FIRST OCCURRENCE OF AN ATLANTIC COMMON EIDER (SOMATERIA MOLLISSIMA DRESSERI) IN THE PACIFIC OCEAN

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ABSTRACT: The circumpolar Common Eider (Somateria mollissima) has six or seven recognized subspecies, females of which differ in size, overall coloration, and bill characters. An adult female observed 20–29 November 2011 in the harbor at Crescent City, Del Norte County, California, was apparently not the Pacific subspecies, S. m. v-nigrum (Pacific Eider). We analyzed photographs, published information, and specimens, and the Crescent City bird’s intensely rufous plumage as well as qualitative and quantitative bill morphology, especially the distance from the tip of the frontal lobe to the proximal end of the nares divided by total bill length, indicated that it was an example of S. m. dresseri (American or Atlantic Eider), of the northwest Atlantic Ocean.

On 20 November 2011 Barron discovered a female Common Eider (Somateria mollissima) in the harbor at Crescent City, Del Norte County, California. The bird was seen daily in the same general area until 29 November 2011. Accepted by the California Bird Records Committee (Nelson et al. 2013: record 2011-182), this record is the second of a Common Eider in California. The first was of an adult male seen 5–18 July 2004, also at Crescent City (McCaskie and Vaughn 2004).

On 26 November 2011 Able, Dunn, and Sansone observed the bird for several hours, and Sansone obtained numerous high-resolution photographs. We were struck by the bird’s very intense rusty brown coloration (Figure 1). Characteristics of the wing indicated an adult female in fresh
basic plumage (Pyle 2008; P. Pyle in litt., 2012). Adult females of the Pacific subspecies, S. m. v-nigrum, are dull grayish brown, very unlike the Crescent City bird. Using Sansone’s photographs, descriptions and analyses of subspecific identification from the literature, photographs of females of all Common Eider subspecies available through the Internet as well as those

Figure 1. Adult female Common Eider, Crescent City, Del Norte Co., California, 26 November 2011, photographed under solid, relatively thin, high overcast. A, portrait showing fresh basic plumage and deep rufous coloration; B, head and bill detail showing shape and proportions of the bill and frontal lobes.

*Photos by Larry Sansone*
provided by other photographers, and examination of specimens at the U. S. National Museum of Natural History by Omland, we set out to determine if the Crescent City eider could be identified to subspecies.

SUBSPECIES OF THE COMMON EIDER

Most authors recognize six or seven subspecies of the Common Eider (Palmer 1976, Goudie et al. 2000). The Pacific Eider (S. m. v-nigrum) breeds across the Arctic from the Northwest Territories west to the New Siberian Islands, including the Bering Sea, Kamchatka, the Commander and Aleutian islands, and east in Alaska to the Kodiak archipelago. It overwinters in ice-free areas in the Bering Sea, Kamchatka, the Commander and Aleutian Islands, and Alaska Peninsula (Gibson and Kessel 1997). Anywhere east of Cook Inlet it is a vagrant (Isleib and Kessel 1973; S. C. Heinl and J. Staab in litts., 2013). Vagrants of v-nigrum have occurred in British Columbia (two records, Campbell et al. 1990), Washington (three records, Mlodinow and Aanerud 2008 and S. G. Mlodinow in litt., 2012), Oregon (N. Strycker in litt., 2012; D. Irons in litt., 2013), California (McCaskie and Vaughn 2004), Saskatchewan, Manitoba (three), North Dakota, Minnesota, Iowa, Kansas, western Greenland, and Newfoundland (American Ornithologists’ Union [AOU] 1957, 1998, Mlodinow 1999). This is the most strongly differentiated subspecies, both morphologically (Livezey 1995) and genetically (Sonsthagen et al. 2011), and Livezey (1995) proposed elevating it to species rank.

The Northern Eider (S. m. borealis) breeds from Southampton Island and Ellesmere Island to Labrador and Greenland and overwinters from southwestern Greenland and southern Labrador to Newfoundland and the Gulf of St. Lawrence. It has occurred as a vagrant to Alaska (Gibson and Kessel 1997), Saskatchewan (three records), South Dakota, and the United Kingdom (Mlodinow 1999).

