

Insect-hawking by some North American gulls: The extent of insect-feeding by gulls, and the caloric benefits and the seasonality of this behavior is not well known. The term "insect-hawking" refers to a foraging strategy where insects are taken and devoured on the wing. Terres (*The Audubon Encyclopedia of North American Birds*. New York, Alfred P. Knopf. p. 489; 1980) describes insect-hawking as an "...action of a bird, such as a swallow or nighthawk, in catching insects out of the air by flying about with the mouth open." Insect-hawking has been reported for Bonaparte's Gull (*Larus philadelphia*) and Franklin's Gull (*L. pipixcan*) (Harrison, P. 1983. *Seabirds, An Identification Guide*. Houghton Mifflin Company, Boston), Glaucous Gull (*L. hyperboreus*). (De Graaf, R. M., N. G. Tilghman and S. H. Anderson. Foraging guilds of North American birds. *Envir. Mgmt.* 9: 493-536; 1985) and Sabine's Gull (*Xema sabini*) (Stromsen, N. 1989. *A guide to Alaskan seabirds*. (2nd ed.) Alaska Nat. Hist. Assoc. in cooperation with the U. S. Fish and Wildlife Service, Anchorage). David Lee (unpubl. data) has found fire ants (Formicidae) in the stomach contents of some gulls off the North Carolina coast. Helen Hays and Robert Dickerman (pers. comm.) have also reported insect-hawking by gulls on Long Island. In this paper we report additional observations of insect hawking by three species of North American gulls — Bonaparte's Gull, Laughing Gull (*L. atricilla*) and Ring-billed Gull (*L. delawarensis*) in southeastern Maine, in southeastern Canada and in Suffolk County on the north shore of Long Island.

On 5 Sep 1987 we observed a flock of approximately thirty-five Laughing Gull insect-hawking with some Common Nighthawk (*Chordeiles minor*) over the salt marsh at Caumsett State Park (Suffolk County). Even though we were within four meters of the gulls we were unable to see the prey and therefore assumed that it was gnat-sized or smaller. Capainolo observed this behavior again on 11 and 16 Sep 1987. All three observations occurred at dusk over the marsh and involved adult birds only. During the 11 and 16 Sep observations, there were no nighthawks present.

In June 1988 Pitocchelli observed similar insect-hawking by Ring-billed Gull in Ottawa, Ontario. The Ottawa gulls were seen feeding around sunset over fields and the road but were not in mixed flocks. All individuals involved were adults.

Laughing, Ring-billed and Bonaparte's Gulls were observed insect-hawking on 26 Aug 1988, accompanying Common Nighthawks feeding over fields along Route 1 in Hancock County, Maine. These also were adult gulls.

In each case gulls were seen snapping at insect prey with their beaks rather than flying with their mouths open. Gulls hawking for insects would stop and hover while they snapped at prey. The hovering never lasted more than 20 seconds. None of the birds were seen sallying for insects.

Several questions are raised concerning insect-hawking by gulls. Why do gulls hawk for insects? When did they begin to exploit this feeding niche? How did this behavior evolve and is it transmitted culturally from generation to generation? Do the energetic gains of feeding on such small prey outweigh the costs of trying to catch it? Is the timing of the exploitation of this food resource correlated with any special physiological processes involved with egg laying, migration or molt? We believe behavioral ecologists should investigate these and other questions about insect hawking in gulls. Information may be useful to understanding the importance of varied foraging strategies and the success of gulls.

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[Additional notes on insect-hawking by gulls appear in *The Kingbird* vol. 27 (2): 87 and vol. 33 (1): 35. *The Editor.*]