Western Specialty: Black-chinned Hummingbird

Female Black-chinned Hummingbird (*Archilochus alexandri*) on its nest, Southwest Research Station, Chiricahua Mountains, Cochise County, Arizona. Note the situation of the nest on a down-sloping twig with a thicker branch above it. In this issue of *Western Birds*, Harold F. Greeney, Chris E. Hamilton, Evelyng K. Astudillo-Sánchez, Susan M. Wethingon, Eric R. Hough, Christina Ripplinger, and Krista K. Schmidt (pp. 326–330) summarize the placement of 412 Black-chinned Hummingbird nests in the Chiricahua Mountains of Arizona, finding that 65% were built in such situations. They suggest that this arrangement helps not only shelter the nest but to screen it from predators that may be crawling along the thicker branch above.
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Front cover photo by © Larry Siemens of Redding, California: nestlings of Townsend’s Solitaire (Myadestes townsendi) at Leoni Meadows, El Dorado Co., California, 2 July 2015—nestlings fed by an American Robin (Turdus migratorius) as well as their own parents.


Western Birds solicits papers that are both useful to and understandable by amateur field ornithologists and also contribute significantly to scientific literature. Particularly desired are reports of studies done in or bearing on North America west of the 100th meridian, including Alaska and Hawaii, northwestern Mexico, and the northeastern Pacific Ocean.

Send manuscripts to Daniel D. Gibson, P. O. Box 155, Ester, AK 99725; avesalaska@gmail.com. For matters of style consult the Suggestions to Contributors to Western Birds (at www.westernfieldornithologists.org/docs/journal_guidelines.doc).
COMPARISON OF VOCALIZATIONS OF FOUR U.S. SUBSPECIES OF THE WHITE-BREASTED NUTHATCH

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ABSTRACT: There are distinct regional differences among the vocalizations of the White-breasted Nuthatch (Sitta carolinensis), but only one subspecies (S. c. carolinensis) has been the subject of published vocal analyses. We used recordings made throughout the ranges of four U.S. subspecies to compare their vocalizations qualitatively and quantitatively, finding that these vocalizations may be categorized in three groups, eastern (S. c. carolinensis), interior west (S. c. nelsoni and S. c. tenuissima), and Pacific (S. c. aculeata). All four subspecies sing a simple song consisting of an evenly spaced series of overslurred notes. The rate of this song varies from <5 notes/sec to >12 notes/sec. The pitch of these songs increases from east to west, being lowest in S. c. carolinensis and highest in S. c. aculeata. Sitta c. aculeata also has an additional song unique to that taxon consisting of a series of sharply slurred, evenly spaced notes that fall, then rise, and then fall in pitch. Both S. c. carolinensis and S. c. aculeata frequently give a simple call note that is very distinctly and rapidly modulated; it is significantly higher in pitch in S. c. aculeata than in S. c. carolinensis. Neither interior subspecies makes a similar call. Both interior subspecies commonly give two calls absent from the repertoires of S. c. carolinensis and S. c. aculeata, one consisting of tightly paired notes given at a constant pace, the other a very rapid, unevenly spaced series of single notes given in short bursts. We found no diagnostic differences between the two interior subspecies in either song or calls.

Although as many as six subspecies of the White-breasted Nuthatch (Sitta carolinensis) have been described within the United States, only four of them occupy substantial geographic ranges: roughly, S. c. carolinensis in the East and the Great Plains, S. c. nelsoni in the central and southern Rocky Mountains and eastern Great Basin, S. c. tenuissima in the high and eastern Sierra Nevada, eastern Cascades, and western Great Basin, and S. c. aculeata west of the Sierra Nevada and the Cascades (Hawbecker 1948, Spellman and Klicka 2007, Grubb and Pravosudov 2008). Phillips (1986)
recognized also S. c. cookei in northeastern North America (synonymized with S. c. carolinensis by Wood 1992) and S. c. oberholseri found in the Chisos Mountains of western Texas. Four or five additional subspecies occur in Mexico.

Except for the pale back of S. c. carolinensis, plumage and structural differences among the subspecies are subtle, with significant overlap in most variables (Pyle 1997, Mlodinow 2014), making consistent visual field identification difficult. Genetic analyses suggest that each of the four widespread subspecies represents a distinct clade, and that the White-breasted Nuthatch may comprise three or four biological species (Spellman and Klicka 2007, Walstrom et al. 2011).

It is well-known that the vocalizations of White-breasted Nuthatches differ regionally (Dunn and Blom 1987, J. L. Dunn in Gaines 1988, Sibley 2000, 2014, Mlodinow 2014), falling into three regional groups: an eastern group corresponding to S. c. carolinensis, an interior west group corresponding to S. c. nelsoni and S. c. tenuissima, and a Pacific group corresponding to S. c. aculeata. However, the only detailed published analysis of White-breasted Nuthatch vocalizations (Richison 1983) was restricted to one site in Minnesota and therefore included only the eastern subspecies (S. c. carolinensis). Most other publications that have addressed the vocalizations of this species have likewise been restricted to the eastern subspecies (Tyler 1916, Kilham 1972, 1981, Harrap and Quinn 1996, Elliot 2005). Thus the vocalizations of the other White-breasted Nuthatch subspecies have not been analyzed in detail.

Differences in vocalizations can both represent and reinforce barriers to gene flow, serving as a mechanism for assortative mating and thus promoting speciation (Newton 2003). Therefore, an analysis of the White-breasted Nuthatch’s vocalizations may help clarify its taxonomy. We analyzed recordings from throughout the ranges of these four subspecies and compared vocalizations both qualitatively and quantitatively to better understand the variation in their vocalizations, to determine which, if any, vocalizations can be used

![Figure 1](image_url)
to identify these taxa in the field, and to compare variation in vocalizations to previously described morphologic and genetic variation among these taxa.

METHODS

Figure 1 shows the locations of all recordings used in our analyses. These recordings included those available from the archives of the Cornell Laboratory of Ornithology’s Macaulay Library (macaulaylibrary.org/), recordings available at www.xeno-canto.org/, our own recordings, and recordings obtained from other recordists (all recordists noted in the Acknowledgments). We selected recordings from locations within the range of each subspecies consistent with published morphometric data, avoiding locations where the ranges of subspecies may be in contact.

We selected recordings of quality sufficient for quantitative analysis. For each recording, we measured four variables: note duration, note rate (number of notes per second), number of notes in a continuous series of notes, and difference in frequency between successive partials (pitch). The partials are the multiple tones that make up a single nasal sound; on the spectrogram, they appear as individual traces arranged in a vertical stack. We used frequency difference between partials rather than fundamental frequency as a proxy for pitch because the purported fundamental frequencies in White-breasted Nuthatch vocalizations are frequently faint or absent. In complex sounds consisting of a stack of partials in harmonic series, the frequency difference between partials is equal to the frequency of the fundamental, and the human ear hears the pitch of the fundamental even if one or more of the lowest partials, including the fundamental, are filtered out (Fastl and Zwicker 2007). Thus a listener hears these sounds at the frequency of the difference between the partials, not at the frequency of the strongest partial on the spectrogram.

It is possible that White-breasted Nuthatch vocalizations are not harmonic series (i.e., that the difference in frequency between partials is not equal to the frequency of the fundamental). At least in the similarly structured sounds of the Black-capped Chickadee (Poecile atricapillus), the stack of partials on the spectrogram can actually represent a set of heterodyne frequencies (frequencies produced by the combination of two different frequencies) generated by the acoustic coupling of the two sides of the syrinx, rather than a harmonic series with a true fundamental frequency (Nowicki and Capranica 1986). In sounds of this type, the pitch the human ear perceives does not always match the frequency difference between partials (Fastl and Zwicker 2007), but the discrepancy is likely to be small in most cases.

For all measurements we used the selection boxes in Raven Pro (www.birds.cornell.edu/brp/raven/RavenOverview.html) applied to spectrograms of the vocalizations. For the time variables (duration of notes and rate of delivery), we averaged measurements from at least four consecutive series of calls or songs for each individual. We defined frequency as the difference between the loudest partial (darkest on the spectrogram) and the partial just above it at the temporal midpoint of the note. For this variable, we averaged at least ten different measurements from at least five consecutive songs or calls for each individual.
To assess the significance of differences between measures of vocalizations in comparisons of more than two subspecies, we used Mann–Whitney U-tests and applied Bonferroni adjustments (Dytham 2003).

Terminology

A bewildering variety of names has been used to describe White-breasted Nuthatch vocalizations. For example, the single nasal call of S. c. carolinensis has been variously described as a quank (Tyler 1916, Richison 1983), kun or kaan (Kilham 1981), yank (Dunn et al. 1983, Elliot 2005, Sibley 2014), and yenk or renk (Sibley 2000). The corresponding single call of S. c. aculeata has been described as wheer (Dunn and Alderfer 2011) or as eeern or beeerf (Sibley 2000) Also, the common contact calls often given by foraging pairs (a vocalization not analyzed here) have been termed hits (Tyler 1916, Richison 1983), tucks (Richison 1983), and inks (Elliot 2005, Sibley 2014). For the purposes of this analysis, we use the terms below for each of the vocalizations studied:

Overslur. We use this term to describe a sound that rises and then falls in pitch (Pieplow 2007).

Quanks. We use this general term for the notes in each of the calls analyzed as it suggests the very nasal quality of all these notes.

Modulated quanks. These comprise the single overslurred notes given by S. c. carolinensis and aculeata, both of which show a distinct pattern of frequency modulation within the note.

Disyllabic quanks. These comprise the tightly paired notes given by S. c. nelsoni and tenuissima, yidi yidi yidi in Sibley (2000, 2014), yida in Dunn and Alderfer (2011). These paired notes may be given singly or in a continuous, evenly paced series.

Rapid quanks. We use this term for the very rapid bursts of notes given by S. c. nelsoni and tenuissima (yidididid in Sibley 2014).

Simple song. By this we mean the evenly paced series of overslurred notes, all on one pitch, given by all four taxa.

Tooey song. This refers to the evenly spaced series of notes given by S. c. aculeata, each note of which drops, then rises, then falls again in pitch (tuey tuey tuey in Sibley 2014).

RESULTS

Each of the four subspecies of White-breasted Nuthatch we analyzed gives a simple song consisting of an evenly spaced series of overslurred notes, all on the same pitch (Figure 2). S. c. aculeata also gives a tooey song consisting of an evenly spaced series of distinctly slurred notes, with each note first falling, then rising, and then falling again in pitch (Figure 3). It sings this tooey song much more often than it does the simple version. On the basis of over 100 observations in California and Oregon, we heard the tooey song approximately ten times as often as the simple song (simple song heard in 10 of 109 song observations).

The rate at which the notes of the simple song are delivered varies from less than 5/sec to over 12/sec, and in none of the subspecies we compared did we find a distinct division between slow and fast versions (Figure 4). There
were no significant differences in song rate (number of notes per second) or in the number of notes in a song among these taxa (Table 1). We noted that, within a given bout of singing, the rate remained remarkably constant from song to song. On average, the variation in rate of note delivery between
the fastest and slowest rate within a set of successive simple songs from an individual was less than 0.2 notes/sec (0.16, 0.19, 0.17, and 0.15 notes/sec for S. c. carolinensis, nelsoni, tenuissima, and aculeata, respectively).

The pitch of the simple song increased from east to west with the songs of S. c. carolinensis being the lowest and those of S. c. aculeata the highest (Figure 5; Table 1). The songs of S. c. carolinensis differed significantly in pitch from those of the other three taxa. The songs of S. c. nelsoni and tenuissima were not significantly different in pitch, nor were the songs of S. c. tenuissima and aculeata. The observed range of frequencies for each subspecies pair overlapped except for S. c. carolinensis vs. S. c. aculeata.

S. c. carolinensis and aculeata both give an overslurred, rapidly modulated quank note (Figure 6) that may be delivered singly, in pairs, or in short series. We found no analogous note in any recording of the other subspecies. This note averaged higher in pitch (Figure 7) in S. c. aculeata than in S. c. carolinensis. The difference in pitch for this note was highly significant \((P < 0.0001)\), with no overlap in range (487–588 Hz for carolinensis vs. 863–1036 Hz for aculeata).

Both of the interior subspecies (S. c. nelsoni and tenuissima) give two types of calls that we did not observe in any recording of the other two subspecies. Disyllabic quanks consist of tightly paired notes (Figure 8), the note

### Table 1
Comparison of Pitch, Song Rate, and Number of Notes of the Simple Song of Four Subspecies of the White-breasted Nuthatch

<table>
<thead>
<tr>
<th></th>
<th>carolinensis</th>
<th>nelsoni</th>
<th>tenuissima</th>
<th>aculeata&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n)</td>
<td>24</td>
<td>24</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Mean pitch&lt;sup&gt;b&lt;/sup&gt;</td>
<td>673 ± 97</td>
<td>788 ± 126</td>
<td>892 ± 147</td>
<td>1039 ± 128</td>
</tr>
<tr>
<td>Range</td>
<td>504–904</td>
<td>604–1136</td>
<td>758–1200</td>
<td>917–1266</td>
</tr>
<tr>
<td>Mean rate&lt;sup&gt;c&lt;/sup&gt;</td>
<td>8 ± 2</td>
<td>8 ± 2</td>
<td>7 ± 2</td>
<td>6 ± 2</td>
</tr>
<tr>
<td>Range</td>
<td>5–11</td>
<td>5–12</td>
<td>4–10</td>
<td>4–10</td>
</tr>
<tr>
<td>Mean notes&lt;sup&gt;d&lt;/sup&gt;</td>
<td>12 ± 4</td>
<td>10 ± 3</td>
<td>10 ± 4</td>
<td>9 ± 4</td>
</tr>
<tr>
<td>Range</td>
<td>7–22</td>
<td>6–17</td>
<td>5–20</td>
<td>4–16</td>
</tr>
</tbody>
</table>

<sup>a</sup>Simple song only; does not include tooey songs.
<sup>b</sup>Hertz, plus or minus standard deviation.
<sup>c</sup>Notes per second, plus or minus standard deviation.
<sup>d</sup>Number of notes per song, plus or minus standard deviation.
Figure 4. Distribution of song rates (notes/second) for the simple songs of *Sitta c. carolinensis*, *nelsoni*, *tenuissima*, and *aculeata*.

Pairs usually given in an evenly spaced series. However, disyllabic *quank* note pairs may also be given singly or in groups of two. These tightly paired notes produce a “rough edge” to the vocalization that can be easily distinguished by the human ear in the field. Rapid *quanks* are given in short, uneven, and very rapid bursts of notes (Figure 9). Between *nelsoni* and *tenuissima*, the rate of delivery of the notes in these calls did not differ significantly (Table 2). However, the pitches showed significant differences, with the calls of *S. c. carolinensis*...
VOCALIZATIONS OF FOUR SUBSPECIES OF WHITE-BREASTED NUTHATCH

Figure 6. Spectrograms of modulated quank calls of S. c. carolinensis (recorded 20 September 2009 in Manistee County, Michigan, by N. Pieplow; recording not used in the analysis) and S. c. aculeata (recorded 18 December 2014 in eastern Placer County, California, by E. Pandolfino). Examples of these calls can be heard at www.westernfieldornithologists.org/W-B_Nuthatch/.

nelsoni lower in pitch than those of S. c. tenuissima (Table 2). However, the difference in pitch is probably too small to be reliably distinguished by ear in the field by most observers, and the observed ranges of pitch of both disyllabic quanks and rapid quanks overlapped considerably (Table 2).

Figure 7. Comparison of the pitch (difference between partials) of modulated quank calls of S. c. carolinensis and S. c. aculeata. Error bars represent standard deviation.
VOCALIZATIONS OF FOUR SUBSPECIES OF WHITE-BREASTED NUTHATCH

Figure 8. Spectrograms of disyllabic quank calls of *S. c. nelsoni* (recorded 3 September 2008 in Mesa County, Colorado, by N. Pieplow) and *S. c. tenuissima* (recorded 22 January 2015 at Juanita Lake, Siskiyou County, California, by E. Pandolfino). Examples of these calls can be heard at www.westernfieldornithologists.org/W-B_Nuthatch/.

Figure 9. Spectrograms of rapid quank calls of *S. c. nelsoni* (recorded 9 March 2008 at Mesa Lakes Lodge, Mesa County, Colorado, by N. Pieplow) and *S. c. tenuissima* (recorded 19 April 2015 in Union County, Oregon, by E. Pandolfino). Note call of Clark’s Nutcracker (*Nucifraga columbiana*) just after rapid quank in recording of *S. c. nelsoni*. Examples of these calls can be heard at www.westernfieldornithologists.org/W-B_Nuthatch/.
DISCUSSION

Our results indicate that, from qualitative and quantitative analyses of vocalizations, these four subspecies of the White-breasted Nuthatch fall into three distinct vocalization groups. *S. c. carolinensis* and *aculeata* share qualitatively similar calls (modulated *quanks*) and song; however, both these vocalizations are delivered at significantly different pitches with no overlap in frequency. In addition, *S. c. aculeata* gives a *tooey* song unique to this subspecies. The two interior subspecies, *S. c. nelsoni* and *tenuissima*, both give call types (disyllabic *quanks* and rapid *quanks*) that were not observed in the other two subspecies. Although the pitches of the calls and songs of these two interior subspecies differ slightly, the ranges of frequency of all those vocalizations overlap.

Field Identification

Except when the pale back of *S. c. carolinensis* can be assessed, especially in contrast with the black on the tertials, it can be difficult or impossible to distinguish these four taxa visually in the field. On the basis of our analyses, *S. c. aculeata* can be confidently identified if one hears the more common *tooey* song, as no other subspecies sings a similar song. In addition, both *S. c. aculeata* and *S. c. carolinensis* can be distinguished by their modulated *quank* calls, which differ strongly from any vocalizations of *S. c. tenuissima* or *S. c. nelsoni*, and which differ from one another in pitch, with no overlap. Disyllabic *quanks* or rapid *quanks* should allow one to confidently identify a nuthatch as either *S. c. nelsoni* or *tenuissima*. The similarity of these calls and the overlap of frequencies suggest that differentiating between these two interior subspecies by call may be impossible in the field. Even if recordings are obtained, only calls outside of the range of overlap in frequency may be useful for identification. Likewise, overlapping frequencies of the simple songs of all four subspecies renders that song generally useless for identification for all except *S. c. carolinensis* vs. *aculeata*.

### Table 2

<table>
<thead>
<tr>
<th>Vocalization Type</th>
<th><em>nelsoni</em></th>
<th><em>tenuissima</em></th>
<th><em>P</em></th>
</tr>
</thead>
</table>
| Disyllabic quank  | n
| Mean pitch\(^a\) | 705 ± 50 | 816 ± 51  | 0.0003 |
| Range            | 633–803  | 760–929     |     |
| Mean rate\(^b\) | 6.7 ± 1.1 | 7.1 ± 1.0 | 0.3 |
| Range            | 5.2–9.1  | 5.5–8.9     |     |
| Rapid quank      | 14       | 18          |     |
| Mean pitch\(^a\)
| Range            | 701 ± 83 | 889 ± 86  | 0.0003 |
| Mean rate\(^b\)
| Range            | 620–908  | 750–1068   |     |
| Mean rate\(^b\)
| Range            | 20 ± 4   | 19 ± 3    | 0.6 |
|                   | 11–25    | 13–25      |     |

\(^a\)Hertz, plus or minus standard deviation.
\(^b\)Notes per second, plus or minus standard deviation.

