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

# LAKE TROPHIC DATA

## MORPHOMETRIC:

| | | | |
|---|---|---|---|
| Lake: | TAYLOR RESERVOIR | Lake Area (ha): | 4.86 |
| Town: | SALEM | Maximum depth (m): | 3.8 |
| County: | Rockingham | Mean depth (m): | 1.2 |
| River Basin: | Merrimack | Volume ($m^3$): | 58000 |
| Latitude: | 42°50'13" N | Relative depth: | 1.6 |
| Longitude: | 71°13'11" W | Shore configuration: | 2.24 |
| Elevation (ft): | 186 | Areal water load (m/yr): | 493.5 |
| Shore length (m): | 1750 | Flushing rate ($yr^{-1}$): | 414.0 |
| Watershed area (ha): | 4970.4 | P retention coeff.: | 0.01 |
| % watershed ponded: | 6.3 | Lake type: | artificial |

| BIOLOGICAL: | | 26 February 1997 | 23 July 1996 |
|---|---|---|---|
| DOM. PHYTOPLANKTON (% TOTAL) | #1 | DINOBRYON 30% | OSCILLATORIA 30% |
| | #2 | PENNATE DIATOMS 30% | MALLOMONAS 20% |
| | #3 | | DINOBRYON 13% |
| PHYTOPLANKTON ABUNDANCE (units/mL) | | | |
| CHLOROPHYLL-A (μg/L) | | | 4.41 |
| DOM. ZOOPLANKTON (% TOTAL) | #1 | SPARSE - NO DOMINANT | NAUPLIUS LARVA 80% |
| | #2 | | |
| | #3 | | |
| ROTIFERS/LITER | | 9 | 5 |
| MICROCRUSTACEA/LITER | | 6 | 196 |
| ZOOPLANKTON ABUNDANCE (#/L) | | 15 | 207 |
| VASCULAR PLANT ABUNDANCE | | | Abundant |
| SECCHI DISK TRANSPARENCY (m) | | | 2.4 |
| BOTTOM DISSOLVED OXYGEN (mg/L) | | 12.8 | 1.9 |
| BACTERIA (E. coli, #/100 ml) | #1 | | 6 |
| | #2 | | |
| | #3 | | |

## SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): None
Hypolimnion volume ($m^3$) : None
Anoxic volume ($m^3$) : None

CHEMICAL:

Lake: TAYLOR RESERVOIR
Town: SALEM

| | 26 February 1997 | | 23 July 1996 | | |
|---|---|---|---|---|---|
| DEPTH (m) | 1.0 | 2.0 | 1.0 | | 3.0 |
| pH (units) | 6.6 | 6.7 | 6.3 | | 6.2 |
| A.N.C. (Alkalinity) | 9.6 | 9.9 | 12.2 | | 12.3 |
| NITRATE NITROGEN | 0.15 | 0.15 | < 0.05 | | < 0.05 |
| TOTAL KJELDAHL NITROGEN | 0.25 | 0.23 | 0.20 | | 0.30 |
| TOTAL PHOSPHORUS | 0.012 | 0.014 | 0.013 | | 0.011 |
| CONDUCTIVITY (µmhos/cm) | 154.6 | 150.8 | 161.1 | | 160.8 |
| APPARENT COLOR (cpu) | 27 | 27 | 52 | | 60 |
| MAGNESIUM | | | 1.56 | | |
| CALCIUM | | | 8.5 | | |
| SODIUM | | | 20.1 | | |
| POTASSIUM | | | 1.60 | | |
| CHLORIDE | 33 | 34 | 37 | | 37 |
| SULFATE | 9 | 8 | 7 | | 7 |
| TN : TP | 33 | 27 | 15 | | 27 |
| CALCITE SATURATION INDEX | | | 4.2 | | |

