2013-2014 Assessment Report
Program: Fisheries, Aquaculture, and Aquatic Sciences, BS

College of Agriculture

School of Fisheries, Aquaculture, and Aquatic Sciences

Fisheries, Aquaculture, and Aquatic Sciences, BS

Expected Outcome 1: Analyze conditions common in fisheries management

Students should be able to collect, interpret, and process data collected through fisheries management activities.

Assessment Method 1: Test
Assessment Method Description
The following 4 questions were given to the students as part of FISH 5510 ‘Fisheries Biology & Management’. Students were asked the same question on the first day of class and during the final exam. These questions capture multiple elements taught throughout the course. FISH 5510 is offered every fall semester and is required of all fisheries majors.

1) Define Fisheries Management

2) Which of the following are native fishes in Alabama. (Six taxonomic genus and species names were listed 3 were native fish, 1 native mussel, 2 non-native fish)

3) Generate a confident interval from the following statistics. (Five numerical series were provided).

4) Define the Tragedy of the Commons

Findings

Four students responded to these questions although one did not take the test on the first day of class. Overall, the students performed most strongly on the questions related to general concepts, management approaches, and fish biology. While they learned to interpret quantitative approaches they were less able to do the mathematical – statistical analyses by hand without working with their notes. While this is not a crippling deficiency, this weakness will only be fully addressed by increasing their familiarity with statistical approaches throughout the curriculum. Specifically in Fisheries Management and Biology more effort will be given to help students learn to choose the appropriate quantitative approach and in the process increase their confidence in using
math and statistics.

<table>
<thead>
<tr>
<th>Question</th>
<th>Points obtained at final exam (average 4 students)</th>
<th>% improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define fisheries management</td>
<td>90.0</td>
<td>166</td>
</tr>
<tr>
<td>List native fishes</td>
<td>83.5</td>
<td>123</td>
</tr>
<tr>
<td>Confidence intervals</td>
<td>60</td>
<td>400</td>
</tr>
<tr>
<td>Explain tragedy of commons</td>
<td>70</td>
<td>400</td>
</tr>
<tr>
<td><strong>Overall performance</strong></td>
<td><strong>75.9</strong></td>
<td><strong>272.3</strong></td>
</tr>
</tbody>
</table>

**How did you use findings for improvement?**
We are aware that our students, in general, are weak in calculus and basic statistic analysis when they take FISH 5510. A significant part of the course is dedicated to teach the students how to use spreadsheets and perform basic calculations but spending more time on these topics will unrealistic and they need to learn the basics of fisheries management. Our faculty would like to see core curriculum courses in mathematics and statistics to cater more to biological sciences.

**Additional Comments**

**Expected Outcome 2: Be competitive in the Fisheries and Aquaculture job market**
Students should be prepared to enter the workforce and succeed in establishment a career in the area of fisheries, aquaculture, and aquatic sciences

**Assessment Method 1:** student survey
**Assessment Method Description**
Students will be asked to reply to the following survey. Responses were anonymous. Survey was submitted between 1-3 months after students graduated. Students were given 2 weeks to complete the survey.

1. What are your plans after graduation?
   - Working for a private company in a field related to my major
- Working for a state agency in a field related to my major
- Working for a federal agency in a field related to my major
- Working in an area not related to my major
- Not seeking employment at this time
- Other, please specify

2. Have you received any job offer at this point?
   - Yes
   - No

3. In which of the following areas are you currently working?
   - Fisheries
   - Aquaculture
   - Natural resources
   - Other agricultural areas
   - Other area non-related to my education at Auburn University
     if other, please specify

3. How satisfied are you with your education?
   - Very satisfied
   - Somewhat satisfied
   - Neutral
   - Somewhat dissatisfied
   - Very dissatisfied

   Comments

4. Do you think Auburn University, particularly the School of Fisheries, Aquaculture, and Aquatic Sciences, prepared you for the working world?
   - Yes
5. Identify the strengths and weaknesses in our program from 5 being excellent to 1 being poor

- Faculty availability
- Faculty teaching
- Faculty - research opportunities
- Courses offered
- Staff
- Advising
- Classroom facilities
- Lab facilities
- Field facilities
- Hands-on training
- Opportunities for professional development
- Campus ambiance
- Interactions with other programs

Comments

6. Would you recommend our program to your friends and family?

- Yes
- No

Comments

**Findings**

The survey was sent to 13 alumni (graduated in 2012-2013) and we received responses from 6.

Overall, our alumni are satisfied with our program. Below are the findings from
each question:

1. 50% of the respondents are currently employed by a private company and working in a field related to their major. 50% are working in an area not related to their major.

