

Manuscript Content: Where Does it Belong?

One of the most common issues we address during content editing of papers for *The Prairie Naturalist (Journal)* is the appropriate placement of content in the text body. Based on my experience with the editorial process, content placement also is one of the issues that authors are most resistant to suggestions or do not fully understand why we are so persistent about it (Thompson 2010). One of the primary objectives of scientific writing is to concisely and accurately disseminate information. Scientific papers are structured to help both the author and reader accomplish this objective. The material that belongs in each section of *Journal* is described in our manuscript submission guidelines and generally follows standard guidelines for scientific writing (Day and Gastel 1998, Council of Science Editors 2006, Thompson 2010). Content editing is intended to bring a manuscript into compliance with our current submission guidelines, though at this stage we sometimes have to deal with additional problems that were overlooked during the peer-review process. My intention here is to describe some common problems we seen in papers submitted to the *Journal* relative to placing content in the appropriate sections, with a primary goal of helping authors prepare better papers for the *Journal*.

The Introduction should present information that provides readers with adequate background to understand the relevance of the study and to evaluate and better understand the primary motivation (need) for the study. This information should include clearly identifying the problem being addressed and a brief review of relevant literature to provide the reader with sufficient background on the topic (Thompson 2010). This section should conclude with a clear and concise statement of the study objectives; if appropriate these objectives can be stated in the form of research hypotheses. Ideally, the justification for research hypotheses should be an obvious and logical extension of the brief literature review in the introduction. A more complex and lengthy justification for research hypotheses should be reserved for the Methods section. The most common problem in the introduction is review of literature that is not essential to understanding the primary motivation for the current study. Additionally, a summary of methods and results are included, which can make this section unnecessarily long and redundant with other sections (Thompson 2010). Occasionally, including a brief statement of the methods is warranted, though these instances are rare. Authors should avoid repetitive summaries of methods, results, or conclusions in this section. Another common problem with the introduction is that authors sometime do not put enough effort into it and do not review relevant issues, knowledge, or current literature that would adequately frame their study in the proper context and indicate its importance (Thompson 2010). Ideally, authors should review their introduction to

ensure it includes an adequate and concise review of the literature relevant to the manuscript's main topic and a brief statement of study objectives; other information does not belong in the introduction section (Thompson 2010).

In their description of the Study Area, most authors adequately describe relevant spatial features of the area in which their study was conducted. Many authors, however, fail to adequately describe how the study areas, or replicate study sites, were selected (Thompson 2010). Selection processes or criteria are critical details to include in this section because they affect the scope of inference of the study (Thompson 2010). If sites or samples of convenience were used, authors should describe to what extent and why broader inferences can be extrapolated from the study (Thompson 2010). Details of experimental design relating to points within sites, animals, or other sampling units belong in the Methods section.

The Methods section should present enough information so that someone competent in the field could repeat the study. Further, authors should not repeat details that can be cited in other references but should include adequate information so that others can understand the study approach without having to track down cited sources (Thompson 2010). This section should be presented in a logical, and when possible chronological, order that addresses study objectives. Results and to some extent discussion, should follow a similar format in the respective sections (Thompson 2010).

A common mistake that I consistently see in submitted manuscripts is the failure of authors to mention statistical tests until presenting results in the Results section. Please keep in mind that all statistical tests, and how they related to stated study objectives or research hypotheses, should be adequately described in the Methods section. Another common mistake that I consistently encounter is the inclusion of results in the Methods section; results belong in the Results section. The partitioning of content is for the simple reason that readers expect to find methods in the Methods section and results in the Results section. Authors should never assume that readers are going to read every word in their paper! A critical component of the Methods section is a statement that authors met any required animal (or human subject) use protocols; these protocols vary with authors' affiliations or funding sources. That being said, authors should provide a description of how they met any requirements and report any relevant protocol or permit numbers (Thompson 2010).

The Results section should be brief, direct, and to the point. Common errors I commonly see are the tendency for authors to describe methods or analyses, or including interpretation of results (e.g., discussion) in this section. Authors should avoid providing interpretation of results beyond a simple description of biological meaning.

Speculation on plausible causes of results, or comparing results to previously published literature should be avoided in the Results section. Authors should use tables and figures to save space or more clearly report results; however, there should not be redundancy in the text body, tables, and figures (Thompson 2010).

The Discussion section should begin by synthesizing results as related directly to the stated study objectives, and then relating study findings to previously published literature. Authors should note where results are supported by previous work and identify exceptions or negative results of importance (Thompson 2010). The Discussion section is commonly much longer than necessary because authors often repeat results or discuss every aspect of their study, both of which should be avoided. Authors should avoid simply summarizing or repeating results in this section and should comment only on the most relevant or important results. Some speculation is allowed in the section. Authors should end this section with any conclusions that are not in the form of recommendations, which should be reserved for the Management Implications section (Thompson 2010).

The Management Implications section is arguably often the most challenging for authors. More than any other section, it clearly demonstrates the take-home message of the study (Thompson 2010). As a result, this section is arguably the most important section of the entire manuscript. Manuscripts that provide readers with direct, concisely written, and justified management implications typically fare well in the peer-review process. In contrast, manuscripts that lack a Management Implications section, or fail to articulate the importance of the study to prospective readers in a short, clearly written paragraph is probably not suitable for the Journal because either the study was poorly executed (and thus had limited inference) or the topic is not relevant to managers and researchers across the Great Plains. In this section, authors should clearly explain issues or draw conclusions important to management and conservation issues that are derived directly from their study (Thompson 2010). These conclusions often will be in the form of management recommendations; rarely will literature citations be needed in this section (Thompson 2010). Authors should avoid restating material from the Results or Discussion sections and should not make recommendations or draw inferences beyond the spatial or temporal scope of their study. I hope you find this issue informative.

—Christopher N. Jacques
Editor-in-Chief

LITERATURE CITED

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- Day, R. A., and B. Gastel. 1998. How to write and publish a scientific paper. Sixth edition, Cambridge University Press, New York, New York, USA.
- Thompson, F. R. 2010. Putting content in the right place. *Journal of Wildlife Management* 74:913–914.