1980-81 data

TEMPERATURE (°C) & DISSOLVED OXYGEN (mg/L) Banner

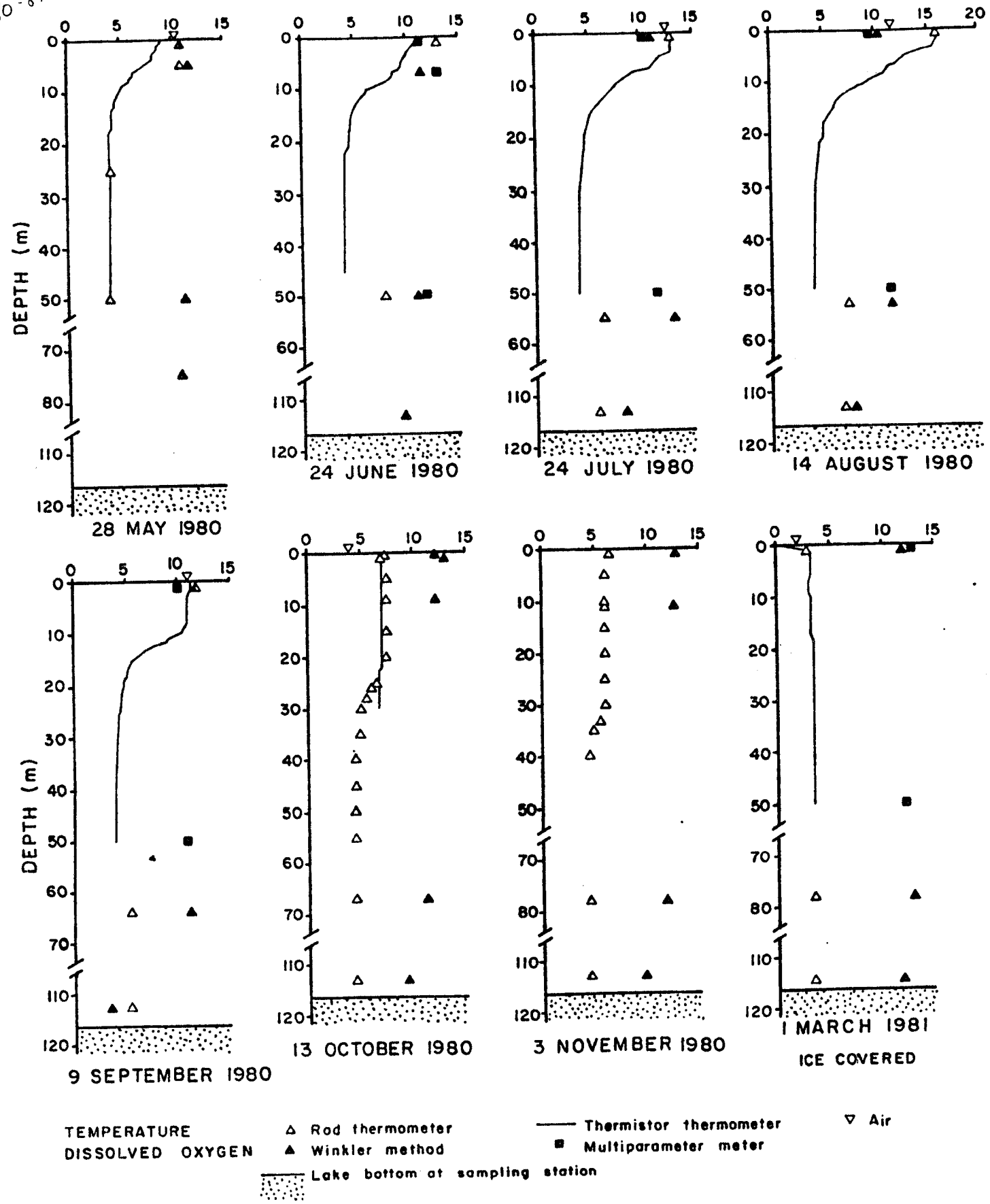
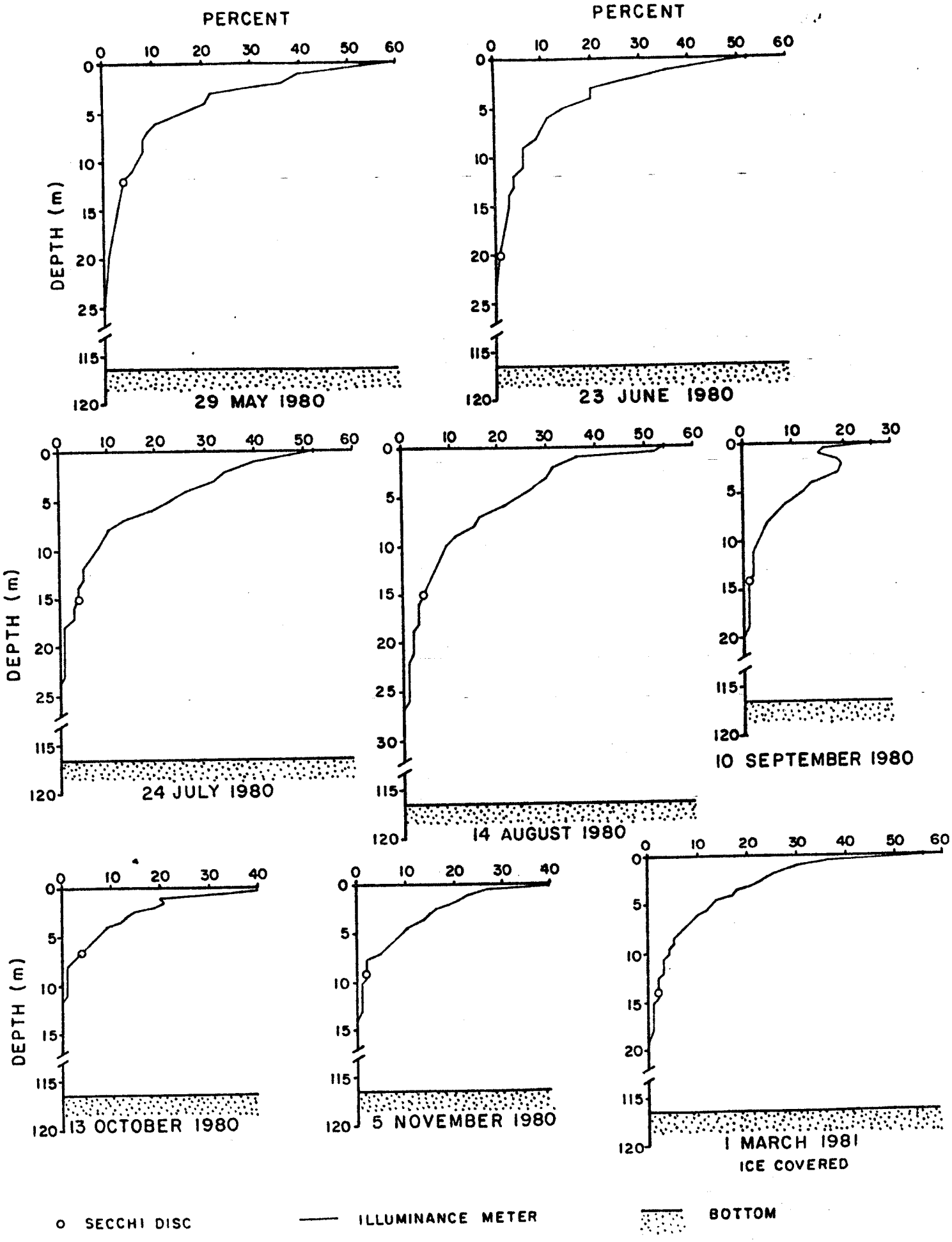
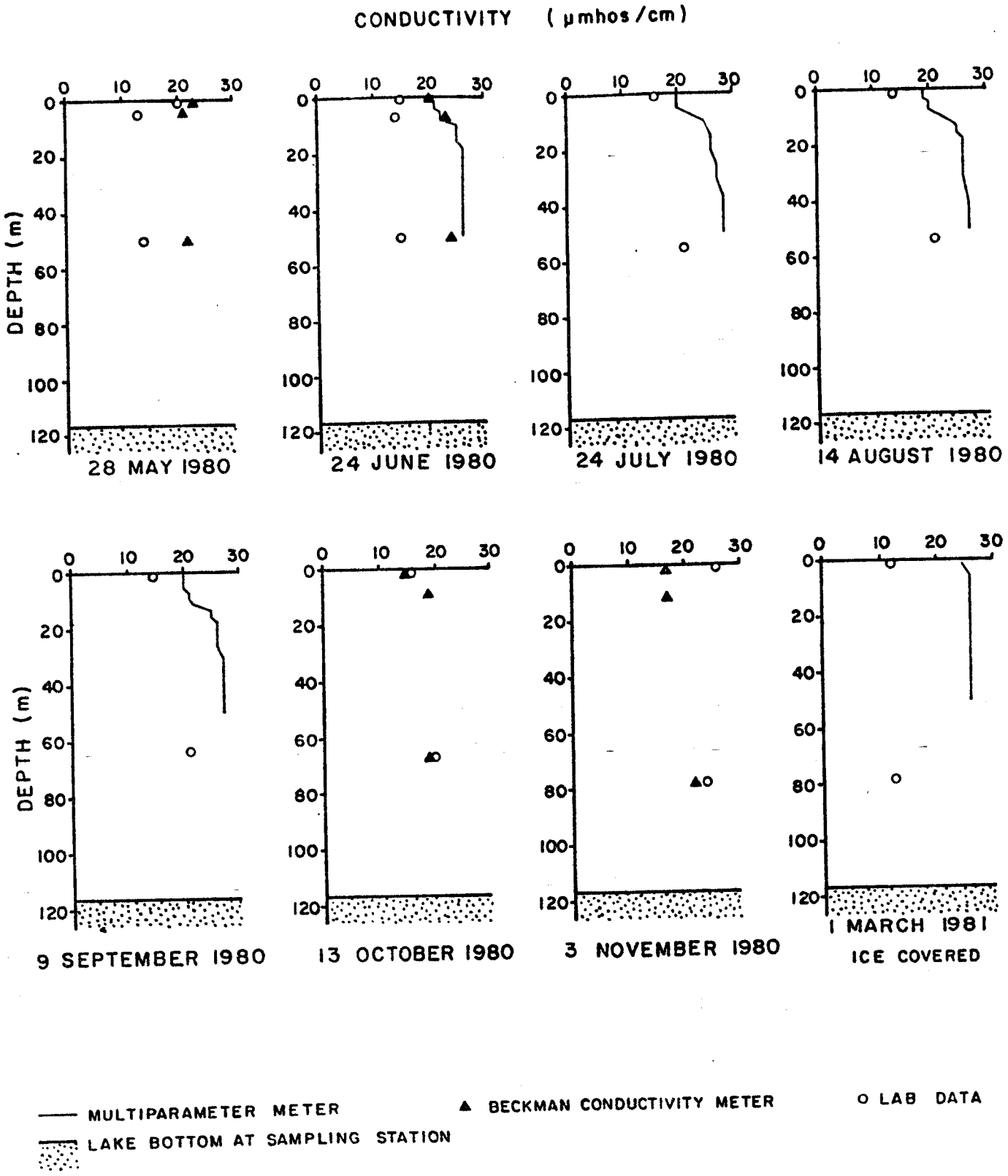


