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FISH AND WILDLIFE MANAGEMENT REPORT

PROVINCE OF ONTARIO

DEPARTMENT OF LANDS AND FORESTS

Division of Fish and Wildlife

Hon. Clare E. Mapledoram
Minister

F. A. MacDougall
Deputy Minister

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SOME STATISTICS AND COMMENTS ON THE PELEE ISLAND PHEASANT SHOOTS OF 1953 AND 1954.

by
C. O. Bartlett

The Pelee Island Pheasant Shoot, 1953

Licences Sold and Pheasant Kill, 1953

Total Licences issued	1,150 Non-resident 250 Resident 1,400 Total Hunters
Average bag per hunter: (29% sample)	7.4 Cocks, 2.0 Hens
Total Birds Bagged:	10,360 Cocks, 2,800 Hens
Estimate for Cripples and Illegal Kill	640 Cocks, 200 Hens
Estimate of Total Kill	11,000 Cocks, 3,000 Hens

Age and Sex Ratios

Sex Ratios: Pre-season (Oct. 26-27th, n = 2,256)
1.32 Hens/Cock

Post-season (Nov. 17th, n = 1,101)
8.2 Hens/Cock

Age Ratios:	Cocks	Hens
Juvenile	868	551
Adult	79	267
	947	818
	11.0 Juv/Ad	2.1 Juv/Ad

Population Estimates

Number of birds before hunt	Numbers of birds after hunt
12,640 Cocks	1,640 Cocks
16,430 Hens	13,430 Hens

Comments

The annual brood survey carried out in July, 1953 indicated roughly a 100 percent increase in the pheasant population from 1952. The 1953 pre-season pheasant population estimate obtained when we increase last year's estimate of number of chicks hatched by 100 percent would place it at roughly 11,000 cocks and 15,000 hens.

The Kelker ratio estimate obtained at the shoot, placed the pre-season pheasant population at 12,640 cocks and 16,430 hens.

It is interesting to note that the pre-season population estimates for 1952 and 1953 obtained from brood surveys both differed (underestimated) by ten percent from the Kelker estimate obtained at the shoot.

We accept the Kelker estimate as being the more reliable of the two and it serves as a basis for estimating the adult pheasant population the following year.

In obtaining our estimate from the brood survey we have made two assumptions; that pheasant chick mortality from the time of hatch in June to the shoot in October, and the average brood size at time of hatch, have both remained the same as the average figures obtained by Stokes during the Pelee Island Pheasant study, from 1946 to 1950.

We presently feel that any discrepancy in average brood size can be detected during the two week field survey in July. However, a change in pheasant chick mortality from the time of the survey in July until the shoot in October, might seriously upset our pre-season estimate of the pheasant population made from the brood survey. Both 1952 and 1953 were normal seasons and conditions generally were very favourable for pheasant chick survival.

It would appear then that during a normal season the present technique of estimating annual pheasant production on Pelee Island from broods observed on road transects is satisfactory for management purposes.

It is questionable at the present time whether the technique is satisfactory in years when conditions are unfavourable for pheasant chick survival.

The Pelee Island Pheasant Shoot, 1954

Licences Sold and Pheasant Kill, 1954

Total Licences issued	1,423	Non-resident
	194	Resident
	1,617	Total Hunters
Average bag per hunter (18% sample)	6.75 Cocks	4.88 Hens
Total Birds Bagged	10,915 Cocks	7,891 Hens
Estimate for Crippling		
Losses and Illegal Kill (Cocks, 5 percent; Hens, 18 percent of birds bagged)	548 Cocks	1,414 Hens
Estimate of Total Kill	11,463 Cocks	9,305 Hens

Age and Sex Ratios

Sex Ratios: Pre-season (Oct. 25, 26; n = 1,548
1.65 Hens/Cock

Post-season (Nov. 8, 9; n = 874
12.2 Hens/Cock

Age Ratios:	Cocks	Hens
Juvenile	908	569
Adult	76	296
	984	865
	11.9 Juv./Ad.	1.92 Juv./Ad.

Population Estimates

Number of birds before hunt	Number of birds after hunt
12,327 Cocks	864 Cocks
20,339 Hens	11,034 Hens

Comments

In 1953, 1,400 hunters averaged 7.4 cocks and 2.0 hens or a total of 9.4 birds each. This year (1954) 1,617 hunters averaged 6.7 cocks and 4.9 hens or a total of 11.6 birds each. The total kill of an estimated 20,768 birds has only been exceeded once since pheasant investigations started in 1946. This was in 1950 when an estimated 27,200 birds were shot.

The bag limit of 9 cocks and the take of 6.7 cocks per hunter is further evidence of the inability of hunters to over-shoot the cock population on Pelee Island. The bag limit of five hens was sufficient to reduce the hen population to the desired level of approximately one bird per acre and left the island with a very satisfactory cock - hen ratio.

The pre-season population estimate of 20.808 hens and 13,898 cocks (submitted in round figures to the Pelee Island Council as 21,000 hens and 14,000 cocks) obtained from the summer inventory agrees closely with the Kelker ratio estimate of 20,339 hens and 12,327 cocks.

SEX RATIOS OF MARTEN, FISHER, MINK AND OTTER IN ONTARIO

PROGRESS REPORT FOR 1953-54.

by
J. K. Reynolds

The study of sex ratios of marten and fisher, begun last year and based on sealing officers' reports, was continued through the trapping season of 1953-1954. The scope of the investigation was extended to include mink and otter.

The data for 1953-1954 are much more extensive than were those of the previous year. It will be noted from the tables in which these data are summarized that in a few Districts fairly large numbers of pelts were not reported as to sex, but the coverage is much better than last year. It is hoped that the current season's returns will show further improvement.

Considerable difficulty was encountered in obtaining final reports from some Districts this year, and as a result this report has been greatly delayed. Districts are requested to submit final summary reports, on the forms provided, as soon after the close of the trapping season as possible.

As will always be the case when data are based on sealing officers' reports, there is no precise correlation between the date on which a pelt is sealed and the date on which the animal was caught. In fact, records kept at Chapleau and White River have shown that there is often a considerable difference between "date animal trapped" and "date pelt sealed." However, except in the more remote areas, the majority of trappers waste little time holding pelts. Most of them need the cash and, fearing still further declines in the prices of furs, they hustle in from their traplines at fairly frequent intervals.

In Table I the data for each of the four species under study are summarized with respect to Forest Districts. In Table 2 most of the same data are summarized according to the week in which the pelts were presented for sealing. The totals of Table 2 are smaller than those of Table I because the date of sealing was not reported for some pelts reported as to sex.

(a) MARTEN - In last year's report, when data were available on 1282 pelts, the sex ratio for marten was 179 males per 100 females. In 1953-1954, with data on 2806 pelts, the sex ratio is 175 males per 100 females.

It is noteworthy (Table I) that in the District of Sioux Lookout and in adjoining Patricia Central the lowest ratios of males to females are reported. The highest are in the Chapleau and White River Districts.

It is also worthy of note that, although more males than females were taken throughout the season, the difference is especially marked in the pre-Christmas period (Table 2). Apparently there is a greater probability of trapping female marten after than before Christmas.

(b) FISHER - In last year's report, data were available on 1207 fisher, of which 603 were males and 604 females. In 1953-54, with data from 2305 pelts a sex ratio of 92 males per 100 females is indicated (Table I). There are considerable variations from District to District, but these show no consistency on a geographic basis. There are also sharp ups and downs from week to week (Table 2), but there is no suggestion of a seasonal trend as there is with marten.

(c) MINK - this is the first year that we have had data on mink. Of 31,657 pelts, 20,035 were from males and 11,622 from females, a ratio of 172 males per 100 females (Table I). This is quite similar to the ratio for marten. There is considerable variation from District to District, but no geographic trend is indicated.

The seasonal variation in the sex ratio is the reverse of that indicated for marten (Table 2). In the latter species, the male:female ratio was higher in the first part of the season than towards the last; in mink, after the first week of February the sex ratio is considerably higher in favour of males.

(d) OTTER - On the basis of 5306 pelts, a sex ratio of 134 males per 100 females is calculated (Table I). There is considerable variation between Districts, but this may well be due to chance alone, since in most cases the numbers of pelts available are small and one or two pelts added to or subtracted from most of these figures would make quite a difference in the ratios.

The same criticism may also be applied to the data for otter in Table 2. In general, there is no indication of a seasonal change in the sex ratio of this species.

Discussion

On the basis of the report for 1952-1953, which dealt with limited numbers of marten and fisher, it was difficult to draw any very definite conclusions. But

for 1953-1954, with much more information at hand, the following conclusions seem to be justified:

(a) In MARTEN, the sex ratio over the entire trapping season is about 1.75 males per female. More males than females are taken at all times of the season, but there is a greater probability of taking females after than before Christmas.

(b) In FISHER, slightly more females than males are taken. This may be somewhat influenced by the fact that the pelts of females are much more valuable than are those of males. There is no indication of seasonal variations in the sex ratio.

(c) In MINK, considering the entire trapping season, about 1.72 males per female are taken. An especially high proportion of males is taken after the first of February, with ratios in most cases 2:1 and higher.

(d) In OTTER, about 1.34 males per female are trapped, with no appreciable seasonal trend.

TABLE I - Summary of Sex Ratios, by Forest Districts, 1953-1954.

