Bachelor of Science in Natural Resources (BSNR) Program Review

Oregon State University

May 1-4, 2016

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1. Executive Summary

a. Introduction

OSU's Bachelor of Science in Natural Resources (BSNR) was launched in 1993 from the collective vision of faculty from four colleges across the university (Forestry, Liberal Arts, Science, and Agricultural Sciences). Faculty recognized a need for a flexible multidisciplinary degree that would provide students with a foundation in the sciences, management, and policy arenas and equip them to engage effectively in natural resource problem solving. The program's mission has not changed fundamentally in its two decades; it is based on a recognition that natural resource management needs people who have a strong background in both basic natural science and in critical thinking skills related to management, problem solving and politics in the technical policy areas, including the natural resources.

b. Objective of the Review

This review is part of the 10-year review process that is conducted of all undergraduate degrees at Oregon State University (OSU). The BSNR had its last full program review in 2004. The objective of this review is to identify the programmatic strengths and weaknesses based on review of documents and metrics, and interactions with administrators, faculty, staff, and students who participate in the program. Key outcomes of this review are a set of recommendations identifying needs and strategies to improve students success, evaluating program administration and student experience, and ...

c. Summary of Site Visit

The review was conducted May 1-4, 2016. Reviewers gathered in Corvallis, OR on the evening of day 1 to discuss the logistics, plans, and program. On morning day 2, reviewers met with the

program administration, including the BSNR program director and coordinator as well as the College of Forestry Dean and the Associate Dean for Undergraduate Studies. Reviewers also met with faculty, undergraduates (including remote students), and program academic advisors. The review team then traveled to Bend, OR to visit the OSU Cascades campus. On day 3, the reviewers met with Cascades administrators, program faculty, part-time instructors, academic advisor, and students. On the evening of day 3, the review team convened in Corvallis to synthesize information and develop a preliminary report. On day 4, the review team presented preliminary findings of strengths, weaknesses and recommendations to BSNR and College leadership, including the BSNR program director, Senior Vice Provost of Academic Affairs, and the Associate Dean for Outreach and Engagement. During the review, the review team were able to meet with faculty, staff and students across all campuses. The review team visited the Cascades and Corvallis campus. However, the review team only met with the program faculty at Eastern Oregon University for a short tele-conference, and the reviewers did not visit the Eastern Oregon University (EOU) in LaGrande or meet/speak with those students, staff, and faculty.

d. Overview of Program

The BSNR degree program provides students with a detailed working knowledge of natural resources, their diversity and interdependence, and the critical relationships between humans and their environment. The program of study is interdisciplinary in nature, encompassing a broad spectrum of coursework, while mixing natural resources disciplines from colleges across campus, to include the Colleges of Agricultural Science, Forestry, Liberal Arts, and Science. Because of its flexibility, this program provides students the opportunity to combine areas of particular personal and/or professional interest, maximizing exposure to key natural resources issues and challenges. The BSNR program is a cross-disciplinary and cross-campus program that is administered by the Department of Forest Ecosystems and Society (FES) within the College of Forestry (CoF) on the Corvallis campus. Students can enroll in the BSNR program as students at the Corvallis or Cascades campuses, EOU, or the Ecampus, the home for OSU's distance and online education.

e. Participants in the Site Visit

External Reviewers:
Dr. Carla D'Antonio, Professor and Chair, Environmental Studies, University of California, Santa Barbara

Dr. Joel Hartter, Associate Professor, Environmental Studies Program and Faculty Director, Masters of the Environment at University of Colorado, Boulder

Dr. X. Ben Wu, Professor and John Kincaid University Professor for Undergraduate Teaching Excellence, former Director of Center for Teaching Excellence, Texas A&M University

OSU Curriculum Council Reviewers:
Dr. Michael Harte, Professor, College of Earth, Ocean and Atmospheric Sciences, Oregon State University

Dr. Daniel Stroud, Assistant Professor, College of Education, Oregon State University

OSU's Office of Academic Programs, Assessment and Accreditation Representative:
Dr. Janine Trempy, Interim Director (Academic Programs), Professor, Microbiology, Faculty Senate President Elect, Oregon State University

OSU's College of Forestry, Natural Resources Program
Program Coordinators and Staff
Faculty (tenure/tenure track) and Instructors
Students
Administration
Provost

Important Note: The review team visited the Cascades and Corvallis campus and met with administrators, faculty, staff, and students. The review team only met with one program faculty at EOU for a short tele-conference, and the reviewers did not visit the Eastern Oregon University campus in LaGrande or meet/speak with those students, staff, and faculty. The comments and recommendations made within this document apply to the BSNR degree in general unless a location is specifically stated. The review team's ability to comment on the BSNR program at EOU is constrained.

2. Summary of Review Team Recommendations

Overall Recommendation:

- **Restructure**
- **Expand**

Restructure emphasizing changes in <u>governance, curriculum and resources</u>
Expand (<u>FTE commitment,</u> required coursework, <u>student enrollment</u>)

Governance
- **Strengthen governing and reporting structure** of BSNR, with two committees and broad representation from programs having significant overlap with BSNR.

