



RANGELAND ECOLOGY
AND WATERSHED
MANAGEMENT
UNDERGRADUATE
DEGREE PROGRAM
REACCREDITATION
VISITATION TEAM
REPORT

Department of Ecosystem Science and Management
University of Wyoming

2019

Rangeland Ecology and Watershed Management Undergraduate Degree Program
Department of Ecosystem Science and Management
College of Agriculture and Natural Resources
University of Wyoming
Laramie, WY
October 27-29, 2019

SRM Visitation Team Report

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Introduction

The Society for Range Management (SRM) Program Accreditation Committee Chair, Kim Stine, appointed the visitation team (VT) to convene in Laramie, WY for the re-accreditation program review of the Rangeland Ecology and Watershed Management undergraduate degree program offered by the Department of Ecosystem Science and Management in the College of Agriculture and Natural Resources at the University of Wyoming. The site visit was scheduled for October 27-30, Sunday through Wednesday. Unfortunately, a late October snowstorm and cold weather, delayed the VT members getting to Laramie until late Monday evening, October 28. The VT was able to meet with the REM Program Lead, Dr. Jeff Beck, and Department Head, Dr. Scott Miller, and range and soils faculty via audio/visual conference call using zoom on Monday morning October 28. The dinner with Department faculty on October 27 and the dinner with stakeholders on October 28 unfortunately had to be cancelled. Dr. Jeff Beck was able to reschedule the appointments so that the VT was able to meet with the upper administration (Provost, Dean, and Associate Deans), support staff, entomology and soils faculty, and undergraduate students. Despite the unusual cold and snowy weather, the VT was treated to exceptionally warm Wyoming hospitality. The purpose of this report is to provide a strengths, weaknesses, opportunities, and threats (SWOT) assessment of each Accreditation Standard.

Standard I. Rangeland Ecology and Management Unit Characteristics

The self-evaluation report included all the necessary information to review Accreditation Standard I in addition to the information gathered by the Visitation Team (VT). The historical summary was very helpful in understanding the context of University of Wyoming's range program and the recent turnover in faculty. The Department has a clearly identified Range Lead, Dr. Jeff Beck, and a letter sent to Dean Barbara Rasco by Department Head Scott Miller was provided to verify the official action on October 18, 2019. The organizational structure was provided but difficult to read in both print and electronic versions of the self-evaluation report. The Department learning outcomes were identified in the report and are also available online in the university catalog. The Department also provided a future outlook regarding the challenges the Rangeland Ecology and Watershed Management (REWM) program is likely to face over the next five to ten years.

Strengths

- Long tradition of an excellent Range Program at UW including teaching, research, and extension.
- A well-articulated set of goals and objectives and action plans were in the Department's strategic plan.
- Specific REWM goals and objectives to integrate teaching, research, and extension; prepare students to excel professionally.
- Mechanisms help faculty to develop and implement curriculum changes to meet the evolving needs of rangeland management practitioners.
- Range Program Lead is identified with adequate workload time (5%) devoted to assigned duties.
- Articulated views of future (2024-2029) challenges facing the Department.

Weaknesses

- Clerical support is lacking (only one front office person).
- Accounting system is a time drain on faculty resources.

Opportunities

- Provost and Dean have vision, action plans, and awareness of the importance of rangelands and the Rangeland Ecology and Watershed Management program for UW and the state that will benefit the Department in future hires in both faculty lines, instructors, and extension faculty and field specialists.
- Collaboration among faculty, stakeholders, and administrators could create a plan to optimize efficient recovery of land grant university mission effectiveness in rangeland ecology and management.
- Faculty could be allowed more flexibility in FTE assignments (teaching, research, or extension) to play into their strengths.
- Additional or replacement faculty could provide students more opportunity for career focus with a pick list of restored or new courses.

Threats

- Volatility in state funding could become problematic again.
- Other Natural Resource programs on campus could compete with incoming students and/or entice transfer of range majors to those programs.
- Lack of staffing support (i.e. secretarial and accounting staff) has resulted in faculty frustration and a potential for reduced faculty retention.

