

The Taxonomy of the Subarctic Great Horned Owl (*Bubo virginianus subarcticus*) Nesting in the United States

ABSTRACT.—Oberholser's resurrection of *Bubo virginianus occidentalis* Stone (considered by Stone himself as a synonym of *B. v. subarcticus*) has confused the understanding of the distribution of midcontinental populations of the great horned owl. With the clarification of the taxonomy, *B. v. subarcticus* proved to be the nesting populations in the prairie-parklands of Wyoming, Montana and North Dakota. Introgression with adjacent subspecies occurs at least in western Montana and in South Dakota.

INTRODUCTION

There has been considerable confusion on the taxonomy of great horned owls (*Bubo virginianus*) of the northern Great Plains (AOU, 1957; Godfrey, 1966, 1986). Oberholser (1904), apparently not being able to accommodate the variation among specimens from the northern prairie region and the adjacent Rockies, resurrected the name *Bubo virginianus occidentalis* (Stone, 1897; Dickerman, 1991). Oberholser used *occidentalis* for specimens from "Western United States, from Minnesota and Kansas to Nevada, southeastern Oregon, Utah and Montana; south to Arizona, south in winter to Iowa" (p. 191). Included were birds with characters that apparently did not fit his concepts of his other races. Thus, he considered only the subspecies *wapacuthu* (= *subarcticus*) and *occidentalis* to be migratory. Karalus and Eckert (1974), Johnsgard (1988) and McGillivray (1989) mapped the range assigned to *occidentalis* by Oberholser (1904) and the American Ornithologists' Union (1957). However, Godfrey (1966, 1986) recognized confusion among the races when he wrote, "... birds from the southern parts of the Prairie Provinces are referred to *occidentalis* in the A.O.U. Check-list (Fifth Edition) but our large series from the southern parts of the Canadian prairies is not separable from *subarcticus* from farther north" (p310).

Oberholser (1904) characterized *wapacuthu* (= *subarcticus*, see Browning and Banks 1990) as, "... upper parts with lighter ochraceous, less black, and more white, the lower surface more white, less heavily barred, the feet with less mottling and less ochraceous—usually immaculate." But he was contrasting it with his own concept of *occidentalis*. Among specimens considered to be *subarcticus*, there is much variation in the extent of the black markings, both dorsally and ventrally, and in the extent of sandy-brown in the underfeathers (I would not use ochraceous in reference to any of these specimens, as did Oberholser, 1904). They are often more distinctly barred with black and they lack the sandy-brown coloration characteristic of *pallescens*. The two forms (*subarcticus* and *pallescens*) likely intergrade south of the localities of the specimens listed below.

Oberholser (1904) identified more specimens as *occidentalis* than any other subspecies except *virginianus* (19 vs. ≥ 26). Specimens in the National Museum of Natural History (USNM) identified and initialed as *occidentalis* by Oberholser include 5589 (Montana, Fort Custer 26 August 1856 = *subarcticus*) 242152 (Oregon, Haycreek = *lagophonus*. He invoked a dark "phase," but there are no color phases (or morphs) in the species), 110958 (Colorado = *pallescens*), 204819 Arizona, (Winslow 21 July 1909 = *pallescens*), 141221 (Minnesota, Elk River 19 November 1891 = *virginianus* \times a pale form, presumably *subarcticus*).

REEVALUATION

With the recognition that *occidentalis* is a junior synonym of *subarcticus* (Stone, 1897; Dickerman 1991), I have begun a reevaluation of the nesting populations within its presumed range (Dickerman, 1993), and herein. Because of the extent of migration in the great horned owl, only early nesting season adults and recently fledged young are of value in taxonomic studies. Oberholser (1919) published on a specimen from Robinson [Kidder Co.] North Dakota, taken 7 March 1918; that was undoubtedly a territorial, if not a nesting bird. Nesting is documented by the following specimens, all from locations in the northern prairies (see Acknowledgments for museum acronyms):

Montana: USNM 5589 Fort Custer, 26 August 1856 [Bighorn Co.]; 104885 Fort Custer, 11 March 1885 ("largest egg size pigeons"); 258097 Powder River, 21 June 1916 [runs through several counties]; 271946 Lisma, 20 June 1919 [= a ferry crossing on the north side of Missouri River = Valley Co.];

270602 Leedy, 12 July 1919 [Phillips Co.]; UIDA 319 Meager Co., "head of Deep Creek," 8 June 1939; CRCM 75-287 Miles City, 15 mile. west, 19 March 1950 [=about at border Custer and Rosebud cos., Miles City = Custer Co.]; UMZM 13813 Billings, 25 mile. east, 31 March 1969 [Bighorn Co.?]; 17618 Near Glasgow, Fort Peck Reservoir, 1 February 1986 [Valley or McCone cos.?]; ANSP 187569 Roundup, [Musselshell Co.], 1 March 1995

Wyoming: AMNH 360498 Douglas, "5 1 91" [=1 May 1891] [Converse Co.].

North Dakota: KU 88562 Lostwood National Wildlife Refuge, Burke Co., 26 June 1995

Specimens from intermontane regions of western Montana are variably intermediate between *subarcticus* and *lagophonus*, being essentially black and white, but too heavily barred for *subarcticus* and too lightly marked for *lagophonus*. Two such specimens are UMZM 16311 Granite Co., 24 February 1978 and 17656 Powell Co., 3 February 1993. Both of these birds may be local migrants although the former had ovules to 5 mm in diameter.

Bubo virginianus virginianus is spreading west into the range of *subarcticus*. They became regular nesting birds in the late 1950s (Murphy, 1903) on the Lostwood National Wildlife Refuge where woody vegetation has proliferated since the refuge was established in 1935. Two specimens (KU 87226, Ward Co., Kenmore 20 June 1995 and 88563, Burke Co, Lostwood National Wildlife Refuge, 3 April 1996) are intermediate between *virginianus* and *subarcticus*.

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