

FEATURE ARTICLES

ARE ABDOMINAL PROFILES USEFUL TO ASSESS BODY CONDITION OF SPRING STAGING GREATER SNOW GEESE?

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Abstract. Abdominal profile indices were developed to evaluate body condition in birds without capturing or handling them. We assessed the reliability of abdominal profile indices in predicting condition of spring staging Greater Snow Geese (*Chen caerulescens atlantica*). We first calibrated profile scores assigned to females against two direct measures of nutrient stores, abdominal fat and body mass corrected for body size. Abdominal profile indices were linearly and significantly related to both abdominal fat and body mass but the variance was high for individuals assigned to the same profile score ($R^2 = 0.08$ and $R^2 = 0.09$, respectively, $n = 230$). On average, an increase of one profile score corresponded to an increase of 100 g in body mass. Abdominal profiles were better predictors of average abdominal fat and body mass of birds assigned to the same profile category. To assess the usefulness of abdominal profiles in the field, we also examined if the technique could detect the negative effect of a spring hunt on nutrient storage by staging geese, an effect previously detected with internal measures of nutrient reserves. We monitored seasonal changes in abdominal profile indices of staging geese in years without (1997 and 1998) and with the spring hunt (1999 and 2000). In two out of three regions, abdominal profiles revealed that condition increased at a higher rate in nonhunting than in hunting years. The lack of a negative effect of hunting in the other region was likely due to variability among observers in abdominal profile scoring. We conclude that abdominal profile indices can be useful to assess body condition of spring staging Greater Snow Geese although the technique has serious limitations at the individual level, especially without proper training of observers.

Key words: abdominal profiles, body condition, calibration, fat reserves, hunting disturbance, nutrient storage, Snow Geese.