- ○ Constitute a **Steering Committee**, with representatives from all campuses, charged with advising on program level decisions (including strategic planning, resources, personnel).
  - ○ Constitute a **Curriculum Committee**, composed of representative faculty and advisors, overseeing curriculum coordination, course development, scheduling, and advising.
- **Appoint a dedicated 1.0 FTE Faculty Director,** who is a tenured CoF faculty member and who will report directly to the FES Department Head, who will:
  - ○ oversees all aspects of the BSNR program (program administration, marketing, outreach, curriculum development, personnel, student recruitment, alumni communication, and strategic planning), supported by the Program Coordinator.
  - ○ teach at least one of the required core courses.

Administration
- **Maintain stability and consistency in advising** among campuses and strong support to the advisors.
- **Adjust the efforts of Corvallis Program Coordinator** to 75% administration and 25% advising to strengthen and improve tracking of alumni, develop and implement a strong social media plan, and engage of current students in multiple aspects of the program.
- Grow the BSNR program in Ecampus through **international recruitment**.
- **Leverage** the professional reputation, strong industry ties, and world class faculty and curricula of CoF to strengthen the BSNR program in curriculum development, student experience, and career services
- **Expand** BSNR's appeal, recognition, and student recruitment and retention, through
  - ○ creating new professional and programmatic relationships.
  - ○ innovative marketing and curriculum to engage broader professional sectors and student demographics and perspectives.

Resourcing
- Needed is a **new budget model** at the University level to reward faculty/departmental engagement in interdisciplinary programs.
- The University and CoF **must commit more resources** to enable the growth in BSNR enrollment that the Dean envisions.
- **Add at least one full time teaching faculty to the Cascades campus** to increase the breadth and stability of courses offerings in the core categories.

Curriculum
- **Define what is unique to BSNR program** and clearly differentiate the BSNR from similar programs such as Environmental Science.
- **Streamline the curricular organization.**
  - ○ Reduce the number of categories in the BSNR Core.
  - ○ Reduce the number of Specialty Options.
  - ○ Keep ISO, and strengthen the support in designing ISO degree plans.

- **Expand the required BSNR courses** to create a "backbone" of the program to facilitate competency development, community building, and student retention and graduation and better differentiate the NR program from Environmental Science. Expansion could include:
    - **Strengthen the capstone** course, consider a blended approach to ensure effectiveness and consistency, have a dedicated faculty assignment (possibly a professor of practice) to develop and maintain the capstone.
    - Add a **first-year seminar** to discover potential careers opportunities, define a desired career path, develop a roadmap of study, and build community
    - Add a **senior seminar** to analyze artifacts collected to assess and reflect on learning and professional growth, and develop a professional e-portfolio.
    - Add one (or more) **interdisciplinary course** to the required core.
    - Add a required **internship or practicum**, which could be completed during the summer or academic year.
- Provide **more experiential learning opportunities** across all options.

Assessment
- **Conduct curriculum mapping** to improve curriculum design and facilitate program assessment.
    - Develop a **curriculum map**; identify and address gaps or unnecessary overlaps.
    - Develop an **efficient plan to correct assessments/artifacts** in individual courses for program assessment.
    - Use curriculum map to increase intentionality of learning and facilitate assessment
- **Strengthen direct assessment** of student learning against program learning outcomes of BSNR.
    - Develop and use **rubrics** to monitor and evaluate student outcomes.
    - Provide ways for **efficient collection of artifacts** of student learning for assessment.
    - Guide students in senior seminar to **analyze artifacts and reflect** on their learning.
    - Conduct structured **exit survey.**
    - Conduct follow-up surveys with alumni.
- **Improve tracking of graduates** to assess student success.
    - **Use social network** to facilitate tracking and networking of alumni.
    - Set up a **BSNR group social media group,** for example using LinkedIn**,** help students build quality professional profiles, facilitate connections with professionals/alumni, and use the group to track and engage graduates.
    - Conduct surveys or studies of the LinkedIn profiles to **assess success of graduates.** Enlist OSU Alumni Relations to develop an appropriate strategy.

Partnerships/external relationships
- Realize the enormous potential in **cultivating relationships with broad professional sectors.**

- ○ **Make this a focus of the administration** to create student opportunities, increase potential for fundraising, and develop greater national recognition.
        - ○ **Initiate strategic partnerships** in and marketing to sectors not traditionally engaged by CoF, to access a broader student population and new opportunities for the program.
    - ● **Enhance presence of program on social media**, to engage current students, graduates, and the broader natural resources community.
    - ● **Bring in alumni** to share their career paths and successes, to help connect students to the broader community and enhance alumni pride in and connection to the program.

Cascades Campus
- ● **Invest in and innovate to realize the enormous growth potential** at Cascades campus.
    - ○ leverage the visibility and importance at Cascades campus to increase program offerings.
    - ○ leverage additional resources, such as creating synergistic opportunities related to regional growth and entrepreneurship with Business or Engineering.
- ● Find a way to **return some of the Ecampus revenue** to Cascades campus.
- ● **Align position descriptions of Cascades faculty** with the reality of teaching expectations and program needs.
- ● **Add 1.0 FTE faculty** to provide needed capacity in teaching, professional mentoring, and stakeholder engagement.