- As the University is limited by budgetary constraints in restoring lost faculty, reframing programs may divert future personnel from meeting rangeland ecology and management needs.

Meets Accreditation Standard I.

Standard II. Degree credential

The self-evaluation report included the pertinent information to evaluate Accreditation Standard II. The Rangeland Ecology and Watershed Management degree is clearly listed on the official transcript. The appropriate website links from the university catalog were provided. The catalog lists the Department faculty, course requirements, and course descriptions. The program is offered as a major.

Strengths

- Degree program clearly identified with the word “range” and “rangeland” in the official transcript and in the university catalog and website.
- The program is offered as a major.

Weaknesses

- None identified

Opportunities

- None identified

Threats

- Non identified

Meets Accreditation Standard II.

Standard III. Curriculum and Advising/mentoring

Curriculum – General Concepts

- Biology (4 credits) - Required courses address these concepts.
- Chemistry (4 credits) - Required courses address these concepts.
- Soil Science (4 credits) - Required courses address these concepts.
- Plant Taxonomy (3 credits, should include elements of both sight identification, and plant classification - keying) - Required courses address these concepts.
- Quantitative Concepts (9 credits) - Required courses address these concepts.
- Integrated Natural Sciences (9 credits) - Required courses address these concepts.
- Resource Management (9 credits) - Required courses address these concepts with an emphasis on headwaters stewardship as reflected in students conversations and required classes in REWM 3100 (3 credits): Principles of Wildland Water Quality and REWM 4700 (3 credits): Wildland Watershed Management.
- Economics (3 credits) - Required courses address these concepts. Both Microeconomics and AGEC 4700 (3 credits): Economics of Range Resources are required
- Communication (3 credits) Speaking, Writing and Listening - Required courses address these concepts.

Rangeland Ecology and Management Specific Concepts

- Introduction to Rangeland Ecology and Management – REWM 2000 uses the textbook - Holechek et al. [2011]. Holechek, J. L., R. D. Pieper, and C. H. Herbel. 2011. Range Management: Principles and Practices. Sixth Edition. Prentice-Hall, Upper Saddle, New Jersey.) Chapters 1-10 with supplementary materials to address Chapter 14. Other required classes address remaining subjects sometimes covered in such a class or in this textbook.
- Applied Rangeland Ecology -REWM 4830 - Ecological Applications for Wildland Management
- Inventory and Assessment Methods – REWM 4330 Rangeland Ecosystem Assessment and Monitoring (based on the catalog description - The Syllabus for this class was missing in the Self-Evaluation Report)
- Vegetation/Habitat Management Techniques - REWM 4850 - Rangeland Vegetation Management Techniques and REWM 4100 - Nutritional Ecology and Management of Rangeland Herbivores
- Rangeland Management Planning and Problem Solving – REWM 4900 - Rangeland Management Planning
- Woven throughout the REM specific coursework there should be professional development – While teamwork is apparently required in REWM 4900 - Rangeland Management Planning, which also addresses human dimensions, there is little in any syllabus that explicitly addresses natural resources law or policy or clarifies that students learn collaboration and negotiation skills. Some other classes have the opportunity to discuss the legal or policy basis for various considerations. However those syllabi do not clarify this either. Several syllabi clarify that students are evaluated on their writing and listening/speaking communication skills.
- While most syllabi were provided, no tests were provided.

Advising/mentoring

- Each student pursuing the REM program should have an assigned academic advisor/mentor. - The University of Wyoming has adopted a professional advising model.
- Discussion of the advising/mentoring protocol. - Faculty serve as mentors to assigned students by academic advisors based on student's career goals.