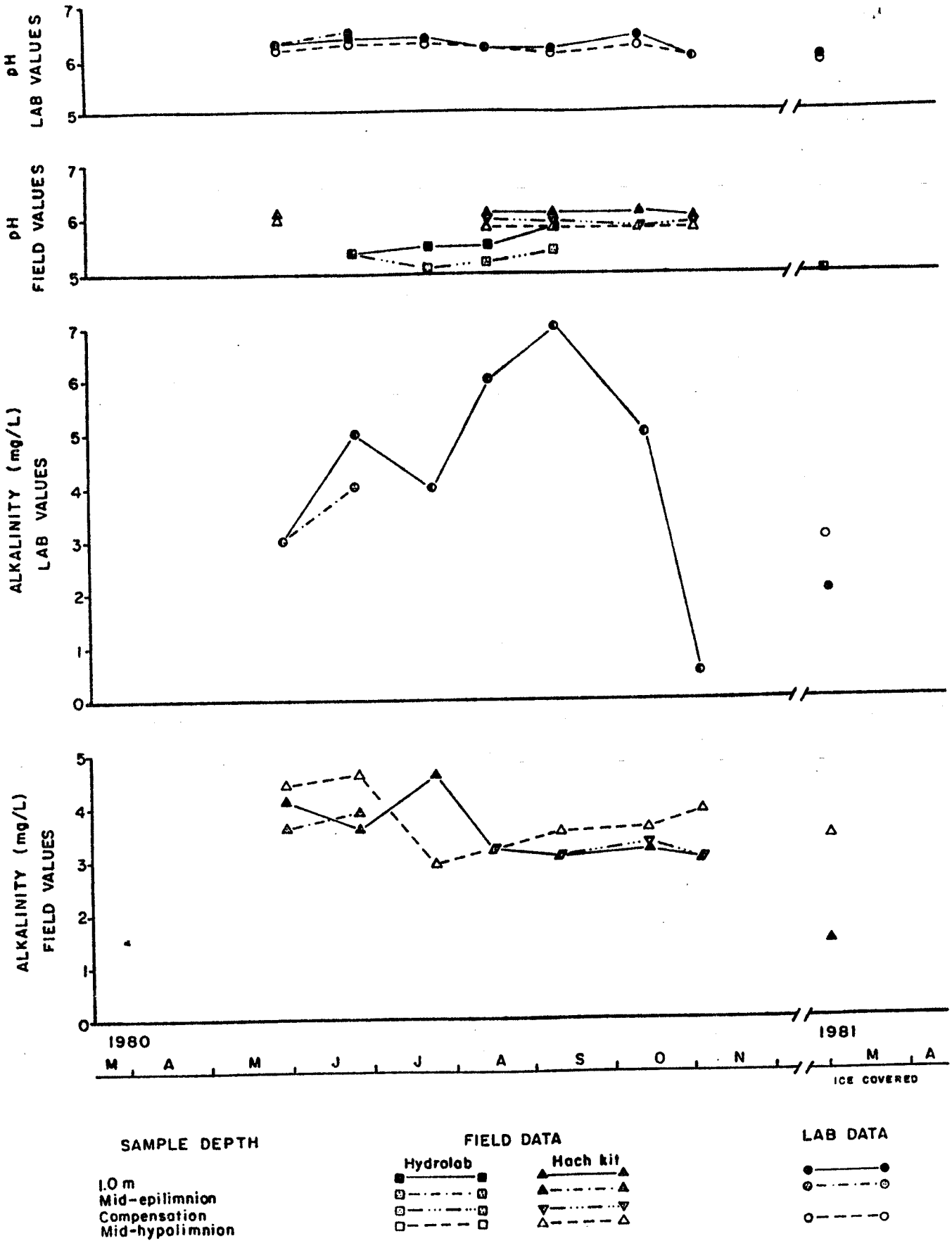
Figure . Vertical profiles of temperature and dissolved oxygen measured at the mid-lake sampling station (X_1) on Banner Lake, 1980.



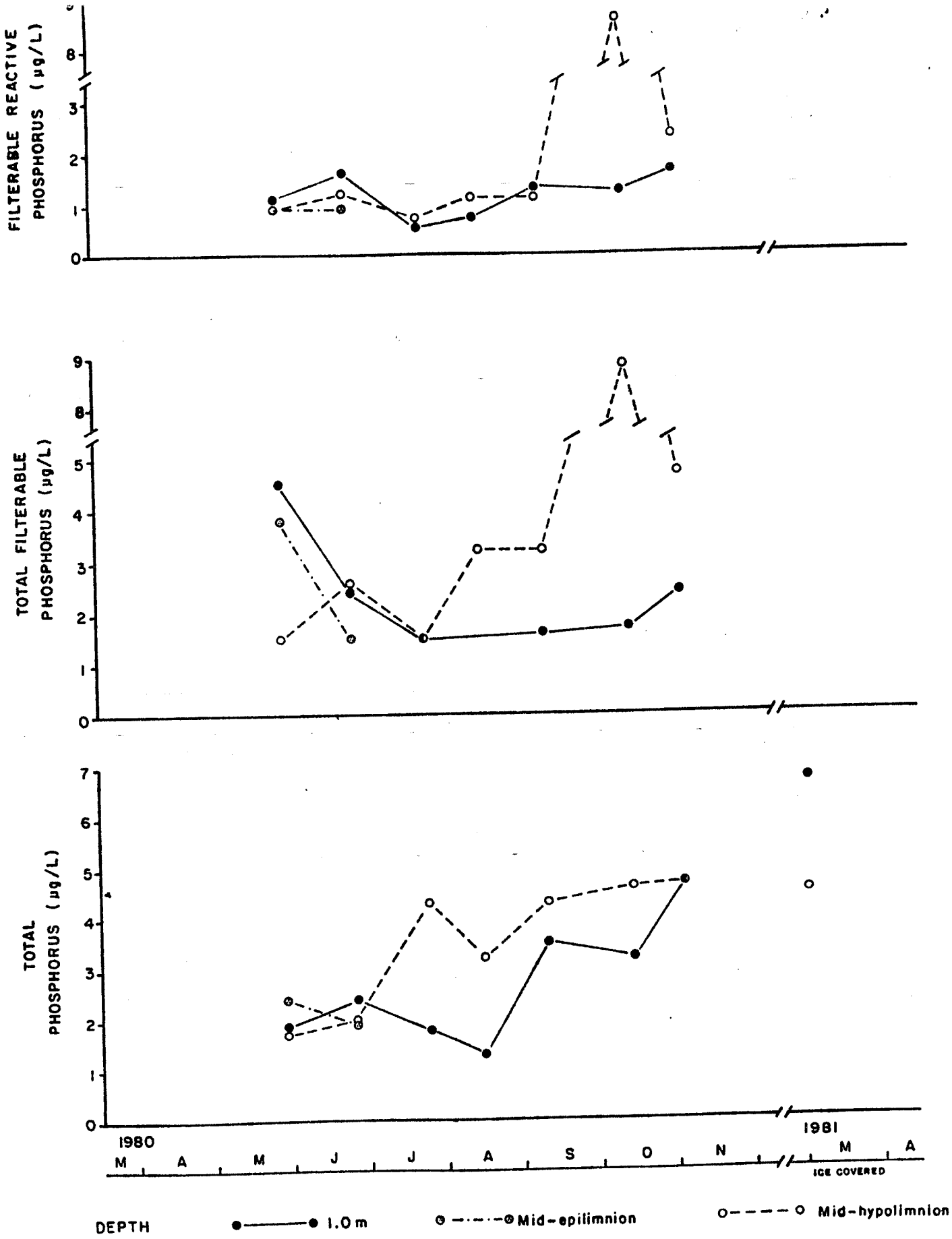
Barrier Lake 1980 Light penetration @ X, sampling station



