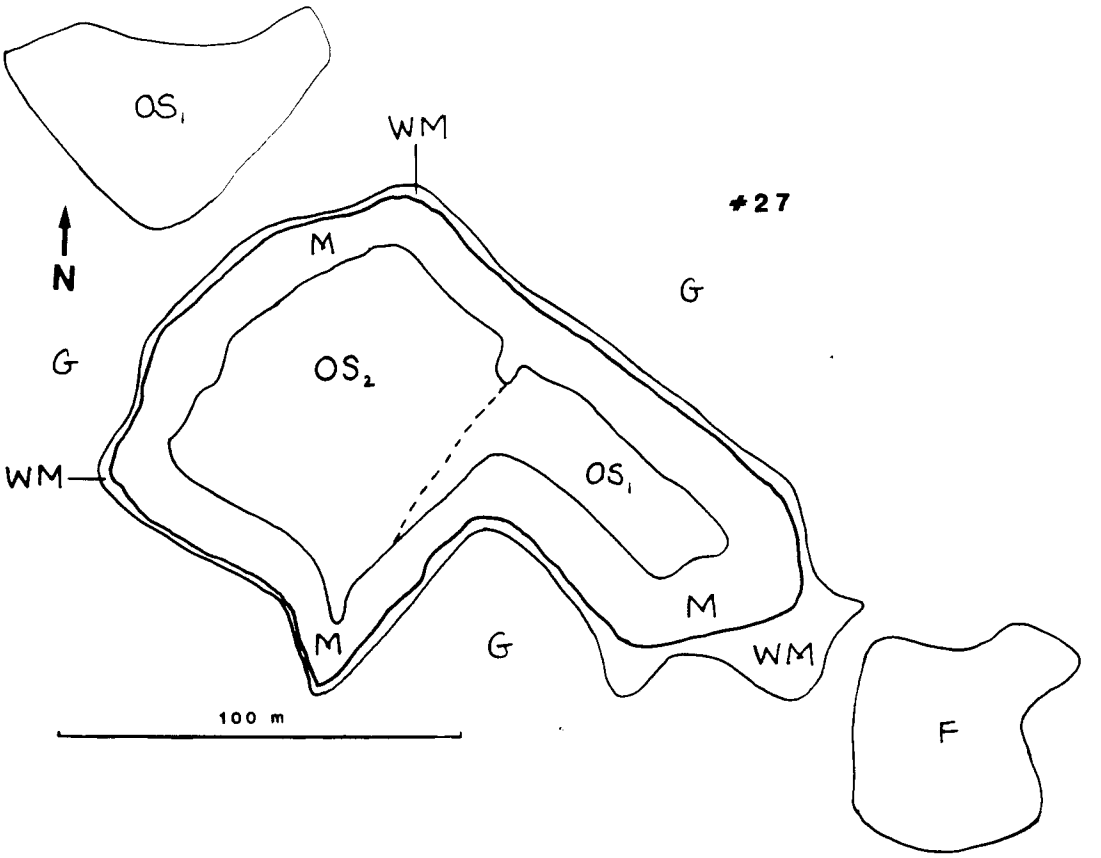
M
G
100 m
WM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WM
#27
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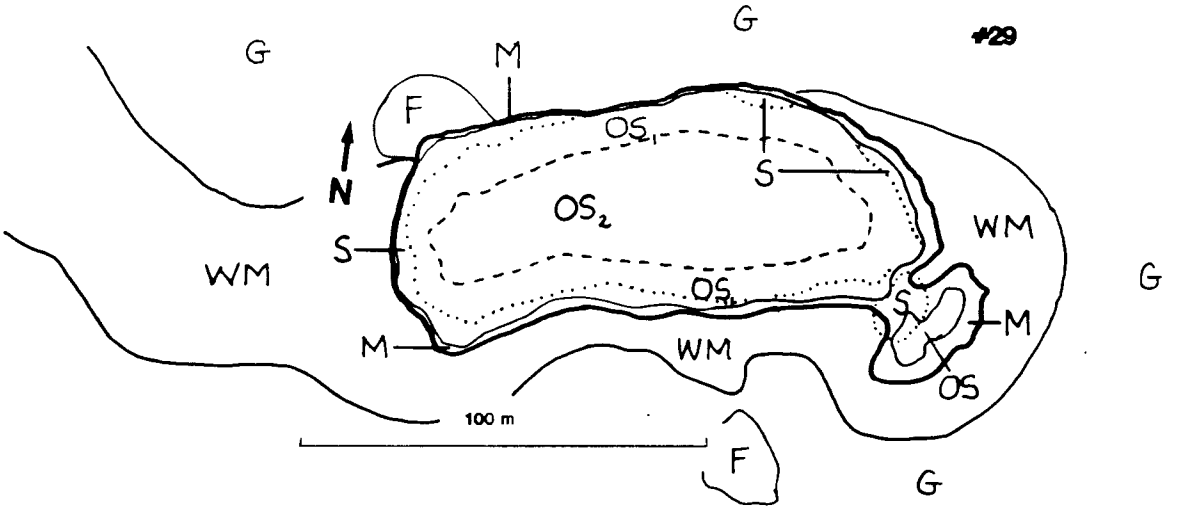
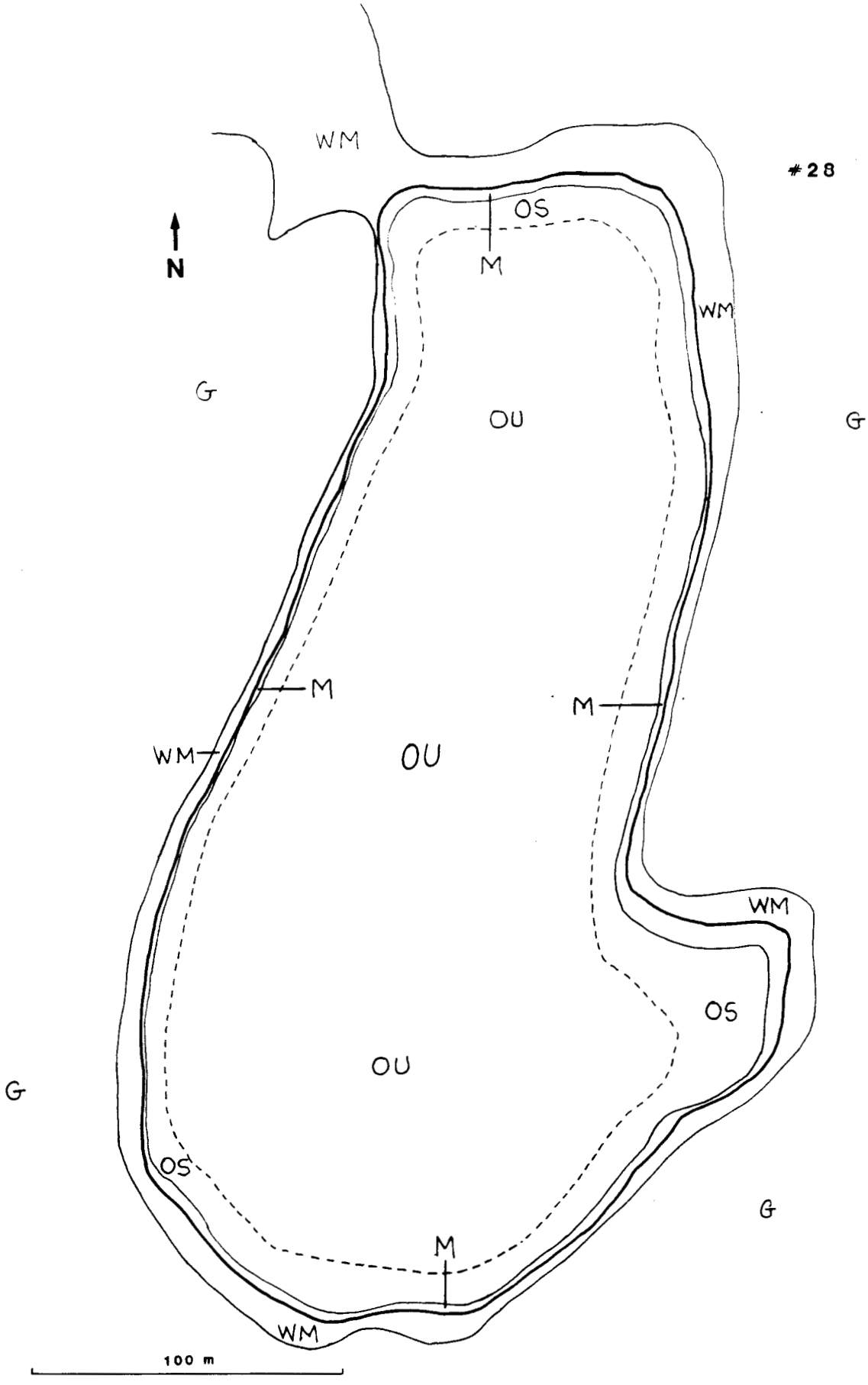
M
G
G
OS2
WM
OS1
M
M
G
WM
100 m
F


G
G
#29
M
F
OS1
N
S
OS2
WM
S
WM
OS2
G
S
M
M
WM
OS
100 m
F
G


#28
N
WM
OS
M
WM
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OU
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OS
OU
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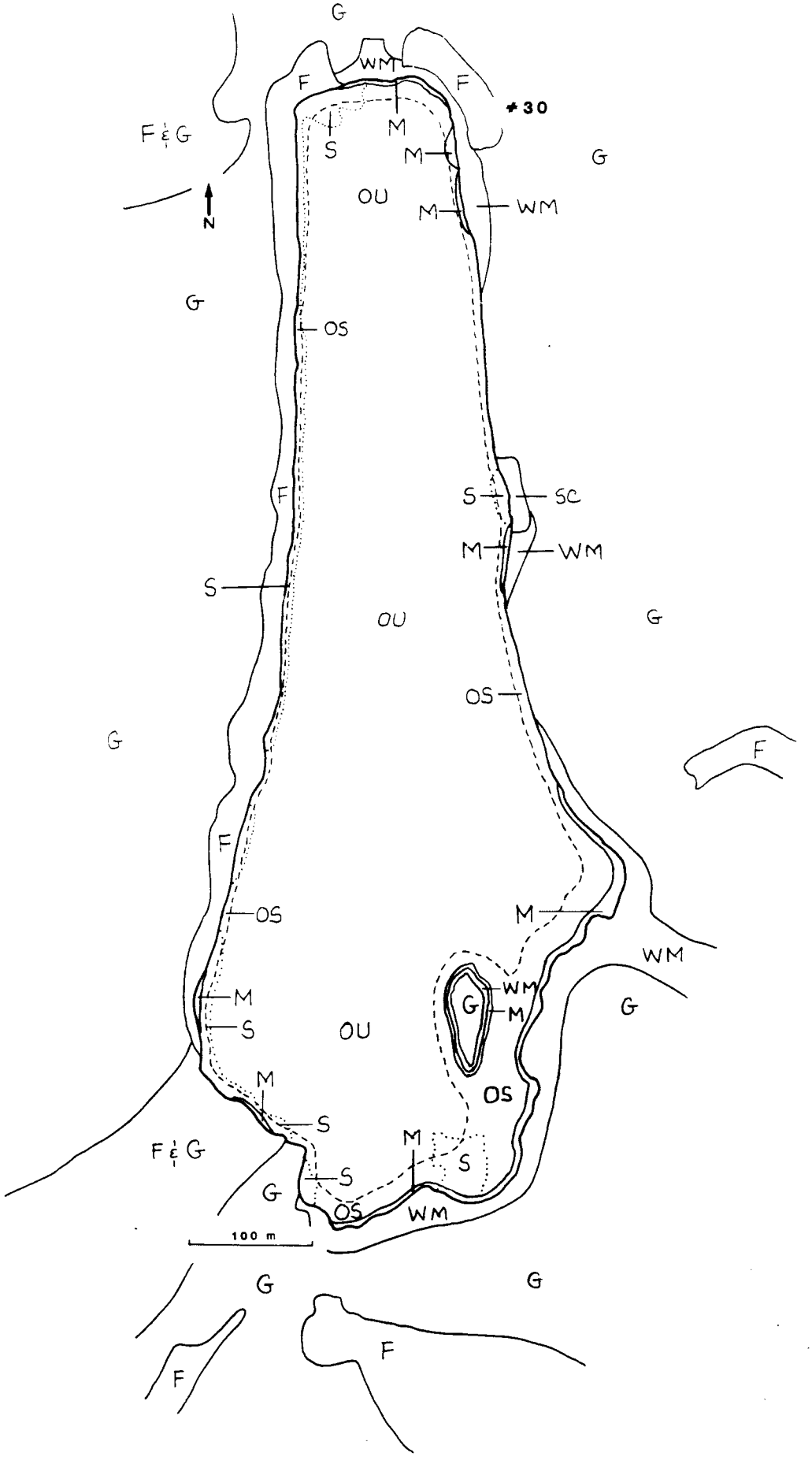
WM
100 m


G
WM
F
F
#30
F & G
S
M
G
M
OU
M
WM
N
G
OS
F
S
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WM
S
OU
G
OS
G
F
F
OS
M
WM
M
WM
G
G
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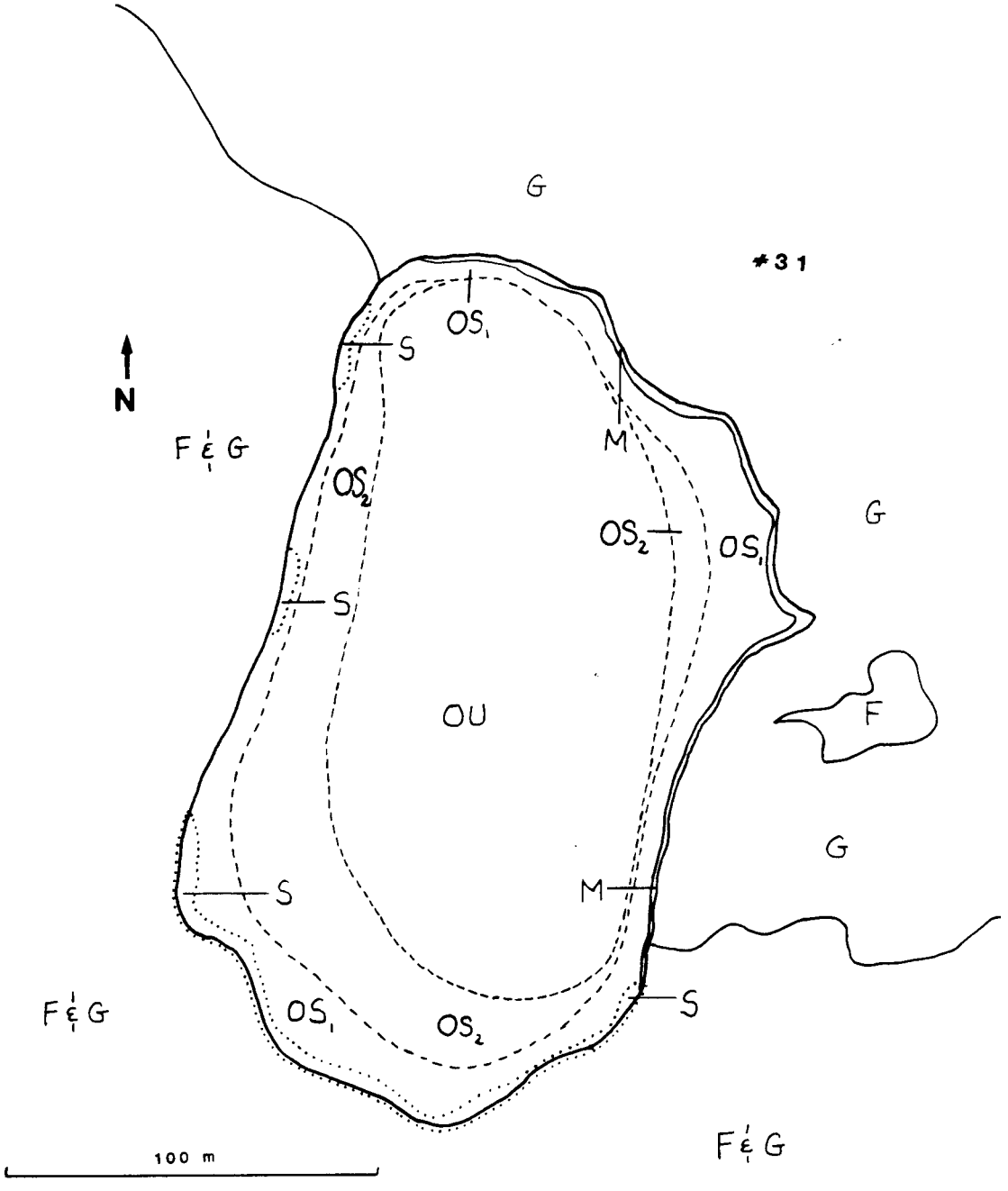
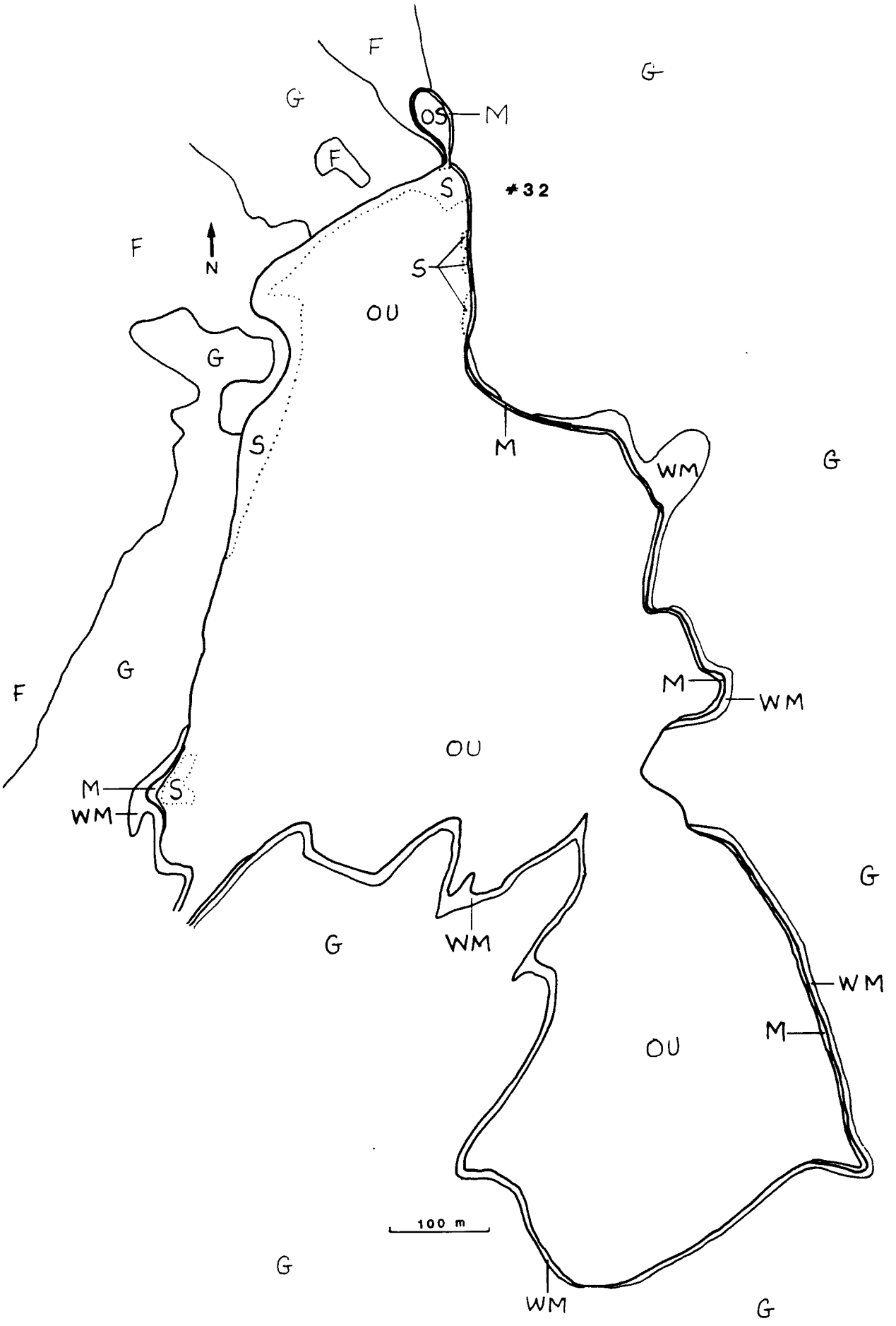
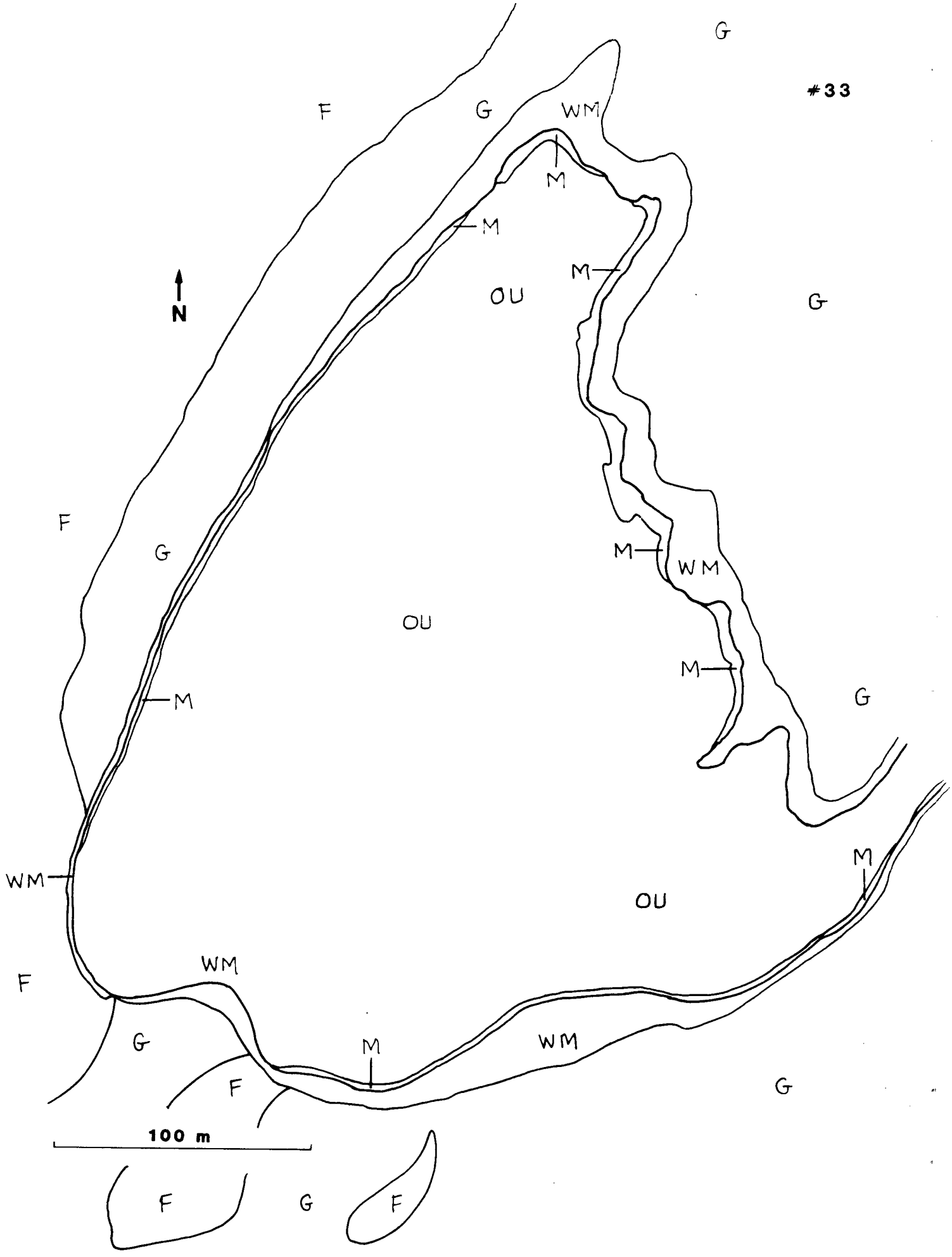
S
OU
OS
M
S
M
S
F & G
S
G
OS
WM
100 m
G
G
F
F


G
#31
N
OS1
S
M
F & G
OS2
G
OS2
OS1
S
OU
F
G
S
M
F & G
OS1
OS2
S
F & G
100 m


F
G
G
OS
M
F
S
#32
F
N
S
OU
G
S
M
WM
G
G
F
M
WM
OU
M
S
WM
G
G
WM
WM
M
OU
100 m
G
WM
G


#33
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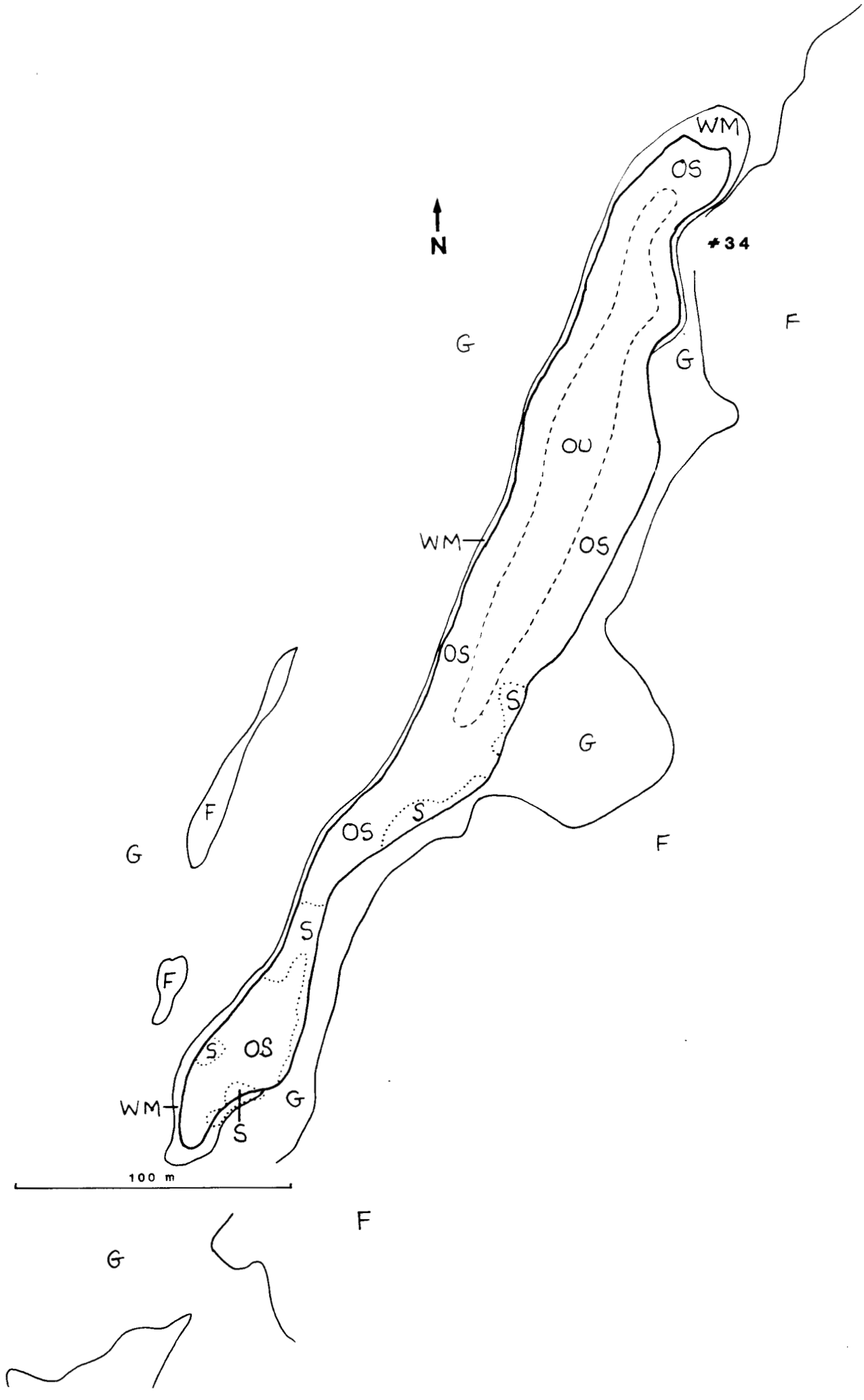
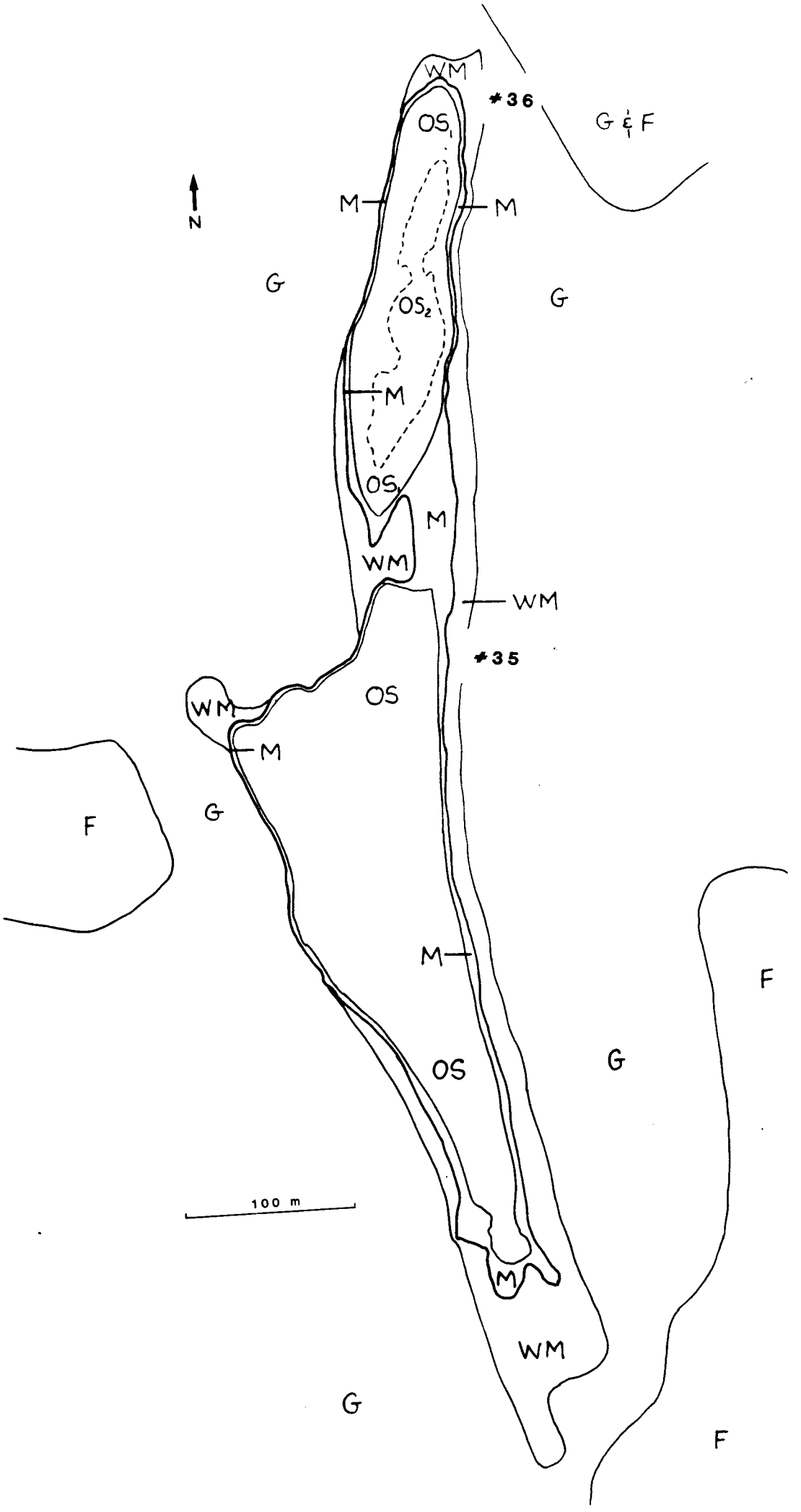
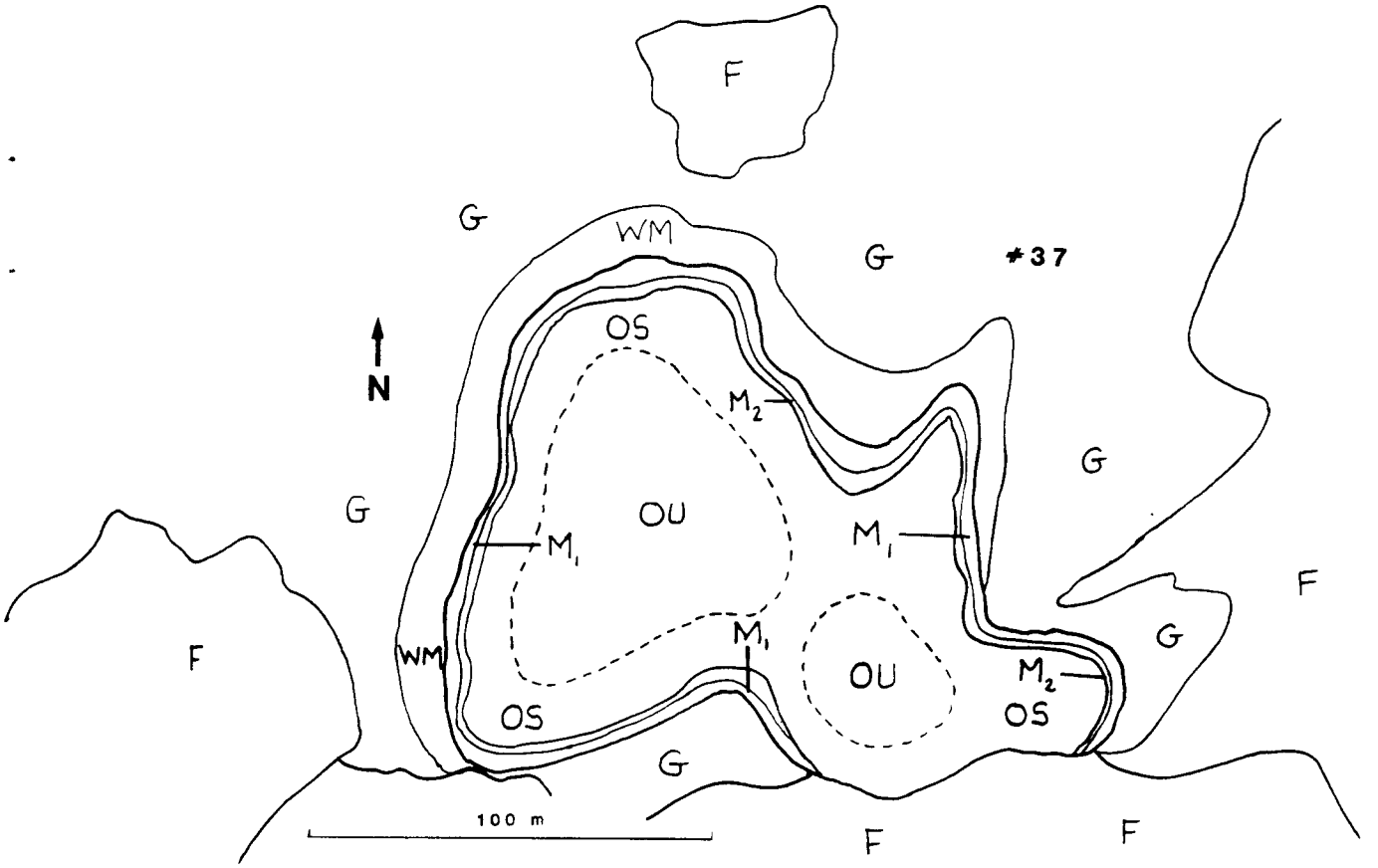
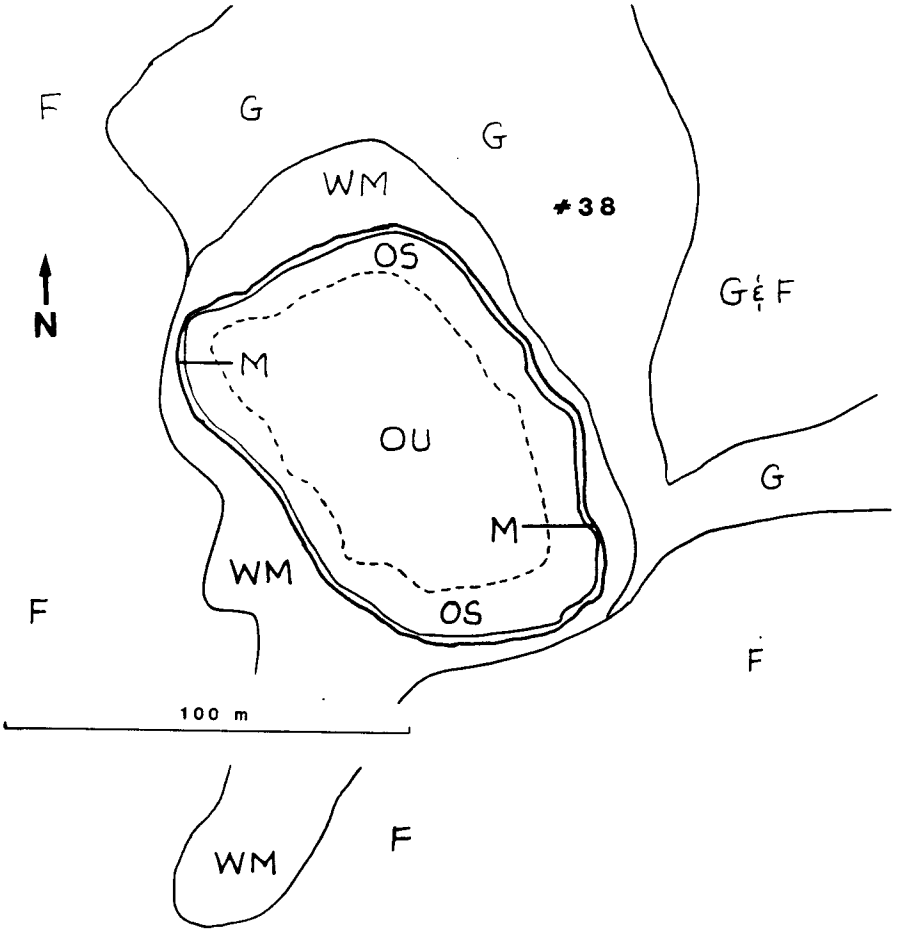
G
WM
M
OU
100 m

