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TOXIC SUBSTANCES IN GREAT LAKES WILDLIFE
IN SUPPORT OF CWS PROJECT NUMBER 1803

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INDEX

INTRODUCTION.....	1
PERSONNEL AND EQUIPMENT.....	2
WORK OUTLINE.....	3
CHRONOLOGY OF EVENTS FOR E.H. WALKER.....	5
CHRONOLOGY OF EVENTS FOR J.R. BROWN.....	6
SUMMARY.....	7
MAP.....	8

INTRODUCTION

The surveillance of toxic substances in Great Lakes wildlife (primarily the Herring Gull) was continued again by the CWS in 1980 with the support of Technical Operations. The effects of toxic chemicals (relative to reproductive success rates and egg loading) have been monitored in each of the four Canadian Great Lakes on a continuing basis since 1975.

Lake Huron, as well as Georgian Bay and the Norther Channel was chosen as the intensive study area for the 1980 field season. Nine colonies of Herring Gulls were monitored throughout Lake Huron for reproductive success studies and egg collections.

Another major task was the census of all fish-eating, colonial birds on the Canadian side of Lake Huron as this had never been done before.

Other work was carried out in Lake Superior, Lake Erie and Lake Ontario.

PERSONNEL AND EQUIPMENT

The CWS requested two technicians and two vehicles to support their field programs during the 1980 Spring and Summer field season. The technicians were E.H. Walker, assigned to the project from April 10 until August 10 and J.R. Brown, assigned to the project from April 24 until July 15. The CWS personnel involved in the field work were biologists D.V. Weseloh and Pierre Mineau, technician Stan Teeple and a contract Summer student, Brian Radcliffe.

The two vehicles supplied were a Chevrolet Station Wagon No. 76-013 and a Ford Van No. 78-010. Both these vehicles were used extensively to trailer boats to the widely scattered survey sites. The boats and trailers for the project were supplied by O&AS and are listed below:

Launch THUNDERBIRD - 18-ft. - 110 hp stern drive - April 25 - October 27
Launch MONARK (SAB II) - 17-ft. - 70 hp outboard - April 21 - July 3
Launch HUNT CLASS (XRC-I) - 17-ft. - 70 hp outboard - April 15 - June 27
Launch BOSTON WHALER - 17-ft. - 70 hp outboard - June 9 - June 17
Cartop ALUMINUM BOAT - 14-ft. - 9.9 hp outboard - April 28 - June 9

WORK OUTLINE

The field work was made up of two major segments; one was the monitoring of toxic chemicals in Herry Gull colonies throughout the Great Lakes with particular emphasis on Lake Huron. Toxic chemical loads affect the reproductive success rates of Herring Gulls which are calculated by establishing the number of nests and eggs laid on a colony of appropriate size (approximately 100 nests) and monitoring this colony to record the number of birds which reach fledgling age (21 days). The natural rate is 1.4 birds per nest but may vary because of toxic chemical buildup.

Reproductive success studies were done at Muggs Island in Lake Ontario, Middle Island on Lake Erie, Agawa Rocks in Lake Superior and at nine colonies in Lake Huron, Georgian Bay and the North Channel.

The second major segment of field work was a census of all colonial fish-eating birds on Lake Huron which included Herring Gulls, Ring Bill Gulls, Caspian Terns, Double Crested Cormorants and Great Blue Herons. The census was done by visiting all likely areas in Lake Huron, Georgian Bay and the North Channel. When a colony was found, each occupied nest present was counted. This ranged from a single nest to 15,000 nests but averaged 263 nests per colony.

The personnel and equipment was divided into three separate field parties because of the great distances and areas to be covered. One party, consisting of D.V. Weseloh and Earl Walker, was responsible

for reproductive success work and censusing of Manitoulin Lake and any islands near it as well as the islands between Manitoulin and the Bruce Peninsula.

Another party of Pierre Mineau and Jim Brown was responsible for the censusing and reproductive success work on the many islands between Parry Sound and Killarney in Georgian Bay.

The third party consisted of Stan Teeple and Brian Radcliffe who were responsible for censusing and reproductive work on the islands in the North Channel from Killarney to Sault Ste. Marie. Approximately 164,445 nests were counted during this survey on the 800 islands where there were colonies.

Other tasks included collection of Double Crested Cormorant eggs and banding of their young throughout the lakes as these sensitive fish-eating birds have recovered sufficiently from toxic chemicals to be safely studied again.

Egg collection, as part of the IJC work, was done in Saginaw Bay and on islands near Alpena, Michigan.

CHRONOLOGY OF EVENTS FOR E.H. WALKER

- April 16 - 18 - Trip to Middle Island in Lake Erie
- April 21 - 23 - Trip to Saginaw Bay (Michigan)
- April 27 - May 2 - Egg collection in North Channel
- May 23 - May 27 - Census of birds in North Channel and Manitoulin Island
- June 2 - 5 - Census of Tern colonies in North Channel and Manitoulin Island
- June 9 - 18 - Reproductive success rate study
- June 23 - 24 - Vehicle delivery to Thessalon
- June 25 - Trip to Muggs Island in Toronto Harbour
- July 7 - 10 - Cormorant count in North Channel and Georgian Bay
- July 28 - Trip to Kingston

CHRONOLOGY OF EVENTS FOR J.R. BROWN

- April 21 - Began CWS assignment
- April 23 - Day trip to Nottawasaga Island
- April 28 - 29 - Established bird-banders' camp on East Sister Island
- May 2 - May 9 - Nest counts on Snake Island, Cartler Island, Agawa Island, Saginaw Island and Middle Island
- May 13 - Nest count on Nottawasaga Island
- May 14 - 26 - Bird census on Georgian Bay
- May 27 - 29 - Trip to Agawa Island
- June 2 - 4 - Tern census in Georgian Bay
- June 4 - 5 - Chick count on Nottawasaga Island
- June 6 - 9 - Chick count on Middle Island
- June 9 - 11 - Chick count on Snake Island and Cartle Island
- June 12 - 19 - Chick counts on West Mary Island, Double Island and Agawa Island
- June 23 - 26 - Cormorant banding
- July 3 - 4 - Cormorant banding on Pigeon Island in Eastern Lake Ontario

SUMMARY

The launches THUNDERBIRD and MONARK were very good boats for the assignment being very seaworthy yet manoeuvrable enough for inshore work. However, the HUNT (XRC-1) lacked the sea-handling capabilities of the afore-mentioned craft and was very wet in a moderate sea. This is not a trivial complaint when one considers that for a period of fourteen consecutive days, the field party camped outdoors, providing little opportunity to dry out gear properly. The E-Z loader trailers worked quite well, reducing turn-around time, providing safety and minimizing damage to the vessels.

For the period of Technical Operations' support to CWS, the combined mileage of the three major launches was 5,260 miles. A further 11,530 miles was driven in the two Technical Operations vehicles. The project was completed without injuries, major damage or loss of equipment.

