DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: BAY, THE		Lake Area (ha):	22.46
Town:	SALISBURY	Maximum depth (m):	9.8
County:	Merrimack	Mean depth (m):	2.8
River Basin:	Merrimack	Volume (m^3):	634500
Latitude:	43°25' N	Relative depth:	1.8
Longitude:	71°47' W	Shore configuration:	3.75
Elevation (ft):	595	Areal water load (m/yr):	573.0
Shore length (m):	6300	Flushing rate (yr^{-1}):	203.0
Watershed area (ha):	26656.9	P retention coeff.:	< 0.01
% watershed ponded:	1.6	Lake type:	natural

BIOLOGICAL:	19 January 1988	21 August 1987
DOM. PHYTOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	DINOBRYON 85%
#2		
#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)		1230.0
CHLOROPHYLL-A (µg/L)		12.93
DOM. ZOOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	CYCLOPOID COPEPODS 29%
#2		NAUPLII LARVAE 24%
#3		KELLICOTTIA 15%
ROTIFERS/LITER	3	68
MICROCRUSTACEA/LITER	0	130
ZOOPLANKTON ABUNDANCE (#/L)	6	198
VASCULAR PLANT ABUNDANCE		Abundant
SECCHI DISK TRANSPARENCY (m)		
BOTTOM DISSOLVED OXYGEN (mg/L)	7.9	0.0
BACTERIA (fecal col., #/100 ml) #1		2
#2		
#3		

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): 2.6
Hypolimnion volume (m^3): 116000

CHEMICAL:

Lake: BAY, THE
Town: SALISBURY

	19 January 1988		21 August 1987		
DEPTH (m)	3.0	6.0	2.0	5.0	7.0
pH (units)	6.4	6.2	7.0	6.4	6.4
A.N.C. (Alkalinity)	8.3	7.3	12.7	10.2	12.9
NITRATE NITROGEN	0.14	0.13	0.11		< 0.05
TOTAL KJELDAHL NITROGEN	< 0.10	0.23	0.31	0.54	0.45
TOTAL PHOSPHORUS	0.007	0.009	0.018	0.018	0.020
CONDUCTIVITY (µ mhos/cm)	58.2	52.5	66.0	61.7	57.4
APPARENT COLOR (cpu)	24	24	35	52	51
MAGNESIUM			0.83		
CALCIUM			4.4		
SODIUM			7.8		
POTASSIUM			0.90		
CHLORIDE	6	5	10		5
SULFATE	3	3	4		4
TN : TP		40	23		22
CALCITE SATURATION INDEX			2.6		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1987