3. Summary of Findings

a. Undergraduate Degree Programs Offered

OSU's Bachelor of Science in Natural Resources (BSNR) is a standalone undergraduate degree. It is a flexible multidisciplinary degree that provides students with a foundation in the sciences, management, and policy arenas and equip them to engage effectively in natural resource problem solving.

b. Administrative Structure

The BSNR program is run at three physical locations: Corvallis, Cascades and EOU. Each campus has its own program lead and the BSNR operates more or less independently at each campus. The head of the Forest Ecosystems and Society department in the CoF at OSU in Corvallis is the the Corvallis Program lead. This position traditionally acts as the defacto lead and main point of contact for the BSNR degree. Program leads at the other BSNR locations consult with the Corvallis campus lead on substantive issues. Decisions are made in an informal and consultative way. Ecampus delivery of BSNR courses is managed by the Corvallis campus.

The Corvallis and Ecampus programs are supported by a Program Coordinator, who has 0.5 FTE dedicated to the coordinator role and 0.5 FTE allocated as lead BSNR advisor. There are an additional 1.5 advising FTEs split among two positions on the Corvallis campus, and a 0.4 FTE advising position at the Cascades campus.

The BSNR has a Program Committee comprised of representatives from all the Colleges offering courses in the degree from the Corvallis campus and representatives from the Cascades and EOU programs. The Program Coordinator and degree advisers also serve on the Program Committee.

c. Faculty

Beyond the professional advising and coordinator staff, the Corvallis campus has no dedicated BSNR faculty. Cascades has two faculty (one tenured and one instructor) contributing 1.5 FTE to the BSNR program. They also use part-time instructors. The FTE split between teaching and administration at Cascades is not given. EOU has five faculty and two instructors who at various times contribute to the delivery of the BSNR program at EOU. The actual FTE contribution to BSNR program at EOU is not given

d. Students

The number of students formally enrolled in the BSNR program in Fall 2015 was 549 students. The Corvallis campus has a steady enrollment of approximately 150 students. Ecampus enrollment (including part time) is just over 400 students. Enrollment at Cascades stands at approximately 100 students. EOU officially began offering the BSNR in 2011, and numbers have remained small at around 10, but it is anticipated that its number will grow. Note that Ecampus part-time enrollments bring the total number of students to over 650 students.

e. Facilities

There are no facilities that are specific to the program. Courses are dispersed across multiple departments and colleges. Offices dedicated to the Program Coordinator and the Program Director are provided by the College of Forestry. The reviewers note a new building is planned for Forestry and the future needs and growth of the BSNR program should be accommodated in this build.

f. Degree Program Structure, Courses, Curricular Innovations

The BSNR has a complex, customizable, curriculum consisting of core courses (both university Baccalaureate Core and a 74-credit minimum NR Core), 21 credits in seven NR Breadth areas, and a choice of 40-credit Specialty Option. At this time, only two courses are required of all students (N*R 201 Managing Natural Resources for the Future* and *NR 455 Natural Resources Decision Making*). The BSNR Core and BSNR Breadth provide considerable scope for students to customize their program and the Specialty Option allows even more differentiation and specialization. Any faculty member can propose a Specialty Option, which accounts for the great variety in options. There are 16 specific options and an individualized speciality option (ISO) allowing for even more flexibility. The ISO is the most popular option.

g. Program Assessment Practices

Program assessment occurs annually. These include a listing of the BSNR Core and BSNR Breadth courses associated with each learning outcome. The data used to assess performance have been annual surveys of students and minimum GPA requirements. Overall conclusions have been based on these data, as well as input from advisors and the program leads' conversations with students. The program recognizes the need to develop better ways to effectively and efficiently evaluate student learning outcomes that move beyond student self-reports.

4. Detailed Program Evaluation

Overall Recommendation:

- **Restructure emphasizing changes in <u>governance, curriculum and resources</u>**
- **Expand (<u>FTE commitment,</u> required coursework, <u>student enrollment</u>)**

a. *Programmatic Strengths*

The BSNR program has the biggest footprint of any interdisciplinary program on the campus. It includes courses in disciplines across multiple colleges on the Corvallis and Cascades campuses, the Ecampus, and EOU. On the Cascades campus, it is one of the largest of the 18 majors offered.

Below, we articulate a number of strengths, broken into categories of *student experience, faculty experience, curriculum,* and strengths unique to the Cascades campus. Note, strengths are not listed in any particular order that would imply priority, bias, or relative importance. Bolded text identifies strengths, which the review committee deemed were particularly important.

