



# Diver/Loon Specialist Group

## Newsletter

### Volume 4

<b>INTRODUCTION .....</b>	<b>1</b>
<b>FORTHCOMING MEETINGS .....</b>	<b>2</b>
LIMNOLOGY AND WATERBIRDS CONFERENCE .....	2
2002 NORTH AMERICAN LOON FUND FALL MEETINGS.....	4
<b>ARTICLES.....</b>	<b>5</b>
RINGING RED-THROATED DIVERS. OR, BANDING RED-THROATED LOONS. ....	5
RINGING OF RED-THROATED DIVER <i>GAVIA STELLATA</i> BLACK-THROATED DIVER <i>GAVIA ARCTICA</i> IN SWEDEN.....	8
LOON BANDING IN LA MAURICIE NATIONAL PARK, QUÉBEC, CANADA. ....	14
SUMMARY OF COMMON LOON BANDING IN NORTH AMERICA .....	16
MONITORING OF COLOUR-BANDED COMMON LOONS IN KEJIMKUIJK NATIONAL PARK NOVA SCOTIA, CANADA, 1999-2000.....	17
<b>NEWS AND ANNOUNCEMENTS.....</b>	<b>25</b>
<b>EDITOR'S NOTE.....</b>	<b>25</b>

### Introduction

Welcome to this special issue of the Newsletter of the Diver/Loon Specialist Group of Wetlands International. It contains four articles describing the status of banding/ringing of loon/divers in North America and Europe.

The articles contained in this Newsletter may be quoted as:

Name of Author(s). 2002. Title of article. (page numbers) Newsletter, Diver/Loon Specialist Group, Wetlands International. vol. 4.

Our next Newsletter will be devoted to the monitoring of Gaviidae worldwide. We are looking for contributions on this subject. If you think that you could make a contribution or if you know someone who could, please contact me on the address below.

We will conduct our next scientific meeting in conjunction with the 4<sup>th</sup> Conference of the Working Group on Aquatic Birds of the International Society of Limnology "Limnology and Waterbirds 2003" to be held in Sackville, New Brunswick, Canada, August 3-7, 2003. You will find the 1st Announcement at: <http://www.links.umoncton.ca/lw/> and more information in this Newsletter.

Please look at our updated Directory on our website. Check your entry and send any necessary correction to the Editor. If you know someone who is not listed in the Directory, but you think that person should be included, please send his/her address to the Editor.

The Diver/Loon Specialist group provides input to improve the Wetlands International world loon population estimates since 1993 and more recently in 2002. Look for the new edition of the World Waterbird Population Estimates available later this year. For more information concerning Wetlands International, see: <http://www.wetlands.agro.nl>.

Joseph Kerekes, Coordinator,  
Diver/Loon Specialist Group, Wetlands International

## Forthcoming Meetings

### Limnology and Waterbirds Conference

The 4<sup>th</sup> Conference of the Working Group on Aquatic Birds of the International Society of Limnology (SIL) “**Limnology and Waterbirds 2003**” will be held in **Sackville, New Brunswick, Canada** **August 3-7, 2003**. You will find the **1st Announcement** at: <http://www.links.umoncton.ca/lw/>

The Proceedings will be published in the journal *Hydrobiologia* as well as a separate volume published in the “Advancements in Hydrobiology” series of Kluwer Publishers, [similar to that of an earlier symposium: Proceedings “Aquatic Birds in the Trophic Web of Lakes” (Dev. in Hydrobiology 1994, vol 96, 524p. or *Hydrobiologia*, 1994, vol. 279/280)].

Please note, the proceedings of the Proceedings of the 1<sup>st</sup>\* (Sarród/Sopron, Hungary) and 2<sup>nd</sup>\*\* (Mérida, México) Conference of the SIL Aquatic Birds Working Group are available and can be ordered on addresses given below

\* Faragó, S. and J. Kerekes (eds.). 1997. Workshop Proceedings. Limnology and Waterfowl. Monitoring, modelling and management. Working Group on Aquatic Birds, Societas Internationalis Limnologiae and Internat. Waterfowl and Wetlands Research Bureau. Sarród/Sopron, Hungary, 21-23 November, 1994 Wetlands Internat. Publ. 43. & Hungarian Waterfowl Publ. 3. 362 p.

Sarród/Sopron, Hungary Proceedings, WI Publ. #43 could be ordered for £15 UK.

The price is UK pound 15.00 including postage and handling:

NHBS Mailorder Bookstore

2-3 Wills Road, Totnes

Devon TQ9 5XN

UK

Tel: +44(0)1803 865913

Fax: +44(0)1803 865280

[www.nhbs.com](http://www.nhbs.com) (book orders can be made directly on the website)

\*\* Comín, F., J.A. Herrera-Silvera and J. Ramirez-Ramirez. 2000. (eds.) Proc. Limnology and Aquatic Birds. Monitoring, Modelling and Management. Working Group, Soc. Internat. Limnol. Mérida, México, November 24-27, 1997. Universidad Autonoma de Yucatan. Merida, Mexico. 305p.

The Table of Contents of the Mérida Proceedings and other information are listed at:

<[http://www.ramsar.org/w.n.book\\_limnology.htm](http://www.ramsar.org/w.n.book_limnology.htm)>

The Mérida, México Proceedings could be ordered for \$50.00 US including postage and handling.

Dr. Jorge A. Herrera-Silveira

Profesor Titular

Lab. De Produccion Primaria

CINVESTAV-IPN, Merida

Carr. Ant. Progreso km. 6

Merida 97310, Yucatan

Mexico.

E-mail: [jherrera@mda.cinvestav.mx](mailto:jherrera@mda.cinvestav.mx)  
Tel: 5299 812960 ext 522

PRICE: \$50.00 US  
FORM OF PAYMENT: A CHECK, AND SEND IT TO ABOVE ADDRESS.

For additional information please contact:

Joseph Kerekes  
Environment Canada  
45 Alderney Drive  
Dartmouth, N.S., B2Y 2N6, Canada  
[joe.kerekes@ec.gc.ca](mailto:joe.kerekes@ec.gc.ca)  
Phone: (902) 426-6356  
Fax: (902) 426-4457

"The Alaska Loon Working Group  
will be meeting on 21-23 January, 2003 in the regional office of the USFWS  
in Anchorage." Contact Tamara Mills at (907) 786-3517 or  
[Tamara\\_Mills@fws.gov](mailto:Tamara_Mills@fws.gov) for more information.

## 2002 NORTH AMERICAN LOON FUND FALL MEETINGS

The 2002 meetings of the North American Loon Fund will be held at Loon Lake, Washington, hosted by the Loon Lake Loon Association. The annual NALF member meeting will be held at the Old Schoolhouse at Loon Lake, on Saturday October 5, followed by the Board of Trustees meeting, which will continue on Sunday, October 6 [www.loonfund.org](http://www.loonfund.org).

Major airlines flying into Spokane Airport are: United, Northwest, Southwest, Delta, Alaska, Horizon, and Big Sky. Transportation will be provided for trustees to and from the airport and to the meetings from motels and homes. Please let Janey Youngblood know via phone: 509-233-2145 or email: [janeyloon@hotmail.com](mailto:janeyloon@hotmail.com) regarding flight arrival times for transportation and reservations for the Saturday evening meal.

For trustees who would like to stay in private homes, a limited number of accommodations will be available with Loon Lake Loon Association members. **Please contact Janey Youngblood** ASAP with requests and information. For those wishing to reserve a room elsewhere, the following accommodations are available in the area, and trustees should contact the motels directly for reservations.

### **MOTELS, close to the meeting site:**

**Lakeside Motel:** 509-233-9060

Rates: \$45. Identify as NALF participant and receive a 10% discount.

