Papers From The 1987 Conference On Loon Research and Management

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North American Loon Fund
RR 4, Box 240C
Meredith, NH 03253

PAPERS FROM THE 1987 CONFERENCE ON COMMON LOON RESEARCH AND MANAGEMENT

September 18-19, 1987
Laboratory of Ornithology
Cornell University
Ithaca, NY

Edited by: Paul I.V. Strong, Ph.D.

Sponsored by: North American Loon Fund
Laboratory of Ornithology

Published by: North American Loon Fund

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RR 4, Box 240C
Meredith, NH 03253

STATUS AND POTENTIAL FOR BREEDING OF THE COMMON LOON IN THE PACIFIC NORTHWEST

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Very little is known about the status of the Common Loon (Gavia immer) in the Pacific Northwest. However, increasing reports of summer sightings of Common Loons in Washington, Oregon, and California suggest that they may begin or already be nesting in areas of historical occupancy.

The legal status of the Common Loon varies under the different jurisdictions in the Pacific Northwest, confounded by its abundance and widespread range along the coast in winter, while generally considered extirpated as a breeding species in Washington, Oregon, and California. It is listed as a Sensitive Species in Region 6 by the U.S. Forest Service, and Region 1 by the U.S. Fish and Wildlife Service. Although it is protected as nongame wildlife, it is not specifically classified in either Oregon or California, but it has been proposed recently for Threatened listing by the state of Washington. Ironically, if the biological status of Common Loons is found to be improving, with nesting discovered in Oregon or California, its legal status would decline from merely Protected to Threatened or even Endangered in those states.

HISTORY

Early records of the occurrence of Common Loons in the Pacific Northwest are rare. Munro's (1945) study in the Cariboo Parklands of British Columbia may be the only extensive research on loons from Alaska to California. He reported a spring concentration of loons on a large lake in southern British Columbia and nesting on many of the lakes in that region. Common Loons once nested in many areas of Washington, especially the northern and western sections (Jewett et al. 1953). Gabrielson and Jewett (1940) indicated discontinuous but widespread summering in Oregon, in both the Cascade and Coast Ranges, as well as in southern and southeastern portions of the state, with nesting presumed but never confirmed. McAllister (pers. comm.) found a nest with 2 young at Waldo Lake in central Oregon in 1947.

Newberry (1857) reported summer sightings on many lakes in the Oregon Cascades and in northern California, even though most of the high elevation lakes did not contain native fish populations (Haight, pers. comm.). Bent (1919) reported Common Loons breeding from northwestern Alaska to northeastern California. According to all of these authors, large numbers of loons wintered off the coast from Alaska or British Columbia to southern California.

By the turn of the century, numbers of Common Loons seemed to be declining. Woodcock's (1902) compilation of reports from Oregon suggested that incidental capture of loons in commercial salmon fishing nets and intentional killing of loons for use as bait by commercial crab fishermen were contributing to a decrease in the loon population in Oregon. Presumably, these same factors affected loons on other sections of the west coast. In addition to commercial fishing, it is probable that human disturbance and settlement at nesting lakes and extensive use of pesticides were also factors in the decline. While I have found few references describing recreational shooting of loons on the Pacific coast, one verbal description (Kneeland, pers. comm.) and a brief reference to shooting parties on tugboats massacring seabirds (Sharp 1926), indicate that this may have been a widespread phenomenon, and one that may have contributed significantly to the decrease in loon numbers.

By the 1930's there had been a major recession northward of the loons' breeding range, and, by the 1950s, the Common Loon had apparently been extirpated as a breeding species from California, Oregon, and Washington (Oregon Natural Heritage Data Base, unpubl. data, Smith, pers. comm., Taylor, pers. comm.).

CURRENT STATUS

British Columbia

I know of no estimate of the present nesting or wintering population size of Common Loons in British Columbia, but available data indicate that the numbers are large. Records on file at the British Columbia Provincial Museum include several hundred nest sites, and nesting seems to be increasing (Campbell, pers. comm.). In contrast to published records of nest site selection elsewhere (Olson and Marshall 1952, Vermeer 1973, McIntyre 1975, Alvo 1981), the majority of nests in British Columbia occur on mainland peninsulas rather than on islands (Munro 1945, Campbell et al., unpubl. data). Increasing numbers of nests are being found in marsh sites in areas of human disturbance. Because nets used for commercial fishing generally are tended continuously, rather than being left in place, few loons are being entangled. There are fewer reports of loons caught in

nets than on fishing lures. The prognosis for loons in British Columbia seems to be very good.

