Self-Study Report
for
Society of American Foresters’ Continued Accreditation
of Bachelor of Science Degree in Forestry

Addendum

Department of Wildland Resources
College of Natural Resources
Utah State University
Logan, UT 84322-5230

January 2010
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Performance of CNR Undergraduate Majors</td>
<td>1</td>
</tr>
<tr>
<td>Retention Profile for CNR Undergraduate Majors</td>
<td>2</td>
</tr>
<tr>
<td>CNR Stakeholder Meetings: March 2009</td>
<td>5</td>
</tr>
<tr>
<td>Themes</td>
<td>5</td>
</tr>
<tr>
<td>Forestry Research</td>
<td>8</td>
</tr>
<tr>
<td>Taking Action</td>
<td>10</td>
</tr>
<tr>
<td>Background of Participants</td>
<td>15</td>
</tr>
<tr>
<td>Biographical Sketch for Mike Kuhns</td>
<td>17</td>
</tr>
<tr>
<td>Wildland Resources Departmental Space</td>
<td>20</td>
</tr>
<tr>
<td>Library Resources</td>
<td>24</td>
</tr>
<tr>
<td>Additional Facilities and Programs</td>
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</tr>
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</table>
## NR Undergraduates

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*Not available for all students

CREC  Conservation and Restoration Ecology  
ENST  Environmental Studies  
FAAS  Fisheries and Aquatic Sciences  
FORE  Forestry  
GEOG  Geography  
GEOT  Geography Teaching  
RARE  Range Resources  
RRMG  Recreation Resource Management  
WAES  Watershed and Earth Systems  
WISC  Wildlife Science
Retention Profile for CNR Undergraduate Majors

Analysis of students who took WILD 2000 but are not now students in WILD (Summary plus Fall, 2006 to Spring, 2009).

Summary – Record for 118 students out of 201 originally enrolled; 68 of 201 still in the Department

<table>
<thead>
<tr>
<th>Class</th>
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<tbody>
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<td>Sophomore</td>
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<td>Juniors</td>
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<tr>
<td>Transfers</td>
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WILD Major in 2000 = 60

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<tr>
<td>CREC</td>
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<td>FR</td>
<td>5</td>
</tr>
<tr>
<td>R</td>
<td>5</td>
</tr>
<tr>
<td>WL</td>
<td>41</td>
</tr>
<tr>
<td>Passed Biology</td>
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<tr>
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NOT WILD major in 2000

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Fall, 2006 – Record for 31 students out of 50 originally enrolled; 11 of 50 still in the Department

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<td>3</td>
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<tr>
<td>Juniors</td>
<td>3 (including 1 Associates from High School)</td>
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<tr>
<td>Transfers</td>
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WILD Major in 2000 = 12

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</tr>
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<td>WL</td>
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</tr>
<tr>
<td>Passed Biology</td>
<td>1</td>
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<tr>
<td>Failed Biology</td>
<td>9 (D or F at least once in one section)</td>
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NOT WILD major in 2000

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<tr>
<td>Undeclared</td>
<td>12</td>
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Spring, 2007 – Record for 9 students out of 20 originally enrolled; 10 of 20 still in the Department

<table>
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<tbody>
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<tr>
<td>Sophomore</td>
<td>2</td>
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<tr>
<td>Juniors</td>
<td>1 (including 1 Associates from High School)</td>
</tr>
<tr>
<td>Transfers</td>
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WILD Major in 2000 = 4

<table>
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<tbody>
<tr>
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<td>WL</td>
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<tr>
<td>Passed Biology</td>
<td>1</td>
</tr>
<tr>
<td>Failed Biology</td>
<td>1 (D or F at least once in one section)</td>
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Still WILD but inactive = 29

Transferred into WILD = 7 (but inactive)

Changed from WILD = 37 Common new majors (NR Undeclared, General Undeclared, ENVS, LAEP, Fisheries, General Studies, Biology Teaching, Education, Journalism, Art)

Dropped out of USU = 3

Still WILD but inactive = 5

Transferred into WILD = 0

Changed from WILD = 3

Dropped out of USU = 1
Passed Biology = 0
Failed Biology = 2 (D or F at least once in one section)

NOT WILD major in 2000
Declared Major = 3
Undeclared = 2

Fall, 2007 – Record for 21 students out of 34 originally enrolled; 12 out of 34 still in the Department

Freshman = 8
Sophomore = 1
Juniors = 0
Transfers = 12 (Freshman, Sophomore, and Junior)

WILD Major in 2000 = 14
CREC = 1
FR = 1
R = 3
WL = 9
Passed Biology = 7
Failed Biology = 7 (D or F at least once in one section)

