

BIOLOGICAL WRITING AND EDITING:
A SESSION SUMMARY FROM THE AMERICAN FISHERY
SOCIETY MEETING IN TORONTO, SEPTEMBER 1988

By

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INTRODUCTION

The 118th Annual Meeting of the American Fisheries Society was held in Toronto, Ontario from September 9 to 15, 1988 at which the American Institute of Fishery Research Biologists sponsored a session, *Writing for Fishery Journals: Pet Peeves of Editors and How to Avoid Them*. The session was well attended, and the papers will be subsequently published in a symposium proceedings.

The papers presented in this session are summarized in this report for the general information of the Commercial Fisheries Division staff and to extract specific applications relevant to our division publication policies and procedures. Each presentation touched on different areas of fishery reporting; these areas will be individually highlighted in the following sections of this report.

SESSION PRESENTATION SUMMARIES

Usage and Style

Paul Eshmeyer (U.S. Fish and Wildlife Service, Fort Collins, Colorado) led off with a humorous, but on-target discussion of word usage and style problems commonly found in biological manuscripts.

* *Mushy Acknowledgements:* The acknowledgements section should include short, simple statements of gratitude for those making significant contributions to your research. It should not be flowery or ingratiating. Avoid, for example, the role of spouses, children, lovers, pals or pets in "putting up with the author during the trying course of the investigation," or expressions of deep gratitude for the "steadfast and loyal service of trusted assistants who endured long hours and foul weather to...", unless, of course, the author(s) particularly wishes to instill severe lower intestinal discomfort among his readers. Acknowledgement order should perhaps be alphabetical to avoid erroneous conclusions being drawn as to the relative importance of the various contributors.

* *Citing Coauthors:* Avoid citing your coauthor in the text as a personal communication (...is this how he or she became a coauthor?). Nor should you mention coauthor in the Acknowledgements unless you perhaps are trying to cleverly allude that the coauthor's role was, perhaps, somewhat less than that of coauthor. (On the other hand, including coauthors in the Acknowledgements would open the door to congratulating yourself for the fine job you did as well.)

* *Age-0+ fish:* Just what is age 0, anyway? The millisecond at which the sperm penetrates the egg? Avoid age 0+. (While Eshmeyer did not recommend alternative terminology, I suppose you could use: age 1- or age pre-1.)

* *Latter/former:* These two words are often used as a means of impressing readers with the author's succinct efficiency in writing. Readers, however, are generally unimpressed since both words represent red flags that send the

reader back over previously read text. For example, the latter of the two words is generally the least appreciated, since it sends the reader back further, but the former word can be equally frustrating to ferret out of the text formerly read. The latter point should now be perfectly distinguishable from the former.

* *Respectively*: This is another red flag word for readers. It is used much too often where the relationship is obvious: e.g., "The length and weight averages in 1986 were 156 mm and 120 g, respectively." How often have you encountered a fish 120 g in length or 156 mm in weight? Or how about, "Average weights at ages I, II, and III were 45, 56, and 65 g, respectively." Since it is generally understood that fish get larger as they get older, "respectively" adds only a needless reading hurdle.

* *Stacking of adjectives*: Quite a few biologists find it convenient to stack their adjectives, but it rarely impresses the frustrated reader who has to decodify the meaning before proceeding.

* *Fishery or fisheries management*: Either is okay, but use the singular and plural forms you select consistently throughout your manuscript.

* *Reside*: Since the word generally conveys a connotation of living in grandeur (e.g., "The Governor resides at..."), its use for fish, as in, "Brook trout residing in French Creek...", may evoke connotations of trout leading a leisurely existence in deep picturesque pools of cool, clear water surrounded by abundant emerging insects and otherwise spending their time in frequent and highly successful reproduction. Do we find appropriate, "Sludge worms residing in...", or does the word "living" seem the more appropriate choice? Eshmeyer urges that we "save reside for rich people."

* *With*: Many use "with" where a conjunction or another appropriate preposition should be used. For example: "The fish was taken **with** a dry fly." Just where was the fish carrying this dry fly anyway? Whenever using "with" make certain that some other preposition is not the one required. Do not use "with" where a conjunction (and, or, but, while) is needed: e.g., "The body cavities were severed **with** livers frozen in plastic bags." Most would agree that a knife might have worked better.

* *Using*: This is another word like "with" that biologists often abuse: e.g., "The sockeye were caught **using** a dip net." If you find no problem with the sentence, be prepared to answer questions such as: "Where did the sockeye acquire the dip nets, and what is the punishment for their possessing and using these nets?" (Also, "use" and "utilize" are synonyms -- why not use the shorter?)

Some of the points raised by Eshmeyer may seem picayune. Like it or not, however, a scientist that cannot correctly apply his own language to his writing makes suspect his ability to correctly apply more complex scientific principles to his research. Therefore, misuse of the English language within a profession will frustrate and impede elevating its credibility among the sciences.

