Vocal Differences In the July 2010 AOU Splits

By Don Jones

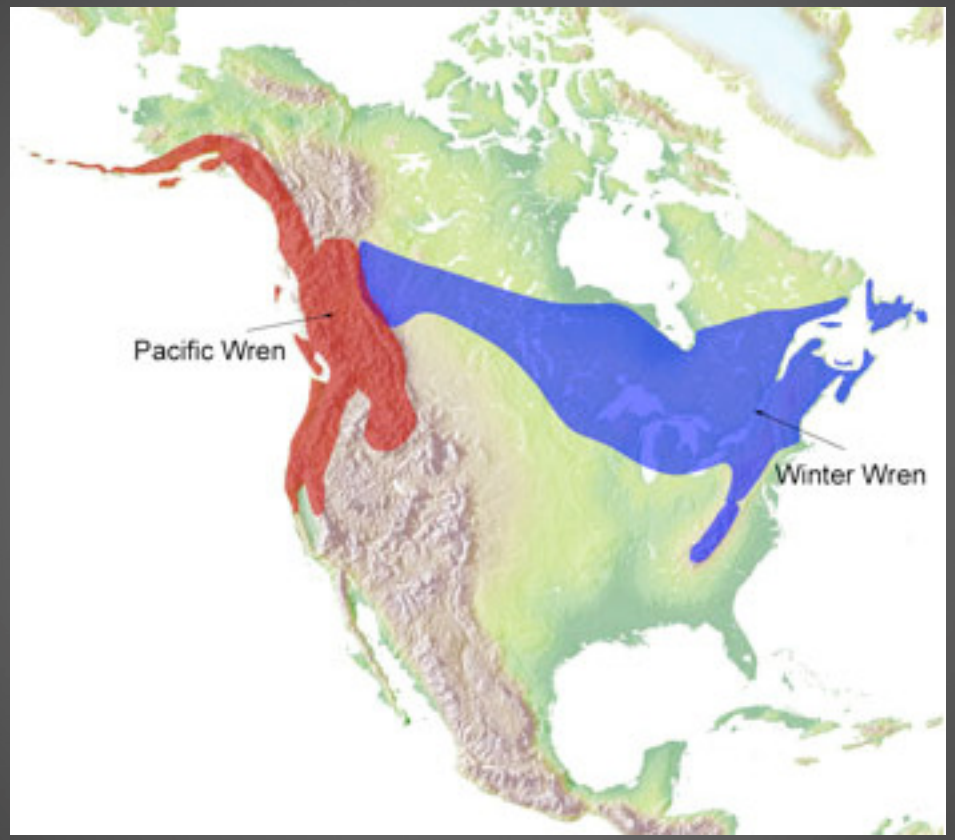
The Splits

- Wren (Troglodytes troglodytes) to
  - Winter Wren (Troglodytes hiemalis)
  - Eurasian Wren (Troglodytes troglodytes)
  - Pacific Wren (Troglodytes pacificus)

