



European Starling Depredated or Scavenged by a Western Screech-Owl

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Analyses of stomach contents and pellets of the Western Screech-Owl (*Megascops kennicottii*) in British Columbia and elsewhere within this species' range have revealed a predominantly insectivorous diet. Small mammals also are taken, much more frequently than birds (e.g., Ross 1969, Smith and Wilson 1971, Marks and Marks 1981, Barrows 1989, Rains 1997, Cannings and Angell 2001, Davis and Cannings 2008). Here I add a record of the European Starling (*Sturnus vulgaris*) to the list of birds recorded in the diet of the Western Screech-Owl in British Columbia (Table 1), although starlings have been recorded as prey in Utah (Smith and Wilson 1971).

On 20 December 1977, I salvaged a dead Western Screech-Owl from a street in Chilliwack, British Columbia, with wounds that revealed the

bird had been struck and killed by a vehicle. The owl was aged as hatch year/second year, i.e., in its first fall (mass, 255.3 g; ovarian follicles < 1 mm in diameter), according to criteria presented by Pyle (1997). The specimen was catalogued as #1315 in the bird collection of the University of Manitoba Zoology Museum, Winnipeg. Removed from the owl's proventriculus and stomach was a recently ingested European Starling, feathers and all. This owl was ~ 72 g heavier than the mean (183 g) recorded for two females of *M. k. kennicottii*, the coastal subspecies of the Western Screech-Owl (Cannings and Angell 2001). Subtracting the mean mass of European Starling – 87 g (Dunning 2008) – the owl's mass at the time of death was ~ 183 g, equivalent to the mean given by Cannings and Angell (2001)



Western Screech-Owl. Photo by Mark Nyhof.

Table 1. Prey taken by Western Screech-Owls in British Columbia.

Location, date	Prey categories	Source
Victoria, 1923	9 stomachs: cutworms (Noctuidae), ground beetles (Carabidae)	Munro (1924) ¹
Victoria, 1924-25	30 stomachs: mostly beetles; 1 contained “mouse hair”; 4 contained birds (4 Fox Sparrows [<i>Passerella iliaca</i>], 2 Dark-eyed Juncos [<i>Junco hyemalis</i>]). 1 pellet: 1 Spotted Towhee [<i>Pipilo maculatus</i>]	Munro (1925, p. 166) ¹
Cedar Hill, 1929	1 stomach: female observed killing and partially eating Northern Flicker (<i>Colaptes auratus</i>)	Munro (1929) ¹
Goose Island, late June 1948	4 “crops”: Rock [Blenny] Prickleback (<i>Xiphister mucosus</i>); fragments of forest-inhabiting beetles (<i>Ceruchus striatus</i> , <i>Zacotus mathewsi</i> , <i>Plectrura spinicauda</i> , <i>Pterostichus</i> sp.)	Guiguet (1949) ¹
Surrey, 1969	Nest-box, examined 2 June: dew worms, beetles, snails, Pacific Treefrog (<i>Hyla regilla</i>), 3 American Robins (<i>Turdus migratorius</i>), 3 Cedar Waxwings (<i>Bombycilla cerdorum</i>), 1 American Goldfinch (<i>Spinus tristis</i>), 1 Brown-headed Cowbird (<i>Molothrus ater</i>); 1 shrew carried to nest-box (video-taped, 16 May)	Ryder (1973) ¹
Vancouver Island	Tidepool Sculpin (<i>Oligocottus brumata</i>), earthworms, Wintermoth caterpillars (<i>Operophtera maculosus</i>), nestling Violet-green Swallows (<i>Tachycineta thalassina</i>), mice	Fraser et al. (1999) ¹
Okanagan valley	1 stomach: caterpillar (Lepidoptera), 2 crickets (Orthoptera)	Cannings et al. (1987) ²
Shuswap River drainage, March-November 2006 and 2007	75 pellets: primarily insects and small mammals, also molluscs, fish and 10 unidentified birds and eggshells; bird feathers (Ruffed Grouse [<i>Bonasa umbellus</i>], Killdeer [<i>Charadrius vociferous</i>], American Robin, Cedar Waxwing) found under roosts	Davis and Cannings (2008) ²
Chilliwack, 1977	1 proventriculus and stomach: European Starling	This study ¹

¹ Prey of the threatened, coastal subspecies of Western Screech-Owl (*M. k. kennicottii*).² Prey of the threatened, interior Western Screech-Owl (*M. k. marfarlanei*).

