1. Assessment information collected

a. Students must pass a written Comprehensive Qualifying Examination which assesses their knowledge of Fisheries Science; Goal = 80% will be successful within 3 years of admission. DID NOT MEET GOAL.

*Implementation*: Advisory committees grade Comprehensive Examination. Staff tracks success rates.

Of 7 PhD students that started their program in AY14 and AY15, 5 have successfully passed their comprehensive exams (71%). The remaining two are delayed but planning to take their comprehensive exams, one in Summer 2018 and the other in Fall 2018.

b. Students are required to write a Ph.D. dissertation that reports the results of independent research in some aspect of fisheries science. Students are required to orally defend the dissertation, and they must present a public presentation of the dissertation. Goal = 80% of students will be judged by faculty and the program head to have performed at the level of a competent fisheries professional. (score ≤ 2). MET GOAL.

*Implementation*: Advisory committee rates student and Grad Program Chair rates thesis after thesis defense. Thesis defense evaluations use a score of 1-4 on 8 criteria and the theses are also evaluated on the same scale by the Fisheries Department Chair using 6 criteria. Scores are:

1 = strong compared to a typical professional  
2 = competent compared to a typical professional  
3 = needs improvement to meet professional standards  
4 = seriously deficient

During the two academic years 2015-2016 and 2016-17, 7 PhD students graduated. Evaluations by committees were missing in 2 cases.
Student committees assigned a rating of 2.0 or better on every category for every student evaluated. Average scores for the 8 criteria evaluated by the committees ranged from 1.0 (literature review) to 1.6 (writing ability).

The Department Chair also assigned a rating of 2.0 or better on every category for every student evaluated, with the exception of one score of 3 for one student in “logical thinking”. For the 6 criteria evaluated, the Department Chair’s average scores ranged from 1.9 (“logical thinking”) to 1.3 (“writing” and “literature”).

<table>
<thead>
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<th>criterion</th>
<th>writing</th>
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<th>logic</th>
<th>clarity</th>
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<th>subject</th>
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<td>1.5</td>
<td>1.3</td>
<td>1.4</td>
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</table>

Average scores of student committees and department chair for PhD students at defense and at chair review of dissertation.

c. Goal = 80% of graduates seeking employment in fisheries or aquatic sciences will succeed within one year of graduation. MET GOAL.

**Implementation:** Surveys of graduates from the previous assessment period (AY14 and AY15), three years after receiving their PhD, were completed.

A total of 7 students provided responses. Of these, 5 attempted to obtain employment in a fisheries-related field and the other two were already employed. Of the 5, 4 were successful within 1 year and the fifth is currently employed.

All students were employed in a fishery-related field by a variety of employers: 4 students worked for the federal government and 3 were employed in academia. All seven said that their PhD program adequately prepared them for their position.

d. Goal = 75% of graduates will submit a manuscript based on their PhD research to a peer-reviewed scientific journal within 1 year of graduating. 75% of graduates will be first author on a peer-reviewed scientific article within 3 years of graduating. MET GOAL

**Implementation:** Advisors and students were asked whether publications resulted from thesis.

Of the 5 PhD students graduating in AY 14 and AY 15, all have submitted and published first-authored papers in peer-reviewed journals. Four of the five have published three or more papers.

Additionally, of the 7 PhD graduates from AY 16 and AY 17, 6 have already published first-authored papers in peer-reviewed journals. The seventh has published a technical report, and has two manuscripts in preparation.
e. Goal = 80% of graduates will be "satisfied" or "very satisfied" overall, with the education they received in the UAF Fisheries Program. MET GOAL.

**Implementation**: Students rate program at exit and 3 years post-graduation.

Exit survey of AY16 and AY17 graduates: Three PhD students returned surveys during the AY16 and AY17 period. All three responded “Very Satisfied” to the question about their overall experience. All gave scores of “Satisfied” or “Very Satisfied” to all other questions.

Three-year post-graduation survey of AY14 and AY15 graduates: Of the 7 students who responded to the survey, 4 were “very satisfied” and 3 were “satisfied” with their overall educational and professional preparation provided by the Fisheries degree program.

f. Enrollment.

In AY 2016-17, 47 MS and 27 PhD students officially enrolled. In AY 2017-18, enrollment was 37 MS and 31 PhD students. This decrease in MS students and modest increase in PhD students is probably due to recent and imminent faculty retirements, and also to reduced state and federal funding opportunities. The upcoming hire of 2 (possibly 3) faculty should reverse this trend.

2. Conclusions drawn from the information summarized above

The graduate program in Fisheries continues to be highly successful at producing graduates who almost all secure professional employment soon after graduation; in fact, one of the most common factors delaying student graduation is accepting a job before the thesis or dissertation is complete. During their tenure in our program, these students conduct high-quality science, as evidenced by the high rate of student publications.

Students are expressing concern about diminished funding opportunities. Our policy is not to accept students without at least one year of support, and many times we have two years’ worth; however, after this initial funding expires some students struggle.

Students are asking for more teaching opportunities, which is challenging given diminished support for TAs. We’ve communicated the importance of maintaining TA positions to CFOS leadership, and are exploring other methods of involving students in teaching short of a full semester as a TA.

Students and alumni are asking for more instruction in practical skills like field techniques, advanced data analysis, supervising staff, budgeting, and other professional development. Although we already offer training in many practical
professional skills in addition to our theoretical offerings, we can and will respond to these requests.

Although our program has maintained a high level of productivity, reduced state funding of the university has resulted in a reduction in faculty and TA positions at CFOS, while reduced research funding from federal sources has reduced RA support. Fisheries is more fortunate than other Departments in having strong public and government recognition of its value; two of the upcoming faculty hires will be made using external funding, while the University’s award of a President’s Professorship likely was partly driven by this same public support of Fisheries. The number of graduate students we are able to support is directly related to the number of faculty advisors available. This reliance on external support to maintain faculty numbers makes the program vulnerable in the long term.

3. Curricular changes resulting from conclusions drawn above

Two (possibly three) upcoming faculty hires provide the potential to develop new courses.

There are two existing Maymester courses that focus exclusively on fisheries techniques, although the one offered in Fairbanks is a 300-level course that is not available to graduate students for credit. Based on this assessment information, and also on discussions with current students, we continuously modify and improve our courses and course offerings. For example, a 2-credit seminar was added in Fall 2018 to respond to the demand for more advanced training. This course will be centered around student-led discussion of case studies. We also contemplate new courses and/or modifying existing courses to include more hands-on techniques. We are also considering offering a student-led techniques course where several students would offer 1-2 week modules in field or analysis techniques that they are expert in; in addition to increasing the range of techniques taught, this would also provide the increased teaching opportunities that students have been requesting.

Several courses already include requested professional skills such as manuscript and proposal writing, scientific presentation, and communicating with the public. We will investigate methods for incorporating training in personnel management and budgeting, which are additional skills students are requesting.
4. Identify the faculty members involved in reaching the conclusions drawn above and agreeing upon the curricular changes resulting

Department Chair Milo Adkison drafted the OA report. The report was circulated among the Fisheries faculty and academic staff for comment, and edits or comments were provided by Shannon Atkinson, Courtney Carothers, Gordon Kruse, Fanz Mueter, and Trent Sutton.

5. Has your SLOA plan been updated to include assessment of the program’s Communication Plan, as required by Faculty Senate motion? (required for baccalaureate programs only)

SLOA updates in progress.