

# Improving a Field School Curriculum Using Modularized Lessons and Authentic Case-Based Learning

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**ABSTRACT** University course evaluations are replete with student comments expressing frustration with taking time out of work, paying money for, and putting energy into field education projects that lack authentic “real-world” problem-solving objectives. Here, we describe a model for field school education that borrows on pedagogical tools such as problem-based learning, hands-on instruction, field-based education, and teaching through research, and employs modularized teaching in a way that incorporates numerous resource management issues and values into a case study that addresses an authentic forest management issue. In presenting the model, we present data from student comments and course evaluations on the effectiveness of our approach and describe and underscore those elements that have served as the guiding force in refining the field school curriculum that we currently use at the University of Northern British Columbia. Additionally, we make recommendations on how to integrate other key elements into the curriculum that appear to be critical for conducting a successful field school.

Curriculum planning in ecology often lacks opportunities for students to engage in authentic, ecologically-based problem solving (Abrahams et al., 2000). Problems of this nature, unlike those posed to students in lecture halls and laboratories, are usually ill-defined and can be approached, interpreted, and solved in various ways (Fortus et al., 2004). Furthermore, although instructors tend to “cover” appropriate ecological principles in lectures and labs, examples are often from far off places and of little local relevance for students (Abrahams et al., 2000). In this regard, field studies can give students the opportunity to gain valuable experiences not possible in other settings (Hall, 1995).

Traditionally, field school at the University of Northern British Columbia (Prince George, BC, Canada) has focused on students applying technical out-of-the-class skills in a series of mock planning exercises in different regions of northern British Columbia. Recently, our pedagogical approach to camp has shifted and now allows students to exercise those same skills, but in a local and more applied “real-world” and research-focused context.

To introduce the concept of ecologically-based problem solving of applied issues and add local relevance to our field school curriculum, we combined and employed the following pedagogical approaches:

1. Case-based learning—a pedagogical approach that introduces a problem-motivated investigation that requires students to analyze, integrate, and apply course materials, ethics, opinion, and real-world information to formulate a

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## Impact Statement

Field Applications in Resource Management is a finishing school for undergraduate students in Natural Resource Management. The course allows for student immersion in 2 weeks of concentrated “real-world” field work. Students do hands-on research, problem solve, and build relationships with instructors, community members, stakeholders, and resource professionals. Relationships started and fostered at the field school often result in job placements for students after graduation.

solution (Kendler and Grove, 2004, Bergland et al., 2006).

2. Hands-on education—learning through concrete and tangible demonstration techniques (Haskett, 2001).

3. Field-based education—a teaching format that utilizes a field arena for inquiry-based, hands-on learning of science process skills (Hall, 1995).

4. Research in education—a teaching model that stimulates critical thinking and increases student interest in research and provides a migration vehicle for students seeking advanced degrees (Chandra et al., 1998).

Here we describe how we currently deliver a university forestry field school that employs these teaching styles. We elucidate the characteristics of our course and how we assess students. We also report student feedback and highlight educational outcomes in an attempt to provide information to others interested in similar forms of curriculum development.

## Course Characteristics

The University of Northern British Columbia’s field school (Field Applications in Resource Management; Fig. 1) is an upper division course offered by the Ecosystem Science and

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Abbreviations: CAD, Canadian dollars; UNBC, University of Northern British Columbia.

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The purpose of this two-week field school is to provide students with an overall professional-level integration of forest resource management that draws on the student's collective undergraduate experiences. Field camp provides a setting for students, instructors and resource professionals to discuss, apply and integrate principles from undergraduate course and lab work, field and employment experiences. Field camp provides resource management students with an opportunity to gain practical experience applying creative and innovative integrated resource management skills and techniques to manage for timber and non-timber forest resource values at multiple temporal and spatial scales. Field camp provides third year students with a foundation for fourth year courses that require knowledge of multiple resource values and issues, and integration of this knowledge. The course is taught in a modular format with the content being delivered by local experts working in the field of integrated resource management. The course is carried out in a setting that promotes group discussion and teamwork.

**Fig. 1.** Course description for field applications in resource management.

Management Program. The course is required for forestry majors, but is open to all students and has no prerequisites. The course is often subscribed to by students interested in Environmental Studies and Field Biology. Students (30 maximum) take the course during the last two weeks of the summer, just before the Labor Day holiday weekend.