Birds larger than the European Starling, such as the remains of four adult Ruffed Grouse in pellet samples reported by Davis and Cannings (2008), have been observed in the diet of the Western Screech-Owl in British Columbia (Table 1), but it was not known whether the grouse were only partly ingested, after being attacked and killed, or were scavenged. Even larger prey have been reported taken by Western Screech-Owls, in Idaho – cottontails (*Sylvilagus* spp.) discovered in three nest-boxes and a female Mallard (*Anas platyrhynchos*) in another nest-box, the latter apparently found injured and subsequently killed (Cannings and Angell 2001).

Did the screech-owl kill and ingest the starling, only to be struck later by a vehicle, or did the owl scavenge an already-dead starling from the road, when it was also struck by a vehicle? Scavenging by the Western Screech-Owl has been reported (Allen and Taylor 2013), and this species is known to forage along roadways, where individuals are frequently struck by vehicles (Davis and Weir 2008). This screech-owl may have depredated the starling in winter because it was food-stressed (e.g., Marti and Hogue 1979). Munro's (1925) early records of prey of Western Screech-Owls in the Victoria area in winter are enlightening. He noted (p. 166) that owls were taken "during a spell of unusually cold weather, in traps of the ordinary funnel type which were being operated at the Provincial Game Farms to capture quail. Small birds entered these traps quite frequently and sometimes, if captured after the evening inspection, were imprisoned for the night. Confined thus, they served to bait the traps for Screech Owls which, no doubt, were hard pressed for food, the ground being frozen and insects dormant." The comparatively high frequency of vertebrate prey taken by Western Screech-Owls in Utah in winter was considered by Smith and Wilson (1971) as support for Johnson's (1963) suggestion that the more northern screech-owls prey heavily on vertebrates during winter when insect food is scarce, contrasting with the more insectivorous screech-owls in the southern portion of the range (also see Earhart and Johnson 1970).

Munro (1925:167) also commented on the impact screech-owl predation might have on songbird populations. He stated that "The presence of bird-

remains ... should not be taken as evidence that the local Screech Owl is destructive to small birds because in these instances the birds were attacked under abnormal conditions which no small owl could be expected to resist." Davis and Cannings (2008) alluded to this in their interpretation of birds as infrequent prey of Western Screech-Owls in the southern interior of British Columbia, noting that bird feathers frequently found beneath the owls' roosts may have been taken by other raptors, rather than the screech-owls.

The few data on the diet of the coastal subspecies of Western Screech-Owl in British Columbia have come almost entirely from observations made on southern Vancouver Island and the Lower Mainland east of Vancouver (Table 1). Guiguet (1949) confirmed the occurrence of this species on small islands along the central coast of British Columbia (also see Brooks 1923) and that marine fish captured after the tide had fallen may constitute important prey in this habitat. Guiguet (1949:206-7) remarked that he observed an adult screech-owl "... on a beach drift log intently watching the receding water line on a falling tide. From all appearances this bird was visually searching for food in the seaweed where species of blenny lie after the tide has fallen." Further research may confirm the importance of marine fish in the diet of coastal populations and whether invertebrates, for example, the beach amphipod, *Orchestria traskiana*, are taken when exposed at low tide, particularly in winter, as reported for the endemic subspecies of Northern Saw-whet Owl (*Aegolius acadicus brooksi*) on Haida Gwaii (Hobson and Sealy 1991, Sealy 1999).

Evidence suggests Western Screech-Owls are opportunistic predators (Table 1) "on the most easily and efficiently obtainable prey" (Smith and Wilson 1971:84, Davis and Cannings 2008). Further support for this will result from additional pellet analyses, and video-records of parental feeding trips to nests and at roosts, during all seasons and in other regions. †

Acknowledgements

I thank Helen Davis and co-editors, Dennis A. Demarchi and Patricia Huet, for thoughtful comments on drafts of the manuscript. Mark Nyhof provided the photograph of the Western Screech-Owl.