	Marten					Fisher				
Forest District	♂♂	♀♀	??	Total	♂♂/c♀♀	♂♂	♀♀	??	Total	♂♂/c♀♀
Lake Erie	0	0	0	0	-	0	0	0	0	-
Lake Huron	0	0	0	0	-	0	0	0	0	-
Lake Simcoe	0	0	0	0	-	0	0	0	0	-
Lindsay	0	1	0	1	-	5	2	9	16	-
Tweed	0	0	0	0	-	3	0	0	3	-
Kemptville	0	0	0	0	-	0	0	0	0	-
Parry Sound	42	27	0	69	155	67	67	0	134	100
Pembroke	24	17	3	44	141	76	70	0	146	108
North Bay	4	2	0	6	-	10	9	2	21	-
Sudbury	7	1	48	56	-	48	42	14	104	114
S. S. Marie	52	34	0	86	153	57	82	0	139	70
White River	114	60	12	186	190	59	67	6	132	88
Chapleau	274	126	1	401	218	54	52	0	106	103
Gogama	100	55	1	156	182	61	55	2	118	111
Swastika	2	3	0	5	-	50	50	8	108	100
Cochrane	209	133	0	342	157	105	74	0	179	142
Kapuskasing	535	295	0	830	181	106	127	0	233	84
Geraldton	210	120	34	364	175	28	40	19	87	70
Port Arthur	70	47	2	119	149	113	119	24	256	95
Fort Frances	8	12	0	20	-	54	53	26	133	102
Kenora	0	0	1	1	-	35	60	31	126	58
Sioux Lookout	83	61	18	162	136	43	42	15	100	102
Pat. W. (Ke.)	0	0	0	0	-	7	2	5	14	-
Pat. W. (Sx.)	1	1	4	6	-	101	162	4	267	62
Pat. C. (Sx.)	25	18	2	45	139	13	12	13	38	108
Pat. E. (Co.)	26	7	0	33	-	11	12	0	23	92
Totals	1786	1020	126	2932	175	1106	1199	178	2483	92

TABLE I - cont.

Forest District	Mink ♂♂	Mink ♀♀	Mink ??	Mink Total	Mink ♂♂/c♀♀	Otter ♂♂	Otter ♀♀	Otter ??	Otter Total	Otter ♂♂/c♀♀
Lake Erie	549	300	11	860	183	0	0	0	0	-
Lake Huron	658	470	0	1128	140	0	0	0	0	-
Lake Simcoe	436	339	0	775	129	0	0	0	0	-
Lindsay	338	204	313	855	166	18	9	23	50	-
Tweed	641	328	7	976	195	48	22	29	99	218
Kemptville	261	141	0	402	185	0	0	0	0	-
Parry Sound	867	557	257	1681	156	69	36	81	186	192
Pembroke	386	222	1	609	174	55	40	2	97	137
North Bay	512	283	16	811	188	60	38	12	110	167
Sudbury	874	496	462	1832	176	104	63	58	225	168
S. S. Marie	651	411	1	1063	159	90	67	1	158	134
White River	447	223	39	709	200	69	55	3	127	125
Chapleau	385	170	0	555	226	107	73	1	181	147
Gogama	281	159	2	442	177	57	50	3	110	114
Swastika	393	283	18	694	139	58	28	1	87	207
Cochrane	514	292	0	806	176	100	59	0	159	169
Kapuskasing	901	530	0	1431	170	162	92	0	254	176
Geraldton	238	128	315	681	186	84	25	71	180	336
Port Arthur	552	234	19	805	235	51	40	26	117	127
Fort Frances	811	466	316	1593	174	61	36	32	129	169
Kenora	559	382	124	1065	147	34	13	32	79	262
Sioux Lookout	326	152	29	507	216	30	16	26	72	187
Pat. W. (Ke.)	257	115	30	402	223	13	5	21	39	-
Pat. W. (Sx.)	1237	621	0	1858	199	-	-	-	-	-
Pat. C. (Sx.)	4426	2611	156	7193	170	1320	1170	170	2660	116
Pat. E. (Co.)	2535	1505	225	4265	169	444	335	0	779	135
Totals	20035	11622	2341	33998	172	3034	2272	592	5898	134

TABLE 2 - Summary of Sex Ratios, by Weeks, 1953-1954.

Week of	Marten ♂♂	Marten ♀♀	Marten ??	Marten Total	Marten ♂♂/c♀♀	Fisher ♂♂	Fisher ♀♀	Fisher ??	Fisher Total	Fisher ♂♂/c♀♀
Nov. 1 - 7/53	18	6	3	27	-	3	3	2	8	-
Nov. 8 - 14	38	20	3	61	190	8	7	2	17	-
Nov. 15 - 21	80	36	7	123	222	35	28	6	69	125
Nov. 22 - 28	127	53	8	188	240	50	66	2	118	76
Nov. 29 - Dec. 5	133	64	5	202	208	78	80	5	163	97
Dec. 6 - 12	91	51	31	173	178	73	102	6	181	72
Dec. 13 - 19	261	143	13	417	182	116	137	22	275	85
Dec. 20 - 26	340	181	12	533	188	170	213	39	422	80
Dec. 27 - Jan. 2/54	174	113	4	291	154	80	110	6	196	73
Jan. 3 - 9	62	35	14	111	178	80	76	15	171	105
Jan. 10 - 16	91	56	2	149	163	59	57	15	131	103
Jan. 17 - 23	105	82	5	192	128	71	68	9	148	104
Jan. 24 - 30	125	68	13	206	183	116	123	14	253	94
Jan. 31 - Feb. 6	20	17	3	40	118	25	11	2	38	228
Feb. 7 - 13	11	5	0	16	-	10	13	3	26	77
Feb. 14 - 20	10	8	1	19	-	6	6	1	13	-
Feb. 21 - 27	5	7	1	13	-	17	12	0	29	142
Feb. 28 - Mar. 6	14	15	0	29	93	9	5	0	14	-
Mar. 7 - 13	12	7	0	19	-	15	5	1	21	-
Mar. 14 - 20	0	1	0	1	-	6	5	1	12	-
Mar. 21 - 27	29	22	0	51	134	8	2	0	10	-
Mar. 28 - Apr. 3	2	0	0	2	-	0	1	0	1	-
Apr. 4 - 10	2	2	0	4	-	2	2	0	4	-
Apr. 11 - 17	10	2	0	12	-	2	0	0	2	-
Apr. 18 - 24	1	1	0	2	-	3	1	0	4	-
Apr. 25 - May 1	0	0	0	0	-	0	0	0	0	-
May 2 - 8	0	0	0	0	-	1	0	0	1	-
May 9 - 15	0	0	0	0	-	0	2	0	2	-
May 16 - 22	0	0	0	0	-	3	1	0	4	-
May 23 - 29	4	4	0	8	-	3	4	1	8	-
June	13	9	1	23	-	3	5	0	8	-
Totals	1778	1008	126	2912	173	1052	1145	152	2349	94

TABLE 2 - cont.

Week of	Mink ♂♂	Mink ♀♀	Mink ??	Mink Total	Mink ♂♂/c♀♀	Otter ♂♂	Otter ♀♀	Otter ??	Otter Total	Otter ♂♂/c♀♀
Nov. 1 - 7/53	176	102	61	339	173	5	6	10	21	-
Nov. 8 - 14	428	256	124	808	167	20	21	11	52	95
Nov. 15 - 21	781	452	223	1456	173	26	14	38	78	185
Nov. 22 - 28	1053	673	188	1914	157	70	36	17	123	195
Nov. 29 - Dec. 5	1105	619	208	1932	178	66	57	17	140	116
Dec. 6 - 12	875	577	152	1604	152	52	47	26	125	110
Dec. 13 - 19	1387	819	215	2421	170	106	68	22	196	156
Dec. 20 - 26	1405	906	99	2410	155	139	80	40	259	173
Dec. 27 - Jan. 2/54	678	350	70	1098	193	53	48	16	117	110
Jan. 3 - 9	543	333	66	942	163	48	40	14	102	120
Jan. 10 - 16	474	335	59	868	141	37	34	15	86	109
Jan. 17 - 23	570	326	26	922	175	64	57	14	135	112
Jan. 24 - 30	556	312	63	931	178	45	32	12	89	156
Jan. 31 - Feb. 6	241	138	14	393	175	33	24	3	60	137
Feb. 7 - 13	78	34	5	117	230	16	12	4	32	133
Feb. 14 - 20	205	106	1	312	193	36	36	5	77	100
Feb. 21 - 27	85	42	5	132	202	25	7	8	40	357
Feb. 28 - Mar. 6	80	47	6	133	170	18	8	6	32	225
Mar. 7 - 13	83	29	11	123	286	15	10	7	32	150
Mar. 14 - 20	186	73	4	263	255	56	45	7	108	125
Mar. 21 - 27	153	60	0	213	255	13	14	4	31	93
Mar. 28 - Apr. 3	123	43	3	169	286	16	11	12	39	145
Apr. 4 - 10	99	35	0	134	283	30	10	10	50	300
Apr. 11 - 17	86	68	1	155	246	41	15	11	67	274
Apr. 18 - 24	196	76	7	279	258	38	14	11	63	270
Apr. 25 - May 1	135	54	13	202	250	60	27	16	103	222
May 2 - 8	129	37	11	177	350	58	27	12	97	216
May 9 - 15	51	20	3	74	255	46	20	7	73	230
May 16 - 22	43	17	5	65	253	60	39	2	101	154
May 23 - 29	42	18	1	61	233	80	42	8	130	190
June	217	83	0	300	261	261	165	1	427	158
Totals	12263	7040	1644	20947	174	1633	1066	386	3085	153

GAME BAG CENSUS FOR LUTHER MARSH, 1954

by
J. F. Gage and W. H. Cantelon

On October 2nd, 1954, the first day of the duck season in the Huron District, seven checking stations were established at main points of access to Luther Marsh in Wellington County.

These several stations were manned by Department of Lands and Forests personnel with the co-operation of Dr. A. de Vos, Wildlife Lecturer, and several of his students taking the Wildlife Management option at the Ontario Agricultural College, Guelph.

