A SAMPLE OF PREY REMAINS FOUND IN GREAT-HORNED OWL NESTS IN SASKATCHEWAN IN 2008

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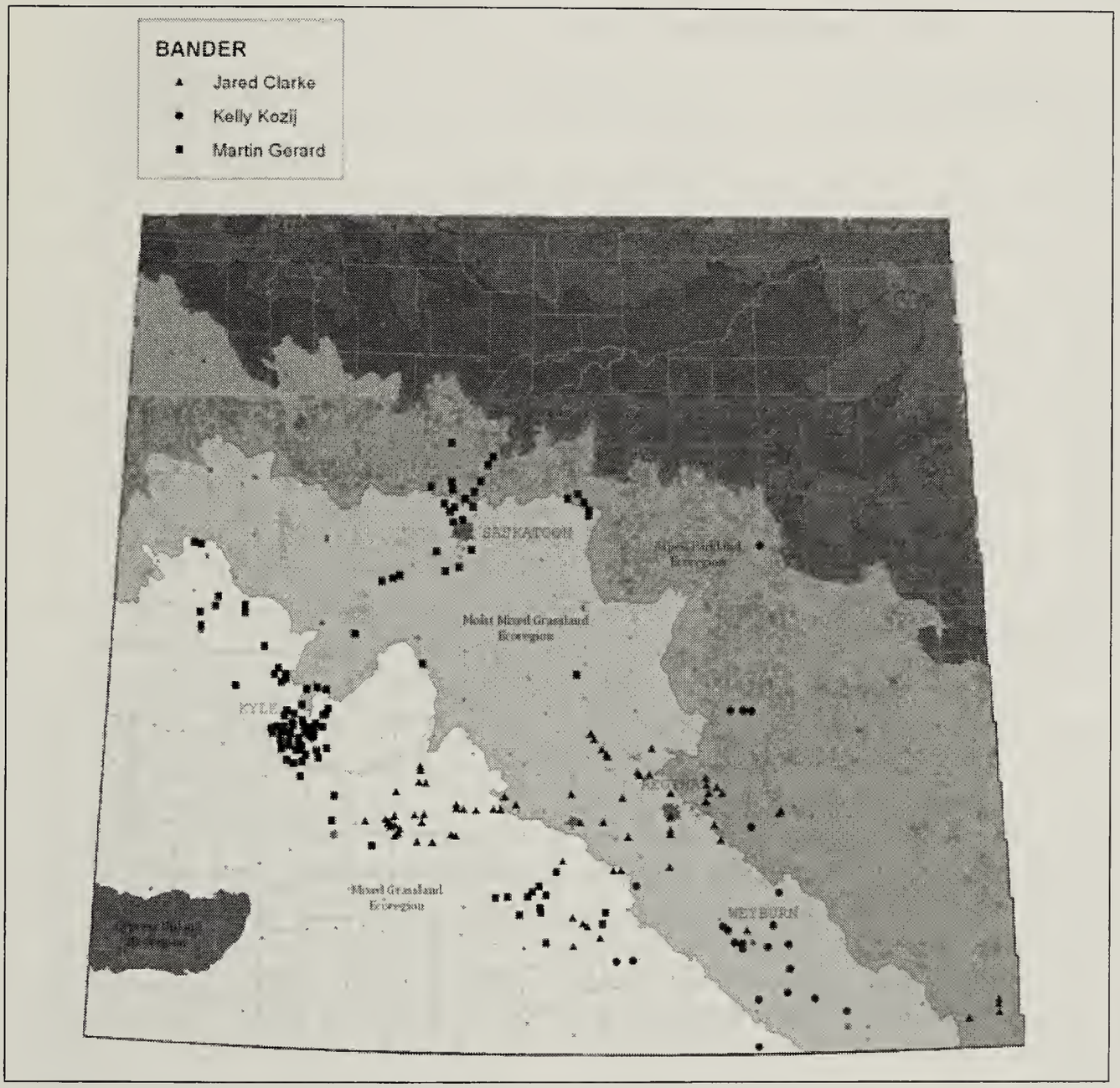

Figure 1. Locations of GHOW nesting sites visited in Southern Saskatchewan in 2008. *Ray Poulin*

We visited 210 Saskatchewan Great-horned Owl (GHOW) nesting sites between 27 April and 3 July 2008 (Fig. 1). Our objectives were to: (a) band the young, (b) identify trends in the types of nesting trees or other structures selected by owls, and (c) to document aspects of GHOW diet by examining prey remains.