VOCALIZATIONS OF FOUR SUBSPECIES OF WHITE-BREASTED NUTHATCH
Taxonomic Implications

Our analyses of differences in vocalizations suggest three distinct taxonomic groups within the U.S., an eastern group consisting of S. c. carolinensis, an interior group including both S. c. nelsoni and tenuissima, and a Pacific group including S. c. aculeata. Because few recordings of White-breasted Nuthatches are available from Mexico, we were unable to analyze vocalizations of those taxa statistically. Qualitatively, however, S. c. alexandrae in the Sierra San Pedro Mártir of northern Baja California fits with S. c. aculeata on the basis of recordings of modulated quanks (www.xeno-canto.org/72055, recordist R. E. Webster) in the same frequency range as those of S. c. aculeata. Conversely, S. c. lagunae in the Sierra de la Laguna of southern Baja California fits into the interior group on the basis of recordings of disyllabic quanks (www.xeno-canto.org/72055, recordist R. E. Webster; macaulaylibrary.org/audio/161719, recordist M. J. Iliff; N. Pieplow recordings). Disyllabic and rapid quanks have likewise been recorded throughout the range of the interior Mexican subspecies S. c. mexicana (www.xeno-canto.org/229762, recordist Peter Boesman; www.xeno-canto.org/67052, recordist Daniel Lane), and S. c. oberholseri (www.xeno-canto.org/229763, recordist Peter Boesman).

Our analysis of vocalizations is consistent with both structural and plumage characters of these subspecies, which also suggest three groups with S. c. nelsoni and tenuissima more similar to each other than to aculeata and carolinensis (Hawbecker 1948, Pyle 1997, Sibley 2000). Genetic studies suggested that each of these four may be a distinct clade (Spellman and Klicka 2007, Walstrom et al. 2011). However, Hawbecker (1948) identified specimens from central southern Nevada that appeared to be intergrades between S. c. nelsoni and tenuissima, and Spellman and Klicka (2007) found mixed haplotypes between these two taxa in the same region. These genetic analyses confirmed those two interior subspecies as sister taxa more closely related to each other than to the other two U.S. subspecies. Spellman and Klicka (2007) grouped S. c. mexicana and lagunae with S. c. nelsoni, which also aligns well with the qualitative similarity of vocalizations we noted above.

Slow vs. Fast Song

Tyler (1916), Kilham (1981), Richison (1983), and Elliott (2005) studied vocalizations of S. c. carolinensis over extended periods at locations in Massachusetts, New Hampshire, Minnesota, and Ohio, respectively. Each author described both a slow song and fast song, with the fast song generally given at approximately twice the rate of the slow song. Tyler (1916) and Elliott (2005) reported never hearing songs of intermediate cadence from any individuals. But we found no clear distinction between slow and fast songs in recordings made throughout the ranges of any of the four subspecies we analyzed. It may be that a given individual sings stereotyped slow or fast songs, as Ghalambor and Martin (1999) suggested for the Red-breasted Nuthatch (Sitta canadensis), but that variation between individuals and across the range of each subspecies produces the relatively continuous set of song rates we observed (Figure 4).

There are no studies similar to the ones cited above for any of the other
subspecies of the White-breasted Nuthatch. However, we have noted two examples of S. c. tenuissima switching from a slow song to a fast song, in each case approximately doubling the cadence. One example in which an individual bird switches from slow to fast song, apparently in response to songs and calls from a distant White-breasted Nuthatch, can be heard at www.xeno-canto.org/239350. Kilham (1981) observed fast song only in agonistic encounters, while Richison (1983) and Elliott (2005) observed this song type in a variety of contexts.

It is possible that the distinction between tooey and simple songs in S. c. aculeata corresponds to the distinction between slow and fast song in other subspecies, but more study is needed.

Further Study

We made no attempt to characterize the function or context of White-breasted Nuthatch vocalizations, including by season. Studies similar to those of Richison (1983) and Elliott (2005) for the other subspecies are needed for the roles of vocalizations such as the disyllabic and rapid quanks of the interior subspecies to be understood. Such studies could also test the hypothesis that individual White-breasted Nuthatches sing two stereotyped songs at different rates, as well as investigating the function of those two songs, and the function of the tooey song in S. c. aculeata.

The possibility of vocal learning in North American nuthatches requires investigation. Strong circumstantial evidence from patterns of individual and regional variation indicates that song may be learned in the European Nuthatch (Sitta europaea; e.g., White 2012), and it is possible that song, at least, is learned in the White-breasted Nuthatch as well.

We did not perform any playback experiments in the field to test how and whether White-breasted Nuthatches differentiate between the sounds of their own subspecies and those of other subspecies. Such experiments could help clarify whether vocal differences between groups contribute to reproductive isolation. Detailed studies of the contact zones between these subspecies could help to determine the extent of reproductive isolation and gene flow, if any, between these groups, and to provide a more conclusive answer to the question of species boundaries in this complex.

ACKNOWLEDGMENTS

We thank the Cornell Laboratory of Ornithology’s Macaulay Library and the Xeno-canto Foundation for maintaining extensive archives of recordings and for making those recordings available. We are indebted to the many recordists who made and uploaded these recordings. An analysis across such a broad span of geography would not have been possible without their efforts. We thank the following recordists: A. Allen, H. Barker, L. Benner, P. Boesman, G. Budney, A. Cartier, B. Clock, I. Cruickshank, L. Davis, E. Defonso, P. Driver, E. Elias, S. Fisher, T. Graves, J. Gulledge, W. Gunn, W. Hershberger, J. Hite, V. Huber, M. Iliff, E. Jakob, T. Johnson, J. Jongsma, G. Keller, L. Kibler, B. Kroeger, D. Labarre, D. Lane, R. Little, G. MacDonald, C. Marantz, J. McGowan, B. McGuire, M. Medler, D. Minis, K. Nelson, M. Nelson, S. Pantle, T. Parker, C. Parrish, G. Reynaud, A. Rinkert, M. Robbins, A. Spencer, M. St. Michel, R. Stein, B. Walker, and R. Webster. We thank B. Byers, T. Gardali, J. Dunn, K. Garrett, and P. Unitt for many helpful suggestions and edits that greatly improved the manuscript.
VOCALIZATIONS OF FOUR SUBSPECIES OF WHITE-BREASTED NUTHATCH

LITERATURE CITED


Accepted 2 July 2015
INDICATIONS THAT THE COMMON REDPOLL IS DOUBLE BROODED IN ALASKA

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ABSTRACT: Successfully rearing two broods in one season (double brooding) is rare at high latitudes, and few well-documented cases exist in the Arctic. There are numerous suggestions in the literature that the Common Redpoll (Acanthis flammea) is occasionally a double-brooded species. We examined banding data sets from interior Alaska, specimens in the University of Alaska Museum bird collection, and Alaska nest-record cards to understand the timing of reproduction in Alaska boreal forest and tundra. In interior Alaska Common Redpolls exhibit characteristics of breeding for over four months, plenty of time to successfully raise two broods. Furthermore, tundra breeding takes place after most boreal forest breeding, making it possible that individuals could rear two broods in different regions, as has been suggested in northern Europe. Finally, pronounced annual variation in production of young in Fairbanks was not correlated with production of tree seeds in the previous summer.

Many passerines increase reproductive success by multiple brooding, raising two or more broods in a single breeding season. The possibility of having more than one brood is determined primarily by the length of the breeding season, as well as by other environmental factors, such as food availability, microhabitat of the nest site, and the amount of parental care needed for the first brood (Hussell 1983, Gill 2007, Mulvihill et al. 2009, Jacobs et al. 2013). The Common Redpoll, Acanthis flammea, breeds during the summer in boreal taiga and shrubby tundra habitats. Individual redpolls depart their wintering areas from mid-March through April and arrive at their breeding grounds by mid-May (Knox and Lowther 2000). During the breeding season, the female, often attended by the male, takes about three days to build a nest, then lays a clutch of three to five eggs; incubation lasts 11 days and is performed solely by the female with the male occasionally bringing her food (Knox and Lowther 2000). Nestlings normally fledge after 12–15 days, although Walkinshaw (1948) reported young leaving the nest after only 9 days. Offspring begin their first prebasic molt shortly after fledging, molting from as early as mid-July to as late as late October, but primarily from August through September (Cramp and Perrins 1994). Records of post-fledging care suggest that it may be very limited (Alekseeva 1986, Haftorn 2002). For example, in Finnmark, Norway, fledglings were seen at the nest site of their presumed parents, which were in the process of renesting, but neither male nor female acknowledged the offspring and the young eventually flew off (Haftorn 2002). In total, these reproductive activities, from nest building to fledging, require 29–34 days.

It is uncommon for passerines to double brood at high latitudes. The short summers provide less time for breeding, particularly if late thaws reduce chances for successful reproduction (Elkins 1983). At Baffin Island, Canada, Hussell et al. (2014) reported unequivocal evidence of double brooding in the Northern Wheatear (Oenanthe oenanthe), the only species of seven small passerines in the North American Arctic so far definitively shown to do so. Close relatives of the redpoll, such as the Twite (Carduelis flavirostris) and
the Greenfinch (Chloris chloris), are known to double brood (Kosiński 2001, Raine et al. 2006). There is evidence that female Common Redpolls can lay replacement clutches if their first nesting attempt is not successful, and up to three clutches have been observed (Sheldon 1911, Troy and Shields 1979, Alekseeva 1986). But so far there seems to be no concrete documentation of their successful double brooding, although observations suggest that it probably does take place (e.g., Brandt 1943, Troy and Shields 1979, Seutin et al. 1991, Haftorn 2002). Relatively long periods of reproductive activity have led many to infer that the Common Redpoll is double-brooded, maybe even commonly (e.g., Evans 1966, Hildén 1969, Kessel 1989, Cramp and Perrins 1994, Knox and Lowther 2000).

There are two distinct ways in which double brooding has been inferred in the Common Redpoll: through the typical avian behavior of renesting in the same general area, and, in northern Europe, through nesting first in one region and then moving substantial distances to renest in another region where spring arrives later (e.g., Peiponen 1957, Hildén 1969, Götmark 1982, Haftorn 2002).

After breeding and before migration, adults undergo a complete prebasic molt, from around July through early September (Cramp and Perrins 1994). Small flocks start to form around mid-July and continue through August. Kessel (1989) found that on the Seward Peninsula, Alaska, departure from the breeding grounds happens mostly in September, but in some years some birds remain as late as December.

Here we examine data on Common Redpoll breeding in Alaska to determine whether the species might be double brooded there.

**METHODS**

We began by examining two datasets on birds banded in interior Alaska, one from the Alaska Bird Observatory and Alaska Songbird Institute (1992–2012), at Fairbanks (64° 50' N), and one from Tetlin National Wildlife Refuge (1993–2013), at Tok (63° 20' N). We considered the timing and incidence of incubation patches, eggs in oviduct, cloacal protuberances, juvénal plumage, flight-feather molt, and relative abundances of adults and birds of the year (hatch-year individuals). Proportions of adults with incubation patches, cloacal protuberances, and flight-feather molt were also calculated (on the basis of total adults, rather than of males or females, because many individuals could not be sexed). Because banding was standardized temporally, we were able to compare years directly. We did not consider flight-feather molt at Tok because of diminished banding there in June or July. All date data were analyzed on the basis of Julian dates, but we report results in calendar dates for non-leap years.

With specimens from the bird collection at the University of Alaska Museum (1963–2013) we compared evidence of redpoll breeding at Fairbanks and Tok with data from tundra in arctic Alaska (where we do not have banding data), “arctic” being defined as territory north of the Arctic Circle or north and west of the Porcupine, Yukon, and Kuskokwim rivers, and other tundra-dominated regions of western Alaska, including the Alaska Peninsula and Aleutian Islands (Arctic Research and Policy Act of 1984, amended 1990;
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www.nsf.gov/geo/plr/arctic/iarpcc/arc_res_pol_act.jsp). Brown streaking on the head, lack of a red cap, and/or an incompletely ossified skull identified a specimen as in its year of hatching. Flight-feather molt was specified on the label or identified by missing or uneven flight feathers. Also, we noted if the label recorded a cloacal protuberance, incubation patch, or egg in the oviduct. A few additional individuals were included from tundra-dominated regions such as Cape Peirce and Mother Goose Lake; while these western Alaska locations are not technically in the arctic, they are dominated by tundra habitats and thus provide data that complement the banding data from forested habitats in interior Alaska. We also used Alaska nest-record cards from the University of Alaska Museum, primarily from arctic Alaska.

Finally, we examined annual seed-crop data for five species of trees from the Bonanza Creek site of long-term ecological research (LTER) in the boreal forest near Fairbanks (www.lter.uaf.edu/data_detail.cfm?datafile_pkey=14) to see if there was a correlation between the abundance of juvenal-plumaged redpolls and the abundance of these seed crops. Surveys are standardized, and the sites that we used were those that had complete data for the years 1992–2012. Tree species included tamarack, Larix laricina, from site FP5A; white spruce, Picea glauca, from sites FP2A, FP4A, UP1A, and UP3A; black spruce, P. mariana, from site FP3A; birch, Betula papyrifera, from sites FP4A and UP3A; and alder, Alnus crispa, from sites FP4A and UP3A. We calculated annual seed fall for each tree species and the total from all five.

RESULTS

Data on Common Redpolls captured by the Alaska Bird Observatory began on 21 April and ended 30 September. The species was abundant from 25 April to 19 May, and eight of these days had over a hundred captures each (in aggregate), with only a portion of these birds apparently remaining later to breed. Females had incubation patches from 22 April to 31 August, a period of 132 days (Figure 1); an outlier (recording error?) on 27 September was excluded. The interval encompassing the days on which the proportion of adults with incubation patches reached 1.0 extended from 18 June to 22 August, a period of 66 days (Figure 2). Females with eggs in the oviduct were found over 47 days from 21 April to 6 June, though Alaska nest records extend laying in Fairbanks to 23 June and even later, with a record of hatching on 6 August.

We found cloacal protuberances from 21 April to 19 August, a total of 120 days of males’ possible breeding, with the highest proportion from 20 June to 19 August; Figure 3). Juvenile plumage was noted from 6 May to 29 September, a total of 146 days. Flight-feather molt was recorded from 21 April to 30 September, suggesting that post-breeding molt of adults can extend over approximately 162 days. However, only a few individuals showed flight-feather molt early in the season, increasing until 50% of captures showed it on 6 June and 15 July and more than 50% only on 22 July and afterwards. Numbers of juvenal-plumaged individuals peaked in 1995, 1998, 2003, 2006, 2009, and 2011 (Figure 4).

Redpoll data from the Tetlin bird-banding station began on 21 April and
Figure 1. Abundance by date of redpolls with incubation patches at Fairbanks (black line starting from 21 April; Alaska Bird Observatory data) and in arctic Alaska (gray bars starting at 21 May; data from specimens in the University of Alaska Museum and Alaska nest-record cards; eggs assumed to correspond with incubation patches in the adult female).

Figure 2. Proportion by date of Common Redpolls at Fairbanks with incubation patches. Gray line, daily proportion; black line, five-day moving average.
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ended on 2 October. Individuals exhibited incubation patches from 23 April to 8 September, giving a total of 140 days of birds in condition to incubate or brood. There were no records for eggs in the oviduct in this dataset. Cloacal protuberances were identified from 22 April to 10 June, a total of 50 days

Figure 3. Proportion by date of Common Redpolls at Fairbanks with cloacal protuberances. Gray line, daily proportion; black line, five-day moving average.

Figure 4. Numbers of redpolls in juvenal plumage banded each year at Fairbanks (black line) and Tok (gray line), Alaska (1992–2013).
of males in condition to breed. Juvenal plumage was found from 30 July to 2 October, a period of 65 days. These dates are roughly similar to those in the larger Alaska Bird Observatory dataset (not shown), but banding at Tok in June and July was insufficient to reflect the full duration of breeding and molting. The number of juvenal-plumaged birds per year peaked in 1994, 1999, 2003, 2007, 2009, and 2011 (Figure 4).

In the UAM bird collection, 23 specimens from arctic and tundra areas of Alaska had incubation patches, on dates from 21 May to 5 July (Figure 1). Three, collected on 26 July, 5 August, and 6 August, showed flight-feather molt. Thirteen, dated 3 July–31 August, were nestlings or in juvenal plumage. One with a cloacal protuberance was dated 21 July. No specimen had an egg in the oviduct. An additional seven nestings in arctic Alaska are documented in the Alaska nest records, with laying reported on 15 June, eggs in the nest on 6 June and 1 and 5 July, and hatching on 20 and 30 June and 6 July.

We found no correlation between the production of juvenal-plumaged birds by year and the seed data from Bonanza Creek LTER (seed abundance for birch, Betula, and white spruce, Picea, is in Figure 5).

DISCUSSION

Although we found no direct evidence for double brooding of the Common Redpoll in Alaska, we can infer that it probably takes place, given 29–34 days needed for a successful nesting and the relatively long period during which redpolls exhibit breeding activity in interior Alaska: 132 days of incubation

Figure 5. Annual counts of fallen seeds (1992–2012) of birch, Betula papyrifera (black line), and white spruce, Picea glauca (gray line), at the Bonanza Creek site of long-term ecological research near Fairbanks. Note that years of peak seed production do not correspond with years of peak captures of juvenal redpolls at Fairbanks in Figure 4.
patches, 120 days of cloacal protuberances, 146 days of juvenal plumage, or 162 days total of some evidence of breeding. On and near the Seward Peninsula, Alaska, Troy and Shields (1979) observed one female attempt three successive nests (only the last clutch was successful), and both they and Kessel (1989) inferred from observations and the long breeding season that this species might be double brooded there. Our data imply an even longer breeding season in interior Alaska, suggesting that seeking direct evidence of double brooding in boreal forests should be worthwhile as well.

Furthermore, comparing the timing of reproduction of redpolls in interior forest and on the tundra implies that birds breeding early at Fairbanks have time to relocate to tundra and breed again there (Figure 1). The complementarity of the timing of breeding in the two regions is highly suggestive, as is the relative scarcity of postbreeding molt in the interior until 22 July (one might expect postbreeding molt to be initiated earlier than this in single-brooded adults breeding from late April through early June). Despite the numbers of females with incubation patches in the interior early in the breeding season (Figure 1), many other redpolls in that area are apparently not breeding then (Figure 2), so not all individuals pursue a two-site strategy of double brooding. Nor may such a strategy be pursued every year. The great variation from year to year in numbers of birds in juvenal plumage (Figure 4) suggests that such a strategy may be followed only in years of ample food, as suggested in Europe (Peiponen 1957, Hildén 1969, Götmark 1982). Although we thought that this annual variation might be correlated with the production of tree seeds, we found no evidence for this (Figures 4 and 5). Common Redpolls consume the types of tree seeds that are counted at Bonanza Creek, such as those of birch, alder, and spruce; they forage primarily for seeds still in the trees, moving to the ground when seeds in the trees are exhausted or fallen (Cramp and Perrins 1994). It is possible that tree-seed production during a summer is not correlated with tree-seed availability during the following breeding season (e.g., if storms knock seeds out of the trees).