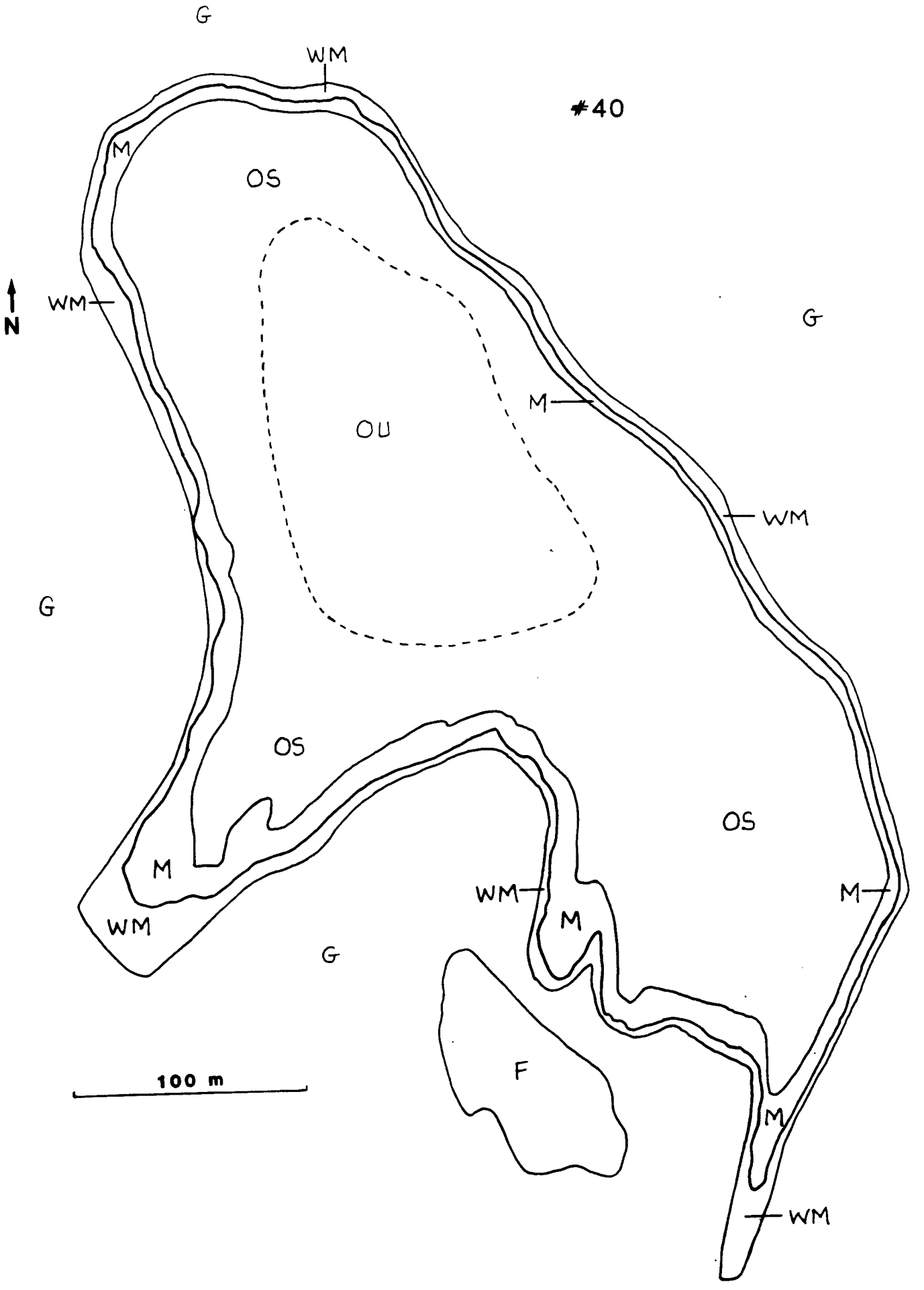

WM
OS
N
#34
F
G
G
OU
WM
OS
OS
S
G
F
OS
S
G
F
S
F
S
OS
WM
G
S
100 m
F
G

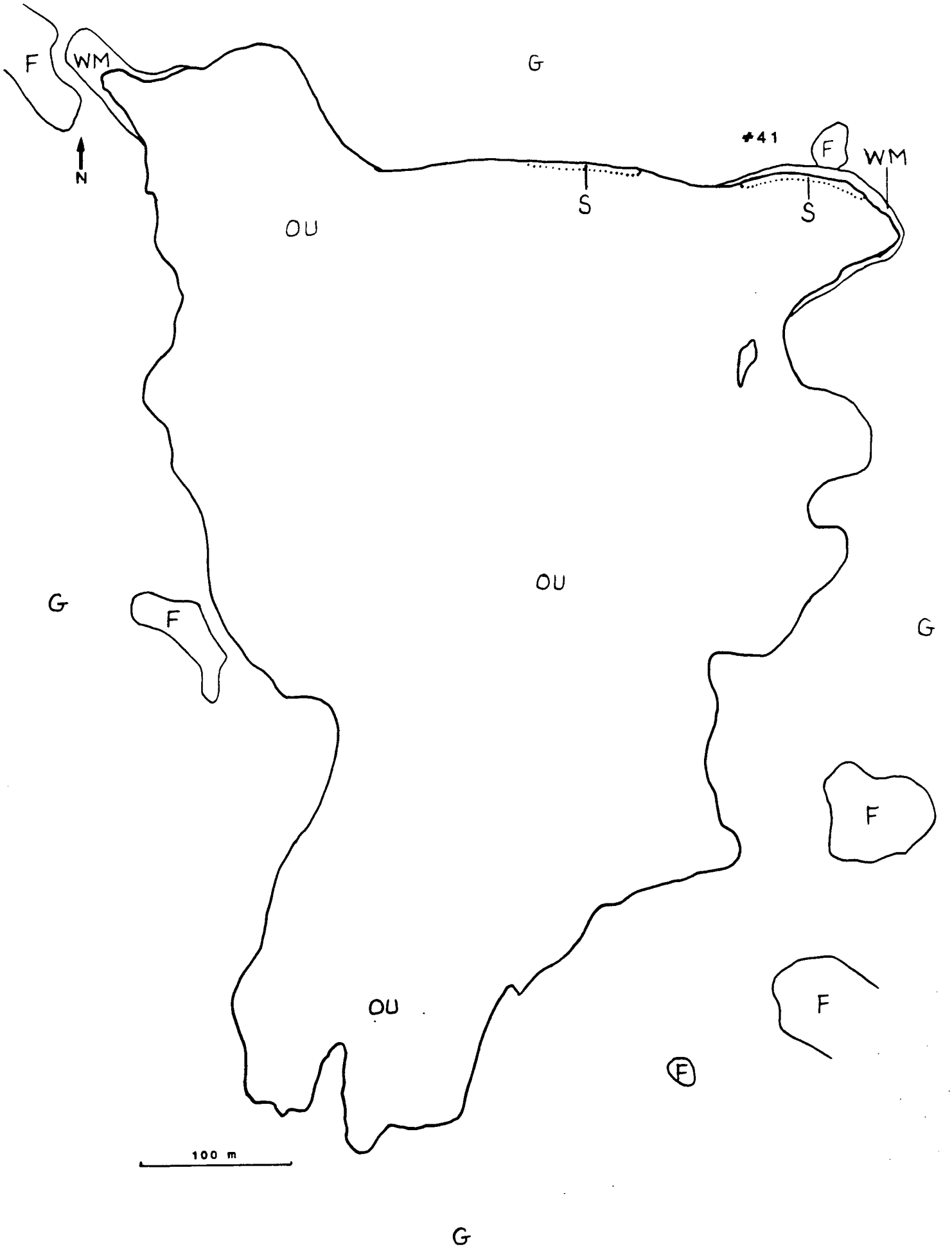

WM
#36
G & F
OS
N
M
M
G
G
OS2
M
OS
M
WM
WM
#35
OS
WM
M
F
G
M
F
OS
G
100 m
M
WM
G
F

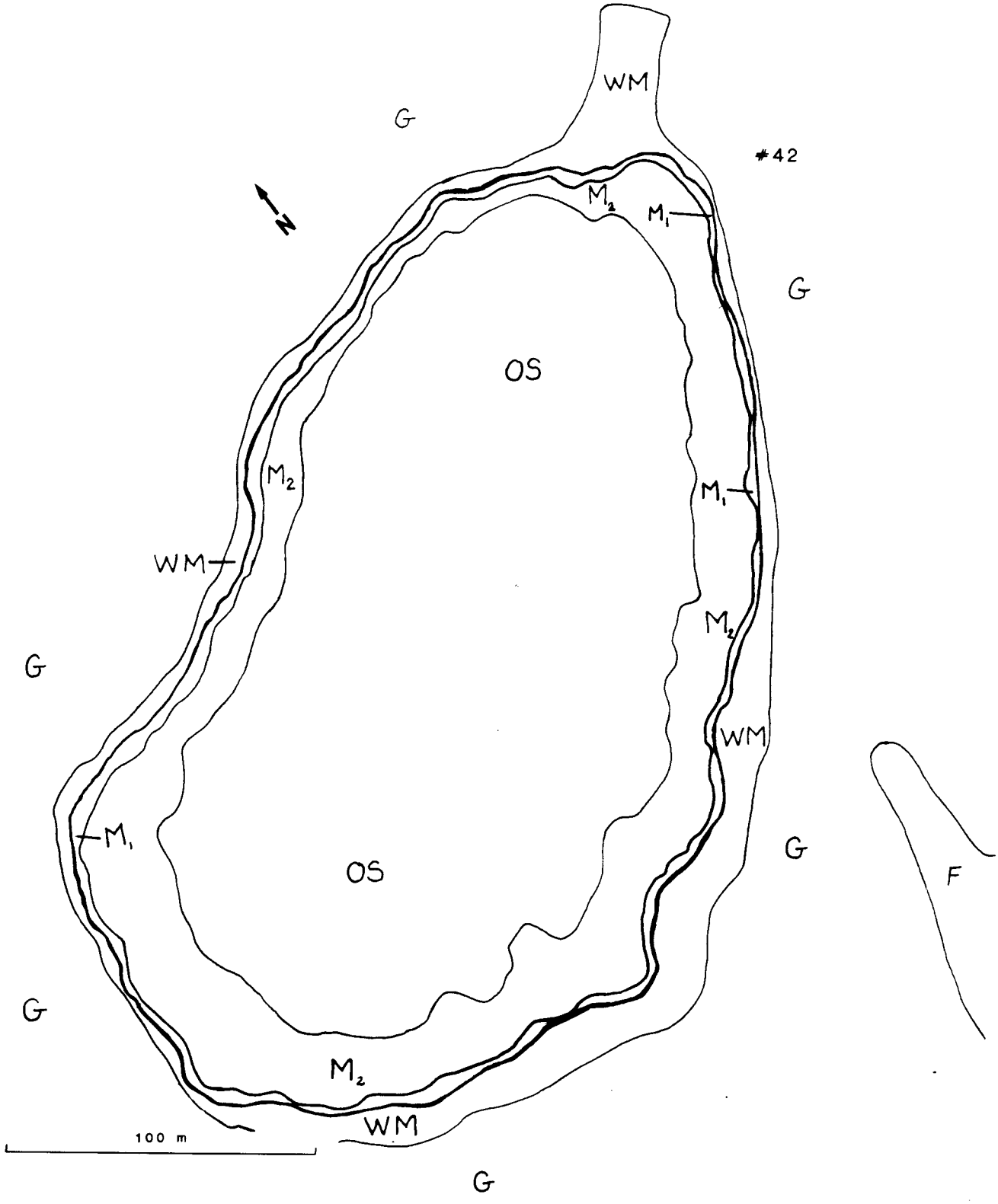

F
G
WM
G
#37
N
OS
M2
G
G
OU
M1
M1
F
F
WM
M1
OU
M2
G
OS
OS
G
100 m
F
F

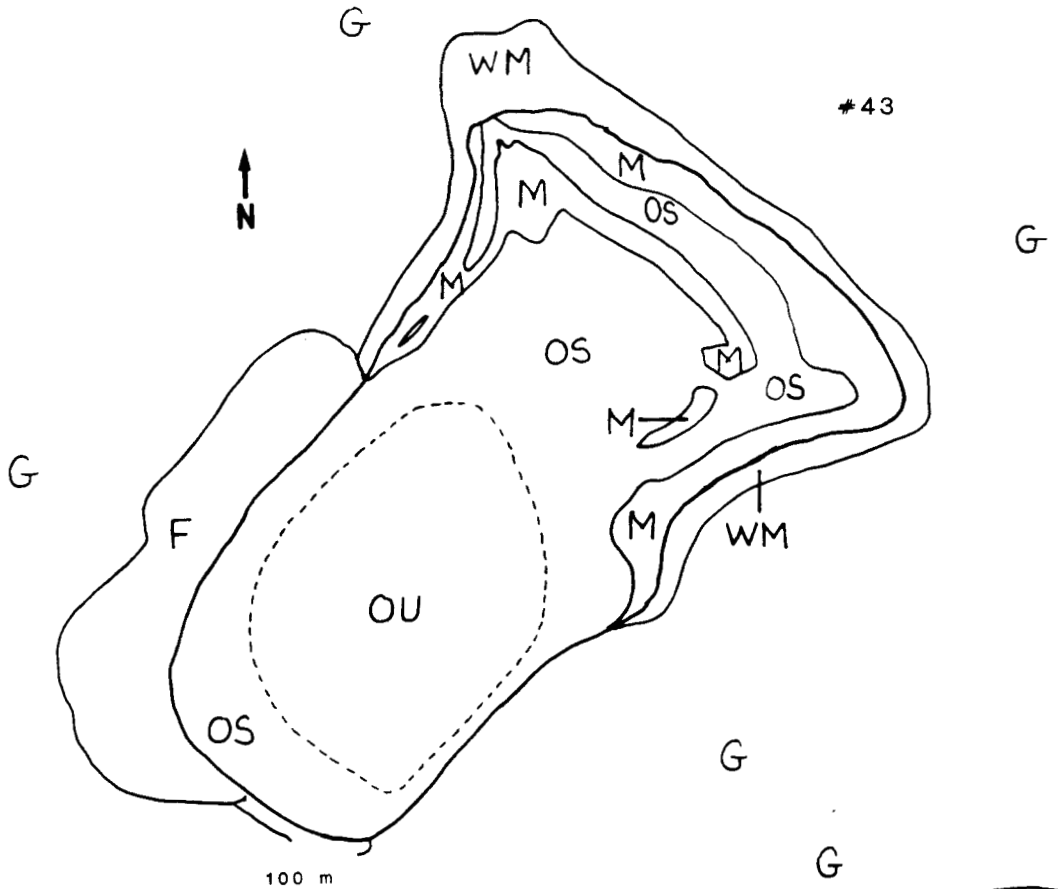

F
G
G
WM
#38
OS
N
G & F
M
OU
G
M
WM
F
OS
F
100 m
WM
F

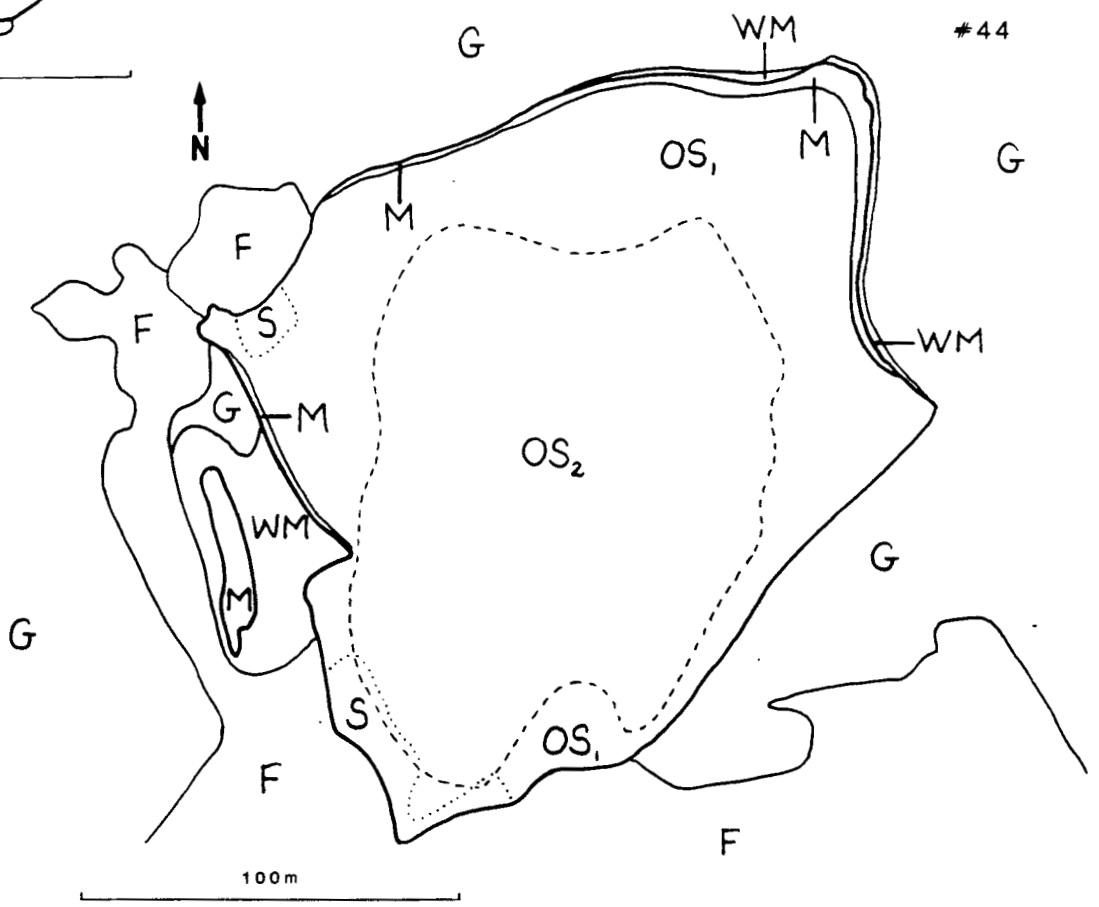
#39
N
M
OS1
G
OS2
G
M
WM
OS1
M
M
G
WM
OS1
OS2
WM
OS1
F
G
WM
M
OS1
G
M
WM
M
F&G
100 m
WM

