

Marine Biology - Master of Science

Current Compliance Year: 2023-2024

Mid-Cycle Review

Recent Recommendations

Feedback will include recommendations from the last Expedited Review or from your most recent review by your school or college. You may not see any feedback or recommendations until you have completed your first full or mid-cycle review.

Response to Previous Recommendations (if any):

Previous recommendations of our program focused mainly on the success and productivity of our graduate students. One question raised was about intermittent check-in with our students. We have a comprehensive exam that is generally taken after the first year. In addition, annual committee meetings (sometimes biannual) give an opportunity to identify student struggles and obstacles.

Student Learning Outcomes

The previous Student Learning Outcomes Assessment has been submitted as its own report. Going forward you will use the following prompts to discuss the success of your most recent SLOA plan and address your assessment activities since your last SLOA report (typically the past two years or since your last program review).

Learning outcomes feedback from last review:

Feedback will be provided once you have completed a full or mid-cycle review.

Discuss your SLOA findings, changes you are making and what you hope to see as a result:

Feedback to our existing SLOA plan was "strong". We do not currently see a need to update the existing plan.

Discuss the curricular changes made based on assessing your SLO. If you haven't made any curricular changes, please explain why not and address what you did notice in the review, including strengths of your curriculum through the assessment of your outcomes:

We changed the field course requirement from 4 credits to 2 credits to allow working students or students with summer jobs to participate. It also made the field experience more affordable. In addition, we changed the seminar requirements to broad aquatic science electives, which made the program more flexible for students. These changes have received positive feedback from the students and allow them to focus more on classes they see as advantageous for their future careers.

Are communication outcomes embedded in the SLOA Plan?

As of 2017 all Baccalaureate programs were required to embed the communication outcomes within their SLOA Plans, this is optional for non-Baccalaureate programs.

Embedded

Student Success

To access the Student Success Dashboard please sign into a UA computer with VPN connection (if not on campus). You will need your UA credentials and it is best accessed with the most updated

version of Chrome, Edge, Firefox or Safari browsers; Internet Explorer is not supported. You will need to filter the data to see your programs. If you need assistance in finding the data for your programs, please contact your data liaison or Julia Manfredini in the PAIR office.

Data Liaisons

Each school or college has a team of Data Liaisons to help you analyze the data provided in the portal and may be able to help you see your data in multiple contexts. You can find a list of data liaisons on the resources page for Program Review.

The college or school level committee will also have access to this data with the goal that by providing these visualizations data availability will be increased.

Data supplied within the dashboard linked below is intended for Academic Program Review and not for any other purpose.

Student Success Data Dashboard

Previous Feedback

Feedback will be provided once you have completed a full or mid-cycle review.

Student Success Data Trends: (please indicate the trends that apply to your program)

Increase in majors, No change in SCH, Increase in persistence, Decrease in pass rates, Something else (use data explanation field to describe), Increase in degrees awarded

If equity gaps were found in any of your disaggregated student success data, please explain how you plan to address those gaps. Please contact your data liaison or make an appointment with Julia Manfredini to learn more about analyzing your data.

Not many trends are apparent, but there is a slight increase in [redacted] students. The observed slight decrease in pass rates is mainly in [redacted] or [redacted] students. We believe that the overall decline in pass rates is due to COVID, and a large shift to distance or asynchronous classes. "Incomplete" grades are included here, which have increased during COVID times.

Optional Data Explanation

Feel free to share more of your thoughts on the data provided.

In addition to metrics addressed here, our program also measures student success in conference attendance, including giving presentations and posters. We also encourage our students to participate in outreach activities, e.g., working with indigenous communities, local schools and science fairs, UAF events etc.

High Impact Practices

According to the AAC&U, High-Impact Educational Practices "have been widely tested and have been shown to be beneficial to college students from many backgrounds." UAF is particularly interested in Undergraduate Research and/or Scholarly Activity because it is one of our mission fulfillment indicators, but all of these researched High-Impact Educational Practices should be reflected in your program's student learning outcomes and curriculum.