In Fairbanks, the redpoll’s breeding season extends over the rather long span of approximately four months, suggesting that the species is capable of a second brood in this area. It is also possible, given the difference in timing of breeding between the forested interior and tundra, that some individuals that raise a first brood around Fairbanks then move to tundra to raise a second brood. To test this hypothesis, one should examine redpolls arriving in the tundra for evidence of regressing incubation patches, post-ovulatory follicles, and for the possible arrival of hatch-year birds. Birds breeding in the boreal forest should be marked individually to assess whether double brooding is taking place and with what frequency.

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Abstract: Since its eighth report (Aanerud 2011) the Washington Bird Records Committee (WBRC) has reviewed 291 reports representing 92 species and seven other subspecies and forms, accepting 232 of them, an acceptance rate of 80%. Most of these birds were observed between 2008 and 2010. Six new species and one subspecies group are added to the Washington state checklist: Providence Petrel (Pterodroma solandri), Hawaiian Petrel (P. sandwichensis), Greater Pewee (Contopus pertinax), Yellow-bellied Flycatcher (Empidonax flaviventris), Variegated Flycatcher (Empidonomus varius), Bell’s Vireo (Vireo bellii), and Interior or Lead-colored Bushtit (Psaltriparus minimus plumbeus). In addition, the WBRC removed two species, the Mute Swan (Cygnus olor) and American Black Duck (Anas rubripes) from the state checklist. The Washington state list now stands at 498 species.

The contents of this report are the results from six Washington Bird Records Committee (WBRC) meetings held between February 2008 and January 2011 and follow the eighth report (Aanerud 2011). The WBRC is a committee of the Washington Ornithological Society. In total for this report, the committee reviewed 291 reports representing 92 species (and seven other subspecies and forms). An acceptance rate of 80% resulted in 232 new records for the state. The WBRC added six new species to the checklist of Washington birds: Providence Petrel (Pterodroma solandri), Hawaiian Petrel (P. sandwichensis), Greater Pewee (Contopus pertinax), Yellow-bellied Flycatcher (Empidonax flaviventris), Variegated Flycatcher (Empidonomus varius), and Bell’s Vireo (Vireo bellii). In addition the WBRC reviewed and accepted the first record of the Lead-colored or Interior Bushtit (Psaltriparus minimus plumbeus).

The WBRC reexamined its list of review species in 2011. Species that will no longer be reviewed include the Manx Shearwater (Puffinus puffinus) (37 records), Red-shouldered Hawk (Buteo lineatus) (41 records), Hudsonian Godwit (Limosa haemastica) (31 records), Bar-tailed Godwit (L. lapponica) (51 records), Ruff (Calidris pugnax) (25 records), Buff-breasted Sandpiper (C. subruficollis) (16 records), Parakeet Auklet (Aethia psittaculosa) (14 records), Eurasian Collared-Dove (Streptopelia decaocto) (21 records), and Rose-breasted Grosbeak (Pheucticus ludovicianus) (53 records). The Blue Snow Goose was the first morph removed from review after the WBRC accepted nine reports in just three years.

In 2009 the committee voted to remove the Mute Swan (Cygnus olor) from the Washington list. No reports, in the committee’s opinion, arise from wild populations, and the Mute Swan does not meet the standard of an established introduced exotic species (as does the House Sparrow, Passer domesticus, for example). In addition, in 2011 the committee voted to remove the American Black Duck (Anas rubripes) from the state list. In the committee’s opinion, none of the reports since the 1970s are likely of birds of wild origin. It is possible that some earlier undocumented reports represent American Black Ducks of wild origin, but these have not been
reviewed. For further discussion of non-established introduced species, see Wahl et al. (2005).

The Washington list now stands at 498 species.

PROCEDURES

Procedures are consistent with those detailed in the introduction to the first WBRC report (Tweit and Paulson 1994) and expanded on in the introduction to the sixth report (Mlodinow and Aanerud 2006). A “report” is information submitted to the committee in the form of evidence substantiating the observation of a review species. A “record” is a report that has been accepted by the committee. Acceptance of a record requires an affirmative vote from all but one of its membership.

Species accounts are organized with English and scientific names first followed in parentheses by the total number of records accepted for Washington and the number of records accepted in this report. An asterisk following the total number of records indicates that the species has been reviewed for a restricted period of time, so the number does not represent the total number of sightings in the state. Each entry includes the following information: date(s) of observation, location and county, and (for accepted records) initials of the observer(s). To aid with record-keeping and future reference, each report includes a unique file number consisting of the species’ four-letter code, year of the sighting, and entry number determined by the order in which the committee received the report. For the sake of brevity in the species accounts below, the four-letter code is omitted from file numbers after the first. The names of the observers who submitted only written descriptions are by convention listed first, followed by those who submitted photographic, video, or audio documentation. The discoverer of the bird is listed only if that person contributed evidence for committee review. Additional details including information such as the number of individual birds present and notes on sex, age, and/or plumage are our assessments and do not reflect decisions made by the committee.

Beginning with this report, the committee reviewed value of maintaining a “supplementary list.” Previously, any species accepted by the committee based on a single-person sight record was added to the supplementary list. These records still underwent close scrutiny, and acceptance to this list was not intended to indicate doubt about the validity of the report. Nevertheless, the distinction between a single observer and multiple observers seemed sometimes arbitrary, and placement on a separate supplementary list implied these species were not fully on the state list. Therefore, the committee is discontinuing the supplementary list and will include species accepted without evidence such as photographs, audio recordings, or a specimen on the regular list but note them as based on “sight only” records. The number of observers will no longer serve as the basis of distinguishing these species’ position on the state list. In this report, 63% of the accepted records were submitted with at least one photo, audio, or video recordings. Although the spread of smart phones and other recording devices has made documentation easier than ever, this percentage indicates the continued value of a well-constructed, detailed written report.
COMMITTEE MEMBERS

Committee members who voted on these reports include Kevin Aanerud, Tom Aversa (until 2010), Phil Mattocks (until 2009), Ryan Merrill (from 2009), Steve Mlodinow, Dennis Paulson, Bob Sundstrom (until 2010), Bill Tweit, Brad Waggoner (from 2010), and Charlie Wright (from 2010).

Ryan Merrill joined the committee in 2009 replacing Phil Mattocks. Charlie Wright and Brad Waggoner joined the committee in 2010, replacing Bob Sundstrom and Tom Aversa, respectively. Jessie Barry left the committee in 2008 and was not replaced, reducing the number of voting members from eight to seven. Doug Schonewald was the secretary through 2010, replaced then by Matt Bartels.

THE RECORDS

Reports Accepted by the Committee

Emperor Goose (*Chen canagica*) (8*, 3). An immature was at Julia Butler Hansen National Wildlife Refuge (NWR), Wahkiakum Co., 4 Apr 2007 (EMGO-2007-1; GBl). Two, one adult and one immature, were near South Bend, Pacific Co., from 15 Jan to 23 Feb 2008 (2008-1; BT, photo: RJM; Figure 1). Two adults were at the same location 18–24 Jan 2009 (2009-1; AKa, RR).

Blue Snow Goose (*Chen caerulescens*) (9*, 1). The lone record of this color morph was of five birds at Fir Island, Skagit Co., 5 Nov 2007 (LSGB-2007-2; photo: RJM). After the WBRC accepted nine records in the three years after adding this morph to the review list, it dropped the Blue Goose from the list in 2008.

Bewick’s Tundra Swan (*Cygnus columbianus bewickii*) (12*, 3). An adult was at Conway, Skagit Co., 24 Feb–1 Mar 2008 (BESW-2008-1; SM, photo: RJM; Figure 2). Another was at Ridgefield NWR, Clark Co., 1 Nov 2008 (2008-2; photo: CLe), and one was at Brady Loop Road, Grays Harbor Co., 18 Jan–21 Mar 2009 (2009-1; photos: KeB, BW). These records bring the state total to 12 since the subspecies’ addition to the review list in 2003.

Baikal Teal (*Anas formosa*) (4, 3). An adult male was at Columbia NWR, Adams Co., 30 May 2008 (BATE-2008-1; photo: RaH; Figure 3). Adult males were also photographed at Ridgefield NWR, Clark Co., 31 Jan 2009 (2009-1; photos: BC, CCr, SK) and near Ferndale, Whatcom Co., 17 Mar 2009 (2009-2; photo: PW). In addition to the four recorded in Washington, two Baikal Teal have been found in Oregon (Nehls 2015) and seven in California (www.californiabirds.org/cbrc_book/update.pdf). The record for 30 May is the latest for the west coast of North America south of Alaska.

Tufted Duck (*Aythya fuligula*) (18*, 6). Records include: An adult male at Everett, Snohomish Co., 11 Oct 2007 (TUDU-2007-1; SM); an adult male at Priest Rapids, Grant and Yakima counties, 23 Feb–16 Mar 2008 (2008-1; DSc, ASt); a female at Lake Erie, Skagit Co., 11 Jan–4 Mar 2009 (2009-1; GBl, SM, photo: GT; Figure 4); an adult male at Drano Lake, Skamania Co., 7–16 Mar 2010 (2010-1; photo: DP); an adult male at Priest Rapids, Yakima Co., 28 Mar 2010 (2010-2; photo: RJM); and an adult male at Port Susan Bay, Snohomish Co., 24 Jun–3 Jul 2010 (2010-3; photos: TA, SM). These six records increase the state total to 18 records since the committee began reviewing the species in 1999. The Tufted Duck at Port Susan Bay is the first recorded for Washington in summer; other summer records for the west coast south of Alaska include one in 1996 from California and three from Vancouver, British Columbia (Toochin et al. 2014).
King Eider (Somateria spectabilis) (15, 1). An immature male was at Semiahmoo Spit, Whatcom Co., 17 Jan 2009 (KIEI-2009-1; JGu). A female was at Ocean Shores, Grays Harbor Co., beginning 3 Jul 2009 and was seen intermittently through at least 8 Apr 2012 (2009-3; DMo, BT, photo: GT; Figure 5). An immature male was at Potlatch State Park, Mason Co., 21 Nov 2009 (2009-2; photo: MvB).

Short-tailed Albatross (Phoebastria albatrus) (9, 2). A juvenile was 193 km west of Westport, Grays Harbor Co., on 6 Apr 2008 (STAL-2008-1; photo: GSM). Another juvenile was tracked via satellite transmitter through Washington waters 25–29 Sep 2009 (2009-1; RoS) as it moved south along the continental shelf break before continuing into Oregon and eventually reaching California. The bird hatched
on Torishima Island in the spring of 2009 and was translocated to Mukojima Island, where it fledged in May. Of Washington’s nine records, six are within the past 20 years, after the species began to recover from its near extinction in the first part of the 20th century.

Providence Petrel (Pterodroma solandri) (1, 1). In 1992, 1993, and 1996, the WBRC voted with inconclusive results on a report of a Providence (also known as Solander’s) Petrel about 50 km west of Westport, Grays Harbor Co., on 11 Sep 1983 (PRPE-1983-1; TWa, photo: MLu). The state checklist prepared by the

Figure 3. Male Baikal Teal (BATE-2008-1) at Columbia NWR, Grant Co., 30 May 2008.

*Photo by Randy Hill*

Figure 4. Female Tufted Duck (TUDU-2009-1) at Lake Erie, Skagit Co., 16 January 2009.

*Photo by Gregg Thompson*
WBRC in 1989 (Feltner et al. 1989) included the species on the basis of this report, but in 1994 the committee opted to refrain from accepting the record until more information could be gathered (Aanerud and Mattocks 2000). Reluctance to accept this record was due in part to concerns in distinguishing the species from other dark gadfly petrels. Advances in the knowledge of identification as well as the personal
experience of several committee members with these species convinced the WBRC that the extensive written description by an experienced observer was adequate for acceptance of the species to the state list. Key field marks noted include the white underwing patch bisected by a thin dark line (producing a “double flash” of white in flight), the languid flight style, overall size, dark upperparts, and relatively long tail. The photo supported the description, but only some members of the committee thought

Figure 7. Great Shearwater (GRSH-2009-1) off Westport, Grays Harbor Co., 29 August 2009.

*Photo by Ryan Shaw*

Figure 8. Adult Red-necked Stint (RNST-2009-1) at Ocean Shores, Grays Harbor Co., 24 July 2009.

*Photo by Gregg Thompson*
the identification was diagnostic from the photo alone. As a result, the Providence Petrel is accepted on the basis of a sight-only record. Murphy’s Petrel (P. ultima), also known to occur in Washington waters, is similar but smaller with more slender wings, less bull-necked than the Providence Petrel, and has a smaller bill. Additionally the described pattern of the underwing is typical of the Providence Petrel and rarely seen on Murphy’s. With respect to other dark gadfly petrels that may occur in the northeast Pacific, the pattern of the underside of the primaries eliminates both races of the Great-winged Petrel (Pterodroma macroptera macroptera and P. m. gouldi), which show a uniformly dull silvery patch. The uniform upper side of the wing eliminates the Kermadec Petrel (P. neglecta), whose outer primaries show obvious pale shafts.
Murphy’s Petrel (*Pterodroma ultima*) (6, 4). On 6 Apr 2008 two Murphy’s Petrels were observed, one 133 km and one 233 km off Westport, Grays Harbor Co. (MUPE-2008-1; GSM, photo: THu; 2008-2; GSM). Another was 90 km off Cape Disappointment, Pacific Co. (2010-1; THa, photo: RJM), and two more were 85 km off Ocean Shores, Grays Harbor Co. (2010-2; THa, RJM) on 1 May 2010.

Mottled Petrel (*Pterodroma inexpectata*) (8, 3). During a research cruise organized by the National Oceanic and Atmospheric Administration’s Northwest Fisheries Science Center, four Mottled Petrels were seen between 64 and 70 km offshore over Nitinat Canyon, Clallam Co., on 25 Mar 2009 (MOPE-2009-1; photo: RJM). The same day, four more were between 48 and 58 km offshore over Juan de Fuca Canyon, Clallam Co. (2009-2; photo: RJM). A single bird was seen at Point No Point, Kitsap Co., 27 Nov 2009 (2009-3; ASe), establishing the first Washington record away from the outer coast.

Hawaiian Petrel (*Pterodroma sandwichensis*) (1, 1). Washington’s first record is based on one photographed over the west end of Grays Canyon, Grays Harbor Co., on 27 Sep 2008 (HAPE-2008-1; BLB, BT, photo: MPI; Figure 6). Details of the underwing pattern, overall proportions, and especially the limited extent of the dark cap appear to eliminate the Galapagos Petrel (*P. phaeopygia*), with which the Hawaiian Petrel was formerly considered conspecific under the name Dark-rumped Petrel (Banks et al. 2002). In addition, contrast between the grayish sides of the neck

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**Figure 11. Northern Hawk Owl (NHOW-2008-3) at Hart’s Pass, Okanogan Co., 5 October 2008.**

*Photo by Gregg Thompson*
and the blackish cowl, as well as the white curling up behind the auricular, appear to specify the Hawaiian Petrel rather than the Galapagos Petrel (Tomkins and Milne 1991, Browne et al. 1997, Force et al. 2007, Howell 2012).

Great Shearwater (*Puffinus gravis*) (3, 1). A Great Shearwater off Westport, Grays Harbor Co., 29 Aug 2009 (GRSH-2009-1; BT, photos: JPr, RSh; Figure 7) was the third recorded in Washington. Oregon has two records, California nine, and British Columbia five. Alaska has four photo-documented sightings (not all of them reviewed) (Gibson et al 2003, Gibson and Withrow 2015; D. Gibson and S. Heinl pers. comm.).


Ashy Storm-Petrel (*Oceanodroma homochroa*) (2, 1). An Ashy Storm-Petrel 233 km west of Westport on 6 Apr 2008 (ASSP-2008-1; GSM) was the second recorded in Washington. In addition to noting plumage characteristics that included narrow gray wing bars and a long forked tail, the report detailed a constant “fluttery” flight style that differed notably from the gliding of the Leach’s Storm-Petrels also present. Washington’s first Ashy-Storm Petrel was photographed in June 2006 (Aanerud 2011). There are also two reports from British Columbia waters, 172 km west of Tatoosh Island, Clallam Co., from June 2008 (Fenneman 2011, 2012), and six records from Oregon, one in 2007 one in 2009, and four in 2014 (Nehls 2015).

Frigatebird species (*Fregata* sp.) (2, 1). A frigatebird flying across the Columbia River at Stevenson, Skamania Co., 16 Apr 2008 (FRIG-2008-1; DK, BR) eluded specific identification. While one might assume that the Magnificent Frigatebird (*F. magnificens*) is the likely species, the precedents of both the Greater (*F. minor*) and Lesser (*F. ariel*) frigatebirds in the continental United States has led the committee to accept this record as “frigatebird species.” Washington has two prior records of the Magnificent and one other of a frigatebird not identified to species.


White-faced Ibis (*Plegadis chihi*) (11*, 5). Although this species was removed from the WBRC’s review list in the fifth report, a handful of reports were voted on before this decision and never formally reported. They include the following: one photographed along Frenchman Hills Road, Grant Co., 21–30 May 1999 (WFIB-1999-1; SM, HO, BT, photo: GL); three videotaped near Othello, Adams Co., 27–28 May 2000 (2000-1; BLB, KK, video: SM); one at Kingston, Kitsap Co., 30 May–2 Jun 2000 (2000-2; VN, IP); one videotaped at Columbia NWR, Adams and Grant counties, 3 Jun 2000 (2000-3; DD, video: SM); and 24 at the Walla Walla River delta, Walla Walla Co., 9 May 2001(2001-1; MD, MLD, BT). In addition one report from State Route 28 near Wilson Creek, Grant Co., on 13 Jul 2000 was accepted as a White-faced/Glossy Ibis (WFIB/GLIB-2000-1; CE, MAT). The 2001 incursion of the White-faced Ibis into Washington, estimated at a minimum of 295 birds in May and June, was
more recent incursions have been less massive, but the ibis has still occurred in the spring in most succeeding years (Tweit and Flores 2006).

Red-shouldered Hawk (*Buteo lineatus*) (41*, 1). An immature Red-shouldered Hawk observed at Ridgefield NWR, Clark Co., on 23 Sep 2007 (RSHA-2007-2; photo: SM) brought the state total to 41 records, 32 of them from 1998 to 2008, when the species was removed from the review list.

Broad-winged Hawk (*Buteo platypterus*) (18, 5). A juvenile at Hooper, Whitman Co., on 16 Sep 2007 (BWHA-2007-1; photo: MWo), a juvenile at Sentinel Bluffs, Grant Co., 9 Sep 2008 (2008-2; SM, BW), a juvenile at Washtucna, Adams Co., 12 Sep 2008 (2008-2; TL, photo: RaH), an adult along Taneum Road, Kittitas Co., 3 May 2009 (2009-1; TB), and a dark-morph juvenile caught at Chelan Ridge, Chelan Co., 28 Sep 2009 (2009-3; photo: HWI, fide SHa, KW) bring Washington’s total to 18 records, though there are a number of reports that have not been reviewed, in particular from the Chelan Ridge raptor-migration site (www.hawkwatch.org/conservation-science/migration-research-sites/74-chelan-ridge-raptor-migration-project).

Eurasian Dotterel (*Charadrius morinellus*) (4, 1). A juvenile Eurasian Dotterel north of Oysterville, Pacific Co., 12–13 Sep 2007 (EUDO-2007-1; KiB, photo: MFe) was the fourth recorded in Washington.