A larger variety of ducks was reported the opening day this year than for the same period in 1953 with slightly fewer hunters participating.

The weather was cloudy and mild, with heavy early morning thundershowers.

The following table shows the order of bag and comparisons for 1953 and 1954.

1953 - Percent of Total Bag		1954 - Percent of Total Bag	
Black Duck	- 41. %	G. W. Teal	- 29.9%
Mallard	- 16.6%	B. W. Teal	- 25.3%
B. W. Teal	- 14.6%	Mallard	- 10.7%
G. W. Teal	- 10.9%	Black Duck	- 9.9%
Other Species	- 16.9%	Other Species	- 24.2%

Reports show that 127 ducks were brought down but not retrieved by the parties responsible, whereas other hunters reported finding 23 which indicates that 16 1/2% of the total ducks brought down opening day were not reported found. Worthy of note in this connection is that of the 729 hunters checked opening day only 22, or 3%, were using dogs.

Although Ontario has no open season on Grebes, census personnel reported having checked eight.

Records indicate that the majority of hunters at Luther Marsh on opening day came from within a radius of 75 miles, with the exception of two hunters from Windsor and South River.

GAME BAG CENSUS FOR LUTHER MARSH - October 2nd, 1954. (Huron and Simcoe Districts)

No. of Hunters	No. of Ducks Shot	No. of Each Species of Duck		Percentage of Total Take	No. of Banded Ducks Found	No. of Hunters Using Dogs	No. of Ducks Lost	No. of Ducks Found
729	494	G. W. Teal	- 148	29.9%	3	22	127	23
		B. W. Teal	- 125	25.3%				
		Coot	- 64	12.9%				
		Mallard	- 53	10.7%				
		Black Duck	- 49	9.9%				
		Wood Duck	- 17	3.4%				
		Ring-necked Duck	- 9	1.8%				
		Ruddy Duck	- 8	1.6%				
		American Merganser	- 4	.80%				
		Blue-Bill	- 2	.40%				
		Pintail	- 2	.40%				
		Shoveller	- 2	.40%				
		Golden-eye	- 2	.40%				
		Widgeon	- 1	.20%				
		*P. B. Grebe	- 8	*1.60%				

* Although the Grebe is on the protected list, 8 were reported shot.

During the afternoon of November 3, Mr. J. B. Dawson and Dr. A. de Vos made a trip to Luther Marsh in order to census the waterfowl population and to assess hunting pressure during that time of the year.

The following species were observed:

Black Duck	450 (more or less)
Mallard	1
Scaups	35 (more or less)

It was very noticeable that most of the flying ducks, and particularly black ducks, tried to stay as much as possible within the boundaries of the Game Preserve.

Based on number of hunters seen and shots heard, it was estimated that not more than two dozen hunters were present. Most of them were concentrated along the edge of the Game Preserve.

The writers made trips to Luther Marsh on November 9th and again on November 16th, 1954, and found the following waterfowl:

November 9th		November 16th	
Black Duck	- 175	Black Duck	- 50
Mallard	- 75	Mallard	- 25
Canvas-back	- 15	Scaup	- 100
		Canvas-back	- 6
		Buffle-head	- 1

An approximation of hunting pressure was six hunters on November 9th and 12 hunters on November 16th. Both days were cloudy with light northwest winds and our observations were made entirely on the East Luther portion of the Marsh.

A visit to the Marsh on Friday, November 19th, by Dr. A. de Vos indicated that considerable numbers of ducks still remained, possibly detained because of mild weather conditions.

The following species and approximate numbers were observed:

Black Duck	250
Golden-eye	15
Teal	a few

Hunting pressure was low. It was estimated that not more than a dozen hunters were present in the Marsh. Very few shots were fired as most ducks flew either out of range, or were flying over the Game Preserve.

CHECK OF DUCK HUNTERS IN RONDEAU PARK, OCTOBER 2, 1954.

by
R. A. McLaren

Below is a summary of the check made of hunters in Rondeau Park after the opening shoot on Saturday, October 2nd, 1954.

Hunters checked	265
Ducks killed in bag	315
Ducks killed not retrieved	86

Ducks in bag were:

Blue-winged Teal	166
Green-winged Teal	19
Black	30
Mallard	52
Wood Duck	48
Total	315

Average bag per hunter: 1.19 ducks.

622 hunting licences were stamped previous to opening morning to allow hunters to shoot in Rondeau Park. 40 more were stamped during the day. 44 hunters were found not to have had licences stamped for the Park.

WATERFOWL HUNTERS' BAG CHECKS

TWEED DISTRICT, 1954

by
H. G. Lumsden

During the early part of the waterfowl season in 1954, District staff checked hunters in order to obtain figures on hunters' success and kill composition.

Tweed District contains two major types of duck habitat. In the south, situated on Ordovician limestones, large fertile marshes with a dominant growth of cattail lie around the shores of Lake Ontario. In the northern two-thirds of the District, situated on Pre-Cambrian formations, ducks are found in many hundreds of beaver ponds and four large marshes in which the dominant vegetation is sedge.

The following table summarizes the results of the checks.

Off the Pre-Cambrian Shield

Marsh	Date	Hunters	Bag	Cripples	Average Bag
West Lake	Sept. 18	56	133	67	2.3
Camden Twp.	Sept. 18	47	108	4	2.3
Huff Island	Sept. 18	35	148	14	4.2
Amherst Is.	Sept. 18	38	126	36	3.3
Wolfe Is.	Sept. 18	60	250	48	4.2
Thurlow Twp.	Sept. 22 & 23	26	82	19	3.2
Crowe Lake	Sept. 18	36	74	4	2.1
Totals		298	921	192	3.1

On the Pre-Cambrian Shield

Marsh	Date	Hunters	Bag	Cripples	Average Bag
Conroy Marsh	Sept. 18	70	69	21	1.0
Dwyers Marsh	Sept. 18	14	17	7	1.2
Mississippi	Sept. 18	13	16	4	1.2
Calabogie L.	Sept. 18	35	19	7	.5
Bob's L. Area	Sept. 18	29	8	5	.3
Matawatchan Area	Sept. 18	6	5	1	.8
Totals		167	134	45	.8

The loss of ducks through crippling admitted by hunters amounted to 21% of the total kill off the Pre-Cambrian Shield and 34% on the Pre-Cambrian Shield.

The species composition of some of the bags checked was also recorded and is summarized in the following table:

	Off the Shield		On the Shield	
Species	Number	Percent	Number	Percent
Mallard	105	16.6	1	1.1
Black Duck	161	25.5	33	36.3
Mallard X Black	1	.1	0	0
Wood Duck	49	7.8	19	20.9
Blue-winged Teal	234	37.0	8	8.8
Green-winged Teal	72	11.4	5	5.5
Pintail	5	.8	0	0
Scaup & Ring-necked Duck	2	.3	20	21.9
Mergansers	3	.5	5	5.5
Total	632	100%	91	100%

It will be seen that Wood Ducks formed an important part of the kill in the beaver pond habitat, being the third most common duck shot. Off the Shield it dropped to fifth place.

During the late summer two banding operations were carried out in the District. Mr. Grey Merriam banded 209 ducks on Amherst Island, and Mr. Harris and Mr. Barber banded 206 ducks in Prince Edward County. So far there have been four returns from these ducks checked by District staff. All were shot on the marsh where they were banded. We understand others have been sent in to Ottawa and Washington.

In a recent report submitted to the Technical Section of the Mississippi Flyway Council, Arthur Hawkins, Flyway Representative, points out that in two banding operations, one in Saskatchewan and the other in Manitoba, the returns indicated that young ducks tended to remain on or near their home marshes for a considerable time after they were banded. Both operations were concluded at least six weeks before the season opened, yet 1/3 of the total Mallard recoveries in Saskatchewan and 1/3 of all species recoveries in Manitoba were obtained within a 50-mile radius of the banding site. He concludes that this evidence furnishes a strong argument against opening the

hunting season early. Openings before local populations are dispersed or diluted with migrants could seriously damage breeding stock, particularly in isolated or marginal breeding grounds.

A FURTHER REPORT ON THE SCARING OF STARLINGS BY SOUND AT BUFFALO, NEW YORK.**

by
John F. Hagerty

This report is in reference to letter of September 2, file 6-1-22-A, and to advise regarding our work in extermination of starlings.

In the original talk which Dr. Frings of Pennsylvania State University gave at the Buffalo Museum of Natural Sciences last Spring, he clearly stated that the experiments which he and his assistants had conducted previously with a tape recording device - that while it had effectively eliminated starlings from several small towns, including Milheim, Pa. and Vernon, N. Y., that there was an intermingling of purple martins and grackles, and that the recording when amplified, while driving away all the starlings, did not entirely eliminate the grackles and the purple martins which were not too numerous.

The first experiment which was conducted in a large city was in Rochester, N. Y., where the amplifying system or sound trucks were not of sufficient size and power, and the field tests were not entirely satisfactory.

However, the City of Buffalo contracted with the New York State Exterminating Corporation's local agent for the Mohawk Business Machines Corporation of Brooklyn, N. Y. to use the tape recorder and two highly powered amplifying trucks for a period ten nights.

The people living in the Depew-Starin area have sent many commendatory letters to this office, advising that conditions have improved greatly, and a Mrs. Charles R. Kittinger, who advised that the infestation had steadily grown for the last fifteen years, and that the change was almost miraculous - and they were able to use their lawns and sidewalks without the nuisance which has prevailed previously.

This division has used everything from shot gun shells, noise, and previous to the tape recording device, a powerful compressor for fogging the starling infested area, and used a DDT solution with an oil base. However,

** This is a follow-up to a previous report by Mr. A. H. Berst, "Experiment in Scaring Starlings by Sound at Buffalo, New York" see Fish and Wildlife Management Report #20, December 1, 1954.

as this fog floated into the windows of homes, and settled on shrubs and lawns, there were numerous complaints, and also one from a resident who had recently painted his home, stating that an oil film had covered his house and that the oil was affecting his shrubs and lawn.

