

Sparrow remained in the box for 1 to 3 min. The House Sparrow entered and exited flying quickly and silently without stopping to perch on the front of the box. The adult male and female bluebird residents were foraging from a high wire 30 m behind the nesting box where their view of the nest hole was obscured. I interrupted the sparrow's visits after the first 20 min and found 5 bluebird nestlings, 4 of which had bloody crown wounds; of these 4 one was already dead. Within 5 min of returning to my blind, a male House Sparrow entered the box and the pattern of entrance and exit at 1 to 3 min intervals resumed. At 1330 four nestlings were dead and the fifth died the next day. The head wounds of these nestlings were similar to head wounds on dead adult bluebirds. On 13 July 1981 I found a brood of 2 nestlings with similar wounds in a neighboring box. On 1 August 1978 at a nest box in an orchard study site, a third brood of 4 nestlings died with similar contusions.

House Sparrows will build their nests over the bodies of dead bluebirds. I have recorded this 3 times. On 15 May 1978 in a box at a pasture-feed lot study site, I found an adult male bluebird, with traumatic wounds on its head; the ventrum faced a back corner of the nesting box; his right wing was stretched out and up and incorporated into the dome of the House Sparrow's nest! Upon discovery the nest was still incomplete, but one House Sparrow egg lay on the bottom of the box. On each of the two following days one more egg was added. On the fourth day, the eggs were gone, but the nest and the now very rotten carcass of the male bluebird were undisturbed. I removed the House Sparrow nest and the body of the bluebird. On the next day, a new House Sparrow nest was begun in the box. On 13 April 1981 on the same pasture and feed-lot study site mentioned above, I found another dead male bluebird underneath a House Sparrow's nest. It was a new nest and egg-laying had not begun. On 7 June 1982 at a pasture study site, I found a dead female under a House Sparrow's nest containing one egg. Four days earlier the nest box had been empty; however, this banded bluebird had successfully nested in the same box throughout May.

I more confidently made the connection between dead adult bluebirds and nest site competition with House Sparrows after watching a House Sparrow killing nestling bluebirds (described above). However, even without that direct graphic demonstration, the circumstantial and correlational evidence supports the conclusion that House Sparrows kill Eastern Bluebirds and suggests that the interactions of these two species might be well studied from the perspective of the current debate over how competition affects community structure.

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- PATRICIA ADAIR GOWATY, *Department of Zoology, Clemson University, Clemson, South Carolina 29631*. (Present address: *Section of Neurobiology and Behavior, Cornell University, Ithaca, New York 14853*.) Received 7 June 1983; accepted 5 July 1984.

Inland Breeding by the Glaucous-winged Gull.—Most species of gulls in North America breed in marine or coastal areas but a few species—such as the Franklin's (*L. pipixcan*), Bonaparte's (*L. philadelphia*), Ring-billed (*L. delawarensis*), and California gulls (*L. californicus*)—have adapted to the inland environment and now breed there almost exclusively. Apparently the inland and marine environments are sufficiently different that most gull species have adapted to breeding in one or the other because few species breed in both. In North America exceptions include the Mew (*L. canus*), Herring (*L. argentatus*), and Great Black-backed (*L. marinus*) gulls (American Ornithologists' Union 1983).

Here, we present evidence that another marine or coastal species, the Glaucous-winged Gull (*L. glaucescens*), is now breeding in small numbers in inland habitats in Wash-

ington and Oregon. According to the American Ornithologists' Union Checklist of North American Birds (1983), the Glaucous-winged Gull "breeds in North America from the southern Bering Sea (including the Pribilof and Aleutian islands) and southern and southeastern Alaska south along the Pacific coast to northwestern Oregon; and in the Commander Islands." We know of no previous reports of its breeding in inland areas except for a single sighting of a Glaucous-winged Gull that was paired with a Herring Gull at Okanagan Lake in British Columbia (Merilees 1974).

While studying the Ring-billed and California gull colonies in the interior of Washington and Oregon during 1977-1978 and 1981 (Conover et al. 1979, Thompson and Tabor 1981), we found several Glaucous-winged Gulls nesting in these colonies. On 13 June 1977, two adult Glaucous-winged Gulls were seen at a colony on Miller Rocks, on the Columbia River 333 km from the river's mouth. No nest was found that day, but on 26 July, two adult Glaucous-winged Gulls in this same colony were attending a Glaucous-winged Gull chick which was almost fledged.