Scientific Prose

C.J. Sinderman (NMFS, Oxford, Maryland) discussed five items to improve scientific writing.

1. Practice the basic rule of good writing: rewrite - rewrite - rewrite. Then, rewrite again, and polish until glowing.

2. Biologists as a group have been weakly trained in the use of paragraphs. Most think they are simply a way to provide some attractive spacing to their pages. Remember that a paragraph should convey a single thought or point. It should have a topic sentence at the start and a transition sentence at the end to lead into the next paragraph.

3. Avoid the use of heavy, pedantic, ponderous or wooden writing. Do not write condescendingly. Do be precise, succinct, fresh and enthusiastic with your writing style. While editors will generally call for deletion of humor, Sinderman felt that this in some ways was unfortunate, offering that by making science "deadly serious, we come across as pretentious, rigid, and boring." He suggested that authors interject occasional and tasteful humor into their writing, especially in the more popularized forms of scientific reporting. Humor will seem more fitting if it can be used to make a point or convey pertinent meaning.

4. Do not mix results and discussion (e.g., a *Results and Discussion* section). In some cases clever authors have abused results and discussion sections such that it is impossible to extricate their results from those of other workers. And do not interject your results into the introduction; this is what the abstract is for.

5. Lastly, Sinderman appealed to authors to begin to use a conclusions section and to reverse the trend of hiding conclusions in the discussion.

Editor-Author Relationship

A.E. Dizon (NMFS, editor of the *Fisheries Bulletin*) offered some do's and don'ts for preparing a manuscript for journal submission.

* Do proofread each and every draft several times, looking for different error types each time.

* Do *not* single space drafts submitted for review.

* Do be sure that all tables and figures are included and that all references are listed in the literature cited.

* Do *not* overkill your use of tables and figures.

* Do be certain that tables/figures and text are clear and legible (good resolution).

* Do *not* submit a manuscript prepared in the style requirements of another journal.

* Do be aware that 30 percent (overall average among fishery journals) of manuscripts submitted for journal publication are rejected.

Lastly, Dixon suggested, somewhat tongue-in-cheek, that reviewers (referees) really need to conduct their reviews with a sense of "righteous indignation" over the drivel the editor has expected them to review -- that a reasonable level of "reviewer hostility" is absolutely necessary. This is the only way for referees to work up sufficient intestinal motivation to do what needs to be done. Authors receiving such hostile commentary, however, are expected and must, in fact, politely overlook the reviewer's hyperbole, tone, and rhetoric and look deep for the point leveled at his or her masterpiece. Even when the reviewer's comment is off base, the author should look for possible writing shortcomings that may have sponsored the reviewer's confusion. Finally, the author should rebut the reviewer's comment when it clearly is ill-founded.

In some following discussion, the opinion was mixed on whether author(s) identity should be withheld from the referees. One study indicated that it made no difference: i.e., that differences in bias/objectivity could not be detected. It was also pointed out that, in many cases, the authors would be identified by the referees through the content of the manuscript. This would mean application of a double standard: i.e., in some cases authors would be known to reviewers and, in other cases, not. The current system (authors names known to the referees) may not guarantee that all reviews will be without prejudice but does at least insure an equal process for all authors.

J. Reinhart (editor of the *Canadian Journal of Fisheries and Aquatic Sciences*) stressed the need for authors, editors, and referees (reviewers) to recognize that they need to form a three-way partnership to get important research published in an accurate, understandable, and timely fashion. She emphasized that authors need to understand and conform to the editorial/publication policies of the journal in which they seek to publish if they want to avoid needless delays or rejection.

Addressing problems of editors, she reflected on her most detested author stereotypes. For example, the "*prima donnas*" who believe their work is above reproach -- that no reviewer can possibly be of sufficient background to review their manuscript. Then there are the mathematical myopians whose manuscript pages are filled with arcane formulae connected with such real words as: "as follows," "where," "and," etc.

Quantitative Reporting Problems

D.G. Chapman (Center for Quantitative Science, University of Washington) discussed quantitative concerns in fishery publications, including:

(1) that tag/recovery investigators are not confronting and resolving important assumptions, such as tag loss, tag mortality, effects of tags on behavior, and homogeneity of the distribution of tagged fish;

(2) that the assumption that CPUE is proportional to population size continues to be widely used in spite of recent work discrediting the assumption's validity;

(3) that bias and variability in age data is not being adequately addressed; and

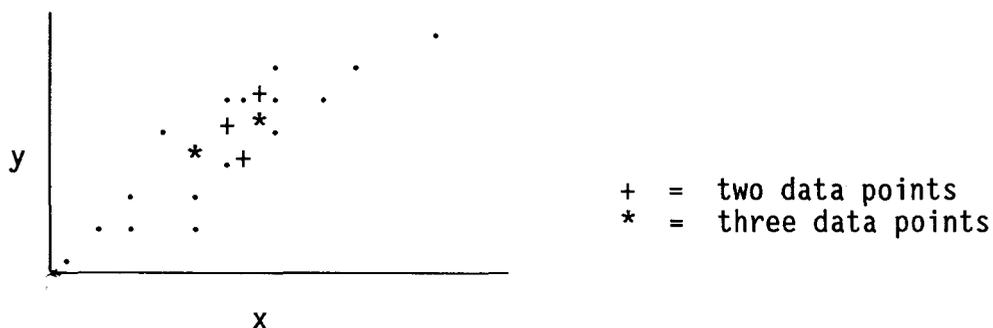
(4) that replications, randomized if possible, are critical but not often enough attempted.