NOT WILD major in 2000
Declared Major = 2
Undeclared = 5

Spring, 2008 – Record for 8 students out of 13 originally enrolled; 5 still in the Department

Freshman = 3
Sophomore = 2
Juniors = 0
Transfers = 3 (Sophomore)

WILD Major in 2000 = 3
CREC = 2
FR = 0
R = 0
WL = 1
Passed Biology = none of the students this semester have taken Biology
Failed Biology

Still WILD but inactive = 1
Transferred into WILD = 0
Changed from WILD = 2
Dropped out of USU = 0

NOT WILD major in 2000
Declared Major = 3
Undeclared = 2

Fall, 2008 – Record for 40 students out of 64 originally enrolled; 22 still in the Department

Freshman = 21
Sophomore = 6
Juniors = 1
Transfers = 12 (Freshman, Sophomore, and Junior)

WILD Major in 2000 = 25
CREC = 3
FR = 2
R = 1
Passed Biology
Failed Biology

Still WILD but inactive = 11
Transferred into WILD = 2 (but inactive)
Changed from WILD = 13
Dropped out of USU = 1
WL = 19
Passed Biology = 7
Failed Biology = 16 (D or F at least once in one section)

NOT WILD major in 2000
Declared Major = 4
Undeclared = 10

Spring, 2009 – Record for 9 students out of 20 originally enrolled; 8 still in the Department

Freshman = 5
Sophomore = 0
Juniors = 0
Transfers = 4 (Sophomore and Junior)

WILD Major in 2000 = 1
CREC = 0
FR = 0
R = 0
WL = 1
Passed Biology = none of the students this semester have taken Biology
Failed Biology =

Still WILD but inactive = 0
Transferred into WILD = 0
Changed from WILD = 1
Dropped out of USU = 0

NOT WILD major in 2000
Declared Major = 1
Undeclared = 7
CNR Stakeholder Meetings: March 2009

Themes

Research Needs

- Need for interdisciplinary, landscape scale approaches to research and management of natural resources

- Research on the economics of natural resources
  - Small-diameter forest material
  - Attaching value to healthy habitats
  - Economics of recreation for gateway communities
  - Economics of ranching, keeping working landscapes viable
  - Costs of extractive uses of natural resources

- Impacts of climate change on wildlife, water, and the health of forests and rangelands

- Impacts of various human activities on natural resources: recreation, mining, types of forestry, range practices, fire, etc so there is better science on which to base policy

- Better understanding of the social dimensions of NR issues

- Establishing baseline conditions for rangelands, forests, and water bodies, and following up with monitoring

- Invasive plants – their impacts and how to control them
  - Particular concern about:
    - Aquatic invasives
    - Cheatgrass
    - Red brome
  - Interest in:
    - Biocontrol
    - Restoration with native species

- How to do restoration and how to know when you’ve succeeded
  - Rangland restoration
  - Forest restoration

- Assessing water quality and understanding specific pollutants, as well as identifying effective ways to protect or clean up water systems.
Extension Needs

- Repair disconnect between people and the land through education about natural resources and ecosystem processes.
  - Particularly important audiences are:
    - Urban audiences
    - Youth (K-12 curricula)
  - A key concern in this area is increasing public understanding of disturbance ecology, particularly as it relates to unpopular management activities such as prescribed fire or timber harvests
  - Emphasize the importance of natural systems to human existence (food, ecosystem services, etc)

- Delivery of extension information must incorporate multiple media and marketing strategies and specifically tailored to audiences
  - Put more research online
  - More on the ground, face to face extension ("get off computer and on the ground.")

- Do a better job of sharing CNR research results with agencies, nonprofits, etc. Do targeted follow-up presentations, conferences, etc.

- Reach a broader audience than agency research partners

- Better sharing and promotion of CNR data sets

Teaching in the CNR

- Make sure graduates have practical skills (problem solving, writing, broad thinking, and management applications)

- "People skills" for graduating seniors

- Education in policy for graduating seniors

- Real-world, on the ground experiences for graduating seniors

- More cross-disciplinary education for graduating seniors

- More in-depth education in specific disciplines for graduating seniors

- Educate students on how to manage at large ecosystem scales

- CNR must increase its emphasis on interdisciplinary approaches to natural resources management and conservation in undergraduate and professional continuing education.
Partnerships

- CNR extension staff and faculty must continually strive to multiply the effects of their efforts by developing programming that identifies and engages new partners in natural resources management and conservation education.

