Differentiating Trumpeter Swan (*Cygnus buccinator*) from Whistling Swan (*Cygnus columbianus columbianus*)

Steven G. Mlodinow

[Except where noted, all photographs are by the author.]

Identifying swans, particularly immature birds, is one of the most underrated challenges in North American birding. In popular field guides and websites, the focus is, rightfully, on the presence/absence of yellow on the bill and the pattern of feathering on the head and bill. However, other potentially useful characters exist that can help make this devilish distinction, especially for immature birds, for which the characters that help separate adults are far less useful. Note that this paper is based almost entirely on personal experience with additional input from other birders. Whistling Swan is referred to rather than Tundra Swan, as the Eurasian subspecies of Tundra Swan (Bewick's Swan, *Cygnus columbianus bewickii*) has a largely pale base to the bill and is thus easy to separate from Trumpeter Swan. In the following, please refer to the photos and captions within the text and to Figures 1 and 2, which are on this issue's back cover.

Figure 3. The feathering atop an adult Trumpeter Swan's bill usually forms a V shape (right), but some birds have more-rounded feathering (left). Near Mount Vernon, Skagit County, WA; 1 February 2011.

Identification of Adult Swans

Bill coloration

When I was a youth in the 1970s, the presence or absence of yellow on the bill was considered sufficient for differentiating Trumpeter and Tundra Swans, though Peterson (1961) wisely cau-

Figure 4. These birds show the U-shaped feathering on the culmen that is typical of Whistling Swan. Boulder Reservoir, Boulder County, CO; 16 November 2014. Photo by David Waltman

Figure 5. Note the bumpy culmen ("Roman nose") on the adult Trumpeter Swan in this photo (right) and on the immature next to it. Both birds also show a downward bulge, or dip, in the mandible just past the facial feathering that is often seen on Trumpeters. Near Conway, Skagit County, WA; 28 February 2010.

Figure 6. Note the more delicate bills on these Tundra Swans, with a slight scoop to the culmen, as well as the straight bottom edge to their mandibles. Rexville, Skagit County, WA; 28 February 2010.

Figure 7. The feet of the Trumpeter Swan (upper bird) appear enormous, even relative to the size of the bird, compared with those of the Whistling Swan (lower bird). Near Kersey, Weld County, CO; 10 April 2013.

tioned that some Tundra Swans lacked yellow on the bill. The current wisdom, however, is that only 90% of Whistling Swans have yellow on the bill (see Sibley 2006). This may not be true continent-wide, as I found the frequency of yellow on the bill to be 99% or higher in the Pacific Northwest (only two of approximately 1,000 adult Whistling Swans examined in northwestern Washington during February 2010 lacked yellow on the bill). Colorado Whistling Swans appear to average less extensive yellow on the bill than those in Washington; in parallel, Whistling Swans lacking yellow on the bill seem more frequent in Colorado, perhaps approaching that 10% mark. Conversely, occasional Trumpeter Swans have a pale spot on the lores, albeit very rarely yellow, but rather ivory or beige. When present on a Trumpeter, this spot is tiny. The red or salmon-colored "grin" mark (along the cutting edge of the bill), which has been purported to be helpful for identification of Trumpeter Swan, is common in both species.

Figure 8. Of these two immature Trumpeter Swans, the left-hand swan has a fairly adult-like head and bill, while the right-hand swan has its eye nearly entirely surrounded by feathering and has a slighter bill, thus resembling Whistling Swan greatly in these features. Near Mount Vernon, Skagit County, WA; 1 February 2011.

Facial feathering

The feathering on a Trumpeter Swan's head is generally well separated from the eye, both above and below, causing the eye to disappear into the black facial skin. In Whistling Swans, the feathering approaches the eye more closely, nearly pinching together in front of the eye, so that the eye appears somewhat separated from the black face (Figures 1, 2). Additionally, the feathering above a Trumpeter Swan's eye typically extends straight forward until it meets the culmen. Below the eye, the feathering on the side of the face forms a smooth contour from just below the eye to where the maxilla ("upper mandible") and mandible ("lower mandible") meet. This line varies from a gentle arc to nearly straight. In Whistling Swans, the feathering above the eye usually curves upward toward the culmen. Below

the eye, the feathering typically angles down and forward from the eye onto the bill, forming a straight (or nearly straight) line, before cutting abruptly downward (Figures 1, 2).

Feathering on culmen

Both swans have feathering that extends out onto the culmen. The difference in the feather–bill interface usually results in a V of white feathers on the culmen (as viewed from above) in Trumpeter and a U in Whistling (Figures 3, 4), but exceptions are not rare. Examining >1000 adult Whistling Swans in northwestern Washington during February 2010, I estimated that approximately 10% did not have the typical U-shaped feathering expected on Whistling Swans; some of these showed a V on the culmen, but most had feathering shaped intermediate between the classic V of Trumpeter and U of Whistling. Fewer Trumpeter Swans had culmen feathering with the U shape of a Whistling Swan (about 1 in 500), but some Trumpeters had an intermediate pattern.