**Loon Lake Motel:** 509-233-2916 or toll-free: 877-233-3228

Rates \$45-55. Queen sized beds. Non-smoking. Identify as NALF participant and receive a 15% discount.

Continental breakfast will be provided on Saturday and Sunday mornings, courtesy of the Loon Lake Loon Association, and lunch will be provided on Saturday by NALF. Refreshments will also be furnished for breaks at the meetings. The Saturday evening meal will be available for a nominal fee.

As always, registration is required in order to plan for meals. To register, please contact Janey Youngblood (509-233-2145; [janeyloon@hotmail.com](mailto:janeyloon@hotmail.com)) **no later than September 20, 2002.**



**We welcome you to Washington State to help the LOONS survive!**

## Articles

### Ringling Red-throated Divers. Or, Banding Red-throated Loons.

By Dave Okill.

I came to live in the Shetland Isles in 1975 and as an active amateur bird ringer I considered that there were a number of species that it would be worth giving some attention to. One of these was the Red-throated Diver *Gavia stellata*, locally called the Rain Goose. These birds are a familiar sight in Shetland during the summer months as they fly back and forward from their inland nesting sites to feed on the sea, often declaring their passage by their distinctive calls. They are the epitome of wild, remote northern places.

Red-throated Divers are able to nest on waters far smaller than any of the other divers. I guess that this is because, they have the ability to take off in a much shorter distance. Also that they don't depend on the lake where they nest for food, they seem happy to fly off to the larger lakes or the sea (in our case always the sea) to fish, feeding themselves and flying back with fish for the chicks. As they only carry one fish at a time, this is quite a task. Rain Geese here can nest on very small pools, I suppose that the smallest is about 10mx4m. These are really easy to catch the birds on. As the lochans get larger they get more difficult to work and success depends more on the shape, the depth and the type of water's edge. Once the loch is wider than the net it is possible to extend the net over the loch by tying extension ropes to one end of the net. In this way we can catch on lochs wider than the net but once loch is much wider than 40m it becomes difficult to work, even with extension ropes. I guess these lochs must be about 0.3 ha. The other problem is as the lochs get larger it sometimes takes more time to get the chicks to swim into the net and we are always aware of the time/disturbance issue.

From 1909 up to the mid 1970's only 162 had been ringed in Britain and little was known about their migrations. Rain Geese in Shetland nest on lochs (lakes) of all sizes from large lochs down to small tarns or pools (lochans). The centre of the British population is in Shetland (Gibbons *et al.* 1993) and I was acutely aware that in any attempts to ring birds it would be necessary to minimise disturbance to this important and specially protected species. It was not appropriate, therefore, to try to catch birds on the larger lochs but many pairs nest on small lochans remotely located on peat moorland and I thought that it should be possible to catch the chicks on these lochans before they fledged.

Assisted by a friend and using the largest size of mist net available, it was with relative ease that I caught my first chick on the first small lochan that we tried. I then had the problem of ringing the chick - the advice from the *Ringers' Manual* was to use a 'K' sized ring - shaped elliptically. After catching a handful of chicks on hill lochans it became obvious that the ordinary mist net was not robust enough to stand up to this catching technique as the thick heather that grows around the small lochs immediately tangled the small mesh nets; neither were the chicks caught easily and making K rings elliptical to fit the unique shape of the diver's leg was proving difficult to standardise. I therefore made up a longer net, of mesh size 40 mm knot to knot (80 mm across the diagonals), which was basically a large single panel net, approx. 22m long and 2.5m wide. (I now use a net that is 28m long). The net was tethered along one edge to avoid bunching. This larger net, with its bigger mesh, proved far more effective in catching the birds, it was stronger and whilst it occasionally still tangled in the heather it was easier to extract. As soon as the chicks touched the net they became caught, which demonstrated how vulnerable this species is to being trapped in fishing nets. I improved the fitting of the rings by flattening the standard K and then re-bending it to better fit the bird's leg. (See Okill, 1981). These rings have lasted well over the years and have proved problem free.

The aim is to catch the chicks, which should be at least half grown, as well as any adults present, ring them, take biometrics and return the birds to the water as quickly as possible, causing minimum disturbance (and without the ringers falling in). The catching technique requires two people to carry the net, spread on poles, over the lochan and lay it horizontally into the water. Normally the chicks dive repeatedly as the catchers approach the loch, those that remain on the surface will swim over the submerged net, this is then easily lifted and the chicks caught. Those chicks that continually dive will eventually surface under the net and so get tangled; the net with the bird in can be taken to the loch edge and the bird extracted. Lochs that are wider than the net can still be worked by simply tying

extra cord to the end of the net thus extending the open net over the loch. When adults are caught I release the chicks first and then return the adult to the water, immediately moving away from the site, the adults invariably swim to the chicks and stay with them as we retreat. One of the limits on ringing is not the actual catching but the time taken to visit the lochans, many of which are located on remote moorlands and are difficult to access.

Since 1979, I have annually surveyed a number of specific study areas throughout Shetland to assess lochs of all sizes for breeding success, but also to ring the chicks in these areas. I also visit various small lochs to ring chicks at sites through the county.

In most years, the largest chicks fledge in the first few days of August. Therefore most of the initial visits are made in July to ensure birds are caught before they fledge, return visits are made in August to catch chicks that were too small to ring at the first visit.

Pairs nesting on small lochs tend to be more successful than those on larger waters. This is probably because the water levels tend to fluctuate less on smaller lochs even during periods of heavy rain or rarer dry spells. Also there is less chance of nest damage from wave or foam action during windy weather and as anglers have no interest in the fish-free small lochans, disturbance is therefore significantly less on small lochs. Breeding success varies from year to year and more chicks fledge in some years than in others, the number of broods with two chicks compared with those with single chicks also varies (Okill & Wanless 1990).

Using the catching techniques described, I have now ringed 1834 Rain Geese in Shetland. Friends in the Orkney Islands have been catching divers since 1983 and the British ringing total now stands at 3135, up to the end of 2001. These ringed birds have now generated a number of recoveries, controls and retraps.

Most adult Rain Geese can be sexed by comparing their biometrics (Okill, *et al.* 1989), males being larger than females and the retrapping of adults has shown that breeding birds normally return to the same lochs to breed year after year. When sites are changed the birds only move a short distance, usually to the nearest available loch. When ringed chicks return as adults to breed, the males take up sites close to where they were hatched, whilst females disperse widely. The furthest being a female ringed as a chick in central Shetland which was subsequently caught as a breeding adult in Orkney some 200 km away (Okill, 1992).

For a number of years, we colour ringed the chicks with a different colour for each year, to try to get further information on the age of first breeding but whilst the colour rings have lasted well, little data was added to give the first breeding age. We have, however, retrapped males breeding at 4 years old and females at 6. The oldest bird that we have recorded was just over 21 years old but as it was originally ringed as a breeding adult it must have been considerably older than that.

Ringing recoveries have been analysed (Okill, 1994), showing that birds dispersed widely around the coasts of Britain and Ireland during the winter. The newly fledged juveniles move the furthest during their first winter, some migrating as far south as the coast of central France with one being found on the coast of Holland. About a quarter of these birds returned to their natal area in their first summer, those birds that do not return generally move back towards the north of Scotland but a small number seem to spend their first-summer on their wintering grounds and one was found in Norway. About two-thirds of immatures return to their natal area in their second summer and all birds are in their home areas by their third summer. Wintering birds disperse widely around the coasts of Britain and Ireland but none move as far south as the immatures; there has been one bird from Norway and another from Holland. In winter the species is coastal rather than maritime and the indications are that the birds prefer wide sandy bays with some shelter as over-wintering sites.