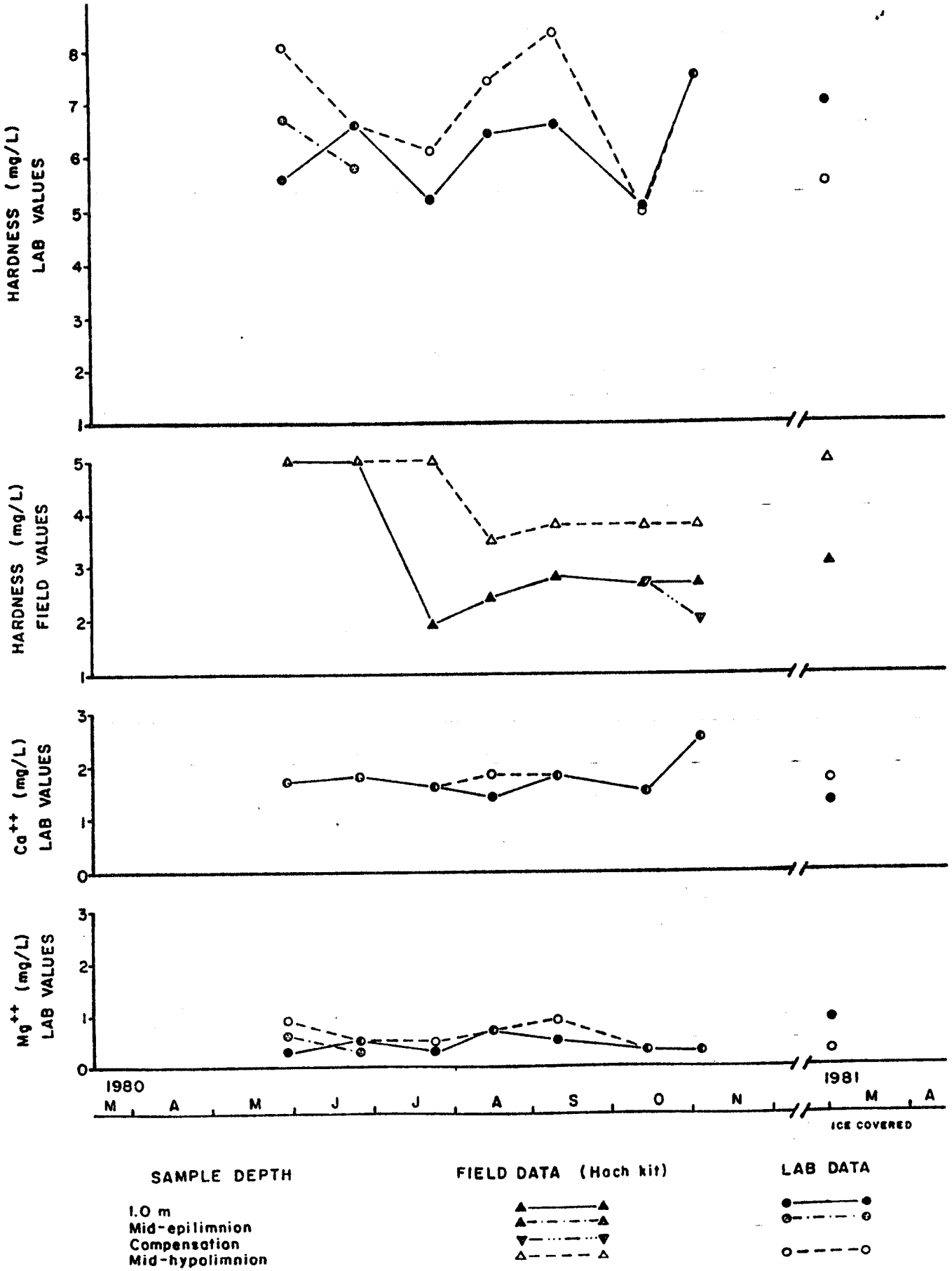
Beaver Lake, 1980 [illegible] sampling station



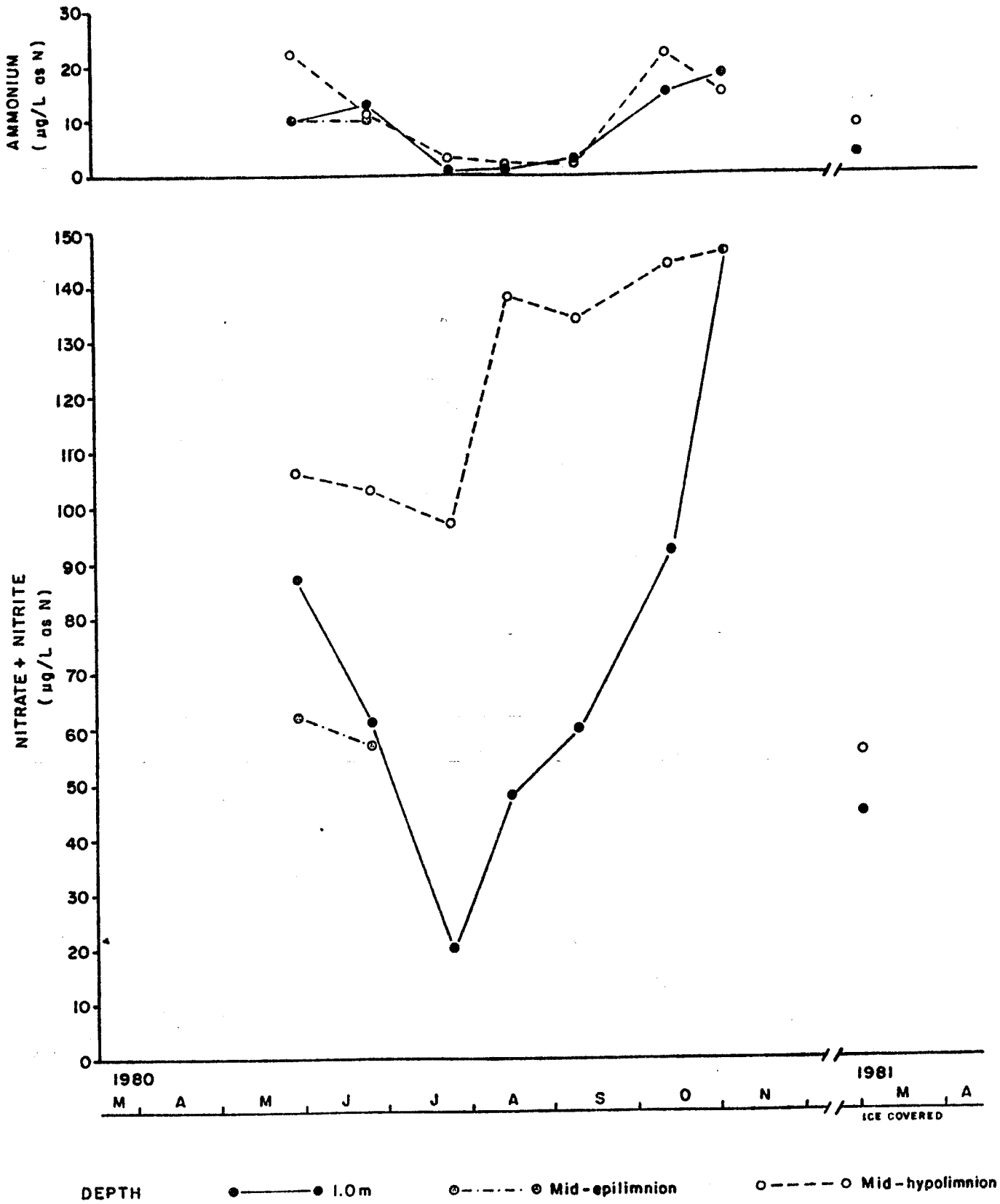
Banner Lake, 1980-81, pH and alkalinity at X, sampling sites