- How are students matched with advisors/mentors? - Students have one advisor. Faculty are matched with students based upon the student's interest and goals.
- How do advisors/mentors keep abreast of new information germane to the progress of the student? - Advisors have access to student records through Degree Works, an online student progress tracking program.
- What criteria are used to guide advisors/mentors regarding course substitutions and/or decisions about which courses fulfill the intent of the General Concepts curriculum categories? – Before substitutions are approved, advisors contact appropriate faculty/REM Lead for approval.
- What is the mechanism in place to ensure that each student meets with their advisor/mentor at least twice a year to discuss academic progress and professional development? - Each student at the University of Wyoming must meet with their academic advisor prior to registering for spring and fall semesters. No mechanism is in place to ensure students meet with Faculty mentors.

Strengths

- Students take 27 credits of Rangeland Ecology and Watershed Management courses.
- Imbedded in the REWM curriculum are components that fulfill the advanced writing requirements.
- The Professional Advising staff is very knowledgeable of the REWM curriculum, job/internship possibilities, and the needs of the students.
- Professional advisors free faculty time for mentoring.

Weaknesses

- Only one of three courses listed under the 9 credits of Resource Management has the word “management” in the title.
- Some inconsistencies in catalog course description and syllabi course description. For example, the words “rangeland” and “rangelands” were replaced by the words “wildland” and “wildlands” in REWM 2000 course description.
- There is little in any syllabus that explicitly addresses natural resources law or policy or clarifies that students learn collaboration and negotiation skills.

Opportunities

- Continue to engage the Professional Advisors and Internship Coordinator to increase accessibility of jobs/internships for students.

Threats

- The current Professional Advisor and Internship Coordinator have previous experience with the REWM program and curriculum; if they were to leave their position and be replaced by someone with less familiarity of the program, advisees could be assigned an advisor with limited experience in rangelands, inhibiting their ability to graduate on-time and receive timely information about summer employment

Meets Accreditation Standard III.

Standard IV. Rangeland Ecology and Management Educators

The abbreviated CVs included in the self-evaluation report did not provide clear evidence for some of these criteria. For example only some of their publications were listed; none of their presentations (e.g. at SRM annual meetings) were listed; no service (e.g. to SRM) was described; Awards (e.g. for excellence in teaching) were listed; and their PhD dissertation title was not listed. Information that was provided is summarized in the table below with the REM specific courses, REM or related PhD degrees, REM or Rangelands Publications, and both SRM membership and service (noted as membership for longer than 1 year) bolded.

Educator	Membership and Service to SRM	Publications targeting the REM Profession	PhD in Range or app. Sci. Discipline directly related to REM	REM Program Lead or under their oversight	Substantive REM teaching
Christianson	No record	Diversity of applied journals, Not REM	Ecol. Env. Sci.	Yes?	2000 Principles of Rangeland Management ½ of 4100 Nut. Ecol and Herbivore mgmt.
Wilcox	1/1/19	Diversity of ecological journals	Ecology	Yes?	2400-Ecosystems/plants
Hufford	1/1/19	REM-in review Rangelands-2015	Botany	No?	
Beck	1992 Active on PAC	REM-2018, 2017, 2016, 2014x2, 2012, 2011, 2005, 2004 Rangelands-2015,	Forestry, Wildlife and Range Sci. Wildlife and Range Sci.	REM lead	4330-Assessment & Monitoring 4850- Rangeland Veg. Mgmt. Techniques
Miller	1/1/19	REM-2017, 73 peer reviewed	Watershed Management	Dept. Chair	4530-Seminar 4900-Planning
Murphy	1/1/18	Rangelands-2012 +41 peer-reviewed	Biology MS-Wildlife & Nat. Res.	Yes?	4830-Ecol Applications for Wildland Mgmt.
Scasta	2007	REM 2019, 2018, 2016 Rangelands 2016 +60 Peer reviewed	Nat Res Ecol. & Mgmt. MS Crop Sci. BS REM	Yes?	3390 Range Judging ½ of 4100 Nut. Ecol and Herbivore mgmt., 4440-App. Fire Ecol.
Norton		JRM-2003	Nat. Res. Conservation	No?	
Paige		REM-2017, 2016, 2014 +42 peer reviewed	Political Sci. MS Soil Physics	No?	