Previous Feedback

Feedback will be provided once you have completed a full or mid-cycle review.

High-Impact Practices Used in this Program

Please use the following fields to discuss how your program is using the high-impact practices, successes and known issues and solutions, or ways you are considering incorporating them in the future. If you are not using any of the high-impact practices listed, please use the "Other or None of These," filed to share what your program is doing to help students be successful.

High Impact Practices that currently apply to your program:

Capstone Courses and Projects, Collaborative Assignments and Projects, Writing-Intensive Courses
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Collaborative Assignments & Projects

Graduate students are required to write a thesis. The expectation is that the thesis is in a publishable format and will be published in a peer-reviewed journal. The department is contributing to publication costs, especially for open access journals. Students are learning to collaboratively work as part of a research team. Many of our students are mentors to undergraduate students in our program and assist them with their research and capstone activities.
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Our students are expected to write grant proposals to various agencies, travel grants, research support etc. This provides ownership of their research and prepares them well for the workforce.
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Undergraduate Research

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Diversity/Global Learning

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ePortfolios

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First-Year Seminars & Experiences

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Writing-Intensive Courses

Graduate students are required to write a thesis (MBI 699). The expectation is that the thesis is in a publishable format and will be published in a peer-reviewed journal. The department is contributing to publication costs, especially for open access journals. Some of the electives (e.g., MBI 602 proposal writing).

Service-Learning and/or Community-based Learning

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Internships

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Capstone Courses & Projects

Graduate students are required to write a thesis. The expectation is that the thesis is in a publishable format and will be published in a peer-reviewed journal. The department is contributing to publication costs, especially for open access journals.

The research design, from conception, analysis, to publication, is done by the students.

Other or None of these (explain)

Submission

Submitter & Collaborator Names

Submitter Email

lahorstmann@alaska.edu

College or School Review Committee

The college or school committees set the tone for helping each program feel seen during this process. We have provided you with strength-based feedback tags to attach to this program review. Please select as many as applicable.

Overall Recommendations

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Explanation of Recommendations

Many of the comments for the Marine Biology MS and Marine Biology PhD are the same because, outside of the student success data, the program reviews were identical. SLOA plans are very similar or identical for the programs in Marine Biology. It is essential that different programs have different outcomes - if students are intended to learn the same things, how are the programs differentiated? Something to resolve, per some of the guidance below, for the full-cycle review in two years. The review panel acknowledges the time and effort that went into preparing the mid-cycle program review for the Marine Biology M.S. program. The review panel appreciates that the program has made curricular changes to address student needs in regard to field courses and seminars. The review panel also appreciates that the program provided a thorough overview of the data trends (student success data) and narrative for the HIPs (high-impact practices). The review panel would also like to emphasize the need for the full program review in two years and how it has addressed any declines in student success metrics.

Learning Outcomes Feedback

Requires Minor Revision

Student Learning Outcomes Assessment Feedback (tags)

"Clear, concise presentation of findings"

Student Learning Outcomes Assessment Feedback (narrative)

The program provided 7 SLOs for the Marine Biology MS SLOA plan. The review panel offers the following recommendations to improve upon the program's SLOAs:

- SLO #s4-6 were appropriate as measures of student learning.
- SLO #s1-3 and 7 are program outcomes and not tied to student learning.
- The recommendation from the review panel is to reduce the number of SLOs from 7 to 3 by eliminating SLO #s1-3 and 7. The program is encouraged to retain these measures of outcome assessment (#s1-3 and 7) for their own internal tracking purposes (just not use them as part of program review). Per guidance from the NWCCU for accreditation purposes, they recommend that degree programs have between 3-5 SLOs per program (so the 3 remaining SLOs would meet that requirement).
- A 4th or 5th SLO could be added that directly assesses student learning from the degree program. The program might consider revising the outcomes to include more "action" words. It is difficult to assess things like "understand" or "recognize." "Identify", "explain", or "analyze" are clearer outcomes to assess. <https://tips.uark.edu/blooms-taxonomy-verb-chart/>.