Of the 48 recoveries were the method of recovery was described, 32 were found dead in fishing nets, a wide variety of nets set for different fish species were implicated, underlining the vulnerability of this species to being caught in nets. Of the remaining recoveries, 5 were found shot, all within areas where the species is protected; four were

grounded, two had mistakenly landed on wet roads; 3 were found oiled; 2 were predated; one hit overhead wires and one was picked up exhausted after gales.

A further analysis of recoveries of ringed birds to and from Britain will be included as part of the BTO's *Migration Atlas* due to be published in Autumn 2002.

Dave Okill  
Heilinabretta  
Trondra  
Shetland ZE1 0XL  
United Kingdom

## References

- Gibbons, D.W., Reid, J.B. & Chapman R.A. 1993. *The New Atlas of Breeding Birds in Britain and Ireland 1988-1991*. T.& A.D. Poyser.
- Okill, J.D. 1981. Catching and Ringing Red-throated Divers. British Trust for Ornithology, *Ringers' Bulletin*. 5:120-122.
- Okill, J.D., French & Wanless S. 1989. Sexing Red-throated Divers in Shetland. *Ringing & Migration*. 10:26-30.
- Okill, J.D. & Wanless. 1990. Breeding Success and Chick Growth of Red-throated Divers in Shetland 1979-88. *Ringing and Migration*. 11:65-72.
- Okill, J.D. 1992. Natal dispersal and breeding site fidelity of Red-throated Divers in Shetland. *Ringing & Migration*. 13:57-58.
- Okill, J.D. 1994. Ringing Recoveries of Red-throated Divers *Gavia stellata* in Britain and Ireland. *Ringing & Migration*. 15:107-118.

# Ringling of Red-throated Diver *Gavia stellata* Black-throated Diver *Gavia arctica* in Sweden

Erik Hemmingsson, Fuxvägen 25, SE-857 52 Sundsvall, Sweden; Erh-@telia.com

Mats O. G. Eriksson, MK Natur- och Miljökonsult, Tommered 6483, SE-437 92 Lindome, Sweden;  
mke.eriksson@swipnet.se

Submitted 12th February 2002

Substantial parts of the European populations of the Red-throated Diver *Gavia stellata* and Black-throated Diver *Gavia arctica* are found in the Nordic countries. For the Black-throated Diver, the current estimate is 5,500-7,000 pairs in Sweden (Eriksson & Lindberg 1998), and with populations of the same magnitude in Finland and Norway (Asbirk et al. 1997), comprising a total of 17,000-20,000 pairs, the Nordic countries hold 99 % of the population outside Russia. For the Red-throated Diver, the European population is estimated to 6,000-11,700 pairs (excl. Russia and Greenland), as deduced from Tucker & Heath (1994) and with the main parts in Sweden, Finland, Norway, Iceland and Scotland. The Swedish population is estimated to 1,200-1,400 pairs (Eriksson & Lindberg 1998).

Although better knowledge of the migration and dispersal is essential for the appropriate protection and management of the two diver species in Sweden, also in an international context, ringling of them has never been a large issue outside a limited number of people. This is reflected in the comparatively small number of ringed birds, and hence a small number of recoveries. Not until the 1990s, ringling of Red-throated Divers became more large-scale, but still a very limited number of Black-throated Divers are ringed, due to the practical constraints linked to the capture of these birds. Here, we give some aspects of migration, survival and dispersal patterns, as preliminary concluded from the recoveries and with a reservation for the limited possibilities for any thorough analyses due to the small sample sizes.

## Red-throated Diver

Ringling of Red-throated Divers is primarily done at the breeding tarns, where chicks are caught in nets when 4-5 weeks old, i.e. shortly before fledging. Thus, almost all ringling concerns non-fledged young at the breeding sites, although adults birds may be accidentally caught (and ringed or controlled) during the field work. 837 birds have been ringed in Sweden until the end of year 2001. Around 90 % of them were ringed after 1985, i.e. when a work-effective method to catch and ring non-fledged chicks had been developed. In all, not more than 5-10 persons have been actively involved in the field work.

By end of 2001, there was in total 67 recoveries, i.e. a 8 % recovery rate. All except four birds were found dead during the period 1950-2001 and 65 of were ringed as chicks (of which 62 found dead). 86 % of all recoveries are from the mid-1980's and onwards (Figure 1), i.e. a clear effect of the increased ringling effort.

## Migration pattern

The long-distance recoveries, i.e. more than 100 km from the ringling site, demonstrates convincingly that Red-throated Divers breeding in Sweden migrate towards south-west to wintering sites in marine habitats in the Skagerack, North Sea and Bay of Biscay (Fransson & Pettersson 2001). There are indications that divers breeding in the province of Jämtland (and northwards?) migrate westwards from their breeding sites directly to the Norwegian coast, after which they turn southwards. The recoveries outside Sweden are from Norway (6 recoveries), Denmark (17), Germany (5) England (3), The Netherlands (5) and France (10). The wintering area is shared with birds from Finland, the northern parts of UK and as distantly as from Greenland (see also Okill 1994).

Young, non-breeding birds spend their first and (mostly also) second year of life in marine habitats, and more occasionally also older birds may stay in their winter quarters during summer. There are no inland recoveries at freshwater habitats of one or two years old birds ringed in Sweden or Finland.

There are no recoveries from the Baltic Sea, neither from Sweden or Finland. The Red-throated Divers wintering here, including the large and recently detected concentrations of around 26,000 divers (around 75 % estimated to be Red-throated Divers) outside the coast of Poland and Germany (Durinck et al. 1993), are presumably from breeding sites in Russia.

#### *Survival rate*

For estimates of survival rates, we used all recoveries of birds ringed as non-fledged chicks, without any selection with reference to ringing date or reported cause of mortality. There is thus a risk that the survival rate of young age classes may be slightly underestimated. With a reservation for this source of error, the survival during the first and second years of life was on the same level, 60 % and 62 % respectively (as calculated from data in Table 1). For the mature age classes, the average survival was 84 %, assuming that most Red-throated Divers start breeding when three years old (as concluded from a long-term ringing scheme in Shetland; Okill 1994). Thus, the survival pattern is very similar to other long-lived bird species. The oldest bird in our data set also holds the international longevity record for Red-throated Divers: it refers to a bird ringed in 1928 and found dead (oil damaged) in the Netherlands in 1952, at an age of 23 years and 8 months (Staaav 1989).

Using the survival rate estimates deduced from Table 1, we assessed the minimum annual production of fledged in order to compensate for the mortality to 0.86 fledged chicks per pair, using the method developed by Henny et al. (1970). The average breeding success reported for Sweden during the period 1994-2000 was above this level in the northern parts of the country, but slightly below in the central and southern parts (Eriksson et al. 2001).

#### *Causes of mortality*

Any analyses of causes of mortality must be done with caution, considering that there is no information of the cause of death for more than one third of all recoveries (Table 1). Furthermore, the probability of recovery differs for various causes of death, which may contribute to biased proportions.

Accidental capture in fishing gear is the most frequently reported cause of death (43 %, Table 1). Birds caught in fishing gear have been found in lakes close to the breeding grounds, as well as in lakes and marine areas along the migration routes and at the wintering sites. But the real importance of this factor is hard to evaluate, as birds caught in fishing gear are much more easily found than those that died due to other causes. Thus, the reported proportion is presumably overestimated.

The second largest cause of death (10 %) refer to birds damaged by oil. General overviews (e.g. Williams 1995) indicate that divers (together with auks) are among the most susceptible groups of birds that spend the winter in marine habitats in the North Sea.

Two birds (3 %) are reported as killed by shooting; both are from the 1950s, when there was still an open shooting season for the Red-throated Diver.

