

NCAFS Student-Mentor Workshop Report to the NCWRC Partnership for Inclusion for the Relevancy Roadmap Implementation Grant

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Introduction

The North Carolina chapter of the American Fisheries Society (NCAFS) is a non-profit organization formed in 1990 for fisheries and aquatic science professionals. NCAFS membership is comprised of fisheries and aquatic professionals from public (state and federal agencies) and private sectors (consulting firms and utility companies) as well as universities, nongovernmental organizations, and other affiliations (including retired fisheries professionals).

The mission of NCAFS is to improve the conservation and sustainability of fishery resources and aquatic ecosystems by advancing fisheries and aquatic science and promoting the development of fisheries professionals. NCAFS chapter meetings are held annually to conduct chapter business, listen to presentations by students and professionals, and support a raffle to sponsor the North Carolina State University Student Fisheries Subunit (NCSU-SFS).

The NCAFS membership includes fisheries and aquatic professionals from the North Carolina Wildlife Resources Commission (NCWRC), including myself. I am also a committee member of the NCWRC – Partnership for Inclusion (PFI). To optimize this connection, I offered to facilitate a student-mentor workshop in connection with a Relevancy Roadmap Implementation Grant that the PFI received in February 2020.

In February 2020, I presented the student-workshop opportunity at the NCAFS chapter meeting in the framework of an ad hoc committee. NCAFS membership voted unanimously to create a Mentoring Committee charged with development of student-mentor activities to be held at annual chapter meetings and other relevant events throughout the year, including the proposed student-mentor workshop.

In March 2020, the Covid-19 pandemic eliminated all in-person connections. Amidst the challenges, virtual meeting platforms were available and becoming more commonplace. With these insights and perspectives regarding the advances in network technology, I moved forward with plans to conduct a virtual student-mentor workshop.

Our purpose was to serve a more diverse student audience interested in a conservation career through a professional society and a state natural resource agency collaboration. Our objectives were to host a virtual student-mentor workshop with a diverse professional panel and invite students enrolled in a Natural Resources and Conservation program within the UNC public university system.

Methods

In preparation for this workshop, I attended two virtual events for students interested in a conservation career to gain more insights on this type of event. I attended the American Fisheries Society (AFS) Diversity and Inclusion for Fisheries Students virtual event on September 15, 2020. I attended a series of Minorities in Natural Resource Conservation (MINRC) virtual student workshops at the Southeastern Association of Fish and Wildlife Agencies (SEAFWA) meeting held October 26-28, 2020. I recruited two NC students (Jessie Page Jordan and Jonathan Williams) from the MINRC meeting to assist in developing our student-mentor workshop.

The NCAFS Mentoring Committee held a listening session with a small group of students and professionals from varied sectors (state, university, private) to learn more about the current needs of the next generation of conservation professionals on December 7, 2020. This meeting supported future opportunities to continue the conversations on minimizing potential barriers and managing expectations in a highly competitive career. This listening session was recorded and made available on the NCAFS Mentoring webpage.

In January 2021, a pre-registration form was created in Google Sheets for anticipated attendees to identify conservation career sectors of interest, how they were made aware of the event, and present a question to assist workshop development. Information obtained from Google Sheets forms was used to inform and develop workshop content. Pre-registration was voluntary and included an opportunity for students to provide questions for panelists ahead of time. Workshop information and pertinent links within a flyer (Appendix 1) were distributed to e-mail listserves and social media platforms (e.g., LinkedIn, Facebook, etc.)

The virtual workshop format was planned for 90 minutes with three 30-minute segments categorized as opening, breakout, and closing segments, respectively. The opening session would panelists time to introduce themselves and respond to pre-requested questions from pre-registrants. The breakout session was designed to create breakout rooms with a panelist, moderator, and attendees assigned to respective breakout rooms based on conservation sector of interest. The closing session was created to allow moderators time to summarize respective breakout sessions. A test run was scheduled before the event.