Subspecies dresseri (American or Atlantic Eider) breeds from south-central Labrador, where it interbreeds with S. m. borealis (Mendall 1980), south to Maine and overwinters along the Atlantic coast, commonly to New England and New York waters. Vagrants of dresseri have been reported from the United Kingdom (Farrelly and Charles 2010), western Greenland, Ontario/New York (Niagara River), Illinois, Wisconsin, and Colorado (twice) (AOU 1957, 1998). Subspecies sedentaria (Hudson Bay Eider), closely related to and weakly differentiated from dresseri, is resident almost entirely within Hudson and James bays but has reached the Niagara River (Ontario/New York) (Beardslee and Mitchell 1965) and Nebraska (Mlodinow 1999, Sharpe et al. 2001).

Sites of additional records of vagrant Common Eiders in western North America, of birds that were not identified to subspecies, include Manitoba, Saskatchewan (six), Alberta, British Columbia (two), North Dakota (three), and South Dakota (Mlodinow 1999).

In the Old World, the widespread S. m. mollissima (European Eider) breeds across northern Europe from Novaya Zemlya and Franz Josef Land to the Baltic Sea, British Isles, and northern France. It overwinters primarily in the Baltic and North seas and along the Atlantic coasts of Britain and northern France, but individuals have wandered casually east along the Russian Arctic coast to the Kara Sea and south to the Mediterranean.
Adriatic, Aegean, and Black seas (Goudie et al. 2000). The closely related S. m. faeroensis (Faroe Eider) is resident on the Faroe Islands. Variable S. m. islandica is now generally merged in borealis, but Icelandic breeders have sometimes been lumped with nominate mollissima (Palmer 1976, Boertmann 1994).

IDENTIFICATION OF FEMALE COMMON EIDERS TO SUBSPECIES

Adult female Common Eiders in basic plumage can be identified with caution to subspecies on the basis of plumage color and bill characters (Figure 2). The latter involve primarily the shape and size of the bilateral frontal processes that extend up onto the forehead toward the eyes, and the relative proportion of these to the rest of the bill. Especially in borealis, dresseri, and, to a lesser extent, sedentaria, there is considerable variation in the color of the female’s basic plumage, so it should be used with caution and in combination with other characters (Mendall 1980, Knapton 1997).

Subspecies v-nigrum (Figure 2C) has a long, attenuated head shape and bill processes that are relatively short, narrow, and acutely pointed. They are positioned higher, more toward the midline of the forehead, than in other subspecies (Goudie et al. 2000). Adult females in basic plumage are
Figure 3. Heads and bills of S. m. dresseri (A, December, Massachusetts) and S. m. sedentaria (B, July, Hudson Bay), showing the bill and frontal lobes, the shape of the malar feathering and its distal terminus relative to the naris. In dresseri, the feathered area typically extends forward under the naris; in sedentaria, it typically ends just short of or even with the proximal tip of the naris.

*Photos by Jim Fenton (A) and Joel Heath (B)*

typically dull, dark gray-brown. In S. m. borealis the frontal processes are relatively short, narrow, and pointed (Cramp et al. 1977). The color of the basic plumage in females varies from gray-brown to rufous. Basic-plumaged females of borealis overlap in color with those of sedentaria at the paler, grayier end of the spectrum, with those of dresseri at the rufous end. Some of this variation may reflect interbreeding of borealis with sedentaria or
Subspecies *sedentaria* and *dresseri* differ from the others in having long, relatively broad bill processes that are distinctly rounded at their tips. In *dresseri* these lobes average longer and broader than those in *sedentaria*, but there is overlap (Mendall 1986). Basic-plumaged females of *sedentaria* are typically washed-out gray or grayish-buff, paler than the females of the other subspecies in comparable plumage (Goudie et al. 2000), but there is variation, and some proportion of female *sedentaria* are more brownish. Knapton (1997:134) noted, however, that “a rufous or rufous-brown bird is not *sedentaria*.” Females of *dresseri* are typically reddish-brown, but can range from gray to rufous, and those at the rufous end of the spectrum are the most richly colored of all female Common Eiders (Knapton 1997).

