# American Kestrel Preys on Killdeer

by
Ron Tozer

On 19 April 1980, at Oxtongue Lake (McClintock Twp., Haliburton Co., Ontario), I observed an American Kestrel (*Falco sparverius*) successfully capture, kill, and transport a Killdeer (*Charadrius vociferus*). I had never seen an American Kestrel prey on any organism even approaching the size of a Killdeer, and so I made some field notes for future reference. Recently, I decided to do some reading on kestrel behaviour and predation habits, and attempt to discover any special circumstances which might have contributed to the occurrence.

The event took place at about 0800h on 19 April 1980, with a temperature of -1° C and clear skies. There was a covering of ice on puddles, but the only snow left consisted of patches in deep shade. Daily high temperatures for the preceding week had barely reached the freezing mark, but then the day before (18 April) this abnormally cold weather ended with a high of 10° C, and the arrival of numerous migrants. Both the American Kestrel and the Killdeer were probably recently arrived migrants themselves, and may have been hard-pressed to obtain food given the "wintery" conditions. Oxtongue Lake is located along Highway 60 between Huntsville and Algonquin Provincial Park. Average spring arrival dates at Huntsville and Algonquin for American Kestrel are 6 April and 11 April, respectively, and 26 March and 30 March for Killdeer (Mills 1981, Tozer 1990).

The Killdeer was foraging (alternately standing and running) on an extensive area of lawn, with scattered shade trees, bordering Oxtongue Lake (mostly frozen) prior to the attack. The bird appeared to be healthy. Then suddenly, the American Kestrel dove from above and behind the Killdeer, and gripped the shorebird in the rump area with its talons. There was much wing-flapping and excited calling by both birds, as they literally rolled over several times on the ground. For one or two minutes, the Killdeer actually progressed a few metres across the lawn with the flapping kestrel fastened onto its back. When the Killdeer seemed to weaken, the kestrel pecked it twice at the base of the skull and the Killdeer went limp. The kestrel then flew just off the ground, with the Killdeer still in its talons, in a laboured flight which took it into some adjoining cover out of my sight.

The method of capture and killing was typical of that reported for American Kestrel when preying on birds (Bent 1938). The fact that there was a single, moving Killdeer in the open may have been significant since "prey activity is more important than either prey size or coloration with respect to selection by wild kestrels, probably because moving prey are most readily detected" and since "kestrels are less selective when