Student Experience

- **Flexibility in curriculum** and student happiness with flexibility
- **Breadth** allows for open exchange of ideas and interaction with multiple perspectives. Breadth also allows students to experience the culture of different departments and colleges across the university (as well as the potential for enrolling in multiple campuses and Ecampus).
- Ability to define and designate an individualized speciality option. The Individualized Speciality Option (ISO) allows students to **cater their course experience to particular interests** and give them the **freedom to pursue career paths that they want.** Many seem very pleased with this.
- Students enjoy the diversity of interests and backgrounds that they experience in their peers in each class.
- Some courses allow experiential learning and field based, outdoor experiences.
- **Program is very "transfer friendly"**, thus appealing to transfer students and allowing them to readily adapt their past course work to a defined major (i.e., BSNR).
- Those students who "find" this program later on (i.e., don't declare BSNR as a freshman or sophomores), seem to really engage with the program and are fully invested.
- Enthusiasm from distance students (those who enroll in the degree and complete coursework exclusively through Ecampus) students is very high. Ecampus students **appreciate the ability to participate in a top notch program at a university renowned for study of and training in natural resources.**
- Ecampus is available all over the world, with in-state level tuition which is very attractive for non-resident students.

Faculty Experience
- Breadth of students in program and of student backgrounds allows the open exchange of ideas and interaction from multiple perspectives
- **Motivation and intentionality of students is inspiring to faculty** since some students "find" BSNR after trying out other majors and/or many students have life experiences and some are non-traditional students.
- Faculty enjoy teaching because they **truly care about student learning and want to make a difference in the world**.

Curriculum
- Open and broad, gives students great breadth and exposure to different perspectives
- This breadth of the coursework within BSNR is multidisciplinary and goes far beyond the Baccalaureate Core
- Since curriculum is diverse and crosses many departments, students can find at least one course in each of the many core areas during most quarters (on Corvallis campus).
- The **fact that many classes are both on the Ecampus and the main campus creates some consistency in course offerings between the campuses.**
- **Key skills that employers want to see (e.g., critical thinking, communication and collaboration in diverse groups, writing, collaborating with coworkers, using management software, spatial analysis) are potentially developed through multiple courses throughout the program.**

- The breadth of offerings leads to some initial struggles for students and advisors finding their way, but it leads to students becoming more independent and motivated, and who must be purposeful in the course selections. Students then become driven by their interests, and who are self-motivated to define their own program to get them where they want to go.
- The **flexibility of the NR curriculum is well suited to support students along various pathways. It is very "transfer friendly"**, thus appealing to transfer students and allowing them to readily adapt their past course work to a defined major.
- In addition to transfer students, the program attracts students from other majors, and non-traditional students, thus giving a home to students who might otherwise be without one.
- Program integrates natural and social sciences to explore environmental challenges and solutions in a way that is up-to-date with current job market needs.
- Curriculum seems strong on economics, policy and social aspects.
- Strong support for Ecampus course development and delivery by OSU. The use of QM (Quality Matters) framework and certifications is a good approach to ensure quality of the online courses and improve student learning.

Program Administration
- **The commitment of the program director is very strong.**
- **Strong advising.** Advisors are committed to the program, know the program well, provide personal and prompt attention to students, can navigate a loose structure, and know what courses are offered and when. The advising ratio at Corvallis, Cascades and Ecampus is better compared to other programs.
- Strong interest from the upper administration of the CoF in improving the BSNR program
- **Ecampus brings in a new student population and demographic thus expanding the campus reach.** The in-state tuition rate is attractive to potential students in other states and countries.
- Ability to use "dual enrollment" with community colleges across Oregon particularly at the Cascades campus is an advantage.
- Thus, BSNR has a strong potential to engage a broad set of employers and partnerships across the public, private, and nonprofit sectors, including green industry and technology, NGOs, natural resource consulting, and government agencies, etc.

Cascades Campus:
- **Cohort and community seem strong among students and between students and faculty.**
- **Small class size** and low faculty-to-student ratios allow ready access of faculty for students.
- **Connection with community colleg**e (Central Oregon Community College) is very strong and students can co-enroll which is a distinct benefit especially given the small number of on-campus courses the faculty are able to offer.
- Dedicated faculty and strong commitment by part-time lecturers to the program despite low pay, lack of benefits, and lack of job security

- **High involvement of veterans with the program**.
- **Nice array of internship opportunities** available.
- **Older and nontraditional students** are a large part of the demographics, and they bring life experience to the learning environment. This makes for a much richer learning environment and experience.
- Students know each other and have been in classes with each other. As a result, they are very involved in the program and engaged in classes.
- Excellent, caring and knowledgeable advisor despite her filling diverse needs across campus.

b. Programmatic Weaknesses

Below, we articulate a number of weaknesses, broken into categories of *student experience, faculty experience, curriculum,* and weaknesses unique to the Cascades campus. Note, weaknesses are not listed in any particular order that would imply priority, bias, or relative importance. Bolded text identifies weaknesses which the review committee deemed were particularly important.

Student Experience
- **Too much flexibility and choice can be bewildering to students**, especially for new students.
- **Lack of cohort feeling among on-campus students** at the Corvallis campus. Since there are so many diverse requirements and options, few students take the same courses. Thus students rarely get to know each other and do not feel like there is a strong sense of group identity.
- **Student perceptions of the senior capstone experience** was inconsistent with expectations of a senior capstone course and were generally negative at the Corvallis and Cascades campuses.
- **Limited field courses or field experiences**, especially with those taught outside the College of Forestry.
- **Limited internship/professional opportunities integrated with the program**. No work experience is required, but students believe work experience should be an important component of the BSNR.
- **Little international focus** - experiences and coursework. While an international office in CoF exists, there still appears to be little curricula emphasis on study abroad, volunteering, service learning, or experiential learning with an international focus.
- Bottlenecks in some courses for popular options particularly if they are not offered through the CoF and BSNR students do not have priority access.

