

OBSERVATIONS ON NESTING RED-WINGED AND YELLOW-HEADED BLACKBIRDS AT MYERS WETLANDS, BRITISH COLUMBIA

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In 1997, the authors of *The Birds of British Columbia* series requested data on Red-winged and Yellow-headed Blackbirds for the fourth and final volume in the series (R.W. Campbell, 25 May 1997, *pers. comm.*). In response to this request, the survey reported here was undertaken. The objectives of the survey were (1) to examine blackbird nest construction and location, (2) to determine clutch and brood size and (3) to compare the above breeding data between the two blackbird species in a British Columbia wetland which had not previously been thoroughly surveyed.

Procedure

The study was conducted at Myers Wetlands (49° 01'N, 119° 01'W; 40 km east of Osoyoos in the Okanagan valley), a privately owned area consisting of Myers Marsh and Myers Lake. Permission from the landowner was obtained prior to the study. The entire wetland area is 23.3 hectares and has a shoreline of 5.7 km.¹ Both the marsh and lake are relatively shallow, with the maximum depth of 4.2 m occurring in the center of the lake (B. Harpur, 3 June 1997, *pers. comm.*). The main emergent vegetation, cattail



Figure 1. Cattail patch in Myers Lake, BC

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(*Typha latifolia*), is not evenly distributed, but is present in patches in the shallowest regions of the marsh and lake (Figure 1). Bulrush (*Scirpus* sp.) also is present in a distribution pattern similar to cattail.

The wetland was surveyed completely from 3-4 June 1997, a period deliberately picked during the midpoint of peak blackbird incubation. The entire area was divided into four sections, roughly based on vegetation distribution. The author and five trained observers were assigned to one of the four areas to record the following data: location of nest, vegetation in which nest was built, construction material and contents of nest, and species that built the nest. Canoes were utilized to survey areas in deeper water. Water depth was measured with a meter stick apparatus. Stage of incubation was estimated by flotation of the egg in water. ⁶

Results

Nest Construction and Location

Red-wing nests were compact, rigid cups lined with fine grasses and woven



Figure 2. Red-winged Blackbird nest with two hatching eggs in cattail at Myers Lake, BC R.W.Campbell

around the supporting stems of the vegetation to which they were attached (Figure 2). Nests tended to be built near the marsh shoreline in shallower water. Yellow-head nests also were compact, but had less rigid cups and were constructed mainly of, and were woven into, the surrounding vegetation (Figure 3). No fine grass lining was present. Yellow-head nests usually were built toward the centre of the marsh in deeper water.

There were 67 active Red-wing nests, all but one constructed in cattail, and 178 active Yellow-head nests, all constructed in cattail or bulrush (Table 1), (active nests = nests containing eggs and/or young, or showing signs of predation). Overall, significantly more nests were built in cattail than bulrush.



Figure 3. Yellow-headed Blackbird nest with four eggs in bulrush at Myers Lake, BC R.W. Campbell

Clutch and Brood Size. Data for clutch and brood size are presented in Table 2. The average clutch sizes were 3.6 for Red-wings and 3.4 for Yellow-heads (average clutch size = total number of eggs and young/total number of nests with eggs and young; all young were assumed to have hatched from the eggs of the parent blackbird). The average brood size was 3.5 for Red-wings and

Table 1. Red-winged (RWBL) and Yellow-headed (YHBL) blackbird nest construction and location at Myers Wetlands, British Columbia

Blackbird	Cattail Substrate	Bulrush Substrate	Location	Water Depth
RWBL	66 (98.5%) ¹	1 (1.5%)	near shoreline	0.18-0.30m
YHBL	112 (62.9%) ¹	66 (37.1%)	near center	0.36-0.42m

¹ Number of nests in cattail versus bulrush were significantly different for RWBL (*Chi-square*=63.06, *p*<0.001), YHBL (*Chi-square*=15.39, *p*<0.001), and for both species combined (*Chi-square*=37.71, *p*<0.001)

3.0 for Yellow-heads (average brood size= total number of young/total number of nests with young). The differences in clutch and brood sizes between species or between nests in cattail versus bulrush were not statistically significant. Three and four young were the most frequent brood sizes for Yellow-heads and Red-wings, respectively. One Yellow-head nest with five young was recorded.