He urged authors preparing quantitative publications to fully explain all assumptions and the reasonableness of their assumptions and to test their assumption, if possible. Sample sizes, appropriate statistical tests, and associated procedures should be worked out before beginning the study rather than at the time data analysis begins. Wherever possible, data should be included in the publication so that others can check the mathematics and procedures used.

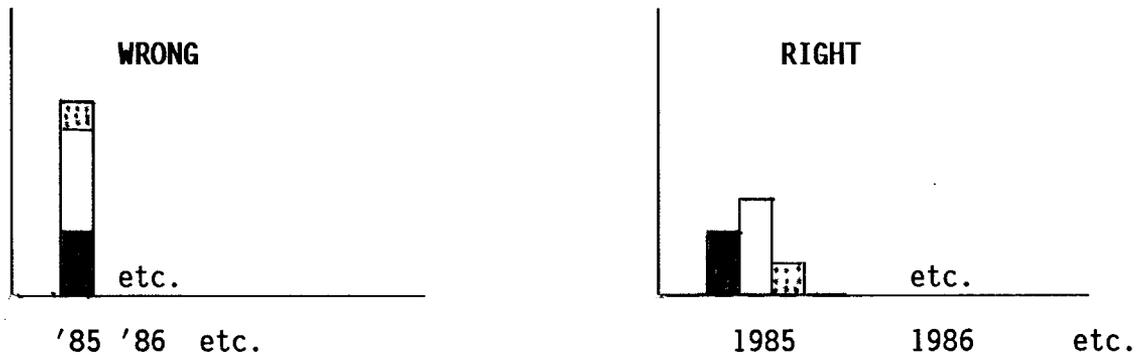
Graphics

V.S. Kennedy (University of Maryland, Cambridge) provided interesting improvements for figures and charts. Some of these were as follows:

(1) Where several or more data points occupy the same space in a graph, use symbols to portray 2, 3, 4, etc. data points, as shown below.



(2) Bar graphs (as shown in "WRONG" below) that lack a common base line and pie diagrams should not be used. Both fail to clearly show relative magnitude of variables because they lack a common base line to facilitate easy comparison.



Gray Literature

B.B. Collette (NMFS, National Museum of Natural History) in his abstract had this to say about gray literature:

"Fishery scientists and their organizations are responsible for posing important questions, gathering relevant data, analyzing the data and then making the results available to the fishery community. This process is endangered by the production of gray literature. Gray literature is written information that is produced and distributed without adequate review. Gray literature takes time and effort to produce (although not as much as manuscripts for peer-reviewed journals). Gray literature, because it is poorly evaluated, lacks credibility. Authors of gray literature reports feel that they have done their job by writing the report, but they have not completed the necessary tasks of producing creditable information and ensuring that the information is distributed in a readily available source to those who need it. Gray literature is hard to locate because it is usually not abstracted, and it is frequently not well-distributed. Some gray literature is produced because of contractual demands and may serve as a data archive. Such gray literature should be issued in a regular series or be available from NTIS or the institution producing the reports. Fishery scientists should be aware that early release of scientific information in the gray literature may jeopardize subsequent publication in the formal literature. Fishery agencies and fishery scientists should avoid producing gray literature and concentrate their efforts on producing good papers that will be accepted, published, and become part of the permanent scientific literature."

His presentation prompted a good bit of discussion and raised a number of unresolved questions. However, some conclusions did seem to emerge.

1. "Gray literature" means reports that are produced without adequate review and with such limited distribution that access for most fisheries workers is difficult.

2. Desktop publishing will, without agency controls, exacerbate gray literature confusion by increasing the production of reports that resemble publications but which otherwise lack adequate review.

3. Agencies should clearly distinguish their publication series from other reports or report series so that credibility (e.g., level of review, final vs. preliminary data, distribution, etc.) of the paper and series can be easily determined by the reader.

4. Agencies having their own publication series should seek blind peer reviews outside the agency to reduce reviewer bias and provide the most qualified and expert referees. Intra-agency blind review is better than no review or author-requested reviews which are invariably constrained by the lack of anonymity. The most important elements for review are that the review be conducted by someone *highly qualified* to conduct the review and that it be a *blind* review.

5. Gray literature needs to be reserved for its valid purposes such as archiving data, contract reports, etc. Publishable material, however, should not enter the gray literature black hole. Agencies need to develop policies and guidelines to ensure that such material is published in an appropriate agency publication series or, even better, a professional journal.