- Get specific and useful information better disseminated to partners (forest info to the Ashley NF, for example)

- Increased collaboration between scientific disciplines will be essential to sustaining natural resources management and conservation

- Natural resources management and conservation collaboration must include all stakeholders

- Sustainable natural resources management and conservation will require interdisciplinary approaches.

- CNR contains a critical mass of faculty and staff to emerge as leader in interdisciplinary natural resources management and conservation.

General themes

- Conflict management is an integral part of natural resources management and conservation

- Sustaining natural resources is critical to Utah’s economy, and citizen health and well being

- Sustaining Utah’s natural resources is everyone’s business

- As Utah becomes more urbanized, conflicts regarding what constitutes sustainable natural resources management and conservation will increase

- The need for natural resources management and conservation collaboration and cooperation will continue to increase

- There is a need for increased education within NR agencies regarding the merits, mechanisms, and applications of increasing interdisciplinary natural resources management and conservation efforts.
Forestry Research

Water yield response to forest management BC, CC, V

- Water yield response to forest management BC
- Effect of vegetation treatments on water yield. What happens to water yield when woody vegetation is removed? Some interest in the effect of PJ thinning on water yield. Also interest in the water yield impacts of other vegetation treatments, across the entire watershed. Especially an interest in “regional, replicated” studies to study the specific impacts in this area. CC
- Water yield differences from conifer forests vs aspen forests V

Economics of small diameter trees, forest restoration BC, CC

- Economics of small diameter lots BC
- Creating industry from local restoration BC
- Small diameter trees BC
  - Economics of small diameter forest material
  - Research how to reduce cost of handling products
  - Cost effective emission controls for small woody biomass boilers
  - Woody biomass processing prior to combustion (torrefecation, pellets) to reduce emission potential
- Aspen utilization – economic research CC
- Economic viability of biomass utilization. Specific information about how many board feet will be needed to make biomass utilization economically viable. CC

Forest Restoration, general BC, CC

- Forest Restoration BC
- Conifer management BC
  - Research to determine whether conifer management could:
    - Enhance water yield
    - Decrease fire hazards
    - Improve wildlife habitat
    - Regenerate aspen
- Aspen restoration techniques on decadent, stable stands (i.e., not stands with conifer encroachment) CC

Forest Health, general BC, V

- Attributes of forest health to society and earth systems (climate, biodiversity, etc). BC
- Livestock grazing effects on forest health BC
- Need to have some research that helps quantify what forest conditions are now and why it needs to change V

Salvage Logging BC

- Doing nothing or “letting nature take its course” will result in xyz... BC
• Does salvage logging after beetle kill and replanting restore forests faster than natural regeneration? (Denato report, Oregon) **BC**
• Potential to lose site to brushfield if do not salvage **BC**

**Prescribed fire CC**
• Impacts to timber tree (PIPO) species, wildlife species (goshawk) etc from differing levels of prescribed fire across a landscape for multiple objectives. E.g. how much fire can a landscape “handle” before we “hurt” something at a detrimental level (local area)? **CC**

**Aspen genetics CC**
• Explore aspen genetics more **CC**

**Ungulate use of trees CC**
• Quantify unglulate (domestic and wildlife) use of cottonwood, willow, and aspen **CC**

**Partnerships for forestry related issues**

**BC**
• Relationships between university and FFSL (opportunities for monitoring collaboration) **BC**
• Promoting small private forest owners **BC**
  o Partnerships: Cities, counties, non-profits, individual citizens
• Managing forests for reduced fire danger, increased aspen regeneration, and increased water yield **BC**
  o Partnerships: Water conservation districts, municipalities, Utah DNR-Fisheries, Utah DNR – Water Resources, Utah FFSL
• Providing holistic management training and information to private landowners in Utah regarding management for profit, wildlife, range health, and forest management. **BC**
  o Partnerships: Foundations for Quality Resource Management, Cooperative Wildlife Management Unit Association, Utah Department of Agriculture and Food, NRCS, FFSL, NGOs (MDF, SFW, TNC, RMEF), Farm Bureau, Cattleman’s Association
• Economies of small diameter forest material **BC**
  o Partnerships: Forest Science Lab, equipment development lab, state forestry
Taking Action

Taking Action on Articulated Stakeholder Needs

There are two fundamental issues here: the needs that are articulated, and our ability to respond. Our ability to respond to any given need is based on both our current condition (expertise, existing programs/faculty, partnerships) and on the level of change to which we are willing to commit. Different needs require different levels of commitment. Nearly every need (or possible solution) listed in the full-length results summary would fit into one of these nine categories. What we are able to address depends on the level of risk and new investment we are willing to take in any given department, etc.