Dr. Frings, who conducted the experiments, advised us that he had only worked on the experiment for starling infestation and it is apparent that it does not affect the other birds, and I believe eventually his experiments will results in tape recordings which will eliminate entirely the other species which intermingle with the starlings.

We are not receiving any further complaints from the area that was treated with the recording device.

The above is our experience as of this date, and as I have stated before, it has resulted in this Division receiving many messages and letters for the improvement thus far accomplished.

RUFFED GROUSE BROOD COUNTS IN TWEED DISTRICT, 1954.

by
H. G. Lumsden

During the summer of 1954 the field staff of Tweed District again recorded the size of Ruffed Grouse broods encountered during the course of their regular duties. The results of these counts are as follows:

Zone 1 - Conservation Officer Ramsbottom
3 broods containing 11 young - average size 3.7

Zone 2 - Conservation Officer Ferguson
5 broods containing 38 young - average size 7.6

Zone 3 - Conservation Officer Stafford
4 broods containing 17 young - average size 4.3

Zone 6 - Conservation Officer Thibadeau
3 broods containing 22 young - average size 7.3

Zone 7 - Conservation Officer Shannon
7 broods containing 30 young - average size 4.3

Zone 8 - Conservation Officer Shields
1 brood containing 8 young - average size 8.0

Zone 11 - Conservation Officer Davison
8 broods containing 20 young - average size 2.5

Zone 12 - Conservation Officer MacDonald
3 broods containing 7 or 8 young each

Zone 13 - Conservation Officer Page
1 brood containing 9 young - average size 9.0

The following table gives the figures for 1952 and 1953 compared to those of this year.

	Broods	Total Young	Average Brood Size
1952	24	171	7.1
1953	50	263	5.3
1954	32	155	4.8

UNPUBLISHED SURVEY METHODS

by
George H. Kelker
(Correspondence received from Dr. George H. Kelker
by Dr. C. H. D. Clarke)

UTAH STATE AGRICULTURAL COLLEGE

Logan, Utah

April 9, 1946

Mr. C.H.D. Clarke,
Department of Lands and Forests,
Toronto, Ontario.

Dear Mr. Clarke:

In regard to your letter of March 26, I am sorry to say I do not have my method published. However, I am sending you an example, and if you publish before I do, refer to Kelker's manuscript "History and Use of the Belt Transect". I want to rewrite it and send it to Dr. Storer in the next 2 or 3 months. In the meantime use it.

Here is an example of the method. The proof that the perpendicular distance is the proper one to use is given in the manuscript.

Theoretical field data made on one belt transect in one day: (Deer is used as example of animals counted)

1 - 61 yards	1 - 28 yards	1 - 14 yards	1 - 63 yards
2 - 13 yards	2 - 81 yards	1 - 37 yards	3 -115 yards
1 - 57 yards	1 - 21 yards	2 - 93 yards	1 - 85 yards
1 - 17 yards	1 - 16 yards	1 - 77 yards	1 - 33 yards
1 - 55 yards	2 - 58 yards	2 - 54 yards	1 - 0 yards
1 -130 yards	1 - 40 yards	1 - 74 yards	1 - 7 yards
1 - 24 yards	3 - 46 yards	1 - 67 yards	1 - 34 yards
			1 - 28 yards

Distance traveled is 5.61 miles

Step 1

Data rearranged and summarized by use of 2 choices in order to see if the animals are distributed uniformly over a larger part of belt transect.

Choice I. Belts of 33 Yards

Distance from line (yards):	0 - 33	0 - 66	0 - 99	0 - 130
Total No. of deer seen inside belt of said width.	12	26	34	38

Choice II. Belts of 25 yards

Distance from line (Yards):	0 - 25	0 - 50	0 - 75	0 - 100	0 - 125
Total No. Deer seen etc.	9	18	28	34	37

Step 2

Formulas to use (See H. M. Wight, Field and Laboratory Technic in Wildlife Management, page 29).

$$a = \frac{8 \times D \times M}{11 \times H}$$ Formula 1

$$P = A/a = \frac{11 \times A \times H}{8 \times D \times M}$$ Formula 2

Where P = Total population on area A.
A = Total acres in entire area.
a = Average acres per head (density factor)
H = No. of head seen on strip of given width.
D = Flushing distance measured perpendicularly to path of travel, and not doubled.
M = Miles walked on belt transect.
11 and 8 are constants developed when product of flushing distance in yards and length of travel in miles and converted to acres.

Examples on use of the two formulas using the maximum widths:

$$a = \frac{8 \times 130 \times 5.61}{11 \times 38}$$

= 13.96 or 14 acres per head-of-deer

$$P = \frac{640}{14}$$ or 45.7 deer per square mile

Summary of Calculations to find Density Factor and Total Population (M = 5.61 miles, A = 640 acres)

Belt I				Belt II			
D	H	a	P	D	H	a	P
0- 33	12	11.22	57.6	0- 25	9	11.35	56.25
0- 66	26	10.35	61.78	0- 50	18	11.35	56.16
0- 99	34	11.90	53.7	0- 75	28	10.90	56.2
0-130	38	14.18	45.1	0-100	34	12.01	53.04
				0-125	37	13.80	46.4

Step 3

Interpretation of Results on populations.

The derivation of the 3 figures, 56.5, 57.0 and 56.5 for the 3 distances 25, 33 and 50 yards shows that the deer are scattered uniformly to a distance of 50 yards on each side of the path of travel. Hence the figure of 57 deer per square mile may be used.

Comments

The use of the two belts of differing widths indicates the extent that deer are scattered uniformly over the area surveyed. A flushing distance of 50 yards means a total width of 100 yards or 4.55 chains. A cruising width for timber of 4 chains gives a 5 percent survey, and twice thru a section (sq. mile) gives a 10 percent cruise of the area. Hence, I conclude that percent of survey was satisfactory.

However, field data are not likely to be so nicely arranged as this "chain-problem", but the latter indicates the goal to achieve in careful field work.

The greatest value of the use of multiple zones is that it affords a check on the reliability of the field data. How much spread in the final results of P that may be tolerated, only experience can tell. A spread of 45 to 57 may not be too great for some people, but it is for me. The fact that half as many deer were recorded for the extreme widths (66-99) and (75 to 100) as at (0-33) shows that animals at such distance are very likely to be overlooked or by being hidden in the brush.

This method does not prove the validity of the multiple choice, it only indicates when or when not the data might be proven valid if tested statistically.

I trust, Mr. Clarke, that my explanations are of an aid to you. If not, write again relative to the points in doubt.

Very sincerely yours,

GHK:sc

George H. Kelker, Prof.,
Wildlife Management

A PROPOSAL TO INCREASE THE EFFECTIVENESS OF PHEASANT STOCKING IN NEW YORK STATE

by
Ben Bradley

(and related correspondence)

The New York State Conservation Department has a large and efficient program of pheasant propagation. Ringnecks have been raised continuously by the Department since soon after the turn of the century. (The Rogers State Game Farm at Sherburne is the oldest in the country in point of continuous operation.) Every effort is made by a competent staff of well qualified propagationists to raise healthy, strong, sporting type birds. Few can question the results attained on the six game farms currently in operation. The problems arise after the pheasants leave the farms and are stocked in the wild.

It is here that much misconception arises regardint the role of stocked pheasants. Actually it is a dual proposition. On the one hand some birds are planted with the hope that they will serve to bolster wild stocks and thus act to step-up wild populations in succeeding years. On the other side of the ledger is the guarded hope that some stocked cocks will be around for hunting, come fall and opening season. In fact it is undoubtedly this latter aspect that has served to boost State pheasant production to its recent high levels. From the early days of pheasant rearing and distribution by the Department it has been customary to solicit the help of Sportsmens organizations to assist with stocking. In the 1930's distribution was placed on a county formulae basis that took into account hunting pressure within the county and from the outside plus quantity and quality of cover. Still the birds were planted by Sportsmens organizations. In fact it can be said that numbers of clubs were formed for the sole purpose of getting in on the pheasant stocking. Certainly in many cases the club members, having released the birds, hoped to hunt the area and enjoy the harvest. Little thought was given to the basic need of stocking to establish the species. After decades of trial that question should have been settled. But no one wanted to stop stocking, least of all the sportsmen who were helping distribute the stock and getting at least some bonus shooting.

Beginning in 1949 soon after the establishment of District Game Managers throughout the state, pheasant distribution was taken out of the hands of the clubs and made the responsibility of the Managers. A number of changes in distribution were made on the basis of pheasant range analysis. Good, intermediates and poor classifications were established over the state based on hunting records, game surveys and special research studies. However there was still the basic system of distribution based on hunting pressure and cover.

The essence of present stocking is to provide some shooting over and above what is produced in the wild. In some sections of the state possibly half of the cocks shot by hunters are from late summer releases of game farm stock. But further than that the stocking is tangible evidence to the sportsmen that the Department is doing something with their funds. Granting this approach it therefore seems appropriate to explore ways and means of increasing the usefulness of these releases. Records of many years standing show that on the average not more than 5% of regularly stocked cocks fall to gunners during the open season following release. A gun stocking program to be really effective should show hunter returns of 20% or more of birds released. However this can only be done on special areas or in counties under a system where both cocks and hens may be legally taken. Such is the essence of this proposal.