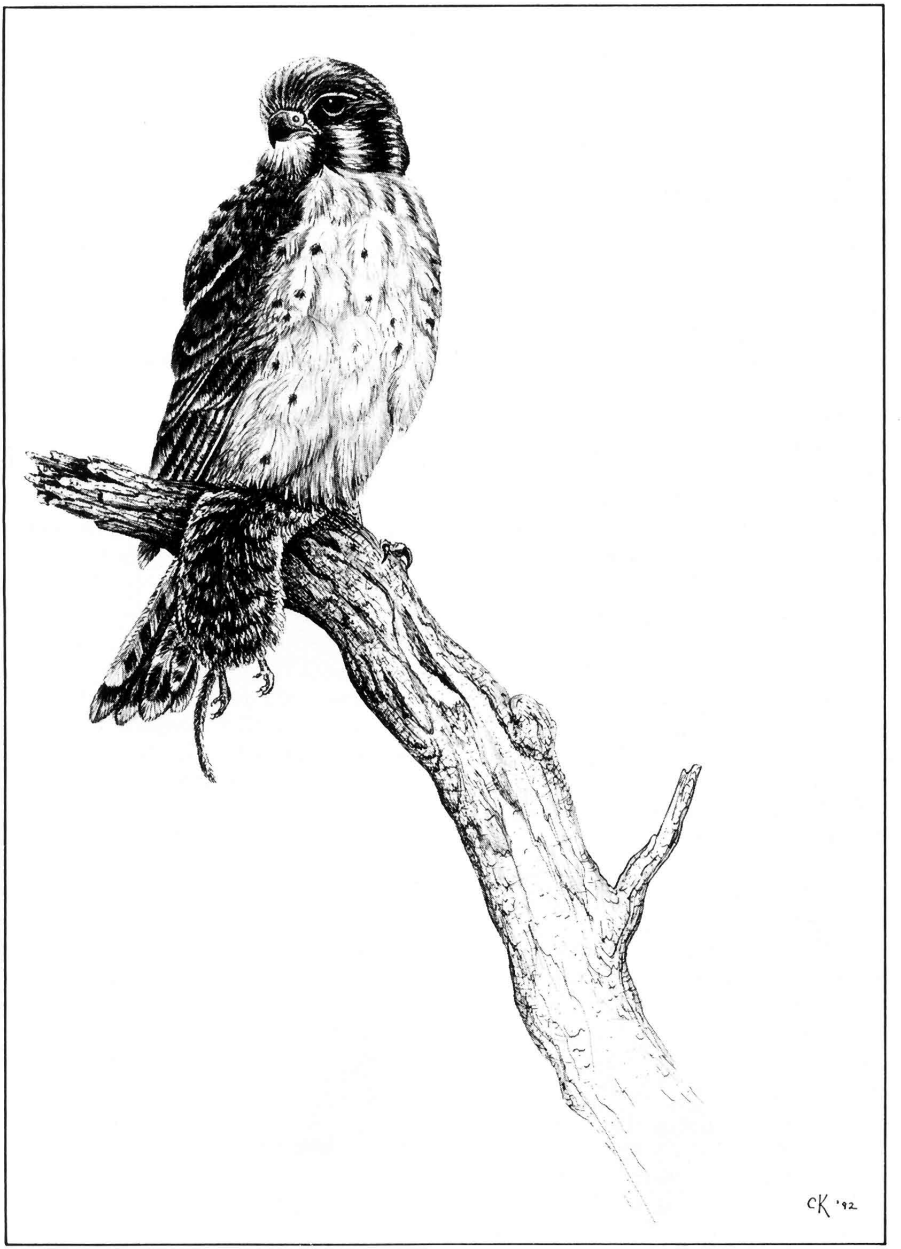


Figure 1: Male American Kestrel with a vole (*Microtus*).
Drawing by *Chris Kerrigan*.

deciding whether or not to pounce on a single prey item" (Smallwood 1989). Increased prey contrast against the background, and length of time exposed (both high for the Killdeer) tend to increase attacks and successful predation by American Kestrels (Sparrowe 1972).

Prey usually taken by American Kestrels consists primarily of insects, small mammals, small birds (including preflight young), small reptiles and a few amphibians (Mueller 1987, Palmer 1988). Normally, they take "at least several times as many insects as vertebrates", according to David Bird (Palmer 1988). However, "during winter in northern latitudes this hawk's prey is restricted to birds and small mammals" (Bent 1938), and those were the conditions confronting the kestrel at Oxtongue Lake.

Bird (Palmer 1988) reported that American Kestrels take birds "more often when they are moving about conspicuously, as during spring migration when other kestrel food is less accessible". However, Young and Blomme (1975) studying the kestrel's feeding habits during the nesting season in northern Ontario found that birds accounted for fully 20.5% of the prey types taken, even when other food sources (such as insects) were readily available. Similarly, Hart (1972) identified 54% of the prey remains in one American Kestrel nest box as birds, during a breeding season with unusually low vole (*Microtus*) populations. Apparently, vertebrates yield more nourishment per capture during brood rearing (Palmer 1988). Also, individual American Kestrels develop specialized "prey habits" (Bond 1936) or "specific search images" (Palmer 1988) wherein they concentrate on a single species or group (such as birds) exclusively, as long as they are available (Mueller 1987).

Bird (Palmer 1988) noted that bird kills by kestrels ranged in size from Mourning Dove (*Zenaida macroura*) down to hummingbirds (*Trochilidae*), with birds as large as California Quail (*Callipepla californica*) and screech-owl (*Otus* sp.) having been fed upon as carrion. Male kestrels have been recorded as taking birds more often than females (Mills 1976). Unfortunately, I did not record the sex of the Oxtongue Lake kestrel! Research has also shown that hungry American Kestrels prefer larger prey (Palmer 1988), and Mueller (1987) claimed that "kestrels attack birds much more often in the spring than in the fall and often with a dash and verve resembling that of the Merlin (*F. columbarius*)".