Hudsonian Godwit (*Limosa haemastica*) (31*, 5). The WBRC accepted five records: an adult male mostly in alternate plumage in Ellensburg, Kittitas Co., on 21 Aug 2003 (HUGO-2003-2; SD); an adult female mostly in alternate plumage at Port Susan Bay,
Snohomish Co. on 26 Jul 2007 (2007-1; photo: TA); a female at Ocean Shores, Grays Harbor Co., on 26 May 2008 (2008-1; photos: MC, JMG); a molting adult at Tokeland, Pacific Co., on 3 Aug 2008 (2008-2; photo: BW); and a female at Sunlight Beach, Island Co., 27 May 2009 (2009-1; photo: RJM). These bring the state total to 31 records, 19 of them between 1999 and 2009. The Hudsonian Godwit was removed from the review list in 2010.

Bar-tailed Godwit (*Limosa lapponica*) (51*, 4). An adult was photographed at Tokeland, Pacific Co., 15 Sep 2001 (BTGO-2001-4; NLF, PS, photo: RuS); an adult female was there 19–23 Jul 2007 (2007-7-1; photos: RJM, RuS, PS); a juvenile was in Westport, Grays Harbor Co., 14–15 Sep 2007 (2007-2; photo: TO); and a juvenile was at Bottle Beach, Grays Harbor Co., 2 Oct 2007 (2007-3; photo: MBi). These brought the state total to 51 records (34 between 1998 and 2008) before the species was removed from the review list in 2008.

Ruff (*Calidris pugnax*) (25*, 2). Records of two at Ocean Shores, Grays Harbor Co., 9 and 11 Sep 2007 (RUFF-2007-2; PK, photo: CWr) and one female at Boe Road near Port Susan Bay, Snohomish Co., 1–19 Dec 2007 (2007-4; photo: SM) bring Washington’s total to 25 records between 1999 when the Ruff was added to the review list and 2008 when it was removed.

Red-necked Stint (*Calidris ruficollis*) (4, 2). Reconsideration of the report of an adult at Crockett Lake, Island Co., on 18 Jul 1993 (RNST-1993-1; SM) resulted in unanimous acceptance. The prior vote was 5–2–1 yes–no–abstain. At the time the committee was “waiting for a multiple-observer or exquisitely detailed single-person sight report, or (better) for photographic or specimen evidence, before accepting this species” (Tweit and Skriletz 1996). Another adult was at Ocean Shores, Grays Harbor Co., 24 Jul 2009 (2009-1; photos: GT, BW; Figure 8).

Buff-breasted Sandpiper (*Calidris subruficollis*) (16*, 3). Three Buff-breasted Sandpipers were at Midway Beach, Pacific Co., on 25 Aug 2007 (BBSA-2007-1; photos: MvB, DnG); one was at Ocean Shores, Grays Harbor Co., on 11 Sep 2007 (2007-2; photo: CWr); five were on Fir Island and two were at Samish Flats, Skagit Co., also on 11 Sep 2007 (2007-3; photo: RJM). The WBRC accepted 16 records of this species (most, if not all, of juveniles) from 1999 to 2008 while it was being reviewed.

Thick-billed Murre (*Uria lomvia*) (17, 3). Thick-billed Murres were found at Point No Point, Kitsap Co., on 12 Jan 2009 (TBMU-2009-1; VN), off Grays Harbor Co. on 25 Mar 2009 (2009-2; RJM), and near Protection Island, Clallam Co., on 14 Dec 2009 (2009-3; BLB, CWr, photo: JKu).

Xantus’s Murrelet (*Synthliboramphus hypoleucus*) (10, 2). Following the AOU’s reclassification of the two subspecies of Xantus’s Murrelet as species, Scripps’s Murrelet (*S. scruppsii*) and Guadalupe Murrelet (*S. hypoleucus*) (Chesser et al. 2012), the WBRC is reconsidering all Xantus’s Murrelet reports, to confirm which can be confidently assigned to either of the new species.

Scripps’s Murrelet (*Synthliboramphus scruppsii*). One was 66 km west of Cape Alava, Clallam Co., on 8 Jul 2007 (SCMU-2007-1; GSM).

Scripps’s/Guadalupe Murrelet (*Synthliboramphus scruppsii/hypoleucus*). A murrelet of one of these two species was at least 32 km west of Westport, Grays Harbor Co., 7 Sep 2007 (SCMU/GUMU-2007-3; RJM).

Scripps’s/ Craveri’s Murrelet (*Synthliboramphus scruppsii/craveri*). Two murrelets—either Scripps’s or Craveri’s—were 61 km west of La Push, Clallam Co., on 9 Jul 2007 (SCMU/CRMU-2007-2; GSM).

Parakeet Auklet (*Aethia psittacula*) (14*, 2). One was observed 18 km WSW of Cape Alava, Clallam Co., on the surprising date of 8 Jul 2007 (PAAU-2007-1; GSM). An additional 101 were observed, and many photographed, between 9 and 75 km off Washington’s central and north coast, Clallam, Jefferson, and Grays Harbor.
counties, between 24 Mar and 8 Apr 2009 (2009-1; photos: RJM). Photographic documentation of Parakeet Auklets in these numbers, as well as unreviewed but reliable reports in other recent years from waters seldom explored at this time of year, precipitated this species’ removal from the review list. Oregon had 18 records of the Parakeet Auklet though 2010, and California had over 80 records before its committee discontinued reviewing the species.

Horned Puffin (*Fratercula corniculata*) (26, 6). One was at Westport, Grays Harbor Co., on 21 Jul 2007 (HOPU-2007-1; BLB, BT); an immature was south of Point of Arches, Clallam Co., on 5 Jun 2007 (2007-2; RJM, photo: RoH); an adult was near Quillayute Needles, Clallam/Jefferson Co., on 13 Jul 2007 (2007-3; RJM); one was near Smith Island, Island Co., 18 Aug 2007 (2007-4; photos: DaH, DoH); a dead bird (specimen not preserved) was at Midway Beach, Pacific Co., on 7 Aug 2009 (2009-1; photo: KeB); and an immature was at Grays Canyon, Grays Harbor Co., 26 Jun 2010 (2010-1; BSb, photos, BD, GSM).

Ivory Gull (*Pagophila eburnea*) (2, 1). Washington’s second was an immature at the Yakima River Delta, Benton Co., briefly on 20 Jan 2008 (IVGU-2008-1; video: BW). California has two records, British Columbia nine, and Oregon none.

Black-headed Gull (*Chroicocephalus ridibundus*) (16, 1). An adult was at Electric City, Grant Co., 29–31 Dec 2007 (BHGU-2007-2; DSc, photos: AST, EST, VG, LS). Although it was the 16th recorded in the state as a whole, it was the first found in eastern Washington.

Laughing Gull (*Leucophaeus atricilla*) (7, 3). An adult was at Ruby Beach, Jefferson Co., on 10 May 1998 (LAGU-1998-1; photo: EF; Figure 9). Another was at Hoquiam, Grays Harbor Co., on 24 Jul 2007 (2007-1; photo: GBe). A second-cycle bird at Point No Point, Kitsap Co., on 1 Jun 2008 (LAGU-2008-1; photo: VN) and then Port Susan Bay, Snohomish Co., on 7 Jun 2008 (SM) was inferred by the committee to represent the same individual, and just the second away from the outer coast.

Black-tailed Gull (*Larus crassirostris*) (5, 3). Adult Black-tailed Gulls were at Tatoosh Island, Clallam Co., on 18 Jun 2008 (BTGU-2008-1; TWo), the Walla Walla river delta, Walla Walla Co., on 29 Aug 2009 (2009-1; photos: MD, MLD), and at Tacoma, Pierce Co., 13 Oct–7 Nov 2009 (2009-2; MHo, CWr, photos: RiC, JeC, GT; Figure 10). These three records increase Washington’s total to five, all since 2004.

Iceland Gull (*Larus glaucoides*) (14, 2). An adult Iceland Gull of subspecies *kumlieni* was at the Wallula Grain Station, Walla Walla Co., on 8 Mar 2009 (ICGU-2009-1; photos: MD, MLD) and a first-cycle bird, also *kumlieni*, was at Nisqually NWR, Thurston Co., on 10 Feb 2010 (2010-1; ST, photo: DR).

Lesser Black-backed Gull (*Larus fuscus*) (18, 6). New records include one adult at Rufus Woods Lake, Douglas Co., 30 Jan 2008 (LBBG-2008-1; photos: VG, LS); one adult at the Yakima River delta, Benton Co., 22 Jan 2008 (2008-2; photo: KeB); one adult at Clarkston, Asotin Co., 8–10 Nov 2008 (2008-3; photos: KC, TeG); an adult at Nelson Island near Richland, Benton Co., on 1 Jan 2009 (2009-1; BLF, NLF); an adult at the Walla Walla River delta, Walla Walla Co., 15 Jan 2009 (2009-2; photo: MD); and one more adult at Richland, Benton Co., 16 Jan 2010 (2010-1; photos: MD, MLD, DnG, TM). All 18 of Washington’s Lesser Black-backed Gulls have occurred since 2000 and all but one have been found east of the Cascades.

Slaty-backed Gull (*Larus schistisagus*) (15, 4). A fourth-cycle Slaty-backed Gull was at the Cedar River mouth in Renton, King Co., on 28 Dec 2007 (SBGU-2007-2; photo: RJM). Three more were accepted from the fields along Wenzel Slough Road near Satsop, Grays Harbor Co.: an adult 9–17 Mar 2008 (2008-1; photos MPI, RuS, CWr), a third-cycle bird 11–17 Mar 2008 (2008-2; photo: MPI), and a second-cycle bird 11 Mar 2008 (2008-3; SF, photo: MPI).

Least Tern (*Sternula antillarum*) (5, 2). One was at Crockett Lake, Island Co., on

Eurasian Collared-Dove (*Streptopelia decaocto*) (21*, 2). Records of two at Ellensburg, Kittitas Co., 13 Apr 2007 (EUCD-2007-1; photo: DmB) and one at Battle Ground, Clark Co., 28 Jun–1 Aug 2007 (2007-2; photo: CK) were accepted before the removal of the species from the review list in 2008. Following the first state record in Spokane on 2 Jan 2000, the Eurasian Collared-Dove expanded rapidly. The first western Washington record came from Stanwood, Snohomish Co., on 9 Oct 2003. By April 2011, it had been recorded in all 39 of the state’s counties, and it continues to increase in both range and population.


Northern Hawk Owl (*Surnia ulula*) (26, 9). Records of the Northern Hawk Owl included one near Winthrop, Okanogan Co., 19 and 25 Jun 2007 (NHOW-2007-2; photo: VG, LS); one at Hart’s Pass, Okanogan Co., 9 Sep 2007 (2007-3; photo: NM); one 1.6 km west of Grand Coulee, Grant Co., 31 Dec 2007–1 Jan 2008 (2007-5; photos: VG, LS, DSc); one at Cheney, Spokane Co., 30 Oct–1 Nov 2008 (2008-1; JuC, CCo, photos: BuD, KC); one at Tiffany Meadows, Okanogan Co., 12 Oct 2008 (2008-2; JDM); one at Hart’s Pass, Okanogan Co., 27 Sep–18 Oct 2008 (2008-3; photo: GT; Figure 11); one 19 km west of Okanogan, Okanogan Co., 7–14 Dec 2008 (2008-4; GK); one near Mansfield, Douglas Co., 3–22 Feb 2009 (2009-1;
Figure 14. Tennessee Warbler (TEWA-2008-1) at Washtucna, Adams Co., on 8 September 2008.

Photo by Gregg Thompson

Figure 15. Magnolia Warbler (MAWA-2008-3) at Washtucna, Adams Co., on 10 September 2008.

Photo by Ted Kenefick

Yellow-bellied Sapsucker (Sphyrapicus varius) (8.2). One immature at Hood River Park in Walla Walla Co. on 7 Oct 2004 (YBSA-2004-2; MD, MLD) was at the same location that hosted a Yellow-bellied Sapsucker the previous winter (see Mlodinow and Aanerud 2008). An immature female was at Gingko State Park, Kittitas Co., on 14 Apr 2008 (YBSA-2008-3; MWe, photo: DSw).

Greater Pewee (Contopus pertinax) (1, 1). Washington’s first Greater Pewee was found at Edmonds, Snohomish Co., the morning of 23 Nov 2008 (GRPE-2008-1; DD, CR). Despite being a sight record, the detailed description specified the overall coloration, prominent crest, bill shape, entirely orange lower mandible, and call note, eliminating the possibility of an Olive-sided Flycatcher or a wood-pewee. Records in California are concentrated between November and March and range as far north as Alameda and Santa Cruz counties in the San Francisco Bay area (Hamilton et al. 2007).

Yellow-bellied Flycatcher (Empidonax flaviventris) (1, 1). Washington’s first Yellow-bellied Flycatcher was photographed at Windust Park, Franklin Co., on 30 Aug 2009 (YBFL-2009-1; CCo, JuC, photo: M Wo; Figure 12). While initially identified as a Least Flycatcher in the field, subsequent analysis of a series of close, sharp photos led to the identification as the Yellow-bellied based on the yellowish throat, large, rounded head, short bill and tail, conspicuous rounded eye ring, and extensive greenish coloration including on the sides of the breast. Although no records have been accepted for Oregon, California has 29 records of the Yellow-bellied Flycatcher, all on dates from 27 Aug to 16 Oct.

Alder Flycatcher (Empidonax alnorum) (3, 1). An Alder Flycatcher singing at Haviland, Okanogan Co., 18–19 Jun 2006 (ALFL-2006-1; photo, audio: PS, RuS, photo: M Wo) was at the same location as the Washington’s first, also singing, four years prior.

Black Phoebe (Sayornis nigricans) (15, 2). Black Phoebes were documented along Larkin Rd. near Midway Beach, Pacific Co., 7 May 2009 (BLPH-2009-1; TA) and on Mercer Island, King Co., 26 Mar 2010 (2010-1; photos: JoC, RiH, RJM), bringing the state total to 15 records.

Variegated Flycatcher (Empidonomus varius) (1, 1). The first Variegated Flycatcher for both Washington and western North America was at Windust Park, Franklin Co., 6–7 Sep 2008 (VAFL-2008-1; MD, MLD, CH, photos: RJM, SM; Figure 13). The Sulphur-bellied Flycatcher (Myiodynastes luteiventris), which has occurred on the west coast as far north as Arcata, California, was eliminated by the bird’s overall small size and relatively small bill. The Piratic Flycatcher (Legatus leucophaius), another austral migrant that has occurred in Texas and New Mexico, has a still smaller bill and lacks the rusty rump with large dusky streaks this Variegated Flycatcher showed. The dark crown, dark auricul ars, and diffuse malar stripe were also consistent with the Variegated and not the Sulphur-bellied or Piratic. There are prior records of the Variegated Flycatcher from Maine, Tennessee, and Ontario, with the Washington record representing the first from the western half of the continent (Mlodinow and Irons 2009).

Tropical Kingbird (Tyrannus melancholicus) (14, 3). One was near Mount Vernon, Skagit Co., 24 Nov–18 Dec 2008 (TRKI-2008-2; photo: RJM); one was at Hoquiam, Grays Harbor Co., 24 Oct 2009 (2009-1; photo: GT); and one was recorded calling at Westport, Grays Harbor Co., 12 Nov 2009 (2009-2; photo, audio: RJM).

Tropical/Couch’s Kingbird (Tyrannus melancholicus/couchii) (21, 5). Birds accepted as either the Tropical or Couch’s Kingbird include one at Neah Bay, Clallam

Scissor-tailed Flycatcher (Tyrannus forficatus) (8, 1). One was near Gardiner, Clallam Co., 2–3 Jul 2007 (STFL-2007-1; photos: RJM, TO).

Bell’s Vireo (Vireo bellii) (3, 3). Washington’s first Bell’s Vireo was at Wyile Slough, Skagit Wildlife Area, Skagit Co., 27–28 Sep 2007 (BEVI-2007-1; KeB, SM). The initial review of this report was tabled in 2008, but in 2011 it was accepted unanimously. The second was at Washtucna, Adams Co., on 6 Sep 2008 (2008-1; DI, SM). A singing bird was at Sun Lakes State Park, Grant Co., 20 May 2009 (2009-1; BSc, DSc). All three birds had features in their descriptions consistent with subspecies V. b. bellii, but were not conclusively identified as such by the observers or the committee. Nearby, Oregon has two records, and Idaho has one record of Bell’s Vireo (Natl. Audubon Soc. Field Notes 52:361, 1998; www.idahobirds.net/ibrc/reviewspecies/vireo_accentor.html#bevi).

Blue-headed Vireo (Vireo solitarius) (6, 1). One was at Lyons Ferry, Franklin Co., on 7 Sep 2008 (BHVI-2008-1; DI, photo: SM).

Philadelphia Vireo (Vireo philadelphicus) (5, 2). A Philadelphia Vireo was accepted from Washtucna, Adams Co., 20 Aug 2005 (PHVI-2005-1; BF), and another was at Hooper, Whitman Co., 3 Jun 2007 (2007-1; GS).

Lead-colored or Interior Bushtit (Psaltriparus minimus plumbeus) (1, 1). After adding the Interior Bushtit group (also known as the Lead-colored or Plumbeous Bushtit) to the list of subspecies it reviews in Washington in 2005, the WBRC received one report from the area where this subspecies is suspected to be resident. On 6 Apr 2009, four were observed near Moses Lake, Grant Co. The photos alone were not diagnostic of the subspecies group, but in combination with the description the documentation was sufficient to confirm it in our state (BUSH-2009-1; DSc). The closest location where nesting of this subspecies is known is in east-central Oregon (Marshall et al. 2003).

Blue-gray Gnatcatcher (Polioptila caerulea) (10, 1). One was at Ocean Shores, Grays Harbor Co., on 13 Sep 2008 (BGGN-2008-1; MBr).

Brown Thrasher (Toxostoma rufum) (10, 2). A Brown Thrasher was at Fort Walla Walla Natural Area, Walla Walla, Walla Walla Co., on 12 Jun 2008 (BRTH-2008-1; MD & MLD). Another was at Nisqually NWR, Thurston Co., on 10 Oct 2008 (2008-2; MLe).


Ovenbird (Seiurus aurocapilla) (19, 2). Ovenbirds at Ellenger Farm, Adams Co., on 4 Sep 2008 (OVEN-2008-1; BW) and Leadbetter Point, Pacific Co., 22 Oct 2008 (2008-2; photo: RJM) bring the state total to 19 records. Most of Washington’s Ovenbirds have occurred during May or June, with only five being in the fall.

Black-and-white Warbler (Mniotilta varia) (30, 3). One was at Washtucna, Adams Co., 14 Sep 2008 (BAWW-2008-1; BoS), one at Kent Ponds, King Co., 24 May 2009 (2009-1; photo: GO, OO), and one at Ridgefield, Clark Co., 30 Apr 2010 (2010-2; THi).

Prothonotary Warbler (Protonotaria citrea) (3, 1). A Prothonotary Warbler, either
a first-year bird or an adult female, at Bateman Island, Benton Co., 10 Aug 2007 (PROW-2007-1; ARJ) was Washington’s third.