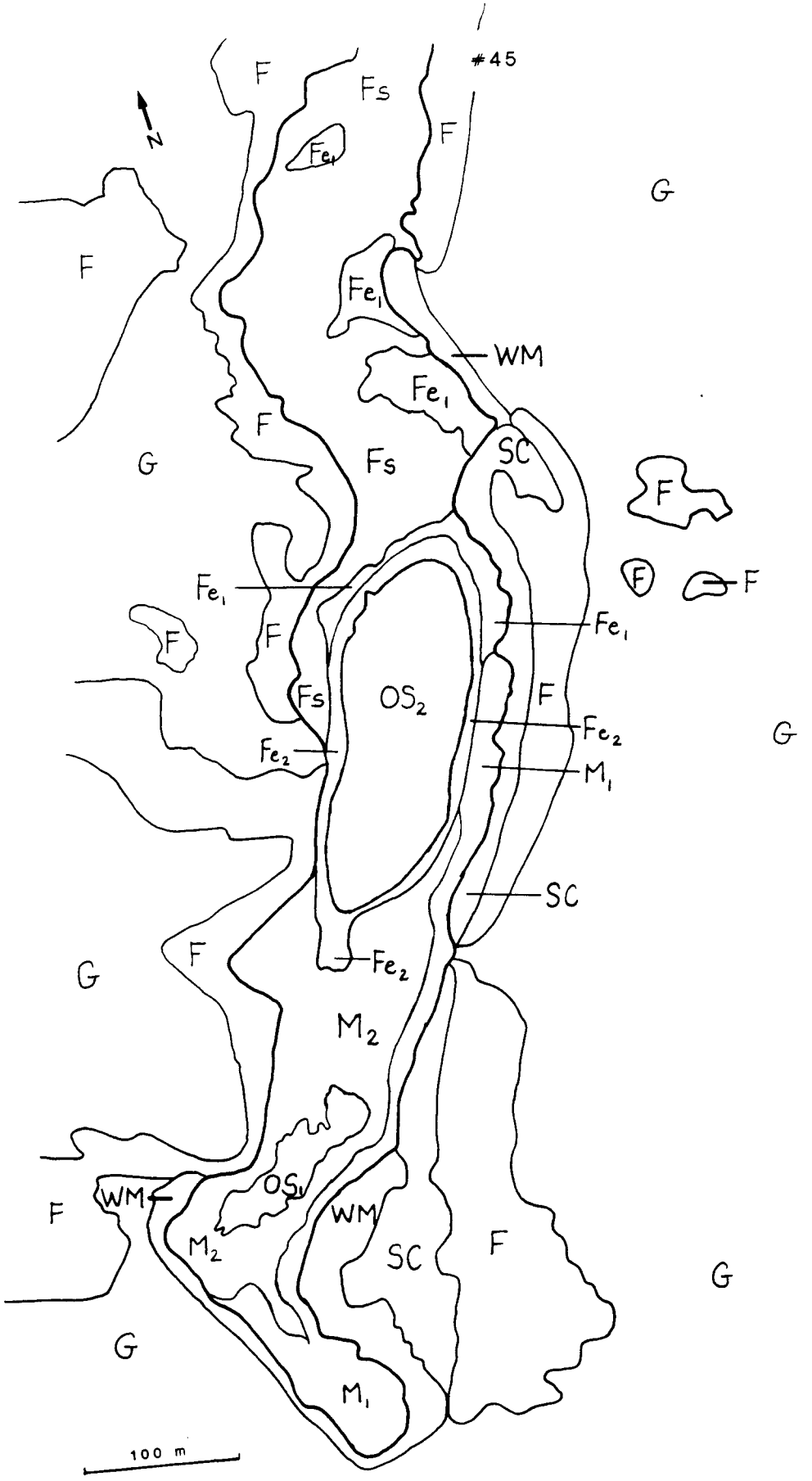

#40
G
WM
M
OS
N
WM
G
M
OU
WM
G
OS
OS
M
WM
WM
M
M
G
F
100 m
M
WM

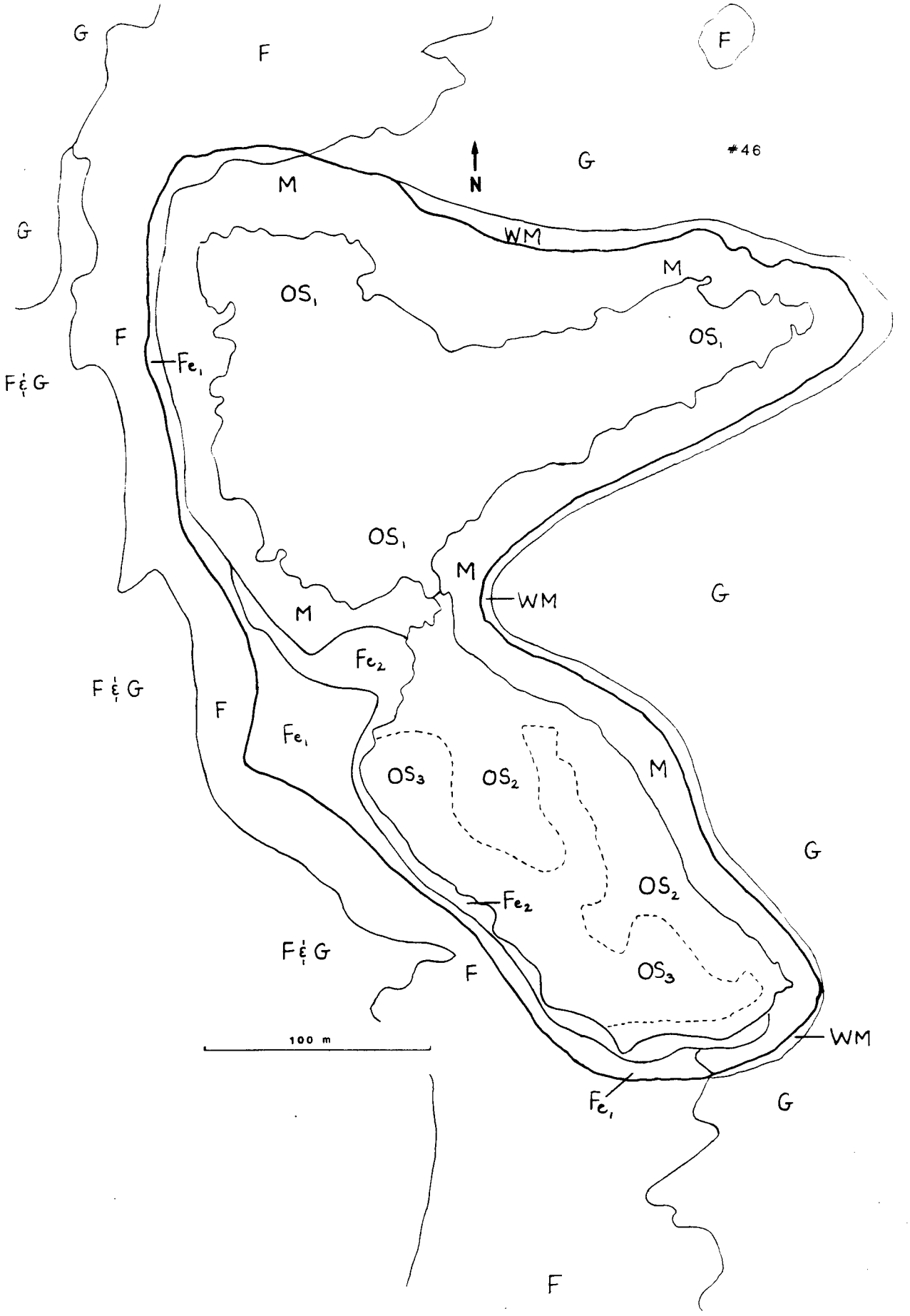

F
WM
G
N
#41
F
WM
S
S
OU
OU
G
F
G
F
OU
F
F
100 m
G

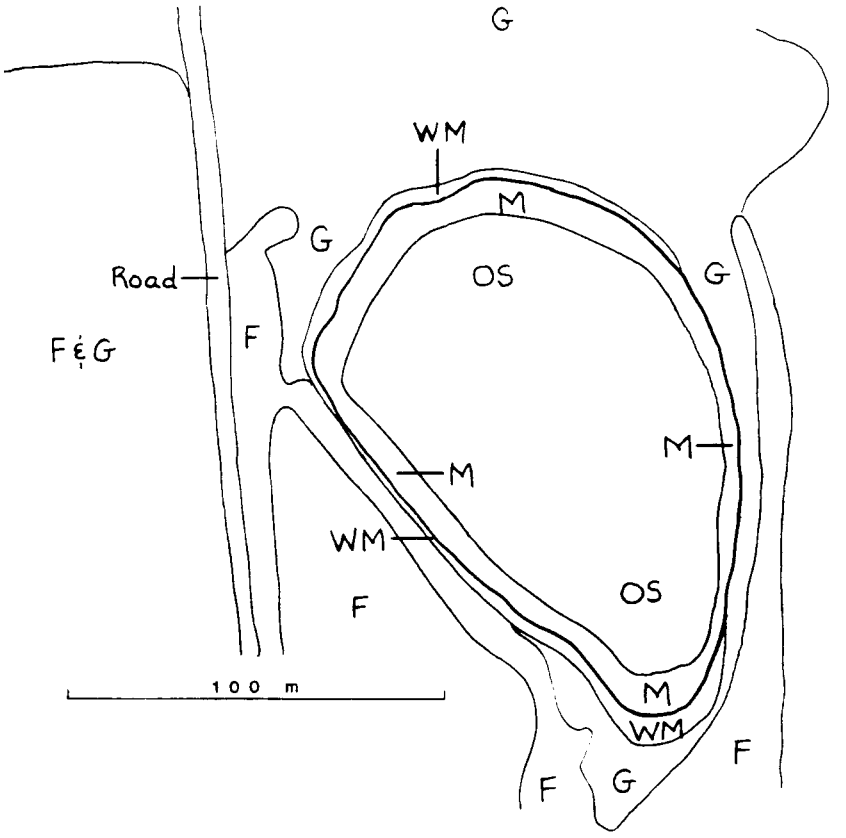

WM
G
#42
N
M2
M1
G
OS
M2
M1
WM
M2
G
WM
M1
OS
G
F
G
M2
WM
100 m
G

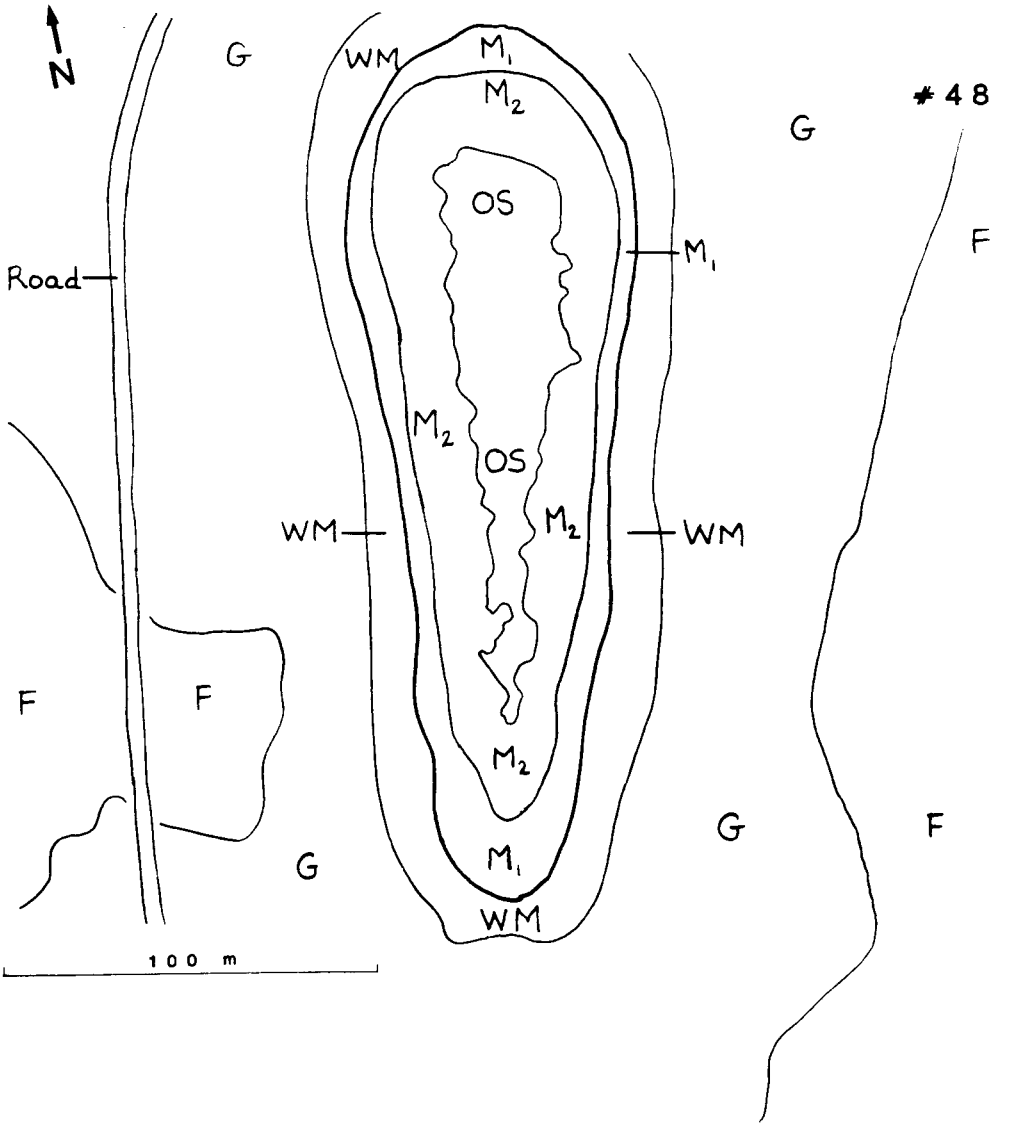

#43
N
G
WM
M
OS
F
OU
100 m

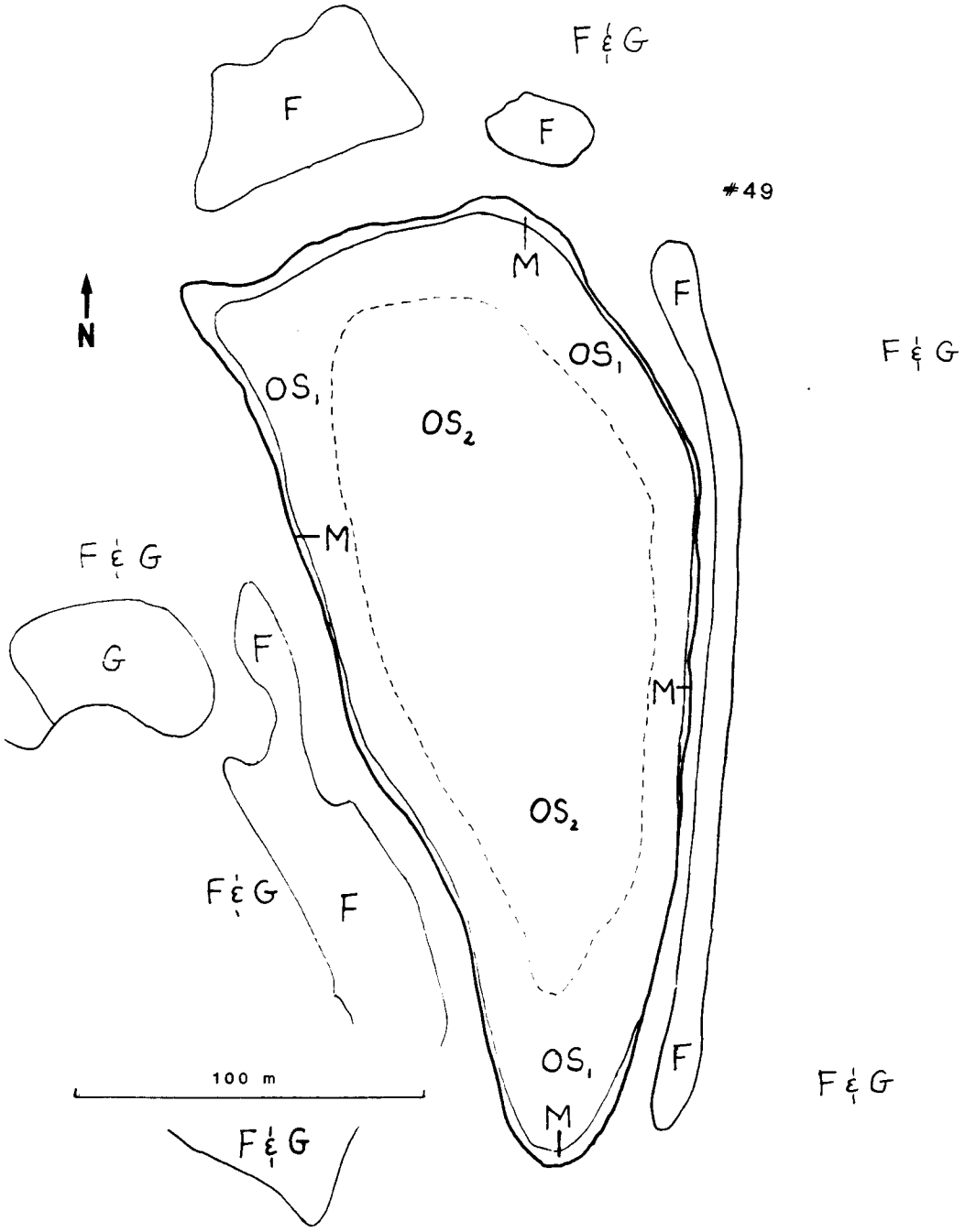

#44
N
G
WM
M
OS₁
F
S
G
OS₂
100m

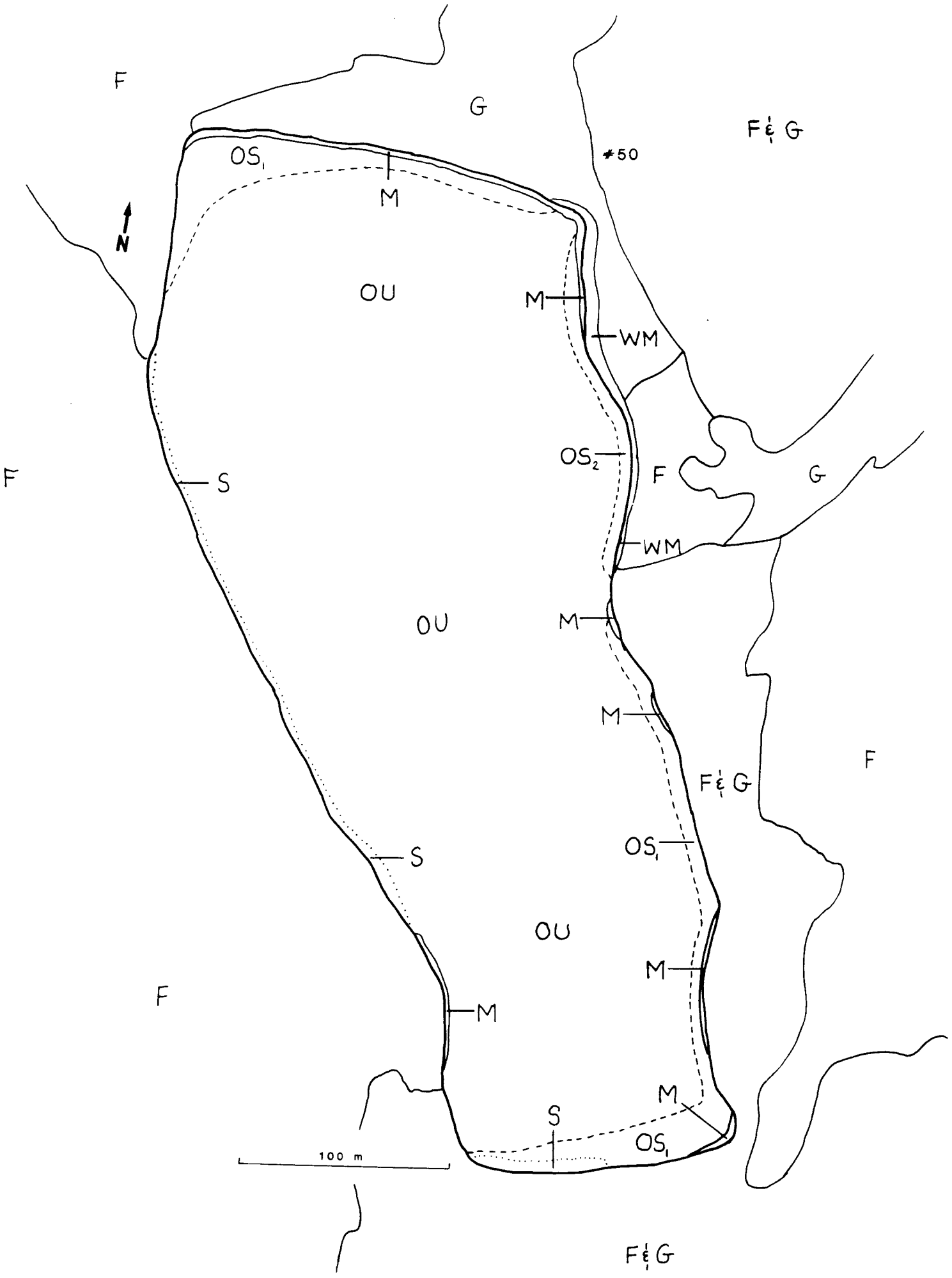

#45
N
F
Fs
F
Fe1
G
F
Fe1
WM
Fe1
F
SC
G
Fs
F
F
F
Fe1
Fe1
F
F
Fs
OS2
F
Fe2
G
Fe2
M1
SC
F
G
Fe2
M2
OS1
F
WM
WM
M2
SC
F
G
G
M1
100 m

