ARE NEW ENGLAND'S LOONS SLIPPING AWAY?

by Philip Martin, Olympia, Washington

The loons are one of the oldest and most primitive of surviving bird families, a fossilized specimen from France dating back 60-70 million years or so. Now there is much concern that this ancient form is having trouble "making it" in the modern world, at least in the northern United States.

The Common Loon (Gavia immer) has probably never been a widespread breeding bird in Massachusetts although it is common as a migrant and winterer. J.A. Allen, in 1864, termed it an occasional breeder in the Springfield region of the Connecticut River valley; Ingalls, in 1889 cited breeding records at two reservoirs in Winchendon (in Bagg and Eliot, 1937). Way back in 1824, Audubon recorded summering birds in the Boston area (in Griscom and Snyder, 1955). However, in the last hundred years at least, the loon has been virtually absent in this state as a nester. Recent discoveries of nesting at Quabbin Reservoir (report fide Massachusetts Audubon Society Breeding Bird Atlas project) are an exciting exception to the historical trend.

Though Massachusetts seems to have been on the southern edge of the Common Loon's breeding range, northern New England has historically supported a large and healthy breeding population. Early records are too scanty to document the decline of loons in these areas, but certainly this species has been feeling the pressure from encroaching civilization for some time. The great ornithologist William Brewster spent much time at Lake Umbagog, on the Maine-New Hampshire border, from 1871-1909, and wrote :

> As [Common Loons] offered conspicuous and attractive targets for rifle practice and were wholly unprotected either by law or by popular sentiment, it was customary to shoot at them whenever opportunity offered. Often the progress of the steamer up the Lake was indicated and proclaimed by the frequent popping of guns fired from her decks at Loons and other waterfowl...Curiously enough they often permitted the noisy, smoke-belching steamers to approach them almost within shotgun range, whereas they habitually gave as wide a berth as possible to small boats and canoes, however silently and skillfully paddled...During the first ten or twelve years comparatively few Loons were killed in the Lake--probably never more than two or three in a season and these mostly young birds. But with the advent of improved rifles and the ever-increasing skill of those who used them, the Loons began to suffer more and more seriously. Nevertheless they continued to hold their own fairly well up to almost the close of the last century. Since then they have been growing fewer and fewer year by year until they have almost, if not wholly, ceased to breed in any part of the Lake. While it is beyond question that the gunners have had something to do with this disappearance, I am inclined to attribute it largely to the recent introduction of motor-boats with which the Lake now swarms and which, in my opinion, would alone have brought it to pass.

Brewster closes his account of this species with a plea for the bird's preservation and a condemnation of those who molest it, which ironically (though rather typically) follows his largely remorseless accounts of his own loon-collecting adventures.

In recent years New Hampshire's loons, at least, have been watched closely. In response to the generally noted decline in that state's nesting loons, the Audubon Society of New Hampshire formed the Loon Preservation Committee to study and protect these birds. (See Hammond and Wood, 1976.) Their research has provided some startling statistics: of the several hundred New Hampshire lakes and ponds with a history of loon inhabitation, only 78 were frequented by loons last summer. Data compiled over the past two years from intensive nest surveys conducted by Loon Preservation Committee volunteers is presented in Table I.

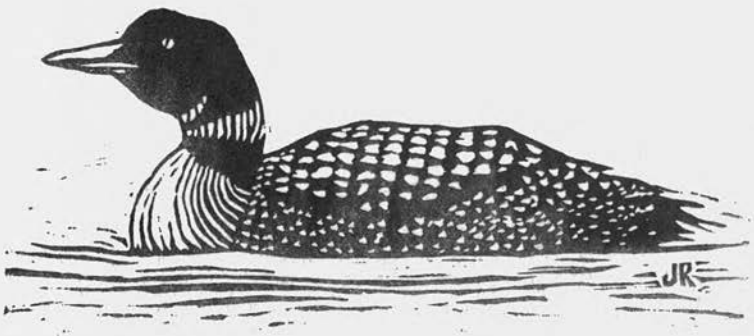
Population Summary	1976	1977
Lakes on Which Loons Occurred	84	78
Lakes With Territorial Pairs	55	45
Active Breeding Territories	91	87
Population Analysis		
Adults -- Paired	182	174
Adults -- Non-breeding	28	39
Immature	6	4
Chicks (Survived to August 20)	49	38
	265	255
Breeding Success		
Territorial Pairs	91	87
Nesting Pairs	81*	60
Successful Nestings	39	29
Chicks Hatched	55	43
% of Chicks Hatched Per Territorial Pair	0.60	0.49
Chicks Survived	49	38
% of Chicks Survived Per Territorial Pair	0.54	0.44

*estimate only, not exact figure

Table I. Summary of Loon Population Surveys in New Hampshire 1976 and 1977 Seasons

