



# NRES Program Review 2017-18

Closing MOU

September 10, 2018

## Overview

**Degree/Certificate Programs Reviewed:** Bachelor of Science in Forest Management and Ecology  
 Bachelor of Science in Ecohydrology  
 Bachelor of Science in Wildlife Ecology and Conservation  
 Bachelor of Science in Environmental Science  
 Master of Science in Natural Resources & Environmental Science

**Department Chair & Dean:** Hall Cushman, Chair; Bill Payne, Dean

**External Reviewers & Affiliation:** Dr. Bradford Wilcox, Professor, Department of Ecosystem Science and Management, Texas A&M University  
 Dr. Thomas DeLuca, Professor, Forestry & Conservation, University of Montana  
 Dr. Jay Gan, Professor, Environmental Sciences, University of California, Riverside  
 Dr. Carla D'Antonio, Professor, Dept. of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara  
 Dr. Jeffrey Brawn, Professor, Natural Resources and Environmental Sciences, University of Illinois

**Date of External Visit:** April 2-3, 2018

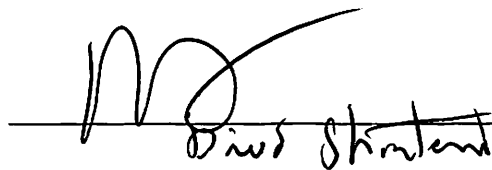
## Review Process Summary

The Natural Resources and Environmental Science program was scheduled for regular program review as mandated by the Board of Regents and University policy. A self-study document for the department and its programs was developed by the department faculty and completed in Spring 2018. The report was provided to the five reviewers before they conducted an on-campus visit on April 2-3, 2018. The external reviewers reviewed the program and met with relevant faculty, staff, students and administrators to determine the department's accomplishments, examine strengths and weaknesses, and identify opportunities as it plans for the future. A final report was issued by the site visitors shortly after the review visit. In accordance with institution practice, responses to the review were solicited from the department and the dean. A final meeting of all parties took place on August 24, 2018. This document represents the final MOU of recommendations and findings from the review.

## Signatures

Executive Vice President & Provost:

Date: 9/14/18

  
David Skrentz

9/10/14

---

### Major Findings and Conclusions

---

1. General: The department is vibrant and is clearly on a positive trajectory in research, the training of its students, and public engagement.
2. The department is emerging as a national leader in the study and management of arid lands and ecosystems; its vibrant new faculty contribute to the positive trajectory the department is likely to continue on for the coming decades.
3. There is a committed department chair who keeps the interests of the department as his top priority.
4. The faculty is a notably talented and productive group with an abundance of impressive recent hires and a collective enthusiasm for what the department has accomplished and what it can become.
5. The department is especially strong in applied ecology with expertise in ecosystem, landscape, and wildlife research.
6. The department has significantly increased its number of undergraduate majors and is committed to excellence in undergraduate education and adapting its curriculum to meet the needs of students enrolled in a diverse suite of degree options.

---

### Next Steps for this Program/Department

---

#### 1. Strategic Planning and Building a Vision for the Department:

While there are many matters upon which the department faculty and college leadership agree, there is a need for clarity and understanding about program directions and faculty hiring. The reviewers noted a lack of unity within the department concerning what the department should look like in 3-5 years. This lack of unity and lack of alignment on some matters between the college and department and even within the department must be resolved as the department begins the work outlined in its program-review response. In particular the priorities for new and replacement faculty positions and the disciplines for those positions must be settled. This issue is complicated by many factors including the need to cover the department's large undergraduate programs, the number of retirements in environmental science, the department's desire to create or shape new programs in emerging areas, and the college vision. It is important that the department faculty continue conversations on the future directions of the department and its programs, but these should be guided and balanced by the college's mission and vision. Other departments and colleges that engage in these types of discussions have found the use of a facilitator to be extremely beneficial at least as these conversations begin, and we would suggest this here. Our office would be happy to provide the names and contact information for a few individuals used by other units here at UNR in this process. It is expected that the outcome of these conversations will be agreement between the college and department on future curriculum, research, and service directions and in particular the faculty hires (both new and replacement) that will help with these directions over the next 3-5 years. We suggest the plan for faculty hires be in writing so that there are no misunderstandings in the future. Naturally, this document is subject to agreed-upon changes based on unforeseen circumstances or the changing landscape.