Stocking for the gun can be made more effective by releasing the birds where both sexes may be shot, where the opportunity of participating in the harvest is lengthened and where the stock is planted just prior to or during the open season. Obviously stocked birds should not be liberated in sections of the state now supporting adequate populations of wild birds. We are not yet ready to propose an open season on cocks and hens in these situations even though such a season may be feasible in the future. Stocking in pheasant producing counties should be done on selected controlled public hunting areas adjacent to large cities (one each near Buffalo, Rochester, and Syracuse would seem adequate). For non-pheasant producing sections or those with low productivity the stocking could be on unposted land as at present. Or it is suggested that birds be released into selected counties where by special legislation a 30 day season on both cocks and hens would be declared.

To help support the pheasant program a special county-wide license would seem required. On the up-state controlled hunting grounds - actually State operated shooting preserves - fees would be charged to cover part of the cost of operations.

These proposals are based on the premise that sportsmen want special pheasant shooting and are willing to pay for it. It is a way to more effectively utilize the present game farm production. The obstacles may be numerous but certainly the results should be more than offsetting. And as the program is evolved certain modifications can be instituted in the interest of fairness and clarity. For example, it may be appropriate to continue limited stocking of cocks in good pheasant range just to give the sportsmen an extra bonus. Following are brief sketches of six proposals:

Proposal A - Set-up special controlled public shooting areas (30 day season - cocks and hens) within 2 years to handle ½ of game farm production or 30,000 adults to be released before and during the season. The remaining half of the stock to be distributed as at present.

Fees on areas: $2.00 permit plus $5.00 per cock and $3.50 per hen shot. No charge for rabbits. 6 areas each 5,000 acres - 2 NYC, Albany - 1 Binghamton, 1 Syracuse, 1 Rochester and 1 Buffalo.

Proposal B - Same as "A" except chicks sexed and 80% of stocking for gun on special areas be hens.

Proposal C - Same as "A" plus special hen counties where both hens and cocks may be shot during a 2 weeks season.

Proposal D - Same as "C" except special county pheasant license required @ $4.00, one half of which goes to towns and counties to reduce landowners taxes.

Proposal E - No special areas or counties. Sex checks on game farms. Save 80% of cocks, 20% of hens. (At chick age value is about 50¢ each but $8,000 to $10,000 loss may be the lesser of two evils).

Proposal F - Lease lands (shooting rights) adjacent to cities as needed and leave them open to public hunting. Pay 10¢ per acre per year for lease. Stock part of birds on these areas. In lower Hudson Valley extend season to 3 weeks or 30 days

Toronto, Ontario,
February 3rd, 1955.

Mr. S. W. Mound
Mr. J. L. Grew
Mr. E. R. Mound

Dear Sir:

Please find enclosed herewith a copy of a report entitled "A Proposal to Increase the Effectiveness of Pheasant Stocking in New York State." May we please have your comments on this report?

Yours very truly,

Encl.
CHDC:nn

For: W.J.K. Harkness, Chief,
Fish and Wildlife Division.

Game Bird Hatchery,
Codrington,
Feb. 8th., 1955.

Dear Sir:

Thank you for the report on the proposed pheasant stocking programme suggested for the State of New York. I have visited the Sherburne farm several times and have had an opportunity to talk shop with some of the personnel.

It does seem that eventually it will be necessary to set aside large areas for public hunting and fishing. If these areas were large enough and could be completely under the control of experienced wildlife managers, it is very probable that hunting conditions similar to Pelee could be established in a few years. While it would be necessary to saturate these areas with hatchery stock in the beginning as habitat conditions improved they would be more or less self perpetuating.

I can see no value in proposal E. possibly because I have always thought hens should be legal game, neither can I see any advantage in proposal F. without full control over land use. The favourable conditions existing during July and August when most of the pheasant planting is done, may be nothing but ploughed land and clean fences by hunting time. Extension of the hunting season for a week or two would probably not materially affect the Spring breeding flock.

This would be a good subject for discussion at the Spring pheasant meeting.

Yours very truly,

E. R. Mound

Dr. C. H. D. Clarke,
Supervisor Wildlife Management,
Lands and Forests,
Toronto.

Provincial Game Farm,
Vittoria, Ontario,
February 10th, 1955.

The N. Y. Pheasant stocking proposal
A counter-proposal

Dear Sir:

I wish to acknowledge receipt of your letter of Feb. 3rd, with reference to the above. Largely, this seems to me to be a state controlled form of the put-and-take type of pheasant shooting we discussed briefly last year in your office and which is becoming increasingly popular in the U. S. on private farms. The most practical method is for private breeders to lease the shooting rights on all the farms surrounding their own, sometimes up to several thousand acres, heavily stocking this area, and charging the general public $5.00 more or less, for each bird shot. A breeder of my acquaintance operates the Niagara Game Farm, near Lockport, in this way, serving the entire Buffalo area. There can be no argument that there is nothing to compare with it in the matter of getting the maximum number of birds in the hunter's bag with a minimum of time and energy spent. At the same time it is costly enough to make it fairly exclusive, at least as a regular thing. Although such areas fill a need and therefore have their place, it is hard to see why it would be feasible for a state to divert a large percentage of it's bird farm production into special shooting grounds at so much a head when such hunting facilities already exist, privately operated, for those wishing to use them. It would appear more feasible in Ontario. Of course, the cost would eliminate a good part of the hunting public which in itself would improve the hunting. The costliness is mainly through the use of adult birds. Feed and labour costs on adults would be roughly twice as much as poults. Capital investment on extensive holding pens and areas and their maintenance would have to be added, plus three times the shipping and handling cost of an eight week old poult. Shipping all the birds as adults to a distant point is cumbersome. Private operators have a big advantage here, their farms forming the nucleus of the shooting area itself. They are able to supervise both activities and at the same time maintain friendly relations with the neighbouring farmers on the leased properties. Disregarding the paid shooting for the moment, the possibility of concentrated stocking (of poults) in a given limited area rather than spreading them thinly over a wide area, has been discussed in this district, but apparently is not compatible with the present system of allotting birds through application from the various clubs,

who, of course, have a large voice in our stocking program. With regard to the shooting of stocked hens, poults or adults, I am unable to see much advantage in saving them in any location where winter survival is only a remote possibility anyway. The other suggestion of eliminating most of the female chicks at the day-old stage and stocking 80% cocks would mean keeping a far greater number of parent stock and large expenditures in pens etc., to give us the same number of chicks at 70¢ each. Basically the trouble all starts from keeping birds on the game farms until they are ready to go in the hunter's bag which, to my mind is an extravagant and out-moded way of operating government farms and should be left to private operators who can do it more cheaply and efficiently.

I would imagine that future government game farms will gradually eliminate even the raising of eight-week-old poults, and concentrate entirely on producing a greatly improved day-old chick with a high survival potential produced through selective breeding. When a bird fails to survive the trouble can be traced to: - (1) Parent stock (2) Incubation (3) Early environment. The present day custom of raising young pheasants en masse on one confined rearing field subject to overcrowding, prey to disease, and where they are almost constantly exposed to the attentions of the general public, sometimes in bus-loads, is obviously not conducive to the environment necessary to produce a good game-bird. At the same time it does not permit room and time for concentrating on the more vital features of pheasant production (1 & 2). There is too much time spent on to-days game farms carrying feed and water, combatting disease, keeping children and pets away from growing birds, and finally gathering them all up and bundling them into shipping crates. The longer the birds are kept on the farms the more aggravated these conditions become. On the other hand, I don't believe that the birds should be handed over to the public at a day old and feel the government should have a closer control over it's investment. I would suggest that this could be done by shipping the birds at a day old (by far the best time) to sub-stations located in selected shooting areas where they are to be released. These sub-stations to be simple, inexpensive set-ups consisting merely of a brooder, or two, and the usual wire-netting pen which also should serve as the release pen. The brooder and pen to be located quite away from human traffic in a good site as to natural food, cover, etc. The operation could be run by a summer student under the direction of the central game farm providing the day-old chicks. Once over the critical first ten days the birds should not be touched or interfered with more than necessary for essential feeding and care. The birds, around eight weeks old, allowed to disperse themselves, following their own inclination, without any shock or adjustment.

The student to follow the progress of the birds for as long after dispersal as possible. Perhaps a dozen such sub-stations within the general release area, at an appropriate distance apart. After eight weeks or so brooder and wire pen could be moved by truck to a new location and the process repeated for a second hatch or, alternately, be made more permanent and remain as a feeding station for poults, if required, through the summer months, or for adults in the winter months. Shooting within the area could carry a fee of a dollar per bird shot, plus licence, (either sex) leaving, of course, the number of hens the area could reasonably support through the winter. This dollar to be used to provide feed, equipment and day-old chicks for that particular selected area's sub-stations. Incidentally, I should think the much discussed habitat-improvement would have some chance of fruition within this limited area.

There is some doubt in my mind whether this idea would be acceptable, at the present time, in the U. S. where an important function of the normal government game farm is to delight the vacationing public with masses of fat, friendly pheasants and the usual assortment of picnic facilities.

Yours very truly,

S. W. Mound

Dr. C. H. D. Clarke,
Fish and Wildlife

A CREEL CENSUS REPORT FOR EUGENIA HYDRO POND

1952

by
J. F. Gage

Introduction

Eugenia Pond is a body of water of some 2,200 acres formed by a dam constructed across the Beaver River by the Hydro Electric Power Commission in the Township of Artemesia, County of Grey. Except for the occasional brown trout, speckled trout are the only game fish present. During the hot summer months high water temperatures prevent free movement of speckled trout throughout the pond. They usually congregate at or near the mouth of the Beaver River and Black Creek feeding the pond.