#### *Natal dispersal*

Recoveries during the breeding season (April-August) at potential breeding areas indicate that the adults to a large extent return to the same region where they were born. Among nine recoveries of birds 3-12 years old, six were found between 3 and 20 km from the birthplace, and the remaining three ones, 50, 58 and 90 km from the birthplace. This result is in accordance to with findings from Shetland, where a range of 0.5-68 km were reported among eleven recoveries (Okill 1992).

#### **Black-throated Diver**

The Black-throated Diver has not attracted ringers to the same extent as the Red-throated Diver, and only around 250 birds have been ringed until year 2001. Surely, this reflects the technical difficulties involved in catching these birds. There was a peak in the ringing activities during the 1950s and 1960s, but after that very few birds have been ringed (Fransson & Petterson 2001).

By end of 2001, there was in total 26 recoveries; all of them birds found dead from 1935 and onwards. 20 of them refer to birds ringed as chicks, and there are only two recoveries after the 1960s (Figure 2). Thus, the data for any kind of conclusions is scanty.

#### *Migration pattern*

Our knowledge of the migration pattern of the Black-throated Diver still relies on the ringing done by the German ornithologist Ernst Schüz at Rositten in Ostprussen (nowadays the Russian enclave Kaliningrad) during the 1920s and 1930s. Recoveries from this ringing scheme indicate that Black-throated Divers breeding in Scandinavia, Finland and Russia to a large extent spend the winter in the Black Sea and eastern part of the Mediterranean (Schüz 1974).

Although there are only few long-distance recoveries of birds ringed in Sweden, they nevertheless confirm the results obtained by Schüz (1974). Seven recoveries outside Sweden, from Ukraine (4 recoveries), Greece (1), Yugoslavia (1) and Italy (1), indicate the existence of a south-eastern migration route. But presumably, an almost equal proportion migrate towards south-west to wintering sites in marine habitats in the Skagerack, North Sea and Bay of Biscay, as indicated of five recoveries from Norway (2 recoveries), Denmark (2) and France (1). But there are no long-distance recoveries after the 1960s, so we do not know to what extent our conclusions reflect the situation of to-day.

#### *Survival rate*

The recoveries of birds ringed as chicks at the birth sites indicate a 40 % survival during the first year of life, and after that an average survival of 80 %, i.e. in accordance to the pattern found for other long-lived bird species.

Information about age of first breeding is even more scanty for the Black-throated Diver than for the Red-throated but is mostly supposed to occur at the age of five years, as concluded from the thorough study by Leo Lehtonen in Finland during the 1960s (Lehtonen 1970). With reference to this figure and the survival pattern indicated by the recoveries, only 15 % of the chicks reach maturity. If these estimates reflects any kind of reality, the average breeding success recorded for various parts of Sweden during 1994-2000, i.e. 0.39-0.57 "large" chicks per pair and year (Eriksson et al. 2001), is much too low to compensate for the mortality.

Analyses of recoveries of birds ringed as adult during migration through the Baltic Sea during, primarily during the 1930s (i.e. the ringing scheme co-ordinated by Ernst Schüz) indicate a higher adult survival, 87-91 %. With these recoveries as a reference, the minimum annual production to compensate for mortality has been assessed to 0.37-0.47 fledged chicks per pair and year (Nilsson 1977), i.e. on the same level as reported for the Swedish population during the 1990s.

The oldest bird in our data set is 16 years and 1 months. But birds from Ernst Schüz's scheme during the 1930s were found until the 1960s, i.e. 26-27 years after they were ringed (Schüz 1974). Considering that these birds were at least 2-3 years when ringed, this indicates that single Black-throated Divers becomes up to 30 years old.

#### *Causes of mortality*

As for the Red-throated Diver, the cause of death was not known for more than one third of all recoveries (Table 2). Six birds (30 %) were reported as deliberately killed, all shot during the 1930s-1950s, i.e. when there was still an open shooting season for the species. Accidental capture in fishing gear is the second most frequently reported cause of death (20 %) but the number of birds is too few for any more conclusive analyses.

#### *Natal dispersal*

There are only three recoveries during the breeding season (April-August) at potential breeding areas of birds ringed as chicks, all within the range of 21-29 km from birthplace when the birds were 2-16 years old. In addition, there are two recoveries of birds ringed as adults, found 2-3 km from the ringing place 1-6 years later. Although a small number of recoveries, they indicate a tendency of tenacity to the region the birds were born.

## The future

The increased ringing effort directed towards the Red-throated Diver since the mid-1980s is now rewarded in terms of an increased number of recoveries, although data still is too scarce to allow for more definitive conclusions about survival rates and dispersal. But considering the level of the ringing effort during the last years, the prognosis for further recoveries is fairly good. This will make more accurate analyses and conclusions possible in a near future.

But for the Black-throated Diver, our knowledge about the migration and survival pattern still relies on information from recoveries some decades ago and with only few recoveries after the 1960s. We do not know to what extent the species has been affected of the large changes in the marine habitats all around Europe during the last decades. The lack of knowledge about central issues for an appropriate conservation work is worrying in the perspective that Sweden, Norway and Finland hold around 99 % of the European population outside Russia. For the future, experiences from the ringing of Common Loon *Gavia immer* in North America needs to be tested and adjusted, in order to make it possible to increase the ringing effort in the core area of the European population of the Black-throated Diver.

## Acknowledgements

The ringing of divers in Sweden is co-ordinated with the activities done within the framework of The Swedish Diver Project, managed by The Swedish Society for Nature Conservation of Nature (Svenska Naturskyddsföreningen) and The Swedish Ornithological Society (Sveriges Ornitologiska Förening), and with grants from the Swedish section of World Wildlife Fund (WWF), Alvin's Fund and The Bingolotto-Återvinsten Fund.

## References

- Asbirk, S., Berg, L., Hardeng, G., Koskimies, P. & Petersen, A. 1997. Population sizes and estimates of birds in the Nordic countries 1978-1994. - TemaNord 1997:614, Nordic Council of Ministers, Copenhagen.
- Durinck, J., Skov, H. & Andell, P. 1993. Seabird distribution and numbers in selected offshore parts of the Baltic Sea, winter 1992. - Ornis Svecica 3: 11-26.
- Eriksson, M.O.G. & Lindberg, P. 1998. Projekt Lom 1997. - Pages 71-75 in SOF, 1998, Fågelåret 1997. - Sveriges Ornitologiska Förening, Stockholm.
- Eriksson, M.O.G., Hake, M. & Lindberg, P. 2001. Projekt Lom 2000. - Pages 47-53 in SOF, 2001, Fågelåret 2000. - Sveriges Ornitologiska Förening, Stockholm.
- Fransson, T. & Pettersson, J. 2001. Svensk ringmärkningsatlas. Vol. 1. - Naturhistoriska Riksmuseet and Sveriges Ornitologiska Förening, Stockholm.
- Henny, C.J., Overton, W.S. & Wight H.M. 1970. Determining parameters for populations by using structural models. - J. Wildl. Manage. 34: 690-703.
- Lehtonen, L. 1970. Zur Biologie des Prachttauchers, *Gavia a. arctica* (L.). - Ann. Zool. Fennici 7: 25-60.
- Nilsson, S.G. 1977. Adult survival rate of the Black-throated Diver *Gavia arctica*. - Ornis Scandinavica 8: 193-195.
- Okill, D. 1992. Natal dispersal and breeding site fidelity of Red-throated Divers *Gavia stellata* in Shetland. - Ringing & Migration 13: 57-58.
- Okill, D. 1994. Ringing recoveries of Red-throated Divers *Gavia stellata* in Britain and Ireland. - Ringing & Migration 15: 107-118.
- Schüz, E. 1974. Über den Zug von *Gavia arctica* in der Paläarktis. - Ornis Fennica 51: 183-194.
- Staab, R. 1989. (Longevity of birds ringed in Sweden. Current list 1989.) - Vår Fågelvärld 48: 251-275 (in Swedish, English summary).
- Tucker, G.M. & Heath, M. 1994. Birds in Europe: their conservation status. - BirdLife International (BirdLife Conservation Series No. 3), Cambridge.
- Williams, J.M., Tasker, M.L., Carter, I.C. & Webb, A. 1995. A method of assessing seabird vulnerability to surface pollutants. - Ibis 137, Supplement 1: 147-152

Table 1. Age distribution and reported causes of mortality among Red-throated Divers ringed as non-fledged chicks in Sweden.