Levels of Change:

Not much outside the box thinking required

1. Some things are research topics that can be addressed by a funding source or a shift in focus by one or several people.
2. Some things are extension ideas that address better dissemination of topics we already have information on to kinds of individuals we already work with. Currently channels may be inadequate but not inappropriate.
3. Some teaching skills or topics would be easy to integrate into current curricula or existing classes (by sharing teaching techniques, using new textbooks, adapting syllabi, requiring more writing or problem solving, etc)

A bit of outside-the-box thinking required:

4. Some things are research topics that would require a broader reorganization of people and intellectual ideas, and require more outside the box thinking.
5. Some are extension ideas that address ideas that we lack expertise in disseminating, either because we lack an understanding of the audience or of how to convey the needed information, but are on topics familiar to current research agendas.
6. Some teaching ideas would be new and involve development of entirely new classes, or require additional communication between departments/colleges or unfamiliar professors.

A lot of outside the box thinking:

7. Research that involves extensive collaboration, time commitment, and larger-scale project management skills, addressing multiple dimensions of a given ecosystem/natural resource issue, multiple individuals who may not be familiar with one another’s work, and questions beyond the scope of previous research agendas.
8. Extension to completely new constituencies with a different focus: for example, targeting different ages, using different channels (web instead of county agents, etc.) Getting faculty with less extension focus more involved in outreach and education efforts, particularly beyond the standard county extension paradigm.
9. Internal review of the goals, strengths, and effectiveness of the teaching program in CNR. Implementation of new ideas for structure, topics, and goals.
What are our limitations and how much risk are we willing to take?

Answers to these questions in part determine where we are in the categories above.

- To what degree are we willing to ask our faculty to reach out to new constituencies with their existing research (and how can we increase their capacity and support them in doing so)?
- To what degree can or will professors change their research agenda (long-term and short-term thinking), either by engaging new constituencies or in order to engage new constituencies?
- To what degree are we willing to discuss fundamental new research, teaching, and organizational ideas within the college and between colleges (interdisciplinary degrees, large-scale research projects, etc)?
- To what degree can some of our academic challenges be overcome by non-academic changes (reallocating lab space, more socializing, more brown bag lunches, better outreach and inreach)?
- To what degree are we willing to rethink our idea of what CNR Extension does, and what its role in better reaching our constituency is?
- To what degree are we willing to change faculty role statements to address new challenges?
- To what degree should we seek out new programs/funding/expertise beyond our current staffed programs?

Ways to Focus

Focusing on all these ideas is impossible. Focusing on a few requires choosing among them. What prioritization schemes, from a top-down perspective, are worth considering?

- Do we pick the stakeholders we feel are most important and then focus our agenda on them?
- Do we pick the research which we think is most important and try to get it out to everyone who needs it?
- Do we choose a worldview (Integrated research programs within and beyond CNR? Teaching restructuring? Expanding to a broader external audience) and try to achieve it?

A broader question might be helpful in focusing:

- What is the scope of “natural resources” that we consider to be within the college? Do we have a defined identity or are we just the water people, the ENVS people, and the range/forestry wildlife people who didn’t fit anywhere else?
- Based on the answer to that:
  - What makes sense for us to focus research energies on?
  - Who is our audience, versus the college of ag’s audience? Where could we better work with college of ag folks to reach traditional producer audiences and combine efforts (extension training, etc.) and better refocus our other efforts?
  - What audience should we be reaching out to because they fit exclusively within CNR’s mission and not other colleges?
  - Do we teach to educate a different audience than we consider our “stakeholders?”
Paths to Effect Change

Style of Change:

Assuming someday we would like to be at a high level of out-of-the box thinking, what paths might get us there? What kinds of change would be better suited to various speeds of change?

- Abrupt change (top-down)
- Gradual buy-in to some smaller ideas (how much time?) and then a top-down structure?
- Committee-based change management?
- Grass-roots change from within

Role Models:

- Are there programs already in place that could be emphasized (bioregional planning, for example) as a way to gradually incorporate new disciplines?
- Do we have a leader who has the capacity to work with multiple departments and become a force in interdisciplinary thinking? (If you could clone one of your faculty to lead an interdisciplinary large-scale program that taught higher level thinking and addressed landscape scale challenges, who would it be?)
- What are faculty’s frustrations with the college? How could change be addressed in such a way that faculty members have input on the direction of change so it addresses some of their core concerns and therefore increases their buy-in?
- Are their other departments in colleges of hass, science, engineering, ag that might be interested in condensing or in trading faculty in some formal or informal way?

Involving Faculty:

We invited faculty to the meetings, but we did not make an effort to gather their impressions of the needs for change (or lack of change) within the college. It might be instructive to learn from them—even if we strongly suspect that there is an unwillingness to change, there are probably also plenty of good ideas lurking there as well.