A creel census on speckled trout was established on Eugenia Pond in 1946 and since that time all hatchery-reared stock planted have been marked by the removal of the adipose fin. In 1950 the collecting of creel census data was suspended due to a lack of summer personnel. Encouraging reports in 1951 from anglers on the notable increase in both the numbers and size of "marked" trout, stimulated an attempt in 1952 to obtain creel census data solely through co-operation with some of the anglers. From past experience it was apparent that this system leaves a great deal to be desired, however, from close association between field workers and anglers several people were established as being good co-operators. These anglers kept good records and were familiar with the area and the special techniques employed at Eugenia Pond. The presentation of this report is an attempt to show that worthwhile information can be obtained with a minimum of effort and cost through co-operation between biologist and a limited number of reliable anglers where complete coverage of all fishermen is not possible.

Purpose

The purpose of collecting data from anglers at Eugenia in 1952 was:

(1) to determine the proportion of hatchery reared trout in the average angler's catch.

(2) to provide an index in the trend of angling success.

(3) to evaluate the method of soliciting co-operation from a limited number of reliable anglers.

(4) to provide an index to the annual crop of speckled trout taken by angling.

Method

A careful inspection of creel census cards and records collected in 1948 and 1949 provided the names and addresses of twelve anglers who had submitted good seasonal records. Special creel census forms (see figure 1) were sent to the twelve anglers with an attached letter soliciting their co-operation in 1952. No other contact was made with these anglers in connection with the creel census. Each angler was assured that his individual record would be treated as strictly confidential and that each angler would receive a general report on the creel census results.

Each angler was assigned a code number after the reports were submitted. The code number is used in this report in reference to any individual angler. Table I shows the number of speckled trout yearlings planted each year. In the early years of the experiment a great size difference was evident in hatchery stock which has since been reduced. The yearlings average 6 inches in length. The fish are planted in May or June before high temperatures normally occur. The trout are planted approximately two miles from the area where the anglers record their capture. Figure II shows a map of Eugenia Pond providing depth contours, location of planting each year and heaviest concentrations of anglers.

Results

Of the twelve anglers who were asked to submit personal records of their catch only nine reported and of these, only eight were in sufficient detail to be valuable. The results of each of the eight anglers are drawn up in table form for clearer understanding -- see Table II.

Eight anglers fishing a total of 1,468 hours or 317 fishing trips caught a total of 943 speckled trout of which 43.05% were "marked" hatchery-reared fish.

FIGURE I

DEPARTMENT OF LANDS AND FORESTS

FISH AND WILDLIFE DIVISION

C R E E L R E C O R D

EUGENIA POND

SPECKLED TROUT CENSUS

19____.

Name .....

Address .....

.....

Date	No. With Adipose Fin	Lengths	No. Without Fin	Lengths	No. of Hrs.	No. Under 7" Returned

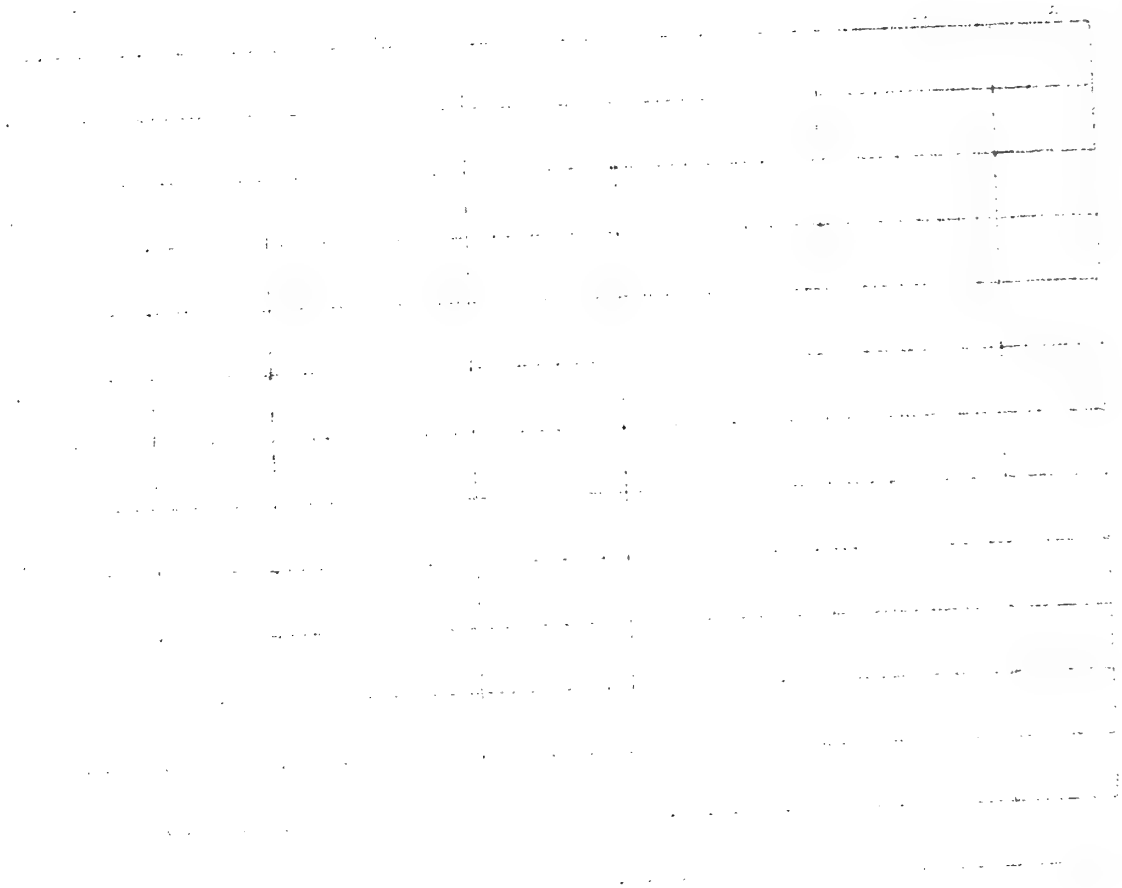

TABLE I - Speckled Trout Marked and Planted in Eugenia Pond Since 1946.

Year	Number	Age
1946	3,600	Yearlings
1947	10,000	Yearlings
1948	10,000	Yearlings
1949	22,000	Yearlings
1950	23,000	Yearlings
1951	25,000	Yearlings
1952	20,000	Yearlings

FIGURE II

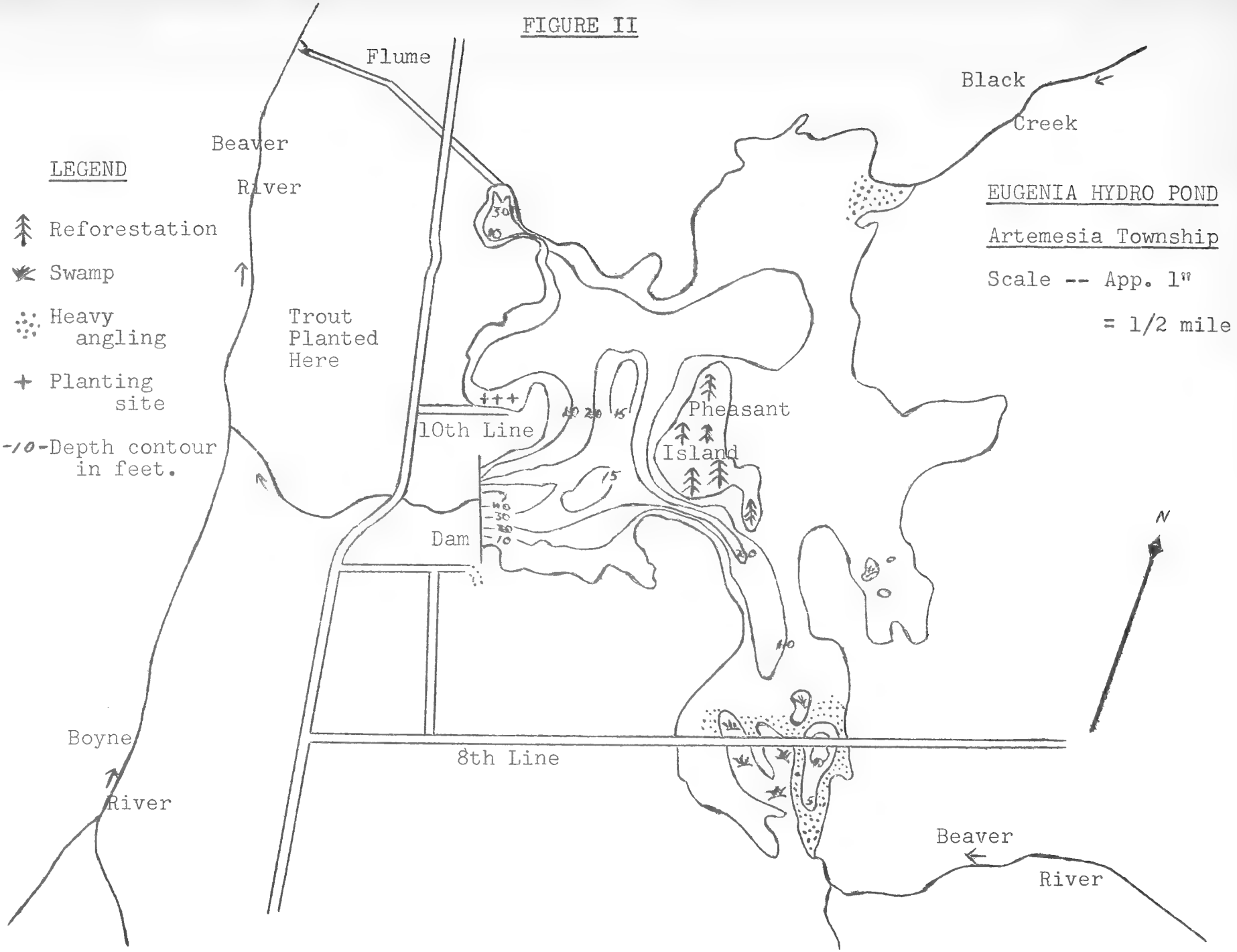
LEGEND
Reforestation
Swamp
Heavy angling
Planting site
-10-Depth contour in feet.
Flume
Beaver River
Trout Planted Here
Black Creek
EUGENIA HYDRO POND
Artemesia Township
Scale -- App. 1"
= 1/2 mile
10th Line
Pheasant Island
Dam
N
Boyne River
8th Line
Beaver River

TABLE II - Creel Census, Eugenia Pond, 1952.

