

Ivory-Billed or Pileated Woodpecker?

OUR DETAILED ANALYSIS [D. A. SIBLEY *ET AL.*, “Comment on ‘Ivory-billed woodpecker (*Campephilus principalis*) persists in continental North America,” Technical Comments, 17 Mar. 2006, www.sciencemag.org/cgi/content/full/311/5767/1555a] showed that a bird videotaped in Arkansas (1) cannot be an ivory-billed woodpecker and is consistent only with a pileated woodpecker (*Dryocopus pileatus*). The Response [J. W. Fitzpatrick *et al.*, “Response to Comment on ‘Ivory-billed woodpecker (*Campephilus principalis*) persists in continental North America,” Technical Comments, 17 Mar. 2006, www.sciencemag.org/cgi/content/full/311/5767/1555b] failed to refute our primary points—black secondaries evident on the upper wing, brighter white at primary bases, and a black band curving smoothly around the wingtip—and instead disputed secondary parts of our analysis.

A photomontage (fig. 1B in the Response) that superficially matches video field 33.3

combines part of the foreshortened wing of an ivory-billed woodpecker specimen with an image of trees. About 60% of the black forewing (~13% of the wing length) was omitted, as if hidden behind a tree (see figure), contradicting earlier reconstructions (1). By this new reconstruction, with foreshortened wing and hidden “wrist,” the putative “wrist-to-tail-tip” measurements in (1) would have underestimated the true distance; yet, those measurements matched “the upper range for ivory-billed woodpecker” (1). Extrapolation suggests that the true measurement would be too large for an ivory-billed woodpecker. This undermines the plausibility of various reconstructions of posture—“perched” (2) or “begins to take flight” (1)—and consequently the claim that field 33.3 shows white on the bird’s dorsal wing surface. We maintain that this white patch represents the underside of a spread wing.

Contrary to the Response of Fitzpatrick



To match video field 33.3, Fitzpatrick *et al.* created a montage (fig. 1B of the Response) from photographs of a mounted woodpecker specimen and tupelo trunks. The specimen was photographed from the side and leaning away, with wings folded, an arrangement unlike that proposed in (1) and implausible because it would be difficult for a bird in this position to cling to the trunk. Our sketch shows the entire specimen, including omitted parts of the body and wing “behind” the tree (gray shading). The montage matches neither the position of the bird’s tail in video field 33.3 (blue shading) nor the position of the actual tree in the video (orange lines).

et al., models of bird flight, in which a flapping bird viewed from behind can show the underside of both wings simultaneously, are supported by photographs shown in our Comment, research (3–5), and video (6, 7). The underwings of a pileated woodpecker can appear mostly white in video (6, 7).

“Suggestive” audio recordings [Fitzpatrick *et al.*’s Response; (8)] remain inconclusive, as

do other lines of evidence (e.g., sightings, wingbeat rates). Thus, no published evidence confirms the claimed rediscovery of an ivory-billed woodpecker.

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References

1. J. W. Fitzpatrick *et al.*, *Science* **308**, 1460 (2005).
2. (1), as originally published online 28 Apr. 2005; see www.sciencemag.org/cgi/reprint/1114103v1.pdf.
3. D. Bilo, in *Instationäre Effekte an schwingenden Tierflügeln*, W. Nachtigall, Ed. (Franz Steiner, Mainz, Germany, 1981), pp. 102–114.
4. S. M. Gatesy, K. P. Dial, *J. Exp. Biol.* **176**, 55 (1993).
5. B. Tobalske, personal communication.
6. J. M. Collinson, *BMC Biol.*, in press.
7. Video by D. Nolin (available at <http://birdviewing.com/upload/NolinPileatedVideos.wmv>).
8. R. A. Charif *et al.*, *Science* **309**, 1489 (2005).

Response

WE DISAGREE THAT SIBLEY *ET AL.* SHOWED that the bird in the Luneau video “is consistent only with a pileated woodpecker (*Dryocopus*

pileatus).” We showed their analysis and assumptions to be flawed or lacking on many counts in our previous Response. We refuted their primary points regarding putative presence of a black trailing edge and rounded black wingtip. Moreover, an impression of brighter white near the primary bases is not diagnostic for pileated, as the primaries are also basally white in most ivory-billed woodpecker specimens.

We presented a photomontage to illustrate that a lateral view of an opening wing of an ivory-billed woodpecker launching off a tree trunk can produce a black-and-white pattern similar to that in field 33.3 of the Luneau video. We did not intend the montage to be a precise match for wing angles and body position of the bird in the video, because (i) these parameters cannot be determined precisely from the video, and (ii) no photographs or mounts are available to illustrate an ivory-billed woodpecker wing as it is opened during launch. Even if field 33.3 does depict the underside of the bird’s wing as proposed by Sibley *et al.*, the absence of a broad black border formed by dark primary and secondary feathers on the distal and posterior portions of the wing renders it inconsistent with

pileated woodpecker.

We do not dispute that “[t]he underwings of a pileated woodpecker can appear mostly white in video.” Rather, we note that (i) all such videos also reveal black trailing edges, contrary to the Luneau video, and (ii) many fields in the Luneau video reveal the dorsal, not ventral, wing surface, and these also show extensive white along the trailing edge.

We continue to regard all aspects of the Luneau video as fully consistent with ivory-billed woodpecker.

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