LITERATURE CITED

Clench, M.H. 1976. Possible pitfalls in museum specimen data. *N. Am. Bird Bander* 1: 20-21.

Parkes, K.C. 1989. Sex ratios based on museum collections–a caution. *Colonial Waterbirds* 12:130-131.

Pyle, P. 1997. Identification guide to North American birds. Part I. Slate Creek Press, Bolinas, CA.

Rea, A.M. 1969. Species, age, and sex determination in the genus *Tyrannus*. *W. Bird Bander* 44:32-35.

News, Notes, Comments

Spotted Towhee Band Size Revisited

The suggested band sizes for Spotted Towhees (*Pipilo maculatus*) are 1A-2 (Pyle 1997). It has been my impression that most banders, including myself, have found that the first recommended band size, 1A, is sometimes too small and band size 2 is a better fit. Thus, at all of my banding stations banders are required to use a leg gauge to determine the appropriate band size to use on Spotted Towhees.

Colwell (2002, 2003) suggested that Spotted Towhees could be assigned a band size based on sex and wing length. Band size 1A tends to fit females and birds with shorter wing length, while band size 2 tends to fit males and birds with longer wing length. The recommendation was that the band size for Spotted Towhees be stated as it is for Eastern Towhees: male : 2 - 1A; female : 1A - 2 (Pyle 1997). My initial impression was that this recommendation did not seem to fit with the Spotted Towhees that I captured in southern California. Thus, I decided to test this hypothesis. I also wanted to test and see if sex or wing length might be a useful predictor of band size as Colwell (2002) data showed.

I used birds captured from 2001 to 2006 at Zuma Canyon for this analysis. The Santa Monica Mountains is an east-west range located just north of greater Los Angeles in southern California. Zuma Canyon is one of numerous north-south canyons that drain south into the Pacific Ocean. This year-round constant-effort banding station is located in the parking lot of the trail head into Zuma Canyon in the Santa Monica Mountains National Recreation Area (NRA) at the end of Bonsall Avenue. The site (34°02'55" N, 118°48'44" W) is located about 1.5 km north of the mouth of Zuma Canyon, which is located at Zuma Beach. Surface water in the canyon in the vicinity of the nets is present only after heavy or persistent rains. The canyon is dry through most of the year.

All of my banders follow the same protocol described in Colwell (2002) and determine the proper band size for this species using an AVINET leg gauge. Based on geographical location, all birds are presumed to be of the subspecies *P. m. megalonyx*. (Pyle 1997).

I eliminated all birds for which there was missing information (sex or wing length) or the sex was listed as "unknown." Recaptured birds were not used in this analysis. The remaining 183 birds were used in this analysis (see Table 1).

Table 1. Number of Spotted Towhees banded using sizes 1A and 2 from 2001 to 2006 in Zuma Canyon.

Year	No. of Birds Using Band Size 1A	No. of Birds Using Band Size 2
2001	21	6
2002	20	37
2003	2	27
2004	9	18
2005	5	20
2006	6	16
Totals	**63 birds**	**120 birds**

I began by conducting a comparative re-analysis of Colwell's (2002, 2003) data (left side of Tables 2 and 3). There is almost a 4 mm difference in wing length between birds using 1A and 2 bands. A t-

test showed that there is a statistical significant difference in the wing chord measurement between birds using 1A and 2 bands in Colwell's birds (Table 2); however, this was not the case for birds I banded (right side of Tables 2 and 3).

According to Colwell (2002), one of the predictors of which band size to use was the sex of the bird. In general terms, females tended to take the smaller 1A bands and males tended to take the larger 2 bands. Colwell (2002) found that (13 females + 21 males) 34/39 (87.2%) birds followed this prediction. My results did not show as accurate a prediction, as I found that only 30/63 birds using 1A bands were females, and 75/120 birds using 2 bands were male, or 105 (30 females + 75 males) out of 183 birds (57.4%) birds followed the prediction (Table 2).

females (left side of Table 3), so I looked at this same variable in my birds. The mean wing length difference between sexes in Colwell's birds was 3.8 mm, while it was 2.6 mm difference in my birds. There were significant differences between the two sexes for the two sets of birds.

There are a number of explanations for these contradictory findings. We are looking at two different subspecies. Although both groups of birds are in the Coastal Group *(Pipilo maculatus oregonus)*, Colwell's birds are presumed to be in the subspecies *P. m. falcifer* (Colwell 2002), while my birds belong to *P.m. megalonyx* (Pyle 1997). The latter is described as slightly larger than the former (Pyle 1997, Greenlaw 1996).

Table 2. A Comparison of Sex Ratio and Wing Length of Spotted TowheesSeparated by Band Size for Colwell and Sakai Birds.

Colwell (2002, 2003)			Sakai	
1A Bands	**2 Bands**	**Band Size**	**1A Bands**	**2 Bands**
13/1	4/21	female/male ratio	30/33	45/75
77.1 mm	81.1 mm	Mean Wing (mm)	81.5 mm	82.2 mm
+/- 2.00 mm	+/- 3.10 mm	Standard Deviation	+/- 2.89 mm	+/- 3.55 mm
75-81 mm	78-86 mm	Range	74-88 mm	71-90 mm
p = 4.36E-07		p-value of t-test	p <0.001	

The second characteristic Colwell (2002) proposed to predict Spotted Towhee band size was wing length. Table 2 compares the wing length of birds based on band size for Colwell and my birds. There is a statistically significant difference in the wing length of 1A and 2 banded birds for Colwell (p = 4.36E-07), while it is not so in my birds (p<0.001).