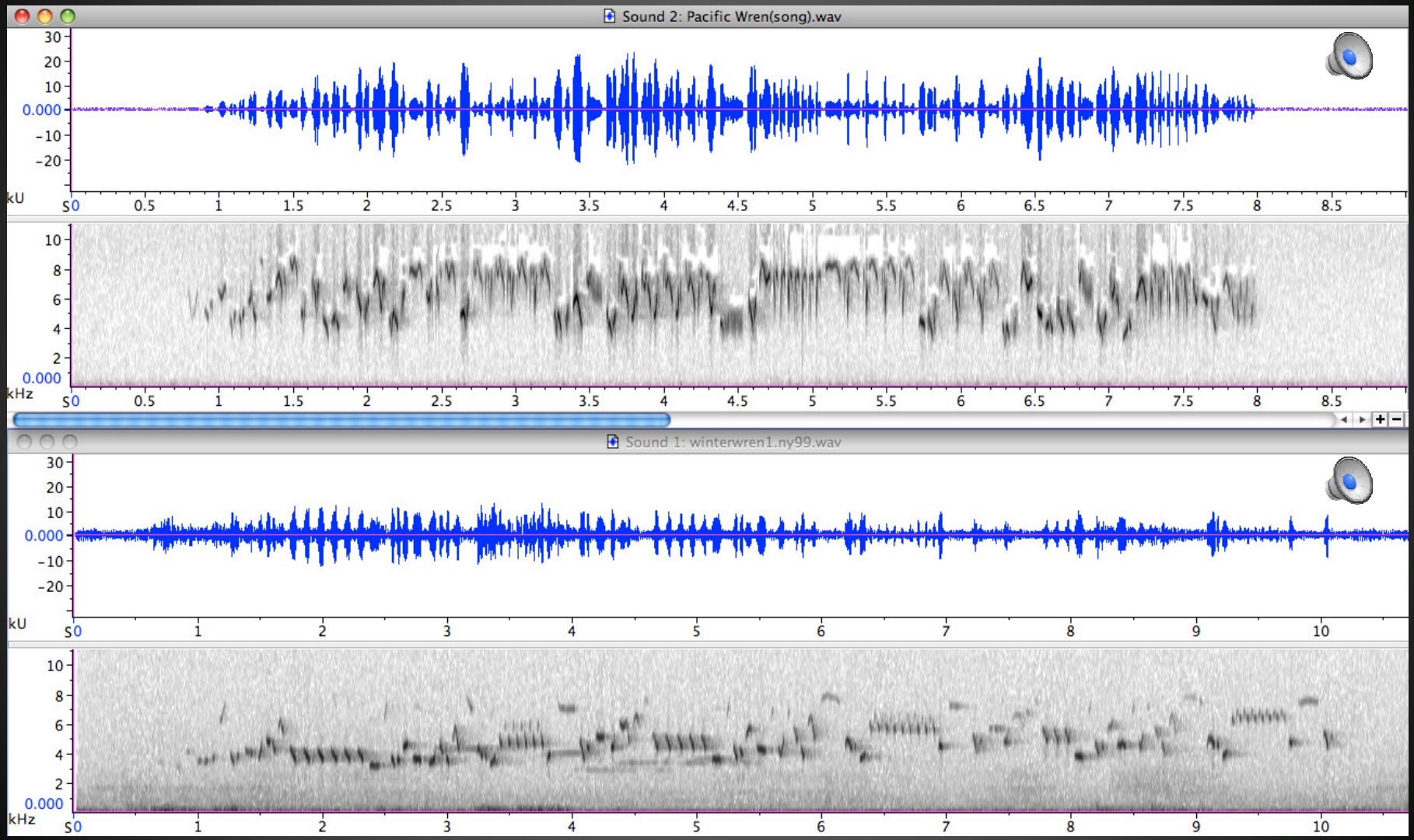
- Whip-poor-will (Caprimulgus vociferus) to
  - Eastern Whip-poor-will (Caprimulgus vociferus)
  - Mexican Whip-poor-will (Caprimulgus arizonae)

- Black Scoter (Melanitta nigra) to
  - Black Scoter (Melanitta americana)
  - Common Scoter (Melanitta nigra)