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
5	**	3	3	11	EUTRO

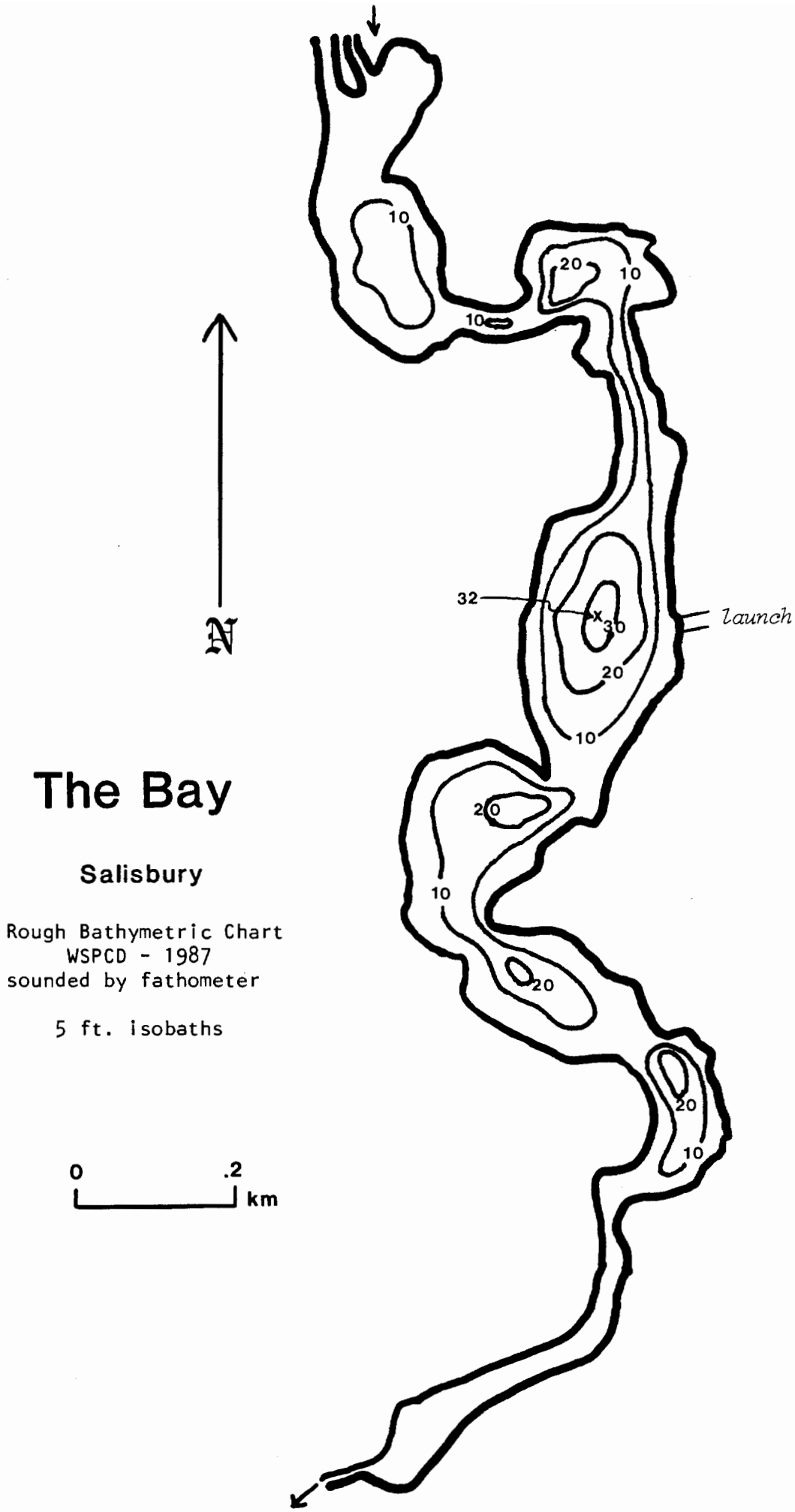
COMMENTS:

1. Also called Blackwater Bay. This is a natural wide, deep area of the Blackwater River.

2. No Secchi disk transparency measurement was taken. The Bay received enough trophic points to be rated eutrophic even without points for transparency.

3. Launch site was very rough and into shallow water.

4. The whole-water phytoplankton was 65% Cryptomonads and 20% greens. Chroomonas (40%) and Cryptomonas (25%) were the dominant genera.



The Bay

Salisbury

Rough Bathymetric Chart
WSPCD - 1987
sounded by fathometer

5 ft. isobaths

FIELD DATA SHEET

LAKE: BAY, THE
DATE: 08/21/87

TOWN: SALISBURY
WEATHER: CLEAR & SUNNY

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	23.0	7.2	84 %
	1.0	23.0	7.3	85 %
	2.0	21.8	10.7	118 %
	3.0	19.2	3.4	36 %
	4.0	18.7	2.2	23 %
	5.0	17.2	0.0	0 %
	6.0	16.5	0.0	0 %
	7.0	15.1	0.0	0 %
	8.0	14.5	0.0	0 %