Discussion

The observations recorded here represent a single point in time, not complete counts for an entire breeding season. Past literature has indicated that, when both Red-wings and Yellow-heads breed in the same area, Red-wings tend to occupy vegetation in

shallower waters toward shore, while Yellow-heads tend to occupy vegetation over deeper water.^{4,5,7} The results of the current study corroborate these findings. Miller suggested that the more productive territories toward the center of a marsh would have higher survival in terms of more efficient feeding of the young and less extended flights away from the nest.² Moreover, risk of predation decreases with increasing depth of water under the nest. It is possible that Red-wings are able to occupy successfully the shallower water areas because their smaller body size not only requires fewer food items to meet metabolic demands, but may also allow Red-wings to forage more effectively through dense vegetation.³

Table 2. Number of Red-winged (RWBL) and Yellow-headed (YHBL) Blackbird nests with each observed clutch and brood size at Myers Wetlands, British Columbia

Nest Contents	RWBL	YHBL	Nest Contents	RWBL	YHBL
Empty	21 ¹	39	1 young	1	4
1 egg	2	2	2 young	-	17
2 eggs	1	13	3 young	8	36
3 eggs	11	55	4 young	13	22
4 eggs	32	68	5 young	-	1
5 eggs	-	1			

¹ Includes the single nest constructed in bulrush.

At Myers Wetlands, both blackbird species nested more frequently in cattail than bulrush. This is likely due to the fact that cattail was the predominant vegetation. In addition, cattails have a more complex structure than bulrushes. Their sheathing leaf bases provide hiding places for a variety of arthropods. Bulrushes have no sheathing leaf bases, have few insects present superficially on stems, and are flattened more readily by winter snow and rain than are cattails. In conclusion, the observed Red-winged and Yellow-headed Blackbird nest construction and location, as well as clutch and brood size at Myers Wetlands correspond to data reported in previous literature. The fact that a large number of nests were detected in a small area illustrates the importance of wetland habitat and of conservation.

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1. Ducks Unlimited Canada. 1988. Myers Wetlands, British Columbia. Unpublished Report. Ducks Unlimited Canada, Kamloops, BC.

2. Miller, R.S. 1968. Conditions of competition between Redwings and Yellow-headed Blackbirds. *J. Anim. Ecol.* 37: 43-61.

3. Orions, G.H. 1985. Blackbirds of the Americas. University of Washington Press, Seattle.

4. Searcy, W.A. and K. Yasukawa. 1995. Polygyny and sexual selection in Red-winged Blackbirds. Princeton University Press, Princeton.

5. Twedt, D.J. and R.D. Crawford. 1995. Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*). In: A. Poole and F. Gill, Eds. The Birds of North America, No. 192. The Academy of Natural Sciences, Philadelphia, and the American Ornithologists Union, Washington, D.C.

6. Westerskov, K. 1950. Methods for determining the age of game bird eggs. *Journal of Wildlife Management* 14(1): 56-67.

7. Yasukawa, K. and W.A. Searcy. 1995. Red-winged Blackbird (*Agelaius phoeniceus*). In: A. Poole and F. Gill, Eds., The Birds of North America, No. 184. The Academy of Natural Sciences, Philadelphia, and the American Ornithologists Union, Washington, D.C.



“Viewed up close, the sloth appears as an ecosystem unto itself, softly vibrating with hundreds of ectoparasites. The sloth’s mottled appearance is due in part to blue-green algae that live symbiotically within its hollow hairs. A dozen varieties of arthropods burrow beneath its fur; a single sloth weighing a mere 4.5 kilograms may be home to more than a thousand beetles.”

Wade Davis, *The Clouded Leopard* p.124