Washington

The survey of Richard and Musche (1985) of lakes in the northeastern corner of Washington recorded successful nests on 2 adjacent lakes. There have been numerous other reports of sightings of loons with chicks from lakes in the northern counties in recent years, however none confirmed by trained observers (Tank, pers. comm., Kuntz, pers. comm., Taylor, pers. comm.). The number of reports seems to be increasing. I know of no estimate of loons wintering on the Washington coast, but the number seems to be large. No data are currently available on numbers of loons caught in commercial fishing gear, but there is a potential problem which the Washington Wildlife Department may investigate in the near future (Owens, pers. comm.). The prospects for Common Loons in Washington are good, with the possibility of an increasing trend in nesting in the state.

Oregon

While there is considerable information on wintering loons in Oregon, there is no comprehensive estimate of the population size. Bayer's and Pickering's unpublished surveys of Yaquina, Salmon, and Siletz estuaries and Devil's Lake on the central Oregon coast indicate consistent use of the areas from late September through May, with slight peaks in numbers in October, February, and April (Bayer, pers. comm., Pickering, pers. comm.). The heaviest concentrations were near the mouths of the estuaries. Fishing by the loons was most frequently observed at high tide. The loons were regularly seen forming rafts just prior to sunset in Yaquina Bay, the largest estuary surveyed. Winter use seems to be even heavier on the ocean than in the bays (Nehls, pers. comm., Oregon Natural Heritage Data Base, unpubl. data). Commercial fishing is not thought to be causing significant mortality to loons in Oregon at this time, because large-mesh nets are most commonly used and are generally tended continuously (Brown, pers. comm.).

Loons are frequently seen inland. Most sightings are in spring and most birds are clearly migrants that move out of the state by the end of May (pers. observ., Oregon Natural Heritage Data Base, unpubl. data). Isaacs (pers. comm.) has recorded loons in spring on 25 freshwater lakes, mostly in central and western Oregon, 1981-1987. Isaacs reported more than 170 loons on Wickiup Reservior on April 26, 1985. A flock of 20 was seen at Timothy Lake in spring of 1987 (Auler, pers. comm.). Most observations are of single loons or groups of 2 or 3. The great majority of

loons seen inland in spring are in breeding plumage (pers. observ., Isaacs, pers. comm., Nehls, pers. comm.). Monitoring of spring activity in the Bull Run Watershed will be discussed below.

Sightings of loons on freshwater lakes in Oregon in summer are infrequent but possibly increasing. No nests or chicks have been reported from the state but, as in Washington, knowledgeable observers are just beginning to look. Isaacs (pers. comm.) obtained summer sightings from 5 Oregon lakes, most of which were of birds in basic plumage from the southern half of the state. Nehls (pers. comm.) reported loons in breeding plumage yodeling on Siltcoos Lake near the central Oregon coast for 3 years 1960-62, and there is the strong possibility that they nested there. There are several recent sightings of loons in breeding plumage in summer from the Bull Run Watershed in northern Oregon, including a vocalizing pair seen throughout one summer (Kennedy, pers. comm., Shaver, pers. comm.). The outlook for loons in Oregon is good, with numbers probably increasing and the exciting possibility that direct evidence of nesting will be found soon.

California

Common Loons winter along the full length of the California coast, but no estimate of their number is available. A nearshore commercial fishery that uses untended, small mesh nets is currently causing significant mortality of seabirds, a very small percentage of which are loons (Brown, pers. comm., Schultz, pers. comm.). Legislation to be enacted soon will probably reduce this problem. Inland sightings of loons are fairly common in spring, but also regular in summer, occurring occasionally even south of Mono Lake (Bailey, pers. comm.). Sightings from Eagle Lake and several in the Mt. Lassen area are of particular interest because of historical reports of loon nests at those lakes (Bent 1919). The majority of inland summer sightings in California are of loons in basic plumage (Bailey, pers. comm.). Although there are no known reports of loon nests or chicks from California in recent years, there is the potential for their discovery, and the prognosis for loons in winter is good.

To summarize, the Common Loon population on the west coast seems to be in very good shape in British Columbia, and numbers are probably increasing at least in British Columbia, Washington, and Oregon. Entanglement in commercial fishing gear is causing some mortality to wintering loons, but does not seem to be greatly affecting the population. I have found no reports of heavy winter mortality anywhere on the Pacific coast. Loons currently breeding in the Pacific Northwest seem to be increasing their use of

marsh nest sites in response to human disturbance. There is the possibility that loons are beginning to nest again in Oregon, and may be nesting in increasing numbers in Washington.

An interesting phenomenon noted in the status information was the difference in plumages reported on inland lakes in Oregon and California. The preponderance of birds in breeding plumage noted in spring in both states undoubtedly reflects the migration of mature loons to nesting lakes farther north or northeast. However, the majority of summer sightings from California and the southern half of Oregon were of loons in basic plumage, presumably immature birds. That all of the summer sightings from northern Oregon were of loons in breeding plumage could be a further indication of potential nesting reestablishment in this part of their former breeding range.

