

WATERFOWL HABITAT SURVEY

CANVASBACK GUN CLUB

1972

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INTRODUCTION

The vegetative survey was made on August 11, 1972, with the assistance of Richard and Bernard Lund. The purpose of the survey was to determine species composition, relative abundance and distribution of submergents. Emergents were also mapped.

METHODS and MATERIALS

A rowboat was the mode of transportation. A transect line consisted of a 100-foot length of rope with three equally spaced plastic jugs tied to it. Transect lines were randomly located on maps. A sample consisted of one square yard adjacent to the floating marker. The portion of the sample that contained vegetation was estimated to the nearest five percent. To become familiar with estimating these percentages, a frame one yard square was divided into sections by strings and was placed over sample sites. Later, ocular estimates were made only by me, so variation from the true percentages of vegetation should be consistent throughout the survey. Species abundance was also estimated and water depth was measured and salinity was measured by conductivity in micromhos/cm³.

Beds of aquatics were color coded by species on the maps.

RESULTS

Field data that were collected is presented in tabular form in the Appendix. Results represent information taken from these forms. Table 1 presents a summary of aquatic vegetation by unit. Frequency represents the percentage of the unit in which a species occurs, in some density, either alone or with other species.

$$\text{Frequency} = \frac{\text{Number of samples containing the species} \times 100}{\text{Total number of samples in unit}}$$

The species percentage composition is based on estimates of relative density in each observation.

$$\% \text{ of total submergents} = \frac{\text{Sum of } \% \text{ of one species}}{\text{Sum of } \% \text{ of all species}}$$

The percentage of a unit that contained vegetation was computed by the following formula:

$$\% \text{ of unit vegetated} = \frac{\text{Sum of } \% \text{ vegetated}}{\text{Total number of samples}}$$

Big and Little Freeman Lakes. Both of these lakes were practically barren of submergent vegetation. A trace of sago pondweed* was noted. Salinity concentration was 1,100 micromhos/cm³, for Big Freeman and 900 micromhos/cm³ for Little Freeman. Water in both lakes was turbid. Emergent vegetation covered two acres of which 80% was hardstem bulrush and 20% was cattail and a trace of arrowhead.

Big Mallard Lake. This lake has remained virtually unchanged since the first vegetative survey in 1960. The salinity reading was 1,100 micromhos/cm³. The average depth was two feet. The water was very turbid. No samples were taken because this lake is practically devoid of submergent vegetation. A trace of bladderwort and western pondweed was found. Emergent vegetation covered 250 acres of which 80% was hardstem bulrush and 20% was cattail.

Dutch Bill Lake. No samples were taken in this lake because it was practically devoid of submergent vegetation. The salinity concentration was 1,300 micromhos/cm³. The water was very turbid. Emergent vegetation covered 200 acres of which 75% was hardstem bulrush and 25% was cattail.

Big Arthur Lake. Water depth ranged from 1.9 feet to 2.7 feet. Salinity concentration was 2,000 micromhos/cm³. Ten samples were taken but 578 samples would be needed to be statistically accurate. The discussion is based on the ten samples. Submergent vegetation covered 42% of this lake of which 36% was coontail; 16%, sago pondweed and 48%, bladderwort. Approximately 0.5 acres of cattail surrounded this lake.

Johnson Lake. The water depth ranged between 2.2 and 2.6 feet. The salinity concentration was 2,400 micromhos/cm³. Fifteen samples were taken but 39 samples were necessary to be statistically accurate. The discussion will be based on the 15 samples taken. Submergent vegetation covered 52.3% of the lake of which 55% was coontail, 36% was sago pondweed and 9% was bladderwort. Hardstem bulrush completely surrounded this lake.

Pappy's Pond. This pond was dry at the time of the vegetative survey.

SUMMARY

Since the last vegetative survey in 1965, the marsh has remained virtually unchanged. The Arthur-Johnson Ponds produced most of the waterfowl food. Dutch Bill Lake, Big Mallard Lake and Freeman Lakes were practically barren of submergent vegetation.

* Scientific names for all species appear in the Appendix

APPENDIX

Field data for marsh units and tables summarizing the findings of the survey are appended to this report.

Submitted by,

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APPENDIX

Table 1

SUMMARY - AQUATIC HABITAT SURVEY
CANVASBACK GUN CLUB - 1973

<u>Unit</u>	<u>Species</u>	<u>Frequency</u>	<u>% of Total Submergents</u>	<u>% of Unit Vegetated</u>
Big Mallard	None			
Big Arthur	Bladderwort	80	48.0	42.0
	Coontail	60	36.0	
	Sago Pondweed	70	16.0	
Johnson	Coontail	60	54.5	52.3
	Sago Pondweed	80	36.2	
	Bladderwort	47	9.3	
	None	6		

Table 2

STATISTICAL ANALYSIS OF VEGETATIVE SURVEY - 1972

<u>Unit</u>	<u>No. Samples Taken</u>	<u>Mean of Samples</u>	<u>Standard Deviation</u>	<u>Standard Error</u>	<u>95% Confidence Intervals</u>	<u>% Value of Confidence Intervals</u>	<u>No. Samples Needed to be in 25% of Mean</u>
Big Arthur	10	42	35.3	11.2	17-67	60.1	578
Johnson	15	52	38.0	9.8	31-73	40.5	39