GHOW nesting habitats varied widely, as would be expected for a

species that opportunistically uses nests of other birds. In the Aspen Parkland surrounding Saskatoon, Trembling Aspen (*Populus tremuloides*) predominated as nest trees, while in the farmyards in the Kyle region, Manchurian Elm (*Ulmus laciniata*) and Ash were more commonly used. Also represented, in order of frequency, were Manitoba Maple (*Acer negundo*), hybrid poplar (*Populus* sp.), White Spruce (*Picea glauca*), Eastern Cottonwood (*Populus deltoides*), American Elm (*Ulmus americana*), willow (*Salix* sp.), and Balsam Poplar (*Populus balsamifera*) (Table 1). Eight nests were in man-made structures: five barns, a wooden box in a spruce, a basket in a spruce, and one on a tire mounted on a 3-m pole.

Table 1. Great-horned Owl nest sites.

# nests banded at	Tree species	% of total
25	Ash	11.9
66	Trembling Aspen	31.4
5	Balsam Poplar	2.4
10	Eastern Cottonwood	4.8
9	American Elm	4.3
31	Manchurian Elm	14.8
19	Manitoba Maple	9
18	Hybrid poplar	8.6
15	Spruce	7.1
6	Willow	2.9
5	Barn	2.4
1	Tire on post	0.5
Total 210		

Food items recovered from GHOW nests also varied widely. Of the 210 nests, 82 had no food, and at 21 others, food data were unavailable, predominantly owing to poor climbing conditions. American Coot (14.7%) and Gray Partridge (5.2%) were the most abundant bird species found (Table 2). Two nests contained Burrowing Owls, three had Long-eared Owls, three had Short-eared Owls, one had an American Kestrel, and one contained Northern Harrier feathers. Remains of adult and young GHOW, Cooper's Hawks, Red-tailed Hawks, Swainson's Hawks, and Merlins have also all been found in Saskatchewan GHOW nests in previous years (unpublished data). Northern Pocket Gophers and Deer Mice were the most common mammalian prey species (10.8% and 8.6% of total individual prey items, respectively; see Fig. 2, inside front cover). Other numerous prey items included waterfowl, lagomorphs (rabbits and hares), and various rodent species. In total, 35 species of birds (127 items) and 13 species of mammals (102 items) were identified. One reptile, a garter snake (likely *Thamnophis radix*), was also found. Regurgitated pellets that contained Giant Water Bug (*Lethocerus americanus*) shells were found at two nests.

We used time-lapse photography to identify prey items in one GHOW nest near Yellow Grass from 1840h on 6 May to 1920h on 12 May. We took 648 photographs at 15-minute intervals.

Table 2. Prey species of Great-horned Owls.

Species	# of individuals found in nest	% occurrence based on # individual prey (232)	# of nests containing item	% occurrence based on # nests (210)
Birds				
American Wigeon	5	2.2	5	2.4
Mallard	5	2.2	5	2.4
Blue-winged Teal	8	3.4	6	2.9
Northern Shoveller	6	2.6	5	2.4
Green-winged Teal	2	0.9	2	1
Lesser Scaup	2	0.9	2	1
Canvasback	1	0.4	1	0.5
Duck species	6	2.6	6	2.9
Sharp-tailed Grouse	1	0.4	1	0.5
Gray Partridge	12	5.2	10	4.8
Pied-billed Grebe	1	0.4	1	0.5
Horned Grebe	1	0.4	1	0.5
Eared Grebe	3	1.3	2	1
Grebe species	1	0.4	1	0.5
American Bittern	1	0.4	1	0.5
Northern Harrier	1	0.4	1	0.5
American Kestrel	1	0.4	1	0.5
Virginia Rail	1	0.4	1	0.5
Sora	1	0.4	1	0.5
American Coot	34	14.7	29	13.8