In 1978, we made a thorough survey of Ring-billed and California gull colonies along the Columbia River and in Washington and found adult Glaucous-winged Gulls at 3 Ring-billed and California gull colonies located along the Columbia River. These colonies were the Little Memaloose Island colony located 314 km from the river's mouth near The Dalles, Oregon; Three-mile Island colony located 412 km from the mouth; and again at the Miller Rocks colony. Glaucous-winged Gull nests, however, were only found at the latter colony where we found 3 nests containing 1, 2, and 3 eggs on 18 May. At least one of these nests was successful because on 23 June, an adult Glaucous-winged Gull was seen in this colony with two large chicks.

Additional Glaucous-winged Gull nests were found in late May 1981 after another survey of all inland Ring-billed and California gull colonies along the Columbia River and in Washington. One nest contained 3 eggs in the Little Memaloose Island colony and another had 3 eggs in the gull colony on Island 20 in the Columbia River, 548 km upstream from the mouth at Richland, Washington. Both nests, however, were washed away in a rapid rise in river level on 6 June which inundated much of the gull colonies.

These findings indicate that a small number of Glaucous-winged Gulls have been breeding inland in Washington and Oregon for the last few years and possibly for the last decade as evidenced by Tabor's (1976) observation of 8 adults at Miller Rocks in 1974, although he did not report finding any nests. Nonetheless, the occurrence of Glaucous-winged Gulls breeding in the interior of Washington and Oregon probably is a recent phenomenon; earlier studies reported them breeding only along the Washington coast (Dawson and Bowles 1932). Moreover, all of the Glaucous-winged Gull nests that we found were located in Ring-billed and California gull colonies and the latter 2 species may themselves be recent arrivals in Washington. No known Ring-billed or California gull colonies existed in the state prior to 1930 (Conover et al. 1979) and few existed in other parts of the Pacific Northwest (Conover and Conover 1981). Since then, however, both Ring-billed and California gull populations have increased greatly in this area (Conover 1983). None of the birds observed during 1977, 1978, or 1981 appeared to be Glaucous-winged Gull \times Western Gull hybrids which are often found along the Washington and Oregon coasts (Hoffman et al. 1978).

During the 4 years of this study, there was no apparent increase in numbers of inland-nesting Glaucous-winged Gulls, although known distribution of nesting expanded upstream on the Columbia River. A potential problem facing these Glaucous-winged Gulls is that Ring-billed and California gull chicks usually hatch and fledge sooner than the Glaucous-winged Gull chicks. On 26 July 1977, the two Glaucous-winged Gull chicks could barely fly while most of the other chicks in the colony had fledged a few weeks earlier. On 6 June 1981, when portions of the colonies were flooded, most of the Ring-billed and California gull chicks had hatched, but the Glaucous-winged Gulls were still incubating their eggs. Consequently, Glaucous-winged Gull chicks may experience higher mortality because the prospect of abandonment or predation is greater for late-fledging chicks.

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- MICHAEL R. CONOVER, *Department of Ecology and Climatology, The Connecticut Agricultural Experiment Station, P. O. Box 1106, New Haven, Connecticut 06504*, and BRUCE C. THOMPSON, *Washington Department of Game, 600 N. Capitol Way, Olympia, Washington 98504*. (Present address of BCT: *Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744*.) Received 7 June 1983; accepted 8 Mar. 1984.

Survival of the Common Goldeneye Banded at Emma Lake, Saskatchewan.—Little information is available on the survival of adult Common Goldeneyes (*Bucephala clangula*) (Palmer 1976:395). Because of this paucity of information, we have reviewed all returns from individual females two and more years of age (ASY F) banded on nests located on

TABLE 1. Number of banded adult female Common Goldeneyes known to be alive in subsequent years at Emma Lake, Saskatchewan.

Year	No. banded	Years following banding									
		1	2	3	4	5	6	7	8	9	10
1973	6	6	3	2	1	1	1	—	—	—	—
1974	16	7	5	1	1	1	1	1	1	—	—
1975	13	6	3	3	2	2	1	1	1	—	—
1976	7	3	3	3	3	—	—	—	—	—	—
1977	4	2	1	1	1	—	—	—	—	—	—
1978	6	1	1	—	—	—	—	—	—	—	—
1979	15	10	5	4	2	—	—	—	—	—	—
1980	14	4	1	1	—	—	—	—	—	—	—
1981	7	3	2	—	—	—	—	—	—	—	—
1982	6	2	—	—	—	—	—	—	—	—	—
Total	94	44	24	15	10	4	3	2	2	—	—

Age of bird is at least two years greater than number of years after banding.