



Arizona White-cheeked Geese: The Canada *vs.* Cackling Goose Identification Challenge

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In 2004 the American Ornithological Union divided Canada Goose into two species, Canada Goose, *Branta canadensis*, and Cackling Goose, *B. hutchinsii*. The Canada Goose is currently divided into seven subspecies and the Cackling Goose into four subspecies. Some of these forms are easy to identify whereas other create more of a challenge. Fortunately for Arizona birders, not all Canada and Cackling Goose subspecies are likely to be encountered in the state. Two forms of Canada and three forms of Cackling are the most likely. Here we present information on how to differentiate the forms that are most likely to be observed in Arizona.

No one character can be used to separate these species and not all individuals can be identified. Overall size is the first character most often noted. Cackling Geese are small and Canada Geese are large. However, the smallest Canada Goose, Lesser Canada Goose, occurs regularly in the state and can overlap in size with the largest Cackling Goose. Therefore, it is important to note a number of different characters including overall size and shape, length of the neck, color of the breast, shape of the head, slope of the forehead, and size and shape of the bill. The two extreme forms, discussed next, are the easiest to identify.

The large, common Canada Goose in Arizona is *B. c. moffitti*. (= Moffitt's or Great Basin Canada Goose). It is a large white-cheeked goose with a pale breast, long neck, large elongated bill, and sloping forehead. This is also the only form found breeding in the state. By virtue of the fact that it is relatively common and easy to observe, *B. c. moffitti* constitutes the "standard" against which to compare all other forms.



Fig. 1. Moffitt's Canada Goose, *B. canadensis moffitti*. Note the long neck, sloped head profile, elongated bill, and pale breast. McCormick Ranch, Scottsdale, Arizona, January 2007. Photo by Pierre Deviche.

The best documented form of Cackling Goose to occur in Arizona is the smallest form, the Cackling Cackling Goose (*B. h. minima*). The only Cackling Goose specimens are of this form and several have been photographed. It is small enough to be identified by size alone. It is a very small, Mallard-sized goose with a short triangular bill, rounded head with a steep forehead, short neck, and generally dark chest and breast. Adults of this extreme Cackling Goose are usually easy to identify based on their size and chest color, which varies from dark gray to almost purple. However, birds in immature plumage may require more attention because the breast of these birds may be paler than in adults.





Fig. 2. Cackling Cackling Goose, *B. hutchinsii minima* swimming with a large domesticated mallard. Note the size and the dark chest which can at times be almost purple. Estrella Mountain Ranch, Goodyear, Arizona, December 2006. Photo by Michael Moore.



Fig. 3. Cackling Cackling Goose, *B. hutchinsii minima*. Note the stubby bill, as tall as it is long, short neck, and high rounded head with a steep forehead forming an angle with the bill. Estrella Mountain Ranch, Goodyear, Arizona, December 2006. Photo by Pierre Deviche.





Fig. 4. A mixed flock of Taverner's Cackling Geese, *B. hutchinsii taverneri* (T) and Cackling Cackling Geese, *B. hutchinsii minima* (M) in the Willamette Valley, Oregon, March 2006. The short-necked, dark-chested minima geese are easy to pick out. The longer-necked, pale-breasted Taverner's present more of a challenge, but note their small bills, squarish heads, and steep foreheads forming an angle with the bill. Photo by Michael Moore.

The main challenge for Arizona birders is to differentiate white-cheeked geese other than *B. c. moffitti* and *B. h. minima* from each other. These other forms that are likely to occur in Arizona are the Lesser Canada Goose (*B. c. parvipes*), the Taverner's Cackling Goose (*B. h. taverneri*), and the Richardson's Cackling Goose (*B. h. huchinsii*). Identifying these forms presents a challenge because they can overlap in size. Lesser Canada is, on average, the largest of the three forms. However, as the table below illustrates, the average size difference between Lesser Canada and Taverner's Cackling Geese, in particular, is small and the sizes of these two forms overlap. Since males are larger than females (sometimes by nearly 50%), a large male Taverner's or Richardson's Goose can be the same size as a small female Lesser Canada.

Comparison of Mass and Sexual Dimorphism in White-cheeked Goose Taxa likely to occur in Arizona

Taxon	Mass Range*	Average Sexual Dimorphism**	Extreme Sexual Dimorphism***
<i>B. h. minima</i>	1.1 - 1.7 kg	18%	55%
<i>B. h. huchinsii</i>	1.7 - 2.4 kg	14%	41%
<i>B. h. taverneri</i>	2.2 - 2.9 kg	8%	32%
<i>B. c. parvipes</i>	2.5 - 3.6 kg	12%	44%
<i>B. c. moffitti</i>	3.2 - 4.5 kg	17%	41%

*Mass Range: Size range from a small female (average female size minus one standard deviation) to a large male (average male size plus one standard deviation) for each taxon. Using one standard deviation is fairly conservative and the stated range covers about 85% of the entire population of each taxon. On average, about 15% of the females will actually be smaller than the given range and about 15% of the males will be larger.

