



Academic Program Review

Program Name: Marine Biology - Master of Science

Academic Year 2025/2026

Recent Recommendations

Using your most recent review, please respond to all feedback and recommendations.

Response:

We updated and simplified the SLOA to make outcomes more measurable. We also differentiated MS and PhD further. However, we would like to note that both programs are designed to teach students how to become competent scientists and experts in their field of study; this includes preparation for the job market, communication skills, and scientific rigor. What really differentiates MS from PhD students is the scope of study. We made this more clear in our expectations, e.g., number of publications. We also added an additional SLOA for the PhD program, i.e., teaching and mentorship, while also an important skill for MS students, it is more critical for PhD students. Our program is supporting degree completion by scheduling regular (at least annual) meetings with students and their committees, and most faculty have weekly or every other week meetings with their students to keep updated on research progress and help with potential pitfalls. Funding support is critical to student success. While our students are very successful in obtaining funding, this could become more difficult in the coming years considering the waning federal support, which is also reflected in thesis completion fellowships no longer being offered by the graduate school. Loss of student funding could also result in length of time necessary for successful completion, e.g., students trying to find funding support may spend less time on their research. Our HIPs are outlined below, but include, but are not limited to student-authored publications and conference presentations.

Student Learning Outcomes

Describe the assessment of your student learning outcomes (SLOs). Discuss your findings, changes you are making, and what you hope to see as a result.

Response:

Simplified SLOA to assess only measurable outcomes, including publications, conference attendance, success in core courses and comprehensive exams

Did you make any curricular changes based on your most recent SLOA? If so, discuss what changes were made. If no changes were made, please discuss the strengths of your curriculum based on the assessment of your outcomes.

Response:

We added a few new elective courses, e.g., MBI 667 to cater to the emergence of mariculture as a new priority and field of study in Alaska. As described in our mid-cycle review, we reduced the number of required field course credits from 4 to 2 credits and increased elective credits accordingly. This change had and continues to have several advantages: field courses are offered in the summer when the majority of students have their own fieldwork, thus creating conflicts. The change also made it possible for several other field courses to be eligible to fill the requirement shifting the teaching load from one to multiple faculty. This change also made it possible for working graduate students to fulfill the field requirement without too much hardship by taking time away from their jobs. The current curriculum in Marine Biology is strong, offering a marine science core to convey principles and overall marine science competency, in accordance with our SLOA. Our program also offers a large variety of electives that serve students to become experts in specific fields of study, while also building on analytical strengths. While we would like to see additional elective courses, e.g., marine microbiology, diseases, we do not have enough faculty to expand our teaching load that is already at capacity. The Marine Biology programs, both graduate and undergraduate, are at capacity with little room to expand without hiring additional faculty.

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

Communication outcomes in the SLOA plan are: **Not Embedded**

Check the checkbox to certify completion of the following tasks:

☒ Upload supporting documents to the Supporting Documents folder. This includes artifacts, rubrics, and other documents related to your SLOA.

☒ Upload your most recent SLOA to the Supporting Documents folder, even if no changes have been made since the last review.

Have changes been made to your SLOA document since your last review? **Yes**

If so, please summarize what changes were made.

Response:

Simplified SLOA based on feedback in mid-cycle review. Added outreach and professional development opportunities

High Impact Practices

Please indicate which high impact practices are currently being implemented in relation to the program's student learning outcomes.

- | | |
|--|---|
| ☒ Capstone Courses & Projects | ☒ Graduate Level Research |
| ☒ Collaborative Assignments & Projects | ☒ Writing-Intensive Courses |
| ☐ Diversity/Global Learning | ☒ Publications |
| ☐ ePortfolios | ☒ Communications |
| ☐ First-Year Seminars and Experiences | ☒ Scholarly Activities |
| ☐ Internships | ☐ Studios |
| ☐ Service or Community-Based Learning | ☐ Practicum |
| ☐ Undergraduate Research | ☒ Other |
| ☐ Labs | ☐ None of these |

Discuss how the HIPs in the program are reflected in the SLOA. If you have identified HIPs that are not included in the SLOA, please consider an update.

