WING-TAIL MEASUREMENTS OF *BUBO VIRGINIANUS* FROM TEXAS

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ABSTRACT—Statistical analysis of a series of measurements from great horned owls (*Bubo virginianus*) revealed no difference in wing chord and tail length among three groups studied (*B. v. pallescens*, *B. v. virginianus*, or intermediate) in Texas.

RESUMEN—Análisis estadístico de una serie de mediciones del búho cornudo (*Bubo virginianus*) no mostró ningunas diferencias con respecto a la longitud de la cuerda alar ni de la cola entre tres grupos estudiados en Texas (*B. v. pallescens*, *B. v. virginianus* o intermedios).

Recently, results of a study were published on unusual tail measurements of the great horned owl (*Bubo virginianus*) in Texas (Brooks and Arnold, 2005). The authors reviewed the literature on reverse sexual dimorphism in size and presented data on sexual dimorphism in great horned owls. They stated that they measured only adults, but did not define what criteria they used to determine adulthood. The problem of defining adults is especially interesting, and to our knowledge, no one has presented measurement data on first-year birds versus birds in their second or later years.

Dickerman (2004) studied the distribution of *B. v. pallescens* and *B. v. virginianus* in Texas based on 157 specimens, including most of those used by Brooks and Arnold (2005) in the collection of the Texas Cooperative Wildlife

TABLE 1—Measurements (mm) of *Bubo virginianus virginianus* from eastern Texas, *B. v. pallescens* from western Texas, and intermediate individuals.

	Males			Females		
Measurement/taxon	*n*	Range	Mean (*SD*)	*n*	Range	Mean (*SD*)
Wing chord						
B. v. pallescens						
Texas[a]	30	322–360	338.5 (8.6)	24	348–372	360.9 (6.35)
Texas[b]	10	320–365	339.2 (na)	4	347–378	363.2 (na)
B. v. virginianus						
Texas[a]	10	334–352	343.3 (7.0)	23	350–381	362.9 (8.8)
Texas[b]	6	336–366	349.6 (na)	8	353–378	365.8 (na)
Intergrades						
Texas[a]	32	318–353	341.0 (8.4)	34	372–348	360.9 (6.4)
Texas[b]	12	320–365	339.6 (na)	6	347–383	365.3 (na)
Tail						
B. v. pallescens						
Texas[a]	29	176–213	195.3 (7.5)	25	191–220	204.0 (7.6)
Texas[b]	10	182–237	206.0 (na)	4	182–214	202.5 (na)
B. v. virginianus						
Texas[a]	9	184–203	194.6 (7.7)	23	198–217	209.0 (5.6)
Texas[b]	6	178–230	206.2 (na)	8	193–225	209.0 (na)
Intermediates						
Texas[a]	31	183–207	195.8 (5.9)	23	192–220	206.3 (7.3)
Texas[b]	12	187–241	209.4 (na)	7	197–232	213.5 (na)

[a] Measurements made during study by Dickerman (2004), but not reported.
[b] Measurements from Brooks and Arnold (2005).

Collection at Texas A&M University. Incidental to that plumage study, wing chord and tail length were recorded on all specimens (Table 1). Among this larger series, there was no significant difference in the wing chord and tail length mean vectors of the three groups; *B. v. pallescens*, *B. v. virginianus*, or intermediate individuals (MANOVA, males: Wilks' Lambda = 0.948, $F = 0.87$, $df = 4, 130$, $P = 0.482$; females: Wilks' Lambda = 0.88, $F = 2.06$, $df = 4, 134$, $P = 0.089$). This indicates that these measurements are not useful for determining subspecies limits of the great horned owl in Texas.

There were specimens in every collection studied that either were not sexed or were misidentified as to sex. However, there were few specimens that could not be definitively sexed based on measurements, so few specimens had to be eliminated from analysis. The sexes of these specimens were based on measurements taken by RWD. In each of the three groups, males were smaller than females (Table 1). Also, minimum wing chord and tail measurements presented by Brooks and Arnold (2005) for 6 of the 12 measurement groups (Table 1), were smaller than the minimum measurements RWD obtained when he measured all birds in basic plumage, suggesting that they did not measure only birds >1 year of age (i.e., adults).

LITERATURE CITED

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