#### 2. Communication

It was agreed that communication between the department and college needs to improve. The planning conversations required above can be an important first step toward this goal. It is hoped that there will soon be a consensus within the department on any unresolved issues related to the department's future directions and vision, and that the department's plan will be in line with the college's vision and mission and therefore supported by all. Naturally, there may be some difficult conversations ahead, but again the use of a facilitator will be useful to keep

these conversations civil and useful. Once these issues are resolved, the chair and dean should identify steps each could take to improve communication between each other and well as between them and the department faculty.

Other communication issues related to allocation of resource decisions at the college level could improve with the conversations described above. However, we are happy to discuss the rationale for decisions regarding allocation of resources at the university level with the dean and/or chair as those questions arise.

### **3. Graduate Curriculum & Education**

The reviewers were positive on the number of NRES faculty involved in interdisciplinary programs but indicated they felt the program should have more graduate students than it currently does. We agree and direct the department to plan to expand the number of graduate students it accepts. The chair indicated that one reason for the low number of graduate students is that faculty are reluctant to accept Ph.D. students without having confirmed funding for them for 5 years. As was discussed at the closing meeting, however, this lack of confirmed funding is not unusual and has existed in academia for decades. The chair indicated he has encouraged faculty to reconsider how they have approached this issue in the past, particularly as they look at their historical record in generating funding to support graduate assistants.

We encourage the department to expand recruitment beyond individual faculty efforts and beyond the local area to address the observation by the reviewers that most graduate students seem to be from the local area or were undergraduates here. Likewise, the graduate dean indicates that improvements to the department's website could make it more of a recruiting tool.

We support the plan of the department to begin working on adjustments to the graduate curriculum by determining any universal foundational courses needed by all MS students. This step will have a role in student cohort building, another recommendation by the reviewers, as will the department's plan to create a departmental seminar series that would be required for MS students.

The department also proposed the development of a NRES Ph.D. program to complement the NRES MS degree. A number of faculty felt that the available interdisciplinary Ph.D. programs (i.e. EECB and ES) were not appropriate for all graduate students. While we support the department's proposal to investigate this option, the department needs to conduct a careful analysis of future enrollment and resource availability. They should also enter into discussions with the program directors of the EECB and ES Ph.D. programs to address the impact that adding a new and potentially competing graduate program would have on their respective enrollment. It would also be a valuable exercise to meet with the EECB and ES leadership and discuss ways that these two existing programs could address the unmet concerns of these NRES faculty.

### **4. Curriculum—Undergraduate**

Several recommendations and ideas regarding the curriculum were expressed by the reviewers or identified by the department. These ideas included bringing the Ecohydrology program into the Environmental Science major, creating a new consolidated major for other majors in the department, and revising some of the courses in the Environmental Chemistry curriculum. There was also a proposal by the department to combine the Forest Management and Ecology major with the Environmental Science Restoration emphasis to form a program in Wild Lands Restoration Ecology. While we encourage the department to develop these plans, decisions on how to proceed should be advised by the conversations that occur in regard to department planning described above. We caution that decisions should also take into account what stakeholder groups have to say about their needs in regards to student preparation as well as what other departments that offer courses that NRES students take think about the impact on them of any proposed changes.

