TABLE 1. Bird species captured using mirror traps.

| Species | Year 1982 | 1983 | 1984 |
|---|---|---|---|
| Horned Grebe (*Podiceps auritus*) | | 3 | |
| Gadwall (*Anas strepera*) | | 1/0[a] | |
| American Wigeon (*Anas americana*) | 1/0 | 2/0 | |
| Blue-winged Teal (*Anas discors*) | | 6/2 | |
| Northern Shoveler (*Anas clypeata*) | | 1/0 | 0/1 |
| Barrow's Goldeneye (*Bucephala islandica*) | 7/0 | 8/6 | 12/10 |
| Bufflehead (*Bucephala albeola*) | 1/0 | 1/0 | 1/0 |

[a] Males/females.

Traps set up in Barrow's Goldeneye territories also captured other species (Table 1). These species, with the exception of the American Wigeon (*Anas americana*) are known for aggressive behavior during the breeding season (Fjeldsa, Sterna 12:161–217, 1973; Donaghey 1975; Titman and Seymour, Wildfowl 32:11–18, 1981).

Birds must see their reflection in the mirror before entering the trap. Improper orientation, wind, and sun often reduced the mirror's efficiency. In addition, individual birds may vary in their reaction to mirrors. Although mirror traps cannot be used to capture large numbers of birds, they may prove useful when accessibility or costs prohibit the use of captive decoys.

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**Influence of Band Size on Rates of Band Loss by Common Terns.**—Two aluminum band sizes have been used on Common Terns (*Sterna hirundo*) in North America: 4.8 mm internal diameter (size 3) and 4.0 mm internal diameter (size 2). Size 2 bands have been used generally since 1970. In an earlier paper (Hatch and Nisbet, J. Field Ornithol. 54: 1–16, 1983), we reported that size 2 bands wore significantly less rapidly than size 3 bands. Although we estimated loss rates for size 3 bands, we could not do so for size 2 bands, because we had only two bands that had been carried for more than 7 yr. This note extends our earlier study by incorporating data on 96 more size 2 bands, including 72 carried for 8–14 yr.

In May and June 1983, we trapped 96 Common Terns carrying size 2 aluminum bands at colonies in Massachusetts. All birds had been banded at colonies in Massachusetts (68), New York (24), or Connecticut (4). All bands were removed and replaced with incoloy bands. For analysis here, we combine data on the aluminum bands with data previously

TABLE 1. Rate of wear of size 2 bands as a function of the number of years between banding and recovery.

| Years worn[a] | No. of bands | Rate of weight loss (%/yr) Mean | SD | |
|---|---|---|---|---|
| 1 | 5 | 4.52 | 1.86 | |
| 2 | 9 | 4.06 | 1.76 | For years 2–9: mean 4.07%/yr, SD 1.17%/yr (n = 207) |
| 3 | 26 | 3.79 | 0.94 | |
| 4 | 33 | 4.38 | 1.30 | |
| 5 | 36 | 4.01 | 1.15 | |
| 6 | 43 | 4.20 | 1.12 | |
| 7 | 45 | 3.96 | 1.17 | |
| 8 | 7 | 3.71 | 1.09 | |
| 9 | 8 | 4.14 | 1.19 | |
| 10 | 21 | 3.86 | 0.96 | |
| 11 | 22 | 3.65* | 0.83** | |
| 12 | 9 | 3.39** | 0.29** | |
| 13 | 5 | 3.79 | 0.68* | |
| 14 | 3 | 3.00* | 1.00 | |

[a] Most bands were carried for about an integral number of years.
* Mean or variance significantly less than mean or variance for years 2–9 ($P < .05$); ** ($P < .01$).

reported on 176 size 2 aluminum bands obtained under comparable conditions in 1973–1982 (Hatch and Nisbet 1983: Table 6). All bands had been manufactured from the aluminum alloy with 2.5% magnesium designated as type V by Hatch and Nisbet (1983: Table 2).