Most of the assessment plan is the same for each SLO, nothing distinguishes the evaluation criteria from each other (there needs to be a difference among SLOs). The program should be clearer with their objectives, assessment, and implementation.

Noted curricular changes which included changing the field course requirement from 4 credits to 2 credits to allow working students or students with summer jobs to participate. The program also made the field experience more affordable. In addition, the program changed the seminar requirements to

broad aquatic science electives, which made the program more flexible for students. These changes have received positive feedback from the students and allow them to focus more on classes they see as advantageous for their future careers.

Following NWCCU guidance, SLOA plans must emphasize "closing the loop" and continuous improvement, ensuring each SLO within the plan is assessed individually to verify alignment with program objectives. If a SLO fails to produce the expected assessment outcome, adjustments to SLO language, substantial changes to the SLO, or revisions to data collection rubrics are necessary to ensure alignment and facilitate program improvement.

Student Success & Equity Feedback

Noted an increase in majors (13 to 25), degrees awarded (3 to 6), and GIP (82 to 100%), a decline in pass rates (100 to 90%), no change in SCH, and something else (increase in first gen, attributed declining pass rates to covid).

How is the program supporting degree completion?

The review panel feels that it would be beneficial to see how the program intends to address any declines in student success metrics.

High-Impact Practices Feedback

The program identified collaborative assignments/projects, writing-intensive courses, and capstone courses/projects as HIPs and provided a narrative for each HIP and where it fits into the program. The review panel recommends including examples to demonstrate/highlight each HIP. For example, what are examples of capstone course projects?

What percentage of students participate in each HIP for those that are optional?

The review panel recognizes that the HIPs employed by the Marine Biology program are all positive and meaningful in preparing students to enter the workforce.

UNIVERSITY OF ALASKA FAIRBANKS
Student Learning Outcomes Assessment Plan
 College of Fisheries and Ocean Sciences M.S. in Marine Biology

Department of Marine Biology CFOS

Date: 2018

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
MISSION STATEMENT: The faculty at the Department of Marine Biology is dedicated to providing exceptional high-latitude research and education experiences and support for our students. CORE VALUES: <u>A core part of Alaska:</u> Alaska's marine ecosystems are the focal point of our research and education endeavors, and we emphasize field work and relevance to stakeholders. <u>Core team values:</u> Our collaborative team is dedicated to research, service, education and balancing a strong work ethic with a good sense of humor and love of life. <u>Education at our core:</u> We are on a quest for knowledge, are committed to education, and strive to provide exceptional high-latitude experiences and support for our students.	1) Graduates will be competent scientists, and adequately prepared to succeed in the job market in their chosen field.	All students must pass a Comprehensive Exam assessing interdisciplinary knowledge in the field of Marine Biology and in-depth knowledge of their field of specialization. It is expected that 50% of our students will pass this exam after the first try and that 95% will pass after the second. Students are required to write a thesis interpreting the results of original research. The quality of the research and written thesis is equal to what would be expected from a peer-reviewed journal article. It is expected that 75% of our students will submit their thesis research to a peer-reviewed journal for publication. Students will present their thesis in a public forum, followed by a closed-session questioning by the student's advisory committee. Quality of thesis presentations will be equal to what is expected from a presentation at a scientific conference. 90% of our students will give presentations that are deemed conference quality by their peers. Students will present at least one public presentation on their thesis research outside of the College of Fisheries and Ocean Sciences. This can include presentations elsewhere within UAF. 50% of graduates will submit a manuscript based on their Master's research to a peer-reviewed scientific journal within 1 year of graduating. 25% of graduates will be first author	The Department of Marine Biology will collect quantifiable data concerning comprehensive exam outcomes with Google form "Comprehensive Exam". The form is designed so that quantifiable outcomes are automatically collated and available for SLOA. Data from these forms will be evaluated each year, collectively, by the Department of Marine Biology Faculty. Every three years, the Department of Marine Biology Faculty will look for temporal trends in performance on exams from the past five years. The Department of Marine Biology Chair will assess research competence and written communication skills by reviewing all M.S. theses submitted each year. The Chair will complete Google form "Thesis Evaluation", which will automate the collection of quantifiable outcomes. The Department of Marine Biology Faculty will review the results from these evaluations. Thesis presentation quality will be assessed with Department of Marine Biology Google form "Thesis Defense", which will be completed by the audience during the defense, aiming for representation in the responses by graduate students and faculty. The form allows to evaluate and quantify each student's communication skills and the scientific content of the oral thesis defense. This procedure will automate the collection of quantifiable outcomes. These evaluations will be reviewed by the Department of Marine Biology