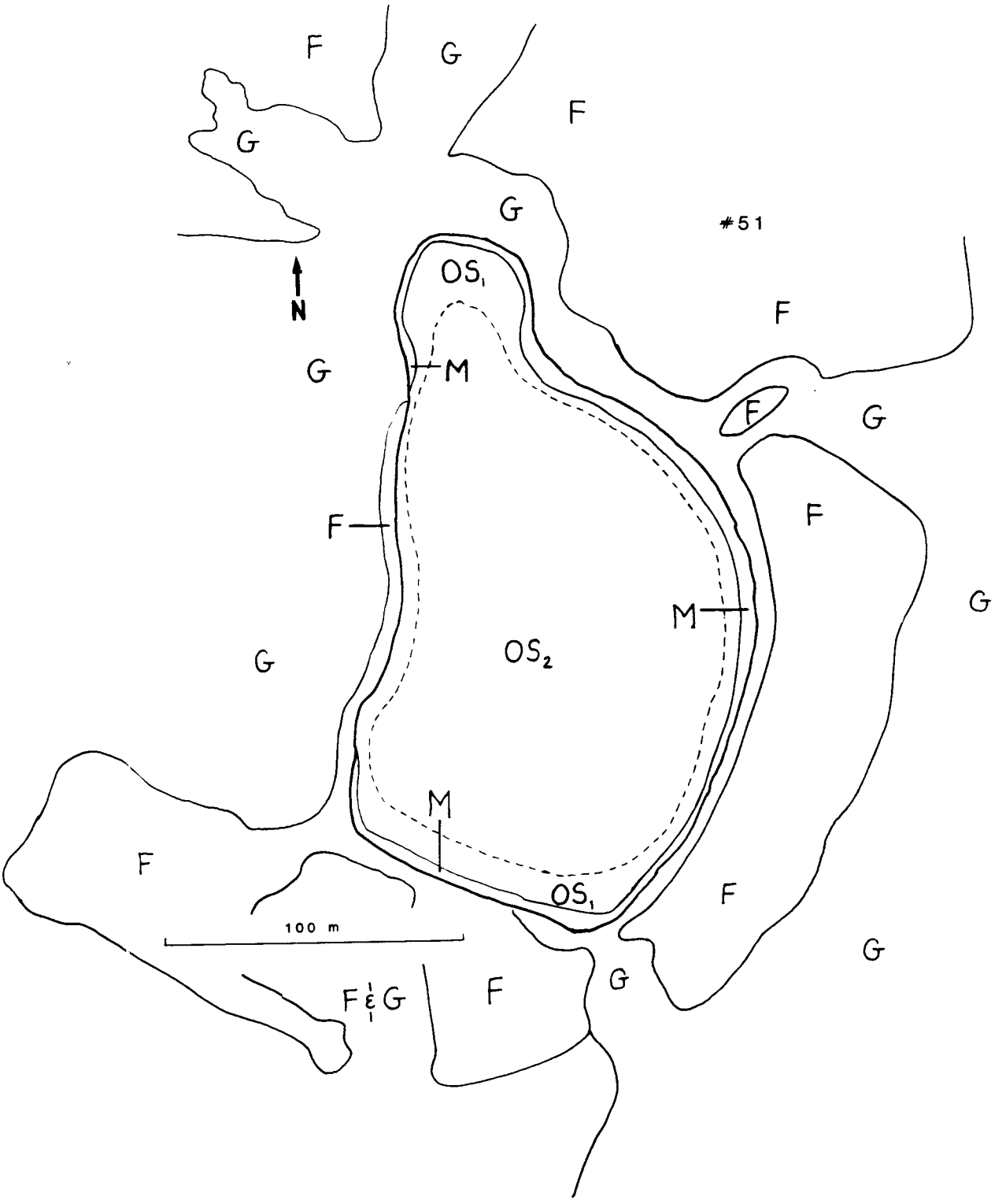

G
F
F
#46
N
G
M
WM
G
M
OS1
OS1
F
Fe1
F & G
OS1
M
WM
G
M
Fe2
F & G
F
Fe1
OS3
OS2
M
G
OS2
Fe2
F & G
F
OS3
100 m
WM
Fe1
G
F

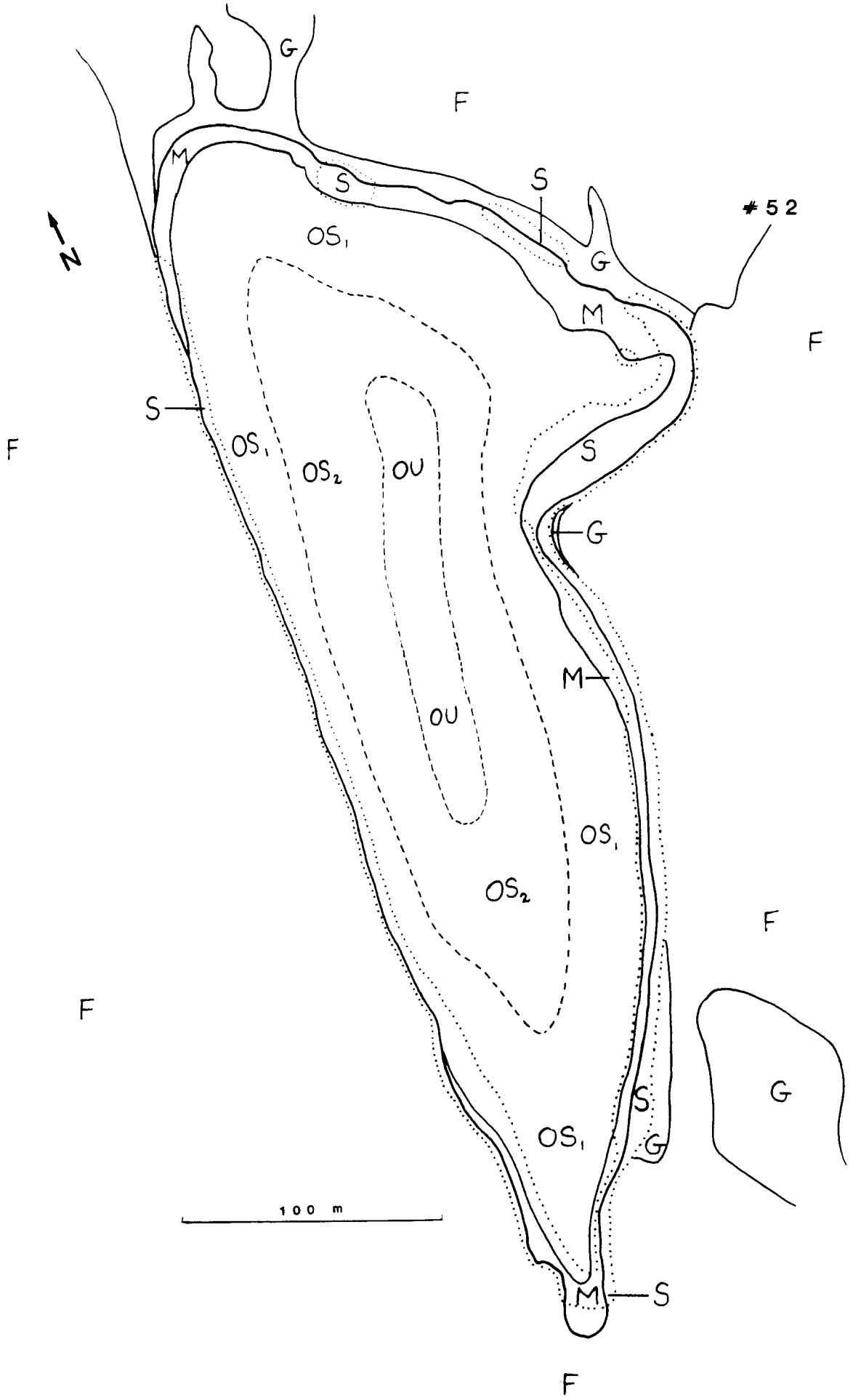

#47
G
WM
M
G
Road
OS
G
F
F&G
M
M
WM
OS
F
100 m
M
WM
F
F
G

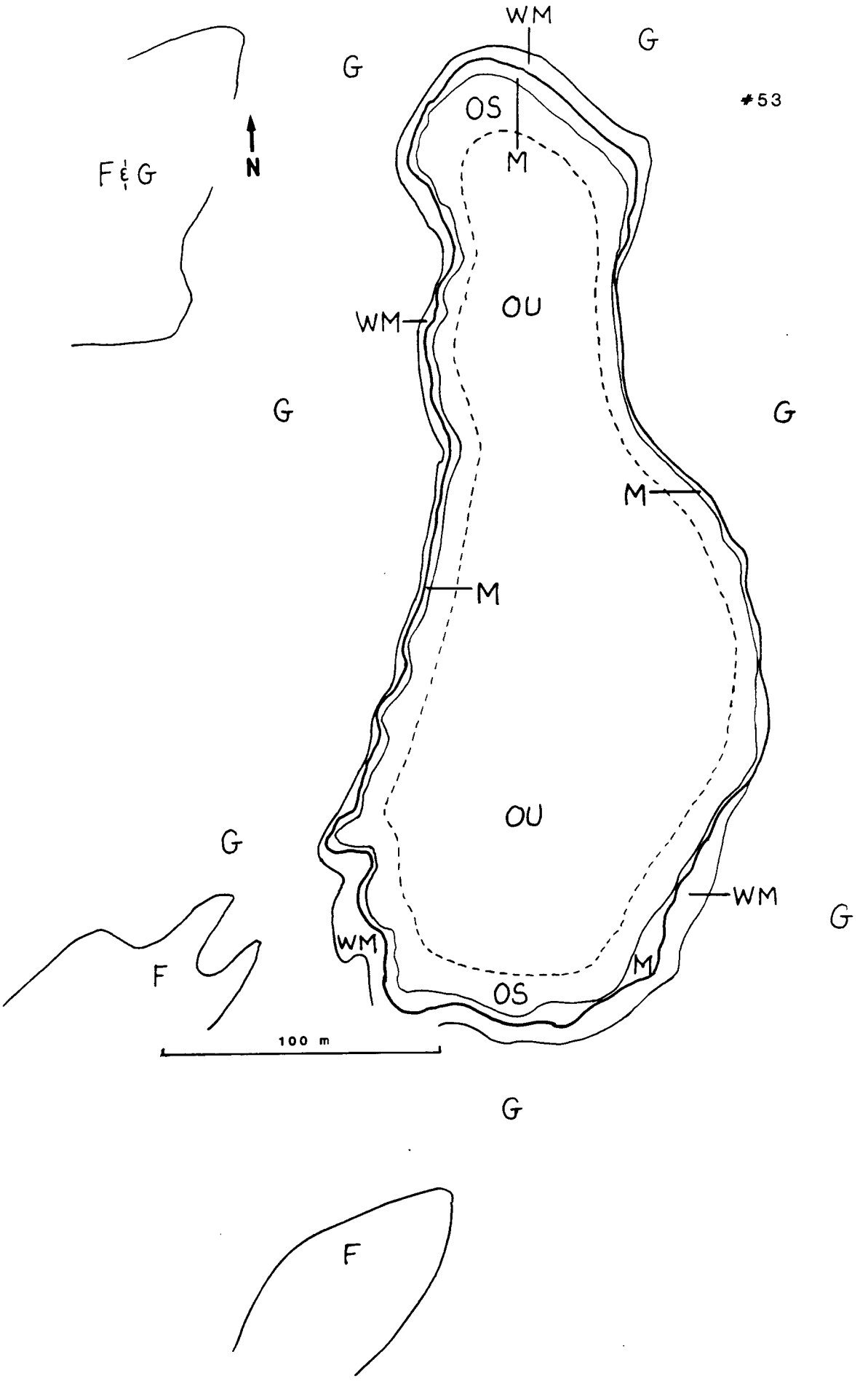

#48
N
G
WM
M1
M2
G
OS
F
Road
M1
M2
OS
WM
M2
WM
F
F
M2
G
F
G
M1
WM
100 m

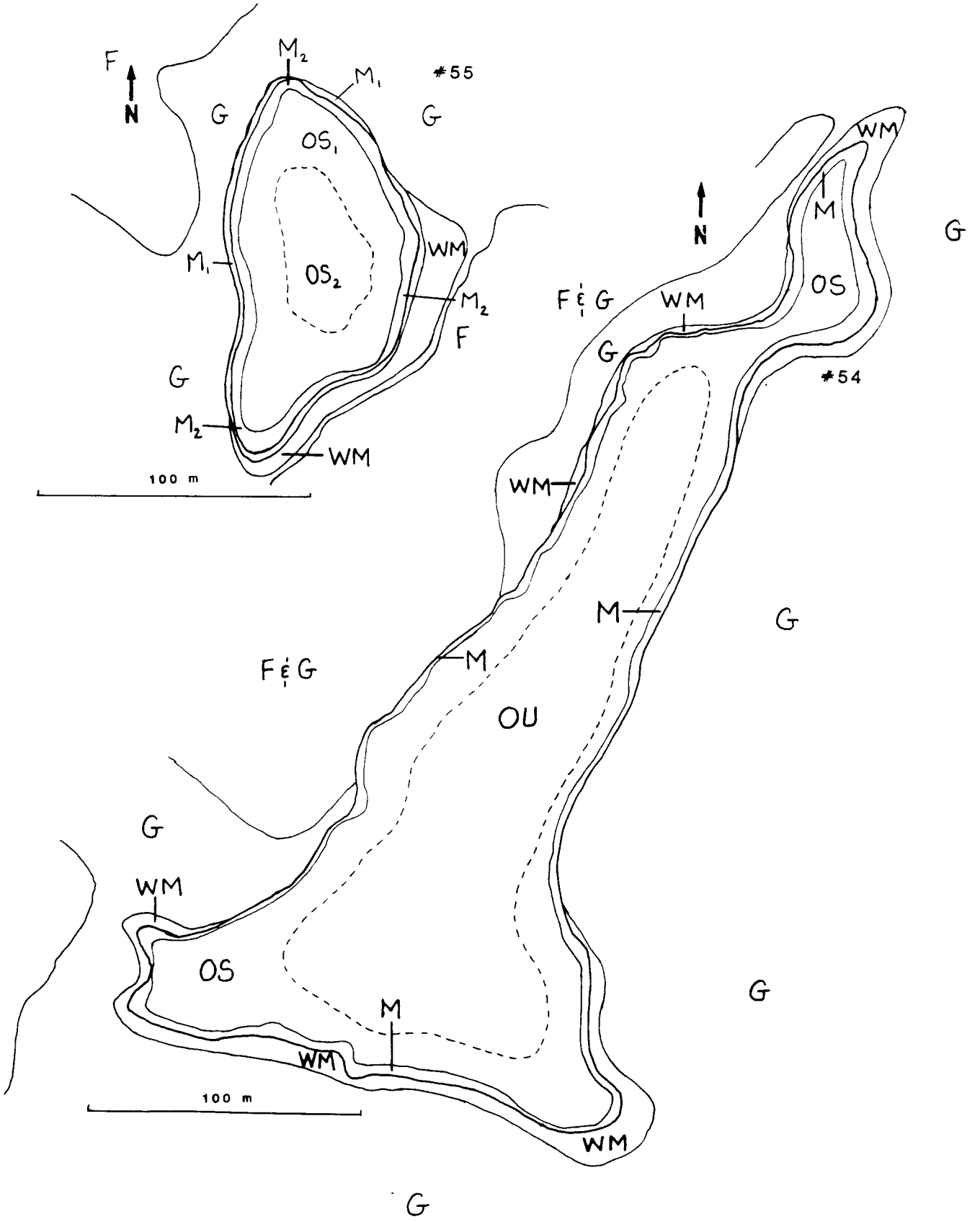

F & G
F
F
#49
N
M
F
F & G
OS1
OS1
OS2
M
F & G
G
F
M
OS2
F & G
F
OS1
F
F & G
100 m
M
F & G

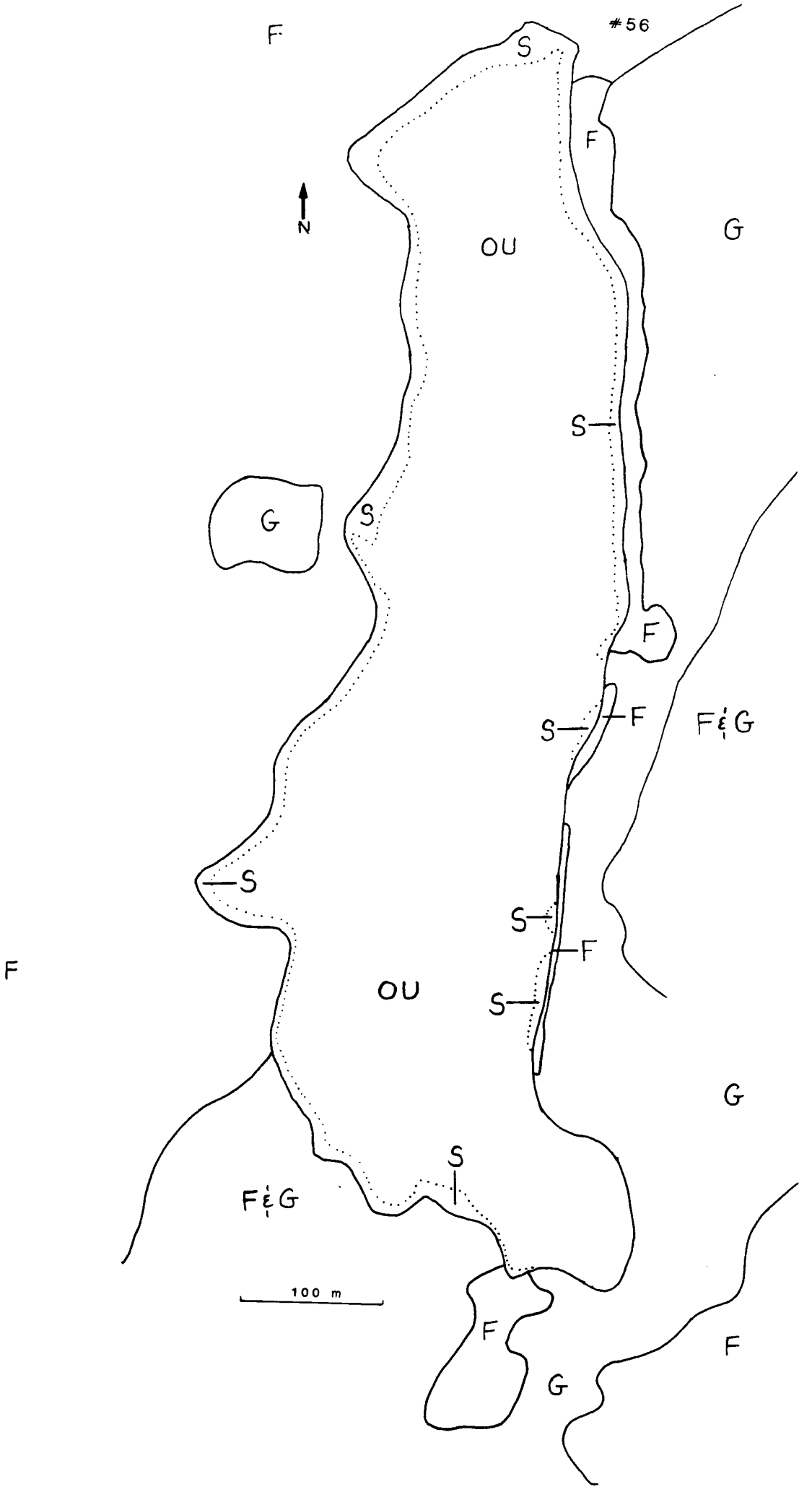

F
G
F & G
#50
OS1
M
N
OU
M
WM
OS2
F
G
F
S
WM
OU
M
M
F & G
F
S
OS1
OU
M
F
M
M
S
OS1
100 m
F & G

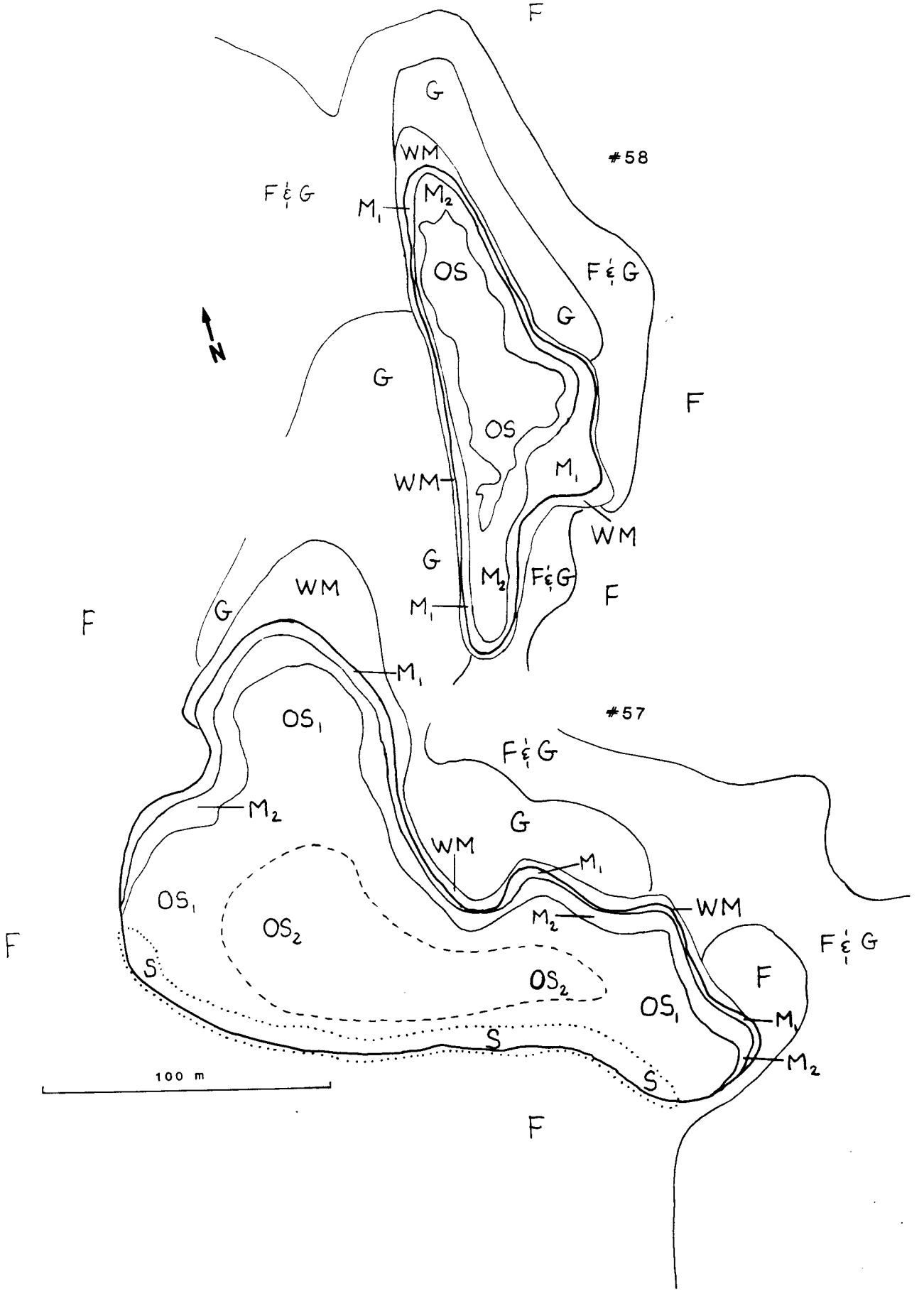

F
G
F
G
G
#51
N
OS1
F
G
M
F
G
F
F
M
G
G
OS2
M
F
OS1
F
100 m
G
F & G
F
G

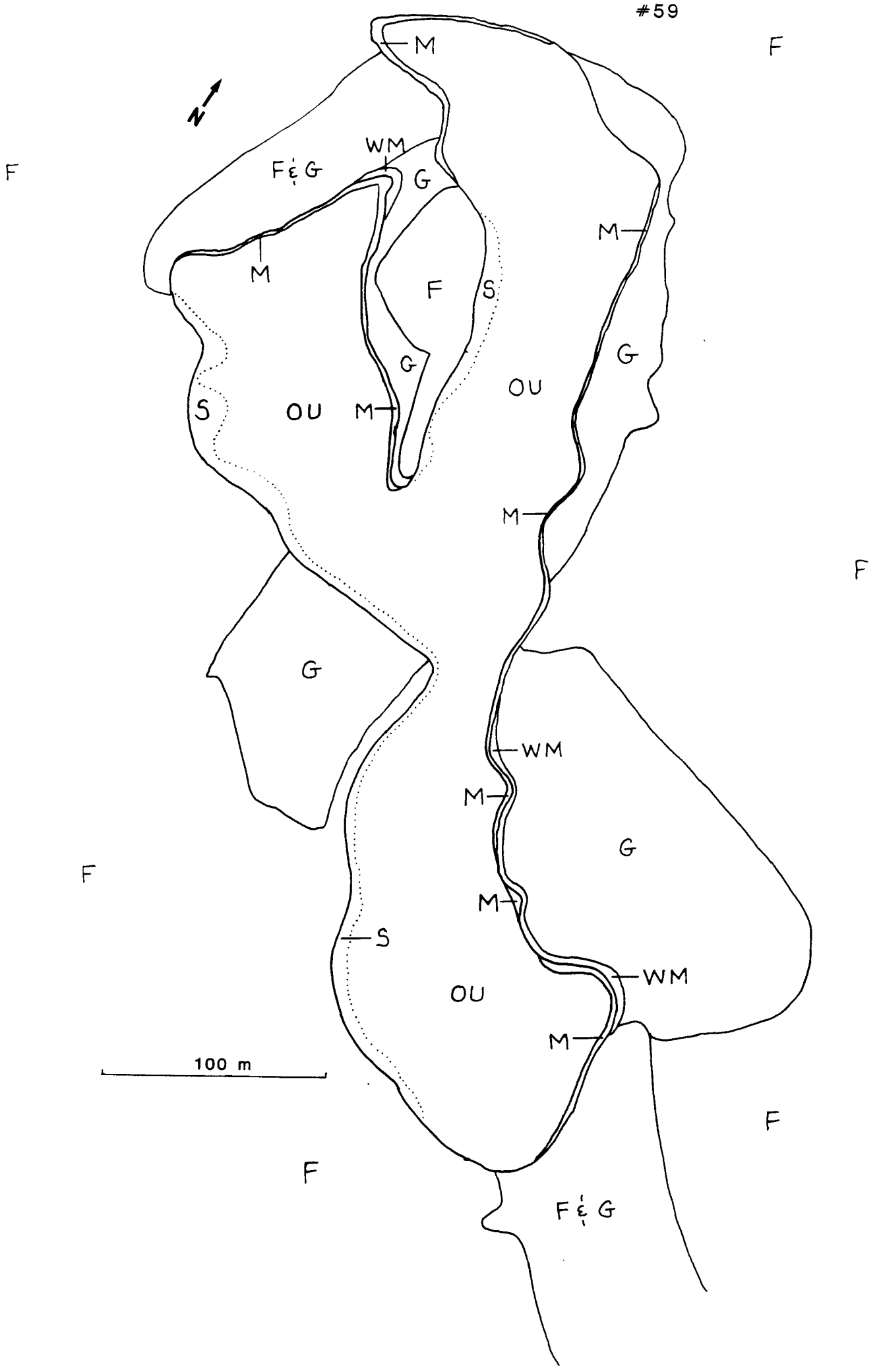

G
F
M
S
S
#52
N
OS1
G
M
F
S
F
OS1
OS2
OU
S
G
M
OU
OS1
OS2
F
F
G
S
OS1
G
100 m
M
S
F

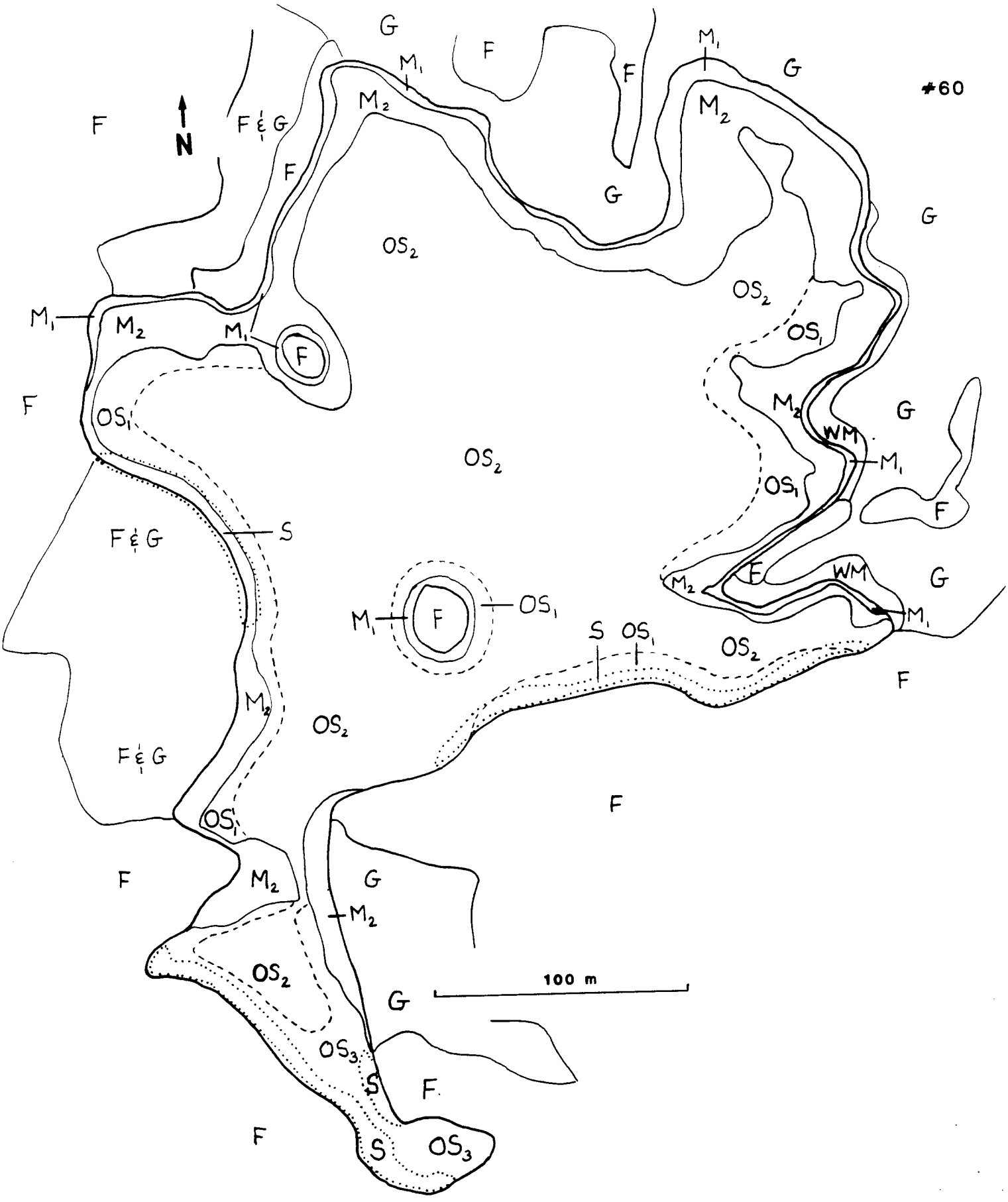

WM
G
G
#53
OS
M
F & G
N
WM
OU
G
G
M
M
OU
G
WM
G
WM
M
F
OS
100 m
G
F

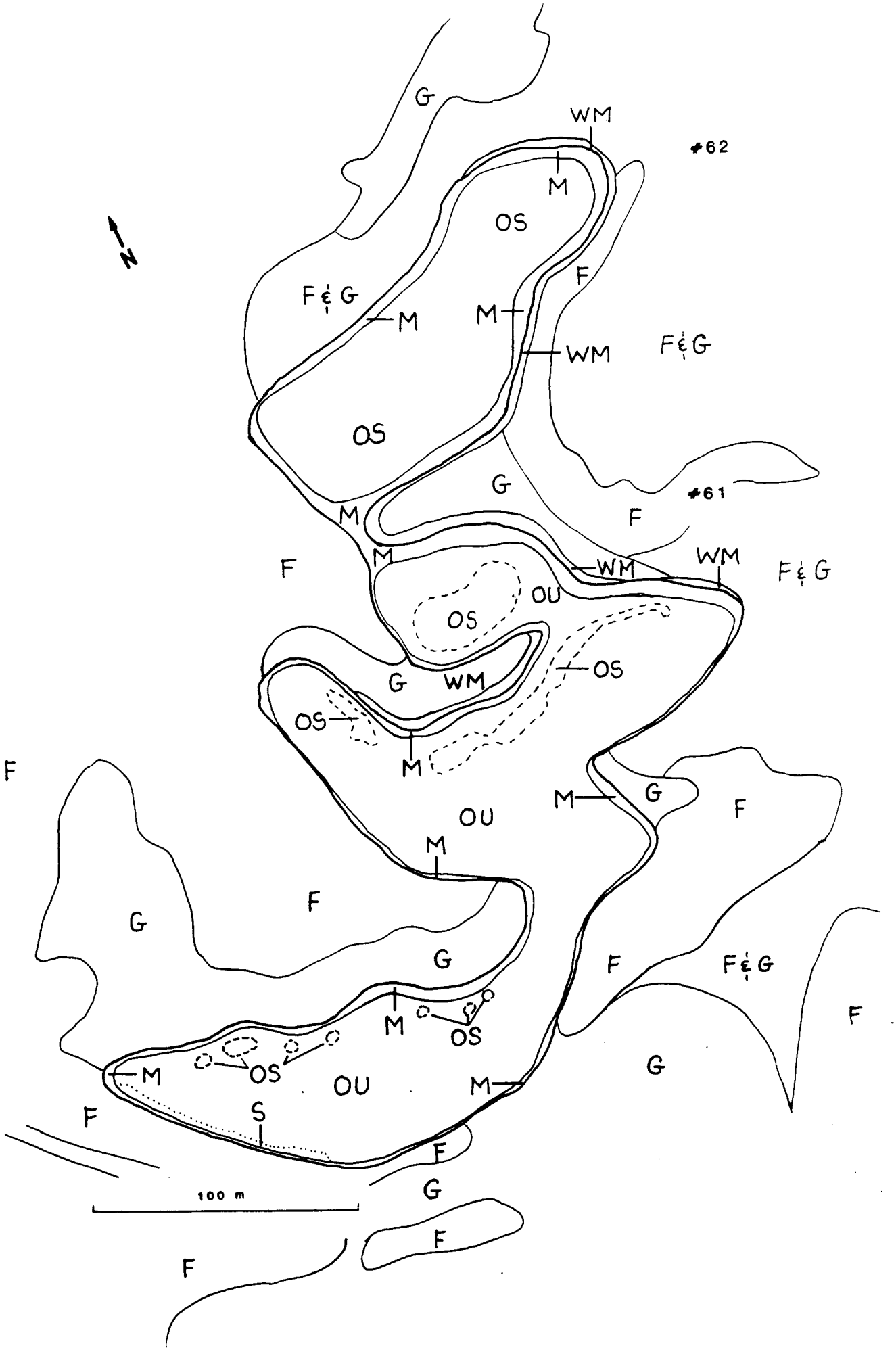

F
N
G
M2
M1
#55
G
OS1
OS2
M1
WM
M2
F
G
M2
WM
100 m
N
WM
M
G
OS
F & G
WM
G
#54
WM
M
G
F & G
M
OU
G
WM
OS
M
G
WM
100 m
WM
G

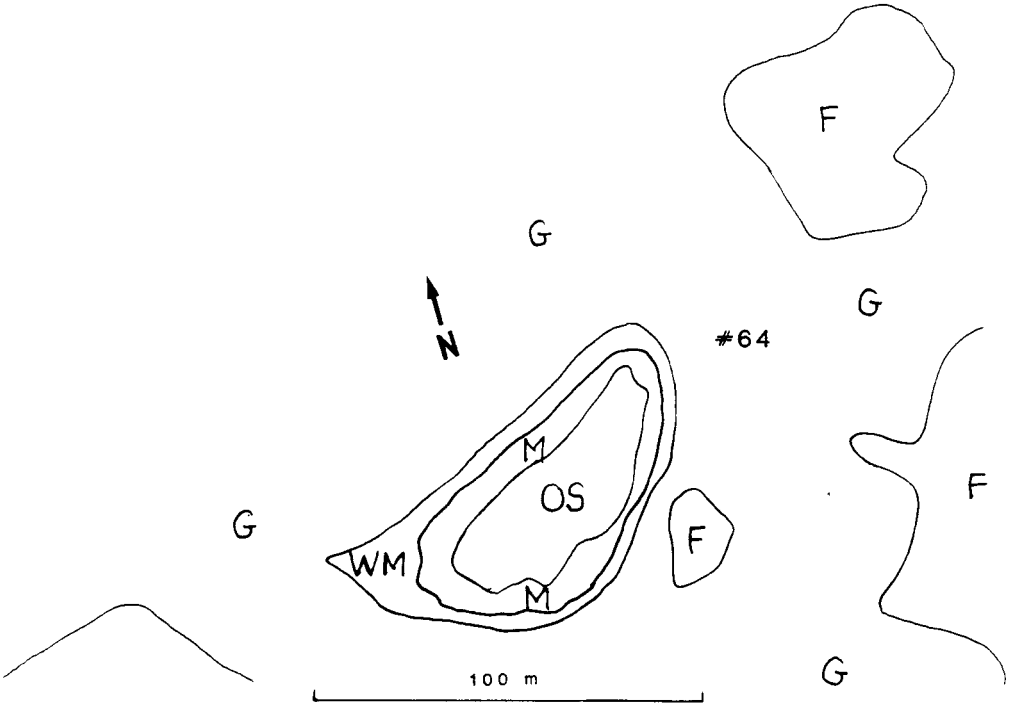

#56
F
S
F
N
OU
G
S
G
S
F
S
F
F & G
S
S
F
F
OU
S
G
S
F & G
100 m
F
G
F

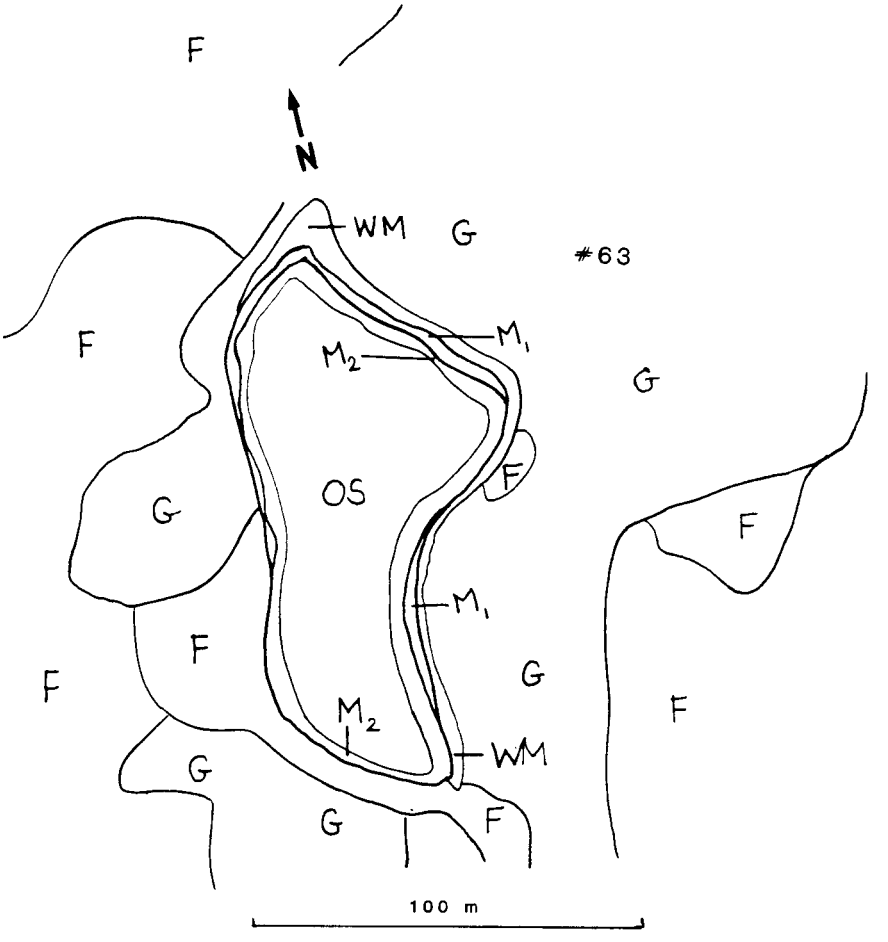

F
G
WM
#58
F & G
M1
M2
OS
F & G
G
N
G
F
OS
M1
WM
WM
G
M2
F & G
F
M1
F
G
WM
M1
#57
OS1
F & G
M2
G
WM
M1
OS1
OS2
M2
WM
F
F & G
S
OS2
F
OS1
M1
S
M2
S
100 m
F

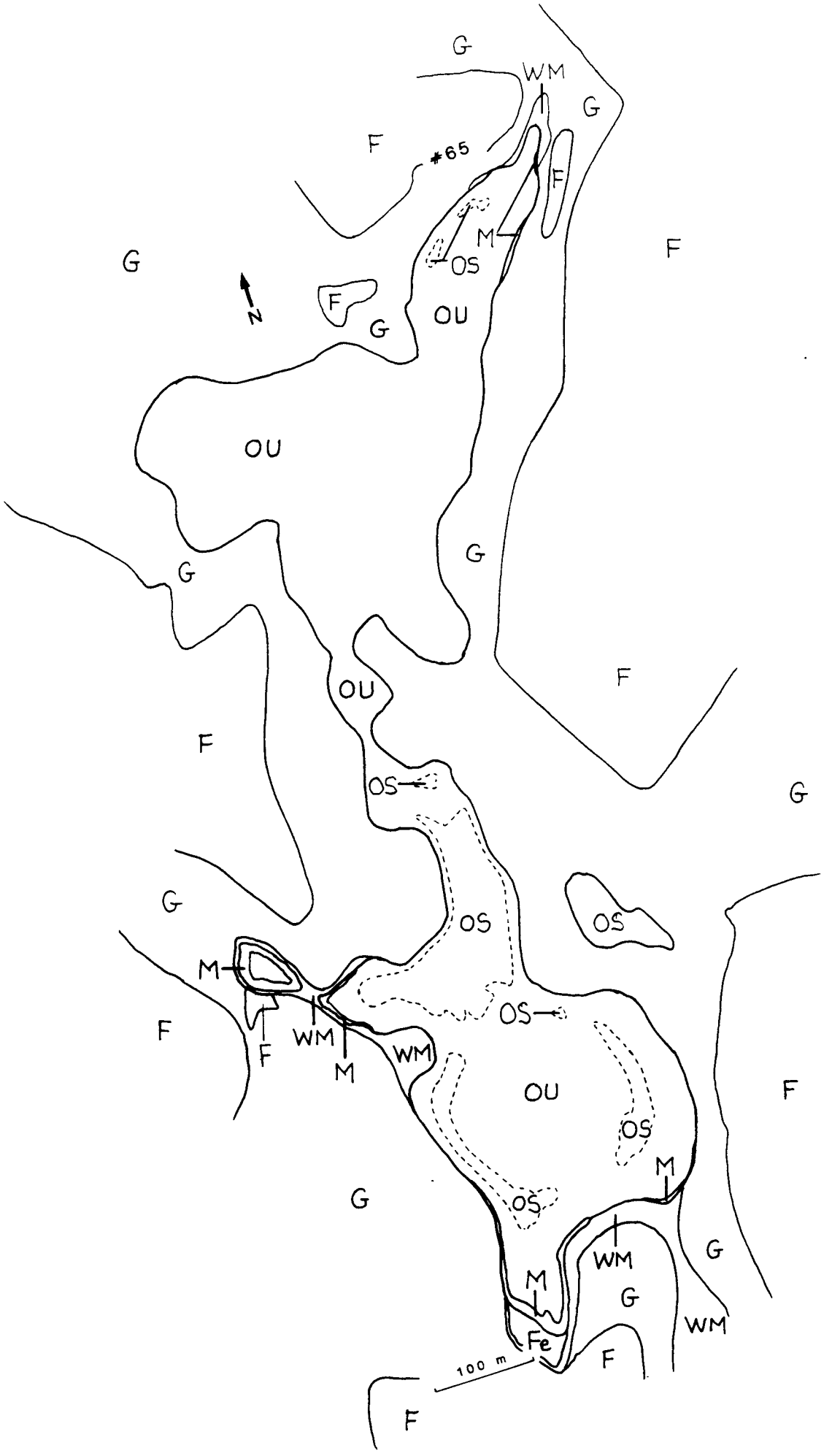

#59
N
F
F
F
F
F
F
M
WM
F & G
G
M
F
S
M
G
G
OU
S
OU
M
M
G
WM
M
G
M
S
WM
OU
M
100 m
F & G

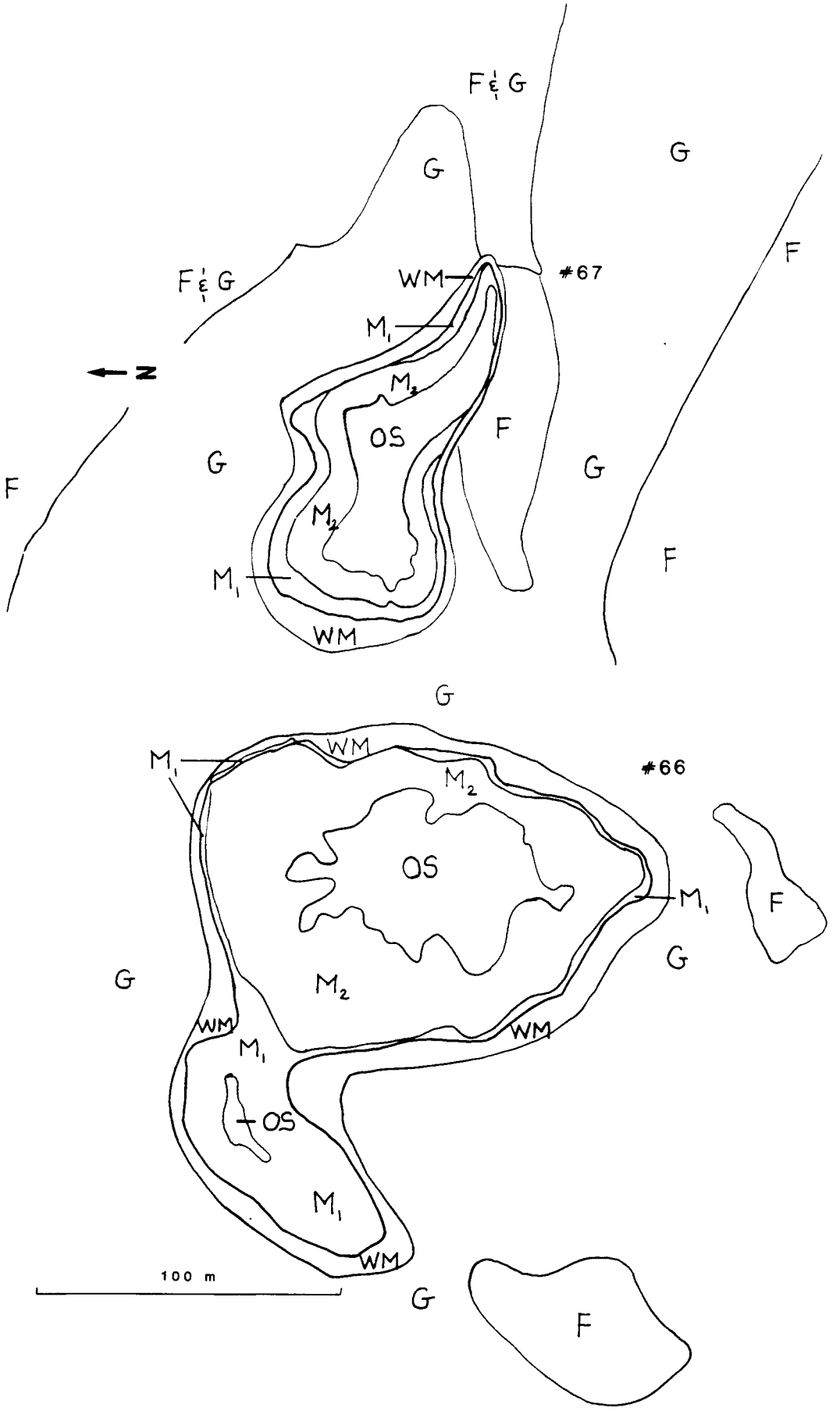

#60
N
100 m
F
G
F & G
M1
M2
OS1
OS2
OS3
S
WM

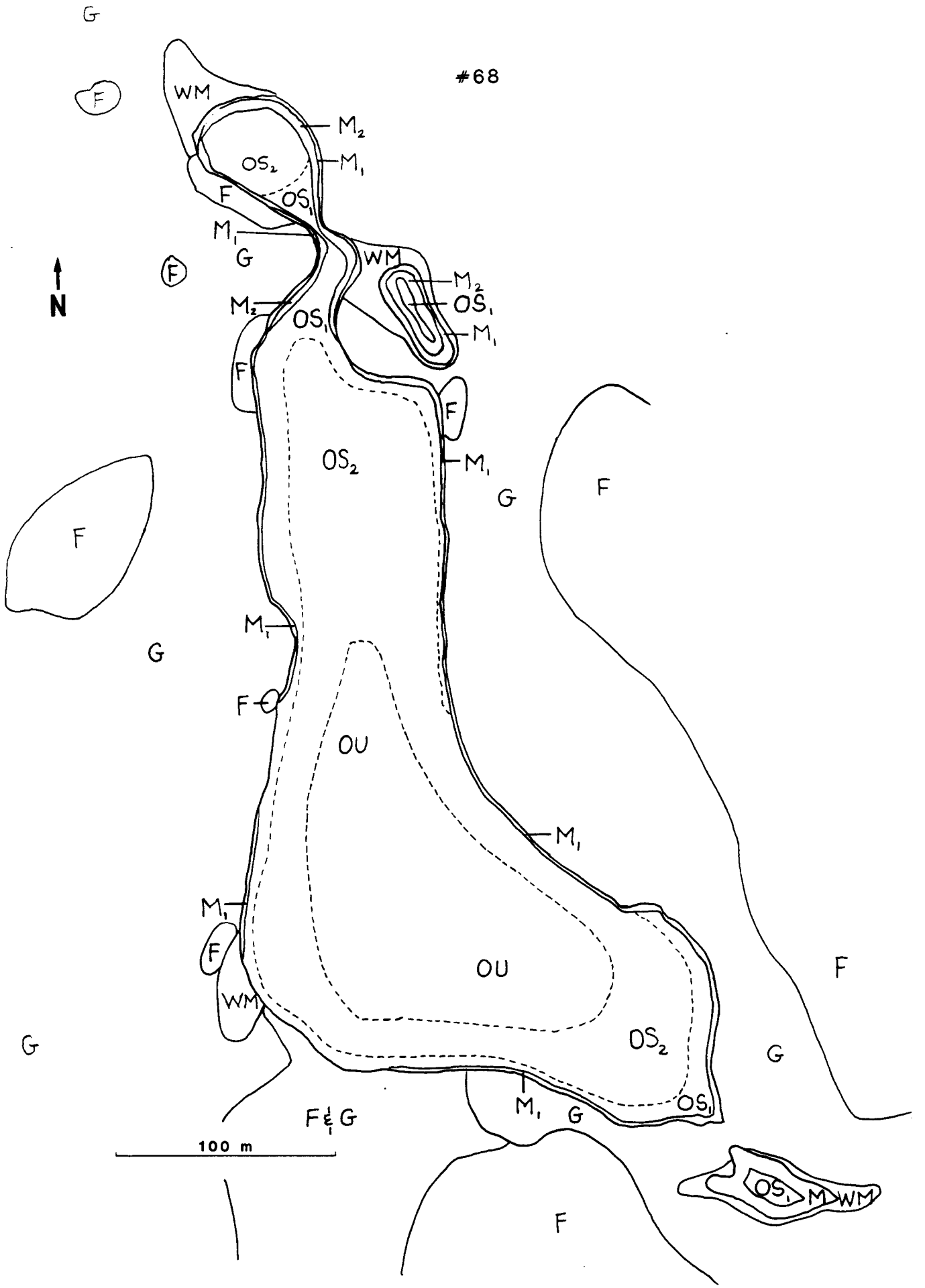

G
WM
#62
M
OS
N
F
F & G
M
M
WM
F & G
OS
G
#61
F
M
M
WM
WM
F & G
F
OU
OS
OS
G
WM
OS
M
F
M
G
F
OU
M
G
F
G
F
F & G
M
OS
M
OS
F
G
M
OU
M
F
S
F
100 m
G
F
F