Tennessee Warbler (*Oreothlypis peregrina*) (23, 6). One was at Washtucna, Adams Co., 15 Sep 2007 (TEWA-2007-2; MD); another was there 8 Sep 2008 (2008-1; DSc, photo: GT; Figure 14); one was at the Elwha River mouth, Clallam Co., 16 Nov 2008 (2008-2; SM, BW); one was at Montlake Fill, Seattle, King Co., 25 Aug 2009 (2009-1; CSi); one was at Theler Wetlands, Belfair, Mason Co., 15–16 Aug 2009 (2009-2; KeB); and one was at Vantage, Kittitas Co., 28 May 2010 (2010-1; SM).

Mourning Warbler (*Geothlypis philadelphia*) (2, 1). The description of Washington’s second Mourning Warbler, at Washtucna, Adams Co., on 25 Aug 2007 (MOWA-2007-1; SM, DSc) specified an even, thin eye ring broken only slightly in front and back of the eye, undertail coverts long in relation to the tail, and bright yellow in much of the throat, distinguishing this bird from the expected MacGillivray’s Warbler (*G. tolmiei*). The extensively yellow throat indicated a hatch-year bird. Oregon has six records, Idaho two records, and California 146 through 2013.

Northern Parula (*Setophaga americana*) (13, 2). A hatch-year female was at Washtucna, Adams Co., on 2 Sep 2009 (NOPA-2009-1; TA, photo: RJM). Another hatch-year female was in the Sooes River valley, Clallam Co., 17 Sep 2009 (2009-2; BT). Six of Washington’s 13 records have been during the fall, six during the summer, and the first, in 1975, was in winter.

Magnolia Warbler (*Setophaga magnolia*) (20, 7). Records of the Magnolia Warbler include one at Biscuit Ridge, Walla Walla Co., 29 May 2005 (MAWA-2005-2; CWr); one at Bowerman Basin, Grays Harbor Co., 8 Sep 2007 (2007-1; MM); one at Nahcotta, Pacific Co., 27 Jun 2008 (2008-1; JGI); one at Washtucna, Adams Co., 10 Sep 2008 (2008-3; photo: TK; Figure 15); another there 21 Sep 2008 (2008-2;
Bay-breasted Warbler (*Setophaga castanea*) (2, 1). Washington’s second Bay-breasted Warbler, the first to be photographed, was a singing male near Chehalis, Lewis Co., 5 Jun–8 Jul 2006 (BBWA-2006-1; RKo, photos: KeB, KT). California has more than 300 records, Oregon 11, and Idaho three.

Blackburnian Warbler (*Setophaga fusca*) (6, 2). A male Blackburnian Warbler was at Confluence State Park, Chelan Co., 19 May 2007 (BLBW-2007-1; DMa, JeP, GR). Another, in its first year, was at Sentinel Bluffs, Grant Co., 29 Aug 2009 (2009-1; SM, CWr).


Blackpoll Warbler (*Setophaga striata*) (27, 6). New records of the Blackpoll Warbler included one at Vancouver Lake, Clark Co., 13 Sep 2007 (BLPW-2007-3; TA); one at Sentinel Bluffs, Grant Co., 2 Sep 2008 (2008-1; BW); one at Washtucna, Adams Co., 3 Sep 2008 (2008-2; photo: RaH); another one there 7 Sep 2008 (2008-3; RaH); one at Lyons Ferry Park, Franklin Co., 8-11 Sep (2008-4; TA, photos: RJM, SM); and a singing male at Sun Lakes State Park, Grant Co., 24 May 2009 (2009-1; photo: DSc). These bring the state total to 27 records, all but three of which have come from eastern Washington, and all but three of which have been in the fall.

Black-throated Blue Warbler (*Setophaga caerulescens*) (9, 2). A female was at Wapato, Yakima Co., 16–17 Oct 2005 (BTBW-2005-1; ASi, ESi, photo: DnG) and another female was at College Place, Walla Walla Co., 8–11 Nov 2007 (2007-1; photo: MD, MLD), bringing the state total to nine records.

Yellow-throated Warbler (*Setophaga dominica*) (2, 1). Washington’s first recorded Yellow-throated Warbler frequented suet feeders and apples in Twisp, Okanogan Co., 8 Dec 2001–23 Jan 2002 (YTWA-2001-1; RMu, photo, video: SM, photo: RuS). A second, later record, from Asotin Co. in 2003 was discussed in the seventh report of the WBRC (Mlodinow and Aanerud 2008). There are eight records for Oregon, four for Idaho, and more than 150 for California.

Red Fox Sparrow (*Passerella iliaca iliaca/zaboria*) (13*, 6). The six records accepted in this period are of one at Harrington, Lincoln Co., 22 Sep 2007 (RFSP-2007-1; photo: TM); one at Yakima, Yakima Co., 16 Dec 2008 (2008-1; ASi, photo: MRo); one at Redmond, King Co., 31 Dec 2008–2 Jan 2009 (2008-2; MHo, JAP, TP, photo: AL); one at Fall City, King Co., 18 Nov 2009 (2009-3; TA); one at Yakima, Yakima Co., 16 Dec 2009 (2009-4; photo: DnG); and one at South Prairie, Pierce Co., 22 Jan 2010 (2010-1; CWr). These bring Washington’s total to 13 records of this subspecies group since it was added to the review list in 2004.

Rose-breasted Grosbeak (*Pheucticus ludovicianus*) (53*, 14). The 14 records accepted were of an adult male at Robinson Gulch, Kittitas Co., 9 Jun 1990 (RBGR-1990-3; NH); an adult male at Quilcene, Jefferson Co., 1 May 2008 (2008-1; BeS, photo: MAS); an adult male at Arlington, Snohomish Co., 17 Jun 2008 (2008-2; photo: DoB); an adult male at Kent, King Co., 5 Jul 2008 (2008-3; photo: DSt); an adult male at Long Beach, Pacific Co., 21 Jun 2008 (2008-4; CWh, photo: SWh); one in basic plumage at Lind Coulee, Grant Co., 20 Sep 2008 (2008-5; SM); another in basic plumage at Gig Harbor, Pierce Co., 10 Nov 2008 (2008-6; photo: CSm); one in basic plumage at Sequim, Clallam Co., 21 Dec 2008 (2008-7; TCu); a first-winter male at Suncrest, Stevens Co., 21 Feb 2009 (2009-1; photo: MWo); an adult male at Elk, Spokane Co., 13 May 2009 (2009-2; photo: MWo); an adult

Indigo Bunting (Passerina cyanea) (28, 9). The nine Indigo Buntings accepted include a female near George, Grant Co., 18 Aug 2007 (INBU-2007-2; GG, BW); an adult male at Point No Point, Kitsap Co., 4 Jun 2008 (2008-1; photo: BW), an adult male at North Auburn, King Co., 6 Jun 2008 (2008-2; photo: KA); an adult male at Coppei Creek, Walla Walla Co., 5–11 Jun (2008-3; photo: RJM); a hatch-year bird at Juanita Bay, King Co., 15 Nov 2008 (2008-4; photo: RJM); an adult male at Kennewick, Benton Co., 1–2 May 2009 (2009-2; TG, RW; photo: SP); an adult male at Three Forks Park, Fall City, King Co., 10 Jun–9 Aug 2009 (2009-3; photos: RJM, GT); an adult male near Carson, Skamania Co., 21 Jun 2009 (2009-4; WC, photo: MV); and a male, most likely in its second year, at Corkindale Creek, Skagit Co., 19 Jun–12 Jul 2009 (2009-5; photo: RJM).

Dickcissel (Spiza americana) (6, 1). A Dickcissel at Westport, Grays Harbor Co., 31 Oct 2008 (DICK-2008-1; photo: BT) was the sixth recorded in Washington.

Common Grackle (Quiscalus quiscula) (18, 2). Adult males were at Toppenish, Yakima Co., 20 Dec 2009 (COGR-2009-1; AS) and Burien, King Co., 25 Apr 2010 (2010-1; photo: JKa). Both birds appeared to be of the subspecies versicolor.

Great-tailed Grackle (Quiscalus mexicanus) (8, 4). Two were 8 km northeast of Wallula, Walla Walla Co., 15 Jul 2007 (GTGR-2007-1; photo: MD, ML); one was at Newhalem, Whatcom Co., 19–23 Jun 2007 (2007-2; RKa; photos: PDB, RJM), one was at Sprague Lake, Lincoln Co., 17 May 2009 (2009-1; photo: GO, OO); and one was at Ridgefield NWR, Clark Co., 2 Jun 2010 (2010-1; JDz). All were males.

Orchard Oriole (Icterus spurius) (6, 3). New Orchard Oriole records were of one at Samish Island, Skagit Co., 6–7 Nov 2007 (OROR-2007-1; HA, photo: LD, MSD), one at the Wa’atch River, Clallam Co., 9 Sep 2009 (2009-2; CW; photo: RJM), and a hatch-year bird at Hoquiam, Grays Harbor Co., 22–27 Oct 2009 (2009-1; photos: RH, GT, IU; Figure 16).


Reports Not Accepted by the Committee—Identification Uncertain

Tufted Duck (Aythya fuligula) (18*, 6). The brief description of a bird at Hoquiam, Grays Harbor Co., on 30 Apr 2010 (TUDU-2010-4) suggested this species but also included aspects inconsistent with the Tufted Duck, including the bill described as “dark brown.”

Smew (Mergellus albellus) (3, 0). A report of two females at Bainbridge Island, Kitsap Co., on 5 Oct 2008 (SMEW-2008-1) failed to eliminate the Pigeon Guillemot (Cepphus columba), among other much more likely species.

Arctic Loon (Gavia arctica) (3, 0). Loons reported from Point No Point, Kitsap Co., on 14 Feb 2008 (ARLO-2008-1) and Ocean Shores, Grays Harbor Co., on 18 Jan 2009 (2009-1), were seen too distantly and described insufficiently to convince the committee they were the Arctic. The Arctic Loon remains one of the more difficult species to document definitively without photographic support.

Mottled Petrel (Pterodroma inexpectata) (8, 3). A report from off Edmonds, Snohomish Co., on 27 Nov 2009 (MOPE-2009-4) coincided with the same day’s report of the same species off Kitsap Co., which the committee accepted. While the
bird may have been the same as the one seen off Kitsap Co. only two hours earlier and 16 km southeast, the details were not sufficient for acceptance.

Streaked Shearwater (Calonecristis leucomelas) (0, 0). While the report of a Streaked Shearwater about 37 km off Westport, Grays Harbor Co., on 23 Aug 2008 (STRS-2008-1) suggested that species, the observer did not see the face, bill, or underwing and was less than certain of the species in part because of the possibility of an aberrant Pink-footed Shearwater (Puffinus creatopus).

Ashy Storm-Petrel (Oceanodroma homochroa) (2, 1). A sighting off Ocean Shores, Grays Harbor Co., on 1 May 2010 (ASSP-2010-1) was too brief to eliminate other species of dark-rumped storm petrels.

California Condor (Gymnogyps californianus) (1, 0). The report from South Prairie, Pierce Co., on 29 Dec 2009 (CACO-2009-1) was insufficiently detailed.

Harris’s Hawk (Parabuteo unicinctus) (0, 0). A report from Race Lagoon, Whidbey Island, Island Co., on 31 Aug 2008 (HASH-2008-1) failed to be accepted, both because some committee members were not convinced the description ruled out other raptors and because Harris’s Hawk is common in falconry, raising the question of wild origin. Harris’s Hawk remains unrecorded in neighboring Idaho or Oregon.

Broad-winged Hawk (Buteo platypterus) (18, 5). A report of one at Ridgefield, Clark Co., on 21 Apr 2009 (BWHA-2009-2) did not eliminate the Red-shouldered Hawk.

Zone-tailed Hawk (Buteo albonotatus) (0, 0). The report of a Zone-tailed Hawk from the bridge of Highway 12 over the Satsop River, Grays Harbor Co., on 18 Dec 2008 (ZTHA-2008-1) failed to consider a dark-morph Rough-legged Hawk (B. lagopus) or Harlan’s Red-tailed Hawk (B. jamaicensis harlani).


Bar-tailed Godwit (Limosa lapponica) (51*, 4). In its previous summaries, the WBRC overlooked a report not accepted from Bridgeport, Douglas Co., 5 Aug 1996 (BTGO-1996-1).

Long-billed Murrelet (Brachyramphus perdix) (7, 0). A report from Luhr Beach, Thurston Co., on 27 Aug 2004 (LBMU-2004-1) was not accepted in a 2006 meeting because of insufficient details.

Horned Puffin (Fratercula corniculata) (26, 6). A possible immature Horned Puffin off Westport, Grays Harbor Co. (HOPU-2008-1) was seen briefly in the distance, and the details reported were insufficient to convince the committee.


Northern Hawk Owl (Surnia ulula) (26, 9). A report from Seattle, King Co., 30 Nov 2007 (NHOW-2007-4) was short on details.

Allen’s Hummingbird (Selasphorus sasin) (1, 0). The description of a supposed adult male Allen’s Hummingbird at Deer Lake, Island Co., on 11 May 2009 (ALHU-2009-1) fit a Rufous Hummingbird (S. rufus) better.

Yellow-bellied Sapsucker (Sphyrapicus varius) (8, 2). A report from Moses Lake, Grant Co., on 12 Sep 2004 (YBSA-2004-1) was considered at two meetings but ultimately not accepted. A report from 16 km west of Eatonville, Pierce Co., on 9 Apr 2008 (2008-1) failed to address the Red-naped Sapsucker (S. nuchalis). A reported second Yellow-bellied Sapsucker with the one accepted at Ginkgo State Park, Kittitas Co., on 14 Apr 2008 was only seen briefly, and no photos or detailed descriptions were possible (2008-2).
Crested Caracara (\textit{Caracara cheriway}) (3, 0). A report of a Crested Caracara from Marymoor Park, Redmond, King Co., on 11 Jul 2009 (CRCA-2009-1) did not persuasively eliminate the Osprey (\textit{Pandion haliaetus}).

Alder Flycatcher (\textit{Empidonax alnorum}) (3, 1). A report of an Alder Flycatcher calling but not singing at Kettle Falls, Ferry Co., 7 Jun 2004 (ALFL-2004-1) was not accepted. A reported Alder Flycatcher near Clarkston, Asotin Co., on 11 Jun 2008 (2008/1) was well described, but the vocalization was heard only briefly and the committee was reluctant to accept the report without a longer interaction.

Eastern Phoebe (\textit{Sayornis phoebe}) (7, 0). In reviewing historical reports, the committee declined to accept the reports of the Eastern Phoebe in Washington published in Bent (1942) (EAPH-0000-1). Three sight reports are mentioned, from Camas, Clark Co., Yakima, Yakima Co., and Pullman, Whitman Co. No specimens were collected, and no dates were reported. These reports probably referred to Say's Phoebe (\textit{S. saya}).

Tropical/Couch's Kingbird (\textit{Tyrannus melancholicus/couchii}) (21, 5). The date of a report from Discovery Park, Seattle, King Co., 9 June 1999 (TRKI/COKI-1999-1) implies the bird was a Western Kingbird (\textit{T. verticalis}).

Scissor-tailed Flycatcher (\textit{Tyrannus forficatus}) (8, 1). Though closely following the Scissor-tailed Flycatcher accepted from the same county on 15 May 2003 (Mlodinow and Aanerud 2008), the report from Silica Road, Grant Co., 17 May 2003 (STFL-2003-2) was insufficiently detailed.

Philadelphia Vireo (\textit{Vireo philadelphicus}) (5, 2). A report from Washtucna, Adams Co., 25 May 2007 (PHVI-2007-2) included a photo and description yet did not rule out a bright Warbling Vireo (\textit{V. gilvus}). Another bird reported from the same locality on 31 May 2008 (2008/1) was well-described but not convincingly enough to rule out alternatives to the Philadelphia Vireo. A 30 Aug 2008 report from Washougal, Clark Co. (2008-2), did not convincingly rule out other vireos.

Wrentit (\textit{Chamaea fasciata}) (0, 0). Written details of a Wrentit reported from the Montlake Fill in Seattle, King Co., 22 Aug 2007 (WREN-2007-1) were inadequate for a species unknown in Washington.

Crested Myna (\textit{Acridotheres cristatellus}) (0, 0). A brief report from Edmonds, Snohomish Co., on 27 Dec 2007 (CRMY-2007-1) did not eliminate other species of mynas, any of which presumably would have been an escapee. An introduced population of the Crested Myna persisted on Vancouver Island from the late 1800s until 2003 (Self 2003). Scattered, undocumented reports of this species in Washington over the years possibly represented birds dispersing from British Columbia, though the WBRC has reviewed no previous reports (Mattocks et al. 1976).

Phainopepla (\textit{Phainopepla nitens}) (1, 0). The report of an adult male from Mill Creek, Snohomish Co., on 31 Jul and 5 Aug 2009 (PHAI-2009-1) was insufficient for acceptance.

McKay's Bunting (\textit{Plectrophenax hyperboreus}) (3, 0). A reported McKay's Bunting along Cameron Lake Road, Okanogan Co., on 17 Feb 2008 (MKBU-2008-1) was tantalizing but was seen too distantly for a pale male Snow Bunting (\textit{P. nivalis}) to be ruled out.

Worm-eating Warbler (\textit{Helmitheros vermivorum}) (0, 0). A report from Tacoma, Pierce Co., on 13 Jul 2005 (WEWA-2005-1) was more likely of another species. Neither the Savannah Sparrow (\textit{Passerculus sandwichensis}) nor wrens were ruled out by the details provided.

Black-and-white Warbler (\textit{Mniotilta varia}) (30, 4). A report from Mercer Island,
King Co., 22 Jun 1992 (BAWW-1992-2) was not accepted by the committee in 1994 but the decision was inadvertently never published. A report from the north side of Stacker Butte, Klickitat Co., 21 May 2010 (2010-1) failed to eliminate the Black-throated Gray Warbler (Setophaga nigrescens) convincingly. A song apparently of a Black-and-white Warbler was heard along Tieton Road, Yakima Co., on 20 Jun 2010 (2010-3). Concerns regarding another species of warbler singing an aberrant song prevented the committee from endorsing this report.

Tennessee Warbler (Oreothlypis peregrina) (23, 6). A report from Sentinel Gap, Grant Co., on 1 Sep 2007 (TEWA-2007-3) raised concerns about the distance to the bird as well as inconsistencies in the described plumage and call note.

Blackpoll Warbler (Setophaga striata) (27, 6). Details of Blackpoll Warblers reported from Spokane, Spokane Co., on 14 Oct 2001 (BLPW-2001-1) and from Vantage, Kittitas Co., on 9 Oct 2005 (2005-4) were inadequate.

Black-throated Blue Warbler (Setophaga caerulescens) (9, 2). The description of a male at Silver Lake, Cowlitz Co., on 9 Apr 2008 (BTBW-2008-1) lacked detail sufficient for acceptance.

Lark Bunting (Calamospiza melanocorys) (11, 0). A report of a male Lark Bunting in alternate plumage from Columbia NWR, Grant Co., on 17 Aug 2008 (LARB-2008-1) did not eliminate other species, and the described plumage seemed unlikely for the season. The description of a female at Ross Lake, Whatcom Co., 8 Jun 2010 (2010-1) was not adequate to establish the identity of the species, and it was unclear whether the bird was definitely in Washington or remained on the Canadian side of the border.

Indigo Bunting (Passerina cyanea) (28, 9). Distant and backlit photos, unaccompanied by a written description filling in the gaps, were not sufficient to rule out a hybrid Lazuli × Indigo Bunting for a bird observed at Long Swamp, Okanogan Co, 13 Jul 2009 (INBU-2009-6).