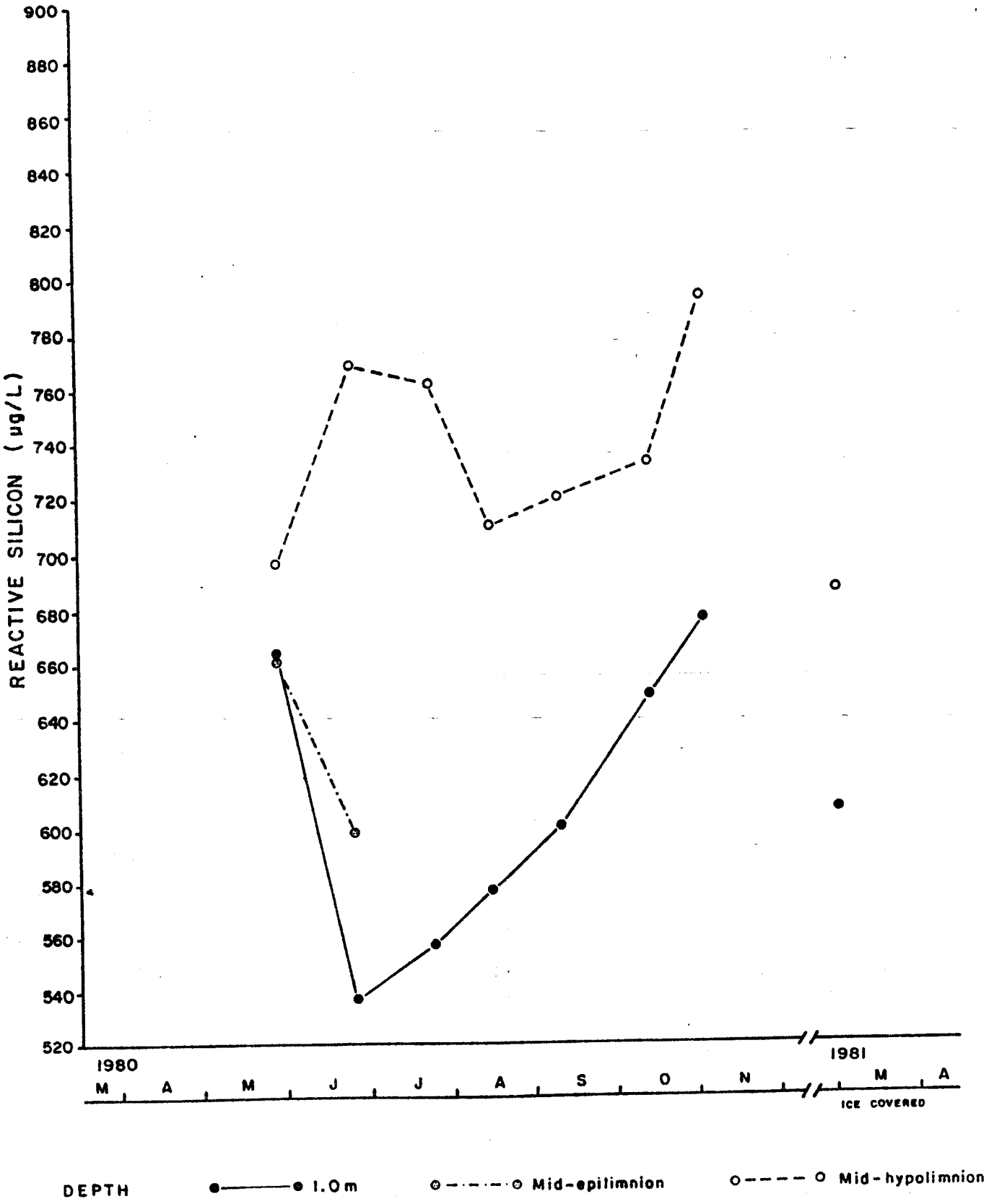
Banner Lake, at X, sampling station, 1980-81.



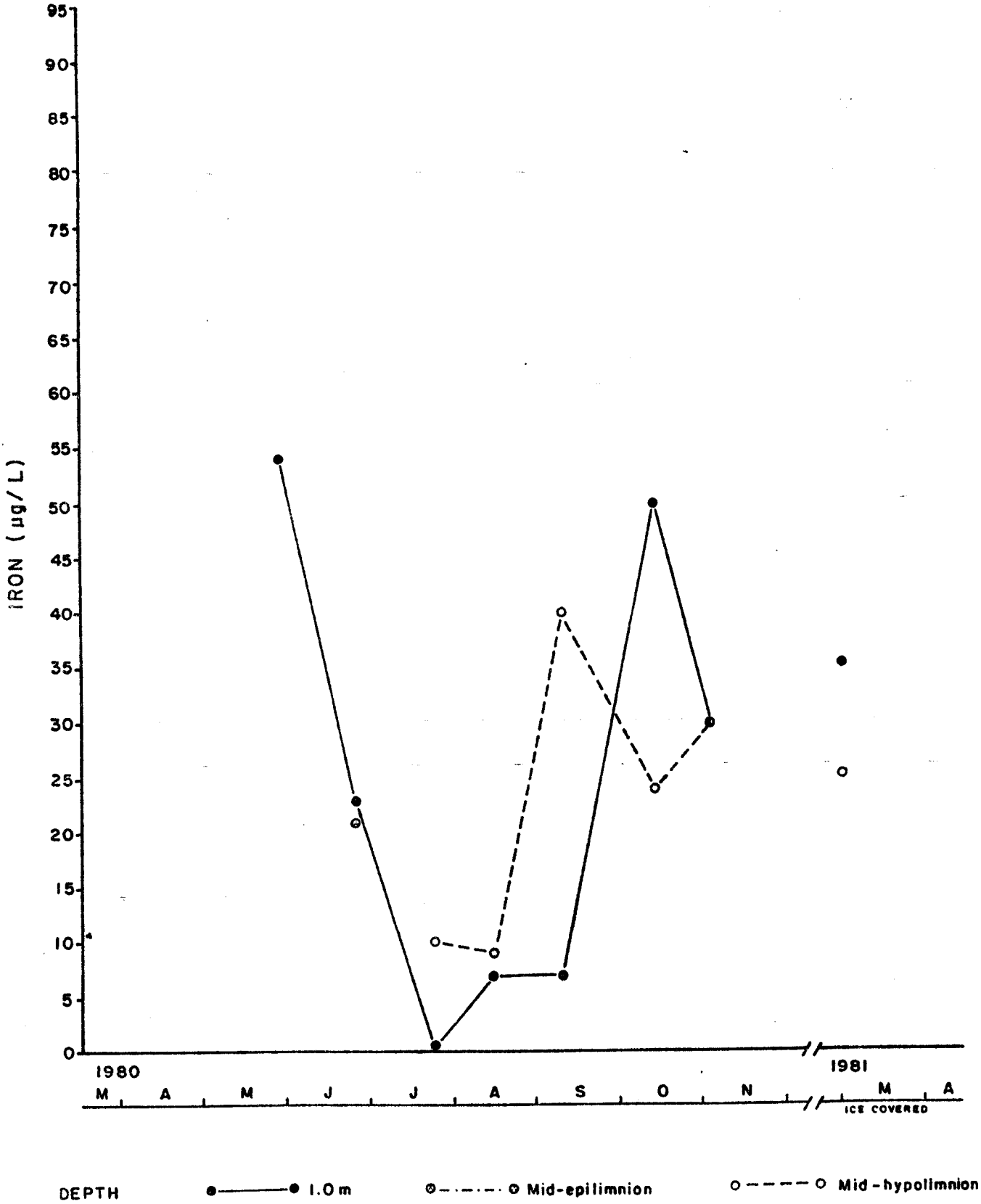
Banner Lake [illegible] @ X, sampling station; 1980-81.



[illegible] Lake, [illegible] @ X, sampling station; 1980-81.



Banner Lake; silicon [illegible] X, [illegible]; 1980-81.



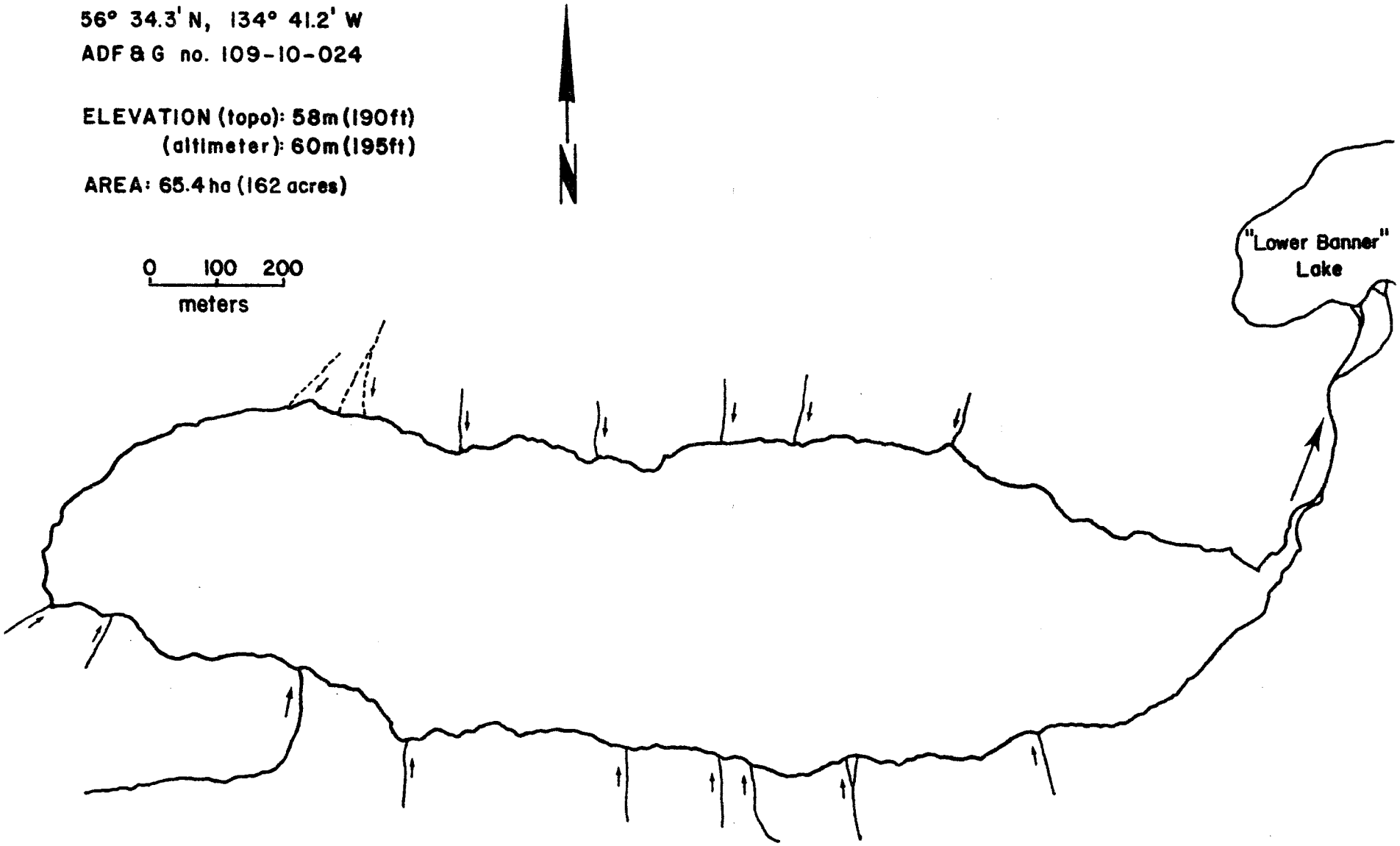
Barrier Lake, iron @ X, sampling station; 1980-81.