Increasing numbers of loon sightings in spring and summer in Oregon and Washington have encouraged the initiation of lake surveys in both states, and the beginning of a study of Common Loon distribution and behavior in northern Oregon. The specific objectives of this study are to: 1) determine whether loons are attempting to nest, 2) identify locations or habitats important to the loons for use in pair formation or migration stopovers, and 3) develop recommendations for management of potential nesting areas or other important habitat.

STUDY AREAS

Portland's Bull Run Watershed in the Mt. Hood National Forest in northern Oregon was chosen as a study site because of the frequency of loon sightings there, and because, being closed to the public, it is relatively undisturbed by human activity. Several natural ponds and 3 large reservoirs contain fish populations. Steep, forested shorelines predominate, but marshy areas also occur.

Tillamook Bay, on the northern Oregon coast, was chosen for the coastal study site. It supports large numbers of loons in winter and particularly during spring migration. One of the largest Oregon estuaries, it is prodigiously productive of fish and shell-fish, and receives considerable human use for recreational and commercial harvest.

METHODS

Systematic observations were initiated in the Bull Run Watershed in 1986, with twice weekly visits from the end of March through June in 1986 and 1987. The coastal portion of the study was started in 1987, with weekly visits to

Tillamook Bay from mid-March into May. Lack of funding curtailed all phases of the study. Common Loons were censused on each visit to each site, but most time was spent observing behavior, particularly interactions between loons.

In addition to the observations, habitat improvement projects have been undertaken in the Bull Run Watershed which should improve conditions for loons. Two floating nest platforms have been placed in one of the reservoirs. Work parties of students from the Catlin Gabel High School in Portland have improved habitat at three of the ponds to increase availability of small fish. Spawning gravel beds and small rearing pools have been added to inlet and outlet streams. Logs have been placed around the shores and several log rafts have been placed for hiding cover for small fish, but could also serve as loon nest sites.

SUMMARY OF PRELIMINARY RESULTS

In the Bull Run Watershed, primarily on the 2 largest reservoirs, 4-11 loons were present during April and May of both years, with peak numbers in early April. There was an apparent establishment and maintenance of a territory at the North Fork of the Upper Reservoir for 6-8 weeks in each of the last 4 years. No nests or chicks have been observed, nor any loons during June or July. Various individuals working in the watershed during 1984 and 1985 reported sightings of "the North Fork pair." In 1986, a pair was observed in that same area on nearly all visits between the first of April and mid May. Courtship or pre-copulatory displays, as described in Tate and Tate (1970), Sjolander and Agren (1972), and McIntyre (1975), were seen on 3 occasions at the North Fork in 1986, but each time the birds swam out of view. Copulation has not been observed. In both 1986 and 1987, aggressive interactions between loons were regularly observed, as described in Sjolander and Agren (1972), McIntyre (1975), Rummel and Goetzinger (1975, 1978), and Barklow (1979). These interactions seemed to be defense of the North Fork territory. Several fights and rushing have been seen, but no yodeling has been heard. Other loons invariably have left this area after a confrontation. Loons which have approached the presumed boundary of this territory while fishing have frequently been seen to assume a "hunched" or "anxiety upright" posture, or to emerge with only the head above water, before retreating farther down the reservoir. These types of behavior were observed in 1986 when a pair was in residence, and also in 1987, even though only a single loon was resident there. This loon was seen apparently courting an immature loon (in basic plumage) that remained in the watershed for only a few days. A trio of loons and several other pairs have been observed also apparently displaying courtship or pair formation behavior.

In Tillamook Bay, 20-60 loons were present during March and April of 1987, with the highest number seen on the earliest visit. No loons were seen in mid-May. Loose aggregations of 5-40 loons were seen occasionally, but generally loons were scattered at high tide, with low tide concentrations in areas of deep water. No cooperative feeding was observed. No 2 loons were seen close together for more than a few seconds. All interactions were aggressive and ended with both loons leaving the area of contact. During one very low tide, 16 loons concentrated in the only deep water took turns performing spectacular, individual displays of mock fighting and other aggressive behavior.

At both study sites, "head tossing" (Tate and Tate 1970) was observed several times, but never in the context of courtship or pre-copulatory display. In the Bull Run Watershed, it was performed by non-resident loons when they were near the territorial boundary. In Tillamook Bay, it was performed by loons when they were approached by other loons, or when fishing loons surfaced near them. Usually it was performed while swimming away from the other loon. It seemed to function as an appeasement gesture that perhaps avoided aggression, which could also explain its use in courtship.

