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FISHERIES INVESTIGATIONS ON WINTERGREEN LAKE

Wintergreen Lake is being studied jointly by the Kellogg Bird Sanctuary staff and the Institute for Fisheries Research as an example of a rich, southern Michigan lake which receives no stocking and on which the fishing is controlled. This study has been carried on now for the past several years. The lake contains the following fishes (listed somewhat in order of abundance):

| <u>Game species</u> | <u>Forage species</u> | <u>Predatory species</u> |
|---|-----------------------|--------------------------|
| Bluegill | Golden Shiner | Bowfin or dogfish |
| Large-mouthed Bass | Blunt-nosed Minnow | |
| Yellow Perch | Black-nosed Shiner | |
| Pumpkinseed Sunfish | Black-chinned Shiner | |
| Yellow Bullhead (<u>A. natalis</u>) | Lake Chub Sucker | |
| Brown Bullhead (<u>A. nebulosus</u>) | Iowa Darter | |

Hybrids between the Bluegill and the Pumpkinseed Sunfish are quite common.

During 1935, 680 adult game fish were taken from the lake, tagged and then released; 214 of these were Bluegills. During the winter of 1935-36, 1604 legal game fish were caught by hook and line from the lake (1079 of these were Bluegills--14 bearing tags; 428 were perch; 92 were sunfish, and 5 were bass--1 with tag). On the basis of the tagging data and the tagged fish in the winter catch, it was calculated that the lake contains approximately 15,000 legal sized Bluegills.

Some data on growth rate of the game species has been accumulated, namely (the average total length in inches at the end of each growing season):

| <u>Growing season</u> | <u>Species</u> | | | |
|---------------------------|-----------------|-------------------|--------------|-------------------|
| | <u>Bluegill</u> | <u>Largemouth</u> | <u>Perch</u> | <u>P. Sunfish</u> |
| 1 | 2.0 | 4.0 | 3.4 | 2.0 |
| 2 | ... | 8.7 | 4.8 | 4.5 |
| 3 | 7.5 | 11.3 | 7.8 | 6.9 |
| 4 | 8.7 | 11.7 | ... | 7.5 |
| 5 | 8.8 | 12.0 | ... | 8.2 |
| 6 | 9.4 | 12.7 | 10.5 | 8.2 |
| 7 | 9.5 | ... | 11.7 | 8.1 |
| 8 | 9.4 | ... | 11.3 | ... |

All phases of this survey work are still incomplete. Future work will include a continuation of the studies on population density and migration by tagging, studies on relative abundance of the different species, studies on fluctuations in growth and abundance of year classes and their effect on the fishing, and studies on food habits and on the fish parasites. An attempt will be made to correlate the results of these studies on the fish fauna of Wintergreen Lake with the results of a thorough limnological study of the lake.

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