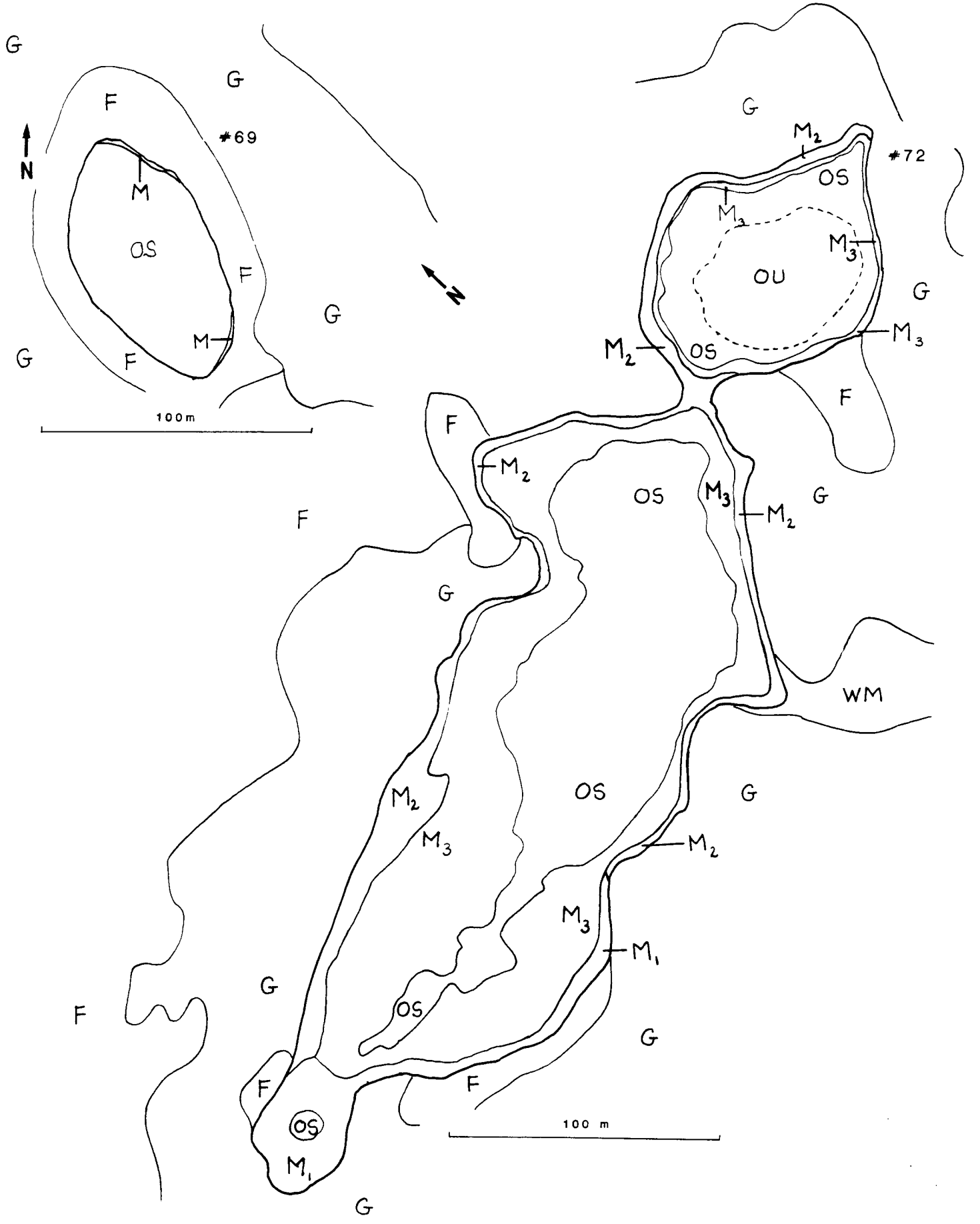

F
G
N
G
#64
M
OS
F
F
G
WM
M
G
100 m

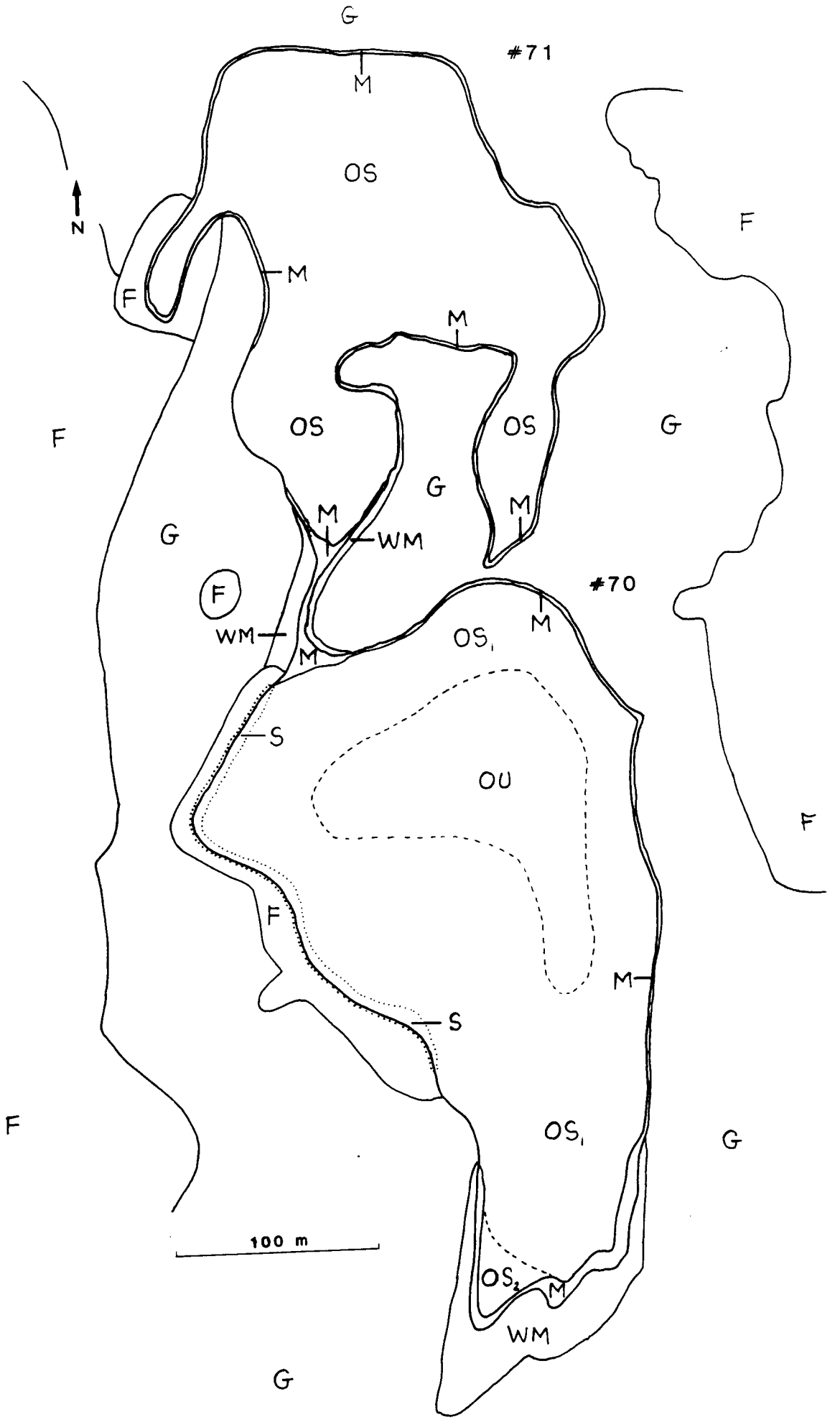

F
N
WM
G
#63
F
M1
M2
G
OS
F
G
F
M1
F
F
G
F
M2
WM
G
G
F
100 m

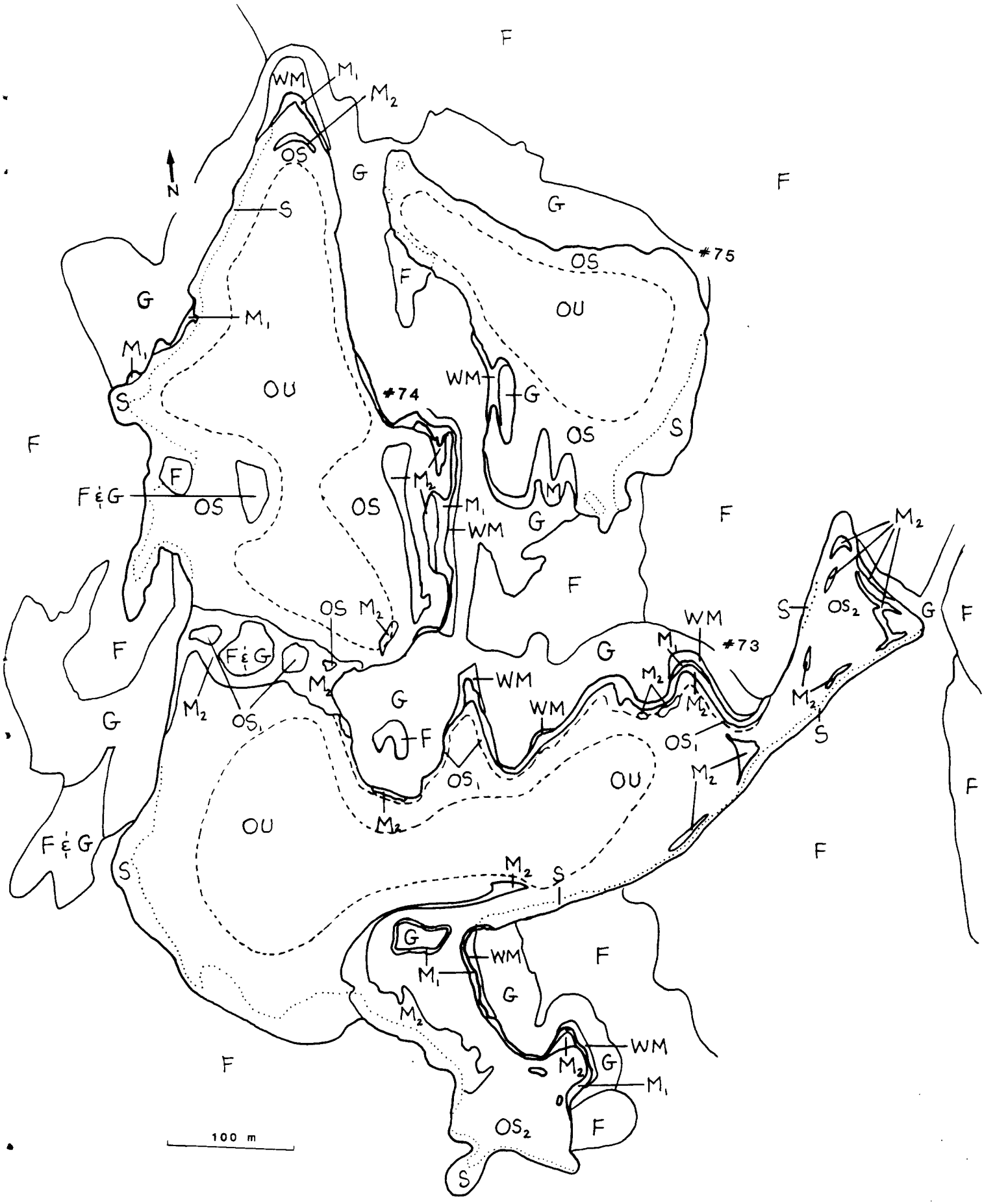

G
WM
G
F
*65
F
M
F
G
OS
N
F
G
OU
OU
G
G
F
OU
F
OS
G
G
OS
OS
M
OS
F
F
WM
M
WM
OU
F
OS
M
G
OS
WM
G
M
G
WM
Fe
F
100 m
F

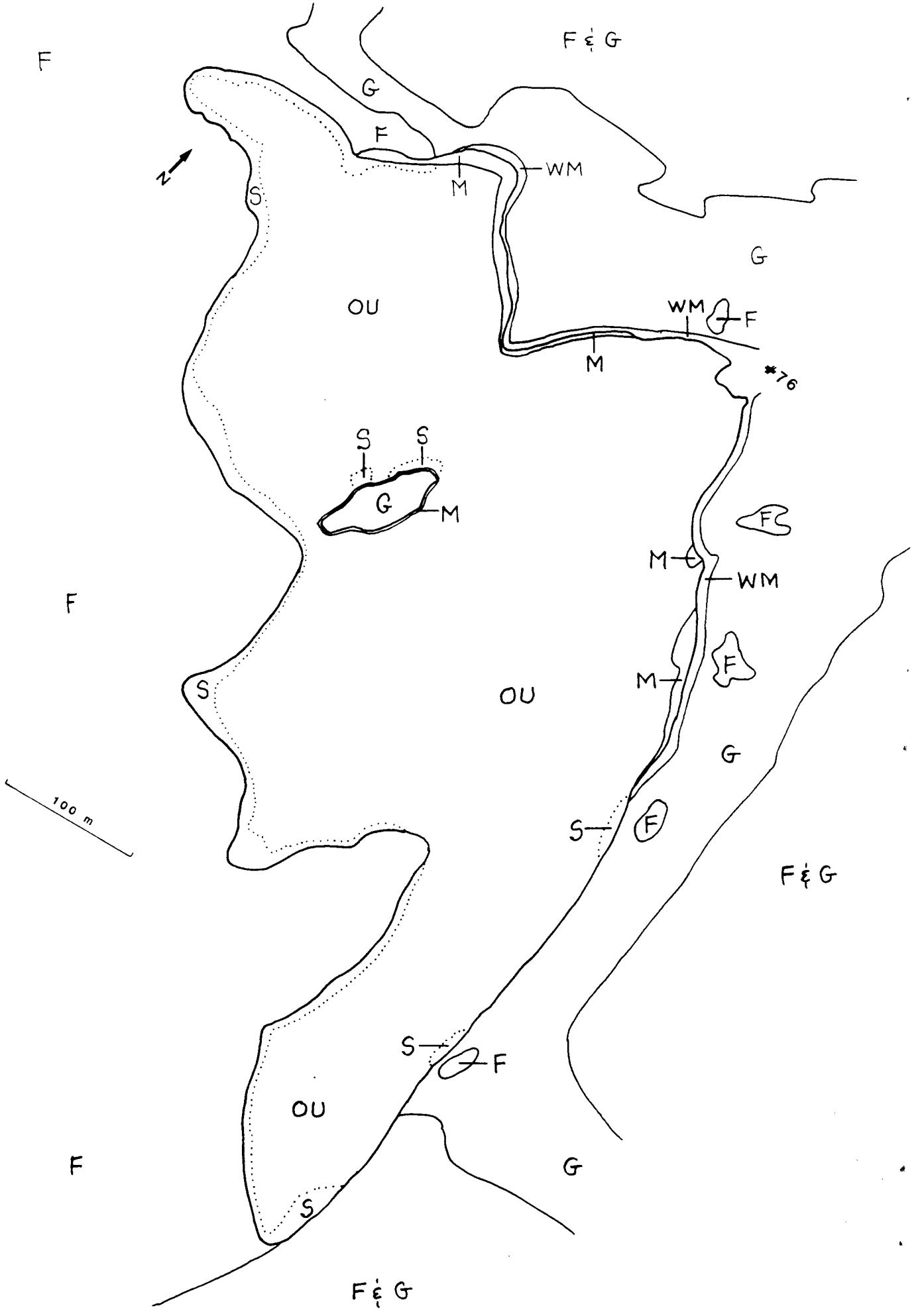

F & G
G
G
F
F & G
WM
#67
M1
N
M2
OS
F
G
G
F
M2
F
M1
WM
G
M1
WM
#66
M2
OS
M1
F
G
G
M2
WM
WM
M1
OS
M1
WM
100 m
G
F

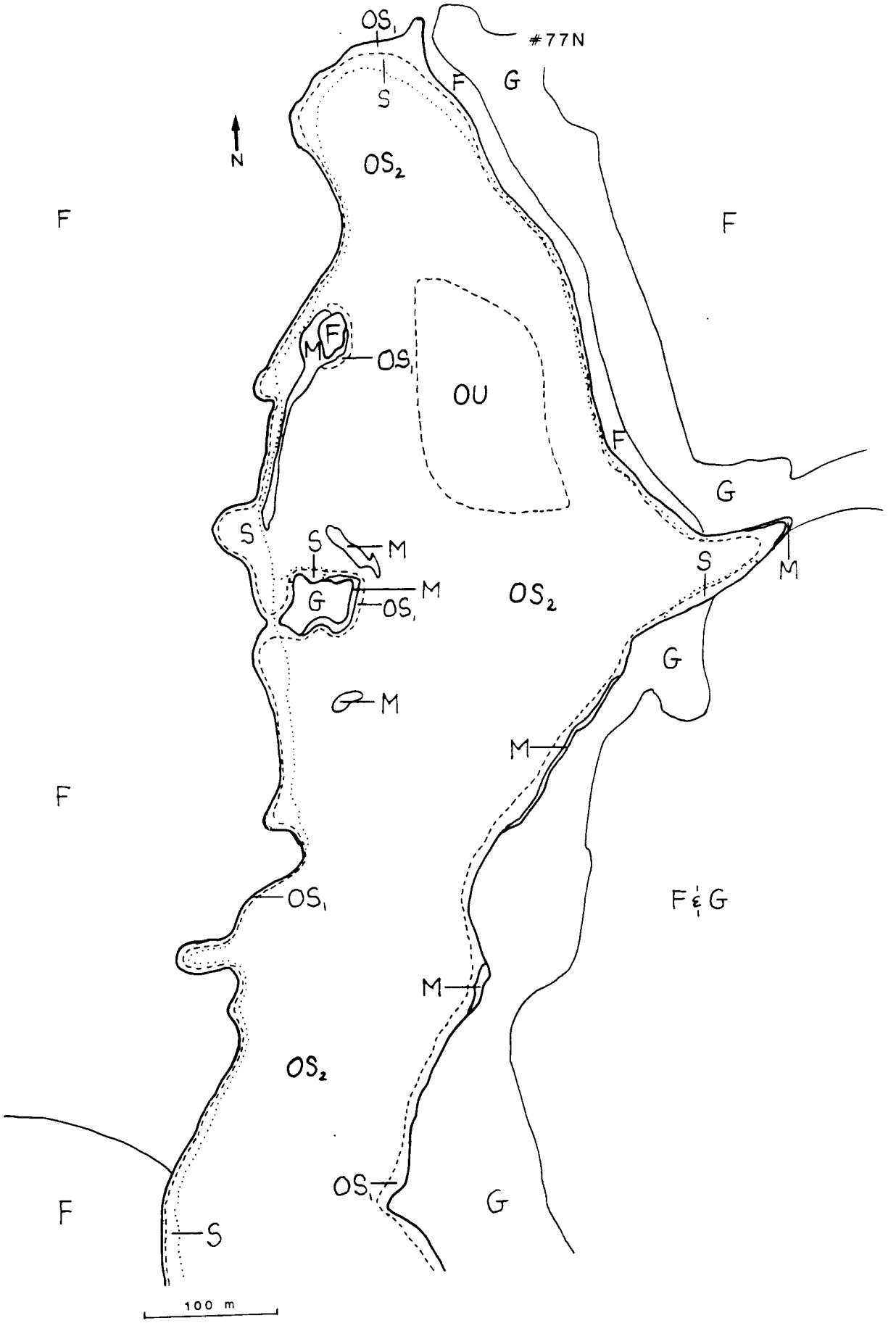

#68
N
100 m
WM
M2
M1
OS2
OS1
F
G
OU
F & G

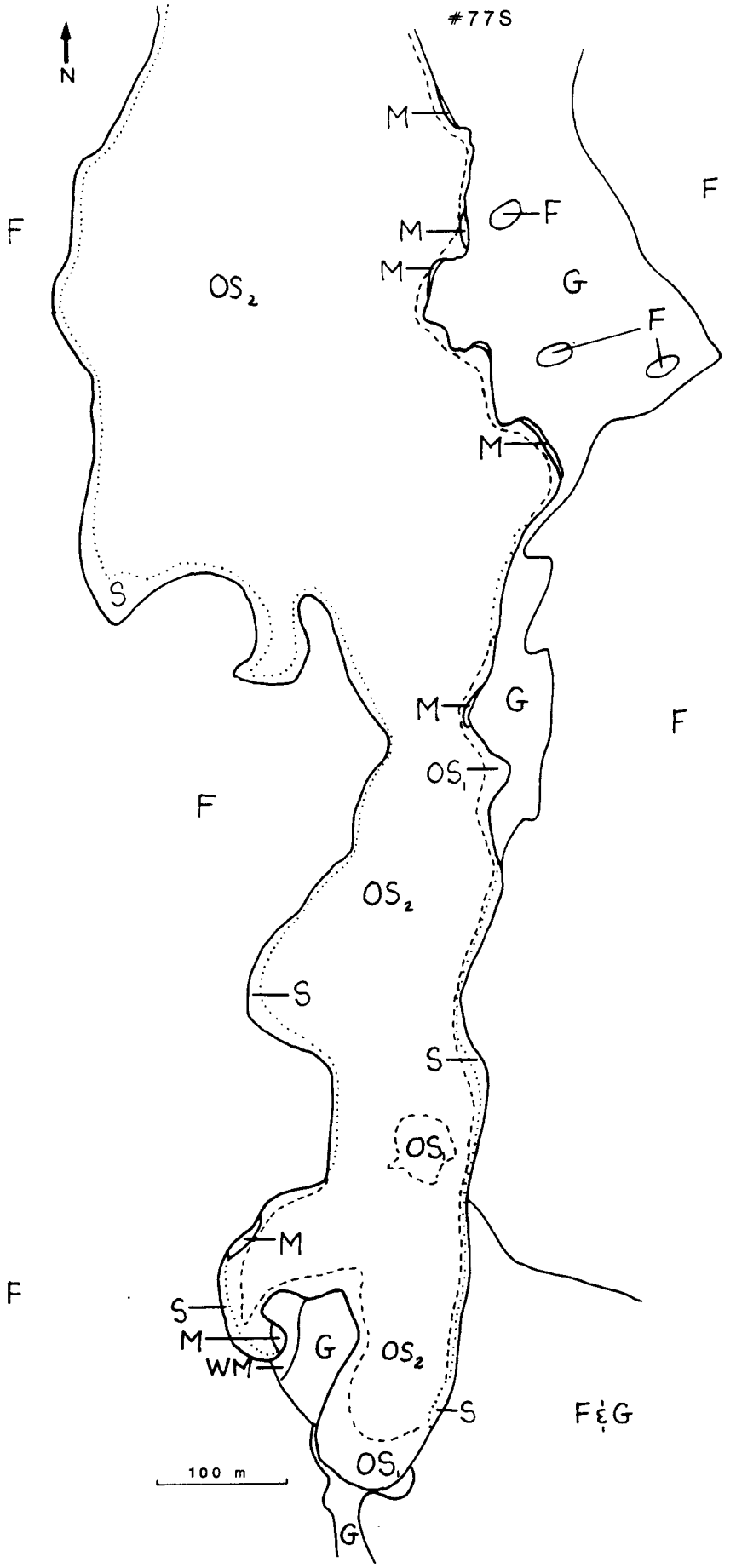

G
G
F
#69
N
M
OS
F
G
M
G
F
100m
G
M2
#72
OS
M2
M3
OU
G
M3
M2
OS
F
F
M2
OS
M3
M2
G
F
G
WM
M2
OS
G
M3
M2
M3
M1
G
F
OS
G
F
F
OS
M1
100 m
G