All results in mg/L unless indicated otherwise

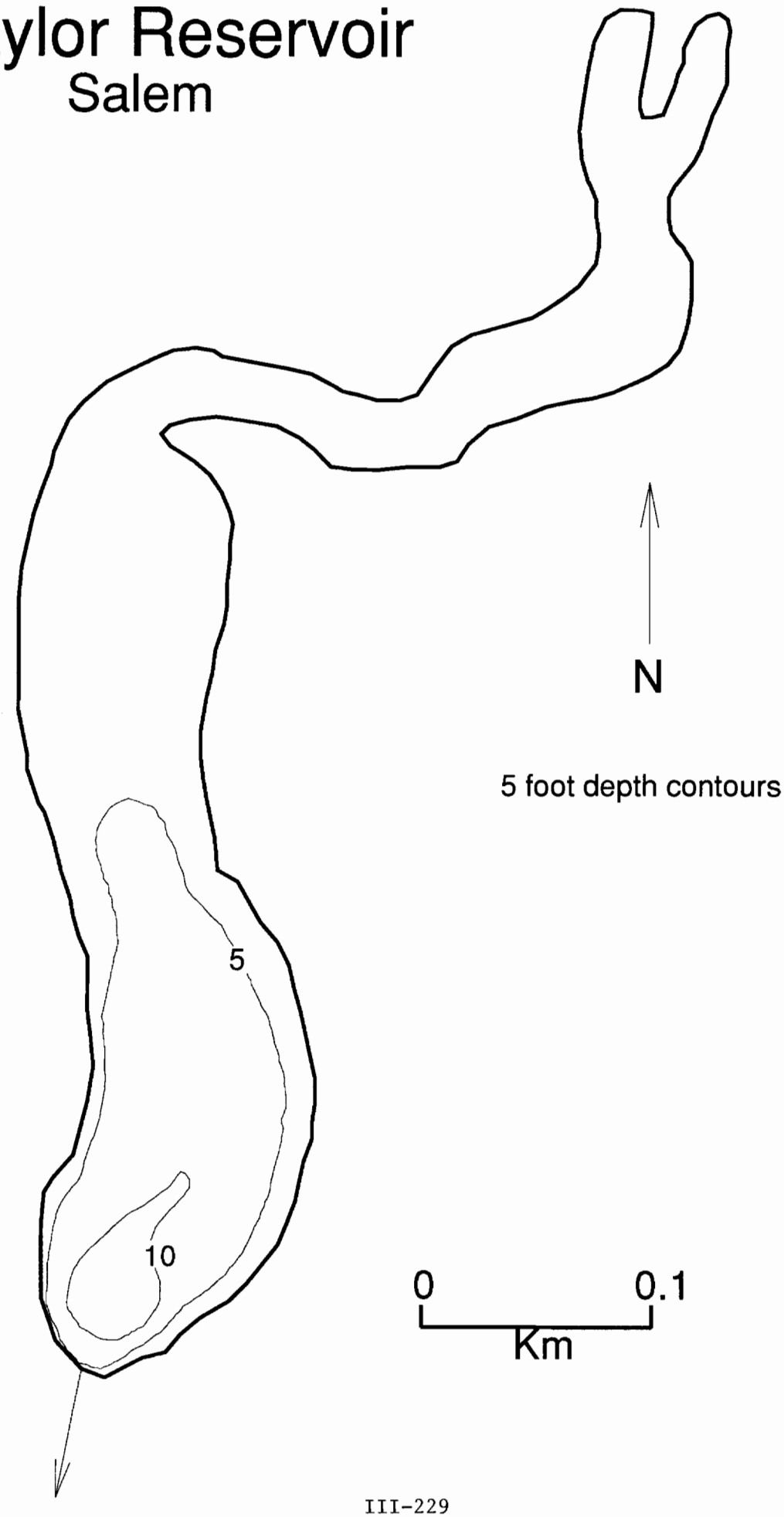
TROPHIC CLASSIFICATION: 1996

| D.O. | S.D. | PLANT | CHL | TOTAL | CLASS |
|---|---|---|---|---|---|
| ** | 3 | 5 | 1 | 9 | Meso. |

COMMENTS:

1. Taylor Reservoir is an artificial impoundment on the main tributary to Arlington Mill Reservoir. This shallow impoundment drains Big Island Pond and its watershed and thus has a very rapid flushing rate (over 400 times per year or more than once a day).