<b>Number of birds</b>								
<b>Age class</b>	<b>Shot or trapped (deliberate killing)</b>	<b>Oil damaged</b>	<b>Caught in fishing-gear</b>	<b>Caught in other human artefacts</b>	<b>Sick or wounded</b>	<b>Predation by mammal</b>	<b>Cause unknown</b>	<b>Total</b>
0-1	1		12	1		1	10	25 (40 %)
1-2	1	1	4				8	14 (23 %)
2-3		1	2		1		1	5 (8 %)
3-4		1	2	1				4 (6 %)
4-5							2	2 (3 %)
5-6			2					2 (3 %)
6-7		2	4					6 (10 %)
7-8			1					1 (2 %)
8-9							1	1 (2 %)
19-20							1	1 (2 %)
23-24		1						1 (2 %)
<b>Total</b>	<b>2</b> (3 %)	<b>6</b> (10 %)	<b>27</b> (43 %)	<b>2</b> (3 %)	<b>1</b> (2%)	<b>1</b> (2 %)	<b>23</b> (37 %)	<b>62</b>

Table 2. Age distribution and reported causes of mortality among Black-throated Divers ringed as non-fledged chicks in Sweden.

<b>Number of birds</b>						
<b>Age class</b>	<b>Shot or trapped (deliberate killing)</b>	<b>Caught in fishing-gear</b>	<b>Caught in other human artefacts</b>	<b>Sick or wounded</b>	<b>Cause unknown</b>	<b>Total</b>
0-1	3	3	2		4	12 (60 %)
1-2	2					2 (10 %)
2-3	1	1			1	3 (15 %)
5-6					1	1 (5 %)
8-9				1		1 (5 %)
16-17					1	1 (5 %)
<b>Total</b>	<b>6</b> (30 %)	<b>4</b> (20 %)	<b>2</b> (10 %)	<b>1</b> (10%)	<b>7</b> (35 %)	<b>20</b>

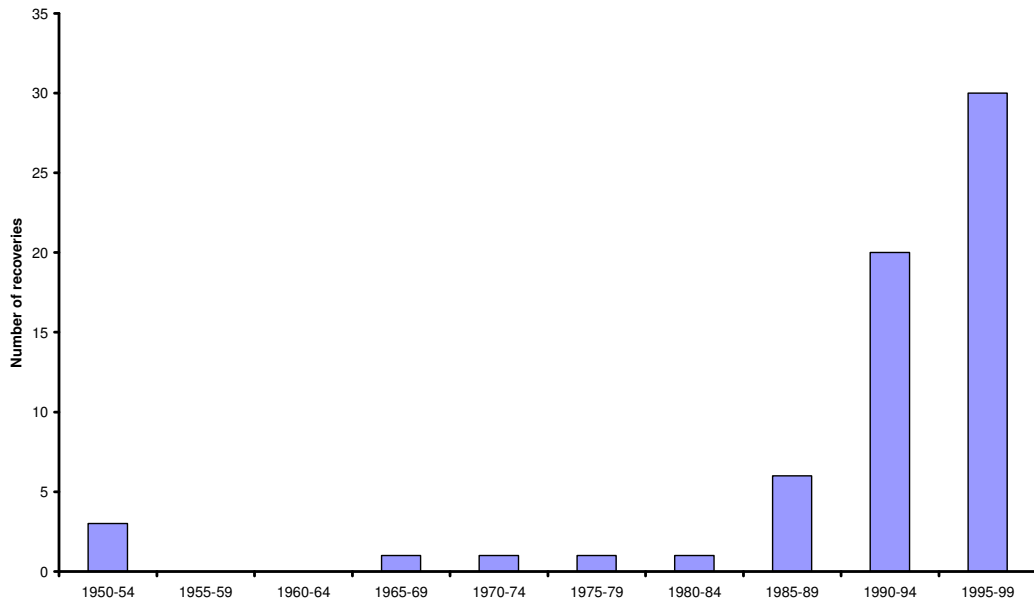


Figure 1. Recoveries of Red-throated Divers, ringed as non-fledged chicks at breeding sites in Sweden. In addition, there is one recovery each from 2000 and 2001.

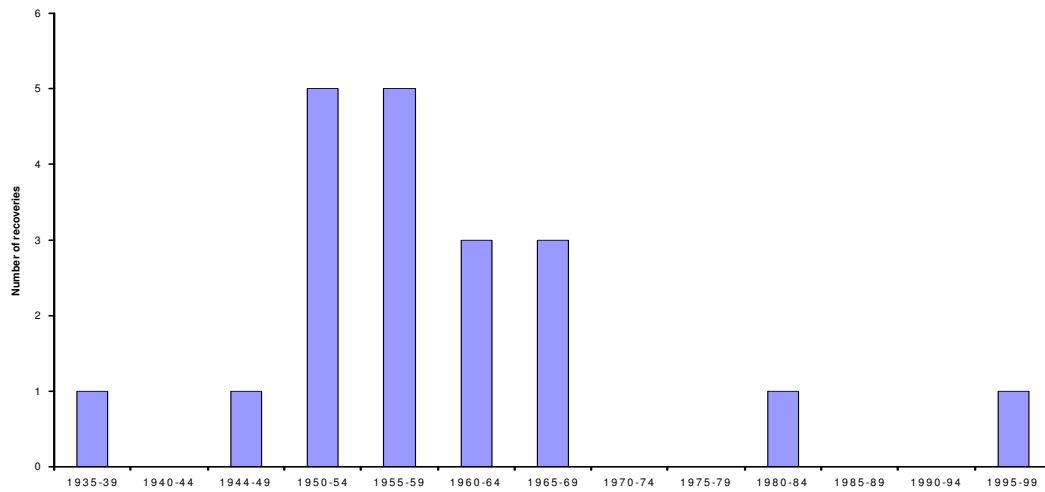


Figure 2. Recoveries of Black-throated Divers, ringed as non-fledged chicks at breeding sites in Sweden. There are no recoveries from 2000 or 2001.

## Loon banding in La Mauricie National Park, Québec, Canada.

**Denis Masse**, parc national de la Mauricie. 2141 chemin St-Paul St-Matieu du Parc, Qué. Canada. G0X 1N0.  
**Louise Champoux**, Environment Canada, Canadian Wildlife Service, C.P. 10100, Ste-Foy, Québec, Canada, G1V 4H5.

Since 1987, Common loon (*Gavia immer*) reproduction is monitored on 76 lakes (>3 ha) in La Mauricie National Park (LMNP) (536 km<sup>2</sup>). The number of residential pairs remains stable with a mean number of 24 (20-32). The reproductive success (number of young surviving to six weeks of age) declined significantly between 1987 and 2001. Human disturbance, acidification and possibly elevated mercury exposure contributed to reduced breeding success.

In August 1997, 1998, 1999 and 2001, breeding loons and their young were captured by night sampling with loon calls, spotlight and net. Feathers and blood samples were collected for mercury analysis. The loons were also banded and measured before being released. This was done to document the mortality rate, homing and lake utilisation. This work is part of a larger Canadian Wildlife Service study on 24 lakes in Québec, with the contribution of Biodiversity Research Institute.