A follow-up evaluation form was created in Google Sheets to assess the relative success of the student-mentor workshop by the students who attended. Questions in the follow-up survey were geared to assess how inclusive the workshop was for student attendee needs, suggestions that would improve future workshops, and what was learned at the workshop. Student responses to open-ended questions were placed in WordItOut to generate a wordcloud as a qualitative visual of frequently used words within the responses where words used more frequently are larger in font compared to words used less frequently.

Results

Workshop Pre-registration

Thirty-seven students completed the pre-registration form before the student-mentor workshop. Twenty-nine pre-registrants were undergraduate students (78%), 3 were graduate students (8%), 3 were exploring options (8%), and 2 (5%) were early career professionals. Pre-registrants were allowed to select any conservation sectors of interest options that applied to respective individuals.

Undergraduate students selected nine variations of the available sectors of interest, and graduate students, early career professionals, and those exploring options had three or fewer variations of conservation sector of interest (Figure 1). Graduate students and early career professionals did not select unsure as did undergraduates and those attendees exploring options.

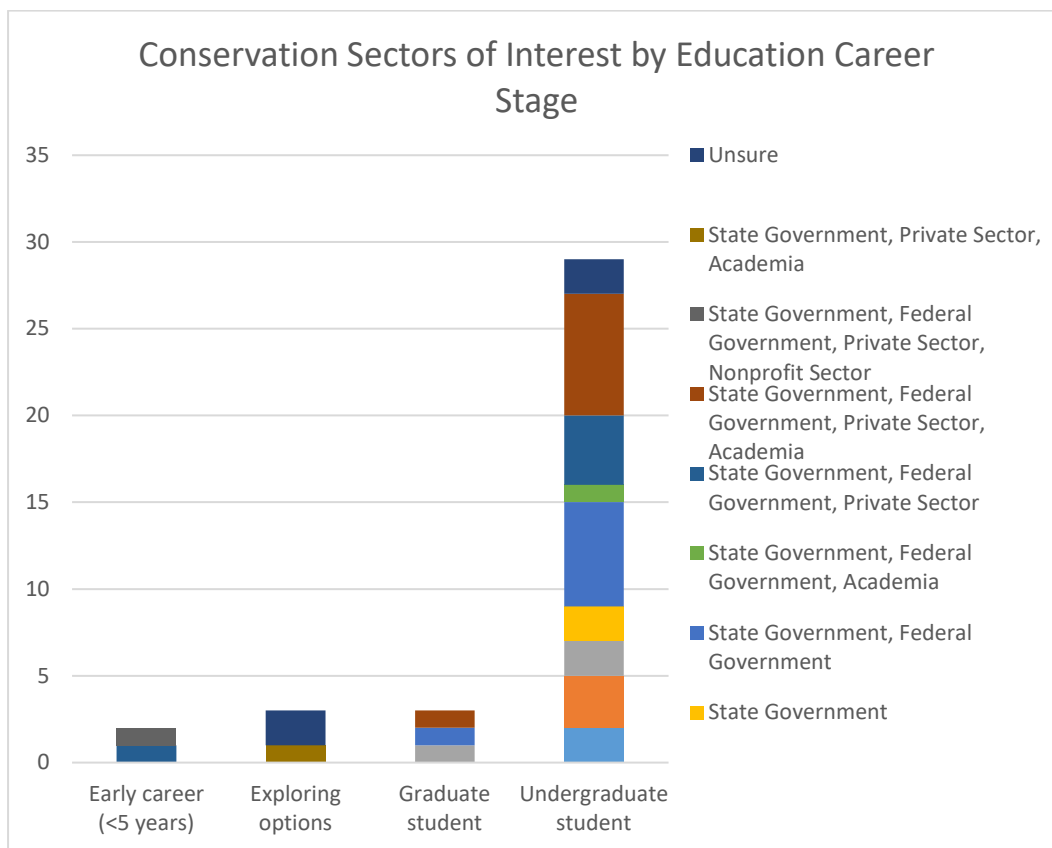


Figure 1. Conservation sectors of interest by education or career stage.

