

No. 61	Special Committee on Educational Requirements	Ron Essig
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**2013 Annual Meeting Report to the AFS Governing Board
AFS Special Committee on Educational Requirements**

TO: John Boreman, President
FROM: Ron Essig, Chair
DATE: August 11, 2013

I. Motion Report

None

II. Activity Report

(A) Summary of Outcomes and Accomplishments Organized by Goals in American Fisheries Society (AFS) Strategic Plan for 2010-2014:

Goal 2: Education/Continuing Education

Objective 2.1 Encourage educational institutions at all levels to maintain excellent academic programs in fisheries sciences and related disciplines to assure recruitment of fisheries professionals that meet the needs of employers.

Committee Charge:

President John Boreman provided a charge for the committee with the following tasks:

1. Assemble a list of North American colleges and universities currently offering undergraduate and graduate degrees in fisheries-related disciplines (e.g., fisheries science, fisheries biology, fisheries ecology, fisheries management, fisheries policy and fisheries economics). Publish the list on the AFS website.
2. Survey major employers that will be hiring graduates with degrees in fisheries-related disciplines in the next 5-10 years to determine what coursework those graduates will be expected to have taken that would be most germane. Publish the survey results in *Fisheries*.
3. Compare coursework expectations of the employers with the current coursework requirements of a selected subset of colleges and universities offering fisheries degrees. If the comparison indicates a misalignment, recommend ways in which an alignment can be made, which could range from simple advice to the colleges and universities to an accreditation program administered by AFS (or something in between).

4. Compare coursework expectations resulting from the survey to degree requirements for certification as a Fisheries Professional, and recommend changes that would bring degree requirements into alignment.
5. Compare coursework requirements to educational requirement standards for grad-level entry into the 480 job series of the US OPM, and recommend changes that would bring the OPM standards into alignment. If possible, perform a similar comparison for federal employment standards in Canada and Mexico.
6. Publish the results of the recommendations developed under Tasks #3-5 as a series of articles in *Fisheries*.

Committee Organization:

President John Boreman established the Committee in November 2012 and appointed the following members from the following units:

Chris Myrick, Education Section
Mark Kaemingk, Student Subsection of the Education Section
Trent Sutton, Education Subcommittee of the Board of Professional Certification
Craig Bonds, Fisheries Administration Section
Robin DeBruyne, Equal Opportunities Section
Troy Hartley, Socioeconomics Section
Martha Mather, At-large member
Steve McMullin, At-large member
Quinton Phelps, At-large member
Ron Essig, Chair

Steve Sammons and Dan Isermann also participated with the Committee as they attempted to organize a symposium on employer educational requirements at AFS 2013.

Two subcommittees were formed to work on the first two committee charges as described above. One subcommittee is assembling a list of schools offering degrees in fisheries related disciplines. Members are Craig Bonds, Ron Essig, Troy Hartley, Chris Myrick, and Trent Sutton. Each member took the lead for the geographic area of each AFS division, except that Canada and Mexico were treated separately. The other subcommittee developed and conducted an education requirements survey and is currently analyzing results. Members are Robin DeBruyne, Ron Essig, Mark Kaemingk, Martha Mather, Steve McMullin and Quinton Phelps. Both subcommittees held numerous conference calls to make progress on their charges as described below. Ron Essig will provide a overview presentation on progress of the full committee at the AFS 2013 annual meeting in Little Rock (Wednesday, September 11, 9:40 AM).

List of Schools:

The List of Schools Subcommittee made several initial decisions so that an effective list could be developed. A template spreadsheet was agreed upon to collect appropriate information. Separate lists are being compiled of schools with traditional fisheries programs versus schools

with related programs like marine biology and environmental science. Colleges and universities offering biology degrees will generally not be included due to their volume and the difficulty of identifying a fisheries focus. However, when local information is available on biology degree programs with a strong fisheries emphasis these programs will be included. This is particularly true for Canadian schools where fisheries courses are mainly within biology degrees.