Stahl		104 peer reviewed	Botany, Ecology		4200 Reclamation of Drastically disturbed lands
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In summary, faculty in REM at UW seem to be very skilled individuals from a diversity of backgrounds and they are collectively providing a high quality of teaching to students and are engaged in rangeland and related Wyoming issues in rangeland and resource management and ecology. While the diverse faculty has some strength in more traditional rangeland ecology and management, they are not as strong as they were before recent retirements nor as strong as they are likely to become as an Ag Initiative unfolds and hopefully adds capacity in REM. While the faculty marginally meet the expectations for program accreditation currently, they have many opportunities to more robustly do so in the near future. Adding or building faculty engagement with the Society for Range Management is expected and something to watch for in Program Accreditation Annual Reports.

Faculty in the REM Program:

Diversity of backgrounds – Yes, there is a great deal of diversity both within REM and in related fields. These include Wildlife, Watershed management and hydrology, Soils, Planning, botany or plant science, fire ecology, restoration ecology, and entomology.

Substantial Professional Experience in range management – While only two faculty, Beck and Scasta, have substantial experience within the narrow field of rangeland ecology and are active participants in the Society for Range Management; Christianson, Hufford, Miller, Murphy, Paige, Vaughn, Wilcox and others have substantial experience in rangeland related fields and provide key synergies through their expertise in botany, ecology, hydrology, landscape ecology, soils, watershed management, and wildlife management.

Terminal Degrees from a variety of institutions – Yes, there is almost no redundancy of PhD institutions.

Competence in the assigned areas of specialization – There seems to be no issue here.

Enthusiasm, ability and effectiveness in teaching – While assessment or course evaluation data were not provided, the faculty enthusiasm and competence was reflected in the outstanding attitude and competent professionalism presented by limited interactions (due to weather delays in VT arrival) and the students in the Range Club evening event.

Aptitude for working closely with students and stimulating independent thinking -- Student conversations reflected this quite well.

Close and continuous liaison with the range profession – While Beck and Scasta reflect this strongly. Five additional faculty have published at least once in REM (or JRM) or Rangelands. There was strong desire by many at the institution to build back this close relationship with SRM and the REM profession. An inquiry to SRM provided the dates of membership noted in the table above. It is expected that this will be reflected in new hires and hopefully in the developing careers of Wilcox and Christianson. There seems to be recognition in Wyoming that it is now Ag’s turn for enhancements at UW and that the University is due for enhancements, perhaps at the \$30 million level. The Dean sent a PowerPoint “presentation from last week that outlines our strategic initiatives.” This presentation, “Our Quest for

Excellence” highlighted fundraising efforts across Wyoming that seeks an “Ag Research & Excellence Fund:” with an endowed professorship(s) in Rangeland and Ranch Management. In a section entitled “Rebuild Teaching Capacity in Key Areas, “Rangeland Resources (ESM, AGECE)” was listed first. Rangeland and Ranch Management was later listed first in Program Priorities. This is consistent with what we often heard from a variety of conversations about the strong desire by politically active constituents to reshape the rangeland management staffing and capacity. There was a recent (~2015) statewide budget shortfall that led to a large number of range faculty (perhaps because of their proximity to retirement) taking the opportunity for a buyout that was offered to faculty across campus. Since then new faculty (Christianson and Wilcox) have been hired to teach critical classes and yet there remains strong motivation to rebuild rangeland management expertise.

Efforts to stay abreast of new developments – This did not seem to be an issue as many of the faculty are fully engaged in extension or research with outside funding from a variety of sources.

Participation in appropriate professional, scientific, and scholarly endeavors – The faculty all appeared to be well engaged in their science and professional application of their research.

The program supports high quality teaching – Administration recognizes the need for faculty to be in the classroom. Teaching loads have increased for all teaching faculty across the university. Promotion and Tenure benchmarks reflect the added teaching workloads of faculty, who strongly desire to excel in research, and the impacts it has on faculty time for scholarly activities. The desire for high quality extension teaching was also expressed by many and some examples were very noteworthy. Both resident instruction and extension teaching in collaboration with UW were very evident for example in Sheridan, Wyoming.