Primary sources of student awareness about workshop was e-mail, professional or mentor, and academic advisors. Fewer responses were received from pre-registrants regarding the informational flyer and social media as a source of the workshop event (Figure 2).

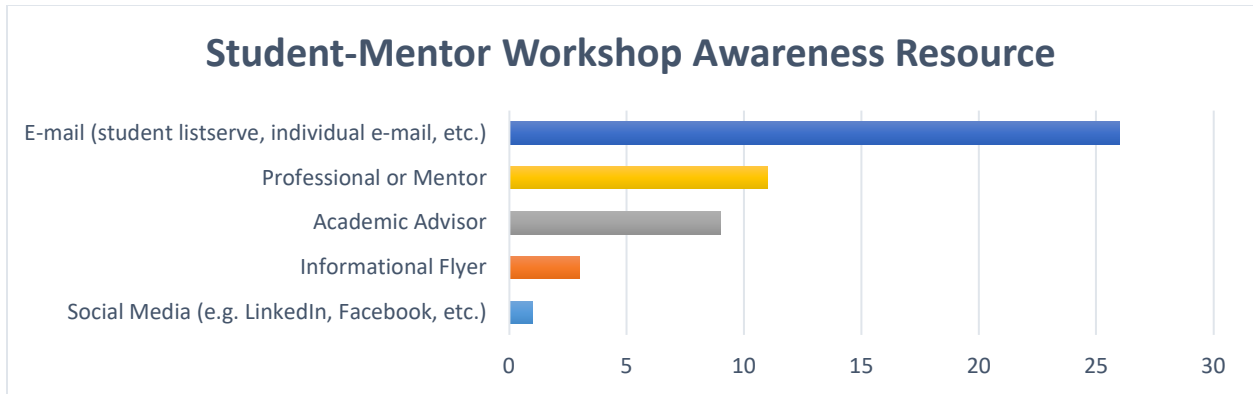


Figure 2. Count of sources referenced by students who pre-registered for the February 15 workshop.

Workshop Test Run

A test run of the workshop format in a virtual setting was conducted on Thursday, February 11, 2021. Following the test run, adjustments were made to create a 20-minute opening session, a 40-minute breakout session, and a 20-minute closing session. A wind-down period was added with a hard stop after 30 minutes. A 2-hour virtual meeting timeframe was deemed reasonable to minimize Zoom fatigue.

Virtual Student-Mentor Workshop

On Monday, February 15, 2021, the student-mentor workshop was hosted on Zoom from 7:00 p.m. to 8:30 p.m. The student-mentor workshop was attended by 45 total participants with six panelists, six moderators, four professionals, and 29 students, including four high school students. This meeting was recorded and made available on the NCAFS Mentoring webpage.

Of the 29 students in attendance, 20 students pre-registered and nine zoomed in that evening. Eighteen attendees provided school affiliations: 11 attendees were students at NC universities and colleges (NC State University, UNC-Pembroke, Western Carolina University, NC A&T and Saint Andrews University), 4 attendees were high school students interested in a conservation career, and one student each from Coastal Carolina University (SC), Tennessee Technological University, and University of California-Davis (Figure 3).

Another 19 students pre-registered ahead of the event yet were unable to attend. Inclusion of attendees and potential attendees, the overall reach included universities and colleges in North Carolina (n = 7, UNC–Wilmington and Montreat College and the five mentioned above), Tennessee Technological University, University of Tennessee, Knoxville, Auburn University at Montgomery, University of California at Davis, Murray State University, Coastal Carolina University, and University of Texas at San Antonio.