- Who is your constituency?
- Who are the college’s constituency?
- Do they overlap with other’s constituencies?
- How could you reorganize your research program so that it achieved all the same results with two-thirds the effort?
- If you had to design a college of natural resources from scratch, what would it look like, and how would it be different from other colleges that fit in complimentary ways around it? What of that could we create here from what we are starting from?

THEMES (Topics):

- Larger-scale ecosystem understanding
- Impact of climate change
- Impacts of various human activities on natural resources: recreation, mining, types of forestry, range practices, fire, etc so there is better science on which to base policy
- Better understanding of economic/social dimensions of NR issues
- Baseline conditions: need for background data on condition of systems: range, forests, water bodies, etc. to have a baseline against which to compare. (Implication is that something widely available better than something stuck in one research lab: better data sharing, as the water lab does? Better promotion of the data that we do have out there?)
- Importance of natural systems to the human existence (food, ecosystem services, etc.)

**THEMES (Techniques):**

- Integrate other disciplines (economics, etc)
- Do a better job of sharing research results—not just assuming they’ll read your papers—with agency, nonprofit, etc. practitioners: targeted follow-up presentations, conferences, etc.
- Reach a broader audience than agency research partners
- Specific useful information to specific constituencies better disseminated (forest info to the Ashley NF, for example)
- Make sure graduates have practical skills (problem solving, writing, broad thinking, and management applications)

**Possible actions and a few more questions: just a brainstorm**

**Teaching:**
- Change which classes are taught
- Change how degree programs are structured: make an interdisciplinary college degree that undergrads have to apply to get into?
- Make sure every student graduates with close familiarity with one of our stakeholders
- If CNR is primarily a “finishing school” for folks with broader undergraduate science experience from other colleges, what does that mean our focus should be? Should different departments teach specialized classes for grads and undergrads only, or is it a place for general earth-systems understandings?
- Are we trying to train good managers that have on-the-ground skills (in which case we should be teaching about techniques, having lots of internships, and getting people in the field as well as having basic science classes) or are we training management types who will go on to make ecological decisions based on theory and an understanding of the bigger picture, without the need for a wide quite of specialist skills (but maybe at least one, so they have sympathy for the reality on the ground?)
- Would it be better or worse to reorganize the college into a series of specialties so that someone could get a degree in Natural Resources with a focus in water, range, ecosystem management, etc., and be required to take at least one class from each department?
- In reality, what is the caliber of undergraduates we get and what can be expected of their career skills?
- Do we need to teach better natural resource writing skills?

**Research:**
- Encourage new research directions by providing seed funding
- Encourage interdisciplinary work by discussing tenure qualifications with university-level P&T policy-makers and including inter-departmental work as an extra bonus
- Hire new faculty with new specialties (is there a niche for them already, or would one have to be created?)
- Change how college is organized—create a new department or refocus others?
- Are their ways we could improve CNR’s administrative/financial leadership to facilitate more cross-disciplinary work between colleges?
- Should we reconsider what departments belong in CNR versus elsewhere?

Outreach:
- Change percentage of faculty time to do outreach
- Work with public schools in Utah... provide science teachers with workshops on a variety of topics
- Consider what is on our website: if we primarily target students, no one would ever know to come to the water lab’s huge online database for water info, for example. The assumption that people know exactly what extension can do for them and will wade through extension’s sites to find information is probably faulty. If we want to reach out to new audiences, it has to be believable (and outwardly evident) that we are trying to meet their needs. Example: website with teaching/research and extension subsets right at the start: if you are interested in classes, being a student, etc, then you go one place. For natural resource reference information, you go elsewhere, and can get research products, maps, reports, (officially extension and otherwise, like databases maintained by USU water lab but that are accessible) links to journal articles with key findings highlighted in one sentence, recommendations and reports on best management practices, etc.
Background of Participants

Gender of Attendees at CNR Stakeholder Meetings, March 2009

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>67</td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
</tr>
<tr>
<td>Total attendees</td>
<td>80</td>
</tr>
</tbody>
</table>

Affiliation of Attendees at CNR Stakeholder Meetings, March 2009*

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural landowner</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Extension agent</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Local municipalities</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Federal agencies</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>State agencies</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>Elected officials</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Power, oil, or gas industry</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Other industries</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Educators (non-USU)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Agriculture-grazing</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Agriculture-non-grazing</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Environmentalist</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Tribes</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>89</td>
<td>100</td>
</tr>
</tbody>
</table>

*Some attendees had more than one affiliation
Affiliation of Attendees at CNR Stakeholder Meetings, March 2009