		on a peer-reviewed scientific article within 3 years of graduating. 80% of graduates will be satisfied, overall, with the education they received through GPMSL. 80% of graduates seeking employment or continued education in marine sciences, or other fields relevant to their education, will succeed within one year of graduation. 80% of graduates will find that the education they received through their Marine Biology degree prepared them well for their continued professional endeavors.	Faculty annually. Upon graduation, each student will be asked to fill out the Department of Marine Biology Google form "Exit Interview". The questionnaire includes quantifiable questions about satisfaction with their education as well as research accomplishments (presentations, publications). Every year, the Department of Marine Biology Faculty will review these data to examine their overall success. Every three years, the Department of Marine Biology Faculty will examine the data for trends in employment success or type. One and three years after graduation, Department of Marine Biology faculty will ask graduates to complete a "Post-Graduation Questionnaire" (prepared as a Google form by the Department of Marine Biology), addressing their job search, employment, and satisfaction with the education received through the Department of Marine Biology. Completed forms will be reviewed by the Department of Marine Biology Faculty annually.
	2) Graduates will be prepared to teach Marine Sciences at the community college or lower division undergraduate level.	All students must pass an oral Comprehensive Exam assessing interdisciplinary knowledge in the field of Marine Biology, and in-depth knowledge of their field of specialization. It is expected that 50% of our students will pass this exam after the first try and that 95% will pass after the second. Students are required to pass an oral defense of the thesis, which includes a public presentation. Students will present at least one public presentation on their dissertation research outside of SFOS. This can include presentations elsewhere within UAF.	The Comprehensive Exams administered during each year will be evaluated, collectively, by the Department of Marine Biology Faculty. Every three years, the Department of Marine Biology faculty will look for temporal trends in performance on exams from the past five years. The Marine Biology Department Chair will assess research competence and written communication skills by reviewing all M.S. theses submitted each year. The Department of Marine Biology Faculty will review these evaluations. A representative of the Department of Marine Biology Faculty will prepare a written evaluation of each student's

		50% of graduates will submit a manuscript based on their Master's research to a peer-reviewed scientific journal within 1 year of graduating. 25% of graduates will be first author on a peer-reviewed scientific article within 3 years of graduating 80% of graduates seeking employment or continued education in marine sciences, or other fields relevant to their education, will succeed within one year of graduation 80% of graduates will be satisfied, overall, with the education they received through GPMSL.	communication skills and the scientific content of the oral thesis defense. These evaluations will be reviewed by the Department of Marine Biology Faculty annually. The Department of Marine Biology will compile information on ^[1-3]_{SEP} graduates' presentation and publication record. Every year, the Department of Marine Biology Faculty will review these data to examine their overall success. One and three years after graduation, Department of Marine Biology faculty will ask graduates to complete a "Post-Graduation Questionnaire" (prepared as a Google form by the Department of Marine Biology), addressing their job search, employment, and satisfaction with the education received through the Department of Marine Biology. Completed forms will be reviewed by the Department of Marine Biology Faculty annually.
	3) Graduates will be prepared to enter a Ph.D. program.	All students must pass an oral Comprehensive Exam assessing broad disciplinary knowledge, the ability to apply that knowledge to interdisciplinary problems in the marine sciences, and in-depth knowledge of the field of specialization. It is expected that 50% of our students will pass this exam after the first try and that 95% will pass after the second. Students are required to write a thesis interpreting the results of original research Students are required to pass an oral defense of the thesis, which includes a public presentation. Students will present at least one public presentation on their dissertation research outside of SFOS. This can include presentations elsewhere within UAF ^[1-3]_{SEP} 50% of graduates will submit a manuscript based on their Master's research to a peer-	The Comprehensive Exams administered during each year will be evaluated, collectively, by the Department of Marine Biology Faculty. Every three years, the Department of Marine Biology faculty will look for temporal trends in performance on exams from the past five years. The Marine Biology Department Chair will assess research competence and written communication skills by reviewing all M.S. theses submitted each year. The Department of Marine Biology Faculty will review these evaluations. A representative of the Department of Marine Biology Faculty will prepare a written evaluation of each student's communication skills and the scientific content of the oral thesis defense. These evaluations will be reviewed by the Department of Marine Biology Faculty annually. The Department of Marine Biology will compile information on ^[1-3]_{SEP} graduates' presentation and publication record. Every year,