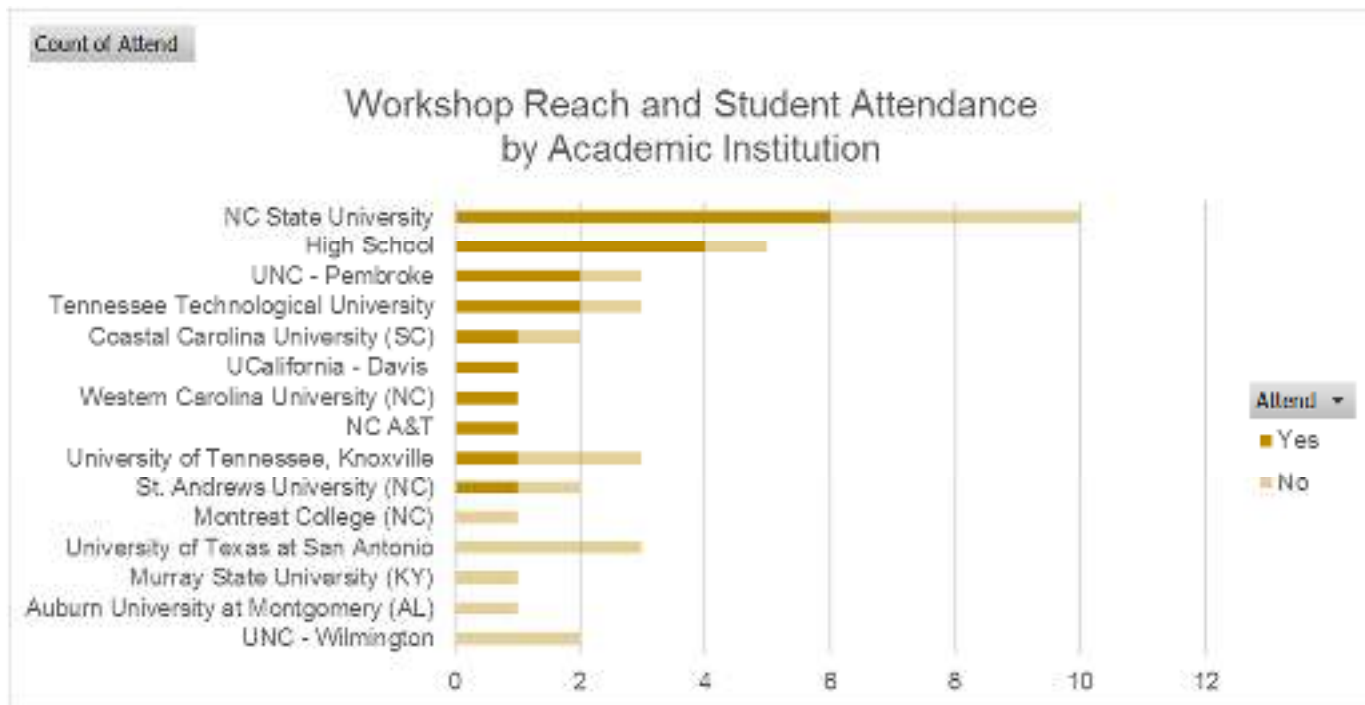


Figure 3. Count of students who pre-registered for workshop by academic institution. Darker shade represents students who were able to attend the workshop, whereas lighter shades are students who were unable to attend.

Follow-up evaluation form

A follow-up evaluation form was sent to 24 student attendees via e-mail with 15 students responding (62% response rate). Five students who attended the workshop did not provide an e-mail address and could not be reached following the workshop.

Most student attendees strongly agreed or agreed that the student-mentor workshop was inclusive of respective needs and interests. One student was neutral and one student strongly disagreed that the workshop was inclusive to their respective needs (Figure 4).