- 26% Ag
- 17% Tribes
- 11% Educators (non-USU)
- 11% Other industries
- 6% Power, oil, or gas industries
- 5% Elected officials
- 5% State agencies
- 4% Federal agencies
- 3% Local municipalities
- 2% Extension agent
- 1% Rural landowner
- 1% Other

1% Other
Biographical Sketch

Michael R. Kuhns  
Professor, Forestry Extension Specialist, Urban Forestry, Tree Physiology, 12-month

Academic education background:
PhD, Auburn University, tree physiology, March 1986  
MS, University of Missouri-Columbia, forest ecology/physiology, August 1980  
BS, University of Missouri-Columbia, forest management, December 1977

Professional and research experience:
Graduate Research Assistant, School of Forestry, Auburn University, Auburn, Alabama. August 1982 to December 1985, 3 years  
Cartographer, Defense Mapping Agency, St. Louis, Missouri. June to December 1980, 7 months  
Graduate Research Assistant, University of Missouri. August 1978 to June 1980, 2 years  
Forest Technician, Rio Grande National Forest, Del Norte, Colorado. May to August 1977 and January to March 1978, 7 months

Teaching experience:
Professor/Extension Forestry Specialist, Department of Forest Resources, Utah State University. April 1992 to present (Assistant Professor April 1992 to April 1995; Associate Professor April 1995 to June 2005), 18 years  
Acting Head, Department of Forest Resources, Utah State Univ. August 2000 to July 2001, 1 year  
Assistant Professor/Extension Forestry Specialist, Department of Forestry, Fisheries and Wildlife; University of Nebraska. January 1986 to March 1992, 7 years  
Teaching Assistant, University of Missouri. September 1976 to May 1977, 1 year

Dates of appointment and promotions at present institution:
Appointment: April 1992  
Assistant Professor, April 1992 to April 1995  
Associate Professor, April 1995 to June 2005  
Professor, 2005

Publications:
Nader, Glenn, Max Moritz, and Michael Kuhns. 2009. How do wildfires behave?
What you need to understand to protect your property from fire. eXtension Fact Sheet
Olsen, S., J. Gunnell, M.R. Kuhns, and A. Barnhill. 2009. Small trees for planting near power
lines. USU Extension Fact Sheet 2009-01pr. 7 pp.
Center, USU. 1 pg.
Shao, M., and M.R. Kuhns. 2008. Planting landscape trees. USU Extension Forest Facts,
University Extension. 34 pp.
Kuhns, M.R., and D. Reiter. 2007. Knowledge of and attitudes about utility pruning and how
Kratsch, H., and M.R. Kuhns. 2006. 16 less common trees for Utah landscapes: Diversifying
Utah’s community forests. USU Extension Forest Facts, NR/FF/014. 16 pp.
pp.
for identifying nonindustrial private forest (NIPF) owner education needs. J. of Forestry,
104(8):419-425.
Extension. 34 pp.
littleleaf linden trees in irrigated buffalograss and Kentucky bluegrass. HortScience
Streamside management zones. USU Extension Forest Facts, NR/FF/008. 6 pp.
Kuhns, M.R., H.A. Bragg, and D.J. Blahna. 2004. Attitudes and experiences of women and
minorities in the urban forestry/arboriculture profession. J. of Arboriculture 30(1):11-
of precision-irrigated buffalograss and Kentucky bluegrass. Online. Applied Turfgrass

Off-campus consulting, or other professional activities, special honors, recognition:
Elected Association of Natural Resources Extension Professionals (ANREP) President, 2009
Gold Award Refereed Journal Article, ANREP, 2009
Silver Award Webpage, ANREP, 2009
Technology Team Award for the New Tree Browser, ESP Iota Chapter, 2009
Overall Extension Specialist Award, USU, 2008
Silver Award Refereed Journal Article, ANREP, 2007
President’s Award, ANREP, 2006
Gold Award, Newsletter, Association of Natural Resources Extension Professionals, 2006
President’s Award, Utah Community Forest Council, 2004
Innovative Program Award, USU Extension Specialist Association, 2004
Merit Award, Intermountain Society of American Foresters, 2004
Silver Award Web Page, Association of Natural Resources Extension Professionals, 2004
Forester of the Year, Intermountain Society of American Foresters, 1997
New Specialist Award, USU Extension Specialist Association, 1995
Outstanding New Specialist Award, Nebraska Cooperative Extension Association, 1990
Project Learning Tree Outstanding New Program Award, 1990

Membership and offices held in professional organizations:
Association of Natural Resources Extension Professionals (President-elect, Past Conference Chair)
Society of American Foresters (Past Chapter Chair)
International Society of Arboriculture (including Utah Chapter)
International Union of Forestry Research Organizations
Xi Sigma Pi
Utah Community Forest Council (Past President)

Major professional self-improvement activities during past 10 years:
Acting Head of USU’s Department of Forest Resources, August 2000 to July 2001; 14 full-time faculty, several hundred undergraduates, budget of $1.1 million excluding grants. Participated in faculty and staff evaluations and annual budget process, while maintaining my Extension program and teaching an introductory undergraduate course.