Table 3

OCCURRENCE AND DENSITY OF SUBMERGENTS IN BIG ARTHUR

<u>Sta. No.</u>	<u>Water Depth</u>	<u>Salinity (Micromhos/cm³)</u>	<u>Coontail</u>	<u>Sago Pondweed</u>	<u>Bladderwort</u>	<u>% Vegetated</u>
1.	1.9'	2,000	5	90	5	60
2.	2.1	2,000	95	5		30
3.	2.3		90	5	5	30
4.	2.7		100			5
5.	2.6		50	50		10
6.	2.0		10		90	70
7.	2.4		5	5	90	90
8.	2.3				100	15
9.	1.9		5	5	90	10
10.	2.2				100	100

Table 4

OCCURRENCE AND DENSITY OF SUBMERGENTS IN JOHNSON POND

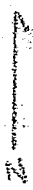
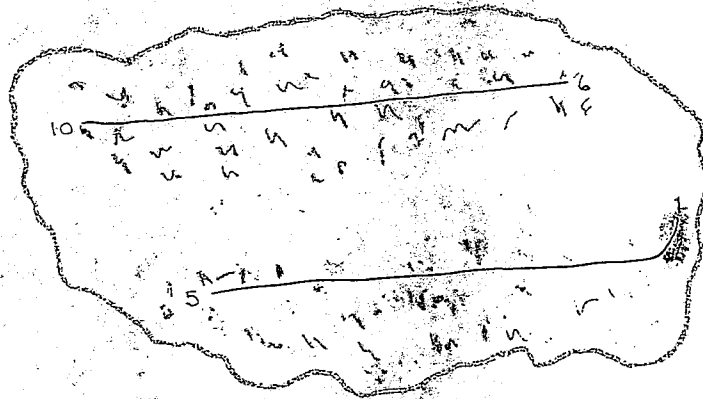
<u>Sta. No.</u>	<u>Water Depth</u>	<u>Salinity (Micromhos/cm³)</u>	<u>Coontail</u>	<u>Sago Pondweed</u>	<u>Bladderwort</u>	<u>% Vegetated</u>
1.	2.3'	2,400	80	20		50
2.	2.4	2,400				0
3.	2.5	2,400		100		5
4.	2.4	2,400	95	5		60
5.	2.4	2,400	50		50	30
6.	2.6	2,400		60	40	50
7.	2.6	2,400		95	5	75
8.	2.6	2,400		100		30
9.	2.5	2,400		100		5
10.	2.2	2,400	100			5
11.	2.5	2,400	90	5	5	90
12.	2.5	2,400	90	5	5	95
13.	2.5	2,400	90	5	5	90
14.	2.4	2,400	70	10	20	100
15.	2.4	2,400	95	5		100

Table 5

CHECKLIST OF SPECIES, ARRANGED IN SYSTEMATIC ORDER

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>
Cattail	<u>Typha sp.</u>
Sago Pondweed	<u>Potamogeton pectinatus</u>
Western Pondweed	<u>P. latifolius</u>
Arrowhead	<u>Sagittaria sp.</u>
Hardstem Bulrush	<u>Scirpus acutus</u>
Coontail	<u>Ceratophyllum demersum</u>
Bladderwort	<u>Utricularia vulgaris</u>

Taxonomy in accordance with Mason (1957).

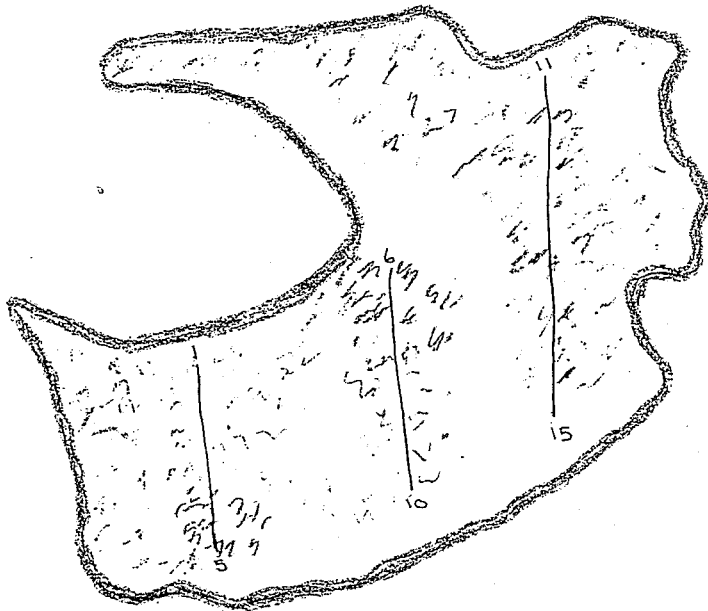


BIG ARTHUR POND

0.9 Acres

1" = 71'

- Coontail - Gray
- Sago Pondweed - Pink
- Bladderwort - Red



JOHNSON POND
2.8 Acres
1" = 166'

Coontail - Gray
Sago Pondweed - Pink
Bladderwort - Red
Emergents - Green