A display not found in the literature reviewed was observed at both study sites. The loon suddenly snapped its neck back, pointing the head straight up, with the bill gaped open widely, then snapped back to a normal posture. The motion was repeated 3-8 times, approximately once per second. This "gaping" display was observed in several situations, for example, when 2 or 3 fishing loons surfaced nearby, when the single, resident loon was cruising near the territory boundary, and when the North Fork pair were courting near the boundary with another loon nearby. Only 1 loon has been seen giving the gaping display on any one occasion. It seems to be a mildly aggressive gesture.

DISCUSSION

The timing, distribution, and behavior of Common Loons seem to differ between Tillamook Bay and the Bull Run Watershed. Although observations began in Tillamook Bay after the loons were already present, loon numbers appear to peak earlier there than in the watershed. In Tillamook Bay, loon distribution was randomly scattered at high tide and concentrated by the availability of deep water at low tide. In contrast, in the Bull Run Watershed, 1 or 2 loons showed a marked affinity for 1 area, the North Fork territory, while all other loons avoided it or were chased away from it. Defense of personal space or of a temporary fishing spot seemed to be the motivation for all interactions

observed in spring in Tillamook Bay. In the Bull Run Watershed, however, defense (or avoidance) of a specific, large territory, and courtship or pair formation seemed to be the predominant motivations.

Interpretation is speculative until I have carried out further observations and comparison of behavior in the Bull Run Watershed with concurrent behavior at known nesting lakes in southern British Columbia. Nevertheless, it seems possible that attempted nesting could have been the ultimate motivation for behavior observed in the Bull Run Watershed. On the other hand, it is highly probable that use of Tillamook Bay was largely for resting and feeding during individual or group migration to breeding lakes, with lesser use for feeding by immature loons that would spend the summer on the coast. Whether the sequential, individual displays of aggression seen on one occasion at Tillamook Bay should be interpreted as release of tension in a confined situation, or display to impress prospective mates (or other males migrating to the same nesting lakes), or merely an excess of hormones on a spring afternoon, is open to conjecture.

CONCLUSION

Increasing numbers of spring and summer sightings of loons and increasing interest in the status of loons are encouraging surveys, research, and management in the Pacific Northwest. Lake surveys have been initiated in parts of Oregon and Washington, with 2 nests found so far. Habitat improvement projects have been carried out or are planned for several areas in both Oregon and Washington. Investigation of spring distribution and behavior in northern Oregon has begun with preliminary results indicating potential nesting in 1 study area.

It is likely that the creation of numerous, large reservoirs and fish stocking of these and higher elevation lakes may be some of the reasons for increased spring and summer sightings of loons in Oregon and Washington. Fluctuations in water levels at these same reservoirs may have deterred loons from successfully utilizing the new habitat for nesting, in which case a more widespread program of floating nest platform placement may be appropriate.

A reestablished population of Common Loons nesting in Washington, Oregon, and possibly northern California could serve an important backup function if anticipated increases in energy, mineral, and other development in Alaska result in loss of current breeding areas. Continuing problems of pesticides and entanglement in commercial fishing gear, and the increasing threat of acid rain and mercury in the eastern United States and Canada make it imperative that

loons be protected, managed, and encouraged in all parts of the continent where appropriate breeding habitat exists.

ACKNOWLEDGMENTS

The author wishes to thank the many people whose information and enthusiasm are part of this paper. Rick Kneeland, Mt. Hood National Forest, first recognized the significance of loon sightings in the Bull Run, and continues to both stimulate and enable me to study loons. Funding for part of the study was provided by the Columbia Gorge Ranger District of the Mt. Hood NF and the Portland Water Bureau. Unpublished surveys and compilations of observations were graciously provided by Frank Isaacs, Oregon Cooperative Wildlife Research Unit; Stephen Bailey, California Academy of Sciences and regional editor for American Birds; and by Range Bayer and Phil Pickering, longtime waterbird students. Loon data were supplied from the Washington Wildlife Department Nongame Division by Susan Tank, from the North Cascades National Park by Robert Kuntz, and from the Oregon Natural Heritage Data Base. Information and other contacts were made available by Bill Haight and Robin Brown from the Oregon Department of Fish and Wildlife Nongame program; Wayne Campbell, Curator of the British Columbia Provincial Museum; Dick Taylor and Tom Owens from the Washington Wildlife Department; Kent Smith and Don Schultz, California Fish and Game; Roy Lowe, U.S. Fish and Wildlife Service; Harry Nehls, Oregon compiler for American Birds; and Alan Richards, Washington loon scientist. Loon observations were also reported by Tom AcAllister, outdoor writer for The Oregonian; Ron Auler, Barbara Kennedy, and Clyde Shaver from the Mt. Hood NF; Terry Luther from the Warm Springs Reservation Natural Resources Department; Bill Stotts, Portland Water Bureau; and fellow loon watchers Ron Maertz, Donna Lusthoff, Jo Walin, and Alan Contreras. Philip Gaddis, Northwest Ecological Research Institute, provided invaluable help with planning, observations, and editing.

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