Yellow-billed Loons, *Gavia adamsii*, Nest Successfully Near Glaucous Gull, *Larus hyperboreus*, Nests

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Three pairs of Yellow-billed Loons (*Gavia adamsii*) nested successfully near Glaucous Gull (*Larus hyperboreus*) nests in both 1983 and 1984 on the Colville River delta, Alaska (70°20′ N, 150°45′W). Yellow-billed Loon pairs that nested near Glaucous Gulls had a larger mean brood size than other pairs in 1983. Yellow-billed Loons and Glaucous Gulls may benefit mutually by nesting near alert neighbors.

Key Words: Yellow-billed Loon, *Gavia adamsii*, Glaucous Gull, *Larus hyperboreus*, nest success, Alaska.

Larids are major predators of Common Loon, *Gavia immer*, eggs and chicks (Olson and Marshall 1952; Fox et al. 1980; McIntyre 1983) and Pacific Loon (*G. pacifica*, formerly *G. arctica pacifica*, A. O. U. 1985) eggs (Bergman and Derksen 1977; Petersen 1979). Titus and VanDruff (1981) reported six negative Common Loon-Herring Gull, *Larus argentatus*, interactions. In one case a gull preyed on a loon nest 25 m from its own nest. In five cases Common Loons did not attempt to renest after Herring Gulls built nests on the same islands. Although little information is available on interactions with gulls, Yellow-billed Loons, *G. adamsii*, may be less susceptible to gull predation than other loons. Neither Sage (1971) nor Sjolander and Agren (1976) reported nest losses to gulls. On the Colville River delta we observed three Yellow-billed Loon pairs which successfully nested near Glaucous Gull, *L. hyperboreus*, nests.

Associations with larids enhanced waterfowl (Vermeer 1968; Evans 1970) and grebe (Nuechterlein 1981) nest success because larids drove away potential predators and alerted others with their alarm calls. Vermeer (1968) found that waterfowl nesting in association with predaceous gulls had high nesting success, but that the gulls depredated most broods.

We studied the breeding biology of Yellow-billed Loons on the Colville River delta (70°20′N, 150°45′W), 260 km southeast of Barrow, Alaska. The 575-km^2 delta is one of the few areas in North America where concentrations of breeding Yellow-billed Loons occur. Field studies were conducted from 12 May to 15 August 1983 and 15 May to 29 August 1984. Nests were found by searching lakeshores and by observing pairs on lakes. Each year we checked 17 nests every one to three days, from a week before the expected hatch date until hatch occurred, to determine nest success. Brood counts were obtained from 17 pairs on 6 to 12 August 1983, and from 17 pairs on 17 to 20 August 1984.

Three Yellow-billed Loon pairs nested near Glaucous Gulls. Yellow-billed Loons and Glaucous Gulls were very alert to potential dangers during the breeding season. Gulls always harassed humans within 200 m and frequently within 300 m of their nests or broods. Loons were usually aware of potential dangers over similar distances. Having alert neighbors may be advantageous to both species.

One Yellow-billed Loon pair nested 30 m from a gull nest; they raised two chicks in 1983. In 1984, loons nesting at the same site (we assume the same pair) hatched two eggs but lost both chicks, at least one to a Glaucous Gull when our activities caused the adult loon and chick to become separated. Three gulls, including two with a nest nearby, were harassing us. One gull swooped down and took the loon chick present, but we do not know if that gull was a member of the nest pair. The gull pair hatched young both years.

Another Yellow-billed Loon pair nested 96 m from a gull nest. They raised two chicks in 1983 and one chick in 1984. The gull pair hatched young at least one year. Another loon pair nested on a lake which had a colony of 20 to 30 resident gulls. The loons nested on an island 100 m from an island which contained three or more gull nests. The loons raised two chicks in 1983 and one chick in 1984. We did not determine gull nest success at that lake. Two other Yellow-billed Loon pairs nested approximately 100 m from Arctic Terns, *Sterna arctica*.

Only three negative loon-gull interactions were observed. One was the incidence of predation

described previously. Another incident involved the loon pair nesting near the gull colony. One member of the pair was loafing on the water about 10 m from the nest when a gull landed 1 m from the unattended nest. The loon rushed towards the gull, which immediately took off. The only loon-gull interaction involving a loon pair not nesting in association with gulls occurred when a non-incubating loon rushed at a gull that was on shore 500 m from the nest.

Success of Yellow-billed Loons nesting near Glaucous Gulls was not substantially higher than for the remaining population. Thirteen of 14 loon nests (92.9%) not associated with gulls hatched at least one egg in both 1983 and 1984. Only the nest lost in 1984 was probably the result of avian predation. Other common avian predators on the delta were Parasitic, *Stercorarius parasiticus*, and Long-tailed jaegers, *S. longicaudus*, and Common Ravens, *Corvus corax*.

Although sample size was too small to be analyzed statistically, loon pairs that nested near gulls had larger broods than the rest of the Yellow-billed Loon population in 1983. In 1983, the three loon pairs each raised 2 chicks, whereas mean brood size of 13 other Yellow-billed Loon pairs that hatched young was 1.2 chicks. In 1984, the numbers of young raised by the two Yellow-billed Loon pairs that nested near gulls (excluding the pair that lost its last chicks because of our interference) were identical to the mean brood size of the 14 other pairs (1.0 chick per pair that hatched young).

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