		reviewed scientific journal within 1 year of graduating. 25% of graduates will be first author on a peer-reviewed scientific article within 3 years of graduating 80% of graduates seeking employment or continued education in marine sciences, or other fields relevant to their education, will succeed within one year of graduation 80% of graduates will be satisfied, overall, with the education they received through GPMSL SEP	the Department of Marine Biology Faculty will review these data to examine their overall success. One and three years after graduation, Department of Marine Biology faculty will ask graduates to complete a "Post-Graduation Questionnaire" (prepared as a Google form by the Department of Marine Biology), addressing their job search, employment, and satisfaction with the education received through the Department of Marine Biology. Completed forms will be reviewed by the Department of Marine Biology Faculty annually.
	4) Graduates will have excellent oral and written communication skills.	All students must pass a Comprehensive Exam assessing broad disciplinary knowledge, the ability to apply that knowledge to interdisciplinary problems in the marine sciences, and in-depth knowledge of the field of specialization. Students are required to write a thesis interpreting the results of original research Students are required to pass an oral defense of the thesis, which includes a public presentation. Students will present at least one public presentation on their dissertation research outside of SFOS. This can include presentations elsewhere within UAF SEP 50% of graduates will submit a manuscript based on their Master's research to a peer-reviewed scientific journal within 1 year of graduating. 25% of graduates will be first author on a peer-reviewed scientific article within 3 years of graduating 80% of graduates seeking employment or continued education in marine sciences, or other fields relevant to their	The Comprehensive Exams administered during each year will be evaluated, collectively, by the Department of Marine Biology Faculty. Every three years, the Department of Marine Biology faculty will look for temporal trends in performance on exams from the past five years. The Marine Biology Department Chair will assess research competence and written communication skills by reviewing all M.S. theses submitted each year. The Department of Marine Biology Faculty will review these evaluations. A representative of the Department of Marine Biology Faculty will prepare a written evaluation of each student's communication skills and the scientific content of the oral thesis defense. These evaluations will be reviewed by the Department of Marine Biology Faculty annually. The Department of Marine Biology will compile information on SEP graduates' presentation and publication record. Every year, the Department of Marine Biology Faculty will review these data to examine their overall success. One and three years after graduation, Department of Marine