Literature Cited

- Allen, M.L. and A.P. Taylor. 2013. First record of scavenging by a Western Screech-Owl (*Megascops kennicottii*). *Wilson Journal of Ornithology* 125:417-419.
- Barrows, C.W. 1989. Diets of five species of desert owls. *Western Birds* 20:1-10.
- Brooks, A. 1923. Notes on the birds of Porcher Island, B.C. *Auk* 40:217-224.
- Cannings, R.J. and T. Angell. 2001. Western Screech-Owl (*Megascops kennicottii*), *The Birds of North America* (P.G. Rodewald, editor). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America: <https://birdsna-org.uml.idm.oclc.org/Species-Account/bna/species/wesowll> DOI: 10.2173/bna.597
- Cannings, R.A., R.J. Cannings, and S.C. Cannings. 1987. *Birds of the Okanagan Valley, British Columbia*. Royal British Columbia Museum, Victoria, BC. 420 pp.
- Davis, H. and R.J. Cannings. 2008. Diet of Western Screech-Owls in the interior of British Columbia. *British Columbia Birds* 18:19-22.
- Davis, H. and R. D. Weir. 2008. Western Screech-Owl conservation along the Shuswap River. Prepared for Bridge Coastal Restoration Program, Burnaby, BC. 97 pp. <http://artemiswildlife.com/Publications.htm><http://artemiswildlife.com>
- Dunning Jr., J.B. (Editor). 1992. *CRC handbook of avian body masses*. CRC Press, Boca Raton, FL. 655 pp.
- Earhart, C.M. and N.K. Johnson. 1970. Size dimorphism and food habits of North American owls. *Condor* 72:251-264.
- Fraser, D.F., W.L. Harper, S.G. Cannings, and J.M. Cooper. 1999. *Rare birds of British Columbia*. Ministry of Environment, Lands and Parks, Victoria, British Columbia. 236 pp.
- Guiguet, C.J. 1949. Kennicott's Screech Owl on British Columbia coastal islands. *Canadian Field-Naturalist* 63:206-207.
- Hobson, K.A. and S.G. Sealy. 1991. Marine protein contributions to the diet of Northern Saw-whet Owls on the Queen Charlotte Islands: A stable isotope approach. *Auk* 108:437-440.
- Johnson, N.K. 1963. The supposed migratory status of the Flammulated Owl. *Wilson Bulletin* 75:174-178.
- Marks, J.S. and V.A. Marks. 1981. Comparative food habits of the screech owl and Long-eared Owl in southwestern Idaho. *Murrelet* 62:80-82.
- Marti, C.D. and J.G. Hogue. 1979. Selection of prey by size in Screech Owls. *Auk* 96:319-327.
- Munro, J.A. 1924. Miscellaneous bird notes from southern Vancouver Island, 1923. *Canadian Field-Naturalist* 38:175-177.
- Munro, J.A. 1925. Notes on the economic relations of Kennicott's Screech Owl (*Otus asio kennicottii*) in the Victoria region. *Canadian Field-Naturalist* 39:166-167.
- Munro, J.A. 1929. Notes on the food habits of certain raptores in British Columbia and Alberta. *Condor* 31:112-116.
- Pyle, P. 1997. Flight-feather molt patterns and age in North American owls. *American Birding Association, Monographs in Field Ornithology*, No. 2. 32 pp.
- Rains, C. 1997. Comparison of food habits of the Northern Saw-whet Owl (*Aegolius acadicus*) and Western Screech-Owl (*Otus kennicottii*) in southwestern Idaho. Pages 339-346 in Duncan, J.R., D.R. Johnson, and T.H. Nicholls (Eds.). *Biology and conservation of owls of the Northern Hemisphere: 2nd International Symposium: 1997 February 5-9, Winnipeg, MB*. USDA Forest Service, North Central Research Station General Technical Report NC-190, St. Paul, MN. 635 pp.
- Ross, A. 1969. Ecological aspects of the food habits of insectivorous Screech-Owls. *Proceedings of the Western Foundation of Vertebrate Zoology* 1:301-344.
- Ryder, G.R. 1973. Feeding habits of the Screech Owl near Vancouver, British Columbia. *Vancouver Natural History Society, Discovery* 2:31-52.
- Sealy, S.G. 1999. Further data on food items of Northern Saw-whet Owls (*Aegolius acadicus brooksi*) on the Queen Charlotte Islands, British Columbia. *Western Birds* 30:200-205.
- Smith, D.G. and C.R. Wilson. 1971. Notes on the winter food of Screech Owls in central Utah. *Great Basin Naturalist* 31:83-84.