On 9 lakes studied in LMNP more males than females were banded (14M; 7F). The number of adults recaptured is 27% (0- 50%). No juveniles with band were captured during the study. Each year many loon observations are made on lakes of LMNP by employees or volunteers. However there is very little detection of the presence of bands on loons observed. The main objective of the long term monitoring is to confirm, for each lake visited, the presence of an active nest, its success and the number of young. For example, in 2001, 220 observations were recorded but only one banded bird was observed. We need to plan more time on loon observation in the monitoring program in order to determine exactly the presence or absence of a band. Banding is a good opportunity for better understanding of LMNP loon population.

Regarding death rate and migration data, only one banded loon has been found dead April 7, 2001, north of Topsail Island Beach, North Carolina.

Table. The number of loons banded in La Mauricie National Park between 1997 and 2001.

	1997	1998	1999	2001	<b>Total</b>
No loon banded	13	5	9	9	36
Adults	10 (6M:4F)	3 (2M:1F)	4 (3M:1F)	4 (3M:1F)	21 (14M:7F)
Young	3	2	5	5	15
Young not banded (too small)	11	2	2	3	18
Adults recaptured <sup>1</sup>	-	0/3 (0%)	1/4 (25%)	2/4 (50%)	3/11 (27%)

Number of adults with bands on number of loons captured (where banding was made)

M: Male, F: Female

## References

- Champoux, L.; J. Kaplan; K. Tischler & D. Masse 1998. Effects of mercury exposure in Common Loon in Quebec. Poster presented at the conference on Mercury in Eastern Canada & the Northeast States. Sept. 21-23, 1998. Fredericton, NB.
- Kerekes, J. and D. Masse. 2000. Comparison of Common Loon populations, based on long term monitoring, in Kejimikujik National Park, Nova Scotia and La Mauricie National Park, Québec, Canada. pp. 66-68. In: McIntyre, J.W. and D.C. Evers (eds). Loons: Old history and new findings. Proc. Symp, Symposium from the 1997 meeting, American Ornithologists' Union. North American Loon Fund, Holderness, N.H., USA. 115p.
- Masse, D. 1995. Nine years of monitoring the Common Loon (*Gavia immer*) in La Mauricie National Park, Québec, Canada. Lake and Reservoir Management. 11:166.
- Masse, D. 2000. Le Plongeon huard sous surveillance en Mauricie. Le Naturaliste Canadien. 124. (2). pp. 22-26.

## Summary of Common Loon banding in North America

By David Evers, BioDiversity Research Institute, 411 US Rte. One N., Suite 1, Falmouth, ME 04105  
david.evers@briloon.org

Since 1989, BioDiversity Research Institute (BRI) has captured, banded, and color-marked 2,097 Common Loons using a combination of night-lighting and playback recording techniques. This effort has spanned the North American continent from Alaska to Washington across through Canada into the Northeast. Most of these loons were captured during the breeding season, although successful efforts during spring and fall migration and in the winter have also proven year round capture is possible. Numerous ongoing studies depend on the ability to capture, sometimes repeatedly, individual loons and monitor individual performance. A list of peer-reviewed publications as well as agency reports can be found at [www.BRILoon.org](http://www.BRILoon.org). Ongoing toxicological, genetic, and demographic studies will continue to depend heavily on marked individuals and will play an important role in a better understanding of the species.

Table 1. Number of loons captured and color-marked, June 1989 - April 2000.

Season/Region	Adult- Males	Adult- Females	Adult- Unclassified Sex	Sub- adults	Chicks & Juveniles	Total Loons Banded	Adults Recap- tured
<b>BREEDING</b>							
Great Lakes <sup>1</sup>	321	299	8	0	658	1,286	241
New England <sup>2</sup>	162	156	5	0	162	485	50
Maritimes & Quebec <sup>3</sup>	44	38	3	0	37	122	7
Alaska & Northwest <sup>4</sup>	17	24	2	0	37	80	5
<b>SUBTOTAL (Breeding)</b>	<b>544</b>	<b>517</b>	<b>18</b>	<b>0</b>	<b>894</b>	<b>1,973</b>	<b>303</b>
<b>MIGRATION <sup>5</sup></b>							
WINTER <sup>6</sup>	0	0	35	15	23	73	0
<b>TOTAL</b>	<b>562</b>	<b>533</b>	<b>70</b>	<b>15</b>	<b>917</b>	<b>2,097</b>	<b>305</b>

<sup>1</sup> Great Lakes: Michigan, Minnesota, Ontario, and Wisconsin

<sup>2</sup> New England: Maine, Massachusetts, New Hampshire, New York, and Vermont

<sup>3</sup> Maritimes and Quebec: New Brunswick, Nova Scotia, and Quebec

<sup>4</sup> Alaska and Northwest: Alaska, Montana, and Washington

<sup>5</sup> Nevada and California

<sup>6</sup> California, Florida, Maine, New Hampshire, Rhode Island, and Virginia

# Monitoring of Colour-banded Common Loons in Kejimikujik National Park Nova Scotia, Canada, 1999-2000

Neil M. Burgess<sup>1</sup>, Michael J. Duggan<sup>2</sup>, and Joseph J. Nocera<sup>3</sup>

<sup>1</sup> Canadian Wildlife Service, Environment Canada, 6 Bruce St., Mt. Pearl, NF A1N 4T3

<sup>2</sup> 6452 Cloverdale Rd., Halifax, NS B3L 2N6

<sup>3</sup> 1621B Maple Ridge Rd., RR#1 Wolfville, NS B0P 1X0

## Abstract

The Canadian Wildlife Service and BioDiversity Research Institute banded 13 adult common loons in Kejimikujik National Park with unique combinations of coloured leg bands between 1995 and 1997. In the year of capture, each adult was part of a territorial loon pair that had successfully hatched at least one chick. We returned to the same lakes in early summer of 1999 and 2000, to observe if the banded loons had returned and whether they appeared to be breeding. In 1999, all 13 banded loons had returned to the same lake where they were captured previously. Two birds were confirmed breeders, two appeared to be nesting and eight others appeared to either not be breeding or had abandoned the attempt. In June 2000, only seven banded loons were re-sighted in their original territories. Banded loons had been replaced by unbanded birds in four other cases. The status of one bird was not established. It is very possible that some banded loons moved to other territories or lakes that were not surveyed. Of the seven banded birds seen, three were incubating eggs, one appeared to be nesting and three did not appear to be breeding in 2000. Given the number of banded loons that did not return to their original territories in 2000, it appears necessary to broaden this survey in future years to include more territories and lakes in Kejimikujik Park.

## Introduction

Loons (*Gavia* species) have been monitored extensively in North America and northern Europe as bioindicators of the health of aquatic ecosystems (Eriksson 1984, McIntyre 1988). In North America, the common loon (*Gavia immer*) has been used to assess the environmental impacts of acid precipitation (Alvo et al. 1988, McNicol et al. 1995, and many others) as well as lead sinker ingestion (Pokras and Chafel 1992, Scheuhammer and Norris 1996) and mercury contamination (Barr 1986, Evers et al. 1998). Although causes of loon mortality have been assessed through necropsy of recovered carcasses of wild loons, little work has been done on assessing the survival of banded loons and the factors that may influence adult survival.

This paper reports on the monitoring of colour-banded adult common loons in Kejimikujik National Park. Common loons breeding in Kejimikujik Park have been monitored by the Canadian Wildlife Service since 1988 (Kerekes et al. 1994). The Canadian Wildlife Service and BioDiversity Research Institute banded 13 adult common loons in Kejimikujik National Park with unique combinations of coloured leg bands between 1995 and 1997. In the year of capture, each adult was part of a territorial loon pair that had successfully hatched at least one chick. The loons were originally captured to determine their exposure to mercury (Burgess et al. 1998a) and the relationships between mercury exposure and loon reproduction (Burgess et al. 1998b) and breeding behaviour (Nocera and Taylor 1998). We returned to the same lakes in early summer of 1999 and 2000, to observe if the banded loons had returned to their original territories and whether they appeared to be breeding.