BANNER LAKE

56° 34.3' N, 134° 41.2' W
ADF & G no. 109-10-024

ELEVATION (topo): 58m (190ft)
(altimeter): 60m (195ft)

AREA: 65.4 ha (162 acres)

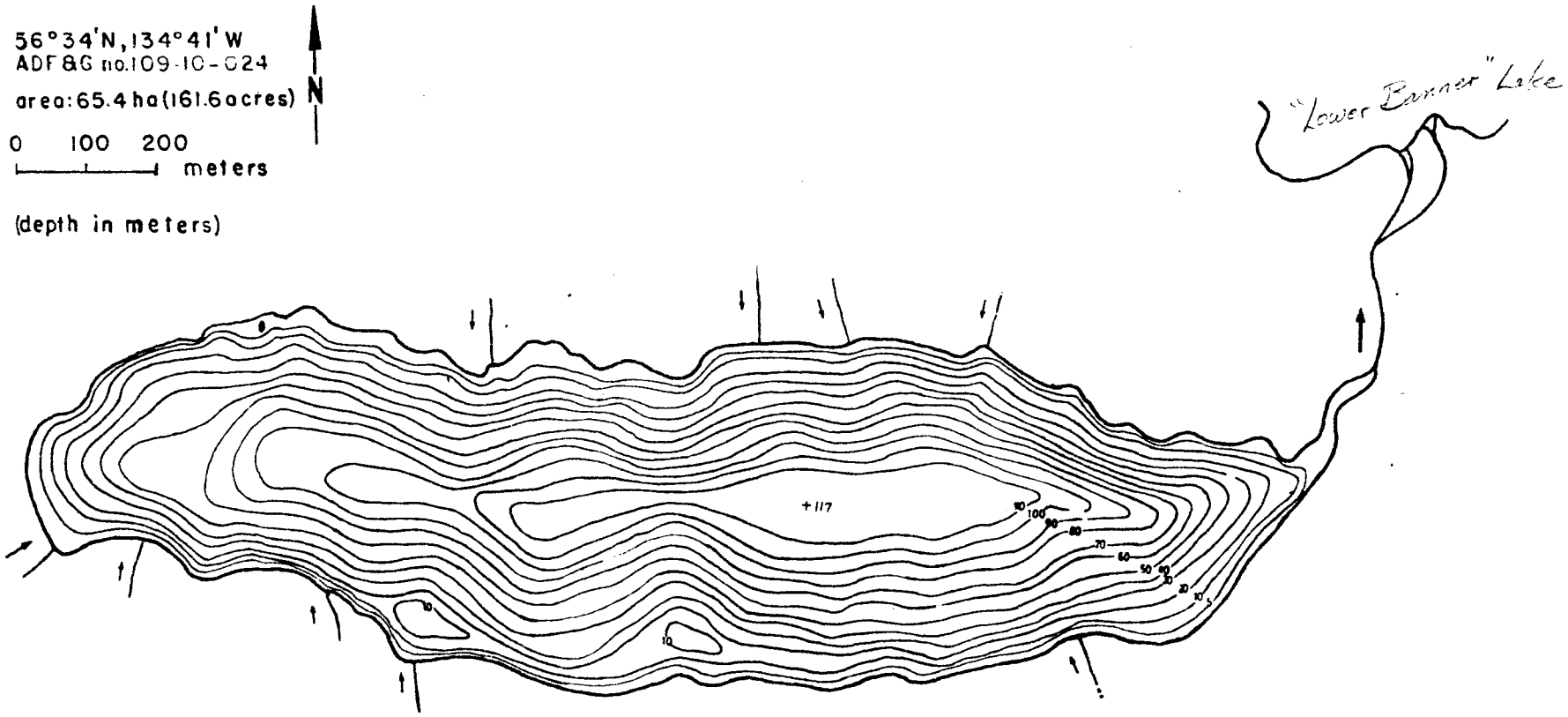


BANNER LAKE

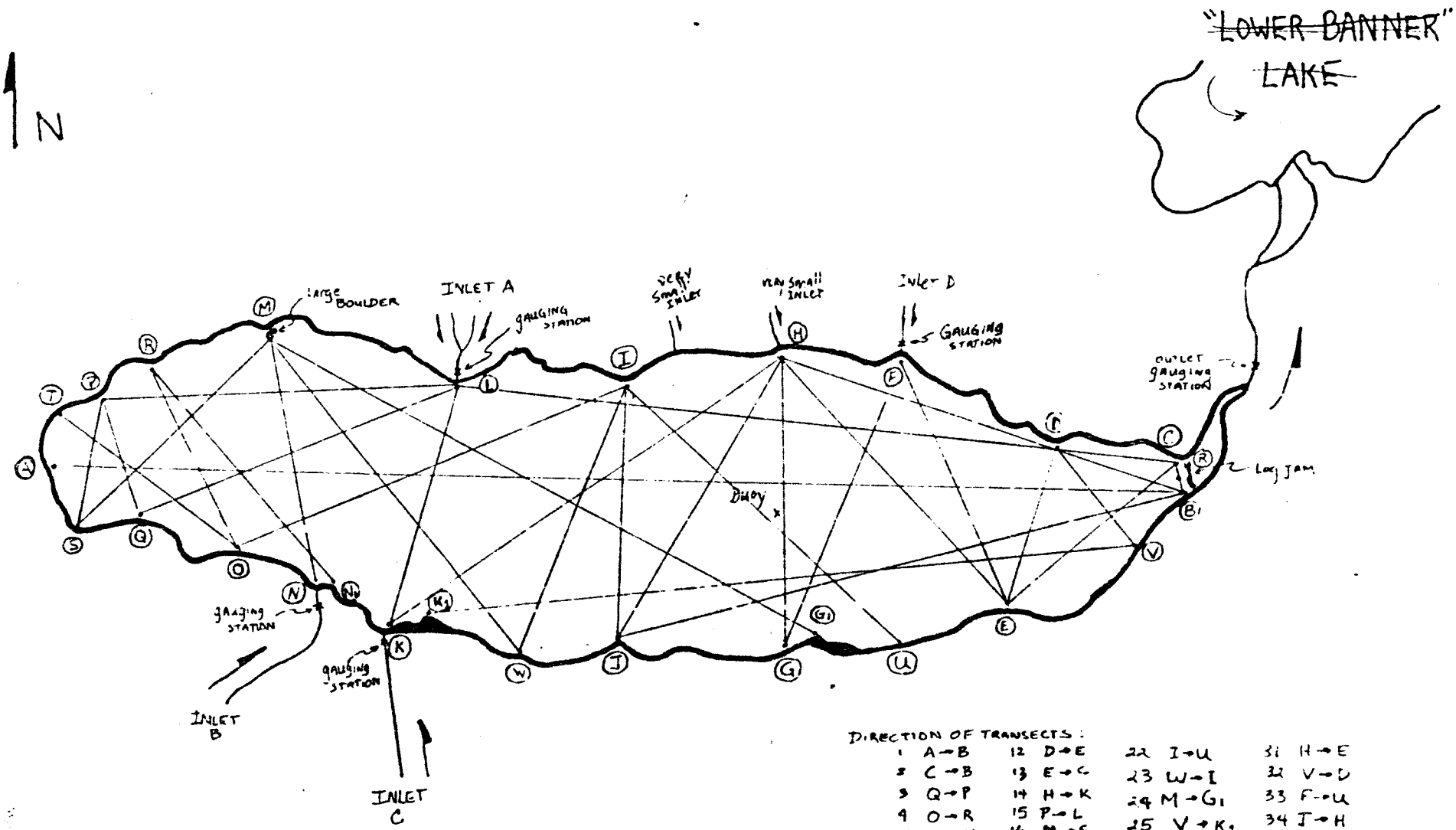
56°34'N, 134°41'W
ADF&G no. 109-10-024
area: 65.4 ha (161.6 acres)

0 100 200
meters

(depth in meters)



This map will be replaced as time permits. It is basically accurate — just lacks the quality of our more recently drawn maps.



DIRECTION OF TRANSECTS:

1 A→B	12 D→E	22 I→U	31 H→E
2 C→B	13 E→C	23 W→I	32 V→D
3 Q→P	14 H→K	24 M→G1	33 F→U
4 O→R	15 P→L	25 V→K1	34 J→H
5 M→N	16 M→S	26 S→P	35 I→N
6 K→L	17 N1→R	27 M→W	
7 I→J	18 C→L	28 H→J	
8 J→I	19 L→Q	29 J→B	
9 H→G	20 T→O	30 B→H	
10 F→G	21 O→I		
11 E→F			

BATHYMETRIC TRANSECTS
+
INLET - OUTLET GAUGING STATIONS
COMPLEATED 5/28-29/80.

BANNER LAKE

109-10-24, 56° 34.3'N, 134° 41.2'W
8" = 1 mile; 1" = 660 ft (201m)
ELEVATION (topo map): 190 ft (58m)
(altimeter): 195 ft (60m)

Table . Physical characteristics of Banner Lake.