Rates of band wear were estimated using the methods of Hatch and Nisbet (1983). All bands were cleaned and weighed to the nearest .1 mg. Weights were compared with those of unused archive bands from the same or adjacent series. To measure the rate of weight loss of each band, we calculated the mean percentage of the original weight lost per year (Table 1). Between years 2 and 9, the mean rate of weight loss did not vary significantly: the overall mean was 4.07%/yr (SD = 1.17%/yr; n = 207). After year 9, annual means and variances were consistently lower than these values, the differences being statistically significant in several of the year-classes (Table 1). Similar changes have been observed in rates of wear of size 3 bands on Common Terns (Hatch and Nisbet

TABLE 2. Estimates of the proportion of size 2 bands surviving into various weight-loss intervals.

| | Weight-loss interval (% of original weight lost) >30–35 | >35–40 | >40–45 | >45–50 | >50–55 | >55–60 | >60–75 |
|---|---|---|---|---|---|---|---|
| Unweighted totals | | | | | | | |
| Expected no. | 28.9 | 21.8 | 17.2 | 14.0 | 11.0 | 8.2 | 13.8 |
| Observed no. | 24 | 23 | 18 | 12 | 4 | 5 | 0 |
| Weighted ratio S(j,k)[a] | 86% | 115% | 83% | 110% | 18% | 37% | 0% |

[a] See text and Hatch and Nisbet (1983) for explanation of weighting and definition of S(j,k).

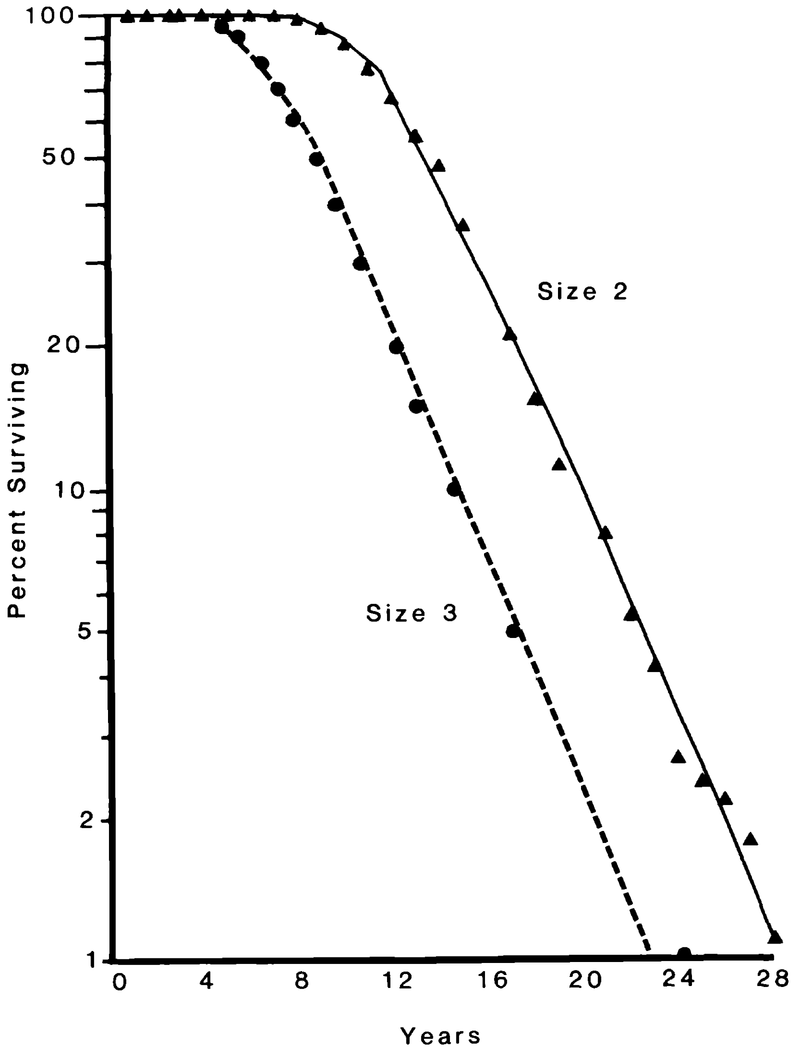


FIGURE 1. Calculated survivorship curves for size 2 and size 3 aluminum bands on Common Terns.

