

## SABINE'S GULL FLOCK RESPONSE TO PEREGRINE FALCON

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Information on the breeding biology of Sabine's Gulls (*Xema sabini*) is very limited. Parmelee et al. (1967) detailed the species' life history on Victoria Island, northern Canada. Abraham (1986) quantified nesting and brood-rearing chronology and success and noted a strong relationship between nesting Sabine's Gulls and Arctic Terns (*Sterna paradisaea*), while Abraham and Ankney (1984) described partitioning of food resources by Sabine's Gulls and Arctic Terns.

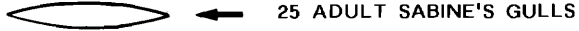
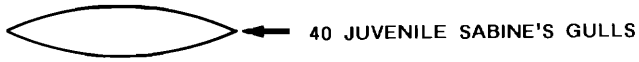
Larson (1960) suggested that one reason for the gull/tern association is that Sabine's Gulls rely on the aggressive defense behavior of Arctic Terns. Later, Brown et al. (1967) discussed the adaptive significance of some behaviors in relation to an absence of communal defenses. Descriptions of Sabine's Gull's responses to predators at colonies are few and sometimes inconsistent. For example, Brown et al. (1967) described distraction displays and aerial attacks from below as defenses against Glaucous Gulls (*Larus hyperboreus*), Parasitic Jaegers (*Stercorarius parasiticus*), and ground intruders but specifically noted a lack of communal defense. Parmelee et al. (1967) also described aerial attacks, ground displays, and defecation by isolated pairs as responses to Snowy Owls (*Nyctea scandiaca*) and ground intruders. Abraham (1986) observed distraction displays and, where colonies were dense, Sabine's Gulls' mobbing Parasitic Jaegers and Herring Gulls (*L. argentatus*). Peregrine Falcons (*Falco peregrinus*) prey on Sabine's Gulls, and one eyrie in arctic Canada contained mostly Sabine's Gull remains (Parmelee et al. 1967).

On 11 August 1988 I observed a flock of Sabine's Gulls respond to a Peregrine Falcon near a colony at the mouth of the Colville River, on the arctic coast of Alaska. The Sabine's Gull flock consisted of approximately 25 adults and 40 recently fledged young. Prior to the appearance of the Peregrine Falcon, the Sabine's Gulls were in diverse activities in the air, on the ground, and on the surface of a 33-ha lake. When the falcon appeared, all the juvenile gulls massed in a flock directly above it, while the adults and one adult Arctic Tern formed a flock between the juveniles and the Peregrine Falcon (Figure 1). Some adult Sabine's Gulls may have been in the flock with the juveniles. The adult gulls and the Arctic Tern took individual turns swooping at the falcon and then returning to the flock. The Peregrine Falcon attempted to attack the flock of adults but it never had the opportunity to attack the flock of juveniles. The Peregrine Falcon isolated one adult Sabine's Gull and stooped at it four times. The gull twice escaped by flying up at the falcon in a counter-attack, then twice escaped the falcon by plummeting toward the lake. The falcon then departed the area. I did not time this encounter, but it lasted only a few minutes.

This behavior represented a successful antipredator deterrence, but it is probably used during only a brief period of the annual cycle, between the time the young fledge and fall migration commences. My observation supports Abraham's (1986) findings of predator mobbing, even though others (e. g., Brown et al. 1967) assert that communal defense is absent in Sabine's Gulls. Abraham (1986) reviewed two explanations for the association between nesting Sabine's Gulls and Arctic Terns: a reliance by Sabine's Gulls on the aggression of Arctic Terns for colony defense, and coincidence. I believe there is a third, more likely explanation for the association between the two species: a mutually beneficial enhancement of colony defense.

I thank K. C. Jensen, G. Hiemenz, and C. M. White for providing helpful comments on the manuscript.

NOTES



x

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WATER SURFACE

Figure 1. Locations of flocks of juvenile and adult Sabine's Gulls in relation to a Peregrine Falcon. "X" indicates the subsequent position of an adult gull that was isolated from the flock.

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Accepted 3 July 1995