Northern Harrier impaled on barbed wire fence

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Abstract: Although numerous birds have been found impaled on barbed wire fences, a female Northern Harrier (*Circus cyaneus)* impaled on a fence at Vancouver International Airport in 2005 appears to be only the third documented case of such impalement for that species and the fourth for any harrier species in spite of their habit of frequently flying back and forth just above such fences.

Key words: accidental deaths, *Circus cyaneus*, Northern Harrier, Sea Island, British Columbia, barbed wire, fence, impale, pierce, ensnare, catch, collide.

While I was conducting a routine bird survey on 26 March 2005 at the Vancouver International Airport on Sea Island in Richmond, B.C. (49° 12' North 123° 11' West) wildlife control officer Ted Brome showed me a female Northern Harrier (*Circus cyaneus*) that he had found impaled on the barbed wire fence along the northern border of the airport. He had found it during his first round of patrolling shortly after 06:00 that morning. As the corpse had not yet stiffened, the bird's death must have been fairly recent. Examination of the corpse showed no sign of having been shot and no obvious damage except on the wing that had been impaled on the fence. Thus, we concluded that the bird's death had resulted from the impalement.

Barbed wire fences have long been known to pose a hazard to flying squirrels and several species of birds and bats (McNicholl 1979; Allen and Ramirez 1990 and references cited therein). More than 50 bird species (listed in Allen and Ramirez 1990), at least four bat species (listed in McCarthy 1973) and one flying squirrel species (Nero 1993) are documented to have been impaled by the bill (Guillory 1973), eye (McCarthy 1973), neck (Cornwell and Hochbaum 1971; Fitzner 1975), skin (Allen and Ramirez 1990), thigh (Knight and Skriletz 1980), undertail coverts (Allen and Ramirez 1990), vent (Cornwell and Hochbaum 1971) or wing (Edeburn 1973; Guillory 1973; Nero 1974; Fitzner 1975; Anderson 1977; Knight and Skriletz 1980; Irwin and Lorber 1984; Catley 2005; probably Preston 2007) or with feathers "wrapped around the wire" (Moore 1995). However, the only other reports of harriers caught on a barbed wire fence appear to be that of one male and one female Hen Harrier (the Palearctic race of Northern Harrier) in the Orkney Islands of Scotland in 1977 (Morris 1984) and a recently fledged Marsh Harrier (*Circus aeruginosus*) cut free by Catley (2005) after he found it entangled by the wing on a barbed wire fence near the Humber River in England. Neither Palmer (1988) nor MacWhirter and Bildstein (1996) reported barbed wire as hazards in their comprehensive summaries of the biology of the Northern Harrier.

Northern Harriers typically hunt by "quartering the ground….barely high enough to clear the tallest vegetation" (Bent 1937:86), often changing direction quickly (Palmer 1988) with "buoyant tilting glides" (MacWhirter and Bildstein 1996:8). At Vancouver International Airport, I have often seen them fly back and forth over the barbed wire fences repeatedly without getting entangled on the barbs. This behaviour could make them more vulnerable to entanglement than almost any other raptor, except the similarly-behaving Short-eared Owl (*Asio flammeus*), a species that is impaled much more frequently (Fitzner 1975; Knight and Skriletz 1980; Morris 1984; Allen and Ramirez 1990). Another record of a Short-eared Owl is probably that of Friesen (2006) who saw one hanging on a barbed-wire fence and assumed that it had been hung there by a hunter; it was only later that Friesen became aware of entanglements of birds on fences.

Morris (1984) attributed the rather large numbers of birds that she and her husband saw impaled on fences in the Orkneys to high and gusty winds, factors known to have caused

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other bird species to crash into cliffs (Byrd and Tobish 1978; McNicholl and Hogan 1979). However, winds on Sea Island were very light and not gusty on the morning of 26 March 2005 and I have often watched harriers hunting back and forth close to the tops of the airport fences on days of gusty, strong winds without either colliding with the fence or becoming impaled. Moreover, in at least some areas, harriers tend to hunt in flight more in moderate winds than on windless days (MacWhirter and Bildstein 1996).

Anderson (1977) suggested that several owls found impaled on barbed wire may not have seen the fences. Allen and Ramirez (1990) listed nine species of owls known to have been caught on barbed wire, including nine cases of Great Horned Owls (*Bubo virginianus)*. A tenth was banded and released in Montana after its wounds were "treated" (Serr 1981) and another was found on a barbed wire fence in southern Alberta in November 2001 (Preston 2007). Harriers at Vancouver International Airport sometimes hunt well after evening twilight and sometimes start to hunt before sunrise. At such times, they may not see the fences readily. They may also be especially vulnerable to glare that may make the fence temporarily "invisible." Moreover, while hunting, harriers often chase other raptors (both intra- and inter-specific) (Bent 1937), an activity that I see very often at Vancouver International Airport, especially between two harriers and between harriers and Short-eared Owls. Thus, the harrier found impaled by Brome may have either not seen the fence because of poor lighting or strong glare and/or been distracted by another raptor, prey or other disturbance while near the fence. Siegfried (1972) similarly attributed a disproportionate number of Ruddy Ducks (*Oxyura jamaicensis*) among waterfowl killed by colliding with power lines to their tendency to fly primarily during twilight periods. Although the habit of harriers of flying just over strands of barbed wire makes them particularly vulnerable to this kind of accident, their high degree of manoeuvrability and remarkable agility no doubt contribute to the rarity of such accidents in this species.

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