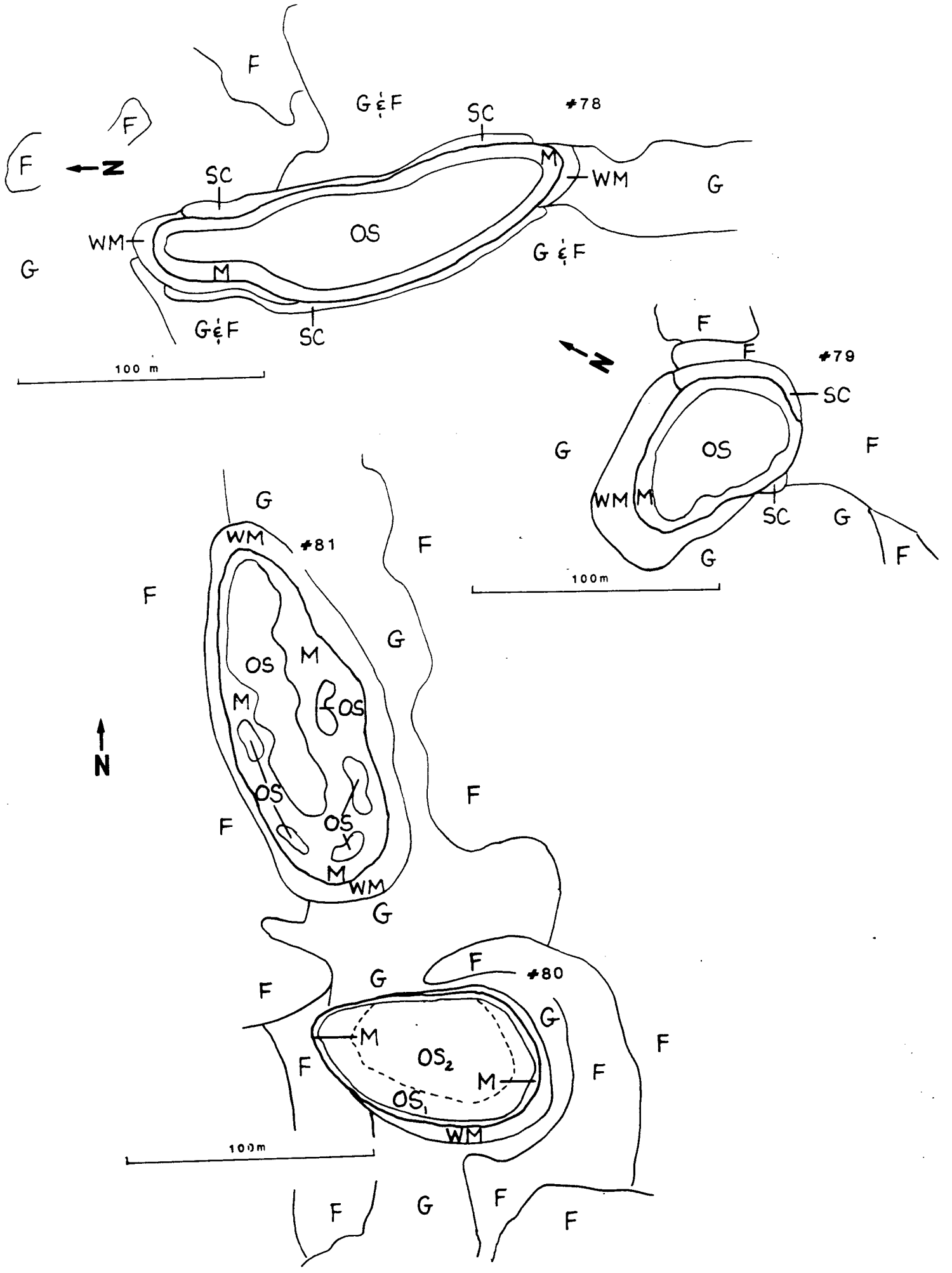

G
#71
M
OS
N
F
M
F
M
OS
OS
G
F
G
G
M
M
WM
F
#70
M
WM
M
OS1
S
OU
F
F
M
S
F
OS1
G
100 m
OS2
M
WM
G

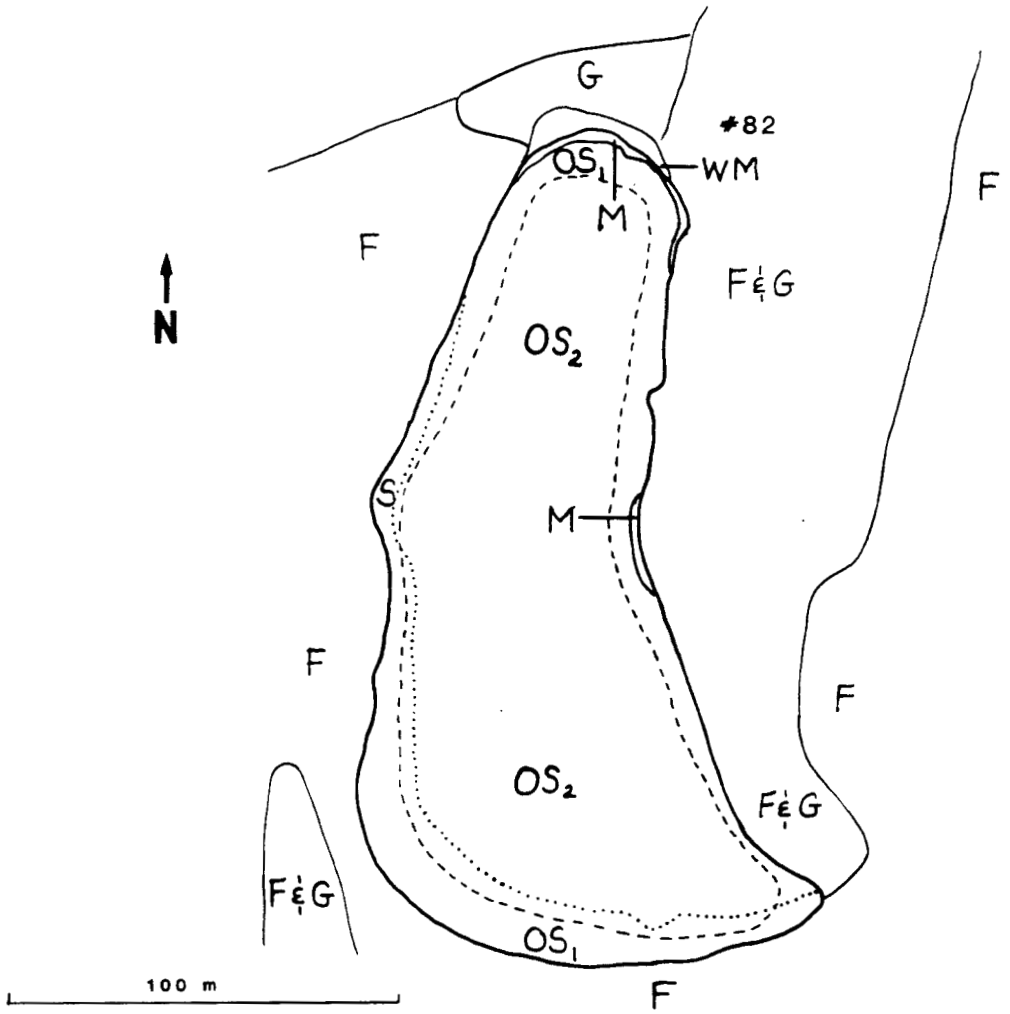

N
F
WM
M1
M2
OS
G
S
OU
#75
#74
#73
F & G
OS1
OS2
100 m

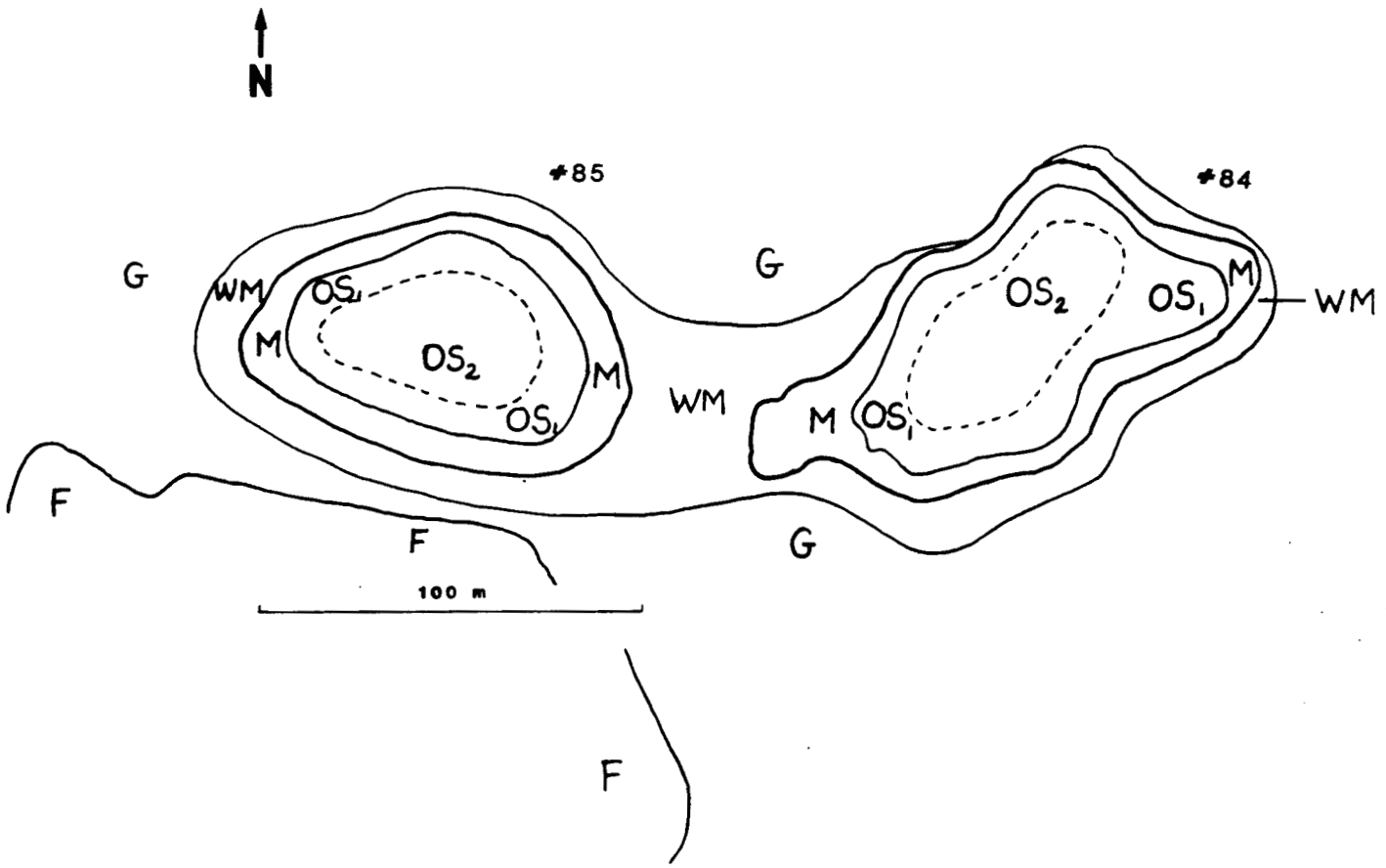

F
F & G
G
F
N
S
M
WM
G
OU
WM
F
M
*76
S
S
G
M
F
M
WM
F
S
OU
M
F
G
100 m
S
F
F & G
S
F
OU
F
G
S
F & G

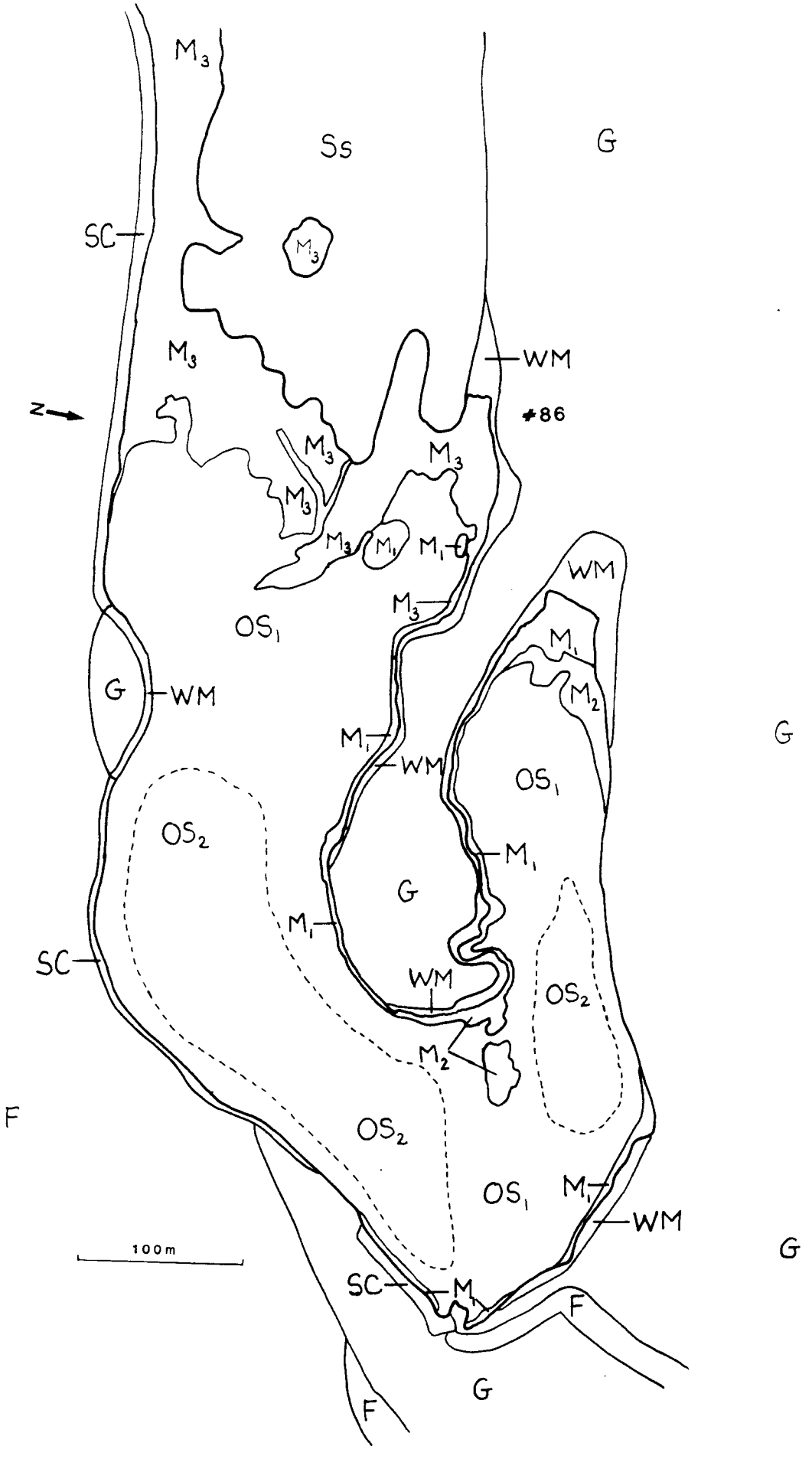

OS1
#77N
S
F
G
N
OS2
F
F
M
F
OS1
OU
F
G
S
S
M
S
M
G
M
OS1
OS2
G
M
M
F
OS1
F & G
M
OS2
OS1
G
F
S
100 m

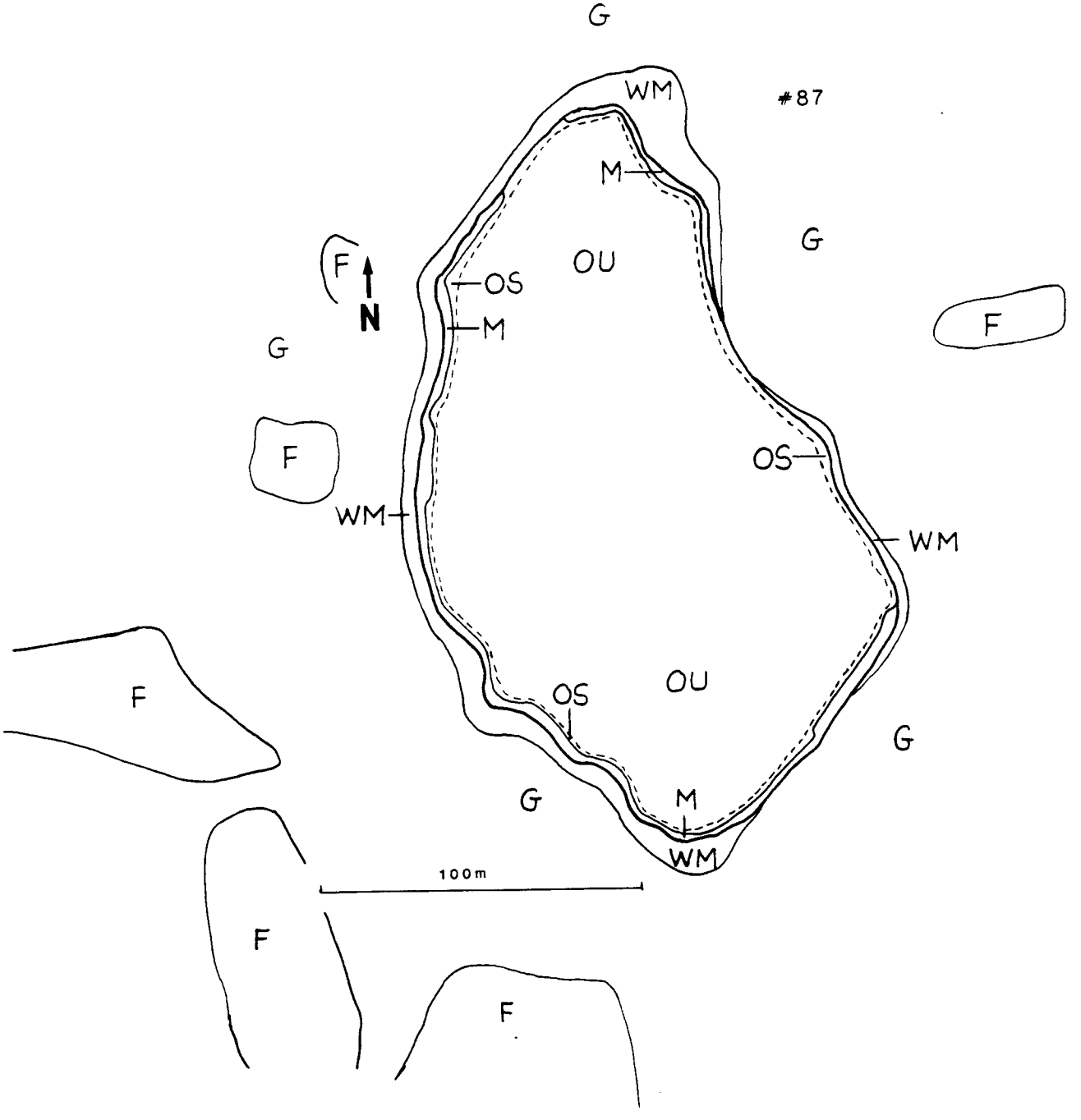

#77S
N
M
F
M
F
M
G
F
OS2
F
F
M
S
M
G
F
OS1
F
OS2
S
S
OS1
M
F
S
M
WM
G
OS2
S
F & G
OS1
100 m
G

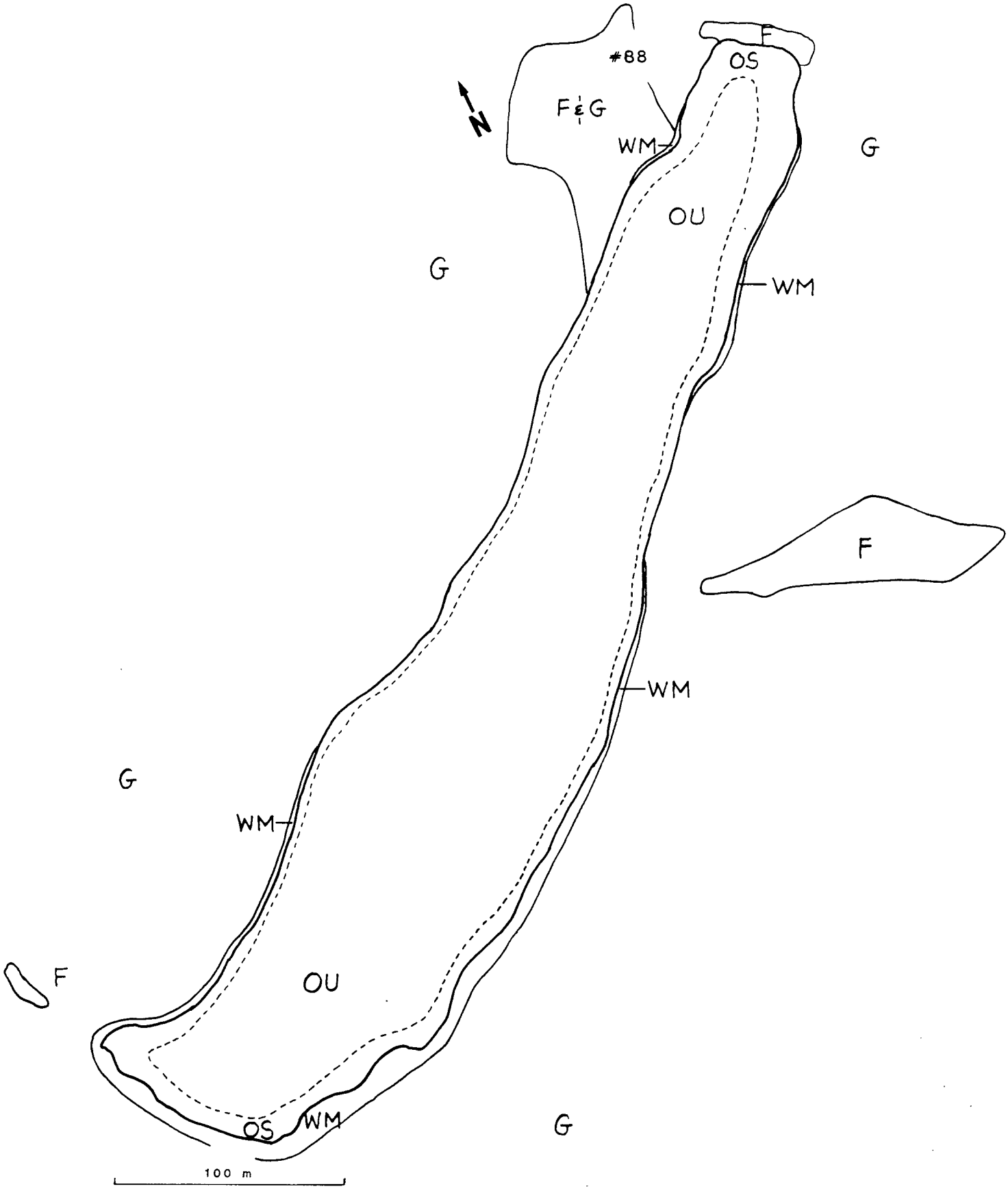

#78
N
F
G & F
SC
M
WM
G
OS
100 m
#79
100m
#81
N
OS
M
WM
#80
OS2
OS1
100m

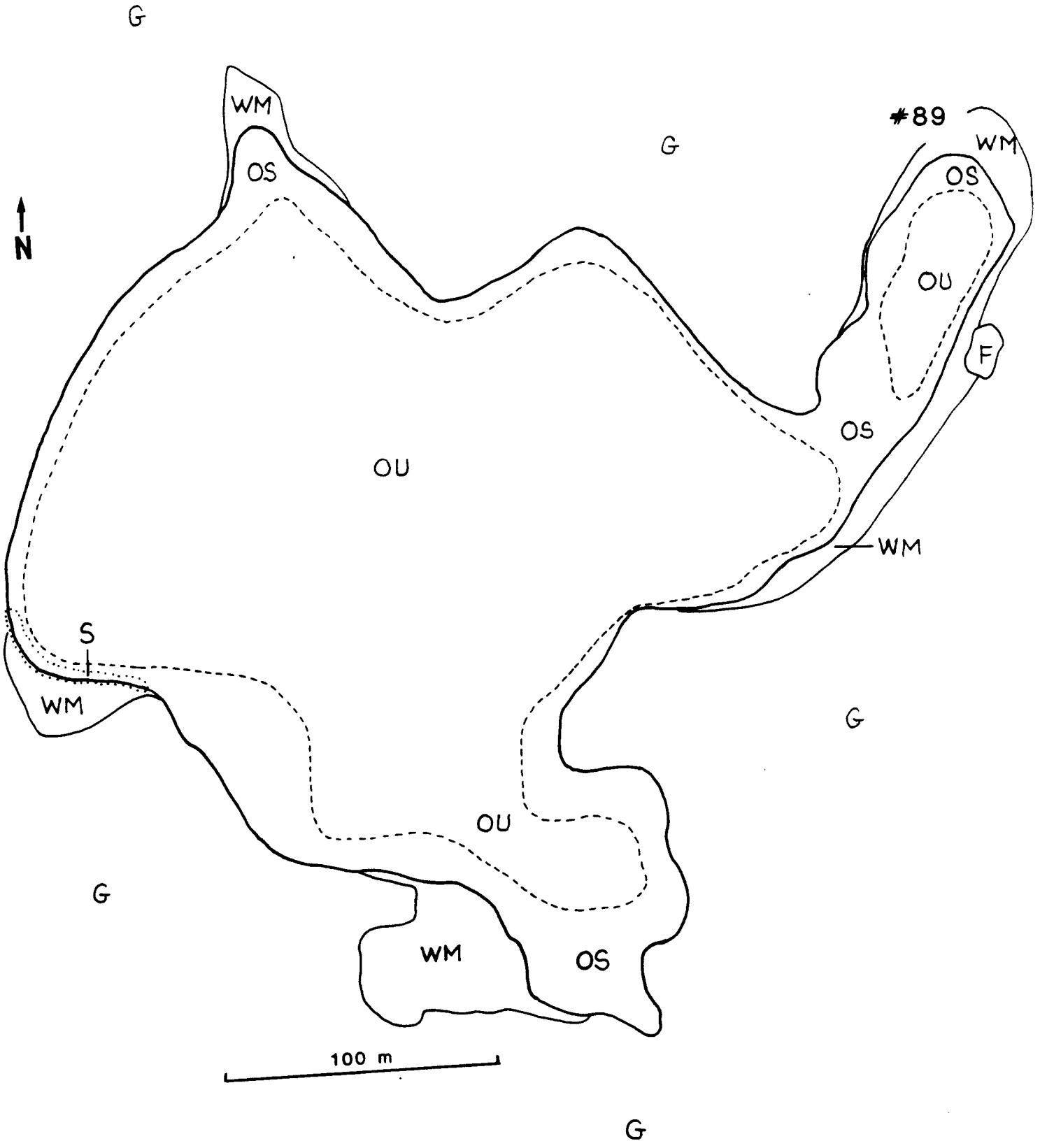

G
#82
OS1
WM
M
F
F
N
F&G
OS2
M
F
F
OS2
F&G
F&G
OS1
100 m
F

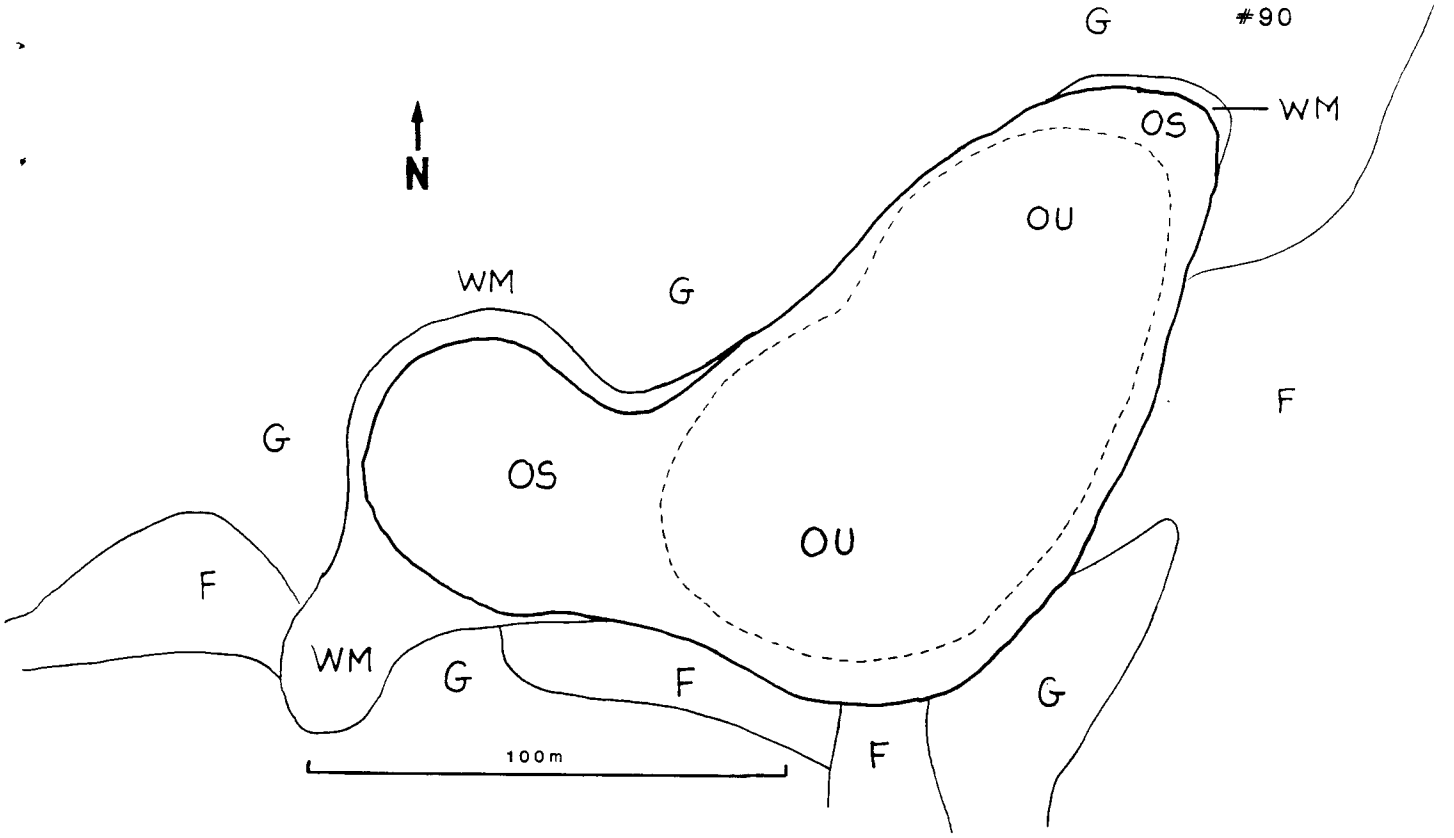

N
#85
#84
G
G
WM
OS1
M
OS2
M
OS1
WM
OS2
OS1
M
WM
M
OS1
F
F
G
100 m
F

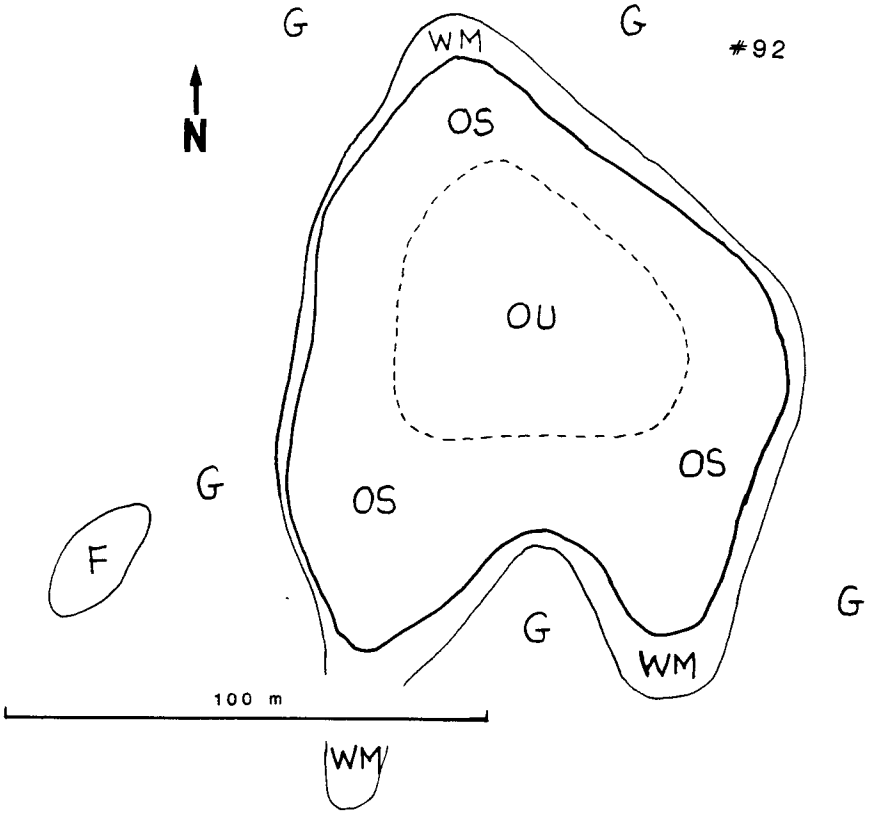

F
G
Ss
SC
M3
WM
N
#86
M1
M2
OS1
OS2
G
100m

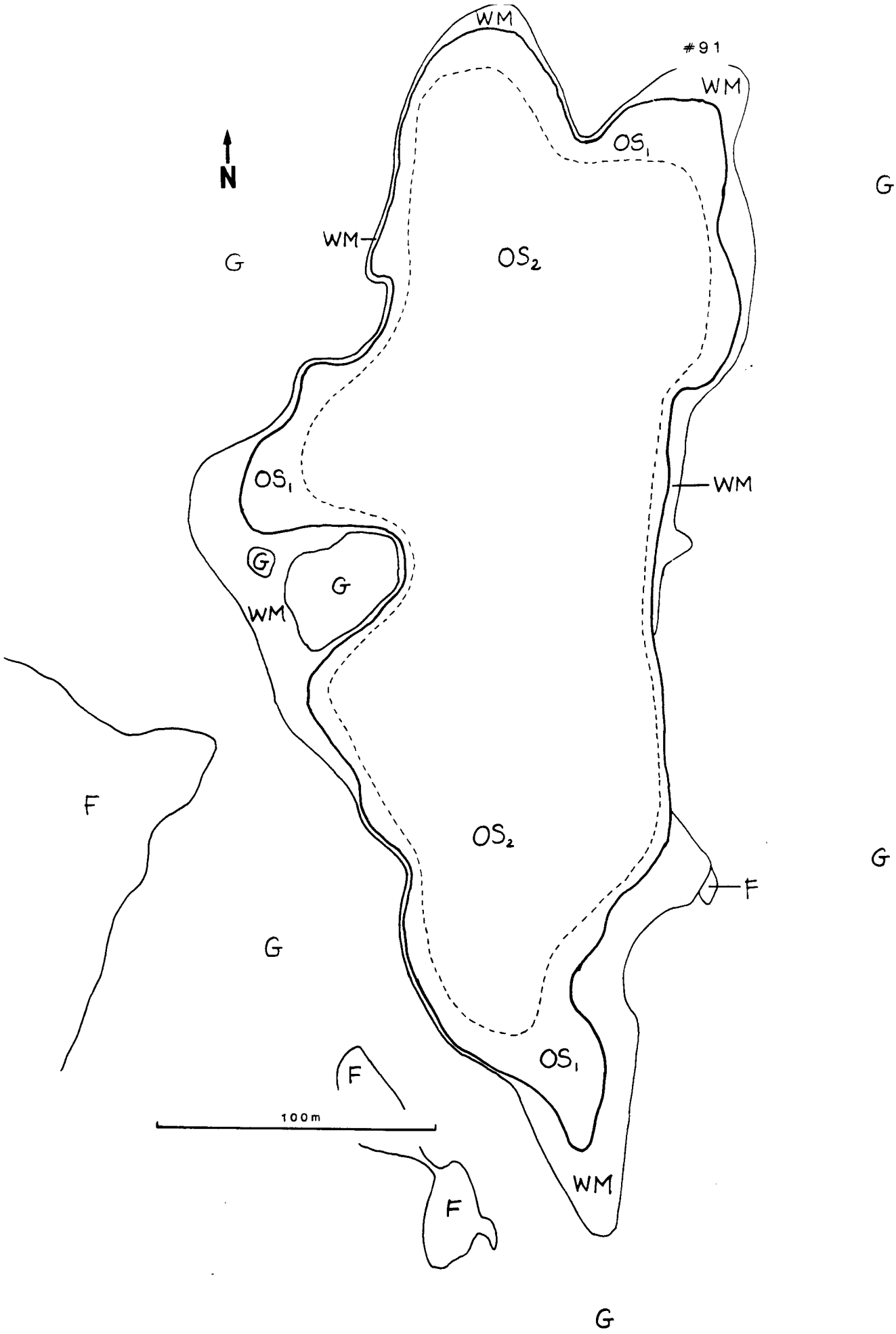

G
WM
#87
M
G
F
N
OS
OU
M
F
G
F
OS
WM
WM
F
OS
OU
G
G
M
WM
100m
F
F

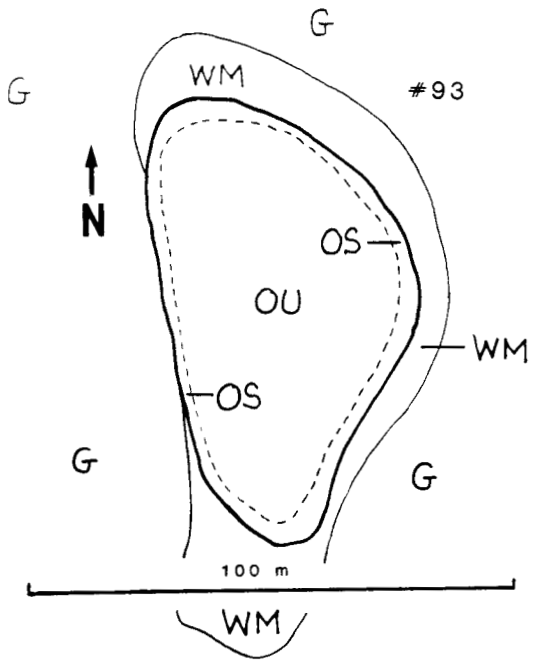

#88
F
OS
F & G
N
WM
G
OU
G
WM
F
WM
G
WM
F
OU
OS
WM
G
100 m

