

BOOK REVIEW

Scientific Communication for Natural Resource Professionals. Edited by C. A. Jennings, T. E. Lauer, and B. Vondracek. American Fisheries Society, Bethesda, Maryland. 2012. 180 pages. \$35.00 (\$25 for American Fisheries Society members) (paper).

Communication is the lifeblood of science. However, it can also be a daunting task, especially for students and young professionals. Recognizing this, the Southern New England Chapter of the American Fisheries Society (SNEC–AFS) held a writing workshop in January 2013. The workshop featured presentations by two prominent experts at the Northeast Fisheries Science Center, senior scientist Fred Serchuk and technical editor Jarita Davis. In addition, attendees were given a copy of the new AFS book *Scientific Communication for Natural Resource Professionals*, edited by Cecil A. Jennings, Thomas E. Lauer, and Bruce Vondracek. The SNEC–AFS asked several of the students to review the book in order to practice some of the writing techniques that they had learned at the workshop.

Scientific Communication for Natural Resource Professionals is an excellent desktop companion for any student or young professional. This short book is reasonably priced and contains a wealth of information. Its overall purpose is to facilitate scientific communication by students and early-career natural resource professionals. The editors and authors achieve this objective, providing important information useful to the target audience. The book consists of a series of contributed papers, allowing readers to reference examples as needed instead of having to read the text from start to finish. While the book covers many topics, most of it focuses on various aspects of manuscript preparation, ranging from the determination of authorship to statistical usage, figure generation, and responding to reviewers' comments. Other topics include making oral and poster presentations, becoming an effective reviewer, and communicating in e-mails and memos. Probably the only topic not covered is how to write a book review, but we figured that out.

The book opens with a brief history of writing from cuneiform through the advent of the printing press to the development of the "World Wide Web" which provides a background for the medium of scientific communication. *Scientific Communication* walks the reader through the process of writing a peer-reviewed paper. The second chapter addresses the often neglected topic of determining authorship. Except in the case of the first author (the person who writes the paper), the criteria for determining authorship are often ambiguous at best. This chapter provides an excellent guide, with 13 recommendations that include the criteria put forth by the International Committee of Medical Journal Editors.

Chapter 3 provides an overview of the steps in crafting an informative scientific paper, beginning with journal selection and proceeding through manuscript compilation and submission. This is a thorough and informative chapter that sets the stage for the subsequent chapters relating to the individual elements of crafting a manuscript. This broad review is followed by a chapter about clear and concise scientific writing that identifies common mistakes in style, usage, grammar, and punctuation.

In subsequent chapters, the book addresses individual aspects of a manuscript. Parts of these chapters are a labor to read, but the information is highly valuable. The fifth chapter provides several tips for managing the literature search, reminding readers of the importance of evaluating the credibility of sources found online. Chapter 6 provides guidance on the presentation of statistics in a manuscript, something that is often difficult to do in ways that will make them accessible to the reader. Although this chapter is a tough read, the information it offers about describing statistics in the Methods section and incorporating them into the Results is insightful. The subsequent chapter goes into graphic design at some length. The material in this chapter does not reflect the current array of software tools and publishing formats available due to the rise of digital publications and supporting materials, giving it a dated feel. However, the strength of the chapter is the arguably timeless set of concepts and guidelines regarding figures.

After covering the various aspects of manuscript preparation, *Scientific Communication* reminds students of the importance of disseminating their research among the scientific community via published papers rather than leaving them in thesis form. Although this chapter is very useful, its title is misleading. It suggests that the chapter will center on ways to convert a thesis into a manuscript, but the chapter actually provides little advice along this line; most of it deals with ways to facilitate subsequent manuscript preparation while one is writing a thesis, which is essentially covered in a previous chapter. The inclusion of topics such as how to pare down a thesis, focus the writing, and select the figures to include in a journal submission would have been valuable to the many students who have already completed their theses.

Other aspects of publishing a paper are addressed in the following chapters, which describe journal selection and the peer review process. Chapter 9, on journal selection, highlights why authors choose to submit to one journal rather than another. This chapter provides examples of research results that could be published in widely different journals based on the emphasis of the research. While helpful, the examples are somewhat redundant. Complementing this chapter, Chapter 10 provides step-by-step guidance on revising a manuscript, whether it needs minor,

major, or multiple revisions. By breaking the process down into manageable steps, it provides helpful advice on handling what can be a daunting and difficult task.

Scientific communication is not entirely about writing manuscripts; oral presentations are also a major part of it. These are covered in Chapter 11, which contains sound advice about the style of presentation that is preferable given the audience and the amount and type of data to be presented. This chapter is an excellent guide for someone new to professional meetings. After all, presenting research can often be more daunting than conducting it.

There is also a chapter about writing a review paper. The chapter discusses the various elements in crafting a review paper and highlights the differences between such a paper and a typical manuscript, noting that the goal of a review paper is to synthesize a wealth of information so that professionals in other disciplines can utilize it without having to consult the pertinent references.

The final chapter covers peer reviewing manuscripts, which over the course of a natural resource professional's career is as important as publishing. This chapter provides straightforward, insightful commentary on the ethical and functional responsibilities of the reviewer, including detailed instructions for reviewing each section of the paper. The author weaves personal experiences and humor into the discussion, while laying out a detailed road map for reviewers. We recommend keeping this chapter close at hand when you are reviewing a paper.

Overall, *Scientific Communication for Natural Resource Professionals* is an effective instructional guide to communicating in our field. Although the subject matter is at times bland and there is some unnecessary overlap between chapters, the book is a welcome desktop companion to those in the natural resource profession. We highly recommend it not only to students and young professionals but also to seasoned veterans as a guide through the daunting task of communicating science.

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