Faculty Experience
- The broad nature of program means that students come into classes with very different training/coursework. This makes it challenging for the instructors who find students have very different levels of knowledge & experience coming into their classes. They have to

do remedial work with some, while others are bored. It is also difficult for students - some are bored, some are challenged all in the same classroom.

- Viewed by CoF as a forestry program, but BSNR is very different and the types of students can be quite different. This creates a disconnect with the forestry cohorts and BSNR cohorts. There is lack of unity and identity with BSNR students on Corvallis campus. Students can feel like like outsiders, or they feel as if they are less important in in the College than the forestry students. This also leads to curriculum and professional foci away from traditional "environmental" professions go unaddressed - e.g., natural resources professionals in food, beverage, consumer products, and other industries and sectors are not represented.

Curriculum

- **Low enrollment in some speciality options**
- Student training in sciences could be stronger. Some faculty feel students are weak in field analyses and quantitative reasoning and skills.
- Student learning outcomes coming out of the program are not consistent.
- **So many credits are required for Specialized options that students have a hard time filling their courses**. This is particularly true at Cascades where there are not very many on campus options for courses to fill this high unit requirement.
- GIS training in BSNR is not sufficient.
- The BSNR curriculum is clearly multidisciplinary, but **few courses have a strong multidisciplinary focus**.
- **Two required courses seems insufficient in meeting curriculum needs, creating a sense of community, and for capturing revenue.**
- No long-term assignments of well-suited faculty to teach the NR 455 course.

Program Administration

- **There appears to be competition and overlap, yet lack of coordination with other interdisciplinary or similar programs (e.g., Environmental Sciences, Fish and Wildlife, and the new Marine Studies program).**
- **Lack of formal assessment and monitoring and evaluation of program learning outcomes.**
- Current University budget model does not reward faculty/departmental participation in interdisciplinary programs.
- BSNR is an advising intensive degree. Complexity of program on main campus makes it difficult for the advisors to keep track of all the different courses, when they are offered and what would fill what requirement
- **Steering committee unclear about its purpose.** They need a charge!
- No one from Environmental Sciences is on the steering committee; yet the two programs are closely related and should be better coordinated.
- Four different colleges are competing for a limited pool of students interested in environment.
- **Lack of communication among program leads at different campuses on core courses. Students at the Cascades campus or EOU may not be getting the same**

experience as those on the Corvallis campus, particularly for the two required courses.

- College of Forestry views this as *their* program, which could discourage other departments and colleges from wanting to support the program with resources, faculty, and staff. It could further lead to program visioning, implementation and program course corrections based on CoF needs and capacity and less buy-in from other units.
- **Confusion or lack of clarity by incoming students/high schoolers about what a program in natural resources would be. A degree in *natural resources* recognizable name (i.e., compared to *environmental science*). This is a missed opportunity to tie new growth areas in Oregon and region with BSNR program.**
- Financial model is prohibitive in incentivizing non-CoF units to provide resources (e.g., teaching classes, staff) to the BSNR major.
- **All student growth of program is in the Ecampus and at Cascades. On-campus at the Corvallis campus numbers are not growing.**
- OSU has a hard time working with "interdisciplinary" programs, especially ones that cross colleges.
- College of Forestry programs tend to be traditional employer-centric (e.g., Oregon Department of Forestry, USDA Forest Service, Weyerhaeuser), yet BSNR is not. No underlying employer groups for BSNR have been built.

Assessment

- Deans and faculty are concerned that BSNR students do not know how to market themselves and thus are not finding employment opportunities. Since there is no tracking of where students go, this outcome is speculative (yet still of concern).
- The campus and program does not do a good job of following up with alumni.
- The assessment of program student learning outcomes is limited.
- Need to improve the effectiveness and efficiency of program assessment, possibly making use of NR 201 and especially NR 455 for the assessment of most of the learning outcomes. One possible model used elsewhere (e.g., Brigham Young and Texas A&M) is to use a senior seminar to guide students to review and reflect on their learning experiences.

Cascades Campus

Students Experience

- Often classes are taken out of order (e.g., taking a 400 class first and then having to take a 200 level course with similar topics) because the limited timing of course offerings means you often have to do this.
- Wide breadth of courses, but the courses are only 1 course deep; **students have limited ability to go deeper due to a lack of offerings.**
- Ecampus tuition is more expensive, but many students are "forced" to take Ecampus courses in order to graduate on time. Most students expressed discontent with the distance classes because they do not get the same feeling of connectedness with e-class peers and instructors as they do in their small on campus classes.