Table 2. Continued

Long-billed Curlew	1	0.4	1	0.5
Marbled Godwit	1	0.4	1	0.5
Shorebird species	1	0.4	1	0.5
Franklin's Gull	3	1.3	3	1.4
Gull Species	1	0.4	1	0.5
Rock Pigeon	6	2.6	6	2.9
Burrowing Owl	2	0.9	2	1
Great-horned Owl	1	0.4	1	0.5
Long-eared Owl	3	1.3	3	1.4
Short-eared Owl	3	1.3	3	1.4
Yellow-shafted Flicker	3	1.3	3	1.4
Horned Lark	1	0.4	1	0.5
Black-billed Magpie	1	0.4	1	0.5
American Crow	1	0.4	1	0.5
Yellow-rumped Warbler	1	0.4	1	0.5
Snow Bunting	1	0.4	1	0.5
Red-winged Blackbird	1	0.4	1	0.5
Yellow-headed Blackbird	1	0.4	1	0.5
Blackbird Species	1	0.4	1	0.5
Western Meadowlark	1	0.4	1	0.5
Total	127	54.7		
Mammals				
Long-tailed Weasel	1	0.4	1	0.5

Table 2. Continued

Least Weasel	3	1.3	3	1.4
Muskrat	2	0.9	2	1
Norway Rat	8	3.4	6	2.9
Vole species	5	2.2	3	1.4
Deer Mouse	20	8.6	13	6.2
Northern Grasshopper Mouse	2	0.9	2	1
Richardson's Ground Squirrel	9	3.9	6	1.4
Thirteen-lined Ground Squirrel	1	0.4	1	0.5
Northern Pocket Gopher	25	10.8	14	6.6
White-tailed Jackrabbit	9	3.9	7	3.3
Snowshoe Hare	1	0.4	1	0.5
Eastern Cottontail	8	3.4	7	3.3
Rabbit species	8	3.4	6	2.9
Total	**102**	**44**		
Reptiles				
Garter Snake	1	0.4	1	0.5
Insects				
Giant Water Beetle	2	0.9	2	2
Total	**232**			

Table 3. Incidence of Norway Rats, weasels, and Burrowing Owls in Great-horned Owl nests.				
Year	**Norway Rats**	**Weasels**	**Burrowing Owls**	**Nests Visited**
2000	2 (2.3%)	1 (1.1%)	0	88
2001	0	0	0	43
2002	0	0	0	76
2003	1 (1.0%)	0	0	101
2004	0	0	0	113
2005	3 (2.4%)	1 (0.8%)	0	124
2006	3 (4.5%)	0	0	66
2007	1 (1.8%)	0	0	55
Totals	**10 (1.3%)**	**2 (0.25%)**	**0**	**790**
2008	6 (2.9%)	4 (1.9%)	2 (1.0%)	210

The following prey items were photographed: Jack Rabbit, Deer Mouse, Thirteen-lined Ground Squirrel, vole, blackbird, Richardson's Ground Squirrel, male Blue-winged Teal, and Muskrat.

Norway Rats, weasels, and Burrowing Owls seemed to be represented in greater than usual numbers. Because of this, field data were reviewed for the years 2000 to 2007 (Table 3). It must be noted, however, that yearly sampling effort and surveyed regions vary. Also, in 2008, the data pooled the efforts of three banders, resulting in a much larger sample size and a much broader geographical area than in previous years.

One of the two nests at which Burrowing Owls were found as prey was an artificial platform (a tire on a post) less than 1 mi from an active Burrowing Owl colony. When we "enhance" habitats for one species, we may well be unintentionally negatively affecting others. To our knowledge, there are no previous records of Burrowing Owls having been found as prey items in Saskatchewan GHOW nests. Most notably, C.S. Houston has no record of Burrowing Owls as prey in 2922 GHOW nest visits made between 1960 and 1992 (pers. comm.).

Our data demonstrate impressive variety in the diet of the GHOW in Saskatchewan. The diversity we observed is likely an underestimate of the true diet of these birds, given that our sampling method produces a bias exaggerating the importance of larger prey. Smaller prey such as mice, voles, and Least Weasels* are likely swallowed whole by the owls soon after they arrive at the nest, and would therefore be underrepresented in our analysis. In addition, we only sampled prey items from each nest on one day, and our total effort spans only a small fraction of the year. Thus, we cannot detect seasonal changes in diet. While very interesting and informative, our diet analysis presents a limited perspective on GHOW prey.

Acknowledgements

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*EDITORS' NOTE: A photograph of a Least Weasel found in a GHOW nest was published in *Blue Jay* 66(2):66.