

Shorter Contributions

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COOPER'S HAWK (*ACCIPITER COOPERII*) TAKES WOOD DUCK (*AIX SPONSA*): PATHOLOGY AND PROCESS OF AN EXCEPTIONAL PREDATION EVENT. — Well-documented interactions between predators and prey seldom include pathological examination of the kill, particularly when the species preyed upon is one very rarely taken by the predator. I document an instance in which I discovered a Cooper's Hawk (*Accipiter cooperii*), which usually feeds on medium-sized birds such as Mourning Doves (*Zenaida macroura*), with the carcass of a partially eaten adult female Wood Duck (*Aix sponsa*). My observations were made at 1245-1250 h on 25 March 2012 at a point 30 m WNW of the intersection of Brooke Road and Sentinel Ridge Lane (Google Earth coordinates 38°22'25.28"N, 77°20'14.82"W), 8.2 km SE of Stafford, Stafford County, Virginia. Brooke Road is a winding, two-lane, paved lane that exists mainly for residential access and ends at a local historical park at Aquia Landing at the juncture of Aquia Creek and the Potomac River. The day in question was an unpleasantly cool (ca. 11-13 C°), completely overcast Sunday when traffic would have been minimal. The habitat at the point of the observation is low, swampy deciduous forest with pools and streams and numerous old gnarled trees with broken branches ideally suited for providing cavities for nesting Wood Ducks.

My attention was drawn to a Cooper's Hawk at the bottom of a V-shaped concrete drainage ditch that was situated parallel to and about 5 m away from the edge of the road. I stopped at a point about 30 m distant where I had a clear view down the ditch with binoculars and noted that the hawk was large, mostly dark brown suffused with fuscous above, with blackish barring on the tail and so heavily barred with rufous below that the underparts appeared almost solid reddish, all indicating an adult female, the larger sex (lack of reddish shoulder patches and white bars in the tail rule out Red-shouldered Hawk *Buteo lineatus*). It remained stationary at the bottom of the ditch for several minutes amid a large accumulation of what seemed to be down. My proximity and the passing of several vehicles apparently caused the hawk to take flight, whereupon I walked to the point where it had been and found the carcass of a female Wood Duck and a large pile of its feathers, some of which had blown farther along the ditch. The carcass was well below normal body temperature but still warmer than the ambient

temperature, the eyes were somewhat desiccated and rigor mortis had set in.

The hawk had evidently been at the task of eating for some time. The left side of the breast of the duck had been plucked and the skin and much of the pectoralis muscle down to the supracoracoideus had been eaten. The sternal ribs had been neatly pulled from their articulations with the sternum and were presumably eaten along with the costal musculature, exposing the viscera. A portion of the left lobe of the liver had been eaten, a bit of muscle had been picked away from around the left knee, and a small hole had been made at the juncture of the proventriculus with the gizzard. Before my arrival, it is unlikely that the hawk had left the carcass to feed young because Cooper's Hawks in Virginia are not known to begin laying before April and would usually not have young until May (Clapp, 1997).

The duck was moderately fat, was not molting, and contained a fully-formed shelled egg (unbroken) weighing 34.4 g. There were five unshelled ova ranging from 8 to 30 mm in diameter, as well as smaller undeveloped ova. The earliest egg dates for Wood Ducks in Virginia are in the first week of March (Clapp, 1997). The weight of the partially eaten carcass was 610 g. The weight of an amount of skin and muscle from the right side approximately equivalent to that removed by the hawk from the left weighed 46 g, for a total of 656 g, which would be a minimum considering reduction by desiccation and fluid loss. This value is very close to the average weight (667 g) reported for adult female Wood Ducks (Hepp & Bellrose, 1995). By contrast, the weight of female Cooper's Hawks ranges from 460 to 643 g (n = 109, spring and fall combined; Mueller et al., 1981).

Apart from the portion of the duck exposed during feeding, the only external signs of trauma consisted of a bloody spot at the base of the white throat patch and blood around the mouth. Upon skinning, the only signs of attack by the hawk were on the posterior portion of the head and the adjacent foreneck. There was a slight tear in the skin at the site of the blood on the throat and four puncture wounds as follows: about 1 cm below the left eye; on the left side of the neck dorsal to the white of the throat about 4 cm behind the eye; at the dorso-posterior margin of the left eye; and on the right side of the neck 3 cm behind the skull. This indicates that both feet were employed in holding the duck by the head and neck. There were small hematomas in the areas of the puncture marks but no significant internal bleeding and no blood in either the trachea or esophagus. It is possible that the feet of the hawk may have compressed

the trachea and major blood vessels in the neck initiating asphyxiation and/or strangulation but it seems unlikely that this would have led to death except over a relatively long period of time. On further dissection, however, it was found that the thoracic cavity and lungs were filled with blood, possibly the result of a stress-related ruptured aorta.

There is no possibility that the hawk scavenged the duck after it had been struck by vehicular traffic on the road. There was absolutely no evidence of blunt-force trauma, no crushed skull nor any broken bones anywhere (except the sternal ribs removed by the hawk in the process of eating), and the duck contained an unbroken, shelled egg, which would have been unlikely to have survived an automobile strike intact.

Accounts of Wood Ducks seldom mention predation on adults, with the only avian predator mentioned by Hepp & Bellrose (1995) being the Great Horned Owl (*Bubo virginianus*). Although "teal and young of other ducks" are mentioned as food of Cooper's Hawks (Bent, 1937: 118), no further documentation was supplied. No ducks of any species were listed among prey items of Cooper's Hawk by Rosenfield & Bielefeldt (1993), although they do mention prey of even larger size such as Ring-necked Pheasant (*Phasianus colchicus*), females of which average 993 g with males being considerably heavier (Guidice & Ratti, 2001). A pheasant would most likely be attacked while on the ground, whereas the Wood Duck reported here was likely struck while in flight.

I did, however, find one account in New Mexico (Cartron et al., 2010: 189) in which one of the authors "once witnessed a female Cooper's Hawk dive at a Wood Duck (*Aix sponsa*) hen that had just taken flight. The two tumbled to the ground, and quite a struggle ensued. But the Cooper's Hawk might have been wary of human presence and did not continue the fight for long. She released her grip on the Wood Duck and flew off, while the duck struggled into nearby thickets. Later that day, while walking in the same vicinity, [the observer] flushed a female Cooper's Hawk off a dead female Wood Duck on the ground. The hawk had consumed quite a bit of breast meat, indicating that she had been feeding for a while. How soon she returned to finish off the duck after the initial attack is unknown." Thus, it is evident that Cooper's Hawks, one of the most rapacious predators of birds in North America and a notorious killer of domestic poultry (Bent, 1937), may prey on Wood Ducks anywhere that the ranges of the two species coincide, although this is evidently a rare

and unusual event.

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