Figure 4. Student attendee responses to statement that student-mentor workshop was inclusive to individual needs

Student attendees provided numerous insights on the workshop strengths with many comments related to the value of time spent meeting with conservation career professionals. Student attendees suggested alternative breakout room options to have more time to ask questions and participate in discussions. Several student attendees suggested to keep the wind-down segment in future workshops to chat longer with panelists who were able to stay on during the wind-down period.

Students shared that the workshop presented them with new perspectives and considerations for developing their own conservation career path. Compared with what students were aware of before the workshop, it appears that the workshop was beneficial and presented opportunities to learn more about the conservation field (Figure 5).



Figure 5. Word cloud generated from comments received on an open-ended question regarding what attendees learned following the February 15 workshop. Words were included in the word cloud when used two or more times in the entire text of responses.

Discussion

Overall, our collaborative approach to a virtual student-mentor workshop was a success. Attendance by students from numerous universities was a clear indication of reach of a virtual student-mentor workshop. Representatives from public, private, and academia sectors provided pertinent and relevant responses to students' questions on navigating a conservation career.

Our workshop announcement was received by students interested in a conservation career at 14 colleges and universities (seven in North Carolina and seven outside North Carolina), as well as high school students in North Carolina. Two of the North Carolina institutions reached, UNC-Pembroke and NC A&T, are Minority Serving Institutions (MSIs) and they play a key role in training and educating underrepresented students in the science, technology, engineering, and mathematics (STEM) disciplines.

Our workshop provided 29 students interested in a conservation career a virtual space amidst a pandemic to ask questions and receive insights successfully on current events and career paths from conservation career professionals in the public, private, and academic sectors. Our panelists represented a number of disciplines in the conservation career and likely contributed to the diversity of student attendees. Moderators and attendees advised breakout rooms were great additions to the workshop, yet more time would have been beneficial.

Most student attendees found the workshop to be inclusive to their current needs. These students stated their general appreciation that workshop opportunity was available for them to attend and learn more about the conservation career. There were two student attendees who were either neutral or strongly disagreed and indicated that either their preferred framework would have been more classroom style or that the specific career option they were interested in was not available during this workshop.

Student attendees were at various education stages. Having high school students in attendance was great because it is important to begin exploring options during those formative years as a junior and senior in high school when parents, peers, and adults begin to ask about the next step after graduation. Most attendees were undergraduate students and I expected they would have interest in every conservation career sector to learn more about each. Graduate students in attendance only selected one or two sectors of interest, likely due to their advanced stage of education, experience, and knowledge.

Implications

The workshop announcement was communicated via e-mail and social media platforms. Those students who pre-registered indicated that they learned about the workshop from e-mail listserves, professionals, academic advisors, mentors, and social media. While there is potential to consider the better communication option, each of these communication channels generated interest in the workshop. Workshop organizers are encouraged to use all available channels of communication to market these workshops.

Conservation career-orientated students are encouraged to explore professional networks to engage with conservation career professionals for advice and insights. Student attendees at the workshop presented questions that were relevant to the start of many conservation careers. Each panelist presented a career course that clearly showcased that a conservation career path is not linear or a set of specific steps that everyone takes; each conservation career path is likely

as unique as the individual that has chosen this career. As such, each student has the opportunity to design their own career path through adapt their education and experiences to benefit themselves towards a positive outcome in a conservation career.

While pursuing conservation career degrees, students may consider proactive measures to create their own professional development series for respective student groups, or partner with organizations for more broad interactions. For example, graduate students may consider hosting an “Ask a Graduate Student” or “Ask a Professor” session for undergraduates to learn more about field and coursework expectations, how projects are funded, and other nuances of an advanced degree in the natural resource conservation field. Alternately, student organizations may consider “peer-to-peer” or “near peer” programs to incoming and current students to share answers to pertinent questions.

Conservation career professionals are encouraged to host events frequently to share experiences, perspectives, and advice with students interested in this career. Actively listening to the current student needs and communicating in an honest and transparent way is genuinely appreciated. Consideration of each decision point along a career can help provide perspective for students asking whether to go on for an advanced degree or begin gaining field experience.