Bill and head shape

The apparent shape of a bird in the field is unavoidably subjective and affected by variables such as (but not limited to) activity, posture, and viewing angle. However, both head and bill shapes can be used rather effectively in swan identification with sufficient practice. The bill of many Trumpeter Swans has a small but distinct downward bulge at the base of the mandible (Figure 5), a feature that is very rarely—if ever—present on Whistling Swans. Additionally, the culmen of a Trumpeter Swan bill often has a bulge near the base, providing a somewhat "Roman nose" appearance (Figure 5). In Whistling Swans, the culmen is typically straight or even scooped downward (Figure 6), yielding a more delicate, Canvasback-like, appearance to the bill.

Trumpeter Swan heads tend to be more angular, whereas those of Tundra Swans often are more rounded, which, in combination with the bill shape differences, tends to impart a bulky-headed look to Trumpeter Swans, whereas Tundras often look "cute" (Figures 5, 6).

Foot size

Trumpeter Swans have considerably larger feet than do Whistlings, not just absolutely, but relative to the bird's size. Differences in foot size are most apparent when birds are in flight, judged in part by projection beyond tail (Figure 7), but can also be discerned on standing birds on occasion, particularly if in direct comparison.

Figure 9. These photos demonstrate the typical progression of first-cycle Trumpeter Swan molt, showing birds in November (A), December (B), January (C), February (D; also see Figure 5), and March (E). The November and December birds are nearly identical in appearance. The January birds are not much different, excepting some white flight feathers. The orange on the left-hand bird's bill is a bit unusual for a Trumpeter Swan in January. Young Trumpeter Swans are still largely brown well into February, though by month's end, some develop a blotchy brown and white plumage. By March, most young Trumpeters are patchy brown and white. A: Near Stanwood, Snohomish County, WA; 8 November 2008. B: Near Sylvana, Snohomish County, WA; 31 December 2010. C: Near Snohomish, Snohomish County, WA; 25 January 2009. D: Near Mount Vernon, Skagit County, WA; 1 February 2011. E: Near Conway, Skagit County, WA; 8 March 2007.

Figure 10. These photos demonstrate the typical progression of first-cycle Whistling Swan molt, showing birds in November (A), January (B), and February (C, D). Even in November, this young Whistling Swan has a smattering of white feathers on the body and paleness to the primaries. By early January, many Whistling Swans have already developed a patchwork of brown and white plumage and, by February, young Whistling Swans are substantially white, with the remaining gray or brown feathering mostly on head and neck. A fair number of Whistling Swans during this time (especially February) will develop a white line along base of bill and around the eyes, giving these youngsters a bespectacled look rarely shown by Trumpeters. Young Whistling Swans are nearly all white by March. A: Fir Island, Skagit County, WA; 28 November 2010. B: Walden Ponds January. C: Rexville, Skagit County, WA; 28 February 2010. D: Near Snohomish, Snohomish County, WA; 14 February 2009.

Figure 11. This bird and the birds in Figure 8 show the typical yellow feet and legs of young Trumpeters. The bird in flight appears to have a pale bill due to encrusted mud. Such birds, when the mud spatter is of the right shape, have been mistaken for Bewick's and Whooper Swans. Both photographs near Mount Vernon, Skagit County, WA; 1 February 2011.

Identification of First-Cycle Swans

The first-pass field mark for adult swans, the presence or absence of yellow on the bill, is rarely useful in youngsters, that is, immature birds in their first plumage cycle (first-cycle birds), in which they transition from wholly brown plumage to wholly white plumage. Additionally, many young Trumpeter Swans have more feathering on the face than adults do, pinching off the eye from the dark facial skin and bill, causing young Trumpeters to appear more like Whistling Swans in this regard. Many young Trumpeters have a less-bulky bill than that of adults, again increasing the resemblance to Whistling Swan (Figure 8). So, how does one differentiate first-cycle Trumpeter and Whistling Swans?

Figure 12. The larger bird of this apparent swan pair is quite clearly a Trumpeter Swan. Most experienced swan observers identified the smaller bird as a Whistling Swan, though some thought it a Trumpeter based on the V-shaped culmen feathering and lack of yellow on the bill; it is probably not identifiable with certainty. Sylvana, Snohomish County, WA; 31 December 2010.

