PEER REVIEW FORM

Reviewer's Bates ID#: _____   **Authors' Bates ID#'s: _____**

Overview: Scientific peer review is done by anonymous reviewers to assure an honest and open critique of the scientific merit and written communication of the work. Your task, as a reviewer is to vet the science and help the authors to write a better, more readable, and scientifically sound paper. For this you just need to be a good, attentive, **reader**.

REVIEWERS: Your review involves providing feedback on (1) the scientific merits of the study, and, (2) the effectiveness of the paper as the communication of the authors' findings. You will be evaluated on how well you identify the strengths/weaknesses in the science and the communication and on the quality and accuracy of your suggestions for improving the paper. Remember that your role is as a concerned colleague whose goal is to help the authors improve their paper. You are not a line editor. **To get started, your focus should be informed by the authors' cover memo outlining where they feel they need the most help, although you must review the entire document**. We assume that you have a working familiarity with the "How to Write Guide" and Hofmann (2016) and that one or both are open on the desk beside you. The review counts 30 points (total project counts 140 pt).

 AUTHORS: You will be evaluated on how well you respond to and incorporate suggestions provided by your reviewer(s). To help facilitate your evaluation, we require (1) that you check off any suggested changes on this document as you make them, and (2) that you also check off your changes on the draft manuscript.

If you opt not to make a suggested change, please provide a brief comment justifying why you didn't accept the advice. "Because we like our way better" is NOT a valid reason.

You will also complete an **Authors' Summary of the Peer Reviewers' Comments** form in which you will identify specific issues in your paper that need attention and how you will revise them based on the collective peer reviews your group received. Your response to reviewers' suggestions counts 20 points on your paper score (20/100 pt).

Tips for reviewing a manuscript effectively:

- **Imagine you're having a dialog with the authors about the draft,** especially as you identify concerns and consider possible solutions.
- **Be kind and constructive.** Be the kind of READER you would like to have read your draft.
- **Give concrete, specific, honest praise.** *Example:* "I like the way the data are presented in Figure 1. The important features are well labeled on the image and explained in the legend."
- **Give concrete, specific, honest, constructive feedback.** *Example***: "**I find it difficult to follow the logical flow of information in this paragraph. A clear topic sentence is needed and then perhaps reordering the sentences…"
- **Write comments upon which the authors can act;** provide enough information that the authors will know the basis for your concerns without becoming directive about solutions.
- **Ask lots of questions if you do not fully understand aspects of the paper.** *Example: "*Your introduction presents conflicting lines of evidence, but I am unsure of your research question. Can you explain which line of evidence your study will examine?"
- **Mirror for clarity –** Say: "It sounds like you are saying…. Is that right?"
- **Move from global to local issues.** For example, start with overall organization and cohesiveness of the paper (the story), rather than wording of individual sentences.
- **Do not try to "FIX" everything.** DO NOT line-edit the paper; let the authors deal with the nitty gritty in the context of their revisions. If there are abundant grammatical issues, simply note that this is an issue that needs to be addressed in revision.
- **Avoid comments that start "You should…" –** allow the authors the opportunity to process your comments and determine how best to revise their work.

Sources Used

Hofmann, A. 2016. *Writing in the Biological Sciences* Oxford University Press, New York. 331 pp.

SCIENTIFIC MERIT OF THE WORK – First read through of the paper

This section asks you to read the paper like a scientist focusing on the content as scientific inquiry rather than a simple written document. Consider how well the researchers carried out their study, i.e., did they accomplish what they say they intended to do based on their stated research question? Do you have confidence in their findings and interpretations? As you read the paper, check off the items below if they are addressed and well done. When possible, direct the authors' attention to the specific location in the draft where issues needing attention come up. In all cases, provide suggestions as to how the authors might improve each aspect of the paper to enhance the scientific merit of the work.

What is the specific <u>research question</u> being addressed by this study?

Background and context – The known and unknown

- ☐ Do the authors identify, contextualize, and motivate the research question with relevant background information from the primary literature? How can these aspects be improved?

Methodology and execution of the study

- ☐ Was the design of the study appropriate to obtain the data necessary to answer the research question?
- ☐ Did the authors do a credible job of carrying out their study such that you have confidence that their results can answer the question?