We use a combination of tools to evaluate student performance including written assignments and quizzes (45%), a case study group mark (25%), field note books (15%), as well as participation, preparedness, and attitude (15%). This structure combines the need for self-motivation and study and allows for individual student assessment, yet at the same time fosters team work and group participation.

**Our Approach**

During the last 4 years (2003–2006) our objective has been to remove mock planning exercises from the curriculum. To this end, both of the major components of camp—the modules and case study assignment—are tied to real-world management issues or research programs.

**Modular Format**

Approximately 20 different modules are taught at our field school each year by university professors, graduate students, government personnel, consultants, industry representatives, community members, and stakeholders. Although modules cover different topics, all modules are taught in the field and most have a hands-on component (for example, measuring bear den dimensions, analyzing soil samples, completing post-harvest assessments, setting mammal traps, assessing forest fire fuels). Many modules are linked to long-term research/monitoring projects. In one module, for example, student teams compete in a mushroom harvest from two distinct (low elevation and high elevation) forest types, then compare findings between forests and discuss the importance of their findings relative to non-timber forest products. How fungi influence various ecological processes in forests (such as food supply, decomposition, tree physiology) are elucidated. Findings each year are discussed in the context of species and abundance of fungal types located in previous years and discussed in the context of wet vs. dry years and the potential impacts of climate change on the mushroom harvest. Module topics are diverse (Table 1) but all, as in the mushroom module,

teach content either tied directly to the case study or to a local issue that helps students get their hands dirty, become intimate with their surroundings, understand the complexity of the ecosystems in which they are working, and think “outside of the box” in terms of what to consider when managing such systems.

**Case Study**

On the first day of camp, students are introduced to the management issue (case study) that they will be addressing. The case study centers on a current management issue at the John Prince Research Forest (co-managed by UNBC and Tl'azt'en First Nation) in Fort St. James, BC, Canada. Case study topics have ranged from the development of an access management plan for the research forest (2003) to managing forests on mule deer winter range (2004), determining local level criteria and indicators required for forest certification (2005) to addressing down falls in mid-term timber supplies as a result of a mountain pine beetle epidemic (2006).

Because of a recent mountain pine beetle epidemic that is responsible for killing mature pine in the north central interior of British Columbia, many forest companies, as well as the John Prince Research Forest, are scrambling to uncover solutions that will help to meet timber supply needs in the next 10 to 50 years. In this particular case, students were given the challenge of assessing forest composition, determining the impact of dead and dying pine to the research forest and its ability to generate revenue and then forge a plan to meet any lack of supply in the decades to come. Students were challenged with how to plan harvests and reforestation projects around this issue, but also challenged to think “outside of the box” and consider other forms of revenue generation (for example, recreation, tourism, hosting conferences and courses). Along with module information, students are given access to information relevant to the case study such as local stakeholder values (John Prince Research Forest, unpublished data, 2004) the research forest management plan, budget details, timber prices, and so forth as well as all resources (such as computers, maps, aerial photos) necessary to complete their assignment.

Students are divided into teams and assigned a particular view or position (such as a stake holder value) for the

**Table 1.** Syllabus: Field Applications in Resource Management – NREM 333 (August 2005)

DATE/TIME	ACTIVITY/MODULE	READING	DATE/TIME	ACTIVITY/MODULE	READING
<b>Mon. 22<sup>nd</sup></b>	<b>Day 1: Welcome, Sustainability, Urban Forestry and Water Quality</b>		1400	Lunch at the Cinnabar	
0900	Welcome and short introduction to field camp		1430	Welcome to The John Prince Research Forest: overview of the mandate, introducing resources, more on the field camp theme and case study: <i>Susan Grainger (Manager of the John Prince Research Forest), Roy Rea &amp; Dexter Hodder and Tl'azt'en Nation &amp; Certification: Bev Bird</i>	
1000	Why Monitor Forest Sustainability?: <i>Pamela Wright (UNBC Resource, Recreation &amp; Tourism Professor)</i>		1530	Forestry Legacies: <i>Susan Grainger</i>	
1130	Urban Beetle Management & Reforestation and Interface Fire Management: <i>Mark Fercho (Environmental Services - City of Prince George)</i>		1830	Supper	
1330	Brown bag lunch in the field		1930	House Keeping Items: Cabin, Shower assignments, Bush safety talk, First aid & Bear aware: <i>Roy Rea and Dexter Hodder</i>	
1500	Land Development and Water Quality Issues: <i>Gina Layte (Environmental Services - City of Prince George)</i>		2000	<b>QUIZ 1</b> – from field notes and readings	pp 97-140
1800	Arrive back at UNBC – Head Home/Readings for next day's modules	pp 1-46	2100	Reading time for next day's modules	
<b>Tues. 23<sup>rd</sup></b>	<b>Day 2: Aleza Lake Research Forest</b>		<b>Fri. 26<sup>th</sup></b>	<b>Day 5: Riparian Forests, Shelf Life and Fire</b>	
0730	Leave UNBC for Aleza Lake Research Forest		0700	Breakfast/Pack lunch	
0900	Introduction to stand dynamics and management: Part 1: <i>Mike Jull (Manager of the Aleza Lake Research Forest)</i>		0800	The economy of riparian and moist habitat animals in forest management: <i>Mark Thompson (Molecular Genetics Support Specialist – UNBC)</i>	
1200	Brown bag lunch in the field		1200	Lunch in the field	
1300	Introduction to stand dynamics and management: Part 2: <i>Mike Jull</i>		1230	Time since death of trees killed by mountain pine beetle: 1. Shelf-life: <i>Kathy Lewis (UNBC Forestry Professor)</i> and 2. Fire management implications: <i>Brad Hawkes (Fire Research Officer – Natural Resources Canada, Canadian Forest Service, Pacific Forestry Centre)</i>	
1700	Head back to UNBC		1800	Supper	
1800	Arrive back at UNBC	pp 47-74	1900	<b>ASSIGNMENT 2</b> – Shelf Life: Applications of dendrochronology: <i>Kathy Lewis</i>	
2000	Reading time for next day's modules		2100	Reading time for next 2 day's modules	pp 141-202
<b>Wed. 24<sup>th</sup></b>	<b>Day 3: Bird Banding and Caribou</b>		<b>Sat. 27<sup>th</sup></b>	<b>Day 6: CWD, Mule Deer Winter Range, Soils, Utilities and Forestry</b>	
0400	Leave for Mugaha Bird Banding Station (Mackenzie)		0700	Breakfast/Pack lunch	
0600	Timber Harvesting and Resident and Migratory Bird Populations: <i>Vi Lambie, Rob Weaver &amp; Jukka Jantunen (Mugaha Bird Banding Field Station)</i>		0800	Coarse Woody Debris and Managing for Mule Deer Winter Range: <i>Bruce Rogers (Field Camp Instructor – Northern Lights Community College) Dexter Hodder and Roy Rea</i>	
1000	Brown bag lunch in the field		1200	Lunch in the field	
1100	Considerations for caribou in forest planning: <i>Chris Johnson (Forestry Professor – UNBC)</i>		1230	Utility Corridors and Forestry: Challenges and Opportunities for Integration: <i>Ken Child (BC Hydro - retired)</i>	
1500	Head back to Prince George	pp 75-96	1330	Soil constraints to forest planning: <i>Paul Sanborn (UNBC Forestry Professor)</i>	
1900	Reading time for next day's modules		1700	Helping encourage the next generation of resource managers: <i>Chris Lear (Council of Forest Industries)</i>	
<b>Thur. 25<sup>th</sup></b>	<b>Day 4: Trapping, Bear Dens and Forestry Legacies</b>		1730	Presenters/Faculty Supper: Soiree and Bar-B-Que – DON'T OVERDO IT, WE HAVE AN EARLY DAY TOMORROW!	
0600	Leave Prince George for Fort St. James				
0900	Considering Traditional use areas in Forestry: <i>Sebastian Anatole (Tl'azt'en First Nation Elder), Johnny Tom (JPRF Natural Resource Technician) and Dexter Hodder (Research Coordinator – John Prince Research Forest)</i>				
1000	Tea and Bannock				
1015	Traditional Ecological Knowledge: <i>Beverly Bird (Director of Research &amp; Development, Tl'azt'en Nation)</i>				
1100	Understanding the ecology of bear denning in the forest landscape: <i>Dexter Hodder</i>				

DATE/TIME	ACTIVITY/MODULE	READING	DATE/TIME	ACTIVITY/MODULE	READING
Sun. 28 <sup>th</sup>	<b>Day 7: Mushrooms, Climate Change and Ecosystems at Risk</b> Breakfast/Pack lunch Forest Management in a Changing Climate – An introduction: <i>Scott Green (UNBC Forestry Professor)</i> Head to Mudzenchoot Park Forest Management in a Changing Climate – Part 1: <i>Scott Green</i> Forest mycology and mycorrhizae: implications for forest management – Part 1: <i>Hugues Massicotte (Forestry Professor – UNBC)</i> Lunch in field Considerations for ecosystems/plants at risk in forest planning: <i>Ken Simonar (BioGeo Dynamics Ltd.)</i> Forest Management in a Changing Climate – Part 2: <i>Scott Green</i> Forest mycology and mycorrhizae: implications for forest management – Part 2: <i>Hugues Massicotte</i> Supper Reading time for next day's modules		1900 2000	<b>Assignment 3</b> —Determining what to monitor Reading time for next day's modules	pp 267-292
Mon. 29 <sup>th</sup>	<b>Day 8: Guide/Outfitting, Archaeology, Silviculture and Mineral Licks</b> Breakfast/Pack lunch Guide/Outfitting in a managed landscape: <i>Paul Trepus (Inzana Outfitters)</i> Archaeological Assessments in Land Planning: <i>Barb Horrell (EcoFor Consulting)</i> Lunch in the field Silviculture: <i>Treena Greenaway (Silviculture Forester - Pope and Talbot Ltd)</i> Considering mineral licks in land planning and development: <i>Roy Rea</i> Supper Introduction to community-based research methods: <i>Sarah Parsons and Beverly Leon (T'at'en CURA Coordinator and Improved Partnerships Stream Leader)</i> Reading time for next day's modules	pp 203-213	Thurs. 1 <sup>st</sup>	<b>Day 11: Range Values, Professional Responsibilities, Case Study Work</b> Breakfast Sheep Grazing on Crown Range: Benefits or Impacts to Seedling Regeneration? <i>Karen Tabe (Range Officer – Vanderhoof Forest District) &amp; Hans Sturm (Crown Range User)</i> Lunch at the Cinnabar Building Consensus: <i>Norman Dale</i> Supper Break into Groups/Prepare presentations	
Tue. 30 <sup>th</sup>	<b>Day 9: Stand Dynamics, Local Values, and TEK</b> Breakfast/Pack lunch Linking stand dynamics and silviculture systems: <i>Mike Jull (Manager of the Aleza Lake Research Forest)</i> Lunch in field Community-based research assignment: <i>Sarah Parsons and Beverly Leon</i> Supper	pp 214-266	Fri. 2 <sup>nd</sup>	<b>Day 12: Scenario planning for Case Study and building consensus</b> Breakfast/Pack van and truck Case Study Round table and consensus building Lunch Turn in field notebooks for marking/course evaluations/contest judging/head back to UNBC Stop and watch Kokanee spawn at Tsilcoch Creek & Take Group photo (optional) Arrive UNBC - Farewell	

case study. Students are instructed to take careful field notes and challenge module presenters throughout the course in an effort to collect data that can then be used for building a group case. Teams are instructed to carefully craft and prepare a portfolio to defend their position in a consensus building exercise that occurs on the last day of camp. A module on consensus building—taught by a professional facilitator—is a critical part of the curriculum.

Because separating the empirical components of science and management from the social context of forest management is difficult and because controversy tends to forge unique connections (Jungst et al., 2003, Seethaler, 2005), we insist on controversy at camp and assign 25% of student grades to each team's ability to articulate and debate their case study position. Student teams are graded on presentation content and quality, consensus building skills, as well as their ability to be diplomatic in how they address peers, instructors and community members. Case study grades are assigned by coordinators, managers, and select community members and are weighed against peer-grading from group members on each team member's contributions to the project.

### Student Responses

Students complete module evaluations (Table 2) for each module presented. Evaluation results are used by the camp coordinators and instructors to evaluate if and how improvements can be made in the module delivery and content. Since 2004, we have also asked students to complete a detailed camp evaluation (Table 3) in addition to the module evaluations and the official course evaluation. This allows students to comment on aspects of the field school that are not found in the generic university course evaluation. As part of their participation mark, students are graded on their contribution to this process and are generally happy to provide module-specific and overall camp feedback.

### Educational Outcomes

Although we do not ask students detailed questions on their perception of the utility of the various pedagogical tools that we are using to build the camp curriculum, we have asked students since 2004 to comment on, among other things, the overall camp curriculum and the case study. Combined data from 2004 (28 students), 2005 (16 students), and 2006 (11 students) indicate that 45 students were generally to very satisfied with the overall camp curriculum, whereas 4 were very to somewhat dissatisfied; 43 students were generally to very satisfied with the case study whereas 5 were very to somewhat dissatisfied (see Table 3).

Data from the official course evaluations indicate that implementation of these principles has been effective in increasing student understanding and comprehension of course materials over the years (Table 4). The process of curriculum development that we employ is an iterative one in which student comments and course evaluations are looked at and considered seriously with an aim to improve the curriculum in ways the students see appropriate. Stu-

dents are made very aware that their comments are taken seriously and what can be done to accommodate their recommendations for improvements to the course will be pursued earnestly. It is through the process of continued research—seriously considering student, as well as instructor and stakeholder/community feedback—that we continue to refine and improve upon our curriculum. This process, according to the steady increase in evaluation scores, appears to have some merit.

In addition to providing numerical ratings for various categories, course evaluations also provide more general impressions in written form about students' experiences at field school. From these comments it appears that the predominant dissatisfaction with camp is the cost and the time of year that camp is offered; students have to truncate their summer jobs to attend. About 60 to 70% of students each year complain about cost and timing, which is reflected in one student's comment:

Camp is too expensive and is taught at a bad time of the year when I am forced to leave work 2 weeks ahead of the fall semester.

The course fees for field school (\$675.00 CAD) work out to about \$60 per day for food, travel, accommodations, and so forth. Unfortunately, registration costs for the camp are close to the same amount and this, combined with loss of summer work earnings, dampens student spirits. We immediately address this concern and describe to students how their camp fees are used. We encourage students to share their concerns and an open dialogue is initiated that is maintained for the duration of the course. Such dialogue is critical to the success of camp and is commented on by two students below (2004 and 2005 field schools, respectively):

I liked the openness of camp. I knew that any concerns could be brought up and would be immediately addressed.

Coordinators were always very approachable and concerned about our needs whether it was food or group dynamics.

Although not all students take the time to write comments on the evaluation forms, our sense is that more than half of the students concur with this sentiment. Aside from the problem of scheduling and costs that we are attempting to creatively address, students report strong feelings about the benefits from the course. In terms of putting students into a context where they can meet and interact with professionals during the modules, one student in the 2004 class commented:

I appreciated the opportunity to meet with instructors...I have an opportunity to now work with a consultant next summer.

Our experience is that at least one or two students annually, excited by what they learned in a particular module at field school, pursue securing positions from presenters who taught at the field school. Approximately half a dozen field school students each year discuss the relevance of what they learned in modules to help them decide on subject matter for thesis projects, independent studies, and professional reports.

**Table 2.** NREM 333 module evaluation form. Module title \_\_\_\_\_

1. Listed below are a number of statements concerning module delivery. Read each item and decide whether you are satisfied or dissatisfied, and to what extent. If you are very dissatisfied, circle "1"; if you are very satisfied, circle "4"; if you feel somewhere in between, circle a number between "1" and "4." If you have no opinion or the statement is not applicable to the module you are rating, circle "5."

Please indicate your level of satisfaction with the following items:	Very dissatisfied	Somewhat dissatisfied	Generally satisfied	Very satisfied	Don't know/ doesn't apply
The instructor's presentation style	1	2	3	4	5
The instructor's level of knowledge	1	2	3	4	5
The instructor's level of preparedness	1	2	3	4	5
The method of module delivery	1	2	3	4	5
The newness of module content (i.e., the level of overlap with other UNBC course content)	1	2	3	4	5
The module's relevance to "real world" issues	1	2	3	4	5
The interest stimulated by module content	1	2	3	4	5
The knowledge you attained from this module	1	2	3	4	5
The critical thinking required for the module	1	2	3	4	5
The amount of time allotted for this module	1	2	3	4	5
(If applicable) The quality of instructions provided to complete the exercise	1	2	3	4	5
(If applicable) The equipment provided to complete the exercise (e.g., field gear, aerial photos)	1	2	3	4	5
(If applicable) The level of integration between the hands-on exercise and the module content	1	2	3	4	5

2. On a scale of "1" (poor) to "10" (excellent), please give an overall rating for this module. Circle one number only.

1	2	3	4	5	6	7	8	9	10
POOR			FAIR			GOOD			EXCELLENT

3. Would you recommend this module for future field camps? Please circle yes or no and explain below.

Circle one

YES                      NO

4. Do you have any suggestions for improving this module? Please explain below:

I had no idea about any of this (forest stand dynamics). I have learned more in one day out here in the field than in my entire degree program. This gets me excited about doing my masters. (Class of 2006)