Ranges of Winter & Pacific Wren



Winter & Pacific Wren Songs



Winter & Pacific Wren Songs: What to Listen For

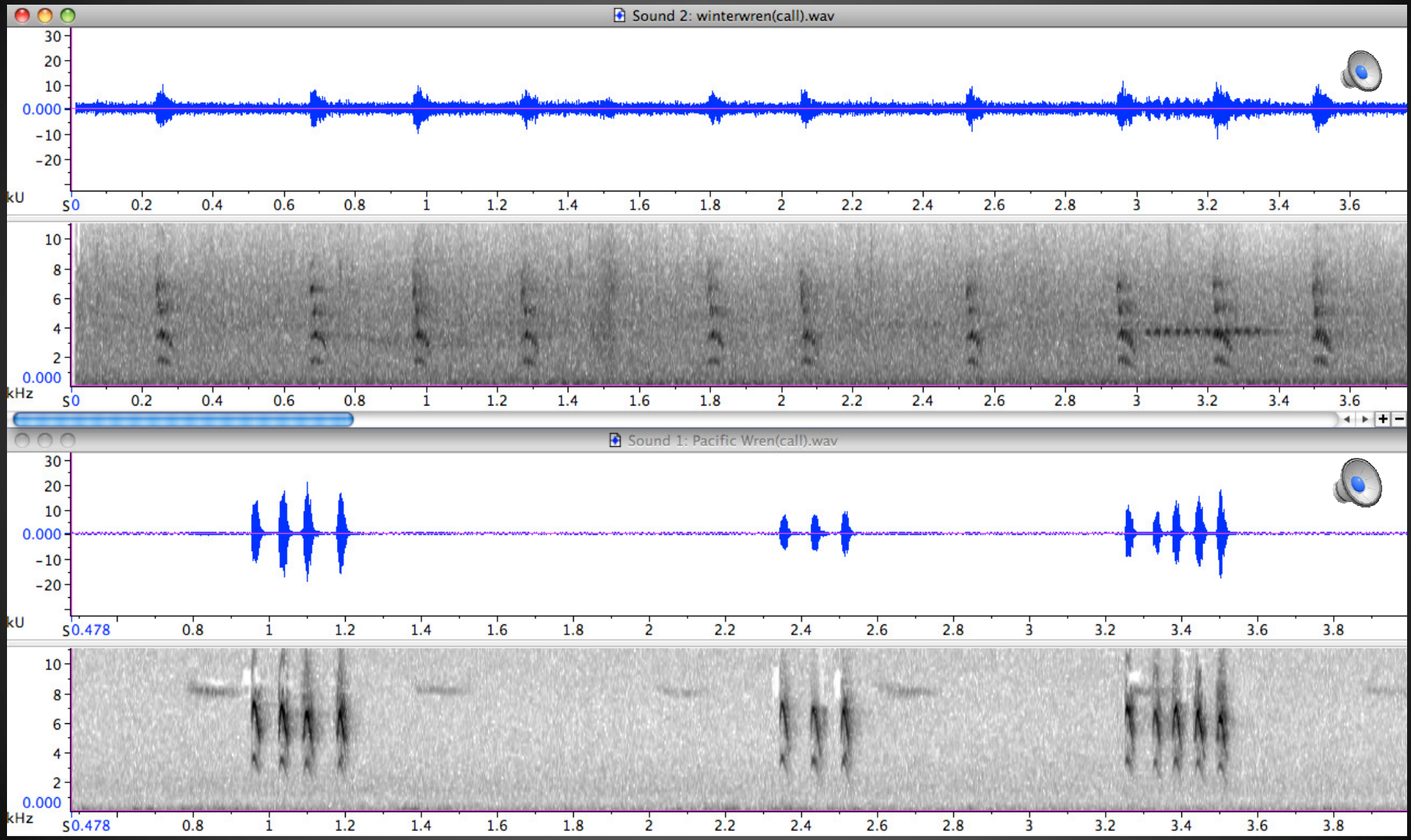
Both species have remarkable long songs composed of a variety of individual notes and trills.

1. Musicality-On average Pacific Wren's song is higher-pitched than Winter Wren although both songs cover the same range of frequencies (i.e. 4 to 8 kHz). Within the individual notes of Winter Wren notice that there is much less frequency change relative to Pacific Wren where many of the individual notes span the whole range from 4 to 8 kHz. Individual notes that change frequency faster (i.e. that are steeper on a sonagram-Pacific Wren) sound less musical (more mechanical) than those that change frequency slower.

2. Speed of Delivery-Pacific Wren delivers its song at a much faster rate (Sibley states more than twice as fast) than Winter Wren. Notice that this IS NOT the length (duration) of the song (variable in both species but actually averages longer in Pacific Wren than Winter Wren although in the example given the Winter Wren's song is over 9 seconds in duration and the Pacific's only somewhat over 8 seconds) BUT the number of notes per unit time.