Dickcissel (Spiza americana) (6, 1). The description of a Dickcissel reported at the Montlake Fill in Seattle, King Co., on 18 Apr 2009 (DICK-2009-1) had several inconsistencies with that identification, including apparent size.


Hoary Redpoll (Acanthis hornemanni) (14, 1). A report from Seattle, King Co., 30 Dec 2001 (HORE-2001-2) was not accepted by the committee in 2002, but the decision was inadvertently never published. A report from Lake Padden, Whatcom Co., 9 Jan 2008 (2008-1) more likely represented a Common Redpoll (A. flammea).

Reports Not Accepted by the Committee—Identification Certain, Origin Unknown

American Black Duck (Anas rubripes) (0, 0). As mentioned in the introduction, in 2011 the WBRC removed this species from the Washington list after concluding that American Black Ducks of wild origin have not been convincingly shown to have occurred in the state. Particularly for recent reports, escapees from captivity are far more likely. The committee continues to evaluate reports, however, first considering the species’ identity, then separately voting on the question of origin. It recognized
these four reports as representing American Black Duck but did not accept them because of uncertain origins: single females at Juanita Bay, Kirkland, King Co., 1 Oct 2007 (ABDU-2007-2) and 1 Aug–18 Oct (likely the same bird returning; 2008-2); one at Stanwood, Snohomish Co., 10 Nov 2007 (2007-1); one at Port Susan Bay, Snohomish Co., 4 May 2008 (2008-1). Subsequently, a Woodinville breeder informed the committee that many free-flying American Black Ducks had escaped his ponds in recent years.

Common Ground-Dove (*Columbina passerina*) (0, 0). While the details of a report near Rochester, Thurston Co., 26 Aug 2008 (COGD-2008-1) seemed to confirm a Common Ground-Dove, the bird appeared tame, so the committee refrained from adding this species to the state list on the basis of this report.

Northern Cardinal (*Cardinalis cardinalis*) (0, 0). Photographs of a female in Vancouver, Clark Co., on 28 Apr 2009 (NOCA-2009-1) left no doubt about the bird’s identity. As with other sightings of Northern Cardinal, the committee continues to wrestle with the question of origin. Sufficient doubt remains over the origin in Washington of any Northern Cardinal, a species regularly kept in captivity, that the committee has thus far not endorsed any reports.

**CORRECTIONS**

A review of previously published reports, aided to a large extent by Laurie Knittle of Washington Birder (wabirder.com), has uncovered a number of unintentional errors published in previous WBRC reports.

Smew (*Mergellus albellus*). “Alan Grenon” is the correct spelling for one of the observers of Washington’s third recorded Smew (SMEW-1993-1), not “Alan Grinnon” as originally published in the WBRC’s second report (Tweit and Skriletz 1996:27).


Bar-tailed Godwit (*Limosa lapponica*). The 18 Oct 2005 observation at Tulalip Bay, Snohomish Co. (BTGO-2005-6) was reported by Maxine Reid, not M. Bacon as published (Aanerud 2011:40).

Lesser Black-backed Gull (*Larus fuscus*). The second-year bird at Sun Lakes, Grant Co. (LBBG-2004-2) was present from 8 to 14 Oct 2004, not 2005 as originally written (Mlodinow and Aanerud 2008:30).


Black-throated Blue Warbler (*Setophaga caerulescens*). One at Davenport Cemetery, Lincoln Co. 26 Sep 2004 (BTBW-2004-1) was a male, not a female as published by Modinow and Aanerud (2008:36–37).

Painted Bunting (*Passerina ciris*). The report of Washington’s first Painted Bunting, from 10 Feb to 2 Mar 2002 (PABU-2002-1), should have included Rachel Lawson as the initial reporter and photographer (Mlodinow and Aanerud 2006:48–49).
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WFO’S 41ST ANNUAL CONFERENCE — HUMBOLDT COUNTY, CALIFORNIA

28 September–2 October 2016

Please join us for Western Field Ornithologists 41st annual conference, to be held 28 September through 2 October 2016 at the River Lodge Conference Center, on the Eel River in Fortuna, California.

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We look forward to seeing you in Fortuna!
NOTES

NEST-SITE SELECTION OF THE BLACK-CHINNED HUMMINGBIRD IN SOUTHEAST ARIZONA

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The selection of safe breeding sites is an important behavioral component of avian population ecology (Newton 1998), and nest predation is a major ecological force limiting reproductive success and shaping the spatial distributions of breeding birds (Ricklefs 1969, Martin 1995). Avian nesting sites can be examined at multiple spatial scales, from broad landscape levels, to nest and patch characteristics, to microsite features such as overhead concealment and nest orientation (Martin 1993, Paton 1994). Microhabitat features of the vegetation used as nest substrates are especially important for camouflage and protection from inclement weather (Martin 1995, Deeming 2002, Kolbe and Janzen 2002). Numerous studies have linked specific aspects of nest microsites and nesting success in a variety of birds (e.g., Martin and Roper 1988, Liebezeit and George 2002, Aguilar et al. 2008, Powell et al. 2010, Miller 2014). While many studies of avian nesting success focus on predation or brood parasitism (e.g., Li and Martin 1991, Larison et al. 1998, Lima 2009), in some species, particularly species with narrow physiological tolerances like hummingbirds (Calder and Booser 1973, Calder 1994, 2002), nest placement may also be important for maintaining the microclimate around the nest (Deeming 2002).

The Black-chinned Hummingbird (Archilochus alexandri) is a migratory species that nests from southern British Columbia to extreme northern Mexico and southern Texas, wintering from southern Texas to south-central Mexico (Baltosser and Russell 2000). As pointed out by Baltosser (1978), its choice of nesting substrate tends to vary geographically, so detailed studies are needed from multiple areas before we can assess the relative importance of geographic variation in its nest placement. Additionally, though there are many anecdotal accounts of the nesting of the Black-chinned Hummingbird, most studies addressing nest-site selection have focused on habitat structure or species of tree used as nest substrate rather than actual nest placement or microsite characteristics (e.g., Stamp 1978, Brown 1992, Smith et al. 2009). If not, their sample sizes are very small (e.g., Christy 1932).

The success of Black-chinned Hummingbird nests in southeastern Arizona has been linked to their placement in relation to nests of the Cooper’s Hawk (Accipiter cooperii) and Northern Goshawk (A. gentilis) and to the spatial patterns of foraging by the Mexican Jay (Aphelocoma wollweberi), an important predator of eggs (Greeney and Wethington 2009, Greeney et al. 2015). To provide baseline information on nest-microsite selection to explore this trophic cascade further, we describe the microsite and placement of Black-chinned Hummingbird nests on the basis of 412 nests in the Chiricahua Mountains of southeastern Arizona. We made all observations in the vicinity of the Southwestern Research Station (31° 53’ N, 109° 12’ W; elevation 1600 m), located west of Portal, Arizona. We located the nests by searching riparian areas at elevations of 1400–1750 m from April to July during 2007 and 2008. We
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located 95% of nests by observing the female’s behavior and following her to the nest, circumventing the concealing effect of nest height and foliage density.

We measured 11 variables at each nest. We estimated the height of substrate trees to the nearest 0.5 m with a 7-m pole and used a tape to measure the trunk’s diameter at breast height (DBH). Using a 7-m pole, we also measured nest height to the nearest 10 cm, estimating the height of nests over 7 m by using the pole as a gauge. We visually estimated the distance of the nest from the central portion of the tree and from the outer edge of the foliage at nest height, and estimated the diameter of the supporting branch by visually estimating the relative sizes of each feature in relation to the width of the nest in question, using mean measurements taken from 26 nests collected in the same study area (Greeney unpubl. data). We noted many nests placed near forked limbs, which appeared as a horizontally oriented “Y,” with one arm of the fork overhanging the nest and one supporting it, so we estimated the distance between the nest and the fork, as well as the distance from the nest rim to the overhanging arm of the fork, and then estimated the diameter of this overhead cover. For each nest we also noted if the supporting branch was angled, and whether it was living or dead, and we made note of all nests that were constructed on the visible remains of an old nest. We recorded the orientation of nests in relation to the substrate tree with a hand-held compass.

We used circular statistics to test for non-uniform directionality of nest orientation (Bergin 1991), running Rao’s uniformity test \((U: \text{ Rao 1976, Batschelet 1981})\) in Oriana 2.0 (Kovach, Pentraeth, Wales). In addition to the probability, we present mean vector length \((r)\), which is a unitless measure \((0–1)\) of the dispersion of the data, with a value of 0 being widely dispersed (uniform) and 1 being tightly concentrated.

Of 412 nests, 266 (64.6%) were in alligator juniper \((\text{Juniperus deppeana})\). The remainder were built in Arizona sycamore \((\text{Platanus wrightii}; 17.5\%)\), oaks \((\text{Quercus spp.; 10.9\%})\), one-seeded juniper \((\text{J. monosperma}; 2.2\%)\), spiny hackberry \((\text{Celtis ehrenbergiana}; 2.2\%)\), pines \((1.2\%)\), and Wright’s silktassel \((\text{Garrya wrightii}; 0.7\%)\), as well as one nest \((0.2\%)\) in each of Fremont cottonwood \((\text{Populus fremontii})\), pecan \((\text{Carya illinoinensis})\), and Arizona cypress \((\text{Cupressus arizonica})\). Substrate trees had an estimated mean height of \(11.3 \pm 3.7 \text{ m (n = 399)}\) and a mean DBH of \(37 \pm 25 \text{ cm (n = 362)}\).

Mean estimated nest height was \(5.7 \pm 2.6 \text{ m (n = 411)}\), with 56% of nests in the upper half of the substrate (tree) and 28% in the upper third \((n = 400)\). Mean estimated distance from the nest to the center of the tree was \(2.6 \pm 1.4 \text{ m (n = 408)}\), and mean estimated distance to the end of the supporting branch was \(1.1 \pm 0.6 \text{ m (n = 408)}\); thus 63% of nests were in the outer third of the foliage (as measured at the height of the nest). Nests showed a significant bias toward orientation south–southeast with respect to the substrate tree \((n = 98, U = 156.408, r = 0.627, p < 0.01; \text{Figure 1})\).

Black-chinned Hummingbird nests were more likely to nest on slightly angled branches \((56\%, n = 403)\) as well as on living branches \((57\%, n = 409)\), and branches used had a mean estimated diameter of \(1.6 \pm 0.9 \text{ cm}\). Most nests were also placed close to the fork of a branch oriented so that they were covered by one arm of the “Y” \((65\%, n = 412)\). Where a covering branch was present, nests were built an average of \(6.9 \pm 3.5 \text{ cm below this branch and } 7.4 \pm 5.2 \text{ cm from the forking of the supporting arm, and overhead branches were on average } 2.7 \pm 1.8 \text{ cm in diameter (n = 266).}

At a mean height of almost 6 m above the ground, the Black-chinned Hummingbird nests we studied were at the higher end of the range reported in the literature or from collected nests. While Baltosser (1986), also working in southeastern Arizona, found most nests 5–6 m above the ground, studies in California and northern Arizona suggest a mean height of 2 m (Brown 1992, Baltosser and Russell 2000). Pitelka (1951) described most nests as 2–3 m up in southern California, while studies in New Mexico and Texas reported nests generally below 4 m (Baltosser 1978, Ortego and Sargent in Baltosser and Russell 2000). It should be noted, however, that mean substrate height varies considerably by site (e.g., 2.4 m, Brown 1992, vs. 11.3 m, this study)
NOTES

The Black-chinned Hummingbird’s preference for nesting in riparian areas is well established (Grinnell and Miller 1944, Baltosser 1989, Strong and Bock 1990), but other habitats are also commonly used, including orchards (Grinnell and Miller 1944, Woods 1936, Small 1994) and well-irrigated urban areas (Rosenberg et al. 1987), perhaps suggesting that humidity is an important factor in nest-site selection. While we did not thoroughly search areas outside of riparian zones, no females we followed were attending nests away from riparian zones, and we did not find any nests outside of riparian zones during casual searches or travel between focal areas. Even within southeast Arizona the preferred species of substrate tree varies considerably from study to study: Baltosser (1978, 1989) found sycamores, cypresses, and maples to be preferred nesting substrates, with the population closest to our site (Rucker Canyon) showing a secondary preference for junipers (Baltosser 1978). Elsewhere, Brown (1992) reported the introduced tamarisk (*Tamarix ramosissima*) as the preferred substrate in northern Arizona, as did Smith et al. (2009) working in southwestern New Mexico, where they also noted use of Russian olive (*Elaeagnus angustifolia*) and eastern cottonwood (*Populus deltoides*). California studies have shown a preference for sycamore, with oak and willow also used (Wueste 1902, Pitelka 1951, Baltosser and Russell 2000). Prior authors have remarked on the Black-chinned Hummingbird’s use of the outer portions of substrate trees (Merriam 1896, Unglish 1932, Woods 1936), while others have found a preference for the lower strata of substrate trees (e.g., Ortego and Sargent in Baltosser and Russell 2000).

The population of Black-chinned Hummingbirds we studied showed a clear preference for the upper, outer portions of junipers, choosing slightly angled, living branches, smaller in diameter than the nest and with a branch sheltering it from above. We believe that such details of site selection may be important for successful reproduction, with any geographic variation in substrate species more likely to be explained by which tree species is locally abundant and having a growth form with architectural qualities to provide such sites.

Figure 1. Compass orientation, with respect to the substrate’s trunk, of Black-chinned Hummingbird nests in southeast Arizona (0° = north). The length of a given bar expresses the number of nests oriented in that direction.
NOTES

We suggest the preference for nesting at branch tips, along with the use of thin supports, may be in response to pressures by non-aerial predators such as snakes and squirrels, and that overhead cover is an important microsite characteristic that has been overlooked in prior studies (but see Holland 1916). Simply because of the density of the trees in which we found nests, we suspect that many of our nests that were not categorized as having overhead cover were actually shaded by thin foliage to some degree. Additionally, we speculate that a thick branch directly above the nest may encourage arboreal predators such as squirrels to travel along these upper branches, reducing the chance that they will physically or visually encounter a hummingbird nest hidden below the branch.

We thank Dawn Wilson and the staff of Southwest Research Station for their help and support during our field work. This study was funded by a grant from the U.S. Fish and Wildlife Service to Wethington, agreement number 201815J857, and the Hummingbird Monitoring Network. Mark Mendelsohn, Daniel S. Cooper, Michael C. Long, and Quresh Latif provided valuable revisions to improve the clarity of this manuscript. Greeney’s field work is also supported by John Moore and Matt Kaplan through the Population Biology Foundation, as well as by Field Guides and the Maryland Ornithological Society.

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COLORADO’S FIRST ACCEPTED RECORD OF THE CAVE SWALLOW

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Colorado’s first accepted record of a Cave Swallow (Petrochelidon fulva) involved an immature photographed at Prewitt Reservoir, Washington County, on 17 July 2013. The bird occurred amid this species’ substantial range expansion and a complex, rapidly changing pattern of vagrancy in the United States and Canada over the last 50 years. Here we detail the species’ colonization of the U.S. and summarize these patterns of vagrancy.

On 17 July 2013, Mlodinow, Andrew Core, and Sean Walters were walking across extensive mudflats at the western end of Prewitt Reservoir, Washington County. Approximately 400 swallows were feeding over the flats when Mlodinow noted an orange-throated swallow headed toward them. He alerted his companions, and both rapidly located the bird. It circled the observers for about 10 minutes, approaching as closely as 3 meters, often in excellent light. When the bird was farther away, it was easy to relocate among the Cliff Swallows (P. pyrrhonota) by its pale orange throat. We took several photographs identifying the bird as a Cave Swallow. The Colorado Bird Records Committee (CBRC) later accepted this record as the state’s first (Faulkner 2014).

Leukering (2011) summarized five pre-2010 reports of the Cave Swallow from Colorado, including three single-observer sightings not submitted to the CBRC but likely representing correct identifications: Las Animas County, May 2003; Bent County, July 2005; and Pueblo County, September 2006. The two other reports include a bird that may have been a hybrid Cliff Swallow × Cave Swallow and one that was not accepted by the CBRC.

The shape and structure of the Cave Swallow we observed were much like those of a Cliff Swallow. The head sported a small orange patch on the forehead that was considerably darker than that of an adult Cliff Swallow but probably within range of young Cliff Swallows. The size of the forehead patch was consistent with that of an immature of either species. The throat was a medium orange that was distinctly paler than that of any Cliff Swallow present and was unmarrred by dark (or light) markings. This orange went up onto the auriculars and blended into the collar, which transitioned to grayish on the hindneck. The demarcation between collar and back was fairly crisp. The crown was dull dark glossy blue, barely extending down to the eyes and curving sharply upward posterior to the eyes (Figure 1). The back and wings were dull glossy dark blue, without white streaking on the back. Thus both the head and back had already taken on the aspect of an adult. The rump was orange. The tail was dark and square. The white chest and belly blended into the sides, which were orange-buff mixed with dusky. The undertail coverts were washed in orange-buff and had very limited markings, seemingly restricted to a couple narrow dusky smudges on the outermost posterior undertail coverts. The small area of yellow at the gape is consistent with a recent fledgling.

The Colorado Cave Swallow had orange auriculars, inconsistent with any plumage of the Cliff Swallow. The throat of the Colorado bird was plain orange. In contrast, by the time a Cliff Swallow acquires back and crown plumage resembling that of an adult (as in the Colorado bird), the throat should have dark smudging resembling, or starting to resemble, that of an adult. Similarly, the background color of the throat should be a darker orange than that of the Colorado bird. The Colorado bird had a narrow cap that did not extend much behind the eye, unlike the more extensive cap
of a Cliff Swallow. Finally, the more lightly marked undertail coverts of this bird are typical of a Cave Swallow and would be unusual for a Cliff Swallow (Leukering 2011).

Cave Swallows in the United States and Canada consist of two subspecies, *P. f. fulva* from the West Indies and *P. f. pallida* from northern Mexico (Phillips 1986). Though *fulva* was first recorded in the U.S. in Florida in 1890 (Scott 1890), it was not noted breeding there until 1987 (Smith et al. 1988) and has not subsequently expanded its breeding range beyond Dade County (Strickler and West 2011). The first record from the western U.S. was of *pallida* in Texas in 1910 (Bishop 1910), with the first breeding records coming from Kerr County on the Edwards Plateau in 1914 (Thayer 1914) and New Mexico’s Guadalupe Mountains in 1930 (Johnson 1960). Subsequently, the New Mexico population has expanded only slightly (Strickler and West 2011), while the Texas population has expanded greatly (Kosciuch et al. 2006)

As of 1956, the Texas breeding range of the Cave Swallow was still limited to Kerr County (Selander and Baker 1957), but by 1966, the species bred in seven counties, occupying a range of nearly 26,000 km² (Kosciuch et al. 2006). By 1970, the breeding range was ~80,000 km², increasing to ~140,000 km² in 1980 and ~191,000 km² in 1990 (Kosciuch et al. 2006). Much of this range expansion was to the north and west, but in the 1990s, Cave Swallows also spread northeast, with a total range of almost 259,000 km² by 1999 (Kosciuch et al. 2006). This rapid increase in range is likely largely due to Cave Swallows adapting to the use of bridges and culverts (Martin and Martin 1978). The breeding population of *P. f. pallida* now extends from southeastern New Mexico through the Edwards Plateau north to Comanche and Kiowa counties, Oklahoma (first Oklahoma breeding record in 2011; J. Gryzbowski pers. comm.) and east to southwestern Louisiana (first Louisiana breeding record in 1997; Cardiff 1997).