Response:

All selected HIPs are reflected in the SLOA, e.g., theses (all identified), research (all identified), field/lab/course work (capstone courses, collaborative assignments, grad level research, communication, scholarly activity), publications in peer-reviewed journals (collaborative assignments, grad level research, writing intensive, publications, scholarly activity), proposals/fellowships (collaborative assignments, grad level research, writing intensive, scholarly activity), and conference attendance (collaborative assignments, grad level research, writing intensive, communications, scholarly activity). We also added teaching/mentorship experience, as well as outreach and professional development, which would fall under grad level research, communications, scholarly activities, and other).

Student Success

Please reference the [Resources tab](#) for information on accessing the Student Success Data Dashboard and contacting your designated data liaisons.

Student Success Data Trends

Persistence:	No Change
Pass Rates:	No Change
Student Credit Hours:	No Change
Majors:	No Change
Degrees Awarded:	No Change

Other Trends (if applicable):

Achievement Disparities

Discuss any achievement disparities identified in your disaggregated student success data and explain how you plan to address them.

Response:

NA

Closing the Loop

Please discuss how your student learning outcomes are reflected in high impact practices and student success data.

Response:

Our SLOA identify theses, scientific rigor/research, field/lab/course work, publications in peer-reviewed journals, proposals/fellowship support, and conference attendance as critical to our students success. We also added teaching/mentorship experience, as well as outreach and professional development as important practices to ensure student preparedness for the workforce. Student success is high and stable (>90% pass rate in classes, 100% pass-rate in comprehensive exams, and >90% graduation-informed persistence).

Academic Program Profile

The following questions help show how your program supports the university's mission, connects with other UA programs, engages with the community, contributes through service courses, and supports student success after graduation. Please use this section to highlight the value your program brings to students, the university, and beyond.

UAF's Mission:

The University of Alaska Fairbanks is a Land, Sea, and Space Grant university and an international center for research, education, and the arts, emphasizing the circumpolar North and its diverse peoples. UAF integrates teaching, research, and public service as it educates students for active citizenship and prepares them for lifelong learning and careers.

In what ways does your program advance UAF's mission?

Response:

Alaska's marine ecosystems are the focal point of our research and education endeavors. We emphasize field work and high-latitude research with relevance to stakeholders. It is our goal, and one of our SLOA to prepare our students for the job market, especially in Alaska.

How is your program related to others in the UA system?

Response:

By its nature, our program is intertwined with other CFOS undergraduate and graduate programs (i.e., Fisheries, Oceanography). Marine Biology faculty and students are taking an especially large part in the BS in Fisheries and Marine Sciences by teaching classes (or being a teaching assistant) as well as undergraduate mentorship. Our program is also commonly collaborating and interacting with the UAF Department of Biology and Wildlife, the UAF Veterinary Medicine Program, the UAA Department of Biological Sciences, and the UAS Department of Natural Sciences. We also commonly see students from these programs attending our classes.

Who are your key community or external partners?

Response:

The nature of our research focus partners us first and foremost with subsistence users around Alaska. We work closely with tribal councils and NGOs (e.g., North Slope Borough Department of Wildlife Management), the Alaska Stranding Network, State agencies (e.g., Alaska Department of Fish and Game), as well as federal collaborators, e.g., the USFWS, USGS, AA/NMFS.

What role do your services courses play, if any?

Response:

While we do not have any "service courses", our mission and research relies on open, two-way communication with Alaska's stakeholders and our partners. We involve our students and their research in outreach opportunities and take part in many management and co-management meetings relating to Alaska's marine resources.

How do your graduates succeed after leaving the program?

Response:

Over 95% of our graduated students in the report period have either moved into PhD programs or are employed by agencies, including NGOs or the private industry in the marine/ aquatic biology field.