**Average Sexual Dimorphism: How much bigger the average male is than the average female.

***Extreme Sexual Dimorphism: How much bigger a large male is than a small female (as defined above by the standard deviation).

Based on data from: Mowbray, T. B., C. R. Ely, J. S. Sedinger, and R. E. Trost. 2002. Canada Goose (*Branta canadensis*). In *The Birds of North America*, No. 682 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Lesser Canada Goose (*B. c. parvipes*). In Arizona, a small white-cheeked goose that looks half to two-thirds the size of the common *moffitti* but has a small bill with a sloping forehead is most likely a Lesser Canada Goose. This form occurs regularly in small numbers in Arizona and is the most commonly seen small white-cheeked goose. Some Lesser Canada's are large enough to be separated from Cackling by size, but others can be mistaken for a Cackling based on size alone. Small Lesser Canadas will have proportionately long necks and a sloping forehead giving the impression that the bill simply merges with the head. In all Cackling Geese, the steep forehead makes an angle with the bill, thus making the bill appear separate from the head.





Fig. 5. Two typical Lesser Canada Geese, *B. canadensis parvipes* (two smaller birds behind the coot) among larger Moffitt's Canada Geese, *B. canadensis moffitti*. Note the smaller bill and more rounded head compared to the moffitti. However, the parvipes still share the sloping profile to the forehead common to all Canada Geese. McCormick Ranch, Scottsdale, Arizona, January 2007. Photo by Pierre Deviche.



Fig. 6. Lesser Canada Goose, *B. canadensis parvipes*. This small individual with a small bill presents the most significant identification challenge. Although the bill is small, note the continuous sloping profile to the head and bill giving the head a triangular shape with crown peak toward the back of the head (see comparison figure below). Neck length and body size relative to head would be extreme for Cackling Goose. McCormick Ranch, Scottsdale, Arizona, January 2007. Photo by Pierre Deviche.

Taverner's Cackling Goose (*B. h. taverneri*) and Richardson's Cackling Goose (*B. h. huchinsii*).

These two forms are thought to occur in Arizona, but are not well documented. Compared to the small, dark-chested, and round-headed *B. h. minima*, these forms are larger and lighter-breasted with squarer heads. Typical Richardson's has a short thick neck, very light breast, and a blocky head. Typical Taverner's is somewhat larger, longer-necked, and less light-breasted with a head shape between Richardson's and *B. h. minima*. These differences are subtle, however, and Taverner's and Richardson's may not be distinguishable in the field.

In Arizona, if you see a very small goose with a short neck, small bill, lighter breast, and steep forehead you need to consider the possibility of one of these other two Cackling Goose subspecies. What characters separate these subspecies from the very similar Lesser Canada Goose? **First**, Cackling Geese have, on average, smaller and stubbier bills than Lesser Canada Geese. In Cackling Geese the length of the bill usually is equal to its depth. **Second**, Cackling Geese have a different head shape than Canada Geese. The forehead of a Canada Goose is sloping and in line with the more elongated bill giving an overall triangular shape to the head. In Cackling Geese, the forehead is usually steeper, forming an angle with the bill and resulting in a squarer head shape (see picture below)

with a flat crown or a crown peak more toward the center of the head. **Third**, Cackling Geese usually have a shorter, thicker neck than Canada Geese, with the neck sometimes only as tall as it is wide. **Fourth**, Cackling geese are *on average* smaller than Lesser Canada Geese although there is some overlap and Taverner's and Lesser Canada may interbreed. Nevertheless, small size, **combined with** differences in bill size/shape and head proportions as well as neck length, should in most cases make it possible to separate the two species.



Fig. 7. Cackling Goose, *B. hutchinsii* (presumably *B. h. hutchinsii* or *taverneri* because of the lighter breast) with larger Moffitt's Canada Goose, *B. c. moffitti*. Note the squarer head, steeper forehead, much smaller size, shorter neck, and smaller bill of the Cackling Goose. McCormick Ranch, Scottsdale, Arizona, January 2007. Photo by Pierre Deviche.



Fig. 8. Wintering Taverner's Cackling Geese, *B. hutchinsii taverneri* in the Willamette Valley, Oregon, March 2006. Note square shape to the head, small size of the bill, and steep forehead forming an angle with the bill. Photo by Pierre Deviche.

The pictures below show two small, short-necked geese next to a slightly larger, longer-necked one. In combination, the relatively small size (compare to American Wigeons), small stubby bill, steep forehead, blocky head, and short, thick neck of the two smaller birds identify them as Cackling Geese, possibly of the Richardson's subspecies.