External grants and other research funding:
$112,252 as PI or co-PI last 5 years
$1,430,000 from the State of Utah for Forest Landowner Education Program support (about $110,000 per year since 1997)
$794,000 from USDA-Forest Service through direct Congressional appropriations 2000-08
## Wildland Resources Departmental Space

<table>
<thead>
<tr>
<th>Room #</th>
<th>Area (sq. ft.)</th>
<th>Room Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>NR 107 – Messmer</td>
<td>619</td>
<td>Extension material preparations, storage for grad. student and technician specimens, specimen preparation and analysis, grad student meetings, undergraduate teaching</td>
</tr>
<tr>
<td>NR 113 – Ryel</td>
<td>872</td>
<td>Field lab, student meetings, staging for field trips</td>
</tr>
<tr>
<td>NR 115 – Ryel</td>
<td>138</td>
<td>Library, field equipment storage</td>
</tr>
<tr>
<td>NR 142 – Banner</td>
<td>81</td>
<td>Work room, file cabinets/files</td>
</tr>
<tr>
<td>NR 215 –</td>
<td>405</td>
<td>Plant collection</td>
</tr>
<tr>
<td>NR 219 –</td>
<td>643</td>
<td>Bird &amp; mammal collections</td>
</tr>
<tr>
<td>NR 221 – Ramsey</td>
<td>485</td>
<td>Postdoc Samuel Rivera (working on a training project with Honduran nationals), Neil West (working on the update to the Rangelands of Utah book)</td>
</tr>
<tr>
<td>NR 233B – Jenkins</td>
<td>385</td>
<td>Field and research lab, field exercise prep and sample analysis, research library, undergrad and graduate student meetings, student office space as needed</td>
</tr>
<tr>
<td>NR 233 – Sharik</td>
<td>330</td>
<td>1) Laboratory space, management of four research projects, (including sizable amount of records – field data sheets, etc), 2) research equipment, 3) research library</td>
</tr>
<tr>
<td>NR 235 – Van Miegroet</td>
<td>612</td>
<td>1) Soil and plant material preparation and grinding (small room), 2) wet and dry chemistry, incubations and laboratory experiments, sample preparation and processing (large room), 3) data management, archiving of lab and field books, and entry in computer and calculations (small computer room)</td>
</tr>
<tr>
<td>NR 305/307 – Long</td>
<td>951</td>
<td>Dendrochronology lab, core and disk preparation and analysis, grad student and undergraduate research meetings</td>
</tr>
<tr>
<td>NR 309 – Provenza</td>
<td>791</td>
<td>Wet chemistry: forage analysis, weighing and freeze-drying samples, growth chamber, walk-in freezer, fumehood</td>
</tr>
<tr>
<td>Room</td>
<td>Name</td>
<td>Room Number</td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>NR 311 – Schupp</td>
<td>444</td>
<td>Preparation of materials for field experiments, processing samples (i.e. counting, drying, weighing, cutting open fruits, etc.), microscope work, workspace for grads &amp; undergrads, and more</td>
</tr>
<tr>
<td>NR 313 – Banner</td>
<td>333</td>
<td>Range Extension/BEHAVE Outreach workroom and literature/pubs.</td>
</tr>
<tr>
<td>NR 315 – Ryel</td>
<td>790</td>
<td>Chemistry lab, sample storage, microscope work, data entry</td>
</tr>
<tr>
<td>NR 317 – Beard</td>
<td>655</td>
<td>Laboratory experiments and analyses for grad and undergrad students, storage of field and lab equipment, student meetings, and data entry and analysis</td>
</tr>
<tr>
<td>NR 321 – Wolfe</td>
<td>280</td>
<td>Analysis of cougar prey remains, storage of capture equipment for cougars and bats, data analyses and transcription</td>
</tr>
<tr>
<td>NR 325 –</td>
<td>363</td>
<td>Graduate Students</td>
</tr>
<tr>
<td>NR 329 –</td>
<td>138</td>
<td>Graduate Students</td>
</tr>
<tr>
<td>NR 340 – Malechek</td>
<td>85</td>
<td>Reprint collection</td>
</tr>
<tr>
<td>JQL 148 – Gese</td>
<td>571</td>
<td>1) Computer lab with licensed spatial software, 2) offices for 5 graduate students (R. Wulff, K. Signor, N. Berg, J. Burghardt, S. Gifford), 3) data archiving, 4) dry lab space, 5) equipment storage, 6) lab meetings, and 7) space to escape for data analysis and manuscript writing</td>
</tr>
<tr>
<td>JQL 146 – Ramsey</td>
<td>672</td>
<td>RS/GIS</td>
</tr>
<tr>
<td>JQL 145 – Edwards</td>
<td>583</td>
<td></td>
</tr>
<tr>
<td>BNR 055 – Ryel</td>
<td>672</td>
<td>Growth chamber facility</td>
</tr>
<tr>
<td>BNR 057 – Baker</td>
<td>186</td>
<td>Summer Camp equipment</td>
</tr>
<tr>
<td>BNR 154 – Baker</td>
<td>582</td>
<td>Forest Biology lab, microscopy, fungal culture, physiology</td>
</tr>
<tr>
<td>BNR 110, 212 – Adler</td>
<td>533</td>
<td>BNR 110 --Office space for one graduate student, plus two work stations for undergraduate hourly digitizing technicians, conference room BNR 212 – Office space for two graduate students</td>
</tr>
<tr>
<td>BNR 268 – Conover</td>
<td>631</td>
<td>Berryman Institute</td>
</tr>
<tr>
<td>BNR 274 – Adler</td>
<td>623</td>
<td>Preparation of soil and plant samples for analysis, drying and weighing of plant and soil samples, sorting of seed and biomass samples, wet chemistry, 2 growth chambers for germination experiments, 1 incubator (van Miegroet), 1 acid digestion system (van Miegroet), 1 refrigerator for sample storage, 1 freezer for sample storage (du Toit)</td>
</tr>
<tr>
<td>Room Number</td>
<td>Name</td>
<td>Space Number</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>BNR 276 – Shultz</td>
<td>305</td>
<td>Personal office space for L. Shultz, houses plant presses, a research-quality stereo microscope, reference library with local floras and the Flora of North America (writing and editing of treatments is an ongoing project), examination of specimens in conjunction with floras, identification of plant specimens for graduate students and faculty</td>
</tr>
<tr>
<td>BNR 354, 356 – Ryel</td>
<td>1054</td>
<td>Isotope extraction, UV calibration, misc. sample processing, Phytolith extraction, student/visiting scientist office</td>
</tr>
<tr>
<td>BNR 366 – Kuhns</td>
<td>435</td>
<td>Office space for Extension forestry staff for newsletter production, video editing, website editing, and other tasks, small Extension forestry meetings (8 people or less), store Extension educational materials</td>
</tr>
<tr>
<td>BNR 375 – Bissonette</td>
<td>249</td>
<td>Student use</td>
</tr>
</tbody>
</table>