- There is a strong commuter mentality that makes it difficult to get students to work well in groups outside of regular class time. **Peer-to-peer learning groups do not readily form which translates to some challenges in the classroom.**
- **Faculty and students observed less cohesion among students than expected.** They engage artificially with each other and appear anxious to move on to whatever is next after class.
- T**he students get limited opportunity to have field experiences**. Most courses are lecture based and this was particularly disappointing giving the amazing physical environment of the region.
- Students do not like the projected/streaming courses from Corvallis because of limited faculty feedback, disconnect with faculty in the interactions, and technology issues. The synchronous delivery seems not be interactive or engaging.

Faculty Experience
- The two permanent **faculty at Cascades are fully stretched** and have little time for creative activity/research.
- Faculty feel they are forced to **teach outside of their specialities/**expertise and this reduces the quality of their teaching.
- Faculty/instructors feel that the strong commuter mentality makes it difficult to get students to work well in groups outside of regular class time. Peer to peer learning groups do not readily form which translates to some challenges in the classroom.
- Because of the need for breath and people in seats (e.g. the current financial model), faculty teach a lot of general education courses. They feel this creates a curriculum that is broad but not deep. In other words, this hampers the rigor of the degree program.
- Faculty frustrated that they have no control over advising at the lower division level.
- Faculty with **heavy teaching load** also **have extensive leadership roles**. They seem close to breaking point in terms of being able to fulfill all aspects of their job descriptions.

Curriculum
- **NR 201 is not offered at Cascades but the substitute course seemed unknown to the students.**
- **Few students are aware of the "capstone course" (NR 455) and its critical function for their learning**, although they knew the particular course they took when it is mentioned. Thus the purpose of having a capstone seems not well-served at Cascades.
- So many units need to be filled for the Specialized options that students have a hard time filling their programs because so few courses are offered at Cascades. This forces students to take E-courses course which costs the students more and moves money off campus.
- **At Cascades, the program administrators have no control over advising for the lower division courses,** which contributes to the imbalance in students' knowledge and readiness for upper division courses.
- Heavy advising load for the advisor who is advising for five programs simultaneously.

- **No GIS course at Cascades.** Students can take it at COCC but the course is basic and students are dissatisfied with it.
- **No data management course at Cascades.** There was a very basic introductory level data management course that was just added, but most students had not taken it yet or feel it may be too basic. There is a desire for more quantitative experiences.

Program Administration
- While the natural environment appears to be quite accessible for "experiential learning", and the administration perceives it as such, the students did not perceive that it was available in their classes. The overall perception of the potential of the program by the administrators thus does not appear to be achieved.
- **Dependence of Cascades program on temporary part time lecturers creates instability in program, reduces staff moral, and impacts faculty welfare.** Students do not know if classes are going to be offered; advisors are not sure how to advise or construct a roadmap for individualized study; instructors do not have job security (or benefits) and therefore may leave at any time. This affects both faculty and students.
- **At current level of staffing, there is little capacity to accommodate growth that is planned for the BSNR at the Cascades Campus.** Cascades' requests for budget support (more instructors) from the main campus has been denied and the amount allocated from the State Legislature is inadequate. If they do grow they will not be able to serve the additional students.
- The BSNR degree program has a robust course offering online, but Cascades no longer offers proctoring so the students have to pay additional funds to take the online tests in a proctored environment.
- Diversity of the BSNR program is low.

5. Conclusions and Detailed Recommendations

In this section, we articulate and expand on a number of recommendations based on the site visits and interactions with BSNR program administration, steering committee, faculty, staff and students, as well as Corvallis and CAscades administration. These recommendations are separated into *governance, resourcing, administration, curriculum, assessment, partnerships and external engagement*, and the *Cascades campus.*

Governance
- **The Program needs a strong governing and reporting structure.** We recommend two committees. Both of these committees should have representation from Fish and Wildlife and Environmental Science - programs who have significant overlap with and provide instruction to BSNR, but currently are not represented on the Steering committee and appear to have little input into curriculum.
    - The Steering Committee, with representatives from all campuses, that manages the overall direction of the program. They would be responsible for making major program decisions (including strategic planning, resources, personnel). Representatives should be senior enough so that they have some influence of resourcing decisions within their own colleges and departments
    - We recommend creating a separate Curriculum Committee that would have oversight over details of curriculum, scheduling, and advising. It would be made up of representative faculty who teach courses in the program, and the advisors (who would skype in from the remote locations).
- **The program requires a dedicated 1.0 FTE Faculty Director,** who is a tenured faculty member in the College of Forestry. This person would report directly to the Forest Ecosystems and Society Department Head. Duties of the Faculty Director would include overall program administration and oversight on marketing, program outreach, curriculum development, staff, professional opportunities, and strategic planning, and teaching one of the capstone or required foundational courses. The Faculty Director will be supported by the Program Coordinator.