Figure 13. In December, these apparently large immature swans are both paler than typical for Trumpeters at this season and also exhibit white primaries, which is also abnormal for Trumpeters in late December. One bird shows an exceptional amount and intensity of orange on the bill for a Trumpeter Swan on 31 December as well. Finally, the leg and foot color of these three birds varied from completely yellowish to completely black. Even if not hybrids, identifying these youngsters in the field is clearly problematic. Sylvana, Snohomish County, WA; 31 December 2010.

Plumage color

First-cycle Whistling Swans are paler during October and November than are first-cycle Trumpeters, when both species are essentially all brown. More importantly, young Whistling Swans molt earlier than do Trumpeters (Figures 9A–E, 10A–D). First-cycle Trumpeters are nearly completely brown through January, and though a bit faded, they are still nearly all brown in February, with only a minority (about 10%) having some truly white plumage, usually on primaries or chest (Figure 9C). In contrast, Whistling Swans typically develop some white feathering (usually on scapulars and primaries) in December and are rather blotchy brown and white by January (Figure 10B), becoming largely white from February into March. Trumpeter Swans usually do not develop a blotchy brown and white appearance until March, with most of the white usually on the scapulars and back; not until April or May are first-cycle Trumpeter Swans mostly white. In both species, the head and neck are the last areas to turn white.

Leg color

First-cycle Whistling Swans have black legs by December, if not earlier, with any pale coloration being pinkish. First-cycle Trumpeters have dull yellow on legs and feet, with some yellow persisting through the spring. Indeed, many Trumpeters in their second winter still have some yellow on their legs or the webbing of their feet (as well as some gray on neck). Note, however, that the yellow on birds mucking around in mud may be obscured (Figure 11).

Bill coloration

First-cycle Whistling Swans average more orange on their bills than do Trumpeters; this orange usually persists longer into the winter on Whistling Swans. In my experience, by January, very few Trumpeters have orange on the bill, but many Whistlings still do. In February 2010, approximately 30% of immature Whistlings studied in northwestern Washington still had an orange saddle on the bill, but only 1 in 100 young Trumpeters had remnant orange on bill. As noted above, it is not unusual for Whistling Swans to show some pale (ivory to yellow) in the lores by February. Do mind that the bill pattern of birds foraging in mud is easily obscured.

Conclusion

The good news is that Trumpeter and Tundra Swans can usually be differentiated. The bad news is that doing so does require good views, the use of multiple field marks, and the understanding that vir-

tually every useful identification character is variable in both species. The final, and most scary, caveat is that Trumpeter and Tundra Swans are known to hybridize and apparent or suspected hybrids (Figures 12, 13) might turn up anywhere in Colorado. Thus, distant swans might be left unidentified specifically, as should seemingly intermediate swans.

ACKNOWLEDGMENTS

I owe a debt of gratitude to Ryan Merrill and Bradley Waggoner for reality testing my observations and conclusions as presented herein and many thanks to Tony Leukering for improving early versions of the manuscript. The online discussion of Trumpeter and Tundra Swan identification by Sibley (2006) was useful, as were Reeber (2015) and Armistead and Sullivan (2016), with the latter having excellent illustrative photographs.

LITERATURE CITED

Armistead, G.L., and B.L. Sullivan. 2016. Better Birding: Tips, Tools, and Concepts for the Field. Princeton University Press, Princeton, NJ.

Peterson, R.T. 1961. A Field Guide to Western Birds. Houghton Mifflin, Boston, MA.

Reeber, S. 2015. Waterfowl of North America, Europe, and Asia. Princeton University Press, Princeton, NJ.

Sibley, D. 2006. Distinguishing Trumpeter from Tundra Swans. http://www.sibleyguides.com/2006/02/distinguishing-trumpeter-and-tundra-swans/

Figure 1. The Trumpeter Swan (front left) and Whistling Swan (front right) show most of the usual differences features of adults of these two species, though the Whistling Swan looks as if it might have somewhat V-shaped feathering on the culmen and the curve of feathering extending downward along the bill edge is not as even as on most Trumpeters. Rexville, Skagit County, WA; 1 February 2009.

Figure 2. Though these are immature birds, they show most of the differences seen in adult Trumpeter and Whistling Swans. Note the much heftier bill of the Trumpeter (left), with a modest bulge at the base of the mandible and atop the culmen, versus the more delicate bill of the Whistling Swan (right). Also, the feathering leading forward from below the eye forms a smooth curve on the Trumpeter. On the Whistling Swan, the feathering forms a straight line forward, which then breaks sharply downward. The eye of the Trumpeter Swan is hidden within the black facial skin, but that of the Whistling stands separate from the rest of the face. The feathering contour above the bill on these birds, however, does not conform to the pattern usually seen on adults, but does demonstrate how similar the culmen feathering can be on immatures of these species. See Figure 3 for adult culmen feathering patterns. Snohomish, Snohomish County, WA; 14 February 2009.