Angler	No. of Hours	No. of Trips	No. of Natural Trout	No. of Marked Trout	Total No. of Trout	Percent Marked	Trout Per Trip	Trout Per Hour	Percent 12" or Less	Released
H - 1	154	50	110	99	209	47.3	3	1.35	84.6	15
H - 2	74	23	24	16	40	40.0	1.7	.54	77.7	70
H - 3	336	56	99	87	186	46.7	3.32	.55	82.7	138
H - 4	102	24	44	25	69	36.2	2.87	.6	89.8	11
H - 5	390	88	151	79	230	34.3	2.6	.58	90.8	145
H - 6	28	6	7	7	14	50.0	2.3	.5	78.5	6
H - 7	225	41	66	47	113	41.6	2.7	.50	92.03	41
H - 8	159	29	36	46	82	56.0	2.82	.51	75.5	40
Total or Average	1,468	317	537	406	943	43.05	2.3	.6	80.0	466

On the average each angler caught 2.3 trout per trip or .6 trout per hour. Eighty percent of the total catch were 12" in length or less.

None of the anglers reported retaining a trout less than 8 inches in length. Four hundred and sixty-six trout were released according to the standards set by the individual angler.

As the rate of growth indicated by scale reading is exceptionally good, most of the marked trout came from the previous years' stocking.

Results for the same eight anglers for 1948 and 1949 were compiled in table form for comparison with 1952. The individual records for 1949 are prepared in table III and records for 1948 are prepared in table IV. A summary for the three years has been prepared in table V.

It is regrettable that records for these anglers for 1950 and 1951 were not solicited so that continuity could have been maintained.

It is apparent that angling success was low in 1949, the total catch being very low although the trout per hour remained the same. The hatchery-reared trout did not appear as worthwhile trout in the eyes of the anglers until 1949. In succeeding years larger specimens brought renewed interest amongst the anglers. A small number of individual specimens of 2 1/2 lbs. were observed by Conservation Officers in 1950 and 1951.

SUMMARY

(1) The proportion of hatchery-reared trout in the average angler's catch for 1952 was 43.05%. This shows that hatchery trout do survive in Eugenia Pond and represent a strong percentage of trout taken by the angler. This strong percentage does not necessarily indicate that the hatchery fish has improved fishing at Eugenia Pond.

(2) It cannot be readily concluded that a trend in angling success is apparent because of a lack of continuity. Such records are very valuable however, in establishing whether angling was good or poor for that particular year.

TABLE III - Creel Census, Eugenia Pond, 1949.

Angler	No. of Hours	No. of Trips	No. of Natural Trout	No. of Marked Trout	Total No. of Trout	Percent Marked	Trout Per Trip	Trout Per Hour	Percent 12" or Less	Released
H - 1	163	45	61	23	84	27.3	1.8	.51	57.1	
H - 2	92	17	9	14	23	60.8	1.2	.25	91.3	
H - 3	230	73	71	42	113	37.1	1.5	.49	87.1	
H - 4	41	9	24	16	40	40.0	4.4	.97	85.0	
H - 5	198	86	63	33	96	34.3	1.1	.48	84.3	
H - 6	39	10	7	15	22	68.1	2.2	.56	50.0	
H - 7	140	16	40	20	60	50.0	3.7	.42	96.6	
H - 8	194	35	17	26	43	60.4	1.2	.22	79.0	
Total or Average	1,097	291	292	189	481	47.2	1.9	.48	78.7	

TABLE IV - Creel Census, Eugenia Pond, 1948.

Angler	No. of Hours	No. of Trips	No. of Natural Trout	No. of Marked Trout	Total Number	Percent Marked	Trout Per Trip	Trout Per Hour	Percent 12" or Less	Released
H - 1	94	26	73	7	80	9.5	3.0	.8		
H - 2	37	10	18	8	26	30.7	2.6	.7		
H - 3	413	78	241	194*	245	1.65	3.1	.59	198	194
H - 4	70	13	28	6	34	17.6	2.6	.48		
H - 5	278	55	124	43	167	25.7	3.8	.6		
H - 6	33	10	4	1	5	20.0	.5	.15		
H - 7	212	36	89	96*	89		2.4	.41	96	96
H - 8	123	22	31	22	53	41.5	2.4	.43		
Total or Average	1,260	250	608	377	699	20.0	2.5	.48	298	290

* All small fish 5" - 7½" - 290 released.

TABLE V - Creel Census, Eugenia Pond.

Year	No. of Hours	No. of Trips	No. of Natural Trout	No. of Marked Trout	Total No. of Trout	Percent Marked	Trout Per Trip	Trout Per Hour	Percent 12" or Less	Released
1948	1,260	250	608	377	699	20.0	2.5	.48		290
1949	1,097	291	292	189	481	47.2	1.9	.48	78.7	
1952	1,468	317	537	406	943	43.0	2.3	.6	80.0	466

(3) Eight returns from twelve solicited is considered good as sickness or absence will occur in any single year. The value of the information available from this method exceeds the effort and cost.

(4) In 1948 field workers collected 378 creel cards plus 14 seasonal records resulting in a total catch of 2,797. The eight co-operators accounted for 699 or 1/4 of this total. Using this figure as a basis the annual harvest for 1952 could be approximately 4,000 speckled trout. This can be further expressed in terms of pounds and pounds per acre.

It is the prerogative of the angler when submitting creel census data to enter remarks which he or she feels are important to angling on Eugenia Pond. The following are few which occur most frequently.

(1) "Fishing has been very good this year" (1952). "Fishing has been worst in years" (1949)

(2) "Length limit should be raised to 8" and bag limit reduced to 10 fish per day."

(3) "Outboard motors should be prohibited"

(4) "All angling above the eight line to the mouth of the river should be prohibited to conserve trout."

(5) "Fly fishing only."

(6) "Season should close end of August"

The above are remarks by anglers and are not necessarily substantiated by their own records.

A BIOLOGICAL SURVEY OF COMPASS LAKE, DISTRICT OF PARRY SOUND, 1950*

by
F. A. Walden

Compass Lake lies across the boundary between the Townships of McMurrich and Perry, in the Territorial District of Parry Sound. The Lake is north of the road from Scotia to Round Lake, and access may be had by crossing the farm of Mr. H. Clifford at Fern Glen. The last half mile of the trail is through hardwood bush, and must be traversed on foot. The Parry Sound to Scotia line of the Canadian National Railways (formerly the Dominion Atlantic Railway line) passes a short distance to the north of the lake.

The lake appears on the Muskoka Sheet of the National Topographic Series, but the map used in the field was a tracing of the appropriate section of the Ontario Forest Resources Inventory Sheet number 454792.

All of the land surrounding the lake has been patented, with the exception of one township lot at the westerly end of the lake. These lands were located for agricultural purposes about the year 1881. Thus, the time of settlement of the area is established. There are no game fish in the lake, and it is therefore of little interest to sportsmen. Inaccessibility may also be a factor in the small amount of interest in the lake, though a cabin has been built on its shore in recent years.

Physical Characteristics

Compass Lake, latitude 45° 28'N., longitude 79° 23'W., lies between two ridges of Pre-Cambrian Rock. The basin is long and narrow, (Figure I). Its greatest length is slightly over a mile, and its average width is about one-quarter of a mile. The long axis of the lake lies in a northwest-southeast direction.

The surface area of the lake is 125 acres, and the length of shoreline is three and one-half miles, giving a shore development of 2.2 units. This low value may be correlated with the rather regular outline of the shore.

Most of the shoreline is rocky. Over most of the lake there is a steep drop-off to a depth of four to six feet. The lake however is not deep. The average depth

* Parry Sound Forest District Biological Studies No. 7.