Having learned that American Kestrels sometimes take fairly large birds, I now wondered whether shorebirds (and particularly the Killdeer) had previously been reported as prey. Young and Blomme (1975) found the remains of a Common Snipe (*Capella gallinago*) in a kestrel nesting box. Three different male kestrels were observed to take a total of twelve Least Sandpipers (*Calidris minutilla*) and two "small sandpipers" (*Calidris* sp.) during winter in California (Page and Whitacre 1975). A Killdeer was reported inadvertently as prey of the American Kestrel in Palmer (1988), but these data actually pertained to a study of the Aplomado Falcon (*F. femoralis*) in Mexico (Sherrod 1978). Consequently, I could find no

previous published report of an American Kestrel preying on a Killdeer in the literature surveying food habits (see Bond 1936, Bent 1938, Heintzelman 1964, Sherrod 1978, Terres 1982, Mueller 1987, Palmer 1988).

In addition to this prey species being apparently unknown, I was interested in the significance of an American Kestrel killing and transporting a bird the size of a Killdeer. The American Kestrel has been observed to occasionally kill prey heavier than itself (Palmer 1988). Weights of male kestrels were recorded by Roest (1957) as averaging 102.5 g (with a range from 80.0 to 143.0 g), while females averaged 119.0 g (ranging from 86.0 to 164.8 g). Killdeer weights have been reported to average 88 g (Terres 1982), and to reach as much as 99 g (Palmer 1967). Thus, the Oxtongue Lake kestrel probably weighed more than its prey. Male kestrels have been recorded successfully carrying prey weighing 89 g, with difficulty (Palmer 1988). Lamore (1956) observed a male kestrel carrying an adult American Robin (*Turdus migratorius*), with an estimated weight of 74 to 85 g, under laboured flight. Adult female American Kestrels have been observed carrying full-grown rats (*Rattus* sp.), but only 0.3 m above the ground -- "indicating some ability to transport prey approaching twice their own weight" (Palmer 1988).

In summary, the Oxtongue Lake American Kestrel may have taken the Killdeer (a relatively large bird) due to the lack of other prey in early spring, the kestrel's individual habit of preying on birds, and because it was hungry. Given the early spring date and avian prey, this kestrel may well have been a migrant male (but the sex is unrecorded). The Killdeer was vulnerable to kestrel attack because it contrasted with its background in open habitat, was solitary, and was moving on the ground. A Killdeer is one of the heaviest prey organisms to be successfully killed and transported by a kestrel. This is apparently the first published account of an American Kestrel preying on a Killdeer.

## Acknowledgements

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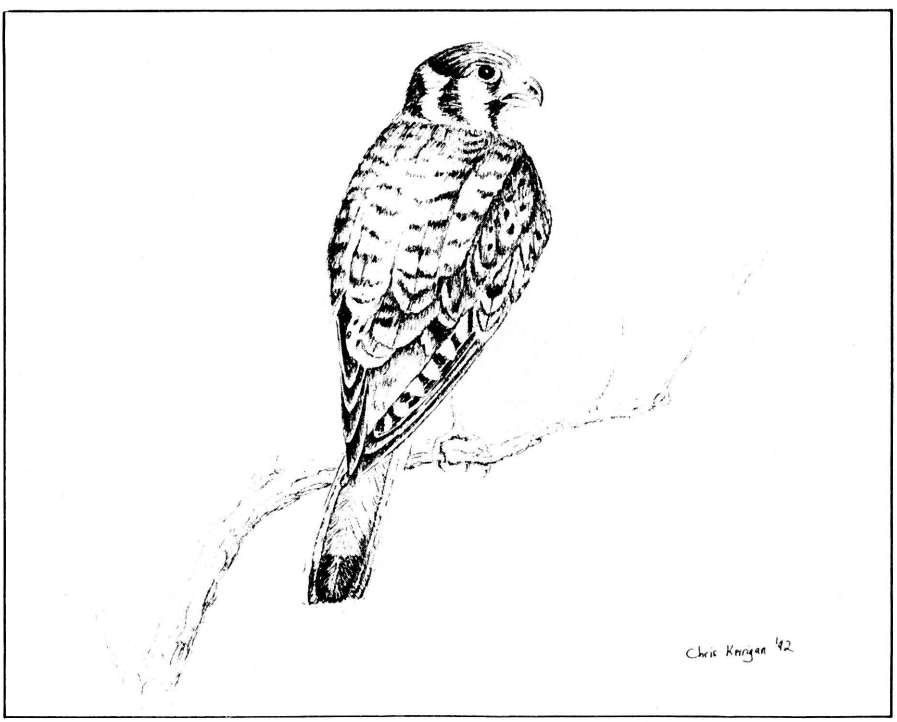