Administration
- Maintain the important role played by program advisors**,** and to maintain stability and consistency among advisors and advising at each of the campuses and Ecampus, existing advisors need to be appropriately supported, and changes to advising should be minimized to avoid disruption of this important role. Any changes to advising need to be clearly communicated to the student body because of their strong dependence and loyalty to their advisors. Both Cascades and Corvallis campuses are hiring new advisors and this transition is creating anxiety in the student body.
- **In order to improve tracking of alumni, and engagement of current students** in **multiple aspects of the program, the Program Coordinator in Corvallis should have her duties shifted to 75% administration and 25% advising**. The goal of reducing her

advising is to allow her to track students better upon graduation, maintain better communications, updates, and surveys with alumni and develop and maintain a stronger social media presence (e.g., LinkedIn, Facebook, Twitter, Instagram, student blogging) for current and past students. This would be coordinated, optimized, and not duplicative with CoF. The Program Coordinator should work be supported at the College level to develop appropriate program monitoring and evaluation of learning outcomes and alumni tracking. Current students could be profiled in the blog and/or current students could be enlisted to create "day-in-the-life" blog entries to highlight the student experience.

- Grow the Ecampus, especially through international recruitment.
- Think intentionally about the attachment of this program to CoF. In what ways can the program leverage the name recognition and branding, strong industry ties, world class faculty and curriculum to strengthen the BSNR program - student experience, developing and iterating an innovative curriculum, and career services. How could BSNR expand its appeal, recognition, and student recruitment and retention by creating new professional (e.g., partnerships new types of industries) and programmatic relationships (e.g., business, engineering), developing new strategies in marketing and curriculum to access to a broader audience, professional sectors, and student demographics and perspectives?

Resourcing
- University level: **trial new budget model** to reward faculty/departmental engagement in interdisciplinary programs e.g. could be ecampus funding model on campus for interdisciplinary programs. There is no incentive to participate by non-CoF faculty and departments.
- **University and CoF must commit the resources to allow the growth that the Dean envisions** and to support the current number of students in the program. The under-support for current program curriculum and administration is particularly apparent at Cascades. If the program is to grow to the extent envisioned by Dean, then thier needs to be investment immediately.
- **Add at least one full time teaching faculty to the Cascades campus** to increase the number of courses offerings as well as the stability of course offerings. Particular areas were mentioned by students. These could enhance the existing strengths at Cascades such as the focus on fish and wildlife and conservation. For example, a couple of students mentioned wanting some plant classes while others mentioned a course on fish habitat. These could be combined into a position focusing on riparian habitats, stream ecology and instream resources, restoration, and fish identification thus covering water, restoration, plants and fish habitat. The key would be to figure out a way to meet multiple teaching objectives while filling in some breadth in the core categories.
- Look for ways to increase revenue - especially Cascades campus. For example, they could offer restoration, soils, GIS bootcamps or workshops open to the general public. The revenue could pay for instructors (as contractors and thus not jeopardize their 0.49FTE, but offer more income potential) and provide revenue to the program. This revenue could be used to seed new initiatives (e.g., faculty hires, student opportunities)

Curriculum

- **Define the Program.** Define what is unique to this program and to these students. Think about this in terms of create a community for current students and recruiting new students and external partners. Articulate why this program is not only top notch, but will get them in the career that they want. Show why BSNR is relevant, be nimble, and open to new and emerging careers. The burden is on BSNR to differentiate itself from environmental science, a much more recognizable field. Distinguish yourself as people who are out there doing things and seeing a career, not just in the classroom. Helping to fix and find solutions, not just describing the problems.
- **Maintain and heighten difference between Environmental Sciences, Fish and Wildlife, and BSNR** in options & curriculum - minimise overlap and maximize difference. To increase enrollment in all programs and not cannibalize one.
- **Reduce the number of categories in the Natural Resources Core.** Currently there are 20 categories. Some of these could be combined into a single category, and some categories could be dispersed among other categories.
- **Reduce the number of Specialty Options**. Reduce the number of credits/units required in the Specialty Options if possible.
- **Keep the Independent Speciality Option (ISO) and strengthen the support to students in designing their ISO degree plans.** Develop some structure, at least optional, to help guide the design.
- **Add one (or more) truly interdisciplinary course to the required core**, in addition to 201 and 455. A set of required courses would help to **create a "backbone" to the program**. In addition to strengthening competency development in interdisciplinary natural resources problem solving, the backbone would add structure, **facilitate student community and cohort building**, and potentially improve student retention and graduation rate. Have these new core courses taught by Forestry faculty to help them take ownership of the program. Insure that these courses are interdisciplinary rather than multi-disciplinary.
- **Strengthen the capstone course.** This can be done by:
  - **having stable faculty assignment dedicated to developing and maintain the capstone (**possibly a non-tenure track faculty member with professorial rank [e.g., professor of practice] could teach this);
  - promoting greater communication among instructors of the capstone across the campuses with support from steering and curriculum committees;
  - **considering a blended approach to help ensure effectiveness and consistency of the course** through the use of common online learning components, design and implementation of in-class activities for deeper and integrative learning, and customizations based on unique opportunities associated with individual campuses and instructors and
  - considering incorporating competency-based online learning modules to help fill the gaps in prerequisites for students with varying levels of preparation and experiences.
- Consider adding **two required "bookend" seminars** for BSNR majors.
  - **A first-year seminar** for new BSNR students to **help them find a desired career path, develop a roadmap of their study, and build community.** It can

be designed to help students discover the range of potential careers and the competencies required to enter and succeed in these careers, ascertain the desired career paths for themselves, explore the available options and courses, and design their degree plans to achieve the desired learning outcomes. This process can help students become more intentional in their learning and collect relevant artifacts along the way for assessment, with the support of both faculty and advisors. This seminar can also have a strong positive impact on community building among new students and networking with successful professionals and alums as role models and future contacts.

