

WHIRLING - A FORENSIC LOOK AT AN ADULT BALD EAGLE BEHAVIOR

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The term whirling is given to the actions when two adult Bald Eagles, while soaring, lock talons and with legs extended and wings spread, fall cart wheeling, and disengage just prior to impact. Whirling has frequently been proposed to be somehow involved with courtship between mated eagles. Here we present what may be called forensic evidence that whirling is most likely an aggressive action, directed at an adult that is not part of the pair.

We look at the reports of this activity in three references. The first is by Brown and Amadon (1968), the second by Stalmaster (1987), and the third by Gerrard and Bortolotti (1988). It should be pointed out that in these accounts the authors do not indicate what initiated this action or what was the result.

Brown and Amadon (1968) describe this whirling display as an extension of the foot touching display, which is common to eagles of the genus *Haliaeetus*. They write of this, "the possibility of confusing this display with actual combat between males must not be overlooked." They say the eagles "engage in various courtship flights which the most spectacular consists of locking talons in mid-air and descending for several hundred feet in a series of somersaults." They are ambivalent as to whether this display is pair bonding or aggression against an intruder.

Stalmaster (1987) has written, after describing the whirling action, "In this nuptial dance...these displays either establish or renew the pair bond and are a precursor to sexual activity." He does not describe any precursor or subsequent event.

Gerrard and Bartolotti (1988) have written: "Whirling may also be seen when a territorial eagle attacks an intruder.... there is much to learn before we can say anything definitive

about it." Also "many people believe this to be part of courtship but it also, perhaps most commonly, appears in aggressive encounters." They are uncertain as to whether this is pair bonding or an aggressive action.

Other observers have reported on whirling of other raptors: Kilham (1981) Red-Shouldered Hawks, Craig et al (1982) Northern Harriers, Clark (1984) Zone-tailed Hawks, Whitt (1992) Black-shouldered Kites, and Dickerman (2003) Red-tailed Hawks. They concluded that this activity is an agonistic behavior, not aerial courtship or pair bonding.

We have not been fortunate enough to witness the whirling display. We have indeed witnessed pair bonding displays including copulation on numerous occasions. We have also witnessed aggressive action by Bald Eagles.

We came upon evidence that whirling may have an aggressive function on May 15, 2008, when we were shown the carcass of an adult female Bald Eagle that had been turned into the Connecticut Wildlife Division for proper disposition. While taking measurements, we noticed that on the tarsus and toes of each leg there were a number of wounds that had penetrated the scutes, drawn blood and formed scabs (Figure 1). The eagle was examined by Dr. Robert F. Giddings, DVM, to see if death was caused by gunshot; he concluded it was not. In his examination he noted "multiple small wounds on both feet." He came to no conclusion as to the cause of death.

From these wounds we have made the following deductions. First is that Bald Eagles do not normally live in an environment where they could suffer such wounds, except in locking talons with another eagle. There are no known eagle nests in the area (Union, Conn.) where the carcass was picked up, and the time of salvage was in the middle of the breeding season. If locking talons and whirling are related to pair bonding, this instance occurred at the wrong time of year. The number of scars would indicate that the bird was wounded more than once. Some 16 miles north of where this carcass was picked up, in Brookfield, Mass., an eagle nest failed in 2008 due to



Julie Victoria photo
 (Fig. 1) Feet of a dead Bald Eagle showing puncture wounds apparently suffered during talon locking.



Paul Fusco photo
 (Fig. 3) A close-up of the locked feet of the two Red-tailed Hawks.



Paul Fusco photo
 (Fig. 2) Two Red-tailed Hawks that appear to have fallen to their death after locking talons. They were found in Bridgewater in May 2006.

intraspecific interference. This type of action could have been involved there, as could this very eagle. We believe this is the carcass of a non-breeding Bald Eagle that was just wandering.

As further support we offer this incident. In May 2006, the Connecticut Wildlife Division was called to pick up two Red-tailed Hawks that were dead in a tree, with their talons locked together (Figure 2). We suggest that one or both died upon impact, and the tendon latching process kept the talons locked together. This we believe illustrates the possible hazardous consequences of whirling action.

In conclusion, we believe that pair bonding would not have evolved into an action that risks injury to both of the pair. We suggest that locking talons and whirling is an aggressive action, to protect the nesting territory where the risk of injury could be justified, as only one of the nesting pair would be in jeopardy.

This aerial maneuver, which centers on 16 needle sharp talons, is bound to cause damage when they lock together. It is hard to believe such action would have evolved to promote pair bonding.

While the evidence presented here is not conclusive, it strongly suggests that whirling is aggressive behavior rather than pair bonding. More studies will have to be carried out to resolve this question.

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