Natural resource conservation professionals need to establish and maintain networks with academic advisors and career counselors to review and share feedback about conservation careers. This action would likely better prepare students with applicable education and skill sets necessary to meet evolving expectations in the real-world of natural resource conservation.

Student-mentor workshops, whether held virtual or hopefully soon in-person, are valuable information transfer and networking opportunities. Students and professionals will find common ground and thrive in a mutual learning environment for the greater benefit of natural resources and this wonderful career.

Diversity is a Fact. Equity is a Choice. Inclusion is an Action. Belonging is an Outcome.
Arthur Chan

Acknowledgments

Thanks to our workshop panelists who provided diverse perspectives:

- Casey Grieshaber - Fisheries Biologist, NCWRC
- Fred Scharf - Professor, Biology and Marine Biology, UNC Wilmington
- Maurice Crawford – Associate Professor, Natural Sciences, Maryland-Eastern Shore
- Neil Medlin - Manager, Natural Resources/RK&K Consulting
- T.D. VanMiddlesworth - Fisheries Biologist, NCWRC
- Wendy Stanton - Wildlife Biologist, U.S. Fish & Wildlife Service

Our moderators kept us on track in the breakout rooms:

- Sara Schweitzer – Assistant Chief, Wildlife Diversity Program, NCWRC
- Ami Staples – Marine Fisheries Statistician, NC Division of Marine Fisheries
- Jessie Page Jordan – Program Coordinator, Lake Johnson Park, Raleigh
- Falyn Owens – Wildlife Extension Biologist, NCWRC
- Ben Ricks - Fisheries Biologist, NCWRC
- Kevin Dockendorf – Fisheries Research Biologist, NCWRC

Sasha Pereira was our Zoom meeting moderator. Kevin Dockendorf provided welcoming and closing comments during the workshop. April Lamb, Jessica Baumann, Jonathan Williams, Zack Xiong, and Wilson Xiong provided valuable support to the listening session and this workshop. Thanks to Anna Elvira Barcafer for taking notes during the workshop for inclusion in this final report. Sara Schweitzer, Falyn Owens, and T.D. VanMiddlesworth provided valuable and constructive comments to greatly improve previous versions of this document.

Appendix 1. Information flyer distributed ahead of the student-mentor workshop.
Credit: April Lamb

STUDENT-MENTOR WORKSHOP
FOR Fisheries and Wildlife Professionals

MONDAY, FEBRUARY 15
7:00 - 8:30 PM

A virtual "show and tell" networking opportunity for those interested in a career in fisheries, wildlife, conservation, or natural resources.

Panellists

CASEY GRIESHABER
FISHERIES BIOLOGIST, NC WILDLIFE RESOURCES COMMISSION

DR. FRED SCHARF
PROFESSOR, BIOLOGY AND MARINE BIOLOGY, UNC-WILMINGTON

DR. MAURICE CRAWFORD
ASSOCIATE PROFESSOR, NATURAL SCIENCES, UNIVERSITY OF MARYLAND EASTERN SHORE

NEIL MEDLIN
MANAGER, NATURAL RESOURCES, R&R CONSULTING

TD VANMIDDLESWORTH
FISHERIES BIOLOGIST, NC WILDLIFE RESOURCES COMMISSION

WENDY STANTON
WILDLIFE BIOLOGIST, U.S. FISH AND WILDLIFE SERVICE

TO SHARE YOUR TAIL AND CAREER QUESTIONS, PLEASE FILL OUT OUR [GOOGLE FORM](#)

& TO ATTEND THE WORKSHOP, [JOIN US ON ZOOM](#)

HOSTED BY THE NC CHAPTER OF THE AMERICAN FISHERIES SOCIETY & THE NCSU STUDENT FISHERIES SUBUNIT

ALL CAREER STAGES WELCOME!