A variety of approaches were taken to develop lists of colleges and universities with degrees in fisheries-related disciplines. Initial contacts were made with AFS division and chapter leaders soliciting information with mixed success. Most schools that are members of the National Association of Universities with Fish and Wildlife Programs were included. Lists of AFS student members and Education Section members with college and university addresses were investigated since these institutions likely offered fisheries degrees. However, the main data gathering approach involved internet searches of schools. Land grant public universities in the United States were an obvious starting point.

As of this report, each subcommittee member has a draft list of schools within their geographic area. At least 115 North American colleges and universities have been identified that offer fisheries degrees, not including those with degrees in related disciplines which is a much larger number. Efforts are now focused on editing this information to a similar scope and format prior to consolidation into a single North American list. Plans are to distribute the consolidated list for review by AFS unit leaders, particularly from divisions, chapters, student subunits, the Education Section and the Canadian Aquatic Resources Section. The list will eventually be published on the AFS website.

Education Requirements Survey:

The Education Requirements Survey Subcommittee made several initial decisions prior to conducting the survey. The AFS member list was selected as the sampling frame since most members work for fisheries employers. Separate analyses are desired for state agencies, federal agencies, private sector, non-governmental organizations and universities. Although desired, it was expected that there will not be enough tribal respondents for separate analysis. A distinction between undergraduate and graduate studies is needed. The education requirements survey would consider other activities beyond coursework like field skills, presentations, and AFS student subunit involvement.

Dr. Steve McMullin agreed to lead the development and implementation of on-line survey to be administered through his laboratory at Virginia Tech. At its mid-year meeting in February 2013, the AFS Governing Board approved up to \$2,000 to conduct the survey, analyze the data, and present preliminary results at the AFS 2013 meeting in Little Rock. To date, \$1,530 has been requested for the assistance of graduate student Vic DiCenzo. Vic and Steve provided the following progress report as of July 29, 2013.

The AFS first emailed the Education Requirements Survey to AFS members via the AFS listserv on June 12, 2013. Reminders were sent on June 19 and July 1 and the survey was closed on July 12, 2013.

A total of 1,490 members completed the survey. Sample sizes for the various groups in Question 1 are given in Table 1. The 106 missing values represent respondents who selected other in Question 1. Many of these respondents indicated they were post doc researchers, college/university staff, or retired members. These entries were not recoded into the predominant categories.

Question 1. Are you currently employed by:

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid State Agency	472	31.7	34.1	34.1
Federal Agency	227	15.2	16.4	50.5
Tribal	23	1.5	1.7	52.2
NGO	55	3.7	4.0	56.1
Private	192	12.9	13.9	70.0
Faculty	184	12.3	13.3	83.3
Student	231	15.5	16.7	100.0
Total	1384	92.9	100.0	
Missing System	106	7.1		
Total	1490	100.0		

Most student respondents were graduate students working toward a Master's Degree (47.1%) or Ph.D. (39.5%) and fisheries was the primary major of 56.1% of all student respondents. The second highest major of students was biology/zoology (16.0%).

Faculty respondents were primarily from public, land grant universities (61.3%) and other public university's (30.1%). More than half of faculty respondents worked in fisheries and/or wildlife departments (56.0%). A Ph.D. was the highest degree offered by most faculty departments (77.7%).

The five employer types from Question 1 accounted for 70.0% of all respondents with state agencies comprising about half of all employer responses. Sample sizes for state and federal agency employees, as well as NGO's and private industries should be adequate to understand the perceptions of which knowledge and skills employer types believe are most important and how prepared recent entry-level employees are for each area of knowledge.

Initial analyses have focused on simple rankings by student type, faculty, and employer type on level of importance of the various knowledge and skills and also the preparedness of those

knowledge and skills. Subsequent analyses will seek to determine preparedness of entry-level employees by employer type, identify specific areas where entry-level hires lack proficiency and summarize AFS' member's perceptions on who is most responsible for preparing young professionals and the most effective ways at preparing them. The results of this survey will be presented at the AFS Annual Meeting in Little Rock, AR (Wednesday, September 11, 11:00 AM in the Education Symposium) and submitted for publication in *Fisheries*.

(B) Recommendations or Suggestions for Future Consideration: None