A species with an increasing population or breeding range should produce more vagrants, a correlation demonstrated by Patten and Marantz (1996) and Veit (2000). Vagrancy of Cave Swallows in the United States and Canada nicely parallels the range expansion detailed above, with two records of vagrants in the 1960s, six in the 1970s, 21 in the 1980s, and 36 from 1990 to 1998, the vast majority along the coast of the Gulf of Mexico from eastern Louisiana to Florida and the Atlantic coast from North Carolina to Nova Scotia (McNair and Post 2001). Late fall (principally November) incursions into the Great Lakes and Atlantic coast regions have been frequent since 1999 (Curry and McLaughlin 2000, Brinkley 2011). These events are linked to powerful cold fronts that are preceded by strong southwesterly winds that sweep across Texas (and often northern Mexico) and northeast toward the Great Lakes and Atlantic coast from southern Canada to New Jersey. Such pulses are often followed by records to the south, with some birds found during winter in the southeastern United States (Brinkley and Lehman 2003, Brinkley 2011). These movements can be massive, with 1000+ birds estimated in New York alone during November 2005 (Spahn and Tetlow 2006).

Vagrant Cave Swallows to the west and due north of Texas have been far scarcer. West of Arkansas and Minnesota and east of the Rocky Mountains, the first was noted in late May 1991 in Garden County, Nebraska (Brown and Brown 1992). There were just two additional records of vagrants during the 1990s, both from Nebraska: late June 1995 and early July 1998 (Brogie 1998, Sharpe et al. 2001). Subsequent records from Nebraska are from July 2003 (Silcock 2003) and mid-May 2004 (Silcock 2004), while Oklahoma’s first record was of four in Tillman County in July 2001 (Grzybowski and Fazio 2004). The species was not recorded again in Oklahoma until 2009 and 2010 when groups of 30 or more were found in September in southwestern Oklahoma (V. W. Fazio and J. A. Grzybowski pers. comm.), not far from locations of current breeding. As of December 2014, the Oklahoma Bird Records Committee had not accepted a record of Cave Swallow from northern Oklahoma (J. A. Grzybowski pers. comm.) The first Kansas record of the Cave Swallow came from Barton County during July 2001, with probable nesting noted there in 2009.
In total, Kansas has nine accepted records, six between 14 July and 2 August (Kansas Bird Records Committee 2013). The other three records include a pair building a nest and later found in the company of two juveniles from late May to late July, a single bird in early June, and another in late September. Only one record is from eastern Kansas, of a bird found in July.

West of the Rocky Mountains, the earliest records involved one or more Cave Swallows at a Cliff Swallow colony in Tucson, Arizona, from 1979 through 1987 (Rosenberg and Witzeman 1999), with a pair raising young there in 1983 (Huels 1984). Otherwise, Arizona has six records across the southern part of the state (Rosenberg and Witzeman 1999, Rosenberg et al. 2007, 2009, Arizona Field Ornithologists files), in August (2), October (1), and December (3), with four of them since 2003. Since 1987, California has accumulated ten records, December–August, all from Imperial County in the state’s southeastern corner, and all but four since 2008 (California Bird Records Committee 2007; www.californiabirds.org/cbrc_book/update.pdf). Finally, one truly exceptional record is of a Cave Swallow well photographed at Iona Island, near Vancouver, British Columbia, in November 2012 (Levesque et al. 2015).

Our Colorado observation thus fits the pattern of vagrancy on the Great Plains, where records are concentrated from May to July. This pattern differs substantially from that elsewhere in North America. Vagrancy to the Atlantic coast and Great Lakes occurs mostly in late fall, to a lesser extent in spring. West of the Rocky Mountains, the few records are scattered throughout the year.

We thank Chris Witt and Doug Faulkner, both of whom substantially improved an earlier version of this manuscript. Paul E. Lehman and Ross Silcock reviewed an earlier draft of the manuscript, improving it. We thank Mark Lockwood and Will Russell for help in confirming the Colorado Cave Swallow’s identification. We thank Joseph Grzybowski, J. Van Remsen, and Kurt Radamaker for their assistance in tracking down records.

Figure 1. Cave Swallow at Prewitt Reservoir, Colorado, 17 July 2013. Note the throat unmarred by dusky (or white) markings, the shape of the dark crown (diagnostic of the Cave Swallow), and lightly marked undertail coverts.
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Cave Swallow

Drawing by George C. West
I observed Townsend’s Solitaire (Myadestes townsendi) nestlings fed by both their parents and an American Robin (Turdus migratorius) on the same day. On 2 and 3 July 2015 at Leoni Meadows, south of Grizzly Flat, southeast of Placerville, El Dorado Co., California, at about 1250 m elevation, I observed a solitaire nest with five nestlings that appeared to be within a week of fledging. Shaded by tall Ponderosa Pines (Pinus ponderosa), the nest was on the ground, surrounded by pine needles, in a south-facing dirt bank below a parking lot near the busy center of a Christian youth camp (Figure 1; see also this issue’s front cover).

I saw only one robin, identified by plumage as a male, come to the nest at a time and I assume that it was the same bird. Both adult solitaires were often present in the nest area at the same time, though I observed only one at a time at the nest itself. I observed the robin at the nest during the early mornings before human traffic increased in the area. The parents fed the chicks regularly throughout the day and removed the fecal sacs. The robin brought insects held crosswise in the bill so the ends of the insects were showing on both sides. The solitaires brought food in the throat so I did not see what the parents were feeding the nestlings. On 3 July 2015 I photographed the nest, the environment, and each species feeding the nestlings. The photographs of the adult birds at the nest were digiscoped (Figures 2 and 3).
NOTES

Figure 2. American Robin feeding the nestlings.

Photo by Larry Siemens

Figure 3. Townsend’s Solitaire feeding the nestlings.

Photo by Larry Siemens
NOTES

Apparent altruistic behavior in the form of allopertual care has been reported in at least 150 bird species (Riedman 1981). Many reports are of conspecific birds not genetically related to the young being cared for, but there are also many reports of interspecific feeding. Skutch (1999) wrote, “interspecific helping is sporadic and more or less accidental; no species of bird is known to regularly assist any other species in rearing its young. Never the less, so many incidents of this nature continue to be reported from all over the world that, I suspect, every species has occasionally helped every other species of more or less similar size and habits with which it has long been in contact.” Shy (1982) listed 140 cases of avian interspecific feeding, 14 of these in the family Turdidae. The American Robin has been reported feeding the nestlings of the Mourning Dove (Zenaida macroura), Gray Catbird (Dumetella carolinensis), Brown Thrasher (Toxostoma rufum), House Finch (Haemorhous mexicanus) (all Shy 1982), and Eastern Bluebird (Sialia sialis) (McNair and Duyck 1991).

LITERATURE CITED


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Townsend’s Solitaire

Sketch by Bryce Robinson
NEW MONTEZUMA QUAIL RECORDS FROM CHIHUAHUA, MEXICO

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The Montezuma Quail (Cyrtonyx montezumae) occurs widely from central Arizona, southern New Mexico, and western Texas to southern Mexico, inhabiting pine–oak forests, arid montane scrub, and temperate grasslands (AOU 1998). In Mexico, the species occurs as an uncommon to fairly common year-round resident in the interior from Sonora and Coahuila south across the highlands to Oaxaca (Howell and Webb 1995). It is uncommon to fairly common (in suitable habitat) at several localities in and near the Sierra Madre Occidental of western Chihuahua, including minor ranges to the east (Howell and Webb 1995, Navarro and Peterson 2007, BirdLife International and NatureServe 2014; Figure 1), but it may now be rare or extirpated locally in much of its historic range.

We compiled Chihuahua records of the Montezuma Quail from published literature (Leopold and McCabe 1954, Howell and Webb 1995) and ebird.org. To put these records into historical and geographic context we also obtained specimen data from scientific collections cited in the Atlas of Mexican Bird Distributions (Navarro-Sigüenza 1994, Navarro-Sigüenza et al. 2003). We could not evaluate the validity of each of these records ourselves but relied instead on the judgment of those who published the records. Using the layers of potential distributions based on the program Genetic Algorithm for Rule-set Prediction from Navarro and Peterson (2007) and BirdLife International and NatureServe (2014), we generated a map in ArcGIS version 9.3 (Environmental Systems Research Institute, Redlands, CA). The analysis of status and distribution has been corroborated with multiple surveys in western Chihuahua from June 1998 through October 2014. Noteworthy distributional information is deposited at the Unidad de Cartografía Digital, Instituto de Ciencias Biomédicas, Ciudad Juárez, Chihuahua, Mexico.

We found 429 Montezuma Quail records for Mexico in the Atlas of Mexican Bird Distributions; of these, 85 are based on specimens from Chihuahua, from 22 localities, taken from 1884 to 1959. These records define the species’ known distribution (Sierra Madre Occidental and nearby mountains). An exception is based on two birds (Western Foundation of Vertebrate Zoology) collected in north-central Chihuahua near San Pedro (30.77° N, 108.27° W) in May 1947. We doubt the accuracy of the data of a specimen (Delaware Museum of Natural History) supposedly taken about 45 km southeast of Ciudad Juárez at Rancho Blanco, Guadalupe Municipality (31.36° N, 106.20° W), far outside the estimated range, in June 1956.

With respect to recent records, we found at eBird 37 records from 21 localities in Chihuahua, 1994 to 2014. These largely correspond in habitat with the older data (records primarily from oak–pine woodlands, occasionally from grasslands or other drier habitats). Two records, however, are from outside the previously known range in grasslands of Janos Municipality. Our new records (triangles in Figure 1; Table 1) include two localities outside the estimated range. In the Sierra La Escondida, Nuevo Casas Grandes Municipality, Gatica and Omar Torres observed one in an ecotone...
between desert scrub and oak woodland with scattered meadows (*Agave* sp., *Larrea tridentata*, *Opuntia* sp., *Mammillaria* sp., and *Quercus* sp.) on 2 August 2006, and a dog captured another individual on 20 October 2007 (leathers deposited at the Colección Científica de Vertebrados, Universidad Autónoma de Ciudad Juárez [CHI-VER-189-08-06]). In the Sierra El Capulín, Ascensión Municipality, Gatica noted another on 3 August 2012 in an oak forest.

Apparently, all Chihuahua records (older and recent) are of subspecies *C. m. mearnsi*, although there are two records of *C. m. montezumae* from the Sinaloa–Chihuahua border (Navarro-Sigüenza et al. 2003). The majority of records (older and recent) are from the Sierra Madre Occidental in western Chihuahua (municipalities of Casas Grandes, Madera, Temósachic, Urique, and Batopilas, among others; eBird 2015). In eastern Chihuahua, there is only one record from the Sierra Rica, in área de Protección de Flora y Fauna Cañón de Santa Elena near the town of Manuel Benavides (CEC 2014), but it lacks specific details. It is likely the Montezuma Quail is more common there than this single report suggests, given the records in nearby Big Bend National Park, Texas (Brennan 2007). More field work in eastern Chihuahua is needed to clarify status of the species there.

The Montezuma Quail is typically associated with wooded habitats, although occasionally it reaches elevations below the level of woodland in west Texas (Brennan 2007). Elsewhere, a pair was seen in desert dominated by creosote bush (*Larrea*...
tridentata) along Interstate 25 near Lordsburg, Hidalgo County, New Mexico, on 30 July 1992 during a rainy season (Am. Birds 46:1163, 1992). In Nuevo León there is a record from an area of desert scrub on 26 July 2013 (N. Am. Birds 66:737, 2013). It is possible, therefore, that the species disperses to drier habitats (e.g., desert grasslands, desert scrub, and riparian corridors) during the rainy season, which in northwestern Chihuahua is usually from mid-June into October (Comisión Nacional del Agua 2015, smn.cna.gob.mx/), as in the case of the record for Sierra La Escondida, Nuevo Casas Grandes Municipality. Since we expect that these birds are dispersing on foot, however, it is probable that the Montezuma Quail does not stray far from its preferred habitats. Stromberg (1990) observed a similar tendency in southeastern Arizona, where the species prefers north-facing slopes and thus is more likely to be near oak woodlands but occasionally reaches open grasslands 3 km from any tree. Because of its retiring behavior the Montezuma Quail might remain undetected for years even where it is a permanent resident.

In Mexico, the Montezuma Quail is accorded “special protection” (SEMARNAT 2010, www.profepa.gob.mx/). It is severely affected by cattle grazing and forest clearing (Ehrlich et al. 1988, Stromberg 2000), and in Chihuahua livestock populations have grown in recent years (Carreón-Hernández 2014), resulting in alarming habitat loss. The maintenance of grass cover is critical to this species because of its defensive behavior of hiding from predators. Hernández (2004) reported that when the primary defense mechanism—camouflage and crouching—are jeopardized, Montezuma Quail appear to be susceptible to predation by raptors and canids as well as to mortality from vehicular collisions and inclement weather (Brennan 2007). According to Brennan (2007), development of a conservation and management strategy for the Montezuma Quail will require further study of the species’ life history, detection and monitoring of populations, basic research on population dynamics, and identifying potential habitat throughout the range.

We thank S. O. Williams III and M. Stromberg for their helpful comments. We acknowledge all those who have taken the time through the years to report their Chihuahua observations via eBird. The manuscript was improved through comments by A. Navarro. We are grateful especially to the several biological collections that have granted access to data contained in the Atlas of Mexican Bird Distributions. This is contribution number 4 of “New Distributional Information on the Avifauna of Chihuahua.”

### Table 1—New Records of the Montezuma Quail in Western Chihuahua, Mexico

<table>
<thead>
<tr>
<th>Locality</th>
<th>Geographic coordinates</th>
<th>Date</th>
<th>Observer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Cerro El Diablo</td>
<td>29° 17.0’ N, 108° 12.4’ W</td>
<td>November 1999</td>
<td>Venegas</td>
</tr>
<tr>
<td>3. Madera</td>
<td>29° 17.6’ N, 108° 08.4’ W</td>
<td>10 August 2002</td>
<td>Venegas</td>
</tr>
<tr>
<td>4. Sierra La Escondida</td>
<td>30° 31.1’ N, 107° 45.8’ W</td>
<td>2 August 2006,</td>
<td>Gatica</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 October 2007</td>
<td></td>
</tr>
<tr>
<td>5. El Oso</td>
<td>27° 19.2’ N, 108° 02.1’ W</td>
<td>17 March 2007</td>
<td>Venegas</td>
</tr>
<tr>
<td>6. Sierra El Capulin</td>
<td>30° 52.2’ N, 107° 45.4’ W</td>
<td>2 August 2012</td>
<td>Gatica</td>
</tr>
<tr>
<td>7. Teseachic</td>
<td>28° 53.7’ N, 107° 27.3’ W</td>
<td>2 August 2014</td>
<td>Venegas</td>
</tr>
<tr>
<td>8. Cumbres de Majalca</td>
<td>28° 48.0’ N, 106° 29.8’ W</td>
<td>18 October 2014</td>
<td>Venegas</td>
</tr>
</tbody>
</table>

*a*Numbered as in Figure 1.

*b*Outside previously estimated range.
NOTES

LITERATURE CITED


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ECCENTRIC PREFORMATIVE MOLT IN THE SPOTTED TOWHEE

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Examination of wing-feather molt often provides information essential for aging birds in the hand (Mulvihill 1993, Pyle 1997b, 2008). Correctly aging birds is important for understanding the causal relationships between age-class survival rates and population changes (DeSante et al. 2005). For example, correctly aging birds facilitates understanding of climate effects on reproduction better than merely monitoring population numbers because reproduction varies widely with annual weather patterns (DeSante and O’Grady 2000). Age-class information can also provide a clear measure of habitat quality without confounding effects such as population sources and sinks (Van Horne 1983) or misleading habitat-quality information based on relative abundance or population size (Pulliam 1988). Changes in bird populations often lag changes in the survival rate of an age class, while environmental changes often affect one age class immediately or after a short lag (Temple and Wiens 1989).

Greenlaw (1996) reported that the preformative molt of the Spotted Towhee (Pipilo maculatus) consists of the replacement of body feathers, tail feathers, and secondary coverts while the remiges and primary coverts of the juvenile plumage are retained. In addition, Byers et al. (1997), writing about the Rufous-sided Towhee before its split into the Eastern Towhee (P. erythrophthalmus) and Spotted Towhee, reported the preformative molt also includes some or all of the rectrices. Pyle (1997b) corroborated earlier reports that the preformative molt includes all median and greater coverts, with the outermost greater covert occasionally retained, and the number of tail feathers replaced ranging from 0 to all 12.

An eccentric molt is one that starts not at primary 1 (p1) but among the middle primaries, most commonly from p3 to p7, and proceeds distally (Pyle 1997b). Such eccentric molts commonly include the secondaries, beginning typically at a point from s2 to s5 and proceeding proximally. In some cases, eccentric replacement can be arrested before completion, but most often it proceeds through the outermost primary and s6 (Pyle 1997b).

In 2010, Los Alamos National Laboratory began operating a constant-effort bird-banding station in fall migration with the objective of tracking the age classes and populations of birds using the site. This station is located in Los Alamos County, New Mexico, within the Pajarito Wetlands complex in Pajarito Canyon, 3.7 km west of New Mexico State Route 4, and is operated one day per week for 10 weeks each year from the second week of August to the middle of October. The dominant plants of these 3.4 ha of wetlands comprise Narrowleaf Cottonwood (Populus angustifolia), Narrowleaf Willow (Salix exigua), and Broadleaf Cattail (Typha latifolia); those of the adjacent uplands Ponderosa Pine (Pinus ponderosa), Pinyon Pine (P. edulis) and One-seed Juniper (Juniperus monosperma).

On 2 October 2014, we captured, banded, and released a male Spotted Towhee showing evidence of an incomplete eccentric preformative molt, which we had never previously observed. An incompletely pneumatized skull implied the bird was in its year of hatching. Primaries 7–9 on the right wing were darker than the other primaries and had been replaced, while primaries 1-6 were distinctly brown and were retained juvenile feathers. Primary coverts 8–9 on the right wing are blacker than the inner primary coverts and had been replaced (Figure 1). Primaries 7–8 on the left wing were darker than the other primaries and had been replaced, while primaries 1–6 and 9 were distinctly brown in comparison and were retained juvenile feathers.
Primary covert 8 (second from the outermost) on the left wing was blacker than the other primary coverts and had been replaced (Figure 2). Secondaries 4–6 on both the right and left wings were replaced whereas secondaries 1–3 had been retained from the juvenile plumage. The secondary coverts, tertials, and alulae were all replaced. Rectrices were all retained.

Since loss and regrowth of the outer primaries and inner secondaries in the observed nearly symmetrical pattern is unlikely due to a loss of feathers in a brush with a predator or to other injury, we interpreted the nearly symmetrical pattern observed as an example of eccentric molt partially replacing the juvenile plumage.

In the passerines, the preformative molt is typically partial with only the head and body feathers being replaced (Pyle 1997b). The eccentric pattern of replacement of the outer primaries and inner secondaries in this molt is relatively uncommon, at least in the United States. Pyle (1997a) reported molt data on 288 species of passerines, in 46 of which some or all individuals replace the primaries and secondaries in the eccentric pattern during the preformative molt. He called for more observations, especially in live birds.