Results – Do the results provide evidence to answer the research question?

- ☐ Does the Results effectively summarize and highlight the key findings of the study?
- ☐ Do the results presented provide sufficient evidence to answer the main question(s) of the study?

Discussion – Have we moved our knowledge forward?

- ☐ Do the authors arrive at well-supported, evidence-based conclusions about their research question?
- ☐ Do the authors contrast their findings with other studies to establish a broader relevance?
- ☐ Does the paper advance our understanding of the aspect of biology that was investigated?
- ☐ Does it provide interesting and important insights into the topic of interest?

Other suggestions for improvement: _____

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INDIVIDUAL SECTIONS – Second, closer read through of the paper

In this section we ask you to focus, as a reader, on the underlined communication of the work with an eye toward ***logical flow of information*** (the overall story), **clarity** (logic, organization, paragraph, word choice, and staying focused on the research question) and **concision** (language, sentence structure) in the writing. If you have not done so, we recommend reading chapters Ch. 3 (Style) and 4 (Composition) in Hofmann (2016).

Introduction:

- ☐ Does the Introduction clearly state the overall BIG question of the study?
- ☐ Has the topic been reviewed, i.e., underlined what do we know going into the study? underlined What don't we know?
- ☐ Do/Does the specific study question(s) follow the unknown?
- ☐ Are all elements (*known, unknown, question, purpose, and experimental approach*) clearly signaled?
- ☐ Do the authors briefly signal their key conclusion(s) at the end of the Introduction? (optional)

Suggestions for improvement: _____

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Materials and Methods:

- ☐ underlined If it is a field study, has the study location(s) been described adequately for the relevant biotic and abiotic features? (n/a for Bio 242)
- ☐ Would the section benefit from using underlined subheadings to organize it?
- ☐ Have the experiments/ sampling schemes been adequately described in a underlined concise manner?
- ☐ Has each experiment been fully described – question, experimental design/procedures, data collected, analysis?
- ☐ Do the Methods provide sufficient procedural detail and quantitative aspects that the study can be repeated by someone else? (e.g., #replicates, concentrations, temperatures, incubation times, etc.)
- ☐ Have the authors avoided unnecessary details that are implicitly understood in the conduct of the work?
- ☐ Has the data analysis been described adequately and in terms of the kinds of questions addressed?

Suggestions for improvement: _____

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Results:

- ☐ Have the authors adequately brought to light the results that their data reveal?
- ☐ Have these results been clearly summarized for each experiment/study in a figure or table?
- ☐ Are the results presented in a logical sequence that builds the evidence needed to answer the research question? Would the section benefit from using underlined subheadings to organize it?
- ☐ Are there errors in factual information, logic, analysis, statistics, or mathematics?
- ☐ Do the Tables and Figures come only after the reference to them in the text?
- ☐ Does each table or figure caption/legend have a clear underlined title sentence?
- ☐ Are there results that should be in a table or figure rather than the results text? Or vice versa?

Suggestions for improvement: _____

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Discussion:

- ☐ Does the Discussion clearly link back to the Introduction?
- ☐ Did the authors adequately remind you of the purpose/question?
- ☐ Has the overall interpretation(s) of the results been clearly stated?
- ☐ Have the authors considered alternative explanations/interpretations when appropriate?
- ☐ Did the authors utilize the relevant primary literature in discussing and interpreting their results?
- ☐ Has a clear, <u>evidence-based</u> conclusion <u>that addresses the main question</u> been provided?
- ☐ Do the authors bring their discussion back to the BIG question (usually at the end of the discussion)?

Suggestions for improvement: _____

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Abstract:

- ☐ Have all necessary content elements been included (*purpose/question, key design/methodology, key results, conclusion/implications*)?
- ☐ Does the Abstract provide sufficient specific information to adequately represent the paper?
- ☐ Does the information in the abstract agree with the corresponding information in the body of the paper?
- ☐ Is the Abstract concise (typically 250-300 words)?