This study comprises a portion of a much larger effort across North America to follow the survival of banded common loons. This larger effort is coordinated by the Biodiversity Research Institute in Maine.

## Methods

Thirteen adult common loons were banded on nine lakes in Kejimikujik National Park in August 1995, 96 and 1997 (Table 1). From 16 June to the end of June in 1999 and from 28 May to mid-June in 2000, two observers visited these lakes to determine if the banded loons had returned to their original territories. All observations were conducted with either a 15-45x or 20-60x spotting scope and/or 8x42 binoculars usually from a concealed location on islands or lakeshores. -To assure consistency, loons were observed simultaneously by both observers until a diagnostic observation of leg-band combinations was seen. An observation was designated as diagnostic if a band combination that was unique to an individual was observed. In most cases this amounted to an unobscured observation of the left leg.

On occasion, it was necessary for observers to use kayaks to reach certain vantage points. In some instances, banded birds were identified en route with the use of binoculars. Wherever possible, observers avoided interaction with birds, especially those with chicks. Breeding status was determined by direct observation in most cases, however, sometimes these data were inferred by adult behaviour. When time permitted in 2000, observers would study a lake that had no returns in 1999. This was considered necessary since some birds had returned in 2000 that had not returned in the previous year at another study site in New Brunswick.

## Results

Of the 13 adult loons originally banded in Kejimikujik Park, all 13 were re-sighted in 1999 (Table 2). All but two were found in the same territories where they were banded. The banded male on Cobrielle Lake had switched territories and mate but remained on the same lake. The banded male on Frozen Ocean Lake appeared to have switched or expanded his territory, while remaining on the same lake. The loons' probable breeding status in early summer is listed in Table 2. Two birds were confirmed breeders, two appeared to be nesting and eight others appeared to either not be breeding or had abandoned the attempt. Surprisingly, the pair at Jake's Landing had already hatched two downy young in June. The breeding status of the pair on North Cranberry Lake was not determined in 1999. The actual leg band combinations observed in 1999 are listed in Table 3. The time spent observing each bird in order to determine its leg band combination is shown in Table 4. Total loon observation time in the Park for 1999 was just under 40 hours, with an average of three hours spent per bird.

In June 2000, only seven of the 12 remaining banded loons were re-sighted in their original territories (Table 2). Banded loons had been replaced by unbanded birds in four other cases. It was not determined if the banded female on Back Lake returned in 2000. It is very possible that some banded loons that we did not observe had moved to other territories or lakes that were not surveyed. Of the seven banded birds seen, three were incubating eggs, one appeared to be nesting and three did not appear to be breeding in 2000. A total of more than 64 hours of loon observations were made in 2000, with an average of more than 5.5 hours per bird.

The male loon observed on Frozen Ocean Lake in 2000 does not appear to have the same band combination as shown in the original banding records or observed in 1999. Both observers viewed a yellow or off-white band on the bird's left leg in 2000, where the banding sheet reports a blue band. There are several possible explanations. The observers in 2000 may have incorrectly identified the band, there may be an error in the banding records (and the bird did not actually receive a blue band), or a different bird may have been resident in 2000. The bands observed in 2000 are very close to those of a banded bird that disappeared from Mary Lake, Caledonia in 1998. There is a possibility this bird took over the territory in Frozen Ocean. Frozen Ocean Lake is approximately 40 kilometers northwest of Mary Lake. Future observations will hopefully resolve this question.

## Discussion

With only two years of re-sighting data, it is premature to conclude much about adult loon survival, territorial and mate fidelity, or impacts of anthropogenic stresses in Kejimikujik National Park.

However, it is clear from our findings that banded loons in the Park do not mate for life nor do they always return to the same territory, year after year. The results from Cobrielle Lake in 1999 show that loon pairs may break up and in

subsequent years the birds may pair with new mates. The pair on Frozen Ocean Lake either switched territories since banding or occupied the entire lake, which had previously held two breeding pairs. Piper et al. (1997) suggest that territorial return rates for adult loons breeding in the Midwest USA are 83% if they produced chicks the previous year, but only 67% if the pair was unsuccessful. These rates appear to be roughly consistent with our observations and past nesting records. Given the year-to-year movements of breeding loons to different territories, it is probable that some of the banded loons that we did not see in 2000 had moved to different territories or lakes (which we did not survey). Thus, our data will potentially underestimate survival of adult loons if non-returning birds are assumed to have died.

Before reliable rates of adult survival or mate and territory switching can be determined for the Kejimikujik loons, several more years of data are needed. The results from 1999 and 2000 clearly indicate that it is also necessary to broaden the survey to include more loon territories and lakes in the Park, before any conclusions can be made about the fate of any particular banded bird.

### Acknowledgements

We greatly appreciate the warm support and assistance we have received over the years from staff at Kejimikujik National Park, in particular Cliff Drysdale, Peter Hope, and many Park Wardens. We thank Jack Duggan for logistical support. Trina Fitzgerald and Donald Glencross provided valuable assistance in the field. Dr. Joseph Kerekes, who started CWS loon monitoring at Kejimikujik, provided inspiration and wise advice.

### References

- Alvo, R., D. Hussell, and M. Berrill. 1988. The breeding success of Common Loons (*Gavia immer*) in relation to alkalinity and other lake characteristics in Ontario. *Can. J. Zool.* 66:746-752.
- Barr, J.F. 1986. Population dynamics of the Common Loon (*Gavia immer*) associated with mercury-contaminated waters in northwestern Ontario. *Can. Wildl. Serv. Occ. Pap. No.* 56.
- Burgess, N.M., D.C. Evers and J.D. Kaplan. 1998a. Mercury levels in the blood of common loons breeding in the Maritimes and their prey. *In Mercury in Atlantic Canada: a progress report. Edited by N. Burgess, S. Beauchamp, G. Brun, T. Clair, C. Roberts, L. Rutherford, R. Tordon and O. Vaidya.* Environment Canada, Sackville, NB. pp. 96-100.
- Burgess, N.M., D.C. Evers, J.D. Kaplan, M. Duggan and J.J. Kerekes. 1998b. Mercury and reproductive success of common loons breeding in the Maritimes. *In Mercury in Atlantic Canada: a progress report. Edited by N. Burgess, S. Beauchamp, G. Brun, T. Clair, C. Roberts, L. Rutherford, R. Tordon and O. Vaidya.* Environment Canada, Sackville, NB. pp. 104-109.
- Eriksson, M.O.G. 1984. Acidification of lakes: effects on waterbirds in Sweden. *Ambio* 13:260-262.
- Evers, D.C., J.D. Kaplan, M.W. Meyer, P.S. Reaman, W.E. Braselton, A. Major, N. Burgess and A.M. Scheuhammer. 1998. Geographic trend in mercury measured in common loon feathers and blood. *Environ. Toxicol. Chem.* 17:173-183.
- Kerekes, J., R. Tordon, A. Niewburg, and L. Risk. 1994. Fish-eating birds abundance in oligotrophic lakes in Kejimikujik National Park, Nova Scotia, Canada. *Hydrobiologia* 279/280:101-106.
- McIntyre, J.W. 1988. *The Common Loon: spirit of the northern lakes.* Univ. Minn. Press, Minneapolis, MN.
- McNicol, D.K., M.L. Mallory, and H.S. Vogel. 1995. Using volunteers to monitor the effects of acid precipitation on common loon (*Gavia immer*) reproduction in Canada: the Canadian Lakes Loon Survey. *Water Air Soil Pollut.* 85:463-468.
- Nocera, J.J., and P.D. Taylor. 1998. *In situ* behavioral response of common loons associated with elevated mercury (Hg) exposure. *Conserv. Ecol.* [online] 2(2):10.  
Available at <http://www.consecol.org/Journal/vol2/iss2/art10/index.html>
- Piper, W.H., J.D. Paruk, D.C. Evers, M.W. Meyer, K.B. Tischler, M. Klich, and J.J. Hartigan. 1997. Local movements of color-marked common loons. *J. Wildl. Manage.* 61:1253-1261.