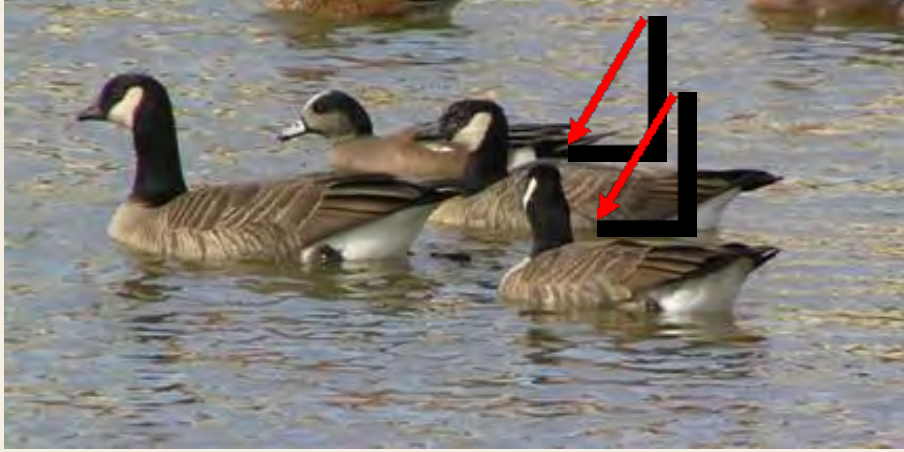


Fig. 9. Cackling Geese, *B. hutchinsii* (indicated by red arrows). Note very small size, blocky head, and short thick neck. McCormick Ranch, Scottsdale, Arizona, January 2007. Photo by Pierre Deviche.

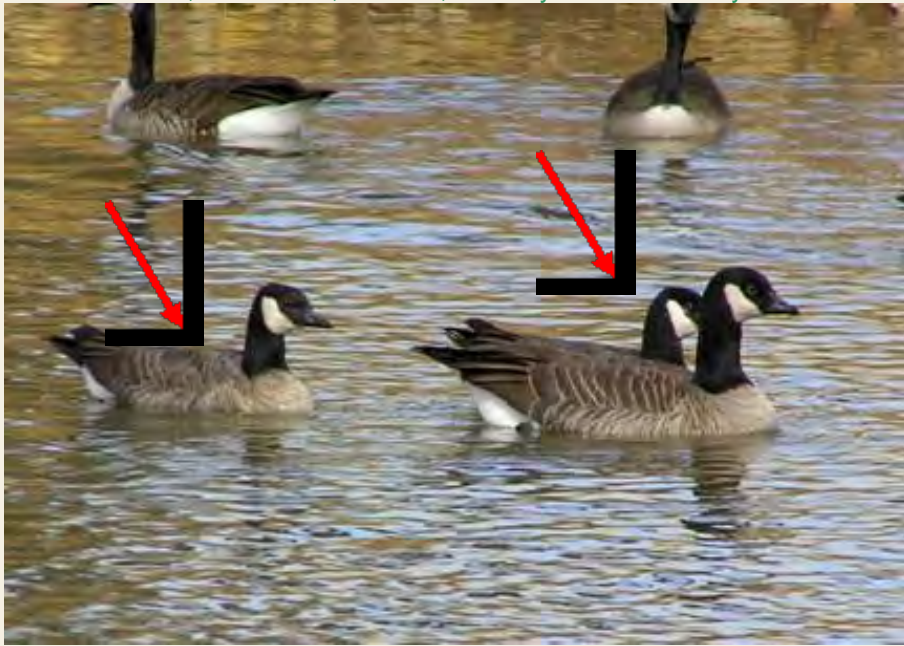


Fig. 10. Cackling Geese, *B. hutchinsii* (indicated by red arrows). On the leftmost bird, note the very short neck that is almost as wide as it is tall and the square, blocky head. The identity of the rightmost, longer-necked bird is uncertain (see text). McCormick Ranch, Scottsdale, Arizona, January 2007. Photo by Pierre Deviche.

The identity of the above longer-necked individual is uncertain. The picture below compares the head of this bird (on the right) with that of the same Lesser Canada Goose shown on one of the previous pictures. The rounder head, proportionally shorter bill, and steeper forehead of the bird on the right suggest that it also is a Cackling Goose. Its longer neck suggests that it may be Taverner's Goose, but the head is more rounded than is typical (see previous pictures from Oregon). This bird is most likely a Taverner's Cackling Goose, but it is an example of a bird probably best left unidentified. It may be a very small female *B. c. parvipes* or it could be a *B. h. taverneri* X *B. c. parvipes* intergrade.



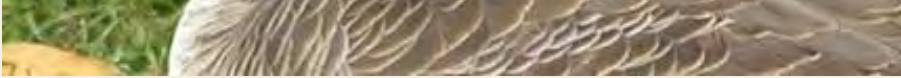


Fig. 11. Composite image showing a Lesser Canada Goose (left) and a probable Cackling Goose (right). Note head shape differences: Triangular, sloping head of Lesser vs. the rounded head and steep forehead of the probable Cackling. McCormick Ranch, Scottsdale, Arizona, January 2007. Photo by Pierre Deviche.

References

- http://www.sibleyguides.com/canada_cackling.htm
- <http://www.idahobirds.net/identification/cackling.html>
- <http://www.iowabirds.org/ID/geese.asp>
- <http://www.granstrand.net/gallery/album12>

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