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A COLORED PLASTIC LEG BAND FOR COMMON LOONS

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Abstract.—Wrap-around plastic leg bands in assorted colors were produced for Common Loons. Bands were molded to conform to the laterally compressed legs of loons. One adult and four chicks from lakes in Michigan were captured and fitted with two colored bands. Bands caused no apparent discomfort and were readily visible 20–140 m away. The adult retained its bands over two summers of observation in Michigan.

ANILLAS PLÁSTICAS DE COLORES PARA MARCAR SOMORMUJOS (*GAVIA IMMER*)

Sinopsis.—Se confeccionarón anillas plásticas de diferentes colores para marcar especimenes de *Gavia immer*. Las bandas se moldearón para que cubrieran adcuadamente la pata comprimida del ave. Un adulto y cuatro juveniles se marcarón con este tipo de anilla. Las mismas no parecierón molestarle a las aves y se pudieron distinguir a distancias entre 20 y 140 m. Ninguna de las aves marcadas perdió su anilla, durante los dos veranos en que se estudiaron estas aves en Michigan.

Some aspects of the ecology of Common Loons (*Gavia immer*) are unknown because few loons have been marked for individual identification (Jonkel 1979). Until recently, identification of individual Common Loons was based on limited recoveries of dead and injured birds with numbered U.S. Fish and Wildlife Service (USFWS) bands (Eberhardt 1984), although a few healthy birds have been recaptured (Eberhardt 1984, McIntyre 1974). Some Common Loons have been fitted with colored patagial markers and resighted in subsequent years (McIntyre 1975), however, colored leg bands have not been used. We made plastic leg bands and used them in the field to identify individual Common Loons.

The bands were a wrap-around type (Ogilvie 1972) made from 1-mm thick strips of polyvinyl chloride (PVC) plastic available in assorted colors. Strips 19 mm wide and 30 cm long were broken off PVC sheets after scoring with a sharp cutting tool. This method produced strips with smooth edges.

We took tarsal measurements from two freshly dead adult Common Loons and shaped a template of similar dimensons on one end of a 3 cm

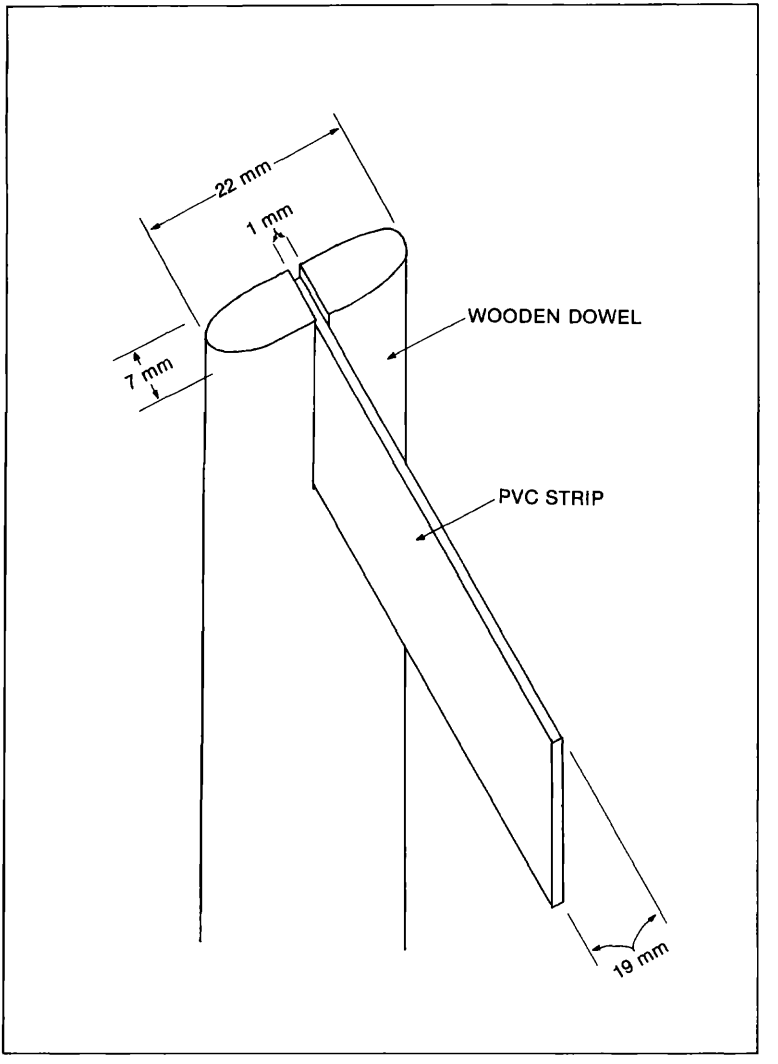

FIGURE 1. Wooden template and PVC strip used to produce plastic leg bands for Common Loons.