Pokras, M.A., and R. Chafel. 1992. Lead toxicosis from ingested fishing sinkers in adult Common Loons (*Gavia immer*) in New England. *J. Zool. Wildl. Manage.* 23:92-97.

Scheuhammer, A.M. and S.L. Norris. 1996. The ecotoxicology of lead shot and lead fishing weights. *Ecotoxicol.* 5: 279-295.

Table 1. Locations of adult common loons banded in Kejimikujik Park, 1995-97.

<b>Lake</b>	<b>Territory</b>	<b>Adult Male</b>	<b>Adult Female</b>
Back			X
Big Dam West	north		X
Cobrielle	south	X	X
Frozen Ocean	west	X	
George	East		X
Hilchemakaar	south		X
Kejimkujik	Dark Island		X
Kejimkujik	Jake's Landing	X	
Kejimkujik	Jeremy's Bay	X	
North Cranberry			X
Peskawa	South	X	X

Table 2. Return and probable breeding status of banded common loons in 1999 and 2000.

Lake	Territory	Sex	1999 Return Status	1999 Breeding Status	2000 Return Status	2000 Breeding Status
Back		f	R	I	?	I
Big Dam West		f	R	NB	Dead	NB
Cobrielle	south	f	R	NB	NR/PTS	NB
Cobrielle	south	m	R/TS	NB	NR/PTS	NB
Frozen Ocean	west	m	R/PTS	NB	R	I
George		f	R	LN	R	I
Hilchemakaar	south	f	R	NB	NR	B
Kejimkujik	Jeremy's Bay	m	R	NB	NR/PTS	NB
Kejimkujik	Jake's Landing	f	R	2 chicks	R	I
Kejimkujik	Dark Island	m	R	LN	R	LN
North Cranberry		f	R	?	R	NB
Peskawa	south	m	R	NB	R	NB
Peskawa	south	f	R	NB	R	NB

Notes:

Return status: R returned, NR not returned, PTS possible territory switch, TS territory switch,  
? undetermined

Breeding status: B breeding, NB not breeding, I incubating, LN likely nesting, ? undetermined.

Table 3. Original and observed leg bands on adult common loons in 1999 and 2000.

Lake	Territory	Sex	Original Left Leg	Original Right Leg	1999 Obs. Left Leg	1999 Obs. Right Leg	2000 Obs. Left Leg	2000 Obs. Right Leg
Back		f	red/orange	orange/silver	not seen	?/silver	not seen	not seen
Big Dam West		f	green	green dot/silver	green	not seen	Dead bird	Dead bird
Cobrielle	south	f	yellow/orange	green dot/silver	yellow/orange	whitish?/silver	No bands	No bands
Cobrielle	south	m	red/yellow	silver/green dot	red/yellow	silver/green dot	No bands	No bands
Frozen Ocean	west	m	orange/blue	orange/silver	orange/dark?	orange/silver	orange/yellow?	orange/silver
George		f	green/white	silver/orange	green/white	silver/orange	green/white	silver/orange
Hilchemakaar	south	f	green/orange	orange/silver	green/light?	orange/silver	No bands	No bands
Kejimkujik	Jeremy's Bay	m	red/white	silver/blue dot	red-orange/white	not seen	No bands	No bands
Kejimkujik	Jake's Landing	f	orange	orange/silver	orange	orange/silver	orange	not seen
Kejimkujik	Dark Island	m	red	orange/silver	red	not seen	red	orange/silver
North Cranberry		f	red/red	orange/silver	red/red	orange/silver	red/red	orange/silver
Peskawa	south	m	green	silver	green	silver	green	silver
Peskawa	south	f	white	silver/orange	white	silver/orange	white	silver/orange

Table 4. Total time spent observing banded common loons in Kejimikujik Park, 1999-2000.

Lake	Territory	Sex	Time spent in observation (hours:minutes)	
			1999	2000
Back		f	5:19	8:10
Big Dam West		f	4:07	-
Cobrielle	south	f	2:16	7:30*
Cobrielle	south	m	2:46*	7:33*
Frozen Ocean	west	m	0:55	5:35
George		f	5:10	8:50
Hilchemakaar	south	f	1:51	4:00
Kejimkujik	Jeremy's Bay	m	4:10	5:41*
Kejimkujik	Jake's Landing	f	3:30	0:35**
Kejimkujik	Dark Island	m	2:45	0:25
North Cranberry		f	0:05	1:20
Peskawa	south	m	3:11	8:00
Peskawa	south	f	3:11	8:05
TOTAL			39:16	65:44

Notes: \* Increased time attempting to find banded birds in other territories.

\*\* Time lessened because of sighting by park staff.

## News and Announcements

Now available on the Diver Loon web site (<http://www.briloon.org/diver.htm>) are a set of short papers written in Russian and translated into English. The papers are dedicated to the Red-throated and Yellow-billed Loons' distribution, abundance and natural history. The research was conducted in the former USSR and translated by Oksana Lane and Jevgeni Shergalin. The United States Fish and Wildlife Service's Division of Migratory Bird Management funded the translation. For more information please contact Oksana Lane at [oksana.lane@briloon.org](mailto:oksana.lane@briloon.org).

A scientific report on the Yellow-billed Loon has recently been compiled by author and field biologist, Jeff Fair ([www.trusteers.org](http://www.trusteers.org)). Jeff is interested in comments from others in the scientific community that have knowledge on this species. A popular article about this loon, and written by Jeff, was recently published in the August 2002 issue of Alaska magazine ([www.alaskamagazine.com](http://www.alaskamagazine.com)).

Call for Proposals Call for Proposals for the 2003 Sigurd T. Olson Loon Research Award.

Loon Watch, a program of the Sigurd Olson Environmental Institute of Northland College, is accepting applications for the 16th annual Sigurd T. Olson Loon Research Award. This award program is named after biologist Sigurd T. Olson, whose 1952 paper with William H. Marshall, The Common Loon in Minnesota, continues to be cited as one of the premier baseline reports on the biology of the Common Loon. Since 1986, the Loon Research Award has provided funding for original research that leads to better understanding and management of loon populations. We are accepting proposals for research on any of the Gavia species in North America. Research on behavior, breeding ecology, migration, winter ecology, and evolution of loons are considered. Proposals addressing human impacts to loons will be given special consideration, particularly those dealing with water level fluctuation, recreational use of lakes, and shoreline development. Maximum grant award: \$2,500 Proposal deadline: January 10, 2003 Proposal guidelines are included. Send proposals via e-mail to: [LoonWatch@northland.edu](mailto:LoonWatch@northland.edu) or via US Mail to: STO Loon Research Award Sigurd Olson Environmental Institute Northland College Ashland, WI 54806. Please download the [guidelines](#).

## Editor's Note

The Wetlands International Diver/Loon Research Group Newsletter is co-edited by Joseph Kerekes, Canadian Wildlife Service & Dave Evers of the private research group, BioDiversity Research Institute. Send all correspondence or articles for submission to:

Joseph Kerekes

Environment Canada

45 Alderney Drive

Dartmouth N.S., B2Y 2N6, Canada

(902) 426-6356, Fax: (902) 426-4457

Joseph Kerekes, Coordinator of the Diver/Loon Specialist Group Wetland's International; e-mail: