

**Assessment of Student Learning Outcomes
Degree Program Report**

College: *College of the Sciences*
 Program: *Cultural and Environmental Resource Management (CERM)*
 Degree: *Master of Science*
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 Academic Year of Report: *2014-15*

This is the seventh year we have operated with assessment goals approved December 2007. For many years there was little feedback on data from our annual assessment, although this is changing. Our assessment methods have changed very little since 2007, and the results continue to be satisfactory to excellent. As budget developments and other factors have contributed to a somewhat downsized program over the last few years, changes in quantitative measures involving a smaller overall number of students (n=10-16) continue to complicate assessment. We plan to make adjustments to our assessment plan in response to comments on the 2013-14 assessment report.

Please note that the program underwent a name change in the past year from “Resource Management (REM)” to “Cultural and Environmental Resource Management (CERM).” This change was made upon agreement by the majority of the faculty in an attempt to better represent the breadth of the program as well as aid in recruitment. The old name still persists in some ways, however, such as in course numbers.

1. What student learning outcomes were assessed this year, and why?

We assessed all 6 outcomes stated in our 2007 Student Learning Outcome Assessment Plan, as we have done annually since 2007. See that plan attached to this report for details on the specific outcomes assessed, and reasons for these outcomes. Here we relate them to the current CWU strategic plan:

CERM Student Learning Outcomes	CWU Strategic Plan Outcome(s)
1: “Students will demonstrate ability to effectively communicate about REM issues”	1.1.1
2: “Students will propose, perform, & report on significant independent research”	1.1.1, 1.1.2
3: “Students will demonstrate knowledge of U.S. environmental & resource laws & regulations”	1.1.1
4: “Students will demonstrate knowledge of procedures for environmental analysis”	1.1.1
5: “Students will be able to assess causes, character, affected parties, and resolution of resource-based conflicts”	1.1.1
6: “Students will engage in professional activities”	3.1.1, 3.2.1

Note that the 2013-14 feedback document reported a CERM score of 2/4 with a target of 3/4 for this question. The comment was “I didn’t see an assessment of attitudes.” The current program co-directors

who began their terms this academic year were not are of this feedback until December, but plan to hold faculty meetings this academic year to work towards adding attitude assessment to the CERM SLO Plan.

2. How were they assessed?

See the Student Learning Outcome Assessment Plan (attached) for details on (A) What methods were used, (B) Who was assessed, and (C) When was it assessed. Here we list whether each assessment method was direct or indirect, and whether it assessed performance, knowledge, and/or attitudes.

CERM SLO	Method	Direct/Indirect	Performance/Knowledge/Attitudes
1	A) Oral presentations	Direct	Performance/Knowledge
	B) Written papers	Direct	Performance/Knowledge
2	A) Thesis proposal	Direct	Performance/Knowledge
	B) Master's thesis completion	Direct	Performance/Knowledge
3	Oral presentation & written paper(s)	Direct	Performance/Knowledge
4	Written paper(s) & exam(s)	Direct	Performance/Knowledge
5	Oral presentation & written paper(s)	Direct	Performance/Knowledge
6	A) Conference attendance	Direct	Performance
	B) Conference presentations and/or publications	Direct	Performance
	C) Applications for research funding	Direct	Performance

Note that the 2013-14 feedback document reported a CERM score of 3/4 with a target of 3/4 for this question. The comment was "I didn't see any indirect assessment methods, e.g., surveys, interviews, focus groups, etc." The current program co-directors who began their terms this academic year were not aware of this feedback until December, but plan to hold faculty meetings this academic year to work towards developing and adding indirect methods of assessment to the CERM SLO Plan. However, use of instruments like surveys will require some financial and technical support that has not been readily available. We suggest that a formal process be established for assisting programs and departments in obtaining such alumni assessment information. As our last program review in 2010-11 indicated, such resources are badly needed to maintain outreach with our alumni and conduct useful alumni surveys for assessment purposes.

To obtain better data for assessment, most programs including ours would also benefit from discussions with an expert in assessment of graduate level programs, who might facilitate discussions of methods, and increased resources for data collection and implementation. Perhaps Graduate Studies could work towards developing means for Faculty 180 to provide data to help complete and expedite assessment reporting.

3. What was learned? See SLO Goals 1 through 6 below.

Student Learning Outcome Goal 1: Students will demonstrate an ability to effectively communicate about REM issues. This goal has two methods of assessment. These two are listed below with their methods, targeted criterion of achievement, and data from the period of review:

A) Oral presentations: The target is that 90% of students earn 80% of possible points on rubric including coverage of material and effective delivery in fall, winter, and spring core classes. Originally we assessed REM 501, 505 and 562, but have recently replaced REM 505 with REM 502 as REM 505 class assignments have shifted. In REM 501 (Fall 2014), in the students' first quarter of graduate school,

100% (14 students) met the standard for oral presentations. In REM 502 (Winter 2015), 100% (11 students) met this standard. In REM 562 (Spring 2015), 100% (14 students) met the standard for oral presentations. These figures are generally meeting our targets although we continue to improve standards for oral presentation skills.

B) Written papers: The target is that 90% of students earn 80% of possible points on rubric including coverage of material and effective English composition in in fall, winter, and spring core classes. Originally we assessed REM 501, 505 and 562, but have recently replaced REM 505 with REM 502 as REM 505 class assignments have shifted. In REM 501 (Fall 2014), in the students' first quarter of graduate school, 11 out of 14 students (79%) met the standard from five written papers. In REM 502, in most students' second quarter of graduate school, 10 of 11 students (91%) met the standard by writing and revising versions of their thesis proposal. Finally, by Spring 2015 in REM 562, 12 out of 14 (86%) met standards.

Student Learning Outcome Goal 2: Students will propose, perform, & report on significant independent research. This goal has two methods of assessment:

A) Thesis proposal: The target is that 90% of students earn 80% on possible points on rubric including problem, purpose, significance, literature review and methods in REM 505. In Winter 2015, 14 of 15 (93%) REM 505 students met this standard. A new combination of REM 505 instructors this year will continue to have students coordinate and work with possible committee chairs as soon as possible to improve proposal work.

B) Master's Thesis: The target here is thesis completion. A large number of students (21) completed thesis work this past year (see attached list). The bulk of these students completed their program in three or four years. Completion rates have fluctuated over the years, though have dramatically increased this year, representing three-fold gain over 2012-13 and 2013-14. We interpret this as a result of creating stronger proposals in REM 505, better integration of thesis development activities in core courses, working to develop quicker and stronger relationships with thesis chairs, and broader interdisciplinary faculty involvement as chairs. We note that the data in the table below are approximations as we do not have direct data tracking individual student completion times. Assistance is needed from the Graduate School to properly track and tie completion rates each year to individual student start dates. This data would be needed to properly assess and compare completion rates over years and between CWU graduate programs.

REM Program Enrollees, Successful Thesis Defenses & Graduate School Completions									
	2006	2007	2008	2009	2010	2011	2012	2013	2014
	-07	-08	-09	-10	-11	-12	-13	-14	-15
Enrollees	28	24	23	18	18	18	14	14	14
Successful Defenses	17	17	10	14	23	16	10	10	21
Completion Rates— 2 year lag (%)*	58	61	42	61	100	88	55	55	150
Completion Rates— 3 year lag (%)*	57	59	43	58	64	72	55	55	117
Completion Rates— 4 year lag (%)*	71	57	34	50	58	70	55	55	117
* Based on successful defenses									

Student Learning Outcome Goal 3: Students will demonstrate knowledge of U.S. environmental & resource laws & regulations. This is assessed with a target that 90% of students earn 80% of possible points on assessment measures regarding knowledge of history, accompanying regulations, and application of key laws in REM 502. We met our target in this area, where 92% (11 out of 12 students) met this in Winter 2015.

Student Learning Outcome Goal 4: Students will demonstrate knowledge of procedures for environmental analysis. This goal is assessed with written paper(s) and exam(s) in the team taught REM 522 course. The target is that 90% of students earn 80% of possible points on assessment measures regarding knowledge of NEPA and other impact assessment models. Based on evaluations by a new team of faculty, 100% of students (13 out of 13) met this standard in Spring of 2015.

Student Learning Outcome Goal 5: Students will be able to assess causes, character, affected parties, and resolution of resource-based conflicts. This goal is assessed with oral presentation and written paper(s) in the REM 562 course. The target is that 90% of students earn 80% of possible points on assessment measures regarding knowledge of conflict management. We met this goal since 93% of the REM 562 students (13 out of 14) met this standard in Spring 2015.

Student Learning Outcome Goal 6: Students will engage in professional activities. This goal has three methods of assessment. These three are listed below with their methods, targeted criterion of achievement, and data from the period of review:

A) Conference attendance: The target is that 25% of enrolled 1st through 3rd year students attend a professional conference annually. This target has been met for several years running. Schedule conflicts and travel budget cuts have kept us from increasing the portion of students attending conferences.

At least 19/42 students (45%) attended meetings of the Alaska Anthropological Association (Ayla Aymond), Association of American Geographers (Dusty Pilkington), CERF Biennial Conference (Scott Adolphson), Northwest Anthropological Conference (James Brown, Erin Chenvert, John Davis, Patrick Garrison, Hilary Matson, Saeed Mohamed, Patrick Molohon, Chris Moose, Lauren Walton), Northwest Science (Serafina Ferri, Christopher Goodner, Dusty Pilkington, Zoe Rushton), PNW Society of Wetland Scientists (Chris Goodner), Society for American Archaeology (James Brown, Dave Davis, Sonja Kassa, Patrick Lewis, Caitlin Limberg)

B) Conference presentations and/or publications: The target is that 10% of enrolled 1st-3rd year students make a presentation or publish an article in a scholarly venue annually. This target has been met for several years running and we are hoping that greater adoption of the journal thesis format will increase our publication rate.

At least 20/42 students (48%) presented papers or posters at meetings or published articles. Presentations were made at the Alaska Anthropological Association (Ayla Aymond), Association of American Geographers (Dusty Pilkington), CERF Biennial Conference (Scott Adolphson), Northwest Anthropological Conference (James Brown, Erin Chenvert, John Davis, Patrick Garrison, Hilary Matson, Saeed Mohamed, Patrick Molohon, Chris Moose, Lauren Walton), Northwest Science (Serafina Ferri, Christopher Goodner, Dusty Pilkington, Zoe Rushton), PNW Society of Wetland Scientists (Chris Goodner), Society for American Archaeology (James Brown, Dave Davis, Sonja Kassa, Patrick Lewis, Caitlin Limberg). Peer-review publications in 2014-15 included Sara Vickers et al.'s (2015) article in *Journal of Forensic Sciences* 60:102-106.

C) Applications for research funding: The target is that 10% of enrolled 1st-3rd year students apply for CWU or extramural research funding annually. This target has been met several years running; however, continued limited funding has prevented us from increasing our success rate.

At least 7/42 students (17%) applied for funding, either internal grants coordinated through the Graduate School or extramural grants, including Ayla Aymond, James Brown, Nicholas Crosby, Serafina Ferri, Dusty Pilkington, Tony Saunders, Janessa Zucchetto.

Note that the 2013-14 feedback document reported a CERM score of 4/4 with a target of 3/4 for this question. As the goal was exceeded, there were no comments.

4. What will the department or program do as a result of that information?

Changes to the CERM Program are reported to the Program Faculty and Affiliate Faculty through faculty meetings organized by the Program Co-directors throughout the academic year. Beginning in Fall 2012, we began reviewing and addressing outcomes of our five year review, starting with changes to teaching teams and course content that reflect the expertise and interests of new hires. During 2013-2014 we conducted a comprehensive, program-wide discussion regarding curricular changes, including: 1) a review and revitalization of program and core course objectives; and 2) possible changes to core courses, including content and credit options. Discussion of core courses and syllabi updates were completed Fall 2014. Adjustments to core courses and their content continued to be implemented and further discussed in 2014-2015. Every year innovations are made to core courses with new teams of co-instructors.

The CERM faculty have made it a point to have regular writing assignments in all of our core curriculum. We have also been working to encourage students to use the Writing Center, take remedial writing courses, work with writing mentors, use peer review, and perhaps even work with editors as needed. We will continue to explore means for maintaining and improving student writing skills. Additionally, a few incidents of plagiarism in 2013-14 have resulted in changes to several core classes (e.g., REM 501, REM 505) to provide additional information to ensure that students better understand expectations for in-text reference citation in graduate-level writing.

CERM faculty regularly discuss student thesis completion and possible means to decrease time to degree. Although there has been considerable improvement in graduation rates as shown in the table above, we strive to help students move more quickly through the program. Some changes in the past few years intended to help in this area are: including more assignments in core courses designed to contribute directly to theses, formation of small writing groups, encouraging more direct student to chair meetings in the first year, and exploring the journal-ready option for thesis format.

Note that the 2013-14 feedback document reported a CERM score of 2/2 with a target of 2/2 for this question. There were no comments.

5. What did the department or program do in response to the feedback from last year's assessment results, and what was the effect of those changes?

For specific responses to feedback from 2013-14, please see under each question above. Our response is in italics at the bottom of each question response, including our plans to adjust assessment methods. We also discuss changes that address this question under (4) above.

Assessment data for 2007-2008 showed quite variable results, while estimates for 2009-2014 have generally showed improvements. This past year we have met targets for all assessment goals. There have been notable increases in several categories, most importantly in thesis completions and conference presentations/publications.

Summary of Results

Goal	Target (% of students meeting standard)	Observed 2013-14	Observed 2014-15	Status
1 (oral presentations)	90%	75-100%	100%	Met goal
1 (written papers)	90%	80-100%	79-91%	Generally met goal
2 (thesis proposal)	90%	100%	93%	Met goal
2 (thesis completion)	Completion	10	21	Increase 210% over 2 years
3 (law & policy knowledge)	90%	87%	92%	Improved, now met goal
4 (analysis knowledge)	90%	83%	100%	Improved, now met goal
5 (conflict/res. knowledge)	90%	100%	93%	Met goal
6 (conference attendance)	25%	24%	48%	Improved, now met goal, increase two-fold
6 (presentation/publication)	10%	20%	45%	Exceed expectations, increase two-fold
6 (funding application)	10%	14%	17%	met goal

Note that the 2013-14 feedback document reported a CERM score of 2/2 with a target of 2/2 for this question. There were no comments.

Appendix 1: REM Thesis Completions (Summer 2014-Spring 2015)

Adolphson, Scott (Winter). Influence of Salwater Intrusion, Climate, and Population Changes on the Groundwater Supply of San Juan Island. (Gabriel)

Blair, Logan (Spring). The Economic Impacts of Forest Pathogens in Washington State: a Hedonic Approach. (Wassell/Sipic)

Brown, Genevieve (Spring). Using Particle Size Analysis to Separate the Deposition of a Bonebed and Artifact at the Wenas Creek Mammoth Site. (Lubinski)

Buchholz, Kathryn (Fall). Aligning Policy with Perception: Management of Whitewater Rafters within the Tieton River Corridor. (Cohen)

Drozdowski, Jarod (Winter). Mesoamerican Sacred Geography and Archaeological Landscapes: A Case Study in the Volcanic Highlands of Michoacan, Mexico. (Hackenberger)

Ferry, Joy (Fall). Significance Evaluation of the Forgotten Creek Site (45PI0429). (McCutcheon)

Geroso, Ray (Fall). Population Structure and Growth Rates of Northern Pacific Rattlesnakes in the Methow Valley, Washington. (Beck/Hickey)

Giblin, Jessica (Winter). Identifying Critical Indicators of Trail Conditions in High-Use Recreational Areas of the Roslyn Urban Forest. (Pease/Lipton)

Kassa, Sonja (Fall). The Archaeology of Obsidian Occurrence in Stone Tool Manufacture and Use Along the Mid-Columbia River, Washington. (McCutcheon)

Killsnight, Adriann. (Fall). An Analysis of Swift Fox (*Vulpes velox*) Occupancy on the Northern Cheyenne Reservation, Montana. (Ernest)

Lewis, Patrick (Fall). Measuring the Cost and Performance of Lithic Industries at the Sunrise Ridge Borrow Pit Site (45PI408). (McCutcheon)

Maquire, Conor (Spring). Understanding Vulnerability in Alaska Fishing Communities: A Validation Methodology for Rapid Assessment of Well-Being Indices. (Hackenberger)

Molohon, Patrick (Summer). Small Islands, Big Heart: Reproducing the Marquesas Islands Through the Body. (Pedersen)

Moose, Chris (Spring). Rediscovering an Upland Site: The Manastash Pines (45KT346) Kittitas County, Washington. (Lubinski)

Morse, Nate (Winter). Interpretation of Shell $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ from Two Hells Canyon Study Sites: A Methods Approach to Analysis. (Lubinski/Hackenberger)

Oliver, Bethany (Fall). Cultural Resource Management Planning for the Sinlahekin Wildlife Area, WA. (Revels/Hackenberger)

Oosahwee-Voss, Sarah (Spring). My Family, My Identity: An Ethnohistorical Exploration of a Multiethnic Family. (Barlow)

Parks, Raychel (Fall). A Comparative Analysis of Natural and Human Made Rock Habitats for American Pikas (*Ochotona princeps*) along Interstate-90 in the Washington Cascade Range. (Ernest)

Walton, Lauren. (Spring). Building a History: Evaluations of CWU Campus Building to Determine Eligibility for the NR of Historic Places (Herman)

Watson, Andrea (Winter). An Analysis of the Socioeconomic Impacts Resulting from the Ellsworth Creek Preserve in Pacific County, Washington (Andrews).

Zimmerman, Kathryn (Summer). Sustainability Policy's Inherent Dilemmas—Exemplified via Critical Examination of the Las Vegas Metropolitan Sustainability Campaign. (Barlow)

CWU Student Learning Outcome Assessment Plan Preparation Form (Updated December 14, 2007)

Department: Resource Management Program

Program: Master of Science

Student Learning Outcomes	Related Program/ Departmental Goals	Related College Goals	Related University Goals	Method(s) of Assessment	Who Assessed	When Assessed	Standard of Mastery/ Criterion of Achievement
1. Students will demonstrate ability to effectively communicate about REM issues	2: Students will demonstrate knowledge, skills, and attitudes for success	III: Provide for outstanding graduate programs that meet focused regional needs...	I: Maintain and strengthen an outstanding academic and student life...	Oral presentations	REM 501 REM 505 REM 562	Fall qtr Win qtr Spring qtr	90% of students earn 80% of possible points on rubric including coverage of material and effective delivery
				Written papers	REM 501 REM 505 REM 562	Fall qtr Win qtr Spring qtr	90% of students earn 80% of possible points on rubric including coverage of material and effective English composition
2. Students will propose, perform, & report on significant independent research	2: Students will demonstrate knowledge, skills, and attitudes for success	III: Provide for outstanding graduate programs that meet focused regional needs...	I: Maintain and strengthen an outstanding academic and student life...	Thesis Proposal	REM 505	Winter qtr	90% of students earn 80% of possible points on rubric including problem, purpose, significance, literature review & methods
				Master's Thesis	At conclusion of REM 700	Once per student	Completion satisfying thesis committee & Grad School requirements
3. Students will demonstrate knowledge of U.S. environmental & resource laws & regulations	2: Students will demonstrate knowledge, skills, and attitudes for success	III: Provide for outstanding graduate programs that meet focused regional needs...	I: Maintain and strengthen an outstanding academic and student life...	Oral presentation & written paper(s)	REM 502	Winter qtr	90% of students earn 80% of possible points on assessment measures regarding knowledge of history, accompanying regulations, and application of key laws

Student Learning Outcomes	Related Program/ Departmental Goals	Related College Goals	Related University Goals	Method(s) of Assessment	Who Assessed	When Assessed	Standard of Mastery/ Criterion of Achievement
4. Students will demonstrate knowledge of procedures for environmental analysis	2: Students will demonstrate knowledge, skills, and attitudes for success	III: Provide for outstanding graduate programs that meet focused regional needs...	I: Maintain and strengthen an outstanding academic and student life...	Written paper(s) & exam(s)	REM 522	Spring qtr	90% of students earn 80% of possible points on assessment measures regarding knowledge of NEPA and other impact assessment models
5. Students will be able to assess causes, character, affected parties, and resolution of resource-based conflicts	2: Students will demonstrate knowledge, skills, and attitudes for success	III: Provide for outstanding graduate programs that meet focused regional needs...	I: Maintain and strengthen an outstanding academic and student life...	Oral presentation & written paper(s)	REM 562	Spring qtr	90% of students earn 80% of possible points on assessment measures regarding knowledge of conflict management
6. Students will engage in professional activities	4. Faculty and students will engage in professional activities	I: Provide for an outstanding academic and student experience...	I: Maintain and strengthen an outstanding academic and student life... VI: Build inclusive and diverse campus communities ...	Conference attendance Conference presentations and/or publications Applications for research funding	All enrolled 1 st -3 rd year students same same	Annually same same	25% of students attend a professional conference 10% of students make presentation or publish article in scholarly venue 10% of students apply for CWU or extramural research funding