

in some bird groups, but not yet reported in cranes. Some cranes occasionally develop subcutaneous emphysema. In this condition, air-filled pockets under the skin occur along the thorax or over the thighs, abdomen, neck, and even the head (Fig. 8.4). Generally, trauma, with rupture of an air sac and leakage of air under the skin, is suspected as the cause, but often no wound can be found.



Fig. 8.4. *Subcutaneous emphysema over the head of a male Greater Sandhill Crane.* Photo David H. Ellis

Body Condition Index and Weight. By palpating the breast (pectoral) muscles and sternum (keel), the degree of development or atrophy of skeletal muscles can be estimated and is reported as the bird's body condition index (BCI) (Fig. 8.5). A BCI of 4 or 5 (on a scale of 1-5) is indicative of a well-muscled or plump bird and the pectoral muscles will be rounded convexly from the keel. A bird with a BCI of 3 will have a rather flat profile to the pectoral muscles. A BCI of 2 is a bird with a concave shape to the pectoral musculature, and a BCI of 1 indicates severe muscle atrophy and emaciation. Differences exist seasonally in individuals and from bird to bird: healthy wild cranes and captive cranes that fly free usually have more devel-

oped pectoral muscles than birds with flight impairment. Generally, birds with amputations of a wing have a loss of pectoral musculature, especially on the side of the amputation. The greatest value in using BCI is not the comparison between birds, but rather a comparison with previous BCI readings for the individual. Caretakers should be trained to palpate and record BCI any time a crane is handled.

A drop in BCI normally indicates weight loss and a possible medical problem. Weighing is the best method for evaluating body condition and monitoring a bird's overall nutritional status. Direct weights can be taken as described in Chapter 2 (see Fig. 2.9). Weight loss signals the need for a complete examination by the veterinarian.

Abdomen. Gently palpate the abdomen for internal masses, fluid (ascites), or ovulated eggs. Generally the liver is not palpated unless enlarged. The gizzard and intestines are easily palpated, and any crepitus (gas), excess fluid, thickening, or masses in the intestines are possible to detect. The vent area should be examined for lesions, growths, protrusions, and for feces or urates accumulating on the feathers. A soiled vent in young chicks is frequently a sign of diarrhea, often caused by *Escherichia coli* infections (see Chapter 5, Veterinary Techniques section). The uropygial or preen gland above the base of the tail can be palpated for enlargement which can be caused by neoplasia, impaction, or infection.

Skin and Plumage. Examine the general condition of the skin and plumage. Look at the general level of hydration as indicated by the elasticity of the skin. Look for mites, lice, skin swellings (emphysema, abscesses), and missing or damaged feathers. Dull, split, or frayed feathers and stress bars across the feathers can indicate nutritional deficiencies, hormonal imbalances, or stress. Feather cysts and abnormally developed feathers are sometimes seen, especially on the wings. Skin irritation and broken feathers or an area of missing feathers on the thighs are seen in

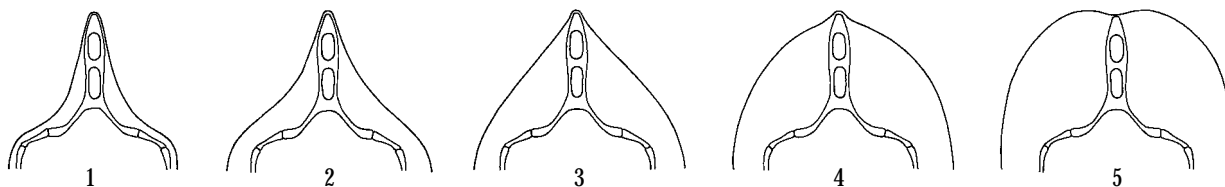


Fig. 8.5. *Body Condition Index (BCI) is an indicator of nutrition: cross section through mid sternum of Sandhill Crane (cavities are tracheal passages).*

Art. Kate Spencer