Lake area 65.4 ha (161.6 acres) Lake elevation 58 m

Lake volume 3.35×10^7 m^3 (2.72×10^4 acre-feet)

Maximum depth 119 m Mean depth 51.2 m

Shoreline length 4,460 m Shoreline development 1.56

Watershed area 750 ha Volume development 1.29

Ratio of lake area to watershed area 1:11

Littoral development (area <10 m) 15.8%

Basin slope (0-10 m) 40%, (10-110 m) 53%

Mean annual outlet flow 1.35 m^3/s Mean annual precipitation 640 cm

Theoretical water residence time 0.79 years

Depth strata (m)	Area of strata as a percentage of total area	Volume of strata as a percentage of total area
0- 5	7.8	9.4
5- 10	8.0	8.6
10- 20	9.9	15.5
20- 30	8.6	13.7
30- 40	8.3	12.0
40- 50	8.3	10.4
50- 60	9.7	8.6
60- 70	7.1	7.0
70- 80	7.1	5.6
80- 90	7.3	4.2
90-100	6.0	2.9
100-110	5.1	1.8
110-119	6.7	0.4

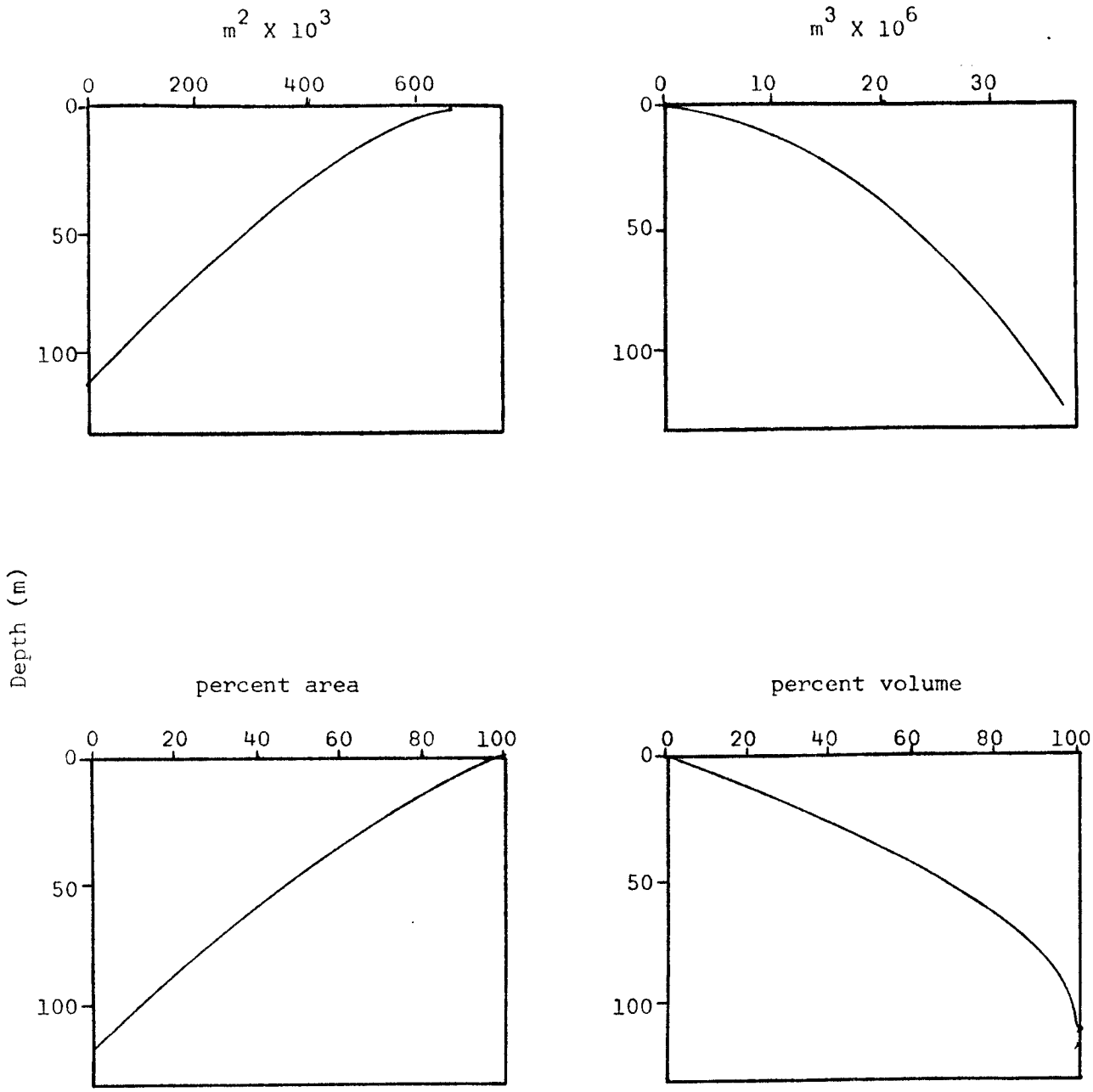
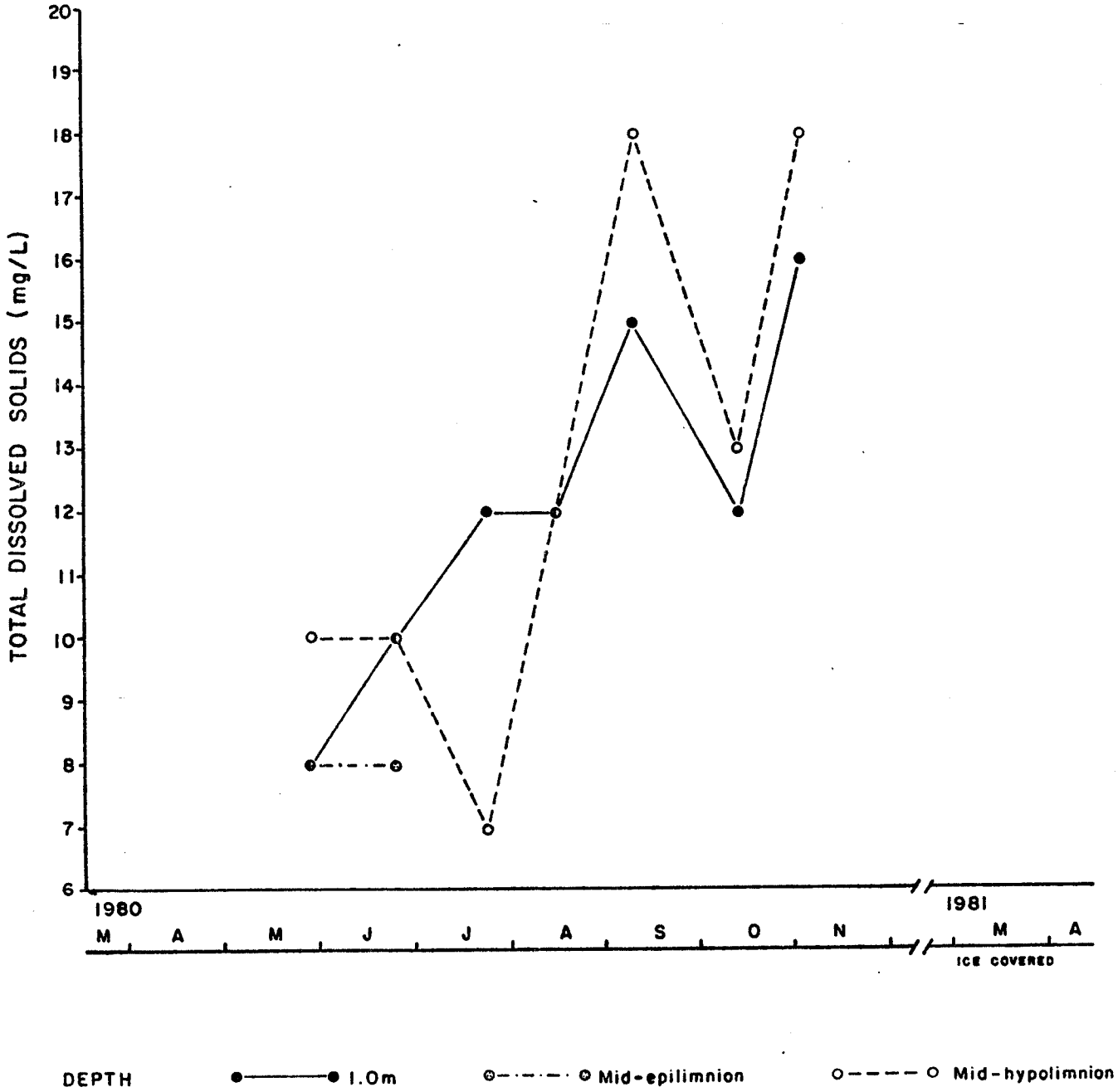


Figure . Hypsographic (depth-area) curves and depth-volume curves for Banner Lake (lake B on stream No. 109-10-24 entering Patterson Bay), Baranof Island.



Banner Lake; TDS at X, sampling station 1980.

CHEMICAL & GEOLOGICAL LABORATORIES OF ALASKA, INC.