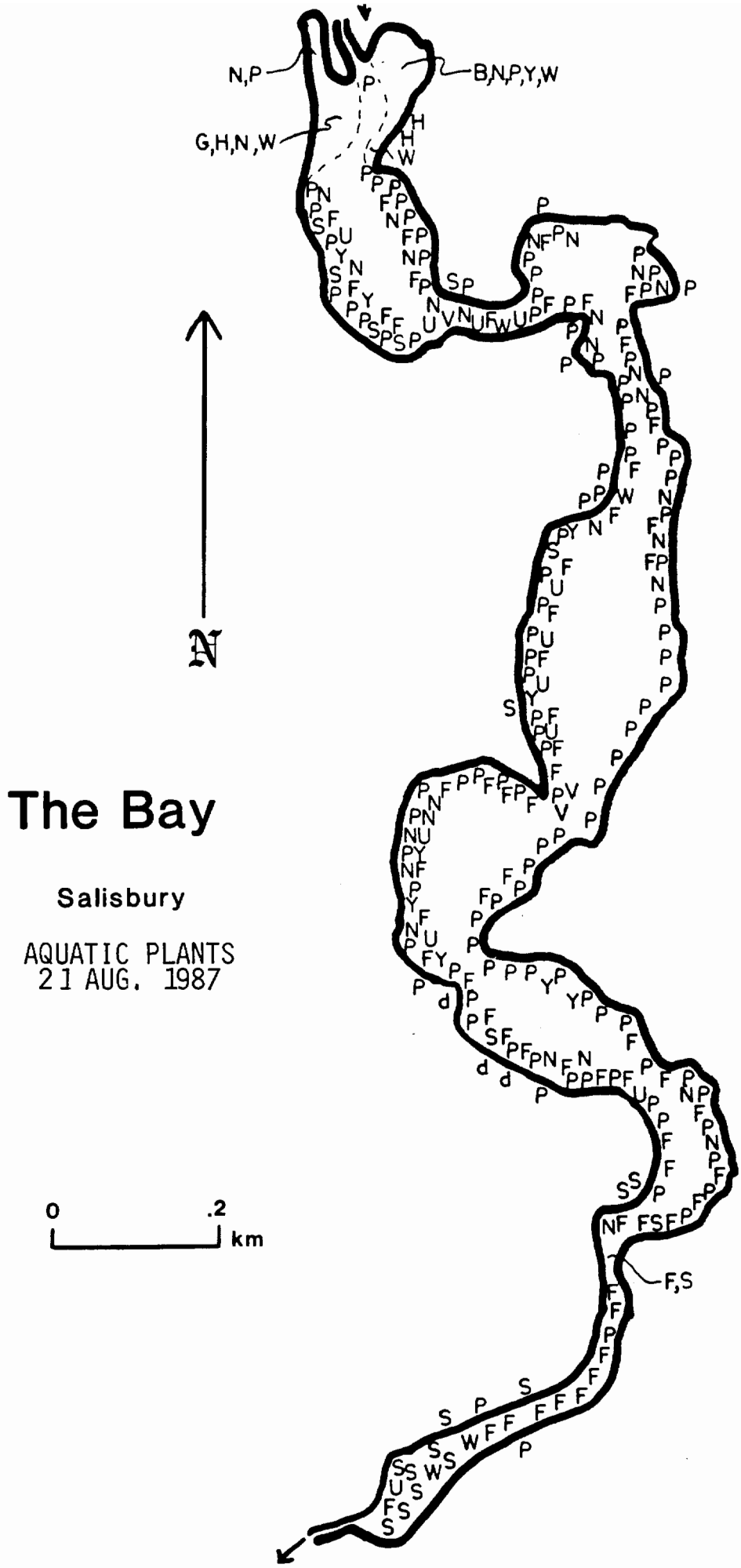
BOTTOM DEPTH (m): 8.5

TIME: 1242

COMMENTS:

1. Not a typical temperature profile because of the river flow. Three small thermoclines were present.
2. No Secchi disk reading was taken.

*Dissolved oxygen values are in mg/L


N,P
B,N,P,Y,W
G,H,N,W
F,S
N
The Bay
Salisbury
AQUATIC PLANTS
21 AUG. 1987
0
.2
km

AQUATIC PLANT SURVEY

LAKE: BAY, THE | TOWN: SALISBURY | DATE: 08/21/87

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Abundant
F	Nymphoides cordatum	Floating heart	Abundant
N	Nymphaea	White water lily	Common
W	Potamogeton	Pondweed	Common
f	Chlorophyceae	Filamentous green algae	Sparse
U	Utricularia	Bladderwort	Sparse
S	Sparganium	Bur reed	Sparse
H	Equisetum	Horsetail	Sparse
B	Brasenia schreberi	Water shield	Sparse
Y	Nuphar	Yellow water lily	Sparse
G	Gramineae	Grass family	Sparse
V	Vallisneria americana	Tape grass	Sparse
d	Dulichium arundinaceum	Three-way sedge	Sparse

OVERALL ABUNDANCE: Abundant

GENERAL OBSERVATIONS:

1. Plants were abundant along the shore but an open water channel was present throughout the length of the pond.