3. Pacific Wren has more trills closer together than Winter Wren-Some authors state that Pacific Wren has >50% trills in a song whereas Winter Wren has <50%. I have not examined the validity of this but in any event it is much harder to assess this in the field compared with the differences in 1 and 2 above. Pacific Wren also has a much larger song repetoire (30 versus 2) but this is also difficult to assess quickly in the field.

Winter & Pacific Wren Calls



Winter & Pacific Wren Calls: What to Listen For

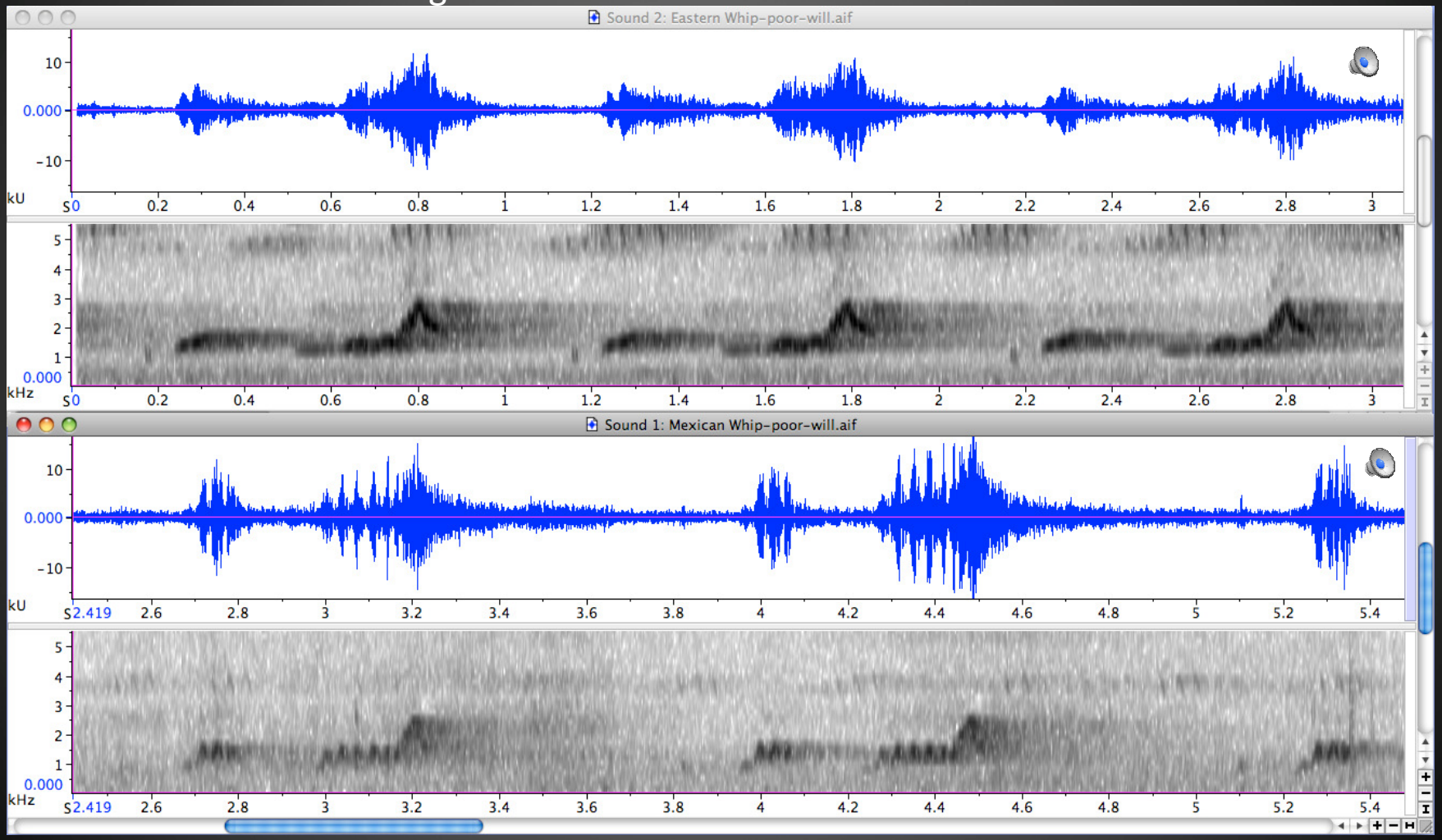
Calls are short, usually doubled or tripled notes.