By appointments and promotions – There is a very appropriate mix of faculty of various ranks including new faculty, recent hires, and associate and full professors. No issues were noted with regard to promotion and there seems to be a strong desire to hire additional faculty from administrators, faculty, and constituents. It was noted that existing faculty appear to be on track for promotion and tenure.

Responsiveness to changes in the profession and teaching methods -- Unfortunately student evaluations and assessment data were not available due to recent workloads after early retirements and recent turnover in clerical staff. However, the VT did not have concerns about professionalism and teaching methods. Faculty and students noted the ease and frequency of access to rangelands close to campus for field trips.

Provides a positive and effective environment for learning by supporting human diversity, profits from student evaluations of faculty performance and excellent faculty have been recognized and rewarded. -- While no student evaluation or assessment data were provided, the on-line student evaluation form and exit interview questions were provided and both seem to be thorough. There is a “Center for Teaching and Learning” that supports quality teaching.

Workloads and responsibilities allocated according to interests and competence of faculty members so that quality of instruction is maintained at a high level. -- There seemed to be a good fit between the courses assigned and the interests and expertise of the faculty members assigned to teach the various classes.

Work assignments take into account time needed for faculty for student counseling, institutional and professional activities and self-improvement – While it is somewhat worrisome that Scasta is on a three-way split appointment and this tends to stretch a person in multiple directions, He seems to be handling this without undue stress and seems very productive in multiple arenas. His teaching provides needed and important connections between students and real-world rangeland management applications. While all the faculty seems to be fully engaged and busy, none appeared to be stretched too far for personal development. One faculty member, Melanie Murphy, was away on a Sabbatical leave.

Class sizes and student teacher ratios are appropriate – While some classes are large, that seems to be due to student interest and therefore presumably due to quality of teaching.

Student advisor ratios are not excessive and staffed by people qualified competent and dedicated to advisement in REM - UW has adopted the model of professional advisor and the professional advisors seem to be recently graduated alumni of UW who have close connection to student needs. This model frees up faculty time to be more invested in mentoring because they are not dealing with the more mundane role of helping students work out schedules. There did seem to be a strong bond between the students and their teachers.

Strengths

- Long tradition of excellent Range Program at UW.
- The faculty has a diversity of expertise and some of it is at the journey level in rangeland ecology and management sub-disciplines.
- The faculty seem strongly motivated to teach well and to provide students with relevant field experiences.
- Large interdisciplinary Ecosystem Science and Management Department with a Rangeland Ecology and Watershed Management major and a shared major in Agroecology.
- Faculty on track for their third year review.

Weaknesses

- Substantial reduction in rangeland management faculty in recent years due to inducements to retire given the State's financial situation.
- Limited Extension Specialist FTE limits the reach of Cooperative Extension in addressing issues vital to Wyoming and limits the diversity of faculty available to enrich undergraduate education.

Opportunities

- Provost and Dean have vision, action plans, and awareness of the importance of rangelands and the Rangeland Ecology and Watershed Management program for UW and the state.
- Collaboration among faculty, stakeholders, and administrators could create a plan to optimize efficient recovery of land grant university mission effectiveness in rangeland ecology and management.
- Faculty could be allowed more flexibility in FTE assignments (teaching, research, or extension) to play into their strengths.
- Additional or replacement faculty could provide students more opportunity for career focus with a pick list of restored or new courses.
- Could hire a lecturer focused on distance education.
- Faculty could collaborate more with Animal Science.

Threats

- Lack of staffing support (i.e. secretarial and accounting staff) has resulted in faculty frustration and a potential for reduced faculty retention.
- Volatility in state funding could become problematic again.

Meets Accreditation Standard IV.