Colwell (2002, 2003) showed a very pronounced difference in mean wing length between males and

Another possibility is that Colwell (2002, 2003) is basing her findings on a smaller sample size and from a single year. There seems to be some yearly effect. Table 1 shows that at the Zuma Canyon banding station, most Spotted Towhees in 2001 used the smaller 1A bands and then there was a shift to the larger 2 band size in the years that followed.

Although wing chord between sexes was found to

Table 3. A Comparison of Sex and Wing Length of Spotted Towhees for Colwell and Sakai Birds.

Colwell (2002, 2003)			Sakai	
Female	**Male**	**Sex**	**Female**	**Male**
17	22	Sample Size	75	108
77.5 mm	81.3 mm	Mean Wing (mm)	80.5 mm	83.1 mm
+/- 2.0 mm	+/- 1.9 mm	Standard Deviation	+/- 3.0 mm	+/- 3.2 mm
75-82	78-84 mm	Range	71-90 mm	74-89 mm
p = 5.32E-07		p-value for t-test	6.44E-08	

be significantly different, it is probably unwise to rely on this measurement to select band size as the overlap is quite high [overall female wing 72-87 mm vs male wing 75-94 mm; *P. m. falcifer* female wing 73-85 mm vs male wing 77-90 mm; *P.m. megalonyx* female wing 74-87 mm vs male wing 78-90 mm] (Pyle 1997).

ACKNOWLEDGMENT

I thank the staff of the Santa Monica Mountains National Recreation Area for allowing access to Zuma Canyon and the multitude of banders who helped out at this station. Thanks, also, to R. Colwell for reading an earlier version of this note.

LITERATURE CITED

Colwell, R.R. 2002. Recommended band size for Spotted Towhees: A suggested revision. *N. Am. Bird Bander* 27:127-129.

Colwell, R.R. 2003. Recommended band size for Spotted Towhee: A suggested revision by Rita R. Colwell (erratum). *N. Am. Bird Bander* 28:120.

Greenlaw, J.S. 1996. Spotted Towhee (*Pipilo maculatus*). *In* The birds of North America, No. 263 (A. Polle and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, DC.

Pyle, P. 1997. Identification guide to North American Birds. Slate Creek Press, Bolinas, CA.

Walter H. Sakai
Santa Monica College
1900 Pico Blvd
Santa Monica, CA 90405
sakai_walter@smc.edu

Recent Literature

BANDING HISTORY AND BIOGRAPHIES

Remembering Marshall Field. W. Wake. 2008. *Cardinal* 210:8. c/o McIlwraith Field Naturalists of London, Ontario, Box 24008, London, ON N6H 5C4 (brief biography of St. Thomas, ON bander of 60 years, prominently involved in the Hawk Cliff Banding Station, Long Point Bird Observatory and Ontario Bird Banding Association.) MKM

EQUIPMENT AND TECHNIQUES

Evaluation of radio transmitters for measuring chick mortality in the Banded Dotterel. R. Keedwell. 2001. *Waterbirds* 24:217-223. Ecol. Group, Inst. Nat. Resources, Massey Univ., Private Bag 11-222, Palmerston North, New Zealand (Elastic harnesses were used to attach transmitters to 49 chicks in New Zealand. As entanglement in the harnesses killed three chicks, 26 chicks died of unknown causes, the predator identity was uncertain for the minimum of 18% that were predated, and 12 transmitters disappeared, this technique yielded too little information to be suitable for this type of study. The transmitters did not appear to affect growth rates of the six chicks known to have fledged.) MKM

Vulture watching! Turkey Vulture studies in Alberta, Saskatchewan, and Venezuela. [R.] W. Nelson. 2007. *Nature Alberta* 37(2):12-13. 4218-63 St., Camrose, AB T4V 2W2 (Brief description of wing-tagging projects of Nelson and associates in Alberta, C. Stuart Houston and associates in Saskatchewan and Keith L. Bildstein in Venezuela, with request for reports of sightings of wing-tagged birds.) MKM

IDENTIFICATION, MOLTS, PLUMAGES, WEIGHTS AND MEASUREMENTS

Reduction in body mass and basal metabolic rate in breeding female Black-legged Kittiwakes *Rissa tridactyla:* an adaptation to reduce maintenance costs? I. Langseth, B. Moe and C. Bech. 2001. *Atlantic Seabirds* 3:165-178. Dept. Zool., Norwegian Univ. of Sci. & Technol., NO-7491 Tronheim, Norway (Body mass and basal metabolic rate of 40 nesting females measured two weeks before hatching, at hatching , early in the chick-rearing period and late in the chick-rearing were found to remain relatively stable during hatching. Body mass declined about 12% from hatching to late chick-rearing, while basal metabolic rate declined about 26%. Neither