- A **senior seminar** in which students are guided to **collect artifacts of their learning throughout the program, evaluate these artifacts using rubrics associated with the program learning outcomes, reflect on their learning and professional growth, and develop a professional eportfolio**. This evidence-based and reflective process for developing the eportfolio can be a powerful learning experience. Students can use the quality eportfolios to market themselves to potential employers and have better and more thoughtful preparations for effective job interviews. This process can also yield critically important and direct assessments of student learning for BSNR

- **Add a required internship** to meet student need and desire for internships and practical work related experiences. The hiring of an internship coordinator in the College of Forestry should facilitate this. The students at Cascades are satisfied already with access to internships but main campus students are not. This requirement could be waived for the ecampus students, at least for those who already have sufficient work experiences directly relevant to BSNR.
- **Provide more experiential learning opportunities across all options.**

Assessment
- **Use curriculum mapping to improve curriculum design and facilitate program assessment**
  - Develop a curriculum map showing in which courses each program learning outcomes is introduced, reinforced, and assessed. Identify and address any gaps or unnecessary overlaps by coordinating adjustment of the learning outcomes of relevant courses
  - Develop a plan to efficiently correct assessments and/or artifacts of student work in specific courses for individual program learning outcomes
  - Familiarize students and faculty with the curriculum map to increase the intentionality of the learning process and facilitate the collection of artifacts for assessment
- **Strengthen direct assessment of student learning** against program learning outcomes of BSNR.
  - Develop and use rubrics for the program learning outcomes to evaluate student work
  - Provide ways in the online course management system to help students and faculty to select and deposit student work, throughout their study, as artifacts for

assessment (students can use these with their assessment work in the senior seminar)

- ○ Guide students in the senior seminar to analyze the artifacts of their own learning against the program learning outcomes and reflect on their learning and growth; their reflections are important artifacts for program assessment as well
- ○ Design and conduct structured exit surveys of graduating students
- **Improve tracking of graduates** to assess student success
  - ○ Use social network to facilitate tracking and networking of alumni
  - ○ Possibly build a Linkedin-type group for each cohort, help students build quality profiles in the senior seminar, facilitate their connections with professionals and alumni, and later use the group to track and keep in touch with the students after graduation
  - ○ Conduct surveys or studies of the Linkedin profiles to assess student success after graduation

Partnerships/external relationships

- **There is enormous potential for this program to cultivate relationships with professional sectors. This needs to be a focus of the administration to create student opportunities, increase potential for fundraising, and develop strong professional relations across the non-profit, public, and private sectors to lead this program to greater national recognition**. **Initiate strategic partnerships** in and marketing to sectors not traditionally engaged by CoF (e.g., consumer products, green technologies, design, food and beverage, and others) and create access for a new and different student population and professional opportunities of the program will help build the cross-sectoral visibility and within the University, the state and beyond.
- Enhance and maintain presence of program on social media, including doing more web site postings, keeping social media active to engage recent grads, alums and current students, set up and encourage LinkedIn or other ways for students to connect to eachother and program and expose them to possible careers and so on. Important point here is that there are no data on student success and some of these data could be acquired by someone like Teraina if she had more time to devote to this. Create a community identity and practice, supporting both students and alumni and a broader natural resources community.
- If the program adds a "careers" course, it could focus on bringing in alumni to share their career pathways and in so doing could help link students to the broader community while gaining alumni buy in and developing alumni pride in their program.

Cascades

- **The Cascades Campus has enormous potential for growth and the University and CoF needs to invest in this growth.** The BSNR has a student enrollment of 115 students, which constitutes greater than 10% of the total Cascades campus student body. The Program at the Cascades campus needs to be creative and entrepreneurial to leverage the visibility and importance at this campus to increase program offerings and leverage additional resources. For example, BSNR could work with Business or Engineering to

create synergistic opportunities related to regional growth and development and entrepreneurship.

- **Align position descriptions with Cascades faculty with the reality of teaching expectations and program needs.**
- **Find a way to return Ecampus revenue to Cascades because a large proportion of their students need to take e-courses but there is a disincentive to do so by the NR program due to lost revenue.**
- They should not be modelled after needs and expectations from Corvallis campus.
- The Cascades campus needs additional capacity in teaching, private/public/non-profit sector engagement, professional mentorship, and teaching the FR 455 capstone course.
- We recommend **creating a new 1.0 FTE faculty appointment perhaps as a Professor of Practice** (PoP). The PoP will be a recognized leader and practitioner in the public, private, and/or non-profit sectors with extensive professional experience and network. Duties could include coordinating communication with external partners, teaching the capstone course, providing mentorship and career advice for students. Though supporting the entire BSNR program, they could be based at the Cascades campus further adding to the strength of the BSNR Cacades.