# Taylor Reservoir
## Salem



FIELD DATA SHEET

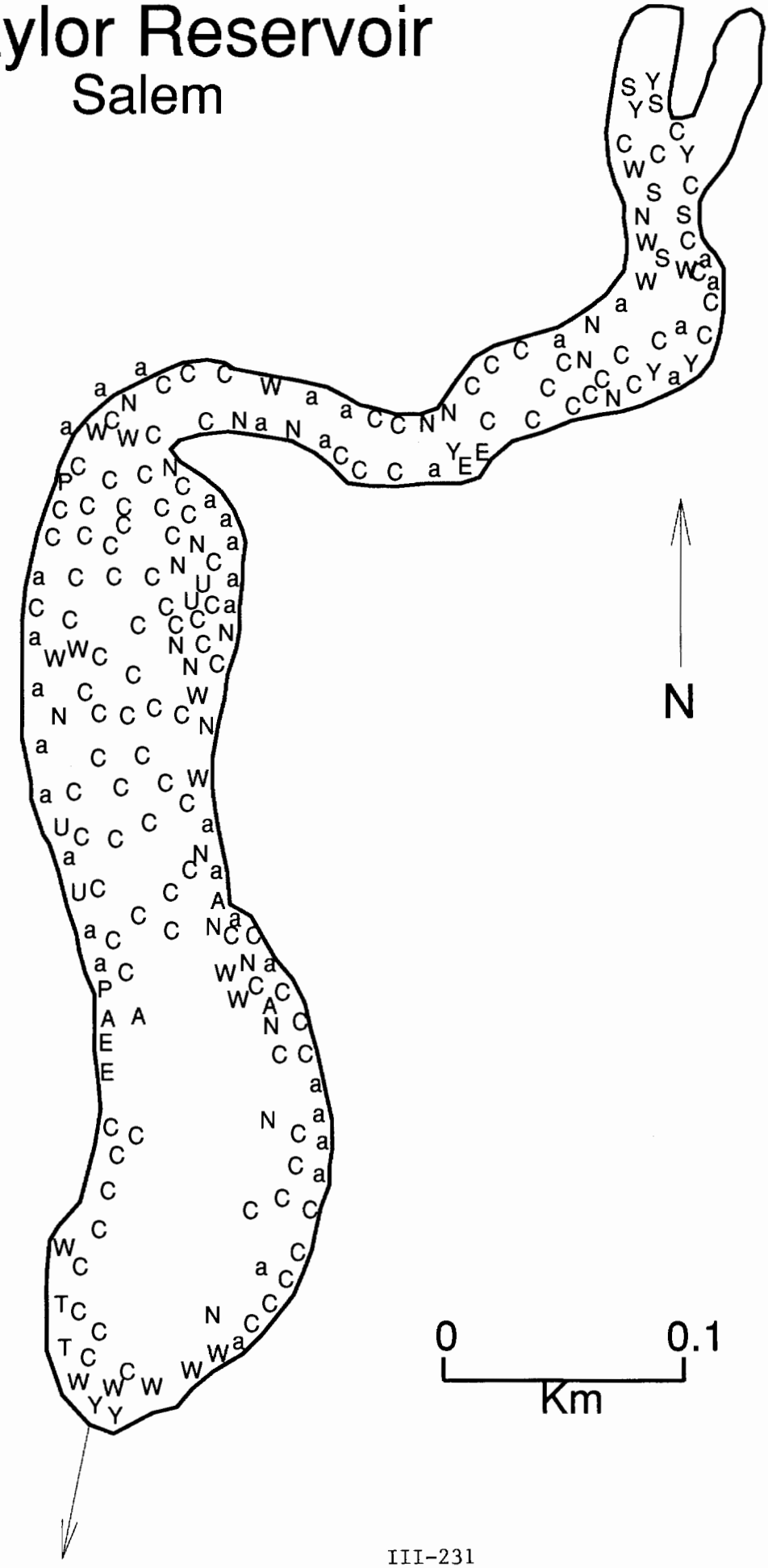
LAKE: TAYLOR RESERVOIR TOWN: SALEM
DATE: 07/23/96 WEATHER: OVERCAST

| | DEPTH (M) | TEMP (°C) | *DISSOLVED OXYGEN | OXYGEN SATURATION |
|---|---|---|---|---|
| | 0.1 | 22.1 | 8.8 | 99 % |
| | 1.0 | 21.5 | 7.6 | 84 % |
| | 2.0 | 20.5 | 4.5 | 49 % |
| | 3.0 | 19.5 | 0.5 | 5 % |
| | 3.5 | 17.5 | 1.9 | 19 % |

SECCHI DISK (m): 2.4 COMMENTS:
BOTTOM DEPTH (m): 3.8
TIME: 1030

*Dissolved oxygen values are in mg/L

# Taylor Reservoir
## Salem



# AQUATIC PLANT SURVEY

LAKE: TAYLOR RESERVOIR TOWN: SALEM DATE: 07/23/96

| Key | PLANT NAME | | ABUNDANCE |
|---|---|---|---|
| | GENERIC | COMMON | |
| C | Ceratophyllum demersum | Coontail | Very abundant |
| W | Potamogeton | Pondweed | Abundant |
| N | Nymphaea | White water lily | Abundant |
| a | Peltandra virginica | Arrow arum | Abundant |
| P | Pontederia cordata | Pickerelweed | Scat/Common |
| U | Utricularia | Bladderwort | Common/Abun |
| E | Eriocaulon septangulare | Pipewort | Sparse |
| T | Typha | Cattail | Sparse |
| Y | Nuphar | Yellow water lily | Sparse |
| A | Sagittaria | Arrowhead | Sparse |
| S | Sparganium | Bur reed | Sparse |
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OVERALL ABUNDANCE: Abundant

GENERAL OBSERVATIONS:

1. Plant growth was abundant in this shallow impoundment.
2. Coontail was across the surface of the upper two-thirds of the pond.
3. Sterile thread-like bottom growth is not depicted on the map but was present in the narrow portion of the pond.