Suggestions for improvement: _____

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Title:

- ☐ What kind of title is given?   Descriptive title? _____   Key result/conclusion title? _____
- ☐ Does it effectively frame the study?
- ☐ Does the title provide adequate key words to indicate the question, variables,

Suggestions for improvement: _____

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QUANTITATIVE ASPECTS OF THE PAPER *(NOT ALL MAY BE APPLICABLE)*

- ☐ Volumes, concentrations, working concentrations, times, temperatures, humidity, pH, etc., have been adequately reported such that the experiment could be repeated.
- ☐ Statistical analyses and descriptive statistics have been summarized in the paper and in figure/table captions as needed for the reader to understand the significance of the findings.

Suggestions for improvement: _____

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GLOBAL AND PARAGRAPH LEVEL ASPECTS OF THE PAPER

- ☐ Do the authors present a research question that is reflected back in each section of the paper?
- ☐ Does the overall organization of the paper clearly and effectively present the story of the work as centered on the research question?
- ☐ Within sections, could the <u>clarity</u> be improved by adding or removing subheadings? Changes in the order of the paragraphs?
- ☐ Does the logical argument structure and flow of information maintain from Introduction through to the Discussion?

Suggestions for improvement: _____

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REFERENCES USED, IN-TEXT CITATIONS, and LITERATURE CITED

- ☐ Check all in-text references cited in the Introduction and Discussion for correct formatting.

- ☐ Cross check the Literature Cited section with the in-text references to make sure that all references have been listed.

- ☐ Do the references in the Literature Cited section have complete citation information and consistent formatting?

- ☐ Is the citation order correctly alphabetized (first author last name)?

Suggestions for improvement: _____

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PROFESSIONALISM, FORMAT, STYLE AND COMPOSITION: For any of these that are not yet adequately addressed, direct the authors to specific examples in the paper.

- ☐ Has the document been prepared to look polished and professional?
- ☐ Have the authors adhered to <u>format</u> and <u>style</u> conventions as described in the How to Write Guide?
- ☐ Are clear <u>topic sentences</u> used for each paragraph? **(clarity)**
- ☐ Do the <u>sentences in each paragraph adhere to the topic</u> of the paragraph? **(clarity)**
- ☐ Are the <u>transition sentences</u> between sections and paragraphs effective? (**clarity**)
- ☐ Are the <u>key words</u> used correctly and consistently? **(clarity and concision)**
- ☐ Is the <u>scientific terminology</u> used correctly and consistently? **(clarity and concision)**
- ☐ What other problems exist?

Suggestions for improvement: _____

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AUTHORS' REVISION PLAN: (to be completed by the authors)

Consideration/utilization of your reviewer's comments is a central aspect of revising your paper before evaluation. Below we ask you to identify important aspects of the paper identified by <u>this reviewer</u> that should be maintained, as well as aspects that need improvement. Most likely the comments on the draft will identify areas of strength that should be maintained. The "Suggestions for improvement" will be a good place to start to identify areas that need attention. After addressing each review separately, we then ask you to prepare a consolidated summary of all reviews to guide your revision (see below).

Did the reviewer attend to the specific aspects of the paper that you identified in your cover letter? ___ Yes ___ No

Did the reviewer avoid the specific "off-limits" aspects of the paper as identified in your cover letter? ___ Yes ___ No

AUTHORS' PLAN FOR REVISION: Describe your plan for revision or re-write <u>based on this reviewer's comments</u>, starting with global revisions and then moving toward more paragraph level revisions. Include an explanation of how you will integrate the reviewer's comments. Likewise, provide justification for choosing not to integrate specific reviewer's comments in your revised draft; <u>these should be noted clearly on the draft as well</u>.

Global (overall structure by sections, within section paragraph sequence, flow of ideas, unity of the message, Intro-Discussion connection):

Paragraph (topic sentence, adherence to topic, transitions):

Sentence level (word choice, sentence structure, clarity and concision, placement of important information):

NEXT STEP

Consolidated Summary of Peer Reviews: The group now needs to consolidate comments from all of your peer reviewers using the **Authors Summary of Reviewers Comments** form which will be included with your final draft for evaluation. Go through this review and identify the most important changes (***Suggestions for improvement***) needed to improve the scientific merit and communication effectiveness of your paper. Especially note any comments made by more than one reviewer on the same issue.