

Statistical Aspects of Fishery Papers

In two papers that follow, the authors address statistical problems that they have perceived in published fishery research papers. The theme of the larger meeting that included our symposium was that fishery science is multidisciplinary. No fishery scientist can be expected to be expert in all the fields represented in the science. This is particularly true in regard to statistical and mathematical skills, which some have in abundance but others lack. Those who do not possess such skills should seek statistical and mathematical help in the preparation of their papers—but carefully, because miscommunication between a consultant and a consultee with disparate skills is frequent.

Editors are aware of and concerned about these problems. No editor wishes to publish a paper that is incomplete or in error. How the statistical quality of papers in fishery journals could be improved was the subject of some discussion during the symposium. Some of the suggestions made were (1) to provide more statistical training in fishery programs, (2) for editors to use as reviewers the younger, statistically trained members of the profession, and (3) for the journal to hire a statistical reviewer. The first of these suggestions will only be beneficial in the long term. To set the second of these in motion, editors need to work with academic institutions to develop a list of statistically trained persons. The third involves costs that must be considered. Alternatively, when the editor and referee are in doubt as to the quality of the analyses performed, the author could be requested to have the work certified by an expert in the appropriate quantitative field. This might require the author or the author's organization to pay a fee to the certifying expert. The certification, including the name of the person involved, would be included as a footnote. As a variant of this, the quantitative expert might be listed as a coauthor. Some recent experiences with medical publications, in which long lists of authors are common, show that some coauthors may not take seriously their responsibilities for the quality or accuracy of the paper. Thus, having a quantitative expert listed as a coauthor may not fully reassure the editor.

It is unlikely that a single solution will resolve all such problems. Each editor must determine what seems best, taking into account the needs and scientific level of the journal, the fraction of statistical or mathematical content of the papers submitted, and the budget. Editors probably should seek a candid evaluation of recently published papers to determine if this is a serious problem for their journal. In any case, editors need to seriously consider this problem and perhaps emphasize it in communications with the associate editors and reviewers.

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Editor