Submitter and Collaborator Names:

Lara Horstmann

Submitter Email:

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Committee Review
Program Name: Marine Biology – Master of Science
Academic Year 2025/2026

Overall Recommendations

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

- | | |
|---|--|
| ☒ Insufficient Narratives | ☐ Report Incomplete |
| ☐ Address Achievement Gap | ☐ Consider Curricular Revisions |
| ☐ Develop Online Offerings/Options | ☐ Improve Time to Degree |
| ☐ Increase Enrollment | ☐ Increase Graduates |
| ☐ Increase Retention/Persistence | ☐ Strengthen Advising Practices |
| ☒ May be asked to share Effective Practices | ☐ Recommendation to University-Wide Committee |

Explanation of Overall Recommendations

Response:

The MS program in Marine Biology appears to be growing (a trend not noted in the review). Clear SLOs and the high number of student presentations, a number of whom received rewards, along with a high publication rate and a high success rate in obtaining employment in their field suggest a rigorous program that produces productive and successful students. Students undoubtedly benefit from strong collaborations across UAF units and with external partners. The evaluation of student success showed few notable trends, but some narrative context would be helpful here. The assessment is on its way to successfully "close the loop" with a number of changes to the SLOs and curricular changes implemented this review cycle, which should support an assessment of their effects on future student success. The program appears to be cost effective due to cross-listing, stacking and other synergies among CFOS departments and with other departments at UAF. Financial data was separated among CFOS departments for the first time this year and only 2 years of data are available for Marine Biology due to the recent separation of MBI and OCN from what was one academic unit (MSL). It is a useful starting point but needs refinement. The review noted the issues with the financial data, but the last two years of data allow for some comparison across departments.

Student Learning Outcomes Feedback

- | | |
|--|--|
| ☒ Strong | ☐ Developing |
| ☐ Requires Minor Revision | ☐ Requires Major Revision |

Student Learning Outcomes Assessment Feedback

- | | |
|---|---|
| ☒ Strong Alignment with SLOA Plan | ☒ Clear, Concise Presentation of Findings |
| ☐ Compelling Learning Story | ☐ Missing a Direct Measure |
| ☐ Missing Active Verbs | ☐ Missing Curricular Connection |
| ☐ Missing Collaboration within Department | |

SLOA Feedback Narrative:

The SLOs are simple, but effective. Our only concern is that they are somewhat redundant. For example, to achieve SLO 1 students must achieve SLOs 2 and 3. This is also evidenced by the similarity of the Assessments. For the most part the outcomes are clear and can be measured based on the ability of the student to conduct research, complete their thesis, or enter a job/ PhD program. The outcomes are all aimed at preparing a student to conduct research in marine biology. Therefore, they support the core values/ mission of the program. The assessment includes student milestones that are needed to achieve the intended outcome. The SLOA summary document does a good job of presenting the findings. In most cases metrics are available. There is evidence of within department collaboration as non-committee members must be involved in comprehensive exams and students must take a variety of courses. The responses in the APR suggest that the program engages with the data used in the SLOA to improve the effectiveness of the program.

Student Success and Equity Feedback

Narrative:

. All overall trends suggest "No change", but that does not seem to be consistent with PAIRS data. There was a pronounced increase in the number of MS students after 2022, as well as an increase in the number of graduates. No other trends in the disaggregated data were noted. Some narrative would have been helpful, at least to note that an evaluation of trends is challenging because MBI courses were recently separated from OCN courses (until two years ago, both were taught as MSL = Marine Science and Limnology). This, combined with small sample sizes, precludes meaningful interpretation of trends at this time. A fuller evaluation of trends should be conducted once multiple years of data under the new departmental structure (OCN/MBI) are available. Some discussion of the demography would have been helpful, for example to note some gender imbalance and the low number of minority students. There are also some apparent discrepancies in pass rates, but they may not be meaningful due to small sample sizes.

High Impact Practices Feedback

Narrative:

The HIPs for the MS are very similar to the PhD except for the quantity of the activities, fewer publications and presentations are expected as is reasonable for a shorter program. Writing intensive courses exist in the department, but are not listed in the HIP narrative section or in the SLOA, this could be updated for a minor improvement. Human dimensions courses are mentioned in the SLOA, but not explicitly mentioned in the HIPs, these could qualify as 'Diversity/Global learning' or 'Other'.

