

**Bachelor of Science in Fisheries Science
2014 Outcomes Assessment**

MISSION STATEMENT:

The SFOS Fisheries Division will create a center of academic excellence in the fisheries discipline that promotes lifelong learning for undergraduate students preparing to enter a career in fisheries.

GOAL STATEMENT:

The goal of the B.S. in Fisheries Science degree program is to educate undergraduate students in fisheries science, with a particular emphasis on the biology, assessment, and management of fish and invertebrate fisheries, in preparation for a career in fisheries and/or the seafood industry in Alaska and elsewhere.

INTENDED OBJECTIVES/OUTCOMES:

1. Have excellent oral and written communication skills.
2. Obtain knowledge of fishery science, with a particular emphasis on the biology, assessment, and management of fish and invertebrate fisheries.
3. Achieve knowledge of the scientific tools of data collection in fisheries science and demonstrate competence in compiling and reporting of that data.
4. Earn a degree in a timely fashion.
5. Be prepared to compete successfully for admission to M.S. programs in Fisheries or related aquatic science disciplines.
6. Be prepared to compete successfully for entry-level professional career positions in fisheries research or management in Alaska and elsewhere.

ASSESSMENT CRITERIA AND PROCEDURES:

1. Compare individual scores of students in similarly-scored evaluations of term papers in the introductory and capstone courses; 80% of students who complete both courses will improve scores. (Objectives 1-3)

For the revised Bachelor of Science in Fisheries Science degree program, the entry level course is FISH 101 Introduction to Fisheries and the capstone course is FISH 487 Fisheries Management. For FISH 101, there are three writing assignments, with one assignment (summary of a global fishery) serving as the course term paper. In FISH 487, there are four writing assignments and students complete a group fisheries management project, which includes the development of a fisheries management plan; this assignment serves as the course term paper. Since the last outcome assessment, which took place in spring 2012, 19 students have completed both FISH 101 and FISH 487 and have graduated from the degree program. The mean percent (and percent range) for the term paper in FISH 101 for these students was 88.1% (range, 48.0 to 98.7%). For FISH 487, the mean percent (and percent range) for the term paper was 93.3% (range, 81.3 to 100.0%). In tracking the individual scores of students, 14 out of 19 students (77.7%) showed improvement in writing scores between FISH 101 (82%) and FISH 487 (92.7%). Two of 19 students (10.5%) showed no appreciable change in writing scores (both of these individuals scored >95% on both term papers; mean FISH 101: 96.7%; mean FISH 487: 97.3), and the remaining 3 of 19 students (11.8%) showed declines in writing scores (mean FISH 101: 98.7%; mean FISH 487:

89.2%). Although 80% of students that completed both FISH 101 and FISH 487 did not show improvement in their writing scores (although it is pretty close), this metric may not be reflective of their writing abilities. Because these two courses are taught by different instructors and 60% of the students received a 90% or higher score on their FISH 101 term paper (whereas only 37% of students in FISH 487 received a 90% or higher score), the trend in writing scores most likely is a result of differences in instructor grading rigor.

2. Track retention rates and rate of graduation within 5 years as evidence of achievement. Eighty percent (80%) of undergraduates will be retained each year, and 50% of juniors will complete degrees in ≤ 3 years. (Objective 4)

Since the initiation of the revised Bachelor of Science in Fisheries Science degree program, the average retention rate for first-time freshman from years 1-2 is 63.8%. Retention rates for years 2-3 are much higher. For freshmen and transfer students from years 2-3, retention rates are 77.1% and 77.8%, respectively. In addition, retention rates for all students, regardless of entry to the program as a freshman or transfer, are 100% for years 3-4. Overall, the retention rate goal for the undergraduate fisheries program (80%) is not being met for freshman between years 1-2 and freshman and transfer students for years 2-3, but is being exceeded for years 3-4.

Of the 19 undergraduates that graduated with a Bachelor of Science in Fisheries Science since the end of the fall 2010 semester, 14 of these individuals, as juniors, completed the degree within three years. As a result, 73.7% of the aforementioned graduates graduated from the degree program within three years after they became juniors, which exceeds our expectation of a 50% degree-completion rate within three years.

3. Eighty percent (80%) of graduates seeking employment in fisheries or aquatic sciences, or admission to a graduate program will succeed within one year of graduation. (Objectives 5-6)

To date, 19 undergraduate students that were enrolled in the Bachelor of Science in Fisheries Science degree program have graduated since the end of the summer 2012 semester or will graduate soon. Ten of these students graduated by the end of the summer 2013 semester, and the other 9 undergraduates will have graduated no later than the end of the spring 2014 semester. Three of these 19 individuals have been accepted into graduate programs and eight of the other graduates have secured employment in the fisheries or aquatic sciences field (mostly with the Alaska Department of Fish and Game). Three of the graduates work as technicians in UAF research labs, and another of the graduates works as a crew leader for natural resources field projects for another university. One other graduate has full-time employment as a commercial fisher in his family's commercial fishing operation. It is unclear at this point if the remaining two individuals have successfully secured employment or have been accepted into graduate school in this field. Based on this information, 17 out of the 19 students that graduated with a Bachelor of Science in Fisheries Science degree since summer 2012 are known to have successfully secured employment or

been admitted to graduate school within one year of graduation (89.5%), which exceeds the expectation for this metric.