diameter wooden dowel (Fig. 1). A notch 1 mm wide and 2.5 cm deep was made in the end of the dowel to hold the strip.

During the molding process, the strip was placed in the notch, warmed over an electric coil until flexible, and wrapped around the template four times. The loose end was secured with masking tape. After the band had cooled, the tape was removed and the inside and outside ends of the strip

TABLE 1. Time taken to see and identify colored leg band combinations on Common Loons at different distances.

Band colors	Time to identify (min)	Distance from loon (m)	Date	Days after banding
Adult (n = 1)				
Green/yellow	10	45	3 July 1985	1
Green/yellow	5	60	23 July 1985	22
Green/yellow	3	20	28 July 1985	27
Green/yellow	1	70	25 April 1986	296
Green/yellow	10	60	5 May 1986	306
Green/yellow	1	15	16 May 1986	317
Green/yellow	2	45	30 May 1986	331
Green/yellow	2	30	7 July 1986	369
Chick (n = 4)				
Green/white[a]	5	20	28 July 1985	19
Green/white[b]				
Green/blue	11	90	10 Aug. 1985	32
Green/white				
Green/blue	1	140	12 Aug. 1985	34
Green/white				
Green/blue	16	30	29 Aug. 1985	51
Blue/red	10	90	7 July 1985	2
Blue/green	7	120	20 Sept. 1985	25

[a] Able to identify only one chick in a two-chick brood.
[b] Two-chick brood. Both chicks identified at same time.

were clipped. A PVC strip cut to the proper size could be formed into a band in approximately 3 minutes.

We made a cursory evaluation of the visibility of the bands and the response of five banded Common Loons on five lakes in the Ottawa National Forest in the Upper Peninsula of Michigan in the summer of 1985. We captured four chicks by nightlighting (Bishop and Barratt 1969) and one adult in a modified beaver live trap. All birds received a numbered USFWS band on the right leg and two colored bands on the left leg. Combinations of green, yellow, white, blue, and red (e.g., green over white) were used. The chicks were one-third to one-half adult size when captured (all weighed $\geq$ 1.5 kg) and were considered large enough for leg bands.

The adult was observed eight times after banding. One chick was observed four times, one chick three times, and two chicks one time each. Color-banded individuals could be identified in 1 to 16 minutes at distances of 15 to 140 m (Table 1).

The birds accepted the colored bands. During the first day, the adult was seen shaking the leg with the USFWS band in apparent discomfort, but was seen swimming and diving with no apparent discomfort on two later dates. The chicks showed no apparent discomfort from the bands.

We expected the bands to be visible only during "foot waggle" behavior (McIntyre 1975). However, the PVC bands were buoyant and could be seen at water level when the birds were swimming also. Bands could not be seen when the birds were stationary.

The buoyancy of the bands did not seem to affect the ability of the adult to swim and dive. However, buoyancy could hinder chicks learning to dive and pursue prey. We suggest using only one band or two narrower bands on chicks to avoid potential adverse effects. Additionally, band width might be used to distinguish birds banded as young.

We did not witness any band loss. Two chicks were known to retain their bands two months after banding and the adult still had its bands 369 d after banding. Loss of this band type should be low. A similar PVC band type had the lowest loss rate of six types tested on Lesser Snow Geese (*Chen caerulescens caerulescens*) (Seguin and Cooke 1983).

We purposely made our bands slightly smaller than an average adult Common Loon's leg so the bands could be adjusted for proper fit in the field. Inside coils can be cut off if the band is too tight and outside coils can be cut off to make the final band thickness two coils. Band wear may be higher than for other types because the bands do not rotate around the leg, but the elliptical shape is required to prevent the bands from slipping off and to minimize drag on the leg during swimming.

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