P.O. BOX 4-1276
Anchorage, Alaska 99509

TELEPHONE (907)-279-4014
274-3364

ANCHORAGE INDUSTRIAL CENTER
5633 B Street

ANALYTICAL REPORT

CUSTOMER NSRAA, Inc. SAMPLE LOCATION: Banner Lake

DATE COLLECTED 5-28-80 TIME COLLECTED: 1145

SAMPLED BY Staley SOURCE S1, 1M

REMARKS Cruise 109-10-24

FOR LAB USE ONLY

RECVD.BY SE LAB # 4157-4

DATE RECEIVED 6-24-80

DATE COMPLETED 6-27-80

DATE REPORTED 6-27-80

SIGNED Archie R. Kerr

	mg/l		mg/l		mg/l
[]Ag,Silver	<0.01	[]P,Phosphorous	<0.05	[]Cyanide	
[]Al,Aluminum	<0.05	[]Pb,Lead	<0.05	[]Sulfate	
[]As,Arsenic	<0.05	[]Pt,Platinum	<0.05	[]Phenol	
[]Au,Gold	<0.05	[]Sb,Antimony	<0.10	[]Total Dissolved Solids	
[]B,Boron	<0.05	[]Se,Selenium	<0.05	[]Total Volatile Solids	
[]Ba,Barium	<0.05	[]Si,Silicon	0.65	[]Suspended Solids	
[]Bi,Bismuth	<0.05	[]Sn,Tin	<0.05	[]Volatile Suspended Solids	
[]Ca,Calcium	1.1	[]Sr,Strontium	<0.05	[]Hardness as $CaCO_3$	
[]Cd,Cadmium	<0.01	[]Ti,Titanium	<0.05	[]Alkalinity as $CaCO_3$	
[]Co,Cobalt	<0.05	[]W,Tungsten	<0.10	[]	
[]Cr,Chromium	<0.05	[]V,Vanadium	<0.05	[]	
[]Cu,Copper	<0.05	[]Zn,Zinc	<0.05	[]	
[]Fe,Iron	<0.05	[]Zr,Zirconium	<0.05	[]	
				* * * * * *	
[]Hg,Mercury	<0.05	[]Ammonia Nitrogen-N		[]mmhos Conductivity	
[]K,Potassium	<1	[]Kjedahl Nitrogen-N		[]pH Units	
[]Mg,Magnesium	0.15	[]Nitrate-N		[]Turbidity NTU	
[]Mn,Manganese	<0.05	[]Nitrite-N		[]Color Units	
[]Mo,Molybdenum	<0.05	[]Phosphorus (Ortho)-P		[]T.Coliform/100ml	
[]Na,Sodium	1.3	[]Chloride		[]	
[]Ni,Nickel	<0.05	[]Fluoride		[]	

TELEPHONE (907) 279-4014
274-3364

ANCHORAGE INDUSTRIAL CENTER
5633 B Street

ANALYTICAL REPORT

CUSTOMER NSRAA

SAMPLE LOCATION: Banner Lake, Alaska

DATE COLLECTED 11-8-80 TIME COLLECTED: ---

SAMPLED BY --- SOURCE Water Sample

REMARKS

FOR LAB USE ONLY

RECVD. BY GY LAB # 6132-

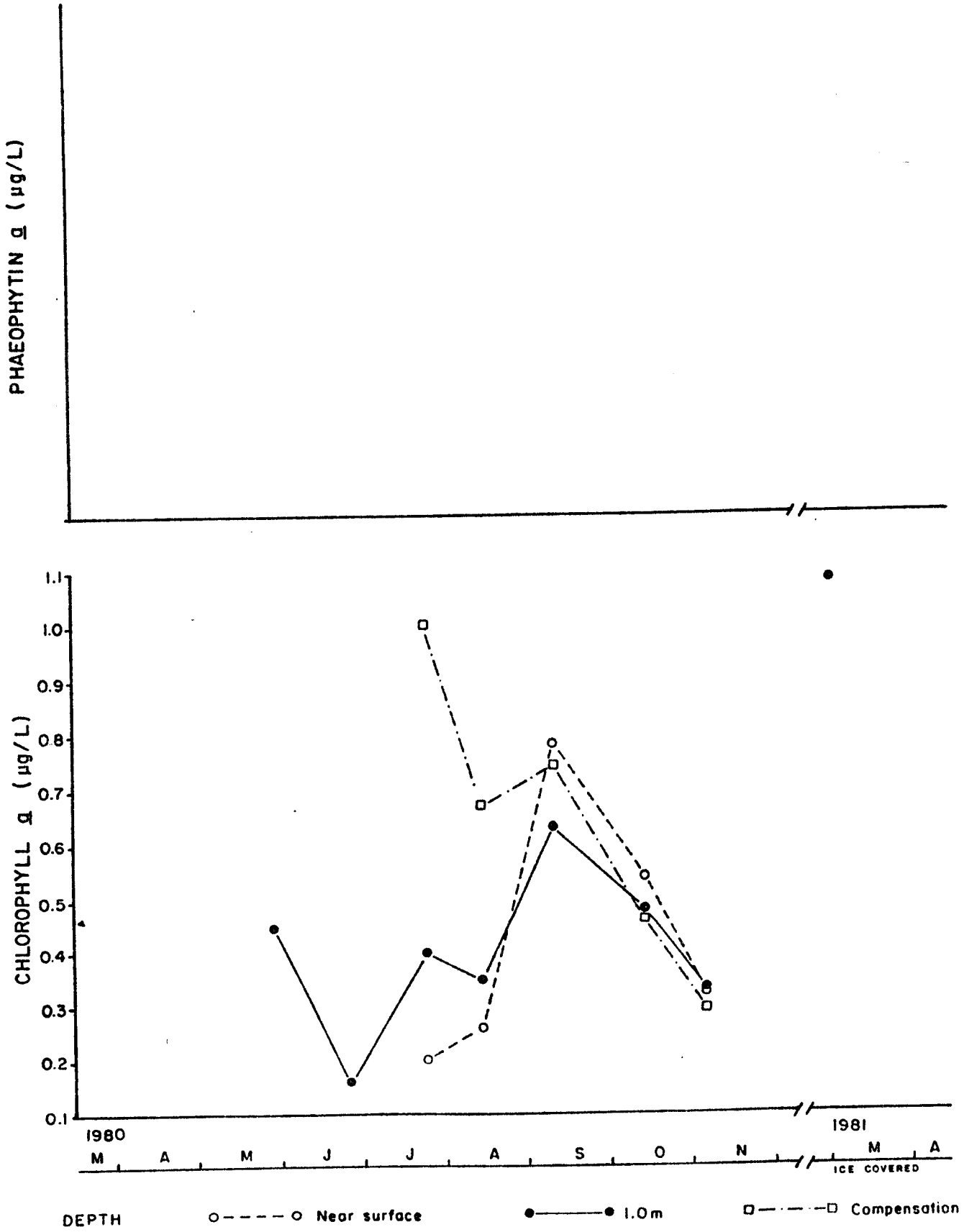
DATE RECEIVED 1-6-81

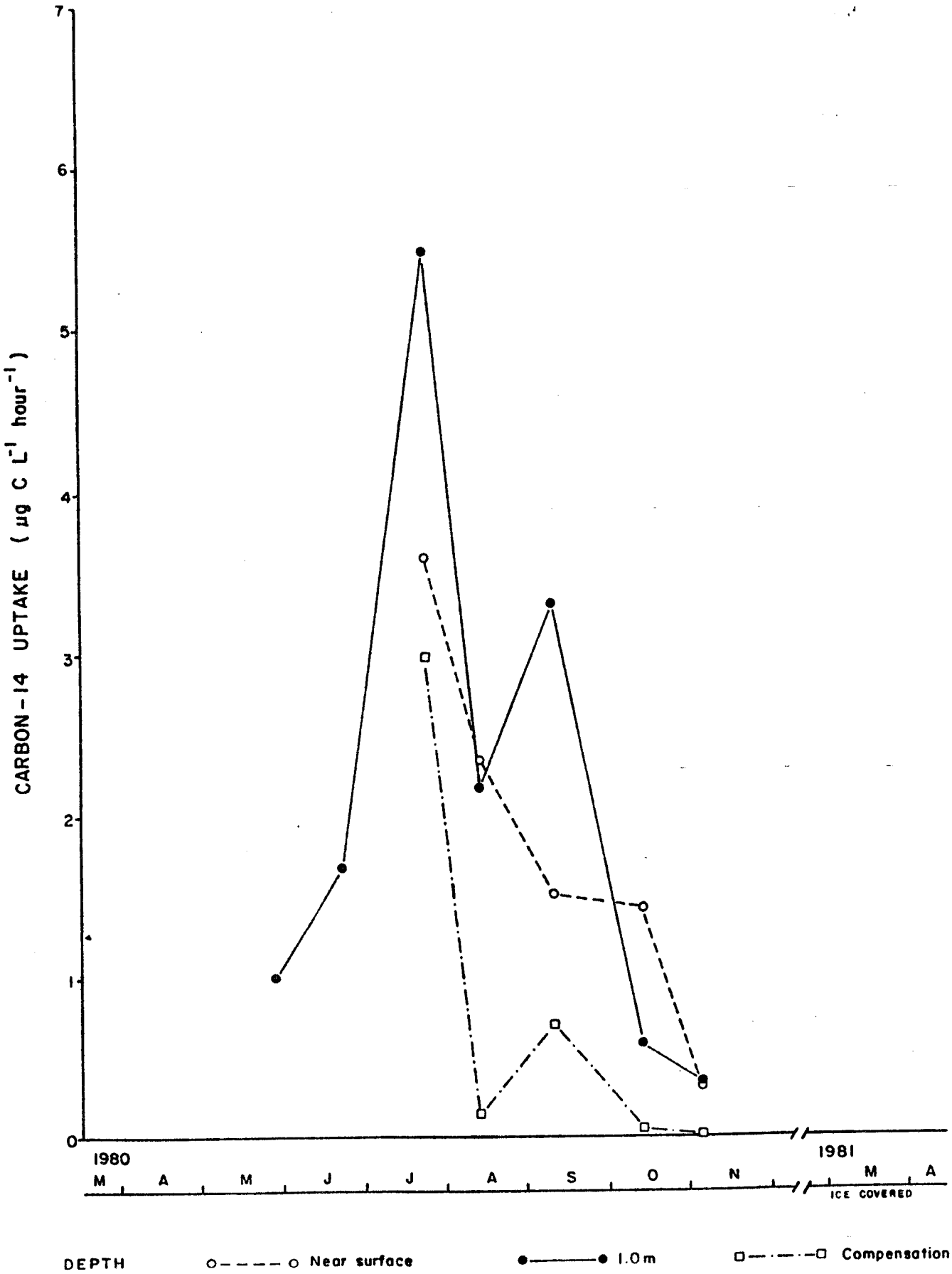
DATE COMPLETED 1-7-81

DATE REPORTED 1-7-81

SIGNED [signature]

	mg/l		mg/l		mg/l
[]Ag, Silver	<0.05	[]P, Phosphorous	<0.05	[]Cyanide	
[]Al, Aluminum	0.13	[]Pb, Lead	<0.05	[]Sulfate	
[]As, Arsenic	<0.05	[]Pt, Platinum	<0.05	[]Phenol	
[]Au, Gold	<0.05	[]Sb, Antimony	<0.10	[]Total Dissolved Solids	
[]B, Boron	<0.05	[]Se, Selenium	<0.05	[]Total Volatile Solids	
[]Ba, Barium	<0.05	[]Si, Silicon	0.62	[]Suspended Solids	
[]Bi, Bismuth	0.34	[]Sn, Tin	<0.10	[]Volatile Suspended Solids	
[]Ca, Calcium	0.89	[]Sr, Strontium	<0.05	[]Hardness as $CaCO_3$	
[]Cd, Cadmium	<0.01	[]Ti, Titanium	<0.05	[]Alkalinity as $CaCO_3$	
[]Co, Cobalt	<0.05	[]W, Tungsten	<1	[]	
[]Cr, Chromium	<0.05	[]V, Vanadium	<0.05	[]	
[]Cu, Copper	<0.05	[]Zn, Zinc	<0.05	[]	
[]Fe, Iron	<0.05	[]Zr, Zirconium	<0.05	[]	
				* * * * *	
[]Hg, Mercury	<0.05	[]Ammonia Nitrogen-N		[]mmhos Conductivity	
[]K, Potassium	1.3	[]Kjedahl Nitrogen-N		[]pH Units	
[]Mg, Magnesium	0.39	[]Nitrate-N		[]Turbidity NTU	
[]Mn, Manganese	<0.05	[]Nitrite-N		[]Color Units	
[]Mo, Molybdenum	<0.05	[]Phosphorus (Ortho)-P		[]T.Coliform/100ml	
[]Na, Sodium	1.4	[]Chloride		[]	
[]Ni, Nickel	<0.05	[]Fluoride		[]	


PHAEOPHYTIN a (µg/L)
CHLOROPHYLL a (µg/L)
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
1980
1981
M
A
M
J
J
A
S
O
N
M
A
ICE COVERED
DEPTH
Near surface
1.0m
Compensation



Barnes Lake; ^{14}C uptake at 4 sampling stations; 1980.

Zooplankton density in Banner Lake, Baranof Island, in terms of number per m^2 and (per m^3) as estimated from 50.0 m vertical tow samples, 1980.

Sample date	Sum of large and preferred zooplankters	Diptera	Copepoda			Cladocera			
		Chaoborus	Calanoida	Cyclopoida	Nauplii	Daphnia	Bosmina	Holopedium	Polyphemus
27 May	9,166 (184)	675 (14)	8,151 (163)	849 (17)	31,245 (625)	340 (7)	170 (3)	340 (7)	-0- (0)
23 June	28,354 (567)	1,185 (24)	26,150 (523)	1,189 (24)	12,905 (258)	1,019 (20)	-0- (0)	849 (17)	340 (7)
24 July	33,343 (668)	1,080 (22)	28,188 (564)	3,736 (75)	4,075 (82)	4,075 (82)	340 (7)	4,415 (88)	-0- (0)
13 Aug	21,142 (423)	765 (15)	17,575 (352)	2,165 (43)	127 (3)	2,802 (56)	-0- (0)	5,604 (112)	254 (5)
10 Sept	20,433 (408)	905 (18)	8,321 (166)	2,038 (41)	1,698 (34)	11,207 (224)	340 (7)	1,698 (34)	679 (14)
12 Oct	5,940 (119)	1,185 (24)	934 (19)	1,019 (20)	4,670 (93)	3,821 (76)	85 (2)	-0- (0)	-0- (0)
3 Nov	3,457 (70)	825 (17)	255 (5)	1,274 (25)	3,141 (63)	2,377 (48)	-0- (0)	170 (3)	-0- (0)

NSRAA/11/29/83/KL

Zooplankton density in Banner Lake in terms of number per m^2 and (per m^3) as estimated from 50.0 m vertical tow samples, 1981.

Sample date	Sum of large and preferred zooplankters	Diptera	Copepoda			Cladocera			
		Chaoborus	Calanoida	Cyclopoida	Nauplii	Daphnia	Bosmina	Holopedium	Polyphemus
1 Mar	1,018 (21)	232 (5)	700 (14)	3,016 (60)	9,192 (184)	87 (2)	-0- (0)	-0- (0)	-0- (0)
23 Apr	17,430 (348)	1,001 (20)	16,302 (326)	2,674 (54)	55,655 (1,114)	128 (2)	168 (4)	-0- (0)	-0- (0)
26 May	48,130 (962)	627 (12)	46,867 (937)	4,076 (82)	35,405 (708)	636 (12)	44 (1)	425 (8)	-0- (0)
13 July	26,356 (526)	502 (10)	23,561 (471)	3,184 (64)	1,528 (30)	2,292 (46)	-0- (0)	4,967 (100)	2,038 (41)
23 July	22,764 (455)	856 (17)	18,976 (380)	4,840 (97)	637 (12)	2,929 (58)	-0- (0)	9,679 (194)	764 (15)

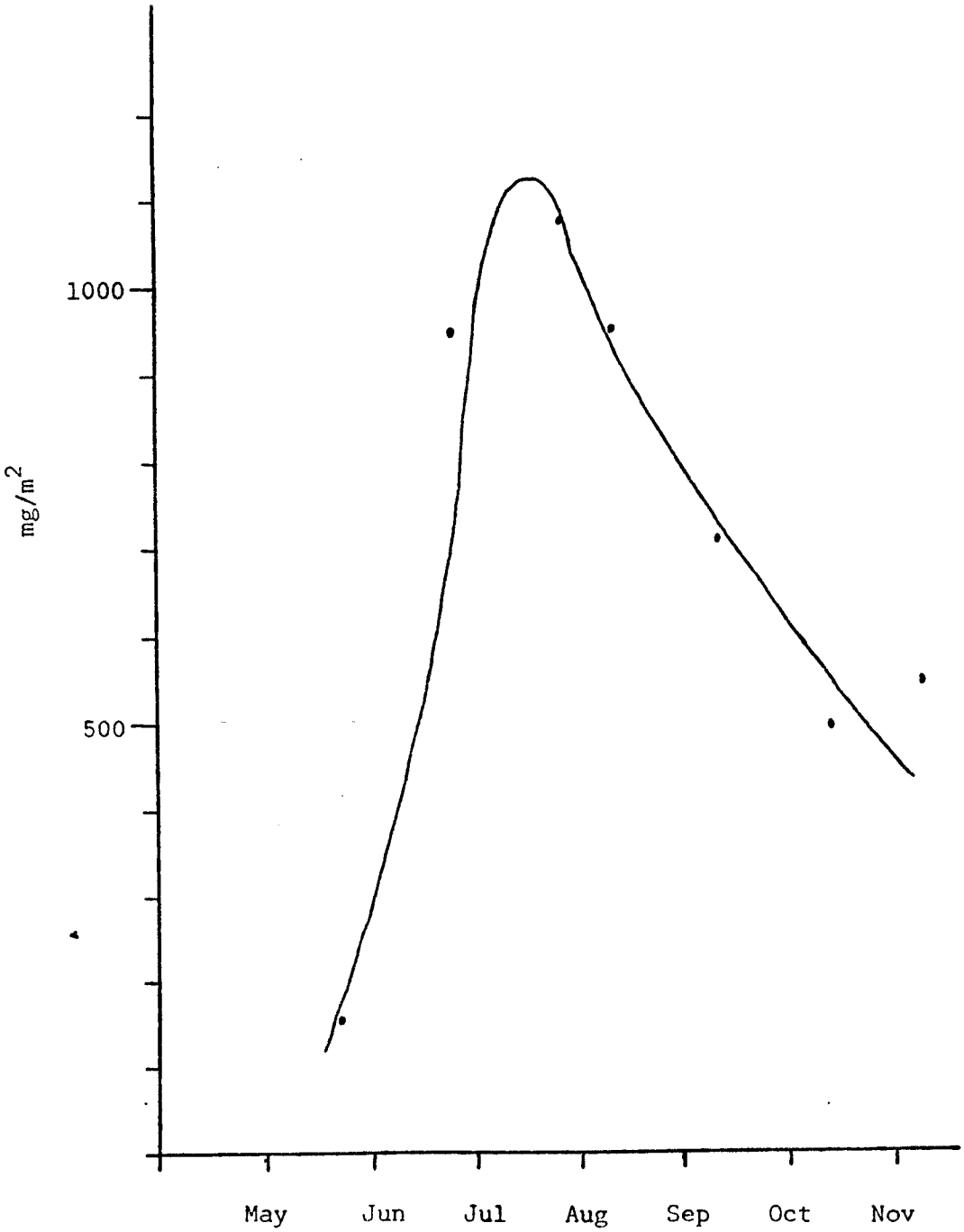


Figure . Zooplankton dry mass (mg/m^2) collected by 50 m vertical tows of a 0.50 m^{diam} No. 10 mesh (153μ) conical net, in relation to months of 1980 in Banner Lake (lake B on stream no. 109-10-24 entering Patterson Bay), Baranof Island.

X, sampling stat