Unsupported Conclusions on Net Conservation Benefits of Mislabeling Seafood

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Stawitz et al. have attempted to quantifiably address the impacts of seafood mislabeling in a powerful statistical fashion, an admirable goal. However, their conclusion that mislabeling increases conservation status of consumed items is not well supported.

Stawitz et al.’s (2016) analyses and conclusions on conservation were particularly troublesome given their non-transparent methods. The authors did not reveal which 43 studies of the 45 listed in Table S1 met their criteria for meta-analyses, nor did they explain why they included 5,200 non-mislabeled samples in their analyses. They did not provide the proportion of the approximately 1,553 (i.e., 6,754/0.23) “true id” or “labeled” samples subjected to estimated IUCN conservation status nor explain how the sizable proportion of aquacultured species were treated. No reasoning was given for why they performed their own de novo investigation of mislabeling globally using U.S. guidance on seafood market names (figure S1).

Given the vagaries of seafood labeling globally, we are not convinced that quantifying the conservation net benefits of mislabeling is an appropriate research question. The authors’ IUCN averaging method ignores the conservation and health implications of vaguely labeled seafood (e.g., Lowenstein et al. 2010; Lamedin et al. 2015) and prevents robust comparisons of conservation status between labeled and true id samples. We envision a number of potential erroneous conclusions based on the vagueness of the label, the nonspecificity of the true id, and the contrasting conservation ranking of disparate species within one genus (e.g., Thunnus, Supplementary Table provided). The incongruity of the Food and Agriculture Organization of the United Nations (FAO) and RAM Legacy Stock Assessment Database (RAM) database results (supp. S7 & S8) further weakens conclusions based on presumed IUCN status changes by showing larger numbers of true id genera that change status, and in opposite directions compared to IUCN trends (e.g., grouper, flounder, and Atlantic salmon).

We worry most how conservation managers may respond to these and other unsupported conclusions, such...
as which points in the supply chain and genera to target to reduce mislabeling. To focus on “...points in the chain-of custody beyond ports, where the majority of mislabeling occurred” is not supported by the data analyzed. Although more studies may have sampled at the retail level, the mislabeling detected could have happened at any point upstream of this level, including at ports. Likewise, how could managers select genera most prone to mislabeling when both labeled and true id genera are mixed in their analyses (figure 3)? If anything, this argues for tracing all seafood.

Even if all their methods were robust and valid, which we argue are not, a less threatened substitute species sold as a marginally more threatened one does not remove the market DEMAND for the more threatened species; neither does it negate the need for accurate labeling for stock assessment purposes. The authors also did not adequately address how mislabeling impacts consumer perceptions of seafood sustainability or how mislabeling can facilitate illegal fishing. These erroneous conclusions may be used to support reduced regulatory focus on seafood mislabeling, ignoring the issue’s very real complexities and conservation implications.

Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher’s web site:

**Supplementary Table 1.** The problem with using IUCN status by genera as a measure of conservation status differences in mislabeled seafood, as illustrated with tuna.

References

Lamendin, R., Miller, K. & Ward, R.D. (2015). Labelling accuracy in Tasmanian seafood: an investigation using DNA barcoding. Food Control, 47, 436-443.

Lowenstein, J.H., Burger, J., Jeitner, C.W., Amato, G., Kolokotronis, S.-O. & Gochfeld, M. (2010). DNA barcodes reveal species-specific mercury levels in tuna sushi that pose a health risk to consumers. Biol. Lett., 6(5), 692-695.

Stawitz, C.C., Siple, M.C., Munsch, S.H., Lee, Q. & Derby, S.R. (2016). Financial and ecological implications of global seafood mislabeling. Conserv. Lett., doi: 10.1111/conl.12328