

Statistics have not supported Pearson's claims, though, as the differences between immature and mature Bald Eagles' wing spans average only two to five centimeters, depending on the bird's sex (Harmata, Imler). These differences in wing feather length are insufficient to account for the size differences measured and observed between the bald and Washington eagles.

Developmentally, two arguments must be presented against the idea that the Washington eagles were oversized first-year Bald Eagles:

1) All immature Bald Eagles have some degree of white mottling, definitively at the wing pits (Domazlicky 1992, Stalmaster 1987). Additionally, first-year bald eagles have contour feathers with white bases (McCollough 1989).

2) Audubon observed a breeding pair with nestlings. While it is known that fourth- and rarely third-year Bald Eagles—the appearances of which are quite different from the Washington eagle—are occasionally capable of reproduction, there is no recorded instance where both parents have been sub-adults (Stalmaster 1987).

The sheer size of Audubon's randomly collected specimen places the Washington eagle outside the realm of what is known of Bald Eagle's sizes at any stage of development. The most astonishing element of his specimen is that it was a male. With Bergmann's law of reverse sexual size dimorphism applying to eagles, the measurements of Audubon's specimen are quite likely smaller than the species' potential. Consider the following comparative measures (all Washington eagle measurements are from Audubon's *Ornithological Biographies*):

1) The Washington eagle, from beak to tail, measured 110 cm. The known range for northern Bald Eagles is 71-96 cm (Palmer et al 1988.).

2) The Washington eagle's wingspan of 310 cm surpasses the largest known bald eagle by 66 cm. The wingspan range for northern Bald Eagles is 200-244 cm (Stalmaster 1987).

3) The average length of an adult male northern Bald Eagle's hallux is 3.98 cm while the Washington eagle's measures 6.35 cm (Bartolotti 1984).

4) In northern Bald Eagles, the range of bill lengths is 4.17-6.06 cm, with a male juvenile mean of 5.04 in length and 3.22 in depth (Bartolotti 1984). The Washington eagle possessed a bill 8.26 cm in length and 4.45 cm in depth.

5) Immature northern Bald Eagles have wing chords ranging from 54.1-69.2 cm, with northern males averaging 60.1 cm (Bartolotti 1984, Freidmann, 1950). The Washington eagle's wing chord was 79 cm.

They nested not in trees, but rather in ground nests built on rocky cliffs adjacent to water (Bilby 1887). Surveys of 899 Bald Eagle nest structures east of the Mississippi River revealed an absence of ground nests (Stalmaster 184-5). Ground nests are used by Bald Eagles only in treeless areas, which doesn't describe the lush lower Ohio River valley in which Audubon observed the Washington eagle's nest (Buehler 15).

It was also noted by Audubon that the Washington eagle's flight was:

...very different from that of the White-headed Eagle. The former encircles a greater space, whilst sailing keeps nearer to the land and the surface of the water, and when about to dive for fish falls in a spiral manner, as if with the intention of checking any retreating movement which its prey might attempt, darting upon it only when a few yards distant. (Audubon 1999)

The Washington eagle also did not share the Bald Eagle's bullying and piratical behavior toward the Osprey (Bilby 1887).

Robert Mengel argued against the Washington eagle's existence because there is no fossil record of any other species of *Haliaeetus* in the United

States. His error, though, was referencing only a search of Pleistocene tar pits in Rancho La Brea, a location some 3000 km from the Washington eagle's habitat.

Many authors even imply that Audubon was the sole observer of this species; the truth is, though, that he was not. Dr. [Lemuel] Hayward of Boston, Massachusetts acquired a live Washington eagle specimen and was said to have kept it for "a considerable time"; while in captivity, he described the bird as being "docile" (Bilby 1887). The bird was eventually poisoned and delivered to the Linnaeum Museum in London. Another preserved male, as long as and heavier than Audubon's 6.6 kg specimen, which Audubon later unsuccessfully attempted to buy, was displayed at Philadelphia's Brano Museum (Audubon 1999). The eventual purchaser of this bird was none other than Audubon's close friend, and the author of *Fauna Americana*, Dr. Richard Harlan, of the same city. The whereabouts of this specimen today are unknown, but it is very likely that upon his death the bird was given to the Peale's Museum of Philadelphia. This institution claimed to have such a specimen, but its collection of curiosities was lost when the museum was consumed by fire. Literature concurrent with Audubon's implies that multiple birds were known to have been kept and raised in captivity (Bilby 1887).

Finally, many current biographers have cited the Washington eagle as but one more proof of Audubon's self-aggrandizing and over-zealous temperament. An early writer reinforced this, but also defended him by reminding readers that he did have a weakness for being careless in statements of matters of fact and that this did lead to a pervasive attitude of distrust in even his correct writings (Burroughs 1902). What Audubon did prove in his lifetime though was that he was definitely not rafinesque.

While few men's names become adjectives, few men deserved it as