		education, will succeed within one year of graduation 80% of graduates will be satisfied, overall, with the education they received through GPMSL	Biology faculty will ask graduates to complete a "Post-Graduation Questionnaire" (prepared as a Google form by the Department of Marine Biology), addressing their job search, employment, and satisfaction with the education received through the Department of Marine Biology. Completed forms will be reviewed by the Department of Marine Biology Faculty annually.
	5) Graduates will have mastery of the core knowledge of marine science, and be an expert in the subject area of their thesis.	All students must pass a Comprehensive Exam assessing broad disciplinary knowledge, the ability to apply that knowledge to interdisciplinary problems in the marine sciences, and in-depth knowledge of the field of specialization. Students are required to write a thesis interpreting the results of original research Students are required to pass an oral defense of the thesis, which includes a public presentation. Students will present at least one public presentation on their dissertation research outside of SFOS. This can include presentations elsewhere within UAF ^[1]_(SEP) 50% of graduates will submit a manuscript based on their Master's research to a peer-reviewed scientific journal within 1 year of graduating. 25% of graduates will be first author on a peer-reviewed scientific article within 3 years of graduating 80% of graduates seeking employment or continued education in marine sciences, or other fields relevant to their education, will succeed within one year of graduation 80% of graduates will be satisfied, overall, with the education they received through GPMSL.	The Comprehensive Exams administered during each year will be evaluated, collectively, by the Department of Marine Biology Faculty. Every three years, the Department of Marine Biology faculty will look for temporal trends in performance on exams from the past five years. The Marine Biology Department Chair will assess research competence and written communication skills by reviewing all M.S. theses submitted each year. The Department of Marine Biology Faculty will review these evaluations. A representative of the Department of Marine Biology Faculty will prepare a written evaluation of each student's communication skills and the scientific content of the oral thesis defense. These evaluations will be reviewed by the Department of Marine Biology Faculty annually. The Department of Marine Biology will compile information on ^[1]_(SEP) graduates' presentation and publication record. Every year, the Department of Marine Biology Faculty will review these data to examine their overall success. One and three years after graduation, Department of Marine Biology faculty will ask graduates to complete a "Post-Graduation Questionnaire" (prepared as a Google form by the Department of Marine Biology), addressing their job search, employment, and satisfaction with the education

			received through the Department of Marine Biology. Completed forms will be reviewed by the Department of Marine Biology Faculty annually.
	6) Graduates will be capable of accomplishing rigorous scientific research.	All students must pass a Comprehensive Exam assessing broad disciplinary knowledge, the ability to apply that knowledge to interdisciplinary problems in the marine sciences, and in-depth knowledge of the field of specialization. Students are required to write a thesis interpreting the results of original research. Students are required to pass an oral defense of the thesis, which includes a public presentation [SEP]. Students will present at least one public presentation on their dissertation research outside of SFOS. This can include presentations elsewhere within UAF [SEP]. 50% of graduates will submit a manuscript based on their Master's research to a peer-reviewed scientific journal within 1 year of graduating. 25% of graduates will be first author on a peer-reviewed scientific article within 3 years of graduating 80% of graduates seeking employment or continued education in marine sciences, or other fields relevant to their education, will succeed within one year of graduation. 80% of graduates will be satisfied, overall, with the education they received through GPMSL	The Comprehensive Exams administered during each year will be evaluated, collectively, by the Department of Marine Biology Faculty. Every three years, the Department of Marine Biology faculty will look for temporal trends in performance on exams from the past five years. The Marine Biology Department Chair will assess research competence and written communication skills by reviewing all M.S. theses submitted each year. The Department of Marine Biology Faculty will review these evaluations. A representative of the Department of Marine Biology Faculty will prepare a written evaluation of each student's communication skills and the scientific content of the oral thesis defense. These evaluations will be reviewed by the Department of Marine Biology Faculty annually. The Department of Marine Biology will compile information on [SEP] graduates' presentation and publication record. Every year, the Department of Marine Biology Faculty will review these data to examine their overall success. One and three years after graduation, Department of Marine Biology faculty will ask graduates to complete a "Post-Graduation Questionnaire" (prepared as a Google form by the Department of Marine Biology), addressing their job search, employment, and satisfaction with the education received through the Department of Marine Biology. Completed forms will be reviewed by the Department of Marine Biology Faculty annually.
	7) Graduates will be satisfied with the quality of their educational and research experiences.	80% of graduates seeking employment or continued education in marine sciences,	One and three years after graduation, Department of Marine Biology faculty will ask graduates

		or other fields relevant to their education, will succeed within one year of graduation 80% of graduates will be satisfied, overall, with the education they received through GPMSL	to complete a "Post-Graduation Questionnaire" (prepared as a Google form by the Department of Marine Biology), addressing their job search, employment, and satisfaction with the education received through the Department of Marine Biology. Completed forms will be reviewed by the Department of Marine Biology Faculty annually.
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