1. Winter Wren's call is much clearer and sounds lower-pitched than that of Pacific Wren-Note in the spectrograms although each call note covers roughly the same range of frequencies the the loudest part (i.e. the darkest on the spectrogram) is around 6-7kHz for the Pacific Wren; it is about 3-4kHz for Winter Wren accounting for the perceived difference in pitch.

Comparison of less familiar calls with more familiar calls is an excellent technique to use in identifying calls. In the case of these wrens the Winter Wren has the same sound quality as a Song Sparrow call and that of Pacific Wren is often compared with a call of Wilson's Warbler, but since Wilson's warbler is not very common in the Delaware Valley, I would tend to say it sounds closer to a Dark-eyed Junco (but not as smacking) call than a song sparrow's call. This is a perfect example of why learning the calls of common birds can be so useful in sound identification in general.

2. The series of rhythmic notes of Pacific Wren are delivered much faster than those of Winter Wren-Note in the spectrograms the triplet in Pacific Wren is delivered in 0.2 seconds (you can just barely hear the breaks between the notes) while the triplets in Winter Wren, although variable, in this example take three times (0.6 seconds) as long to be delivered and it is easy to distinguish each note of the triplet.

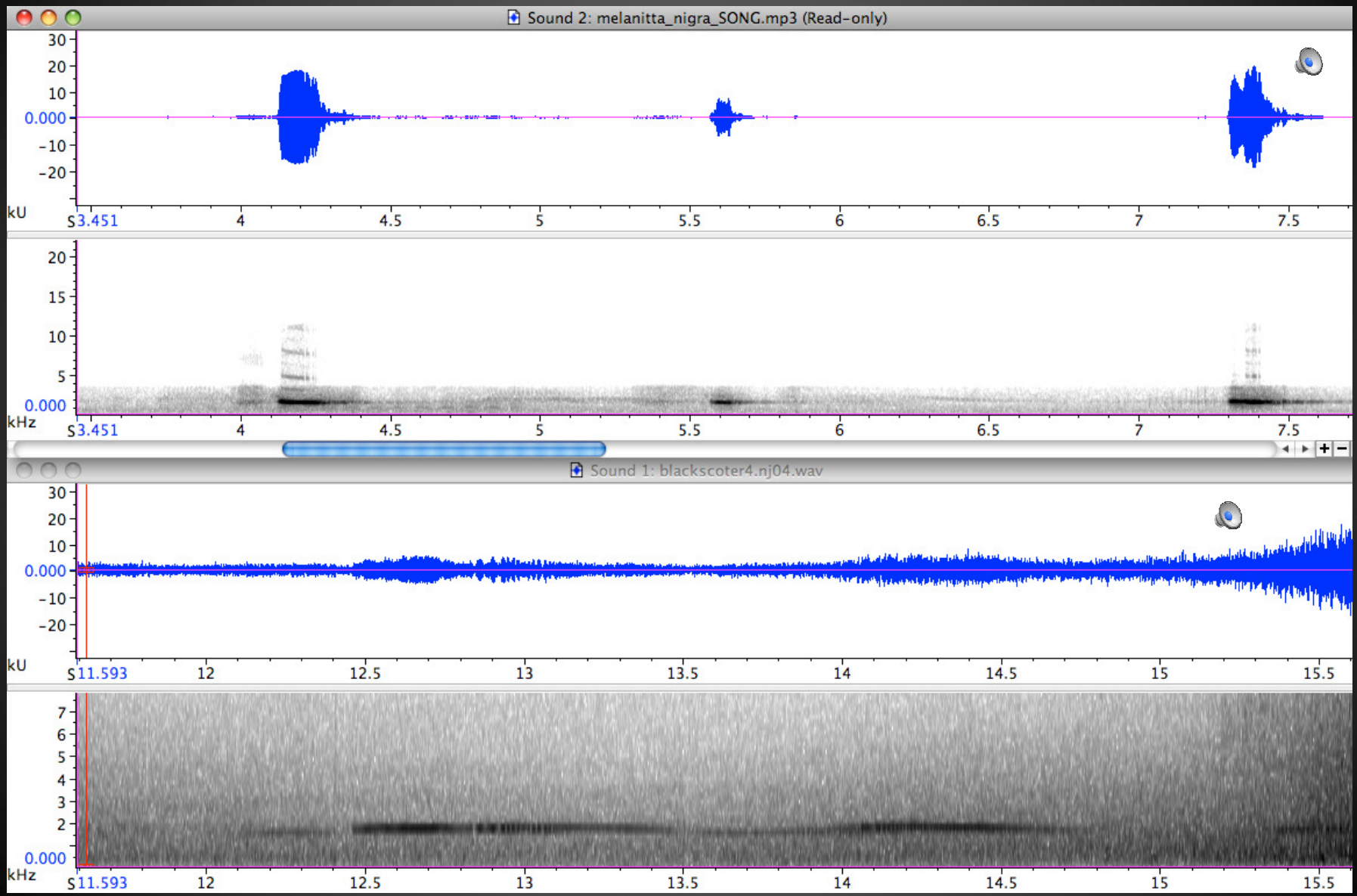
Eastern & Mexican Whip-poor-will Songs



Eastern & Mexican Whip-poor-will: What To Listen For

1. Mexican Whip-poor-will More Burry-a tonal quality characterized by rapid beats (10-125Hz); derived from the word "burr" originally used to describe the sound of the letter "r" in the Scottish dialect of English; appears as a more squiggly trace on spectrograms.
2. Eastern Whip-poor-will Delivered Faster (less time between songs)-caution this can depend on mood of bird so be certain bird is in full regular rhythm song; in the sound examples each song and the time in between for the Mexican Whip-poor-will is about 1.29 seconds; for the Eastern it is 1.08 seconds. Each clip is 12 seconds in length during which the Eastern Whip-poor-will delivers 12 songs and the Mexican Whip-poor-will only 10 songs.