The lower production figures for 1977 can be attributed largely to raccoon predation. On the most productive lake, 75% of all nests were destroyed by raccoons. Other chance events may have also contributed to low production last summer; for instance, June rain storms raised the water level on Lake Umbagog to the point where nesting was probably disrupted. It is dangerous to attempt to extrapolate from the results of two years' work. We know loons have been declining, but the picture is far from simple. For instance, if Brewster saw loon nesting cease on Lake Umbagog in the early part of this century, how do we explain the census results of nine pairs found there in 1976, and fourteen pairs in 1977? Perhaps Brewster was simply unable to census as carefully as modern researchers, but it is possible that conditions have improved on that lake--for instance, there is little hunting of loons there now. Far more typical, though, are the instances of drastic decline. Lake Winnipesaukee, in the central part of the state, supported a summering population of 60 to 70 loons only twenty years ago--in 1976 a total of 15 birds produced only one chick.

What factors have contributed to the decline? One prime suspect, pesticide contamination of the eggs has been eliminated as an important factor. In a study sponsored by the Loon Preservation Committee, loon eggs were analyzed for residues of four pesticides (DDT, DDD, DDE, and dieldrin) and PCB's (poly-chlorinated biphenyls), and the eggshell thickness was measured. Correlations were found between high DDT and DDE levels and a reduction in shell thickness. However, the egg-shell thinning compared to pre-pesticide era values was much less than in other bird species which have declined due to pesticide contamination, and most likely not serious enough to affect nesting success.



Loss of habitat has certainly been a factor. Shoreline development of lakes and ponds has meant the end of many sheltering marshes and secluded shoreline nesting sites. Also, it is certain that increased public use of the lakes and ponds by fishermen, boaters, and vacationers can have a

deleterious effect on the loon population. Loon behavior patterns can be surprising, though. Just as Brewster noted the loon's tolerance for noisy steamers, loons are known to nest very close to active boat channels and docks. If too closely approached, however, a loon will retreat from the nest and if the intruder does not leave the area soon enough, the eggs or young may perish. More people on the lakes increase the chances of this occurring--even if it is accidental. Other development pressures may continue to take their toll: a diatomite dredging operation proposed for Lake Umbagog (still one of the most productive lakes for loons and one that retains much of its original wilderness character) would threaten four nest sites, according to Scott Sutcliffe, director of the Loon Preservation Committee.

As mentioned earlier, raccoons appear to be major villains in the loss of eggs and young. Raccoons have increased greatly in population around New Hampshire lakes as the influx of humans has provided a source of abundant garbage for them to eat and as natural predators, such as marten, fisher, and weasel have suffered a decline due to human pressure.

Much has been learned about the loon's status and requirements for nesting success, but there are still unsolved mysteries. It is unknown, for instance, why only 60 out of 87 territorial pairs even attempted to breed last summer. Perhaps further research will provide the answers, but meanwhile there are various measures proposed to help preserve New Hampshire's loons. Reduction of the raccoon population through hunting and trapping seems to be a necessity at this point. Floats and posters are being installed to help keep away unwitting human intruders. Artificial nest sites, small floating islands, have been installed in several lakes with one successful nesting. The most important task confronting the Loon Preservation Committee is one of educating and persuading lake-shore residents to take an active interest in protecting this species.

Linocuts by Julie S. Roberts

The future of the Common Loon in our region is uncertain, but perhaps it has enough friends working for it to turn the tide and halt its decline. It would be a sad sign of changing times if the loon, with its wilderness aura and haunting cries, were to vanish from New England.

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References:

Bagg, A. C. and S. A. Eliot, Jr. 1937, Birds of the Connecticut Valley in Massachusetts, Hampshire Book Shop, Northampton, Mass.

Brewster, William, 1938, Birds of the Lake Umbagog Region of Maine, Bulletin of the Museum of Comparative Zoolosy, Harvard University, Cambridge, Mass.

"Drive is Started to Protect Loon from Predators," Sept. 14, 1977, p. A1. New York Times.

Griscom, L. and D. E. Snyder, 1955, The Birds of Massachusetts, Peabody Museum, Salem, Mass.

Hammond, David E. and Rawson L. Wood, 1976, The Vanishing Loon: Can it Survive in New Hampshire? Loon Preservation Committee, Centre Harbor, N.H.

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Note: The updated 1977 edition of the Committee's report, unavailable at the time this article was written, can be obtained for a small charge from: The Loon Preservation Committee, Box 502, Center Harbor, N.H. 03226. They can provide further information on the status of the Common Loon across the northern states.

LOON STICKERS AVAILABLE

Sticky-backed loon bumper stickers are available from the Audubon Society of New Hampshire at $1.25 each. It is hoped wide distribution of the stickers will stimulate interest and support of the Society's loon preservation efforts. The 15-by-4-inch stickers are available from the Audubon Society of New Hampshire, 3 Silk Farm Road, Concord, NH 03301.

T.H.A.