Because of the shape of a Common Eider’s bill, feathering in the malar region extends distally along the sides of the bill and can be used as a character distinguishing the subspecies (e.g., see Sibley 2000, Pyle 2008, Dunn and Alderfer 2011). The malar feathering of female *v-nigrum* is broad and rounded at its distal margin (Goudie et al. 2000, Pyle 2008) and does not extend forward of the proximal end of the naris. In nominate *mollissima*, the malar feathering is not so broad, is bluntly pointed distally, and extends forward beneath the naris (Cramp et al. 1977). In *borealis* the malar feathering is moderately pointed (Pyle 2008) and usually does not extend forward below the naris (Cramp et al. 1977). In *dresseri* the malar feather extension is long, narrow, and pointed and typically extends forward beneath the naris (Figure 3A). The malar feathering extension in *sedentaria* is short and quite pointed (Pyle 2008) and, on the basis of our examination of photos and specimens, usually falls short of or just reaches the proximal tip of the naris (Figure 3B). There is individual variation in this character, especially with regard to the shape of the distal end of the feathered area, and it must be used with caution and in combination with other criteria (Mendall 1980).

The most definitive means of identifying Common Eiders to subspecies involves measurements of the bill and frontal processes, which reflect the consistent differences among the subspecies in the overall bill sizes and shapes. From an extensive study of specimens and live birds (trapped for banding) of *borealis*, *sedentaria*, and *dresseri*, Mendall (1986) concluded that employing such measurements would permit racial identification of most Common Eiders in eastern North America. Pyle (2008) extended Mendall’s analysis to include *v-nigrum*.

**IDENTIFICATION OF THE CALIFORNIA EIDER**

The Crescent City Common Eider showed intense rufous-brown coloration (Figure 1A, B), at the extreme even for basic-plumaged females of *dresseri*. Even the most rufous females of *borealis* rarely if ever approach the color of this bird, which was quite unlike females of the other subspecies. The Crescent City eider possessed long, broad, and conspicuously rounded
frontal lobes that extended well onto the forehead (Figure 1B). The lobes’ ventral edges were gently curved where they met the feathering of the malar region on the side of the face. The malar feathering extended distally to a blunt point that reached slightly, but obviously, past the proximal tip of the naris. These features of bill morphology are typical of *dresseri* and, by themselves, virtually eliminate most of the other subspecies from consideration. Even in intergrades between *S. m. borealis* and *dresseri*, described and illustrated by Mendall (1980, 1986), the frontal lobes are not nearly as long, broad, or rounded as those of *dresseri* or the Crescent City bird.

Subspecies *dresseri* and *sedentaria* have the most similar bill morphology. The Crescent City eider exhibited frontal lobes that were longer and broader than in *sedentaria*, and the malar feathering extended past the proximal tip of the naris, characteristic of *dresseri* (compare Figures 1A, 3A, and 3B).

It is, of course, impossible to obtain absolute measurements of a free-flying bird. However, with high-resolution images and a lateral view, it is feasible to take relative measurements of the bill processes of the Crescent City eider. From these measurements, ratios can be calculated that reflect bill shape and proportion, and these can be compared with similar ratios calculated from published measurements taken from live birds in the hand and from specimens.

Mendall (1986) found that the metrics most useful for discriminating Common Eider subspecies were (1) nostril extension—the distance from the tip of the frontal lobe to the proximal end of the nasal opening (signified distance a–b in Fig. 85 of Pyle 2008:127) and (2) total length of the bill measured from the tip of the frontal lobe to the tip of the bill (distance a–c in Pyle 2008:127, Fig. 85). Using values of these measures from Mendall (1986) and Pyle (2008), we computed the ratio of nostril extension/total bill length for adult females of each of the four North American subspecies (similar data for nominate *mollissima* are not available). These computed

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**Table 1**  
Ratios of Bill Measurements of Adult Females of the Subspecies of the Common Eider

<table>
<thead>
<tr>
<th>Subspecies</th>
<th>n</th>
<th>Nostril extension (mm)</th>
<th>Total bill length (mm)</th>
<th>Ratio (nostril extension:total bill length)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>v-nigrum</em></td>
<td>88</td>
<td>24.0–33.0</td>
<td>58.0–70.0</td>
<td>0.41–0.47</td>
</tr>
<tr>
<td><em>borealis</em></td>
<td>86</td>
<td>22.0–32.5</td>
<td>62.0–72.0</td>
<td>0.37–0.45</td>
</tr>
<tr>
<td>borealis–dresseri</td>
<td>47</td>
<td>27.5–36.0</td>
<td>62.0–72.0</td>
<td>0.44–0.50</td>
</tr>
<tr>
<td>intergrades</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>sedentaria</em></td>
<td>22</td>
<td>31.0–39.0</td>
<td>67.5–74.0</td>
<td>0.46–0.53</td>
</tr>
<tr>
<td><em>dresseri</em></td>
<td>163</td>
<td>32.0–41.5</td>
<td>68.0–80.0</td>
<td>0.47–0.52</td>
</tr>
<tr>
<td>Crescent City eider</td>
<td></td>
<td></td>
<td></td>
<td>0.51 ± 0.01</td>
</tr>
</tbody>
</table>