2. 50% of the respondents received a job offer before graduation while 50% did not.

3. 66% of the respondents prefer to work in the area of fisheries, 33% in the area of aquaculture, 16% in the area of other agricultural fields and 16% would prefer to work on non-agriculture related fields.

3. 66% of respondents were very satisfied or somewhat satisfied with their education while 44% were neutral or somewhat dissatisfied.

4. 66% of respondents think our program prepared them well for the job market. Criticisms include students feeling not challenged enough and perceiving courses as weak.

5. Regarding our strengths and weaknesses:
   - 83% of our respondents thought our faculty availability was excellent to very good
   - 66% of thought our teaching was excellent to very good
   - 50% thought they had excellent research opportunities
   - 66% considered the courses offered as excellent to very good
   - 100% considered our staff excellent to very good
   - 83% considered our advising excellent to very good
   - 50% said our classroom facilities are average to poor
   - response to lab facilities was very variable from excellent to poor. No clear trend was found.
   - 83% thought our field facilities are excellent to very good
   - 66% considered hands-on training to be excellent to very good
   - 66% were neutral to somewhat dissatisfied with the opportunities offered for professional development
   - 66% were somewhat dissatisfied/dissatisfied with the School’s
interactions with other programs

- 100% would recommend our program to family and friends

**How did you use findings for improvement?**

One of the weakest areas identified in this survey was related to our classroom facilities. Renovation of the Swingle Hall classroom 303 was completed in 2013 and we now have modern audiovisual equipment that should enhance our students learning experience.

Other areas that need improvement are research and professional development opportunities for students. Students also felt that our School is not well connected to other programs such as Natural Resources and Environmental Sciences. All these issues require a serious discussion by our faculty and with a new director likely coming in in 2015, no action is proposed at this time. In addition, more hands-on training seems desirable although with the current funding situation, our budget for labs is very stretched out.

**Additional Comments**

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**Expected Outcome 3: Understand general freshwater principles and concepts**

Students are expected to comprehend general limnological principles and concepts, as well as the tools used to study freshwater ecosystems.

**Assessment Method 1: Pre- and post-test comparison**

**Assessment Method Description**

The following 10 questions were given to the students as part of FISH 5320 ‘Limnology’. Students were asked the same question on the first day of class and during the final exam. These questions capture multiple elements taught throughout the course. FISH 5320 is offered every spring semester and is required of all fisheries majors.

**Questions (1 point/question):**

1. What is limnology?
2. What is the ‘Paradox of the plankton’?
3. What are the three phases of water?
4. What is the approximately volume for this lake (diameter = 2 m; depth 2 m)? Show your calculations
5. Draw a simple aquatic food-web showing one example of competition and
one example of predation. Be sure to label members of the food-web.

6. What is the molarity of the 285 g/L of PO4. Show your calculations. Notes: atomic weight of P = 31; O= 16

7. What is picture below and what is it used for? (picture showed a Secchi disk)

8. Can primary productivity increase the pH of lakes? Explain your answer

9. List two ways to manage a pond that is experiencing a huge bloom of algae

10. Draw your favorite zooplankter and provide its specific name

<table>
<thead>
<tr>
<th>Questions</th>
<th>Results at day 1 (average of 7 students)</th>
<th>Results at last day (average of 7 students)</th>
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<tbody>
<tr>
<td>1</td>
<td>0.86</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>0.14</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0.86</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>0.71</td>
<td>0.4</td>
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<tr>
<td>5</td>
<td>0.86</td>
<td>0.80</td>
</tr>
<tr>
<td>6</td>
<td>0.71</td>
<td>1</td>
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<tr>
<td>7</td>
<td>0.43</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>0.57</td>
<td>1</td>
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<tr>
<td>9</td>
<td>0.93</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>0.36</td>
<td>1</td>
</tr>
<tr>
<td>Average score</td>
<td>0.64</td>
<td>0.92</td>
</tr>
</tbody>
</table>

How did you use findings for improvement?
Students enter our program come from different backgrounds and display a broad range of variability in the initial knowledge, which present a challenge for
our faculty. During the course students gained knowledge in all queried areas but two. The first involved calculating the volume of a lake and required that the students knew how to calculate the volume of a cylinder. This reflects, one more time, that our students have a weak background in math that hinder their progress in fisheries sciences. This is a recurrent problem that needs to be addressed at the core curriculum committee level. The second area in which students didn’t improve upon after taken FISH 5320 was understanding of food-webs. We did not observe this response last year. We will wait to see if this result becomes a trend in future years before taken further action.

Additional Comments