

UNIVERSITY OF ALASKA FAIRBANKS  
**Student Learning Outcomes Assessment Plan**  
**Biological Sciences Ph.D.**  
 College of Natural Science and Mathematics  
 30 October 2025

**MISSION STATEMENT:** The Biology and Wildlife Department educates students from diverse backgrounds worldwide about living systems with an emphasis on the circumpolar North by fostering intellectual inquiry, problem solving, and creativity through coursework and research.

**GOAL STATEMENT:** The Biology and Wildlife Department aims to provide its students a strong foundation in biological knowledge; to empower them through course experiences, research, and inquiry to think creatively, flexibly, and critically; and to prepare them to achieve their future educational and professional goals.

| Intended Objectives/Outcomes                                                                                                                                                                                                                                                                                                                                                         | Assessment Criteria and Procedures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Implementation<br>(what, when, who)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| 1. Demonstrate mastery of biological knowledge relevant to the student's research area and the scientific method by writing an original scientific project proposal<br><br>2. Communicate science effectively in writing<br><br>3. Communicate science effectively in speech<br><br>4. Contribute original knowledge discovered through research to the broader scientific community | 1. Ph.D. students will write a formal dissertation proposal including at minimum an introduction, rationale, research plan including methodology and data analysis, and a set of references cited<br><br>2. Assessment of writing quality in the student's dissertation proposal is included in the proposal assessment rubric<br><br>3. Ph.D. students will present and defend their dissertation effectively in a public setting<br><br>4a. At least half of Ph.D. students will publish at least one dissertation-related peer-reviewed publication prior to graduation<br><br>4b. At least half of Ph.D. students will present their work each year to a broad audience, for example at a meeting or conference | 1. The graduate advisory committee will evaluate the student's research proposal based on a rubric, provide formative feedback, and communicate their final evaluations to the department chair<br><br>2. A portion of the proposal rubric will be focused on writing quality<br><br>3. The graduate advisory committee will assess the quality of the oral communication during the public seminar portion of the dissertation defense using standard rubric<br><br>4a. B&W will monitor publications by Ph.D. students using three means: an annual survey by the department, the Graduate School's Report of Advisory Committee form, and a search of the scientific literature<br><br>4b. B&W will track oral presentations made by students using two means: an annual survey by the department, and the Graduate School's Report of Advisory Committee form |