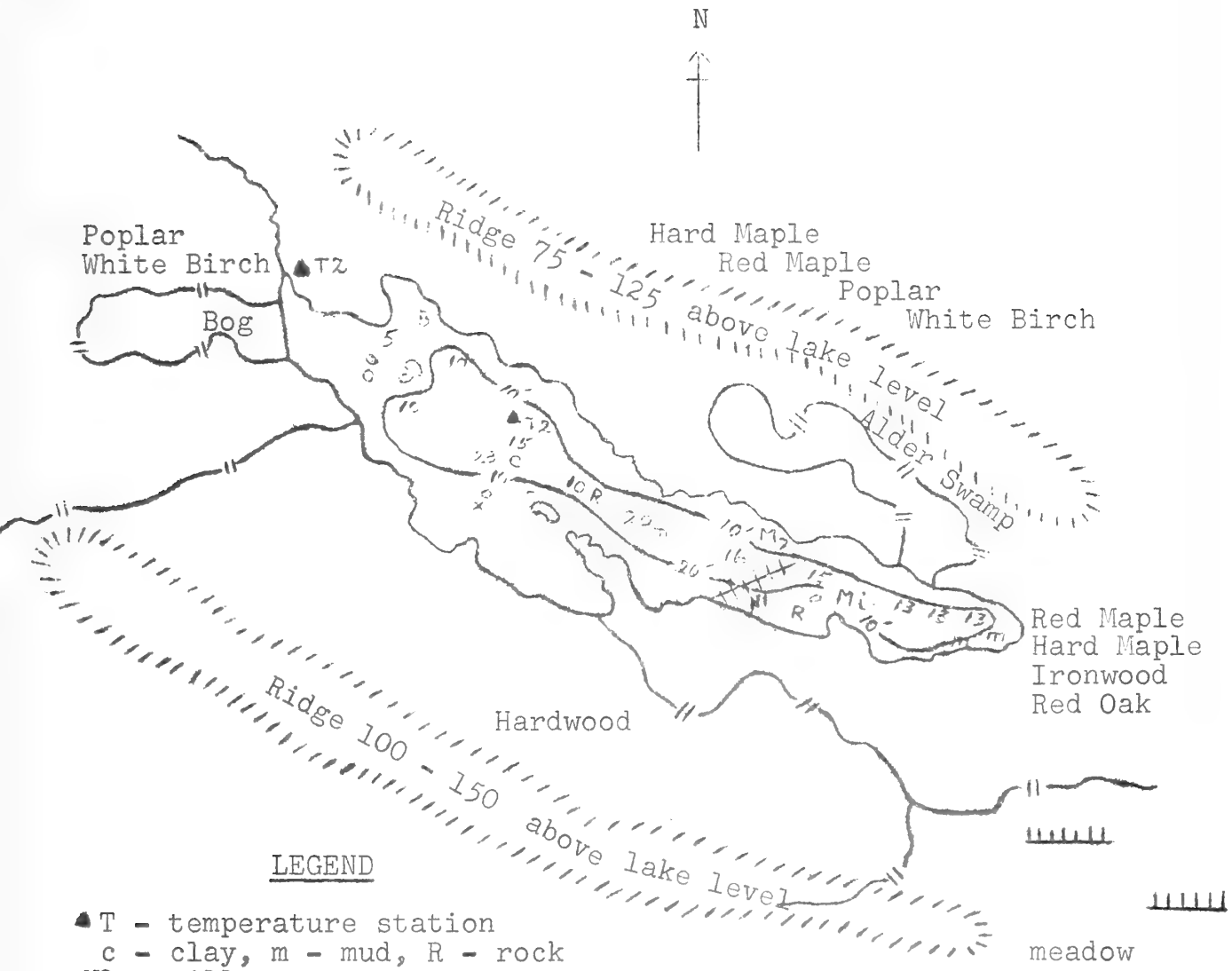

Figure 1

Outline map of Compass Lake, Townships of McMurrich and Perry showing nature of shoreline, depth and ten foot depth contour. The location in which a gill net was set is shown by N1, and the locations of two minnow trap settings by M1 and M2. Scale: 4 inches: 1 mile.

has been calculated as 8.5 feet, and the maximum depth was found to be 23 feet.

The proportion of the area included by ten-foot contours is as follows:

Contour Interval	Area	Percentage of Total
0 - 10'	72 Acres	57.6
10 - 20	47 Acres	37.6
20 -	6 Acres	4.8

There are two small islands in the lake and several emergent rocks. No allowance has been made for these in calculation of shore development or area.

The lake bottom is about 40% rock, 40% mud, 3% clay and 7% sand. The clay occurs in the deepest part of the lake; sand is noticeable in shallow water along the shores.

The colour of the water is almost white, though it has a slight bluish cast. Considerable amounts of suspended matter were visible. On July 26, 1950 at 3 p.m., the reading of the Secchi disc was 2.7 meters, (9.8 feet). It is possible that the turbidity is due to agricultural practices on the southerly shores of the lake, though it must be remembered that the actual shoreline is wooded.

The watershed of Compass Lake is not large, comprising an area of approximately one and one-half square miles, (Figure 2), of which 75% is wooded, and the remainder is under cultivation. In the wooded parts of the watershed, the soil is loam, though there are rocky and sandy areas. The agricultural land is sandy with some clay areas. A considerable amount of crushed limestone has been used on the land, and it is thought that this will have a valuable affect on the lake during the next few years.

The source of water appears to be run-off from precipitation. There is no inlet to the lake. The outlet is a small stream at the northwesterly extremity of the lake, with an estimated flow of approximately 20 gallons per minute at the time of observation. This stream flows down to Round Lake at a much lower level than Compass Lake, thence through Buck Lake and Fox Lake to Lake Vernon, and thence to the Muskoka River system. It is joined by two or three small streams enroute to Round Lake, and contains speckled trout in its lower reaches. There is not a very great water-level variation in Compass Lake during the course of the year.

Figure 2

Outline map showing the watershed area and drainage of Compass Lake, Townships of McMurrich and Perry.
Scale: 4 inches:1 mile.

Observations of the water temperature were made at two stations. Station I was located near the deep basin, and the temperatures were as follows:

Depth	Temperature
Surface	71.8°
10 feet	70.9°
15 feet (Bottom)	70.0°

No stratification was observed. Station II was at the source of the outlet stream. A temperature of 75° F. and a pH of 6.5 was found.

No other physical tests were made.

Biological Characteristics

Throughout most of the lake there is a light to moderate growth of yellow water lilies, Nuphar variegatus and pond shields, Brasenia Schreberi. At the northwest end, white water lilies, Nymphaea odorata, bladderwort, Utricularia sp. and pickerel weed, Pontederia sp., also occur. Of the submerged flora, Potamogeton spp. were found to be the most important.

A bog area at the northwesterly end of the lake supports a growth of ericaceous plants including the cranberry, Carex spp., and sphagnum moss. The remaining shore area supports hardwood forest for the most part.

The fish population was sampled using a gang of gill nets. Details of the nets and of the fish catch are given in diagrammatic form, below:

Net Number	#14	#5	#3	#4
Length	140 feet	125 feet	130 feet	180 feet
Mesh	3½"	2"	2¾"	4"
Depth Shore	15 feet	11½ feet	15 feet	17 feet
Catch	2 white suckers	2 creek chub 4 white suckers 4 pumpkinseed 16 brown bullheads	4 white suckers 2 brown bullheads	1 white sucker

In addition, two anglers minnow traps were set and fished overnight. These captured two specimens of the creek chub Semotilus atromaculatus, one of the fathead minnow, Pimephales promelas and 40 pumpkinseed sunfish.

The growth rates for the white suckers and pumpkinseed are given in Table I. These growth rates are seen to be exceedingly slow when compared with growth rates given by Carlander (1950).

TABLE I - Growth of White Suckers and Pumpkinseed Sunfish, Compass Lake, 1950.

	White Suckers			Pumpkinseed		
Age Group	No.	Size Range (ins)	Average Total Length	No.	Size Range (ins)	Average Total Length
II	0	-	--	13	1.3-1.8	1.6
III	2	8.8-9.8	9.3	4	2.0-2.2	2.1
IV	2	9.5-10.0	9.8	6	2.3-3.8	2.8
V	2	12.5-14.0	13.2	1	-	2.9
VI	2	-	15.8	0	-	-
VII	1	-	14.2	2	5.3-5.5	5.4
VIII	2	15.0-15.3	15.2			

Sixteen brown bullheads were taken in the gill nets. The largest of these was 10.3 inches in length and weighed eight ounces. Six other specimens were measured, and were found to have an average length of 7.3 inches (range 7.0-7.5 inches) and an average weight of 3.2 ounces (range 3.0-3.5 ounces).

Food of Fishes

Study of the stomach contents of several sunfish revealed that for the most part, they had not been feeding at the time of capture. The stomach of one sunfish contained 60 amnicola sp., and many shell fragments, another contained some fish remains.

The presence of many small sunfish, and two or three species of cyprinid suggests the possibility of suitable food for a carnivorous species, possibly smallmouth bass. Diligent search failed to reveal any crayfish in the lake.

Stocking

Compass Lake has been stocked with hatchery raised fish as follows:

1924	Yellow pickerel	100,000 fry
1925	Yellow pickerel	100,000 fry
1932	Speckled trout	5,000 fgs.
1933	Speckled trout	5,000 fgs.
1937	Speckled trout	360 Y.
1950	Speckled trout	500 Y.

Discussion and Management Recommendations

It is believed that the experimental fishing has revealed the presence of the major species occurring in the lake. It is reported that 25 or 30 years ago (Dickson, 1952) smallmouth bass occurred in the lake, and that some fishing for them took place. The stocking records show that yellow pikeperch and speckled trout have been stocked. It is not hard to realize that attempts to introduce the pikeperch based on two plantings of 100,000 fry or eyed eggs, each, would be a failure. If the plantings had been successful initially in that some of the fry lived, the conditions in the lake are hardly amenable to establishing a good population of pikeperch. As for speckled trout, conditions in the lake are even less suitable. The temperature was found to be high in the middle of a cool summer. In a warm summer, it is likely that most of the water in the lake would approach the lethal temperature for this species.

The question arises as to what happened to the bass which are said to have occurred in the lake years ago. While the answer, based on present information must be speculative, it is believed that winterkill might well have been the destructive agent. The species now occurring, namely white sucker, bullhead and pumpkinseed are perhaps a little more resistant to poor conditions than is the smallmouth bass.

In formulating a management plan for the lake, introduction of a cold water species need not be considered. Of the warm water species only the basses are adapted to the conditions of the lake, and it is believed that some slight preference should be given the smallmouth bass. Good spawning areas are available for this species, and it is believed that food is sufficient and suitable.

Conclusion

Compass Lake is an eutrophic lake, containing no valuable game species of fish. Its summer temperature is too high for cold water species of fish, specifically speckled trout, and there are no spawning facilities available for this fish. The introduction of smallmouth bass is recommended since conditions are generally suitable for

bass and spawning grounds and food are available.

References

Carlander, K. D., 1950: Handbook of Freshwater Fishery Biology.

Dickson, Roy, 1952: Personal communication.