*a* Computed from Data in Mendall (1986) and Pyle (2008)  
*b* Ratios computed for the smallest and largest measurements of each of the bill characters for each taxon.  
*c* Mean ± standard deviation of 12 ratios computed from three repeated measurements of nostril extension and total bill length taken from each of four photographs of the Crescent City eider.
values are shown in Table 1 and compared with the ratio estimated for the Crescent City eider.

The ratio of nostril extension/total bill length of the Crescent City eider falls outside the range of values for S. m. v-nigrum, borealis, and borealis–dresseri intergrades. It falls within the range of values for S. m. dresseri and sedentaria.

We have thus concluded that the Crescent City Common Eider was consistent with an adult female American or Atlantic Eider (S. m. dresseri) in fresh basic plumage. The bird’s plumage color was atypical of females of any of the other races. Bill morphology, especially the size and shape of the frontal lobes, the extension of the malar feathering distally to beneath the nostril, and a quantitative characterization of bill proportions also supported dresseri.

THE QUESTION OF ORIGIN

Occurrences of waterfowl outside normal ranges always raise the question of origin. The date and locality were consistent with a natural origin, as were the appearance and behavior of the bird. Both of its legs were unbanded, its plumage was in superb condition, and it was observed flying strongly. The bill appeared normal with no overgrowth or abrasions. Although there was considerable human activity nearby, the eider showed neither signs of tameness nor interest in people and did not approach them as if looking for a food hand-out. It dove actively and had a high rate of success at harvesting crabs and mussels. As the tide went out, the bird moved in under a pier where it pulled tightly attached mussels off the wooden pilings.

Records of vagrant Common Eiders are not numerous, but the species clearly has the potential to travel long distances on occasion. All four North American subspecies have been documented far outside their nominal ranges (no records of nominate mollissima exist for North America). We can only speculate on how an individual of S. m. dresseri might naturally reach the northern California coast. Birds of this subspecies occur regularly in the St. Lawrence River and enter the Great Lakes casually, and two occurrences in Colorado suggest that the occasional bird continues west, potentially reaching the west coast (AOU 1957, 1998).

Perhaps a more likely scenario is that increased open water in the Arctic during summer and early fall has facilitated the exchange of birds between the Atlantic and Pacific across arctic Canada and Alaska. Arctic sea ice reached a record minimum in September 2011 [Heygster 2011; National Snow and Ice Data Center (2012) shows a data-based animation of September ice minima from 1979 to 2012], creating a substantial, continuous passage of open water from Labrador and Greenland to the Bering Sea. Recent occurrences in Alaska of birds such as a Common Eider of subspecies borealis (Gibson and Kessel 1997), a Northern Gannet (Morus bassanus) (Gibson et al. 2013), and a Great Black-backed Gull (Larus marinus) (Day et al. 2013) and a Northern Gannet in California (Rottenborn et al. 2013) are consistent with the movement of water birds through the Northwest Passage, a pattern that is likely to increase in the future.

That said, the possibility that the bird was an escapee from captivity cannot be entirely excluded. Eiders of any species are expensive to purchase.
and to maintain, and are not numerous in captivity. Zoos and similar public facilities currently have very few (Keith Lovett, American Zoo and Aquarium Association, in litt., 2012): one male *dresseri* in the Central Park Zoo, New York City, and one in the Emporia Zoo, Kansas. The Montreal Biodome has three males and two females of unknown subspecies. It is impossible to determine the numbers and location of Common Eiders in private collections, but the consensus is that only serious collectors maintain eiders. There are at least two collections in Washington state that contain numbers of *dresseri* (S. G. Mlodinow in litt., 2012). Most birds are kept under netting, and individuals outside some sort of enclosure are likely to be pinned. Jeff Sailer, captive-waterfowl expert with the Wildlife Conservation Society, said (in litt., 2012), “it would be a very unique circumstance in which an eider would escape from a captive setting.” Thus it seems most likely that the Crescent City bird was a vagrant wild *dresseri* that arrived in California naturally from the Atlantic Ocean.

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