4. Compile and summarize mentor evaluations from the experiential learning internships as evidence of readiness for a professional position. 80% of students will be judged by mentors to have performed at a satisfactory level for an entry-level fisheries professional. (Objective 6)

Mentor evaluations were compiled for 21 different experiential learning internships completed by undergraduate students enrolled in the Bachelor of Science in Fisheries Science degree program since spring 2012. The mean mentor evaluation score (out of 5) was 4.73, with a range from 4.0 to 5.0. A mentor evaluation score of 4.0 or higher is considered satisfactory for an entry-level fisheries professional, and all 21 of the mentor evaluation scores for student internships in the Bachelor of Science in Fisheries Science degree program were 4.0 or higher (100% of students). This percent exceeds the expectation for this metric.

5. Eighty percent (80%) of graduates will be "satisfied" or "very satisfied" overall, with the education they received in the Fisheries Program at UAF. (All objectives)

Fourteen of the 19 undergraduates that graduated with a Bachelor of Science in Fisheries Science degree provided responses to the exit interview survey. On a scale from 1 to 10, the range in the overall evaluation of the Fisheries Program from the 18 respondents was 2 to 10, with a mean score of 7.8. Fourteen of the 18 scores were "7" or higher, indicating that 78% of our B.S. students were "satisfied" or "very satisfied" with the program. Note that we consider a score of 9-10 as very satisfied and 7-8 as satisfied on a scale of 1 to 10. Specific comments that support this assessment include the following:

"I really liked the small class sizes and that a lot of my fisheries courses were discussion based. I also think there are a lot of opportunities available to undergrad students at UAF that aren't available at other schools (research and job opportunities). Also, I can't think of a better place to study fish than Alaska. I would rate my experience a 9/10."

"I think that my experiences at UAF have prepared me for graduate school but a lot of the most helpful experiences were not required (lab jobs, thesis, presenting at conferences, etc.). I think that you will get out of the program what you put in. All in all, I think that I am a much better writer and have stronger quantitative skills than when I started the program. Definitely a solid 9."

"The UAF School of fish did a great job of getting students into the fisheries arena, making contacts, and putting people where the work is. Participation in internships, experiential learning, volunteering, and any other form of practical application of knowledge are the best tools available to students who are seeking a career in fisheries. Applied experience is what employers are looking for in a potential hire and the

internship I had as a sophomore with ADFG led to full time employment as a fisheries biologist. I would rate the experience an 8."

"I would give the fisheries program a 9/10. I got a lot out of this degree and accomplished more than I thought I would have. I really like that faculty and there is a small community of really good and helpful people in SFOS. I feel like both the education and work experiences I have had while being a part of SFOS will greatly help me in my professional career. The course conflicts and the lack of classes were hard to deal with."

"Thank you SFOS staff for all the work done, often behind the scenes, that made my experience at UAF School of fisheries and Ocean Sciences an enjoyable, memorable, and productive time in life. Great experience, a 10. Good Fishing!"

"I would rate my experience a 5, not great, but also not without some merit. I feel like 90% of what I had to go through will not be used, I think that we would be better served if we had people in the field we are going into come and talk about what they use day to day and why they use it so we can benefit from their experiences and will be better equipped to handle the jobs we hope to apply for. We could use more hands on training telling you what to do, and class time telling you why to do that. The enormous amount of electives required for a "well rounded student" is waste of time and money. Because of them I nearly dropped out and gave up, I have barely been able to crawl to the finish line. No valedictorian for me."

"I would give SFOS a 10. The people are friendly, we get to know our peers pretty quickly through taking many classes and participating in AFS together, class size is small (mostly), faculty are helpful whenever and however they can be, we're provided with space to work together (or at least print our assignments), the grad students treat us as equals, and everyone knows how to have fun. SFOS is awesome!"

"I would rate the fisheries program a solid 9. It was an amazing program and I felt like I gained a lot of very useful and practical information out of it, but it wasn't perfect. There are always things that could be done to make it a little bit stronger. More lab classes would help. FISH 315 (Freshwater Fisheries Techniques) was probably the most significant lab class that helped prepare me to be a fish biologist. My ability to write scientific papers has been improved drastically from when I was a freshman because of all the writing I had to do in fisheries classes."

"I would rate my overall experience an 8, mainly because fishery classes were not always available when I needed them. I felt like the education and experience I have had through the fishery program has helped prepare me for a future career and possibly graduate school. Classes are taught by researchers who make a big point of writing scientifically and writing reports which is a very important part of the fishery profession."

“I give it an 8, just due to the challenges of being a Juneau student. The availability of classes was a challenge and having to take most of my classes at UAS campus was a hassle. Overall though, my experience here has been great. I feel that this program is really relevant especially for working in this industry in Alaska. Even if I did not want to pursue a graduate degree, I feel I would be pretty prepared for getting a fisheries-related job.”

“I really enjoyed my fisheries classes and found them to be very informative and relevant, especially marine field methods, behavioral ecology of fishes, and fisheries management. STAT 401 too. I do not think that I had any fisheries classes that I took that I did not take something away from or didn’t like. Good program, I rate my experience an 8”.

“I rate the program a 9. The best part of the fisheries program was the hands on experience in fisheries and getting to know and talk to the professors. Small class sizes were great too.”