### **5. Undergraduate Recruitment/Enrollment/Progression**

It was agreed that student recruitment would likely benefit from an improved departmental website. The department shared its plans for how it will discontinue its practice of offering courses on an alternate-year schedule, and we are in agreement with those plans. As program changes are planned, it will also be important to map the curriculum in order to confirm that students can graduate in a timely manner. The department stated other reasons in its response for students taking longer to complete their degrees, one of them being the lack of preparation in math and or science. We are confident that the department’s recent implementation of math level requirement for entry into the NRES and ENVS majors should address this issue. However, before this is done, it is advised that the department understand exactly what the expected effect will be on student enrollments in the department’s programs as it undertakes any change so that it can plan accordingly.

**6. Program Outcomes (assessment, placement, retention, graduation—Undergraduate/Graduate**

We are aware that the department is committed to developing a full program of assessment for both undergraduate and graduate programs. In addition to this important step, we encourage the department to continue to review retention and graduation figures regularly. An exit survey of all undergraduates should be developed and implemented as soon as practicable.

**7. Space**

As mentioned in the closing meeting, conversations regarding the assignment of space in Fleischman Agriculture have begun. While not addressing all the space issues identified in the review, it is a positive step.

**8. Faculty**

Concerns from junior faculty regarding progress toward tenure and inequity of teaching loads need to be addressed. We understand the chair has begun conversations on the topic of teaching loads, and these should continue. This reexamination of teaching loads could address the need to regularize course offerings while also addressing the junior faculty’s concerns regarding inequity.

As for uncertainty about progress toward tenure, we understand the department and college have plans to offer workshops on this topic in the near future. These workshops should be communicated to faculty as soon as possible. Vice Provost, Faculty Affairs Jill Heaton should be invited to participate in workshops or discussions on this topic. Please also encourage your new tenure-track faculty to attend the *New Tenure Track Academic Faculty Orientation* sponsored by our office to be held on September 14 (9-11:30 a.m., MIKC Room 107) where the promotion-and-tenure process application process will be discussed at length.

The department should keep in mind that it is the expectation at the university that tenured faculty in all departments continue to build a portfolio of scholarly work following achievement of tenure so as to move successfully through the promotional ranks to full professor.

---

**Vital Statistics on NSHE Reports**

---

Bachelor of Science in Forest Management and Ecology

Number of students with declared major in the program area 2015-16:	53
Number of graduates from the program, 2015-16:	8
Number of graduates from the program, 2016-17:	13
Number of graduates from the program, 2017-18	12
Headcount of students enrolled in any course related to the program (duplicated):	2824*

**Bachelor of Science in Ecohydrology**

Number of students with declared major in the program area 2015-16:	37
Number of graduates from the program, 2015-16:	5
Number of graduates from the program, 2016-17:	5
Number of graduates from the program, 2017-18	9
Headcount of students enrolled in any course related to the program (duplicated):	2824*

**Bachelor of Science in Environmental Science**

Number of students with declared major in the program area 2015-16:	167
Number of graduates from the program, 2015-16:	22
Number of graduates from the program, 2016-17:	36
Number of graduates from the program, 2017-18	37
Headcount of students enrolled in any course related to the program (duplicated):	2824*

**Bachelor of Science in Wildlife Ecology and Conservation**

Number of students with declared major in the program area 2015-16:	206
Number of graduates from the program, 2015-16:	27
Number of graduates from the program, 2016-17:	25
Number of graduates from the program, 2017-18	46
Headcount of students enrolled in any course related to the program (duplicated):	2824*

**Master of Science in Natural Resources and Environmental Science**

Number of students with declared major in the program area 2015-16:	23
Number of graduates from the program, 2015-16:	3
Number of graduates from the program, 2016-17:	5
Number of graduates from the program, 2017-18	3
Headcount of students enrolled in any course related to the program (duplicated):	229

\*For every Bachelor plan listed, the plan owner is the same. When compiling related courses by owner, all courses are treated as applicable interchangeably between plans; hence, all course totals are the same.

\*\*Because the College of Education does not use departments in their official academic structure, courses were calculated using the subject prefix *EL*.