...and although I knew nothing about that subject, I now want to pursue a graduate degree in that area. (Class of 2004)

There are 420s (professional reports) everywhere I look...modules opened my eyes to so many possibilities. (Class of 2005)

Interviewing community members in the field during our local values module made me realize just how important feedback and values of the locals are to properly managing the landbase. I am going to do my term paper in ethics on this topic. (Class of 2006)

I was exposed to different values in our forest area I have seen nowhere else. This gives me materials to consider for my paper. (Class of 2004)

The majority (~80%) of field camp students comment either verbally or in course evaluations on their appreciation for being able to participate in an authentic issue for the case study. They commend us for...

not making us waste my time on yet another make-work, make-believe project. (Class of 2004)

Some comments from the course evaluations on the use of an authentic case-based study included:

I loved that the case study allowed me to be involved in a real issue in our forest. (Class of 2005)

Awesome exposure in observing real-life research and decision making. (Class of 2005)

**Table 3.** NREM 333 overall course evaluation form.

1. Listed below are a number of statements concerning Field Camp delivery. Read each item and decide whether you are satisfied or dissatisfied, and to what extent. If you are very dissatisfied, circle "1"; if you are very satisfied, circle "4"; if you feel somewhere in between, circle a number between "1" and "4." If you have no opinion, circle "5."

Please indicate your level of OVERALL satisfaction with the following items:	Very dissatisfied	Somewhat dissatisfied	Generally satisfied	Very satisfied	Don't know
Camp curriculum	1	2	3	4	5
Case study assignment	1	2	3	4	5
Field notebook assignment	1	2	3	4	5
Assignments/quizzes	1	2	3	4	5
Level of organization	1	2	3	4	5
Scheduling	1	2	3	4	5
How concerns are addressed	1	2	3	4	5
Field camp location at JPRF	1	2	3	4	5
Camp cleanliness	1	2	3	4	5
Camp security	1	2	3	4	5
Accommodations	1	2	3	4	5
Food quality	1	2	3	4	5
Food quantity	1	2	3	4	5
Driver safety	1	2	3	4	5
Field safety	1	2	3	4	5

**Table 4.** Official course evaluation scores for selected rating categories for NREM 333 between 2003 and 2006. Note: number of respondents for each question is bracketed.

Rating category	Year			
	2003	2004	2005	2006
Course subject matter interesting	3.88 (26)	4.17 (18)	4.22 (9)	4.20 (10)
Effective assignments	3.70 (27)	4.12 (17)	4.14 (7)	4.25 (8)
The course objectives were met	3.89 (28)	4.24 (17)	4.22 (9)	4.88 (8)
Overall course rating	3.28 (25)	3.94 (17)	4.0 (8)	4.3 (10)
Recommend this course to others	3.04 (26)	3.88 (17)	3.88 (8)	4.0 (10)

...felt a real sense of ownership about the case study issue. (Class of 2005)

Some general comments about the field school, from students taking the field school between 2003 and 2006, include:

This is a great course that is very helpful with career planning.

I really enjoyed learning real field skills and practicing techniques.

My brain is too full. Setting up (mist) nets and handling the birds was unbelievable.

...very relevant and real issues...previously unknown to me before...were presented in interesting ways...a very rewarding experience.

I had a fun experience that I can incorporate into my knowledge base as I progress as a professional.

Lots of out-of-the-box thinking that is critical for new resource managers.

The course is a fantastic concept...well delivered...the best course I have ever taken.

### Conclusions

Employer expectations have shifted in recent years and now require students to have both an applied and philosophical understanding of their discipline that they often do not receive in class (Miller, 1995). We believe our field school helps to fill this void.

With the use of modularized teaching and authentic case-based learning, our Field Applications in Resource

Management course now allows students to integrate their academic experience with hands-on learning in a novel way that combines several other pedagogical tools. This style of teaching, as reported by Smith (2001), is critical for better retention and for providing skills such as collaboration, communication, decision making, and leadership that are not easily obtained in the classroom. This has led to multiple benefits for our students, not the least of which, as described by Abrahams et al. (2000), is the opportunity to network with professionals in a context, which in our case, often results in career track returns.

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