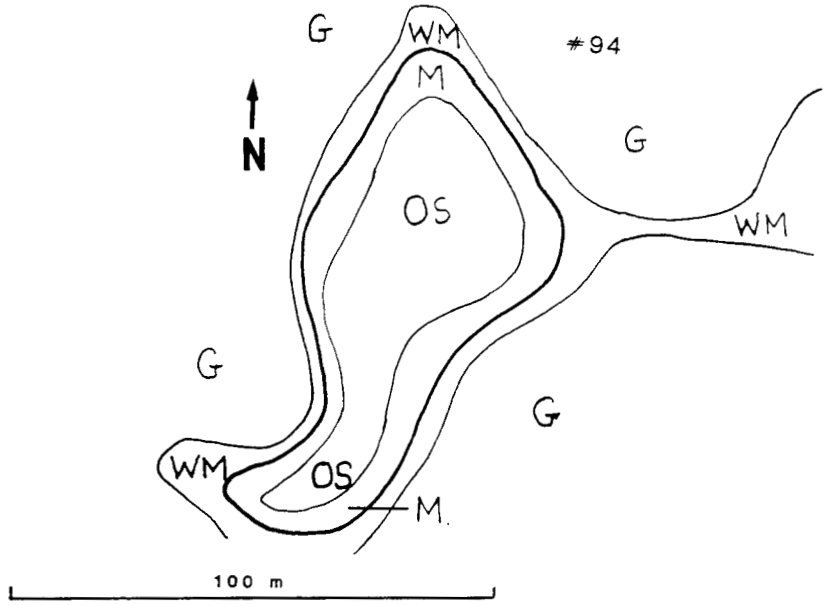

G
WM
OS
G
#89
WM
OS
N
OU
F
OS
OU
WM
S
WM
G
OU
G
WM
OS
100 m
G

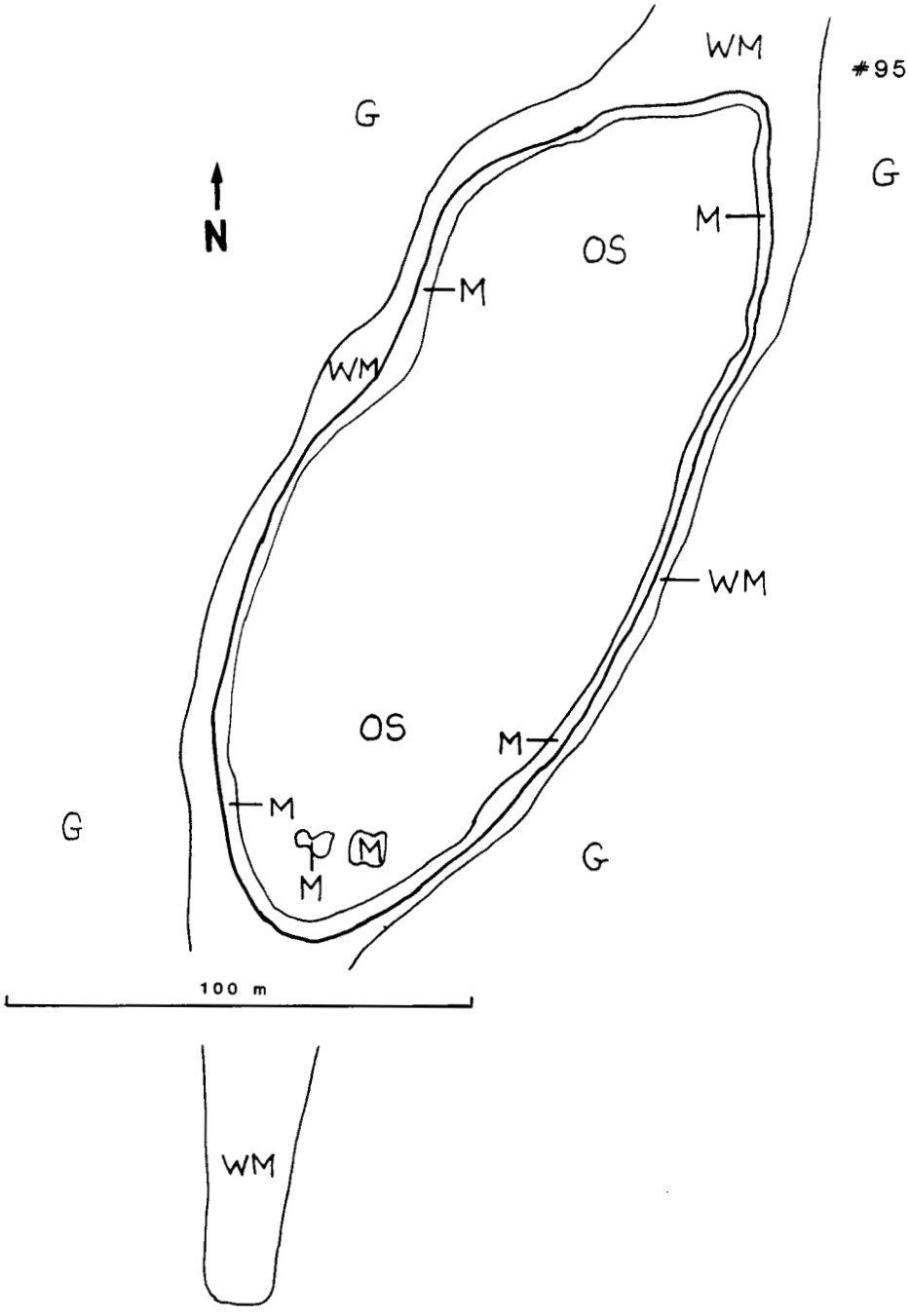

G
#90
WM
OS
N
OU
WM
G
F
G
OS
OU
F
WM
G
F
G
F
100m

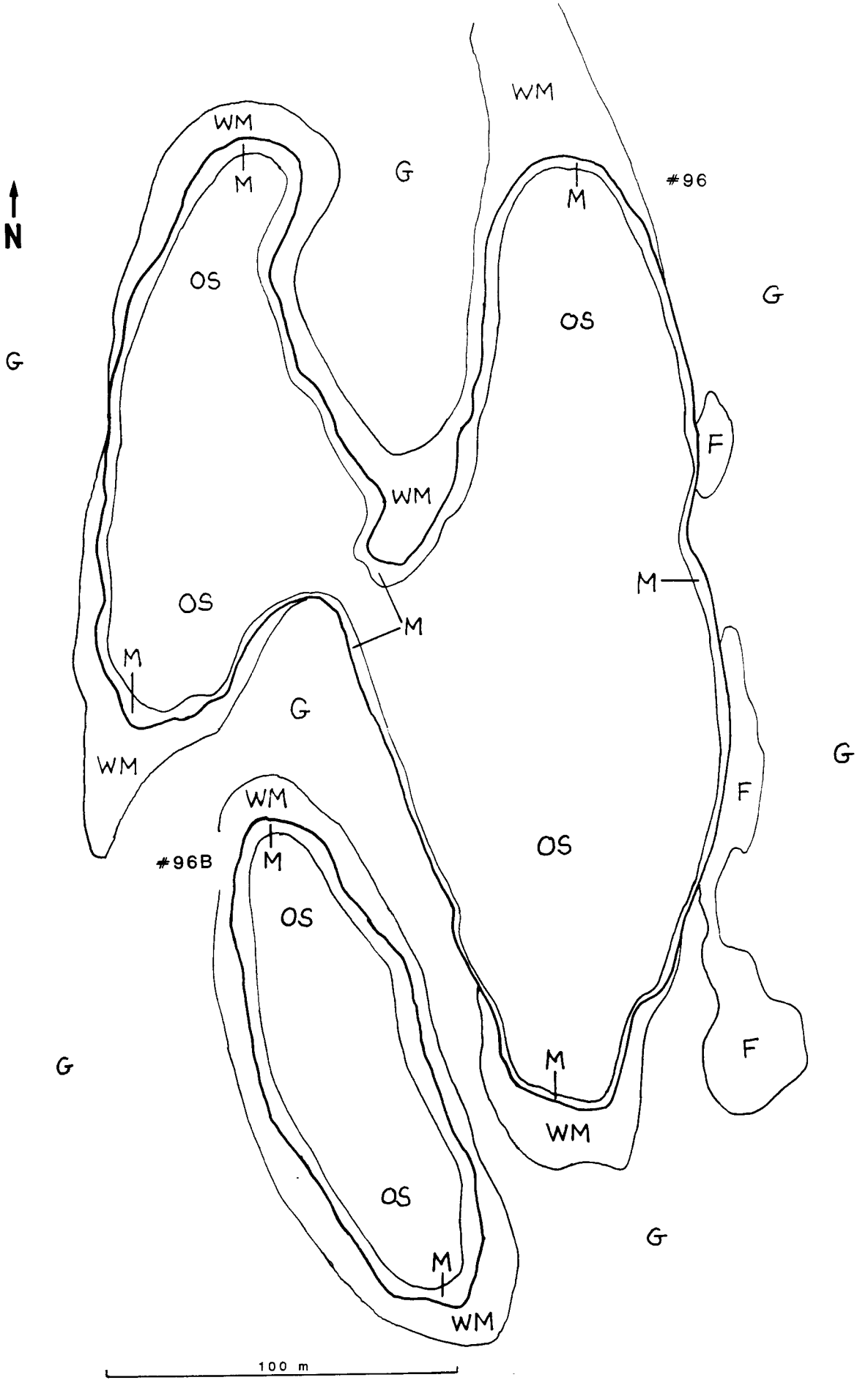

G
G
WM
#92
N
OS
OU
G
OS
OS
F
G
G
WM
100 m
WM

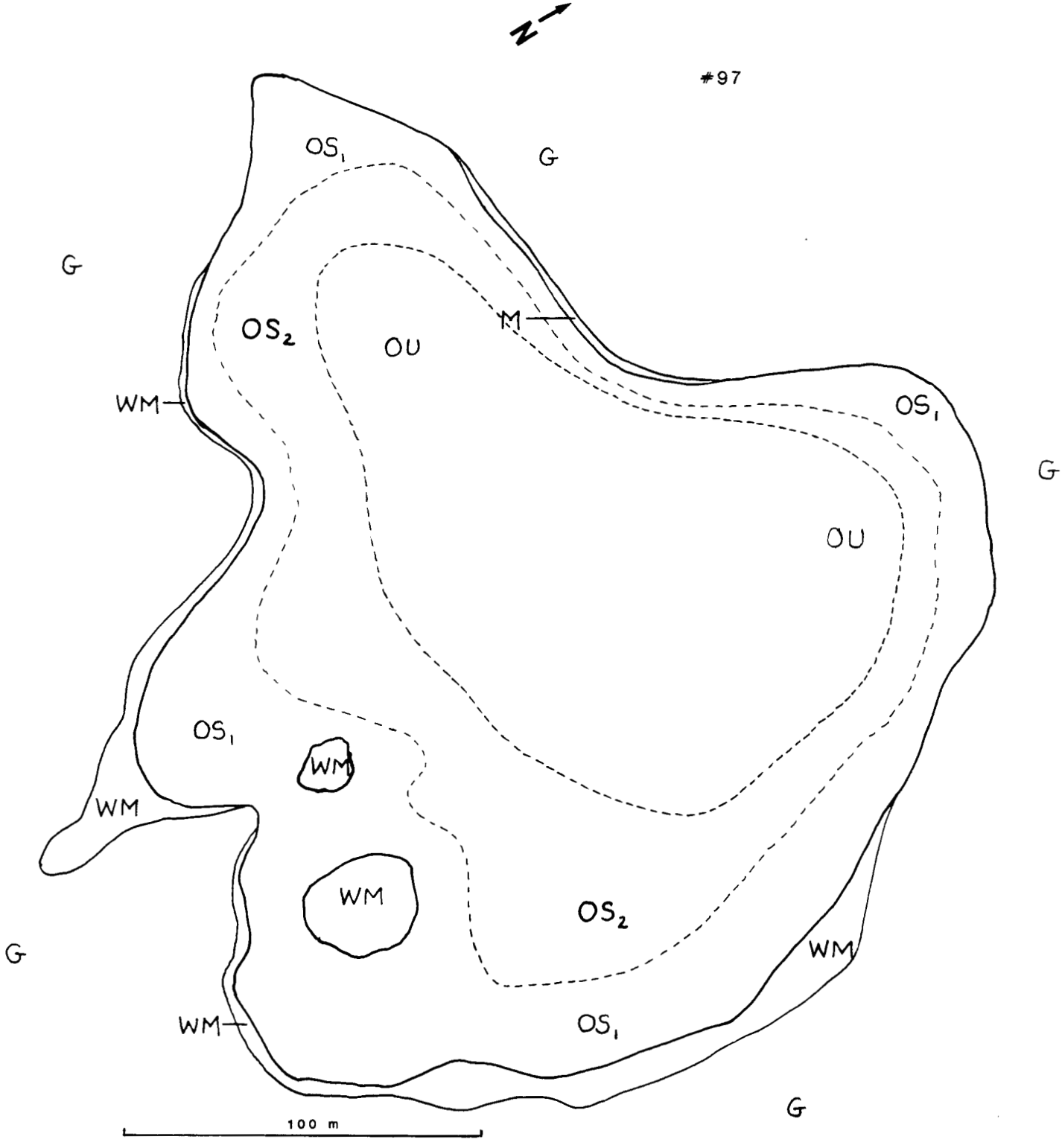

WM
#91
WM
OS1
N
G
WM
G
OS2
OS1
WM
G
G
WM
F
OS2
G
F
G
OS1
F
100m
WM
F
G

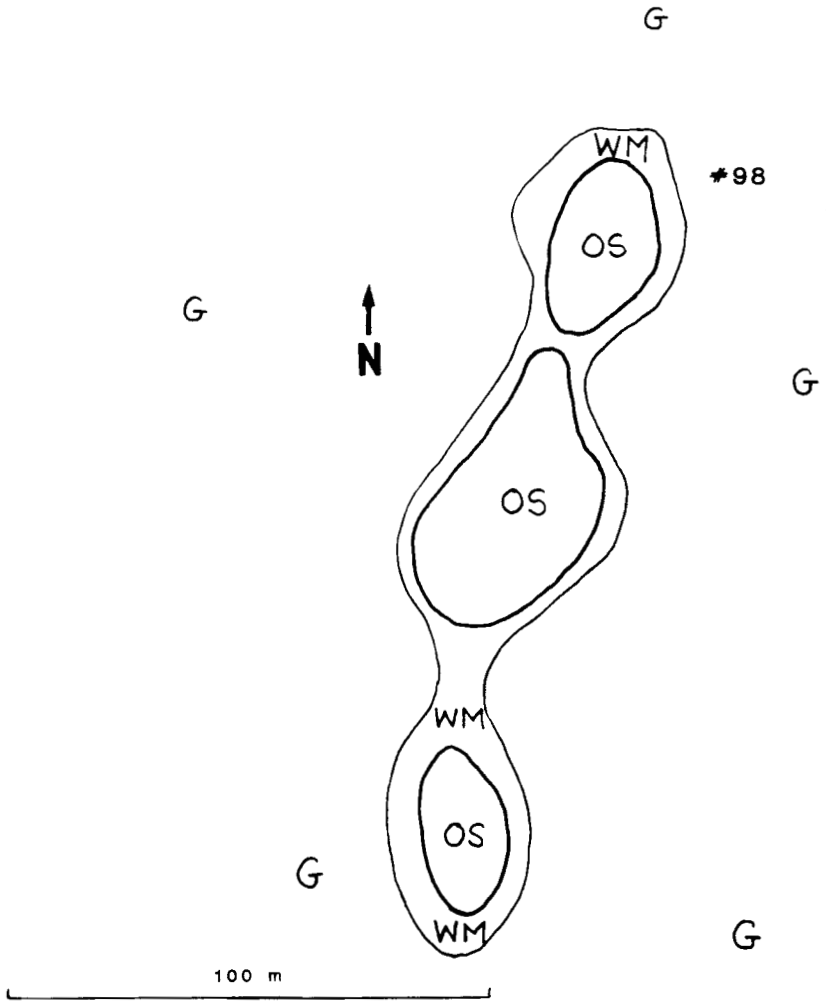

#93
N
G
WM
OS
OU
OS
WM
G
G
100 m
WM

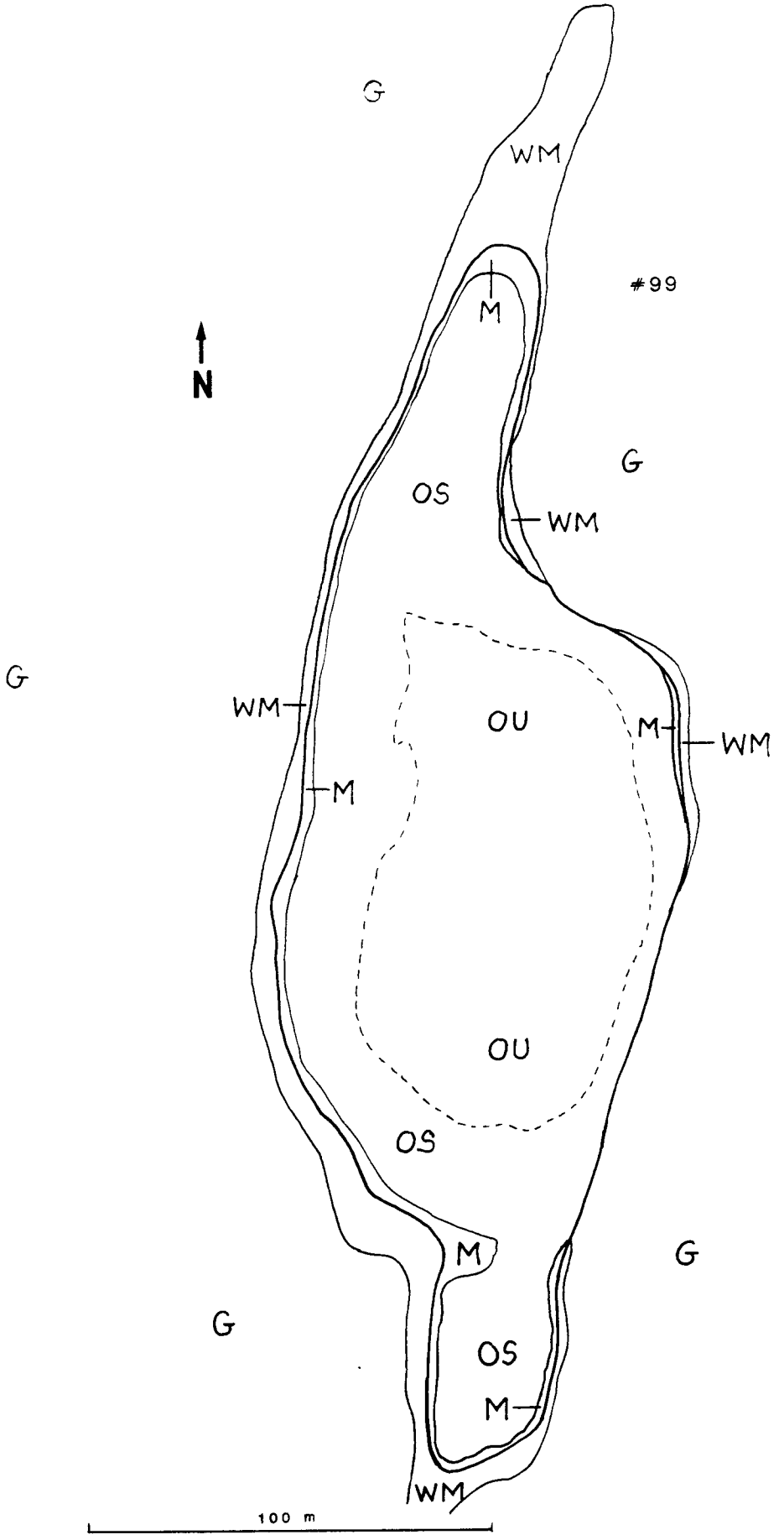

#94
N
G
WM
M
OS
G
WM
G
G
WM
OS
M
100 m

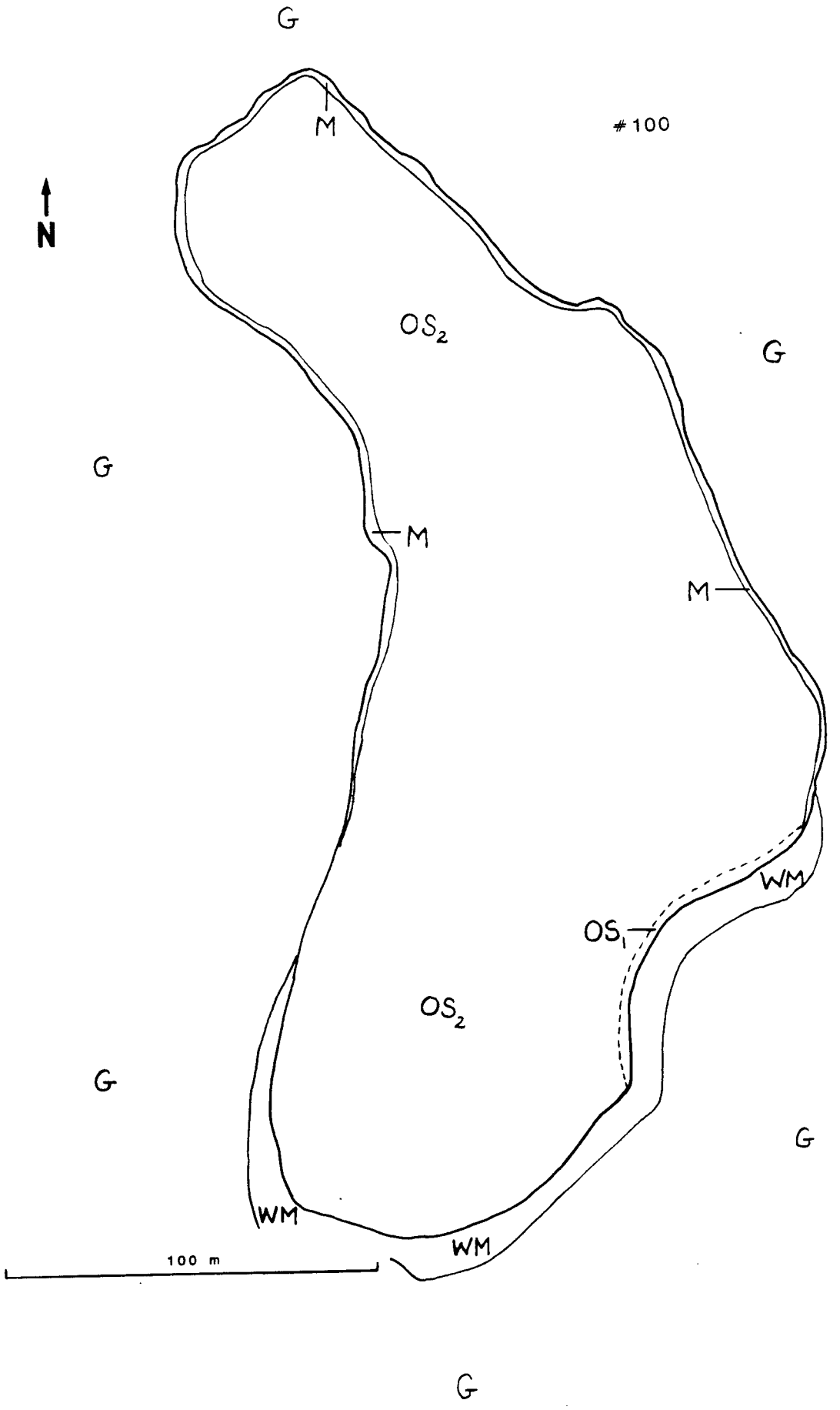

#95
N
WM
G
G
M
OS
M
WM
WM
OS
M
M
G
M
G
100 m
WM

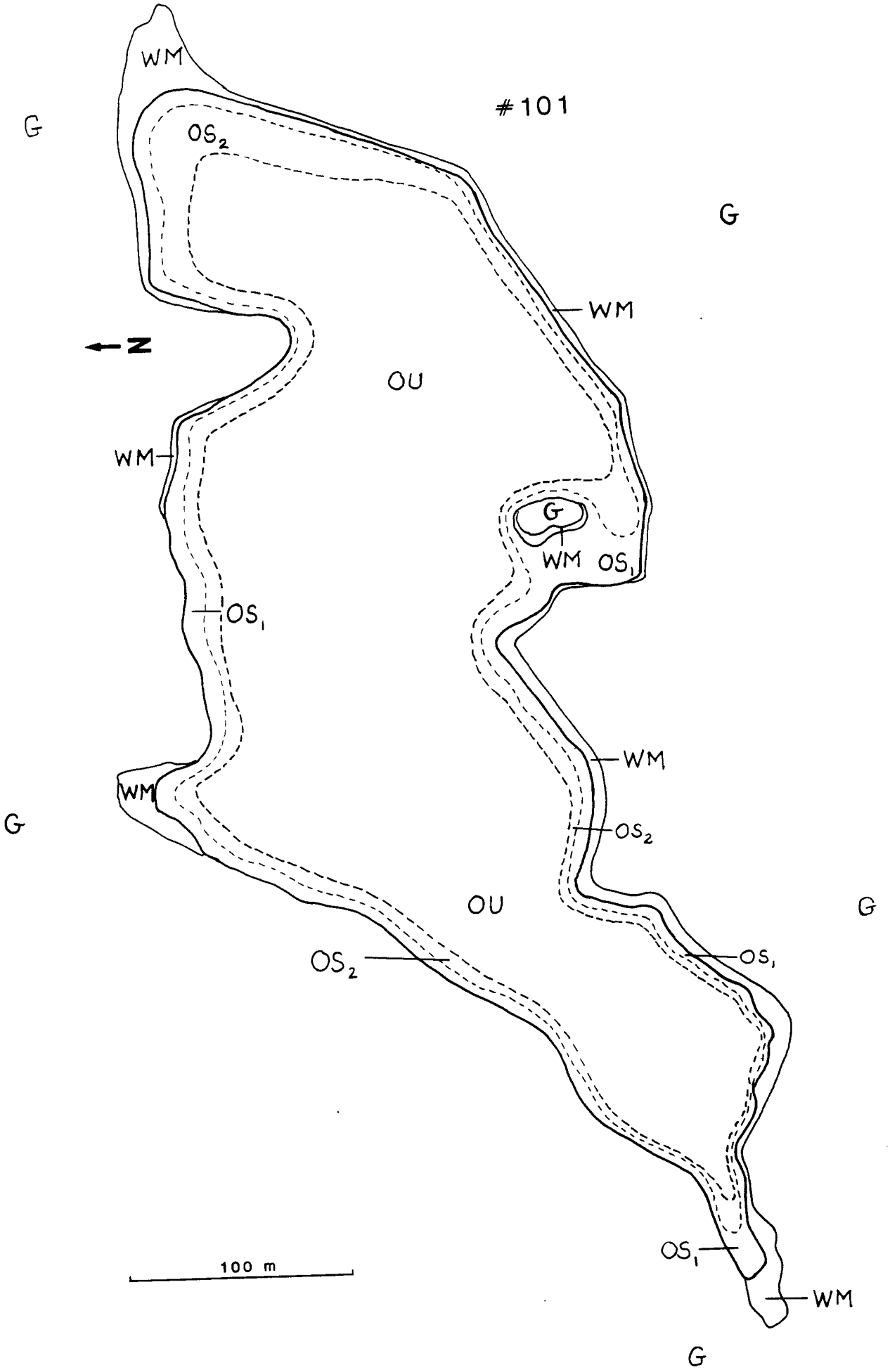

N
WM
M
G
#96
OS
F
#96B
100 m

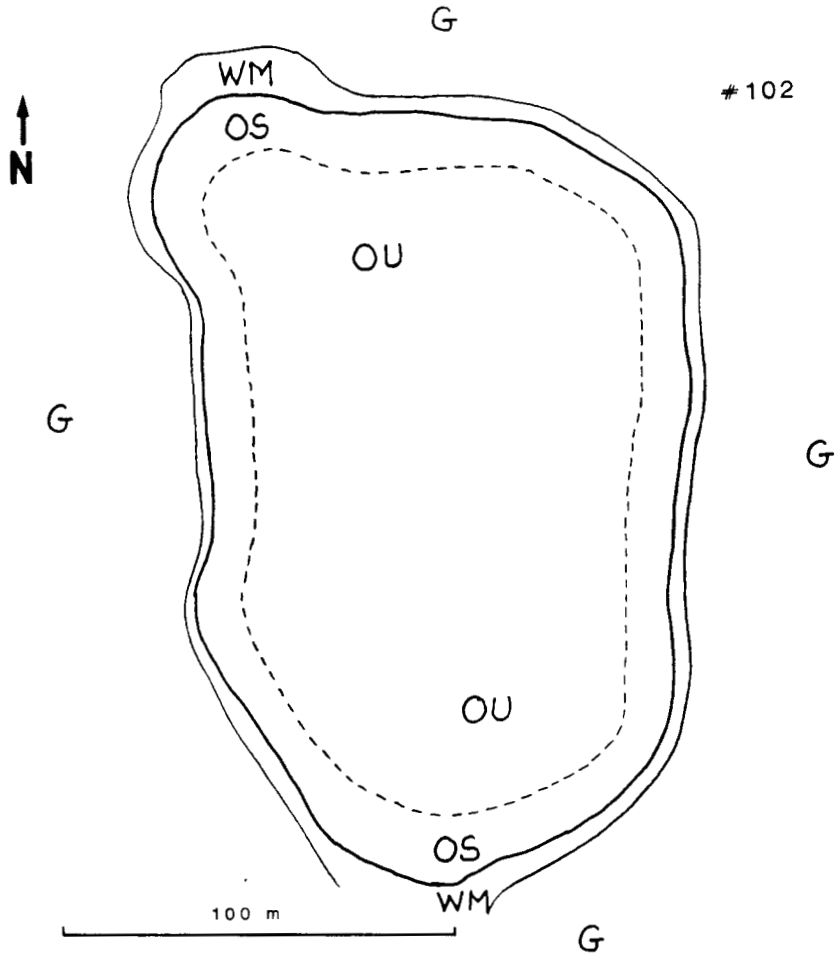

N
#97
OS1
G
G
OS2
OU
M
WM
OS1
G
OU
OS1
WM
WM
WM
OS2
G
WM
WM
OS1
G
100 m

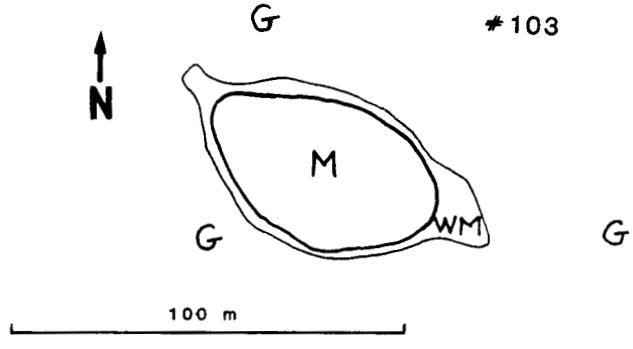

G
WM
#98
OS
G
N
G
OS
WM
OS
G
WM
G
100 m

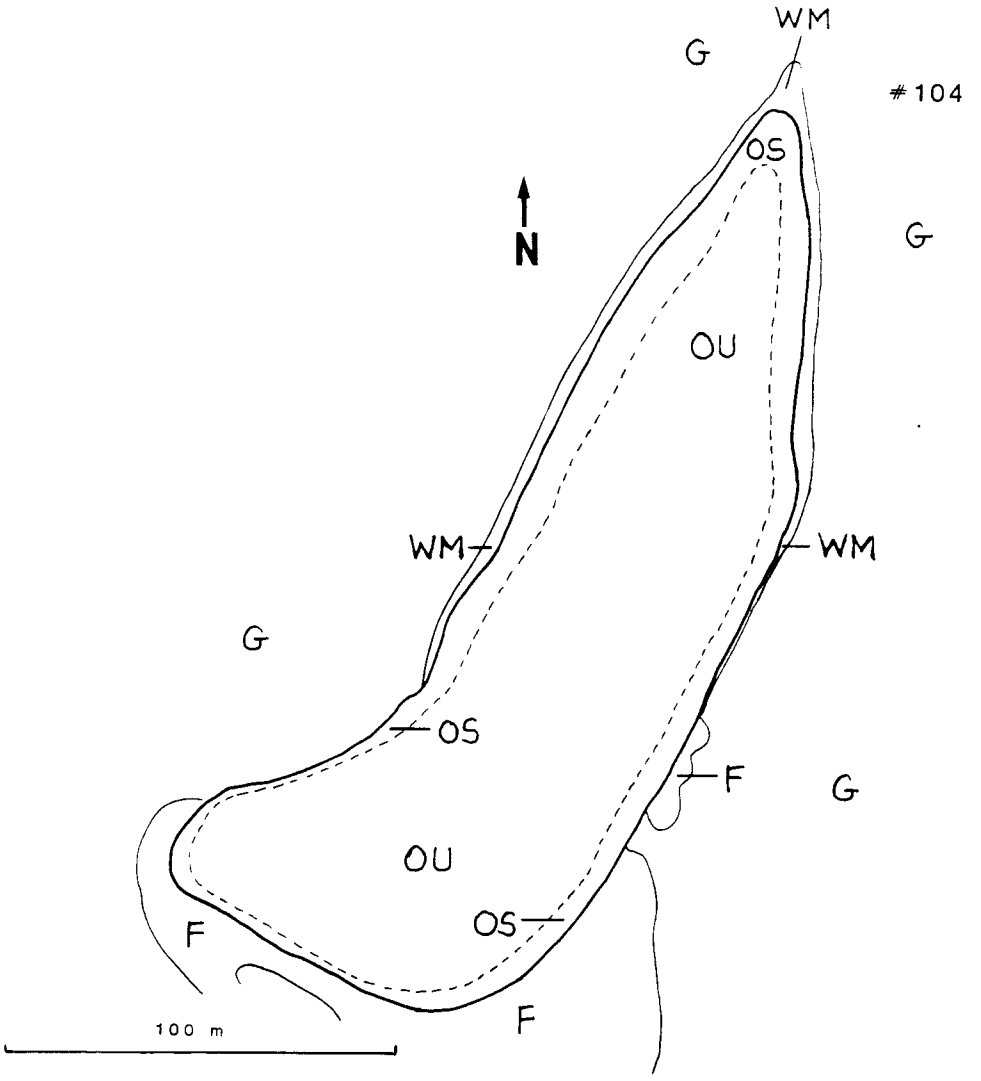

G
WM
#99
M
N
G
OS
WM
G
WM
OU
M
WM
M
OU
OS
M
G
G
OS
M
WM
100 m

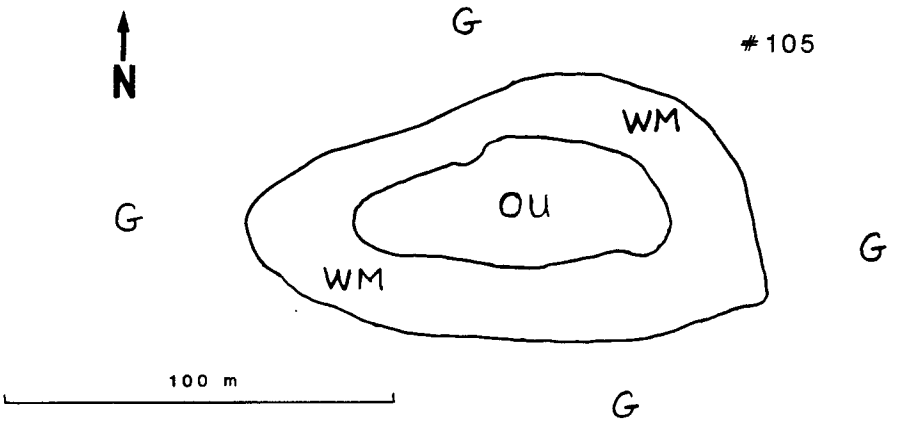

G
M
#100
N
OS2
G
G
M
M
WM
OS1
OS2
G
G
WM
WM
100 m
G

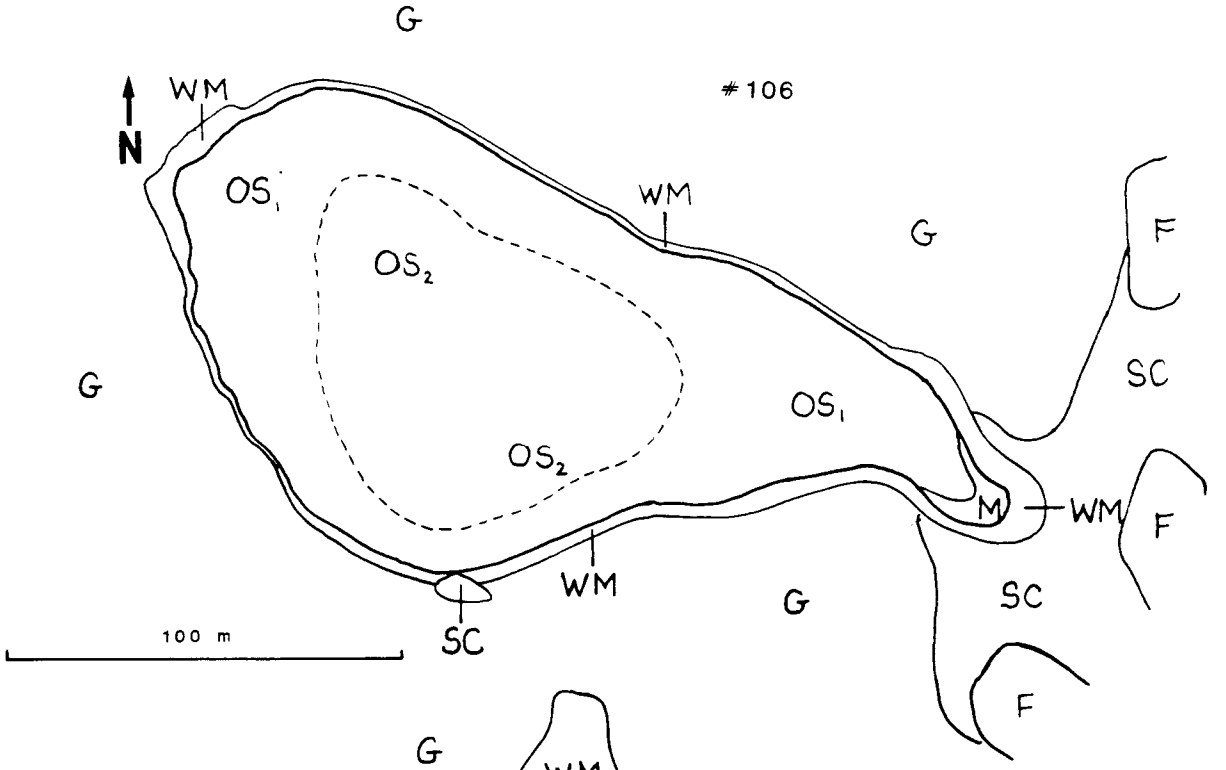

#101
WM
G
OS2
G
WM
N
OU
WM
G
WM
OS1
OS1
WM
WM
G
OS2
OU
G
OS2
OS1
OS1
WM
G
100 m

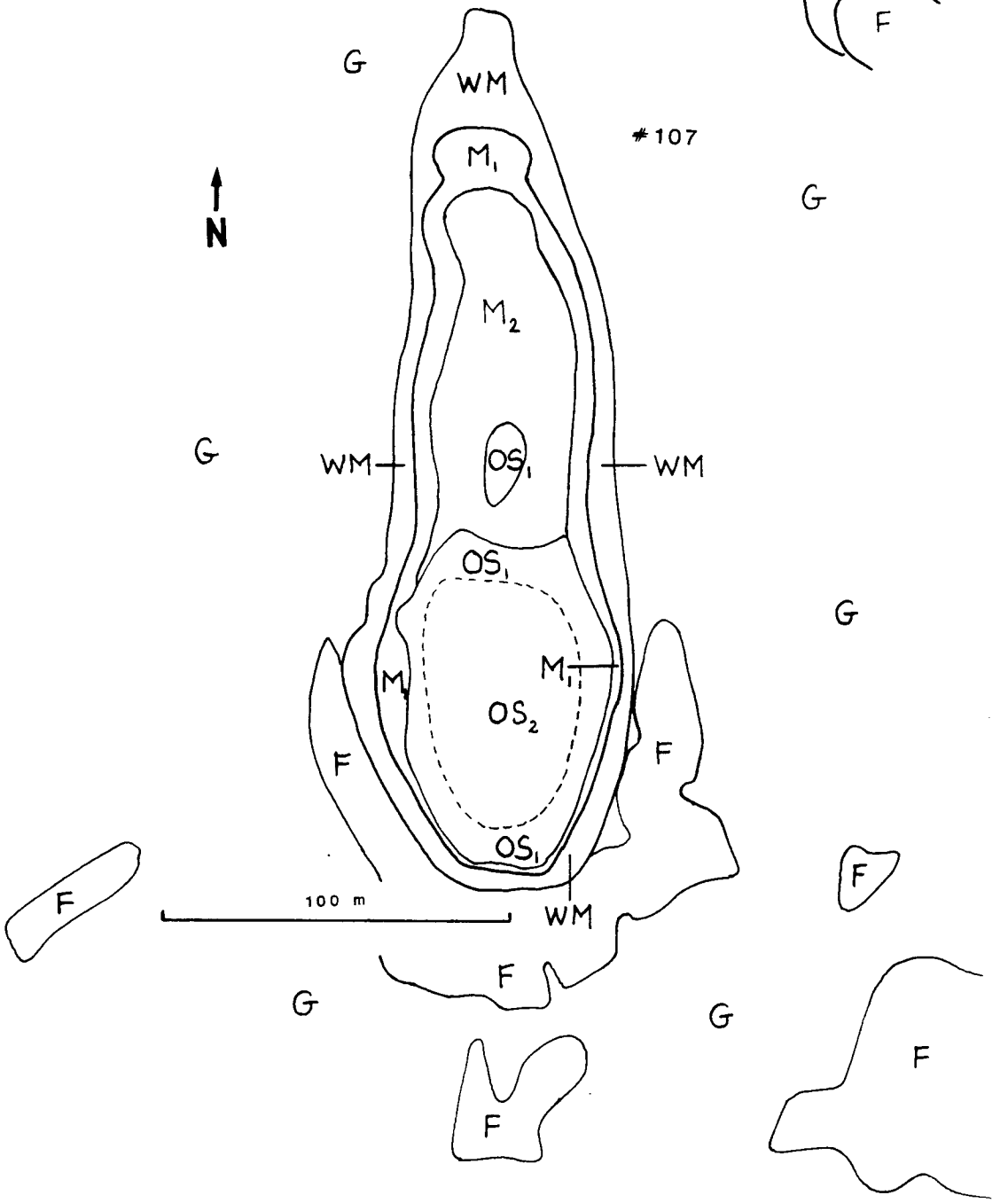

G
WM
#102