Common & Black Scoter Courtship Call



Black & Common Scoter: What To Listen For

1. Black Scoter has a courtship call of much longer duration (in Sangster's samples 694±168 versus 106±12milliseconds) than that of Common Scoter- Although the usefulness of this vocalization in identification will be extremely limited (how often have you heard Black Scoter's courtship call?) the dramatic difference in length of the courtship call was instrumental in gaining acceptance of the proposed split under the "biological species concept". George Sangster argues (The Wilson Journal of Ornithology 121(4): 696-702, 2009) that the huge difference in these calls given by males as they swim in circles around a single female would preclude the forms interbreeding if their ranges overlapped in the wild.

Recordists & Locations:

Pacific Wren Song-Kevin J. Colver (July; Alaska)
Winter Wren Song-Don Jones (June 8, 1999; Ferd's Bog, Eagle Bay, New York)
Winter Wren Call-Don Jones (October 28, 1994; Dot & Brooks Evert Trail, Southampton Township, NJ)
Pacific Wren Call-Kevin J. Colver (June; California)
Eastern Whip-poor-will-Don Jones (July 2, 1996; Wharton State Forest, Atsion, NJ)
Mexican Whip-poor-will-Don Jones (June 2010; Pinery Canyon Road, Chiricahua Mountains, Arizona)
Common Scoter-http://www.ivnvechtplassen.org/ivn_vogels_winter/Zwarte_Zeeeend_Melanitta-nigra.html; recorded in the Netherlands 1979
Black Scoter-Don Jones (February 29, 2004; Cape May Point, New Jersey)

References/Additional Information

http://www.xeno-canto.org/ A website collection of bird vocalizations from around the world containing over 60000 recordings of over 7000 species.
http://earbirding.com/ A website by Nathan Pieplow devoted to ear-birding with a huge amount of useful and helpful information.

The Sibley Guide to Birds, David Allen Sibley Although the publication of this guide preceded these splits by a decade, David did an excellent job of discussing the both the visual and aural differences.