Standard V. Extracurricular Professional Development

The REWM Department at UW supports four student organizations and clubs within their Department for undergraduates that include: The Range Club, a student chapter of the Society for Range Management (SRM), advised by Dr. Derek Scasta; the Reclamation Outreach and Research (ROaR) Club, a Student Chapter of the American Society of Mining and Reclamation (ASMR), advised by Dr. Peter Stahl; the Entomology Club, and the Soil and Water Conservation Society Student Chapter.

Structure and Membership - The Range Club is an RSO (Recognized Student Organization) that is open to all students and currently has participation of approximately one third of REWM undergraduate students. (See Table 8 of the Self-Evaluation; 90 REWM students and Data presented during the Range Club Presentation; 33 current members). Leadership within the club is structured by an officer team that is comprised of a President, Vice-President, Treasurer, Secretary, and Historian. At the National level of SRM, UW has four elected members with two in the 2019-2020 Student Conclave and two in the Young Professionals Conclave respectively.

The Department supports faculty coaches for the different competitive judging teams held within SRM. Currently the Plant Identification Team is coached by Dr. Kevin Wilcox, the Undergraduate Range Management Exam (ERME), the Extemporaneous Speaking Team and the Undergraduate Research Paper presentations are coached by Dr. Derek Scasta.

Activities and Participation - UW Range Club members participate in both State SRM Section meetings and the National SRM conference. In 2019, UW took 12 students to the National Conference in Minneapolis. The team had great success winning the prestigious Trail Boss Award, second place in the Range Cup, a first place in the Extemporaneous Speaking Contest, two individual Top 10 places in the URME, and was one of the top schools to have the most participants in the Undergraduate Research Paper Session. UW is one of only two schools to have won the Trail Boss Award twice in its history. Also, in 2019, UW took 22 undergrad students to the Joint Wyoming-Colorado State Conference where they also received multiple awards in all categories. UW historically has solid participation in both levels of SRM conferences with an average of 12-15 students attending and participating annually in all student contests.

Other activities the UW Range Club is involved in include maintaining a Club Facebook Page, sampling vegetation samples for nutrient content, assisting the Cowboy Classic; an FFA event where plant ID, range management knowledge and soils competitions are held, FFA recruiting activities, Campus Ag Days, BBQs, holiday activities, assisting local ranches with branding, Ag Ambassadors and professional development field trips.

Financial Support - Funding for undergraduate students to attend professional meetings is provided from 5 main funding sources: fundraising through firewood sales and an annual banquet auction; funds through the College of Ag and Natural Resources SEND grants (couple hundred dollars per year), intermittent Departmental funds through Ecosystem Science and Management, six external private business sponsors and student out-of-pocket.

Firewood sales are a 40-year-old tradition, where students help cut, split and haul firewood for \$150/ per cord. Historically, they sell 20 cords a year.

Memberships in Professional Societies - It is apparent that the importance of participation in professional societies is conveyed to the range students of UW by the percentage of students who attend SRM functions and the success they have accomplished. Participation in other clubs and

societies that range students are involved in include but are not limited to: Wyoming Cattleman's Association, Alpha Tau Alpha, Agroecology Club, Block and Bridle, Farm and Ranch Club, Wyoming Sheep Growers Association, Alpha Gamma Roa, Sigma Alpha, Colligate FFA, and the Pre-Vet Club.

Professional Development Information and Dissemination - The REWM Department disseminates career information and job advertisements by a variety of methods. There are two job fairs annually; fall and spring semester, agency staff providing in-class presentations, communication networks from colleagues and former students, Department-wide student email lists and a job bulletin board located outside the ESM Department office. Currently there are no employment tracking systems in place at the REWM Department; but staff has stated that “every student that wants a job, gets hired. There are more positions available than students to fill them”.

Research and internship opportunities for undergrad students are advertised to students in class, through email, and through individual contact by faculty. Students also contact faculty and grad students for opportunities to work in labs and assist in grad research. There is a limited opportunity for undergrads to apply for research support on campus through the Wyoming NASA Space Grant Consortium. UW also holds a university-wide research day in April where undergrads can showcase their research projects.