1983) and in other species (Ludwig, Bird-Banding 38:309–323, 1967; Colonial Waterbirds 4:174–186, 1981). These changes probably reflect the fact that the bands subject to the most rapid wear are progressively lost, so that only the bands subject to less rapid wear survive to be recovered.

To estimate band-loss rates, we assumed that, in the absence of band loss, the percentages of original weight lost by bands carried for i years would have followed a Gaussian distribution with mean 4.07i%/yr and standard deviation 1.17i%/yr (see Hatch and Nisbet 1983). We fitted the lower part of such a distribution to the observed number of bands recovered in the i'th year with weight losses between 0 and 35%. This yielded expected numbers of bands in various weight-loss intervals (35–40%, 40–45%, 45–50%, etc.), which were compared with the observed numbers in these intervals. This calculation was repeated for each year from year 5 to year 14. The first two lines of Table 2 give the total numbers of bands observed and expected in successive weight-loss intervals. The third line of Table 2 gives the ratio of observed to expected bands, weighting the numbers of bands in each year in proportion to the number of bands observed in that year with weight losses between 0 and 35%. Observed and expected numbers were similar through 50% weight loss, but there was a significant shortfall of bands in the weight-loss interval 50–60%. No band was recovered with weight loss greater than 59%. These data suggest that size 2 bands are lost by Common Terns after losing between 50% and 59% of their original weights. This contrasts with our earlier estimate that size 3 bands were progressively lost after losing 32–62% of their original weights; the difference between the estimated distributions is highly significant (Kolmogorov-Smirnov two-sample test, $P < .01$).

To compute a survivorship curve for size 2 bands, we used the methods of Hatch and Nisbet (1983). For each of the 207 bands recovered in years 2–9, we selected a random number between 41 and 50% as the fall-off weight, and computed the age at which the band would have fallen off, assuming that its rate of weight loss would have remained constant. The calculation was repeated 3 times for each band, to generate 621 estimates of age at the time of loss. Figure 1 presents the computed survivorship curve for size 2 bands and compares it with the curve for size 3 bands presented by Hatch and Nisbet (1983: Figure 1). The first size 2 bands are expected to be lost during the seventh year, and losses are expected to reach 5% by year 8, 25% by year 11, 50% by year 13, 75% by year 16, and 95% by year 23. On average, size 2 bands are expected to last about 5 yr longer than size 3 bands; the difference between the survivorship curves is highly significant (Kolmogorov-Smirnov two-sample test, $P < .01$).

Size 2 bands last longer than size 3 bands for two reasons. They wear less rapidly (mean $4.07 \pm .08\%$/yr, versus $5.42 \pm .18\%$/yr, $P < .001$) and they fall off at a lower average percentage of their initial weight (44.5% versus 53%, $P < .01$). Ludwig (1981) similarly found that smaller bands wore less rapidly than larger bands on Caspian Terns (*S. caspia*). Smaller bands probably wear less rapidly because they fit more closely to the leg, so that there is less abrasion by sand grains inside the band. Larger bands may be lost at a higher percentage of their original weights because they can slip over the terns' feet more easily.

In spite of the greater expectation of life of size 2 aluminum bands on Common Terns, band loss appears to be significant by year 8 or 9 after banding. We repeat our recommendation that the more durable incoloy bands should be used for any study in which age of banded birds is an important parameter.

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**Yearling Male Long-eared Owls Breed Near Natal Nest.**—During a study of nesting Long-eared Owls (*Asio otus*), I found that some yearling males breed near their natal nest. Here I present my findings and discuss their implications.

I studied a population of Long-eared Owls that nested along a 115-km stretch of the Snake River and its tributaries in the Snake River Birds of Prey Area (SRBPA) in southwestern Idaho. In 1980 and 1981, I banded 92 and 97 nestlings that fledged. Three banded adults were observed and netted near their nest in 1981 and one in 1982.

Breeding females have a well-developed incubation patch (pers. obs.). Males do not incubate or brood (Wijnandts 1984) and have no incubation patch (Drent 1971). Each of the 4 banded adults was a yearling male that nested successfully within 1.5 km of its natal