Pyle (1998) discussed hypotheses for the adaptive value of eccentric molts with respect to exposure to bright sunlight, abrasive vegetation, and distance of migration. Willoughby (1991) suggested an eccentric primary molt may be of adaptive value to first-cycle birds exposed to abrasive vegetation, as in the case of the Verdin (Auriparus flaviceps), Yellow-breasted Chat (Icteria virens), Passerina buntings, and several wrens, thrashers, and sparrows. On the basis of variations within the tyrannid flycatchers, Pyle (1998) suggested that species migrating short distances are likely to change fewer remiges in the preformative molt that do those migrating longer...
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distances. Since the Spotted Towhee often inhabits dry, abrasive habitats on or near the ground and migrates a relatively short distance, if at all, it seems reasonable to expect that an eccentric primary molt should occasionally be found in this species.

Johnson et al. (2013) reported finding eccentric molt patterns in 3 of 27 Eastern Towhees in formative plumage examined in Louisiana. Similarly, at the Pajarito Wetlands, we observed an eccentric molt pattern in 1 of 30 Spotted Towhees in formative plumage (Table 1). We know of no previous report of a Spotted Towhee having undergone an eccentric preformative molt.

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Table 1  Numbers of the Spotted Towhee Captured at the Pajarito Wetlands, Los Alamos County, New Mexico

<table>
<thead>
<tr>
<th>Year</th>
<th>Hatching-year birds</th>
<th>Older birds</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2011</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2012</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>2013</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>2014</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
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*Over 10 weeks from the second week of August to the middle of October, 1 day per week. Recaptures excluded.


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BOOK REVIEWS


With the possible exception of hummingbirds, no avian group is more popular than owls. Perhaps for this reason, the number of owl books that have appeared in recent decades is mind boggling. Some are quite good; far too many are unexceptional. The best have been produced by owl specialists who are excellent researchers but not necessarily great writers. Thus I had high expectations when I learned that Scott Weidensaul had written a new owl book. Not only is he an experienced owl researcher, he’s a talented nonfiction writer. His nearly 30 books include *The Ghost with Trembling Wings: Science, Wishful Thinking and the Search for Lost Species* (2002, North Point Press), *Of a Feather: A Brief History of American Birding* (2007, Harcourt), and *Living on the Wind: Across the Hemisphere with Migratory Birds* (1999, North Point Press). The last was a finalist for the Pulitzer Prize and is my favorite among his titles.

Weidensaul begins *Owls of North America and the Caribbean* with an 18-page introductory chapter that includes a how-to guide to using the book, a brief treatment of owl ecology and topography, and a detailed explanation of which topics are covered in the species accounts (see below). His geographic scope is Canada, the continental United States, Bermuda, Mexico, and the West Indies, within which 39 owl species breed according to the 7th edition of the *AOU Check-list* and its supplements through 2014. Weidensaul notes that two Old World taxa have strayed to Alaska, the Oriental Scops-Owl (*Otus sunia*) and the Northern Boobook (*Ninox japonica*), but wisely does not include species accounts for these vagrants. A very useful addition to the book is a link to a downloadable album of 86 vocalizations of the 39 species and an annotated list that briefly describes each vocalization (e.g., territorial song, alarm call, food-begging call) and gives the location where the sound was recorded. The vocalizations were obtained from the Macaulay Library of the Cornell Lab of Ornithology and range from one to six per species. The introductory chapter concludes with an interesting discussion of owl taxa that went extinct in all or parts of the West Indies since humans came on the scene. Following the species accounts are the acknowledgments, a brief glossary, a general bibliography, and an index that allows one to find every place where a species is mentioned in the text.

Nearly 90% of the book is devoted to the species accounts, which summarize the birds’ size (body length, wingspan, and body mass), longevity, systematics and taxonomy (including subspecies), etymology, distribution (including a multicolored range map), plumage characters, vocalizations, habitat, breeding biology, behavior, and conservation status, and end with a list of references. Each account provides interesting tidbits about ecology, the latest thoughts on classification and nomenclature, and brief summaries of pertinent journal articles, many of them recent. Just as important, we learn what is not known about the basic biology of many owls, which turns out to be quite a bit. The accounts also include color photographs, which range in number from one for a couple of the poorly known pygmy-owls (*Glaucidium sanchezi* and *G. griseiceps*) to 19 for the Snowy Owl (*Bubo scandiacus*). Without exception the photographs are excellent, and the captions that accompany them are informative.

Weidensaul writes in an engaging style, and the book is well designed and nearly free of typographic errors. A few things I expected to find but didn’t are minor issues but perhaps worth noting. For example, left unstated is the fact that the hoot of a male Flammulated Owl (*Psiloscops flammeolus*) is similar to that of a male Long-eared Owl (*Asio otus*), which can lead to misidentifications of both species during nocturnal surveys. Also not mentioned is the astounding case of a female Burrowing
Owl (*Athene cunicularia*) that was banded at a nest with eggs in Arizona in April 2003 and recaptured at a nest with young 1860 km away in Saskatchewan three months later (G. L. Holroyd et al., Wilson J. Ornithol. 123:378–381, 2011), thus documenting double brooding, serial polyandry, and long-range dispersal during the breeding season in one fell swoop. Last, in the Northern Saw-whet Owl (*Aegolius acadicus*) account one gets the impression that the species breeds almost exclusively in coniferous forests. Yet some of the highest densities of nesting birds have been documented in riparian willows and tree farms of poplars surrounded by shrubsteppe desert in Idaho and Oregon, respectively. I noticed only one mistake and one typo, both of them quite trivial. In the bibliography my name was left off the paper that describes a Flammulated Owl nest in a hollow below ground (K. M. Smucker and J. S. Marks, J. Raptor Res. 47:421–422, 2013). That this anecdote was mentioned at all, however, more than makes up for the omission. Similarly, the typo is likely to be noticed only by someone with my first name: it’s Jeffrey pine, not Jeffery pine (p. 306). I point these out not as nit-picky criticisms but as examples of how hard one has to work to find any fault with a book such as this one, which has no weaknesses. In summary, my expectations for *Owls of North America and the Caribbean* were met, and then some. It’s a wonderful book that will be a valuable contribution to the burgeoning literature on owls. Anyone with more than a passing interest in nocturnal raptors will enjoy it immensely.

*Jeffrey S. Marks*


Seawatching, as authors Ken Behrens and Cameron Cox define it, is the “challenging act of identifying waterbirds in flight.” The birds are in motion. They are frequently distant and typical field marks may not be useful. More often than not there are no landmarks to orient the observer. And the best conditions for seawatching are often harrowing, when storms blow flocks and normally pelagic species close to shore. But seawatching can also be mind-blowing. Imagine 2000 Sabine’s Gulls flying through your field of view, or over 1,000,000 Short-tailed Shearwaters streaming past, or the moment a Great-winged Petrel chances by a tourist-choked promontory in southern California. If you do not have the physical or financial strength to regularly join pelagic excursions, your best bet for encountering ocean-going species is from shore with a spotting scope. Digesting even a small portion of the wealth of information provided in the *Peterson Reference Guide to Seawatching* will doubtlessly enhance your time searching the water, from land or boat.

Seawatching, the book, is focused on eastern waterbirds, 111 species in total from 13 families, treating waterfowl, loons, grebes, shearwaters and petrels, storm-petrels, the Magnificent Frigatebird, boobies and the Northern Gannet, cormorants, the Anhinga, pelicans, skuas and jaegers, alcids, and gulls, terns, and the Black Skimmer. While the book covers only those species that occur with regularity in the eastern U.S. and Canada, the overlap with the West is significant, as nearly 70% of the species treated occur with regularity in the Pacific Ocean. For example, the Surf, Black, and White-winged scoters are treated, as are the Common, Pacific, and Red-throated loons, and the three jaeger species. However, the alcids and tubenoses covered are only those regularly recorded in the east and do not include western species (with the exception of the Manx Shearwater and Wilson’s Storm-Petrel). While the occurrence in the west of many of the species treated in *Seawatching* is enough to justify
its inclusion in many western birders’ libraries, a full volume dedicated to western waterbirds would be nice. Unfortunately, this is not in the works.

The purpose of Seawatching is two-fold: to teach waterbird identification by techniques beyond simple field marks (e.g., by observing flight style and species association) and to inspire more birders to take up seawatching. The book begins with a 20-page introduction that touches on migration and conservation and includes a two-page spread on bird topography. Most of the introduction is dedicated to laying out and defining the authors’ set of identification techniques, including relative size, structure, flight style and flock structure, overall coloration, and associations (e.g., Northern Pintails are typically in large monospecific flocks) in order to prepare the reader for the species-identification section of the book. If a lot of the authors’ philosophy on waterbird identification sounds similar to hawk watching, it is because Behrens and Cox have also spent a good deal of time doing just that and draw comparisons to Hawks in Flight.

The bulk of the book (over 500 pp.) is filled with species accounts arranged in a taxonomy suggested by Howell et al. (2009) in Birding that “emphasizes utility and stability over precise taxonomic relationships”; one that would help beginners without hampering advanced birders. Each group begins with a one- or two-page introduction on the family, including an overview of the biology, taxonomy, range, and molt similarities of the species within each family, and briefly mentions additional species not covered in the text (e.g. they do not treat the Ancient Murrelet because of its rarity on the east coast). The introduction to the dabbling ducks contains a valuable seven-step process for identifying flocks even at distance. Each species then receives a two- to five-page treatment, with the more common and confusing pairs/groups receiving more discussion (for example, scoters combine for 21 pages). Within each account, a brief summary of the species is provided, leading into a discussion of size, structure, flight style, flocking behavior, appearance (including, where relevant, differences in plumages by season, age, and sex), and, perhaps most helpful, similar species. Also included is a map showing migration routes and seasonal ranges, although this is limited to the eastern U.S. and Canada. But what really catches the eye is the photos in each account.

Pick this book up if for no other reason than the sheer volume of photos (900+!). It is easy to get lost just turning the pages. The authors provided most of the photos, but nearly 100 photographers are credited. The intent is to show what birds look like under field conditions, but a book of strictly distant flocks and silhouettes would not be as attractive as the mix of full-frame, medium-distance, and silhouette shots Seawatching actually contains. Some of the photos are full-page, jaw-dropping crushes (first-cycle Bonaparte’s Gull, p. 441). Some are wonderful compositions (a Razorbill flying past a lighthouse, p. 268; King Eiders flying through snow, pp. 166–167). Some capture chance encounters (a Brown Booby catching a flying fish, p. 344; Black Terns exchanging food, p. 515). But the real value lies in the hundreds of photos of mixed flocks (especially of ducks), where the authors point out the keys to identification and occasionally quiz the reader. There are nearly 40 such quizzes, involving finding and identifying certain species within a mixed flock or aging/sexing individuals (“What ages are the Little Gulls?”). The answers, with often lengthy explanations, are in an appendix. While the quality of the majority of the photos is good, a few choices for full-page reproduction should have been left at a half page or smaller, as they are not fully in focus or appear overcropped and pixelated (e.g., Surf Scoter, p. 175; Manx Shearwater, p. 305; Magnificent Frigatebird, p. 329; Wilson’s Storm-Petrel, p. 321).

Though discussing similar species at length, the authors manage to keep the writing fresh. The Harlequin Duck tends to “pop its head up and down” like “an anxious turtle.” The Great Skua is a “stovepipe with wings.” Long-tailed Jaegers are “playful,” but they “haunt the migratory footsteps of Arctic Terns.” Parasitic Jaegers “will mark
BOOK REVIEWS

a victim from a distance … and pummel it.” If the photos do not carry you out over the breaking waves, the language will.

The book closes with a glossary, an extensive and up-to-date bibliography, and an appendix entitled “Where to Watch,” which describes nearly 47 popular watch sites from South Padre Island, Texas, to Whitefish Point, Michigan, to Cape Spear, Newfoundland. Each site description includes a summary of the location, timing of migration, and species occurrences but is really relevant only to travelers to the east coast. Who knew that people “seawatched” along the Mississippi River?

While not specifically focused on western birds, the overlap in coverage is good, and the techniques in Seawatching are usable in any location where waterbirds are in flight. Whether you are a seasoned veteran with a salt-encrusted tripod at Point Pinos or a beginner curious about the group of people staring out at the open ocean in La Jolla (with no whales in sight), this book hopes to “capture some of the simple joy of being outside … and looking at birds” and will be a book you return to time and again.

Justyn Stahl

THANKS TO WESTERN BIRDS’ REVIEWERS AND ASSOCIATE EDITORS

Peer review is a critical step in the publication of a scientific journal. I thank the following people for their generosity in taking the time to provide this essential service sustaining the scientific quality of Western Birds for volume 46: George F. Barrowclough, Peter Bloom, Russell Bradley, M. Ralph Browning, Bruce E. Beyers, G. Vernon Byrd, David A. Cimprich*, Alan Contreras, Jon L. Dunn*, Kimball L. Garrett, T. Luke George, James J. Giocomo, Mélanie F. Guigueno, Ralph J. Gutiérrez, Les Gyug, Lauren B. Harter, Steven C. Heini*, Steve N. G. Howell, David J. T. Hussell, Juan Diego Ibáñez-Alamo, Todd Katzner, David J. Krueper, Jeffrey L. Lincer, Mark W. Lockwood, Michael C. Long, Mark B. Mendelsohn, Joel E. Pagel, Peter Pyle*, Kurt Radamaker, Leslie Robb, Michael A. Schroeder, Steve Shunk, Dan Small, Mark R. Stromberg, Bridget J. Stutchbury, David Vander Pluym, Greg Wann, Sarto O. Williams III, and Christopher C. Witt. Asterisks designate reviewers who reviewed more than one paper.

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Philip Unitt
FEATURING PHOTO

HYBRIDIZATION BETWEEN THE DUSKY GROUSE AND SHARP-TAILED GROUSE

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Hybridization between the Dusky Grouse (*Dendragapus obscurus*) and Sharp-tailed Grouse (*Tympanuchus phasianellus*) has been rarely documented. The only published record from the wild is of one collected at Osoyoos, British Columbia, in 1906 (Brooks 1907, Lincoln 1950). There is one record of this hybridization between captive birds (McCarthy 2006).

On 7 April 2013, Stephanie Cobbold and I found a suspected hybrid of this pairing at Hardware Ranch Wildlife Management Area, Cache County, Utah. The bird was running through the sagebrush, with its tail held high, showing bright white undertail coverts. The tail was the most obvious indication of hybrid parentage: the rectrices were similar to those of a Dusky Grouse, with black vanes tipped with gray; the undertail coverts approached the pure white of Sharp-tailed Grouse, but some of them had the distinct banding of a Dusky Grouse. The broad gray tips to the rectrices indicate the Dusky Grouse parent was of the nominate southern subspecies *D. o. obscurus*, resident in Utah, as the northern subspecies lack extensive gray tips to the rectrices.

The pattern of the tail on the bird we observed closely matched that described by Brooks (1907:168), although he specified the outer rectrices as having “diminishing tips of grayish white” and the undertail coverts as “almost immaculate.” Brooks’ bird was found in the range of one of the northern subspecies of the Dusky Grouse, *D. o. richardsonii*, which has a smaller and less distinct band of gray at the end of the rectrices. The bird featured on this issue’s back cover had an overall yellowish tone similar to that of a Sharp-tailed Grouse. The flanks were intermediate between the two parental species (unlike the bird described by Brooks, which he said looked like a Sharp-tailed Grouse below), the feathers having white tips but light mottled sandy bases, whereas the Dusky Grouse has gray bases. Body feathers hid most of the wing, but the tertials seemed closer to the white and sandy brown patterning of a Sharp-tailed Grouse. The outer vanes of the primaries were more heavily marked than in a Dusky Grouse but lacked the distinct banding or spotted pattern of a Sharp-tailed Grouse. The nape and upper back resembled those of a Dusky Grouse more than they did a Sharp-tailed Grouse, being mostly slaty gray. A small area of yellow skin, found in both species, was visible over the eye and was also mentioned in Brooks’ description. The bill appeared intermediate in structure. The facial pattern was overall closer to that of a Sharp-tailed Grouse, with yellowish-brown auriculares bordered by indistinct white stripes. Although several of these features, such as white undertail coverts and more extensive white in the scapulars, could be explained instead by partial leucism in a pure Dusky Grouse, each is consistent also with hybrid Sharp-tailed Grouse parentage, and other traits support Sharp-tailed Grouse parentage to the exclusion of leucism, including the overall yellowish tone to the plumage and the bill structure.

Because this bird was not captured, we have no detail about its size, but the hybrid reported by Brooks was intermediate in size between the parent species. Shortly after I took this photograph, the bird flushed, and flew off through the sagebrush. I am not aware of any attempts to relocate it.

A male Dusky Grouse has been seen displaying among a lek of Sharp-tailed Grouse about 40 km north of where I photographed this bird (Adam Brewerton and Frank Howe, Utah Division of Wildlife Resources, pers. comm.). That male Dusky Grouse attempted to copulate with a Sharp-tailed Grouse while the Sharp-tailed Grouse was
Caught in a trap. It seems likely that the bird featured on this issue’s back cover was the product of a similar pairing, a male Dusky Grouse with a female Sharp-tailed Grouse, rather than the converse. Sharp-tailed Grouse mate in leks and Dusky Grouse do not, so a male Dusky at a lek might be able to copulate with a visiting female Sharp-tailed Grouse. It seems less likely that a female Dusky Grouse would be attracted to a Sharp-tailed Grouse lek.

Although hybridization within genera is more common than between genera, it is perhaps not that remarkable that these species would hybridize, given that *Dendragapus* and *Tympanuchus* are each other’s closest relatives (Gutiérrez et al. 2000, Drovetski 2002). The ranges of these two species overlap broadly from northern Utah and Colorado to Yukon and the Northwest Territories. Given the close relationship and extent of overlap of their ranges, it is perhaps surprising that there have not been more reports of this hybrid combination in the over 100 years since Brooks (1907) first described one. These species are generally segregated by habitat use, as the Sharp-tailed prefers open grassy sites for leks and shrubby areas for nesting and the Dusky is typically found in forests of conifers or mixed aspens and conifers, but Dusky Grouse do display at the edge of and in open areas, often near the top of a hill and in sagebrush. The scarcity of documented hybridization between these species could also be due to a failure to report such hybrids when found.

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Montezuma Quail

Photo by © Peter LaTourrette of Los Altos, California:
Montezuma Quail (Cyrtonyx montezumae)
Davis Mountains State Park, Jeff Davis County, Texas, 18 April 2005.
In this issue of Western Birds, Israel Moreno-Contreras, Ana Gatica-Colima, and Diana
Venegas (pp. 339–342) outline the distribution of the secretive Montezuma Quail in
the Mexican state of Chihuahua, which remains poorly explored ornithologically.
The Montezuma Quail is not only widespread in the Sierra Madre Occidental of western Chi-
uahua, it occurs in some isolated outlying ranges to the east, the Sierra El Capulín
and the Sierra La Escondida. In eastern Chihuahua, there is only a single unspecific
report from the Sierra Rica, in the Área de Protección de Flora y Fauna Cañón de Santa
Elena, calling for better exploration of that area, which lies just west across the Rio Grande
from Big Bend National Park where the Montezuma Quail is resident.