Profile Feedback

- | | |
|---|---|
| ☒ Mission-Centric to College and/or UAF | ☒ Unique within UA |
| ☒ Collaborative with other UA Programs | ☐ Provides Job Placement for Graduates |
| ☒ Strong Post-Grad Success for Students | ☐ Strong Service Teaching Component |
| ☒ Strong Ties to Community or Industry | |

Financial Feedback

- | | |
|--|--|
| ☐ High Tuition Revenues | ☐ High Grant Revenues |
| ☐ Operates at Low Cost | ☒ Productive Faculty |
| ☐ Opportunities to Increase Revenue | ☐ Low Enrollment |

Reviewer Names:

Cramb, Hennon, Horstmann, Hueffer, Kelley, Mueter

Dean Review

Program Name: Marine Biology - Master of Science

Academic Year 2025/2026

Dean Feedback

Overall feedback narrative:

As with other CFOS thesis-based MS degrees, the Marine Biology MS is a key degree program of the Marine Biology Department, as is the PhD degree program, and benefits from collaboration with other CFOS department faculty. Prior minor issues with SLOs, HIPs are being addressed. The program is very important to meeting Alaska's workforce needs related to aquatic ecosystems.

Recommendation to University-Wide Committee **No**

Vice Provost Review

Program Name: Marine Biology - Master of Science

Academic Year 2025/2026

Vice Provost Feedback

Overall feedback narrative:

The program revised its SLOA after the 2023 mid-cycle review, but the MS and PhD SLOs are still not sufficiently differentiated to reflect the distinct expectations of the two degree levels. Clearer distinctions are needed in breadth and depth of knowledge, research competency, and communication skill development, as these differences cannot be expressed solely through assessment methods—they must be evident in the SLOs themselves. SLO #1 is broad and overlaps with components already addressed elsewhere, SLO #2 combines two distinct constructs that should be separated, and SLO #3 should focus more precisely on research breadth and depth rather than grantsmanship. Although assessment procedures are outlined, the program must include the corresponding artifacts, rubrics, data, and narrative evaluation in future reviews. For the 2027 mid-cycle review, the program should revise the SLOA to better distinguish the two programs and provide direct evidence showing how each SLO is assessed and how resulting data inform curricular decisions.

The program briefly referenced Student Success Dashboard metrics and highlighted strong graduate outcomes, with approximately 95% of graduates moving on to PhD programs or relevant jobs. Students benefit from frequent advising, close research supervision, and a curriculum that incorporates thesis research, publications, and conference presentations, providing strong academic and professional preparation. However, the analysis of PAIR data was minimal, with several metrics marked as "No Change" despite growth in MS enrollment and graduates. Disaggregated analysis was not provided, limiting insight into gender imbalance or underrepresentation of minority students, and the program did not discuss strategies to address potential equity gaps or evaluate the impact of interventions. Future reviews should more fully examine dashboard trends, contextualize disparities, and outline actions to expand access and support for underrepresented groups.

High-impact practices are woven throughout the program through research engagement, collaboration, field and lab coursework, writing, and publication in peer-reviewed journals. These practices clearly support student learning and align with the SLOA, but the HIP narrative would benefit from explicitly discussing writing-intensive experiences to highlight their role as a core practice within the curriculum. Strengthening the narrative with clearer descriptions of how HIPs are implemented and assessed—and how they connect to specific SLOs—will better demonstrate their effectiveness and support closing-the-loop expectations for the next review cycle.

Department Name: Marine Biology

Last updated: 2025/2026

Have you reviewed the information in this section and made any necessary updates?

