

Spread-wing Posturing in the Turkey Vulture

By MIKE MOSSMAN

Spread-wing posturing is seen in many bird species, particularly among Ciconiiformes, Pelecaniformes and Falconiformes. Postures vary between species, but in general the bird holds one or both wings away from the body, usually while facing toward or away from the sun. Suggested functions of the spread-wing posture include warming, cooling, drying, rousing ectoparasites, and vitamin D synthesis in oil on the feathers (Kahl, *Auk* 88:715-722. 1971; Mueller, *Z. Tierpsychol.* 30:253-258. 1972).

I observed spread-wing posturing in turkey vultures (*Cathartes aura*) at a communal morning perch in the Baraboo Hills. Vultures assumed two spread-wing postures in direct sun, while perched upright:

- 1) Extended posture: wings extended laterally, usually to almost their full length, and the tail fanned.
- 2) Delta posture: wrists separated from the trunk, with wingtips crossed behind the closed tail. The bird's dorsal or ventral silhouette is heart-shaped. The ventral wing surface is concave, with the body roughly at the focus.

If these spread-wing postures serve to absorb solar radiation, then vultures in the extended posture should face away from the sun. With this orientation the greatest possible surface area is exposed perpendicular to the sun's rays. This exposed dorsal surface is completely dark colored and may be kept at a favorable angle if the bird leans forward as the sun rises. Birds in the delta posture should be observed facing toward the sun; in this position a concave surface, consisting partly of the light-colored ventral surface of the primaries, is exposed to the sun, and solar radiation may thus be reflected directly to the body.

Of 180 observations of turkey vultures in the extended posture, 169 were of vultures facing directly away from the sun. I observed 58 vultures in the delta posture of which 56 were facing directly toward the sun. The difference in orientation is significant ($X^2 = 193$, 3 df), and conforms to the above predictions.

Field work was supported by a Steenbock Scholarship and the Joselyn Van Tyne Memorial Fund.

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