Figure 2: Male American Kestrel. Drawing by *Chris Kerrigan*.

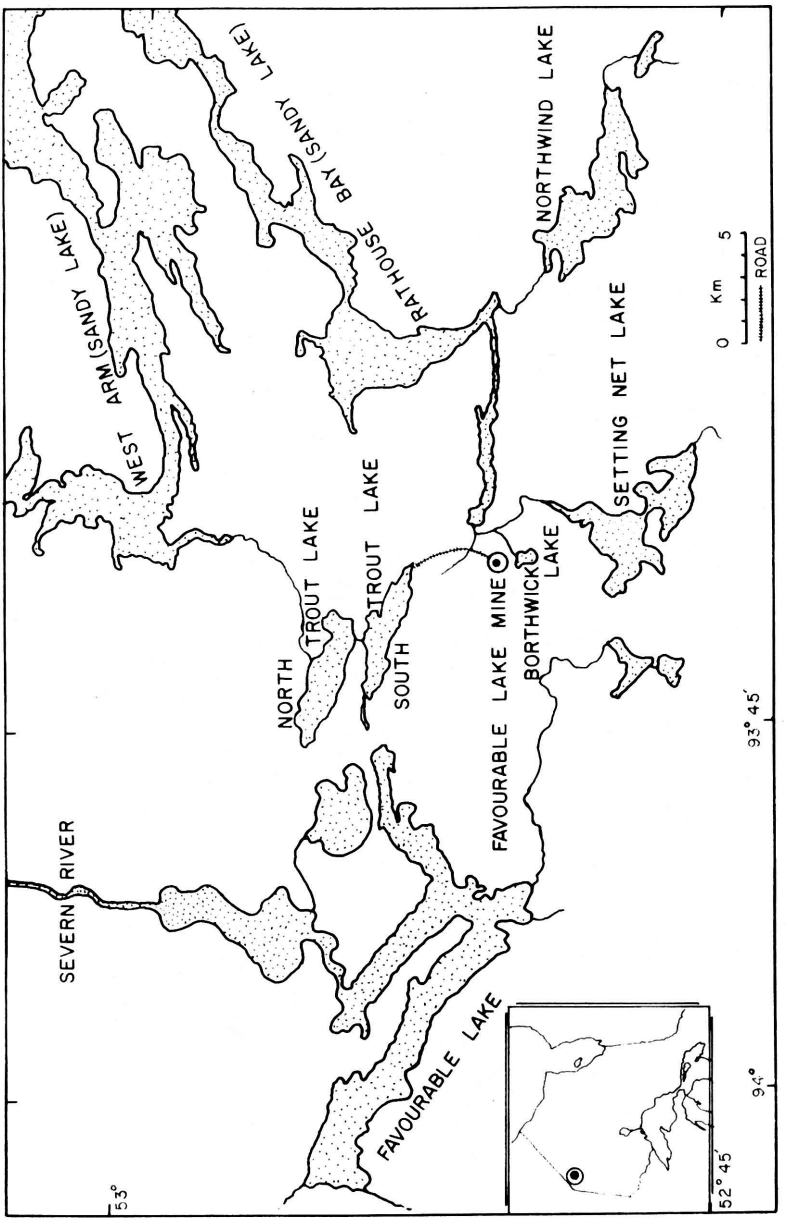


Figure 1: Map of the Favourable Lake Mine area, Ontario.