No

[illegible]

Collaborator Email(s):



Financial Data

Department Name: **Marine Biology**

Academic Year 2025/2026

	FY2023	FY2024	FY2025	For Data Entry Staff	For Programs and Review Committees
Total Student Credit Hours (SCH)	0	748	765	Provided in SCH tab in the student success data provided by PAIR.	
Service SCH	0	513	501	Sum rows labeled as "In unit, outside department, Service" and "Outside unit, Service" in the SCH tab of the data provided by PAIR.	
Department FTEs	10.91	10.625	10.375	FTE = Full-time equivalent employee. This field will auto-populate from the FTE Worksheet below.	
Total SCH per Department FTE	0.00	70.40	73.73		
Service SCH per Department FTE	0.00	48.28	48.29		

Majors in Programs	37	14	36	Sum for all programs from the Majors Total tab in the data provided by PAIR.	
Department FTE's	10.91	10.625	10.375	This field will auto-populate from the FTE Worksheet below.	
Majors per Department FTE	3.39	1.32	3.47		

Total Unrestricted Expenditures				Total Expenditures made from budgets with an F1 or F7 fund type designation, from provided cycle report data filtered by Data Liaison	
Total Restricted Expenditures				Total Expenditures made from budgets with revenue of the F2 or S2 fund type designation, from provided cycle report data filtered by Data Liaison	
Total Unit/Central Support Allocated to Program(s)				Expenses incurred for direct support of instruction within orgs identified as central or academic support, if applicable	
Total Expenditures					

Tuition Revenue				Receipts to college from tuition generated by the department/program (F1). NOTE: under the current 80/20 percent tuition distribution model generating units receive 80%. PLEASE USE PAIR REPORTED SCH.	Receipts to college from tuition generated by the department/program, based on the campus's active tuition distribution model, which determines how much the unit receives of their generated tuition, and how much the campus keeps (in addition to the out-of-state surcharges) to support central offices/functions. The current distribution model is 80/20, where the unit/college receives 80% of their generated in-state tuition.
State Appropriation Revenue				Appropriations for current funds operation of the university from the general fund of the State of Alaska through the annual budget cycle. This category also includes TVEP and State Mental Health Trust funds, if allocated to the department. (F1)	Appropriations for current funds operation of the university from the general fund of the State of Alaska through the annual budget cycle.
Restricted/Sponsored Project Revenue				Revenue from external sponsors; includes grants, contracts, sponsored projects & restricted (grant) accounts funded by UA Foundation funds (F2/S2)	Revenue from external sponsors; includes grants, contracts, sponsored projects & restricted (grant) accounts funded by UA Foundation funds
Fees				Course Fees (9159)	
Other UA Receipts/Revenue				e.g. Performance and Sales Receipts, Space Rental Revenue, Indirect Cost Recovery (F1/F7); NOTE: COURSE FEES (9159) REPORTED ABOVE	
Total Revenue					

Workload Allocation	FY2023	FY2024	FY2025	
Teaching Units	101.25	102	99.5	Department faculty's workload units assigned to teaching
Service Units	22.8	23	26	Department faculty's workload units assigned to service
Research Units	106.47	115	114.5	Department faculty's workload units assigned to research

Full-Time Equivalent Worksheet*	FY2023	FY2024	FY2025	
Faculty FTEs	5.66	6	6	Base assumption: 12-month full-time = 1.0 FTE. 9-month = 0.75 FTE. Split appointments are multiplied by the % of effort assigned to this department. Part-time are multiplied by the % of effort assigned. F9 faculty on sabbatical count as 67% of one 9-month 0.75 FTE (or 0.50 FTE).
Adjunct FTEs				Base assumption: 40 units/credits = 1.0 FTE. Total # of credits taught by adjuncts in a year divided by 40 = the FTE of adjuncts in that year.
Staff FTEs				Base assumption: 12-month full-time = 1.0 FTE. 9-month = 0.75 FTE. Split appointments are multiplied by the % of effort assigned to this department. Part-time are multiplied by the % of effort.
Graduate TA/RA FTEs	5.25	4.625	4.375	Base assumption: 40 hours/week for 12 months = 1.0 FTE. 9-month = 0.75 FTE.
Total Department FTEs	10.91	10.625	10.375	Sum of all employee FTEs

*Note: FTE definitions and calculations for the purpose of Academic Program Review are different than for other institutional reporting processes (e.g. OMB or IPEDS reporting)

Information last updated by: DKQ

Date: 2025.10.16