N
OS
OU
G
G
OU
OS
WM
100 m
G

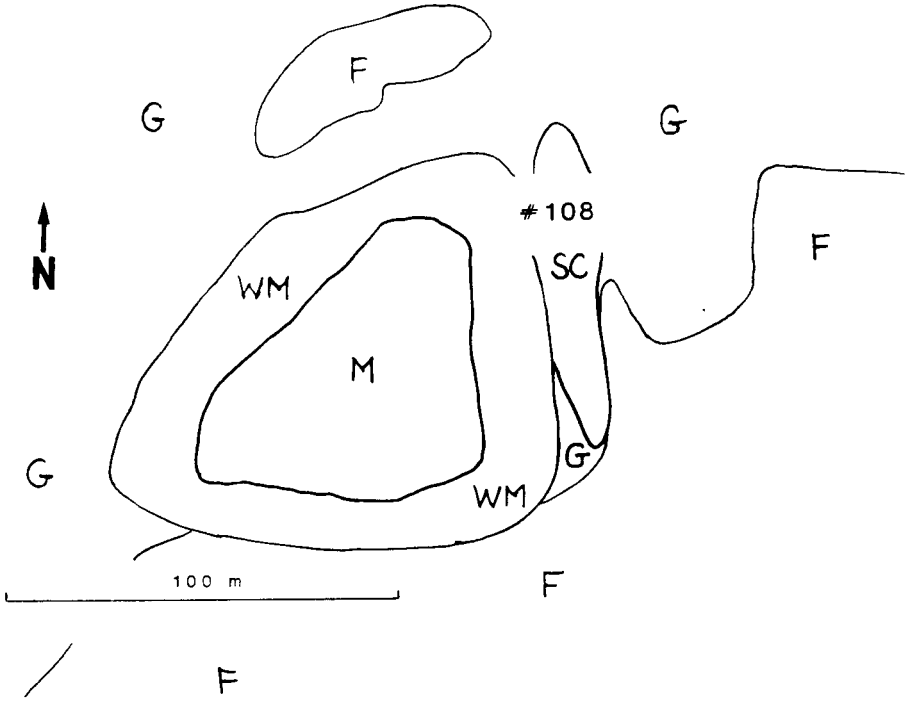

G
#103
N
M
G
WM
G
100 m

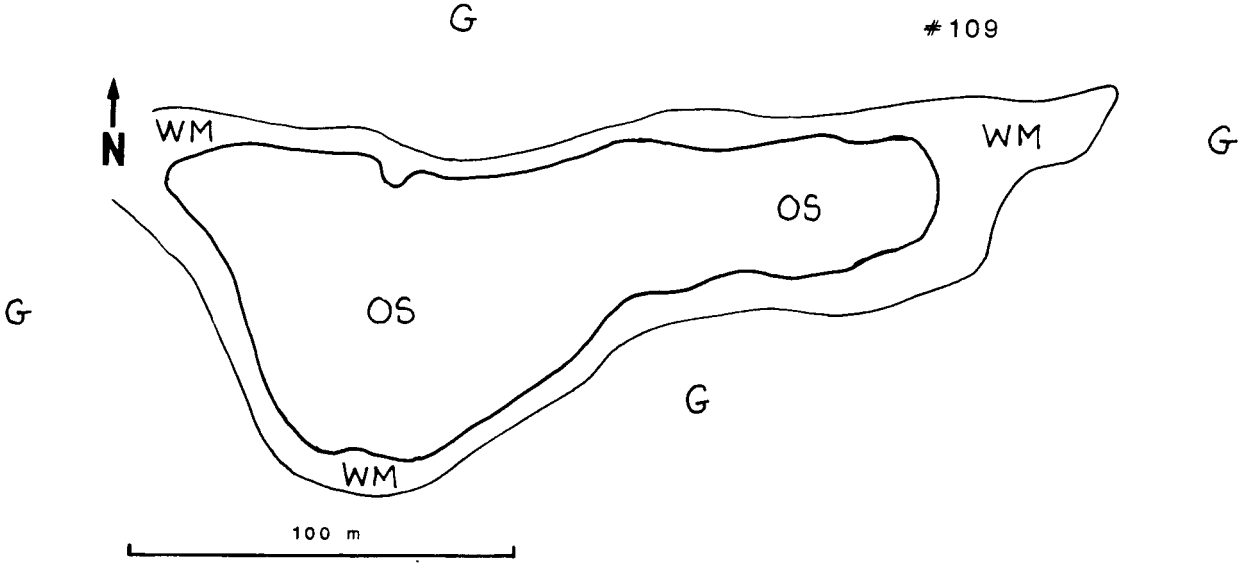

WM
G
#104
OS
N
G
OU
WM
WM
G
OS
F
G
OU
OS
F
F
100 m

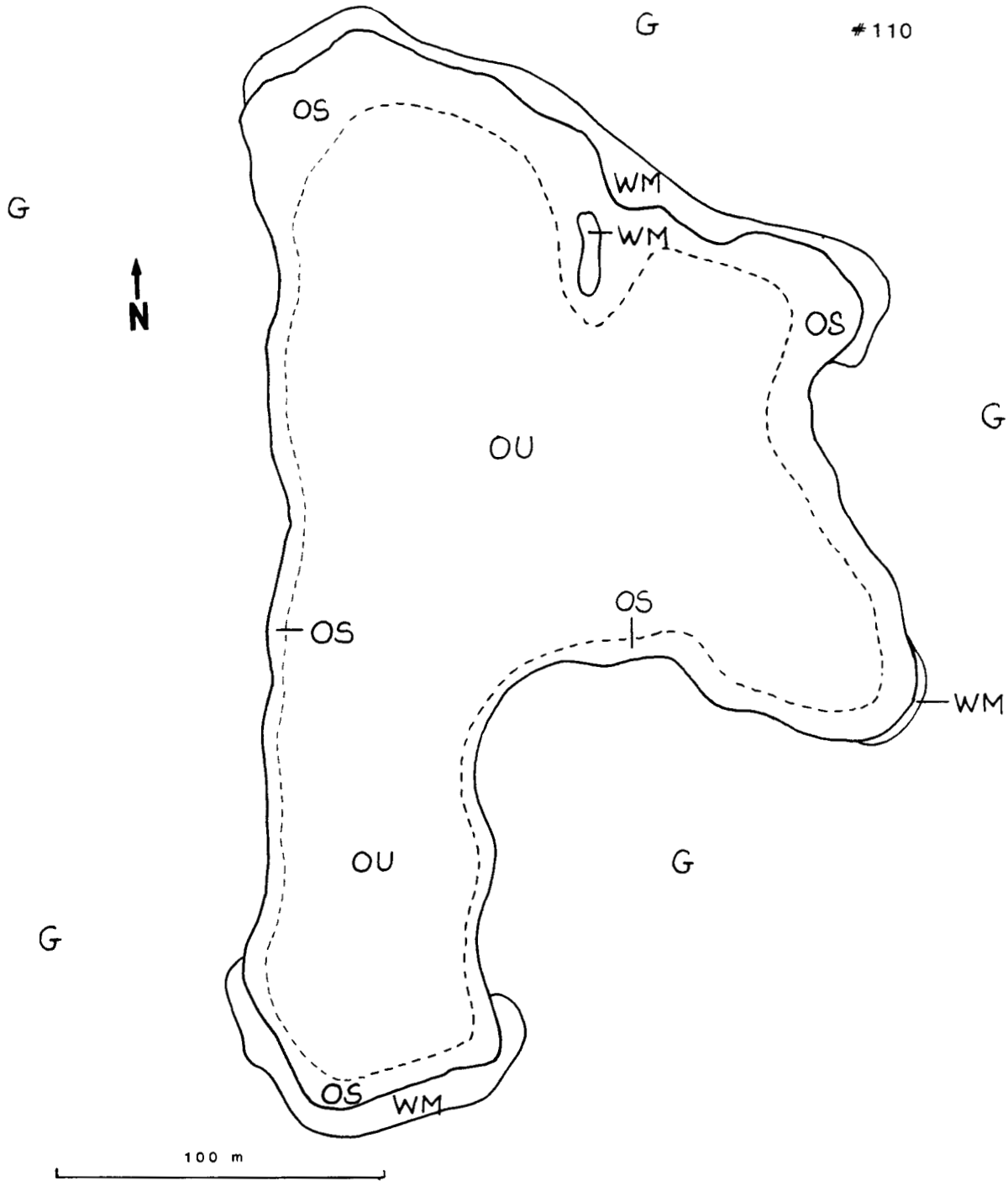

G
#105
N
WM
OU
G
G
WM
100 m
G

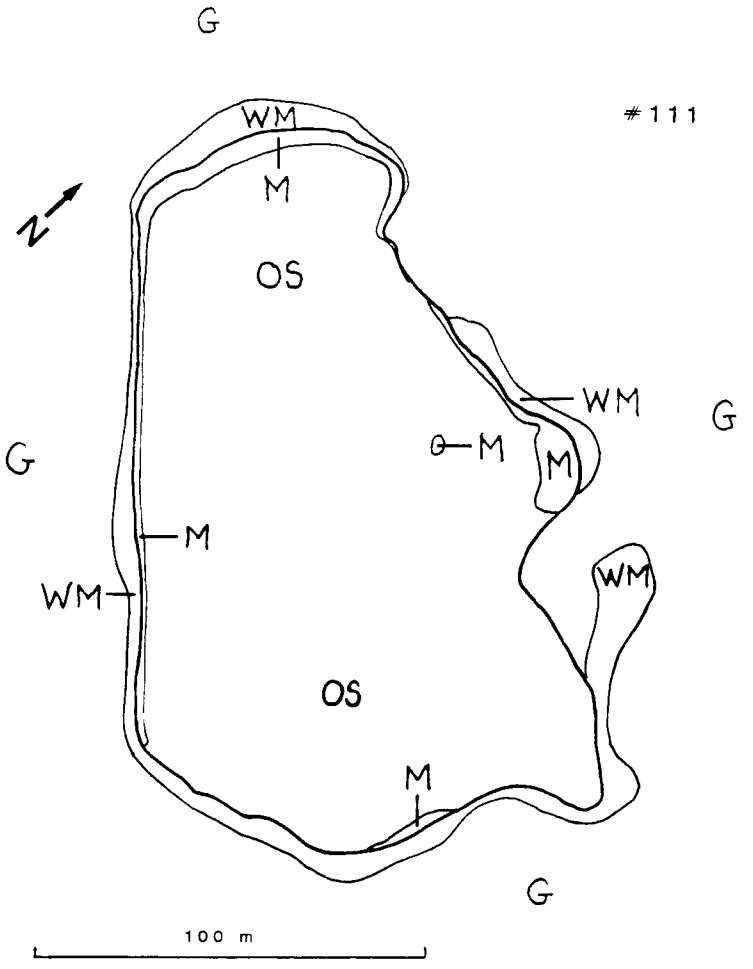

#106
N
WM
OS1
OS2
WM
G
F
SC
G
OS1
OS2
M
WM
F
WM
G
SC
SC
100 m
F

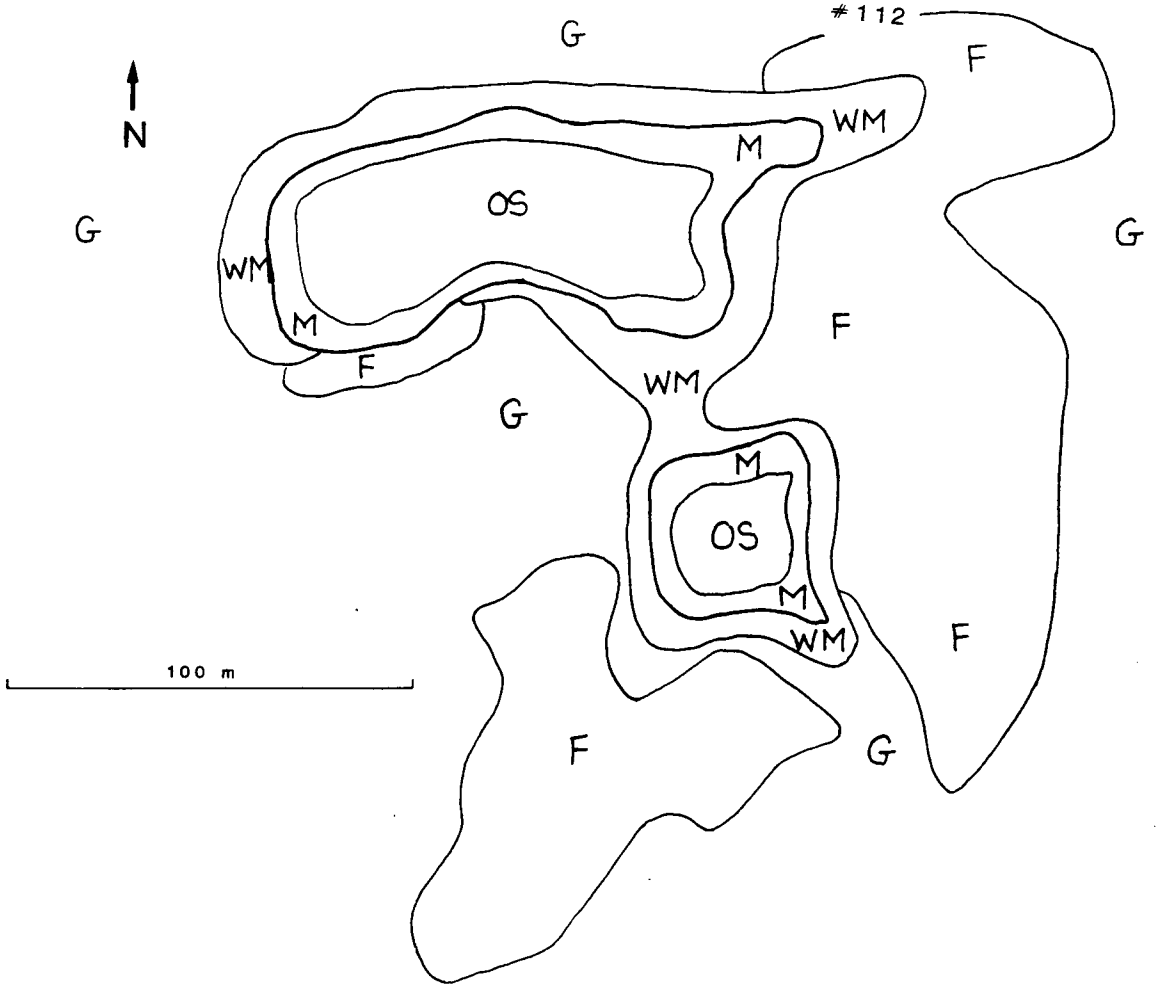

G
WM
#107
M1
N
G
M2
G
WM
OS1
WM
OS1
G
M1
M1
OS2
F
F
OS1
F
F
100 m
WM
F
G
G
F
F

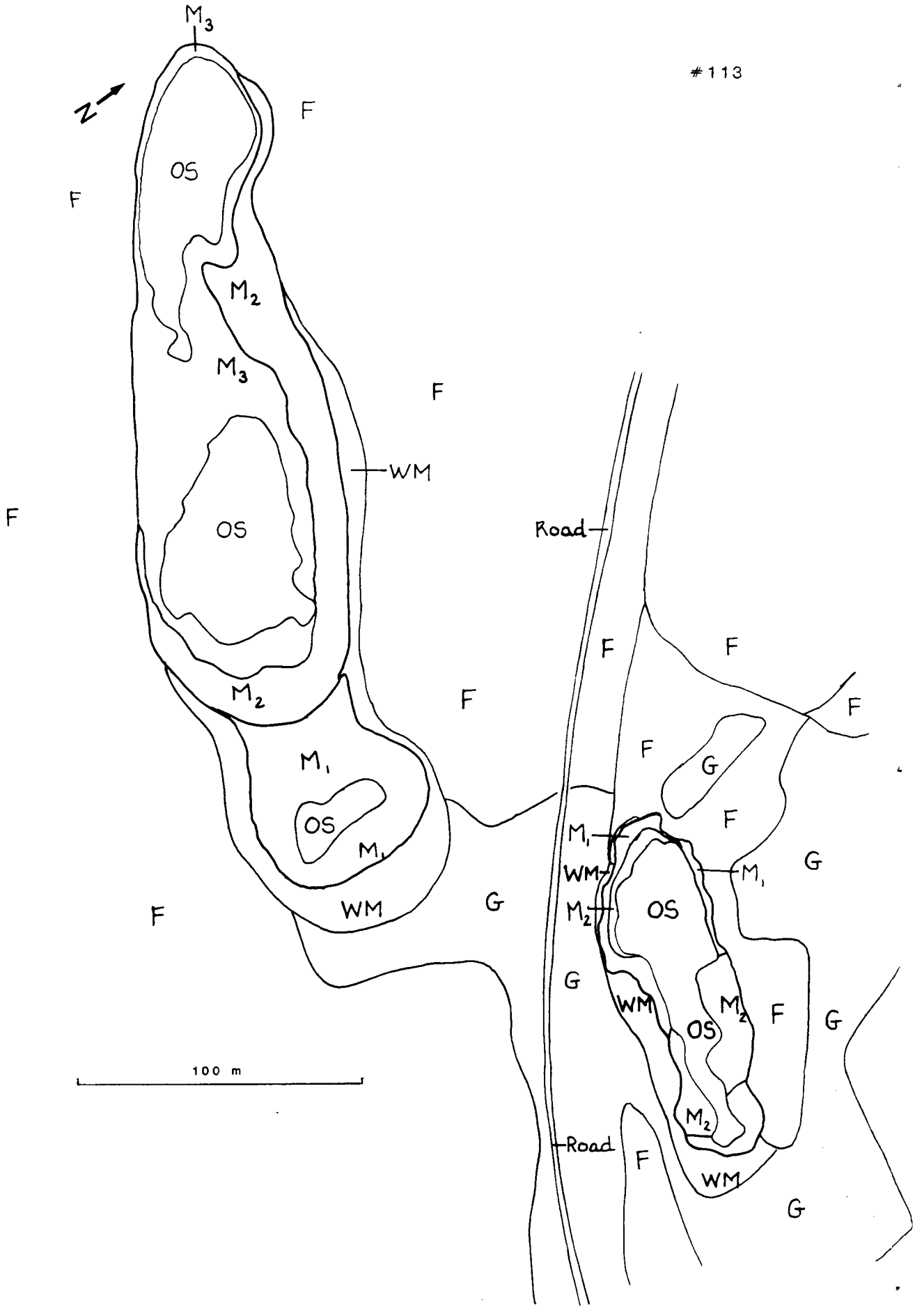

F
G
G
#108
N
SC
F
WM
M
G
G
WM
100 m
F
F

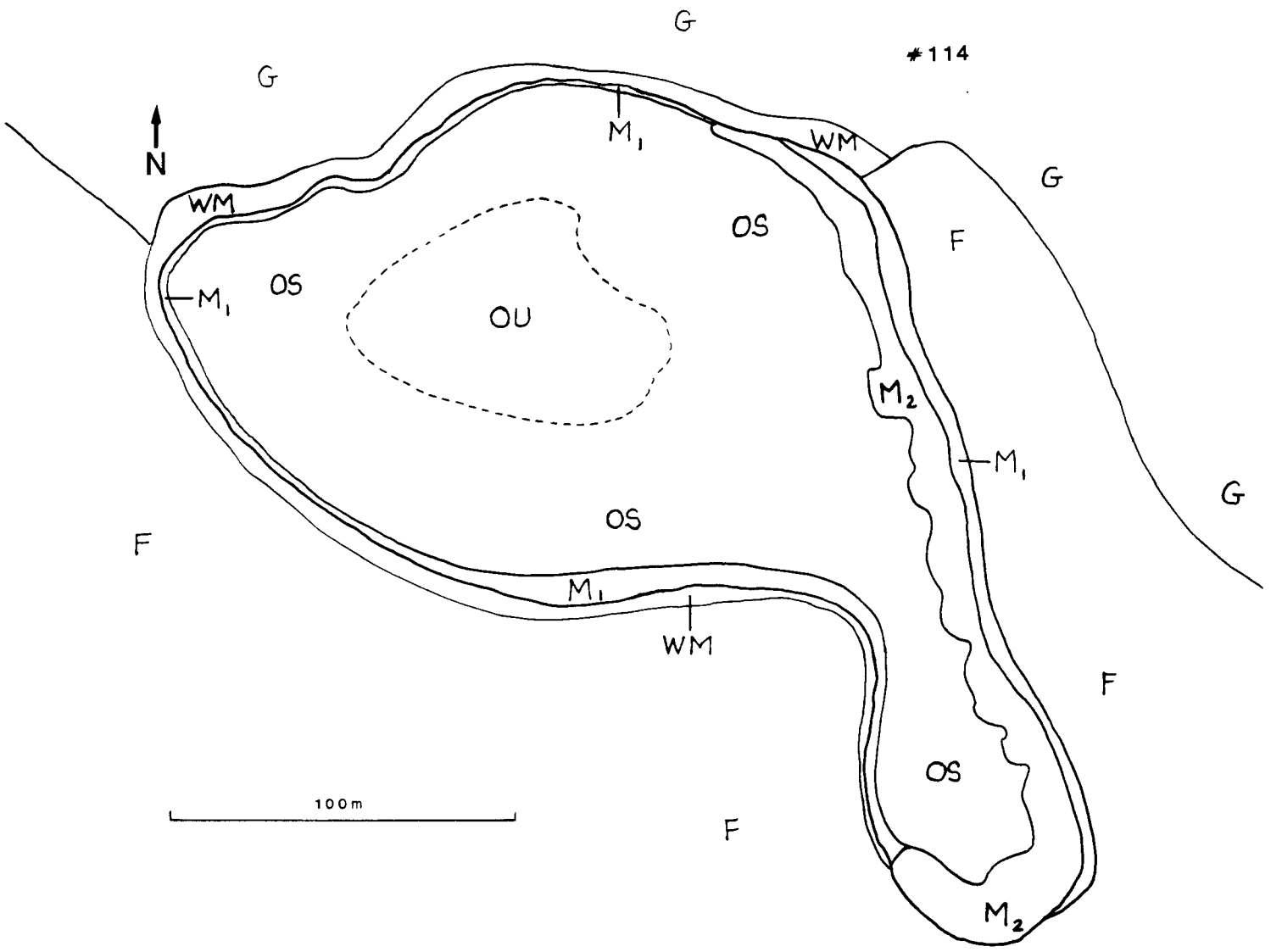

G
#109
N
WM
WM
G
OS
G
OS
G
WM
100 m

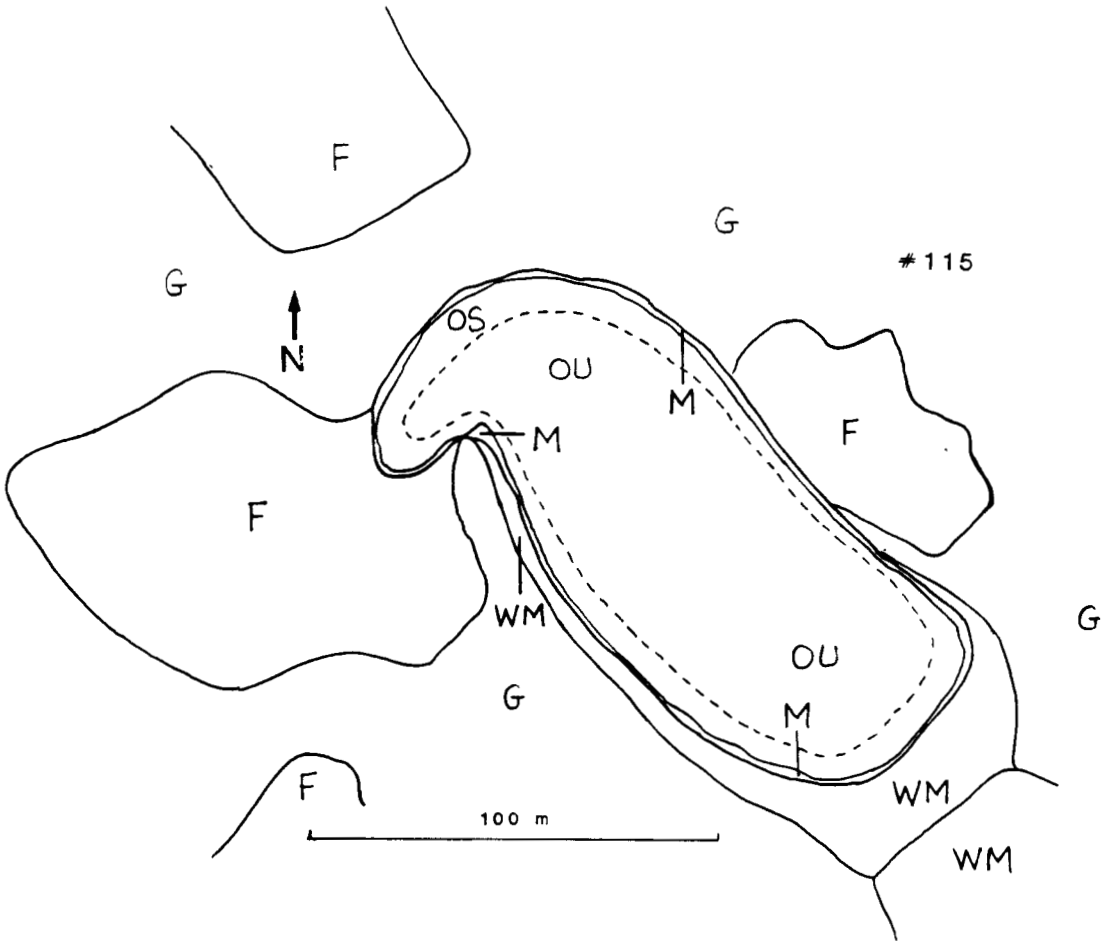

G
#110
OS
WM
G
WM
N
OS
G
OU
OS
OS
WM
OU
G
G
OS
WM
100 m

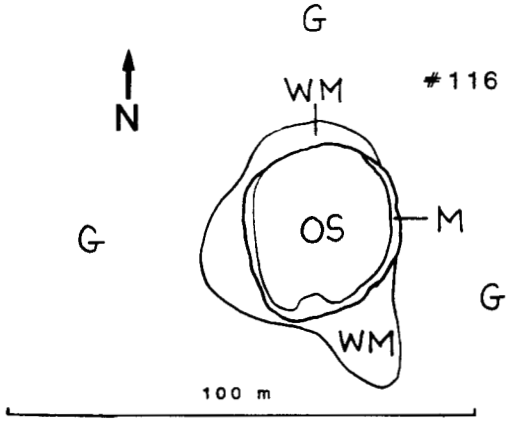

G
#111
WM
M
N
OS
WM
G
G
M
M
M
WM
WM
OS
M
G
100 m

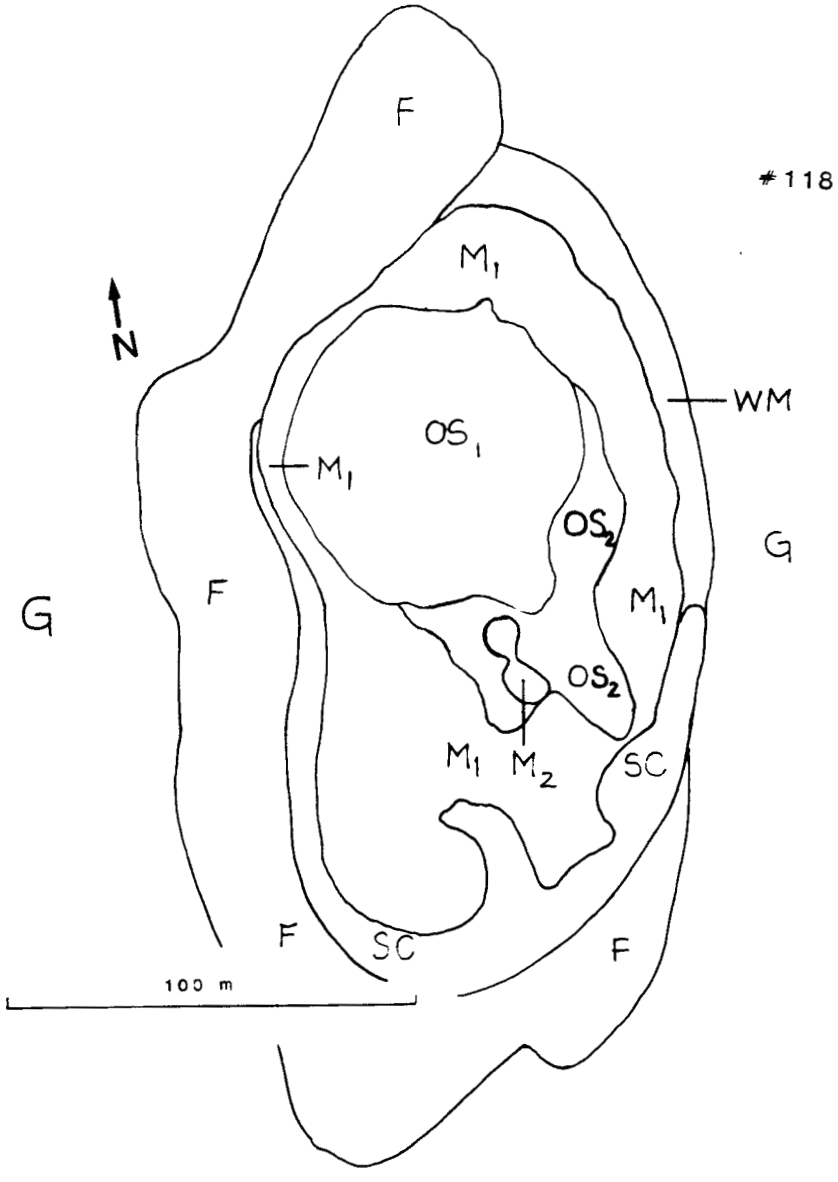

#112
G
F
N
WM
M
OS
G
G
WM
M
F
F
WM
G
M
OS
M
WM
F
100 m
F
G


#113
N
M3
F
OS
F
M2
M3
F
WM
F
OS
Road
F
F
M2
F
F
M1
F
G
OS
M1
F
M1
G
WM
M1
F
WM
G
M2
OS
G
WM
M2
F
G
OS
100 m
M2
Road
F
WM
G


G
#114
G
N
M1
WM
G
WM
OS
F
M1
OS
OU
M2
M1
G
OS
F
M1
WM
F
OS
100m
F
M2


F
G
G
#115
N
OS
OU
M
M
F
F
WM
G
OU
G
M
F
WM
100 m
WM


G
N
WM
#116
OS
M
G
G
WM
100 m


#118
F
N
M1
WM
OS1
M1
OS2
G
G
F
M1
OS2
M1
M2
SC
F
SC
F
100 m