

# Student Learning Outcomes Assessment Summary

## Fisheries MS Degree

SFOS

2011 and 2012

Submitted by: Fisheries Graduate Program Committee Milo Adkison (Chair), Courtney Carothers,  
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### 1. Assessment information collected (new process started 2011)

**a. Results of student defense of thesis proposal (pass/fail). Goal = 80% success w/in two years of enrollment. NO DATA YET.**

The MS program was very recently revised to require a defense of the thesis proposal. To date, no failures have been recorded.

**b. Student committee rates student and Grad Program Chair rates thesis after thesis defense. 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  $\leq 2$ ). MET GOAL.**

Revised OA procedures changed the committee evaluations from pass/fail to a score of 1-4, and added an evaluation of the thesis by the Graduate Program Chair. 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

Committee evaluations for MS students in AY 10-11 and 11-12 were: four of five students received an overall score of 2. Another committee declined to give an overall score, but assigned six 2's and one 1 to the individual aspects of the student's performance.

Grad Chair overall evaluation of the theses were 1 (five students), 1.5 (one student), 2 (four students), and 3 (one student).

**c. Students post-graduation employment. Goal = 80% have fisheries-related employment or in PhD program within one year. MET GOAL.**

The majority of students are finding fisheries-related employment. Many had a job or had been accepted into a PhD program at the time of the exit interview, and 13 of 16 were in a job or an advanced degree program three years post-graduation (see exit interview and post-graduation survey below). The other three cited personal reasons for not being actively engaged in the workforce (e.g., childrearing) rather than an inability to secure a position.

**d. Advisor and students asked whether publications resulted from thesis. Goal = 50% of MS students submit a manuscript to a journal within a year, 25% successfully publish a first-authored paper within three years. MET GOAL.**

Student publications: Based on faculty annual reports and CVs, **publications based on thesis/dissertation research by current and former students during AY 2010-11 numbered 17.5** (during any year, some faculty turn in reports covering multiple AY's – in these cases, we sum publications from calendar years 2010 and 2011, and divide by 2). AY 2011-12 publications aren't yet available, as faculty annual reports are not yet available.

Based on the three-year post-graduation survey (see below), **10 of 16 MS students** that graduated in AY 2009 had published papers based on their theses, and one had a manuscript in review.

**e. Students rate program at exit and 3 years post-graduation. Goal = 80% satisfied or very satisfied. MET GOAL.**

Exit interviews with 2010-2012 graduates: Fifteen exit interviews were conducted with 9 MS and 6 PhD students. On a scale of 1-5, with 1 highest, no scores lower than 2 were recorded. They gave the following ranks to aspects of the Fisheries Graduate Program:

Scoring	“1”	“2”
Overall	6	9
Advising	7	8
Courses	3	12
Research Experience	4	11
Thesis	5	10

Five indicated they had a job but three of these were looking for a better job, three were entering a PhD program, one a post-doctoral position, and the other five were looking for work. Several students mentioned statistics courses and training on professional presentations as especially useful. Several indicated that they'd like to see improvements in the VCON course experience, and that they'd like more non-academic professional skills training.

Survey of 2008-09 graduates: 3 PhD and 16 MS students graduating in AY 2008-09 were sent follow-up surveys. Two of the PhD recipients had done their PhDs while employed at NOAA Fisheries and were still employed. Another was a self-employed fisheries consultant. All had published peer-reviewed articles from their dissertations with faculty co-authors (one had 3, another listed 7 but only two had faculty co-authors). One was satisfied, and two very satisfied with their graduate program. All were working in fisheries-related positions in Alaska.

Of the MS students, two worked at NOAA Fisheries, two at ADF&G, one at USFWS, and six were pursuing a PhD. Ten had published peer-reviewed articles from their theses and one had a manuscript in review; six were first authors, one a second author. Eight were very satisfied and two satisfied with their graduate program. All except three were working in fisheries positions in Alaska.

One MS student was not satisfied with their experience at the Fairbanks location, citing few faculty and courses available; both situations have been addressed and substantially improved since then. This student listed a couple of desired courses; these courses are now offered locally in Fairbanks.

#### **f. Miscellaneous statistics.**

In AY 2010-11, there were 49 MS and 29 PhD students officially enrolled. In Feb of AY11-12, official enrollment was 48 MS and 38 PhD students.

During the period Fall 2010-Summer 2012, 22 MS and 10 PhD students graduated. The PhD students had a median time to graduation of 5.5 years but the mean time (7.5 yr) was considerably higher because of two students who took 10.5 and 16.5 years. Both were full-time agency employees, and one had significant health problems during her tenure. The MS students had a median time of 3.5 years, with a mean of 4.4 yr, due to two students who spent 8.5 and 11.5 years (one of whom interrupted her program for several years).

During AY 2010-2011, graduate student credit hours totaled 737, down from the previous 4 years which ranged from 745-847. Food Science totaled 65 credit hours – many of which may be designated Fisheries in the future due to program re-structuring. In Fall 2010 and Spring 2011, enrollment in graduate courses (not including seminars) totaled 62 and 52 students, respectively (there were also 14 enrollments in Summer 2010). This total of 114 is over double the average of the previous 3 AYs (average fall/spring total of 52). This increase has several explanations: new faculty have added new courses (some were available earlier in their initial offerings as seminars), student enrollment has increased, and the biennial cycle of graduate course offerings included several popular courses (Fish 621/622 and the 693 R course). In AY 11-12 class enrollment has declined to 68 total. These totals do not include 400 level courses, several of which are taken primarily by graduate students.

### **2. Conclusions drawn from the information summarized above**

By the most critical measures, the Fisheries MS Program is very successful. It is producing students that are successful in obtaining fisheries-related employment, much of it in Alaska. A substantial majority of students are publishing the results of their theses in peer-reviewed scientific literature, indicating that their research is of high quality. Students are generally satisfied with the program, and at the end of their program the faculty are satisfied with the students and their theses.

A significant fraction of the students suggested that we add more “professional development” training, such as grant writing, supervisory skills, etc. We need to consider the best means of providing these skills, whether through formal courses, incorporation into existing courses, or as short workshops.

The mean time to graduation – 4.4 years for an MS and 7.5 years for a PhD – due to the occasional very long time to graduation, is too long. Strategies to reduce the number of students who are in the program for more than 3-4 years need to be developed.

Improvements to data collection are needed: A higher fraction of students need exit interviews. Grad chair/staff follow-ups have significantly improved rate of return of post-graduation surveys – this needs to continue. The Grad Chair and staff will clarify procedures and responsibilities for collecting, collating, and archiving OA data.

### **3. Curricular changes resulting from conclusions drawn above**

Curricular review is slated to be the major focus of the Graduate Program Committee in the 2012-2013 academic year. These data will be one of the principal bases of discussion.

**4. Identify the faculty members involved in reaching the conclusions drawn above and agreeing upon the curricular changes resulting**

The Fisheries Graduate Program Committee consists of Milo Adkison (chair), Courtney Carothers, Franz Mueter, and Alex Oliviera. The Committee reviews the outcomes data and suggests changes, but any changes are approved (and possibly modified) by the Fisheries faculty as a whole.