Since academic year 2018, each student at the REWM Department has a faculty mentor and a professional academic advisor. This new structure of professional advisors is led by Mrs. Kerry Casper, Manager. Hunter Bruce is the Academic Advising Profession charged with advising students enrolled in the REWM undergrad program, and Sarah Kauer formerly the Recruitment Coordinator, now the Internship Coordinator works with students on their career readiness. This structure realigns faculty to mentor their assigned students by providing advice on internships, career decisions, writing letters of recommendation, suggesting elective courses, and other activities that best move students toward their career goals. Student progress is monitored through Degree Works, an online student progress tracking program.

UW also offers SOAR, is a competency-based program made up of experiences intended to shape, engage and prepare students to meet unpredictable and complex challenges for the future. Participants engage in high impact learning experiences in research, cross-cultural and international perspectives, internships, entrepreneurship, leadership and community service. Students gain hands-on experience in the 7 competencies deemed most important by employers: Civic and community engagement, Cultural Competence, Career Readiness, Research Experience, Communication Skills, Leadership and Development, and Critical Thinking and Problem Solving while they fine-tune skills to effectively articulate experiences to a range of audiences.

Summary

UW REWM undergrads have entered the workforce in professional positions within a wide range of range related, processed-based occupations. Historically, UW students are successful in state and federal land management agencies, the mining and reclamation industry, managing ranches, working in Non-governmental organizations (NGOs) and within research institutions. Students migrate to UW from numerous states besides Wyoming such as Colorado, Nebraska, California, Oregon, and others as they feel it is a good University to meet their goals. Students during the Range Club evening stated they were interested in a broad array of occupations including: Ag Teacher-Educator, Ranching Operation Manager, Wyoming Game and Fish, Natural Resources Conservation Service (NRCS), Energy Reclamation Specialist, and Ag Advisor to name a few and felt they were getting the education that would enable

them to succeed. The students were well spoken, engaging, professional and confident. It was refreshing to learn that some students from agricultural backgrounds were taking the education and technology learned in their college curriculum back home and applying it on their family operations.

Strengths

- Active and Successful UW Range Club
- Active participation at National SRM and State Section Conferences
- Successful in all SRM student competitions with national recognition
- Range Club traditions that span multiple decades
- Department/university financial support
- Culture of undergraduate students involved in research
- Undergrad students from numerous states (besides Wyoming)
- Preparedness for a diversity of occupations
- Partnership with Sheridan Community College and the Western Land Management Practicum

Weaknesses

- Career Tracking mechanism not available

Opportunities

- Continue to work through existing UW Initiatives to increase diversity including Native American and Historically Underrepresented Student participation and enrollment. (Department of Ecosystem Science and Management Strategic Plan #3c).

Threats

- Secure more dependable funding and transportation to maintain field trips and hands-on learning.

Meets Accreditation Standard V.

Standard VI. Assessment of Courses/Program Effectiveness

Included in the UW self-evaluation were the survey for teaching evaluations that students complete for each course they enroll in during a specific semester and the online, exit interview survey that is submitted to graduating students. While the teaching evaluation survey that was included is not requested for completion of this standard, the exit interview survey seems appropriate to provide data that could be acted upon to address any concerns that might be stated. No teaching evaluation or exit interview data were included in the self-evaluation, although during the site visit VT members were told data from a previous year did exist. The degree requirements were included in the report, however, no information on how the courses introduce, reinforce and apply the content was provided. Student enrollment data from 2010-2019 for all REWM courses and the major were included in the self-evaluation. No information was presented concerning employment for graduates. Administrators with whom we met during the site visit stated that Outcomes Assessment had been one of the functions negatively affected by the severe budget cuts in previous years and that there is a current goal of addressing this need in the very near future.

