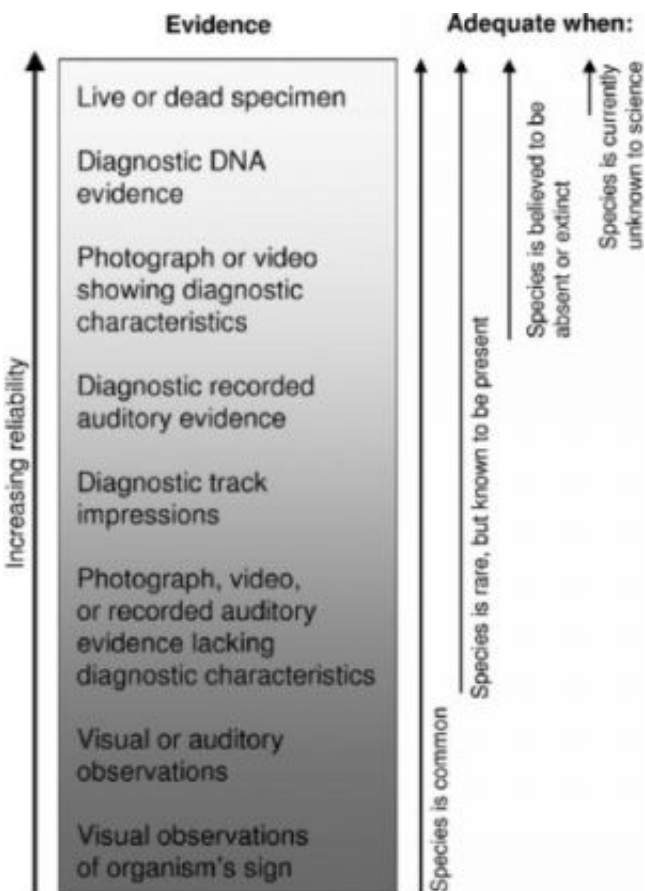


# Reliance on unverifiable observations hinders successful conservation of wildlife species

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A sample set of evidentiary standards based on a gradient of increasing species rarity. The relative reliability of data types is expected to vary among organism groups. Credit: McKelvey et al.

Nearly any evidence of the occurrence of a rare or elusive wildlife

species has the tendency to generate a stir. Case in point: in February 2008, remote cameras unexpectedly captured the images of a wolverine in the central Sierra Nevada, an area from which the species was believed to be extinct since 1922. But frustratingly few observations prove to be so conclusive. So what, then, are managers to make of unverifiable observations, especially those that are not diagnostic?

Researchers from the U.S. Forest Service's Pacific Northwest and Rocky Mountain Research Stations examined three cases of biological misunderstandings in which unverifiable, anecdotal observations were accepted as empirical evidence. Ultimately, they found that this acceptance adversely affected conservation goals for the fisher in the Pacific states, the wolverine in California, and the ivory-billed woodpecker in the southeast by vastly overestimating their range and abundance. The researchers' findings appear in the current issue of the journal *BioScience*.

"These cases revealed that anecdotal data can be important to conservation by supplying preliminary data, such as early warnings of population declines," said Kevin McKelvey, a research ecologist based in Missoula, Mont., and the study's lead investigator, "but conclusions regarding the presence of rare or elusive species must be based on verifiable physical evidence."

In their study, the researchers found that the dependability of species occurrence data depends on both the intrinsic reliability of each record as well as the rarity of the species in question, because the proportion of false positives increases as a species becomes rarer. To help managers determine the suitability of evidence in conservation decisionmaking, the researchers developed a gradient of evidentiary standards for data that increases in rigor along with species' rarity. This "sliding scale" of standards might permit the use of anecdotal data, the least reliable form, in decisionmaking when the species in question is common, for example,

but require indisputable physical evidence for a species thought to be extinct. The authors also encourage professional societies to debate evidentiary standards for their organisms of interest and to establish rules for using occurrence data.

"Over the years, many state and federal management agencies have placed a lot of emphasis on compiling sighting reports and other unverifiable wildlife observations" said Keith Aubry, a research wildlife biologist based in Olympia, Wash., and one of the study's co-investigators. "Unfortunately, the uncritical use of such observations has largely impeded conservation goals, not advanced them."

Source: USDA Forest Service, Pacific Northwest Research Station

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