

*J. Raptor Res.* 23(2):48

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## OBSERVATIONS ON COOPERATIVE MOBBING OF A BALD EAGLE

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Mobbing is a well known avian behavioral response and is described as a "demonstration made by a bird against a potential or supposed enemy belonging to another and more powerful species: it is initiated by the member of the weaker species, and is not a reaction to an attack upon the person, mate, nest, eggs or young." (Hartley, *Symp. Soc. Exp. Biol.* 4:313-336, 1950). Leahy (The birdwatcher's companion. McGraw-Hill, Ryerson Ltd. Toronto, 1982) described it as "The harassing of a predatory species, usually by a mixed flock of smaller passerines. . . a collective response to a common danger." Mobbing responses are normally directed at predatory birds, particularly hawks and owls passively intruding into territorial or roosting areas of smaller birds (Wilson, E. O., *Sociobiology*. Harvard University Press, Cambridge, Massachusetts, 1975), or when foraging passerines encounter roosting raptors. Altmann (*Condor* 58:241-253, 1956) stated, "Birds will often respond "by contagion" to the reactions of other birds . . . and are the basis for large aggregations that sometimes form around predators." Part of the reason for this contagion is the similarity in duration and frequency of mobbing calls by different bird species (Marler, P. R. in P. R. Bell, ed., *Darwin's biological work: some aspects reconsidered*, pp. 150-206, 1959). In general mobbing is considered a mono-specific, or mixed flocks of small passerines mobbing larger birds, (Corvids), or small raptors such as Screech Owls (*Otus asio*); or larger birds such as jays and crows (*Corvidae*) mobbing raptors. Raptors, in interspecific concert, do not commonly mob larger birds of prey. In this note I report an instance of raptors cooperatively mobbing a larger raptor.

On 9 May 1985 at approximately 1100 H (EST) I observed cooperative mobbing of a Bald Eagle (*Haliaeetus leucocephalus*) at Monomoy National Wildlife Refuge, Chatham, Massachusetts. There was little wind, no cloud cover, and the temperature was approximately 20°C. A juvenile Peregrine Falcon (*Falco peregrinus*) flew across the field of view of a 20× spotting scope to an area about 400 m to the north where over 1000 Herring (*Larus argentatus*) and Great Black-backed Gulls (*Larus marinus*) were flying and giving distress calls. A juvenile Bald Eagle, soaring approximately 30 m above the ground, was in the center of the flock of birds. The falcon, 5 Common Crows (*Corvus brachyrhynchos*), a female Northern Harrier (*Circus cyaneus*), 2 Short-eared Owls (*Asio flammeus*) and no fewer than 50 gulls and 75 Red-winged Blackbirds (*Agelaius phoeniceus*) were mobbing the eagle.

It was obvious that there was a distinct, species-specific

stratification of distance between the mobbing birds and the eagle that was maintained until the eagle landed (1120 H EST). The conspecifics altered positions and distances relative to one another but maintained approximate distances from and directed their aggressions (alarm calls, mock attacks) toward the eagle. The Peregrine made several stoops at the eagle. I then lost sight of the falcon and did not see it again. Of the mobbing birds the Peregrine came the closest, probably within 1 m from the eagle. The crows approached the eagle to within 2-3 m and remained within 5 m of the eagle for the entire episode. The harrier although not actually directly harassing the eagle was integrated in the mob and maintained a distance of 5-10 m from the eagle. The owls never approached closer than 9 m from the eagle, while the blackbirds flew in and out of the various ranges of the larger birds. Most of the gulls stayed outside of 20 m from the eagle, although some approached as close as the owls. All of the birds were part of a large aggregation responding to the presence of the eagle.

Of further interest is that not only were heterospecific raptors (harriers, owls, falcons) collectively mobbing the eagle, but also that a variety of non-raptorial birds overcame or dismissed their usual conditioned response to familiar avian predators to participate in the mobbing (Wilson, E.O., *Sociobiology*. Harvard University Press, Cambridge, Massachusetts, 1975). In this same area in the past, I have observed blackbirds mobbing crows and harriers, crows mobbing harriers and owls, and gulls mobbing or harassing harriers, owls and Peregrines. In each case the mobs were mono-specific. Whether the observed cooperative mobbing was a contagious response to a large concentration of gulls in the aggregation as Altmann (1956) suggests, a stronger stimulus by the eagle over the usual stimulus toward smaller or "less dangerous" predators, or a combination of both could not be determined. Unfamiliarity of local birds to such a large avian predator could also be a contributing factor.

### ACKNOWLEDGMENTS

I thank Denver W. Holt, Donald E. Kroodsmas, Laurie H. MacIvor, Blair J. Nikula and Mark W. Sayre for their review of the manuscript.

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Received 15 May 1988; accepted 6 March 1989