Strengths

- All UW Administrators recognized the need for Outcomes Assessment and stated their intent to develop an assessment plan for programs throughout the university.
- The program currently states their mission program learning objectives. These could be used to develop the framework for an assessment plan.
- Students enrolled as majors in the REWM program appear to increase from one year to the next, indicating that recruitment of students into the program either as transfer students from community colleges or as transfers from another major within the university has been consistent over the years. That trend continues today. New majors added into every class level (e.g. sophomores to juniors) each year.

Weaknesses

- A lack of understanding of the ability to use assessment results to assist in identifying weaknesses and redundancies in the curriculum was expressed by faculty.
- A lack of culture tying teaching, learning and assessment together.
- No review process was in place for faculty to have their course objectives and student learning outcomes reviewed to ensure they were connected to program level objectives and the mission of the program.
- Absence of staff support in entering and organizing data collected for assessment.

Opportunities

- Developing a new assessment plan and carefully mapping the curriculum required by the majors provides the opportunity to clearly evaluate the curriculum and develop efficiencies in course content.
- The Center for Teaching and Learning appears well suited to offer workshops for faculty to develop an assessment plan and sustainable assessment process.
- Students throughout the state are clearly aware of rangefields, thus maintaining the number of students within the major should be possible.

Threats

- The absence of an outcomes assessment process and a curriculum map prevents the REWM Program from determining if they are meeting their Mission and the needs of the students to become career or graduate school ready.
- Any future faculty losses could become permanent given the lack of assessment results and curriculum mapping which could illustrate the importance of replacing that faculty member's expertise.
- The ability of the program to maintain contact with graduates is inhibited by the loss of a graduate's email address soon after graduation, thus significantly reducing the ability of the program to track employment of students and use their experiences to determine long-term strengths of the program.

Does not meet Accreditation Standard VI.

Standard VII. University Credentials and Support

The self-evaluation report in addition to the site visit provided the necessary information to evaluate Accreditation Standard VII. The University of Wyoming is accredited by the Higher Learning Commission. Base support for library services is excellent in both print and electronic access. The Department has adequate space for offices, classrooms, and laboratories. The Range Club has their own study room which is a tremendous strength. Salary information was not provided, so it was hard to determine if competitive wages are being offered to new faculty and if salaries of tenured faculty are keeping pace with inflation to avoid salary compression. The process for promotion and tenure was laid out and there is a strong 3rd-year review. Benchmarks (number of papers published, grant dollars received, etc.) were not provided so it is hard to judge against expectations. The Department has one office manager and one accountant. In the past they have had 3-4 office positions. The Rocky Mountain Herbarium is a tremendous asset to the Department, faculty, and students. The close proximity to public rangelands offers opportunity for outdoor class experiences. The diversity of other units (e.g., Animal Science, Haub School of Environment and Natural Resources, Biodiversity Institute) in the college and university provide cross-disciplinary opportunities for research, teaching, and outreach.

Strengths

- University of Wyoming is accredited by the Higher Learning Commission.
- The University of Wyoming Library system has vast in print holdings and access to electronic (online) materials to pertinent agriculture, natural resources, and ecology disciplines including *Rangeland Ecology and Management* and *Rangelands* to assist undergraduate students, graduate students, and faculty in academic and research pursuits.
- The College of Agriculture and Natural Resources has adequate space for classrooms, laboratories, faculty and staff offices, and graduate student offices.
- The Range Club has their own study room.
- University of Wyoming houses one of the largest herbariums in North America, the Rocky Mountain Herbarium.
- Alan A. Beetle Grass Herbarium (The Range Teaching Herbarium) is housed in the Department and has a large collection of specimens for teaching.
- Public rangelands and forests are near campus to permit class field trips.
- Very competent accountant with institutional knowledge of accounting systems and well appreciated by faculty and staff.

Weaknesses

- No salary data provided to understand hiring competitiveness or salary compression for faculty retention.
- Tenure benchmarks are vague.
- High staff turnover

Opportunities

- Hire more office support staff to increase operational efficiencies.

Threats

- Support staff salaries limit retention.

Meets Accreditation Standard VII.