22
### Table 1. Research Labs – NR – Wildland Resources Department

<table>
<thead>
<tr>
<th>Room #</th>
<th>Area (sq. ft.)</th>
<th>Occupants</th>
</tr>
</thead>
<tbody>
<tr>
<td>LR 107</td>
<td>619</td>
<td>Messmer</td>
</tr>
<tr>
<td>LR 113</td>
<td>872</td>
<td>Ryel</td>
</tr>
<tr>
<td>LR 115</td>
<td>138</td>
<td>Ryel (?)</td>
</tr>
<tr>
<td>LR 215</td>
<td>405</td>
<td>Plant Collection</td>
</tr>
<tr>
<td>LR 219</td>
<td>643</td>
<td>Critter Lab</td>
</tr>
<tr>
<td>LR 221</td>
<td>485</td>
<td>Ramsey</td>
</tr>
<tr>
<td>LR 233B</td>
<td>385</td>
<td>Jenkins</td>
</tr>
<tr>
<td>LR 233</td>
<td>330</td>
<td>Sharik</td>
</tr>
<tr>
<td>LR 235</td>
<td>612</td>
<td>Van Miegroet</td>
</tr>
<tr>
<td>LR 305/307</td>
<td>951</td>
<td>Long</td>
</tr>
<tr>
<td>LR 309</td>
<td>791</td>
<td>Provenza</td>
</tr>
<tr>
<td>LR 311</td>
<td>444</td>
<td>Schupp</td>
</tr>
<tr>
<td>LR 313</td>
<td>333</td>
<td>Malechek</td>
</tr>
<tr>
<td>LR 315</td>
<td>790</td>
<td>Ryel, Adler</td>
</tr>
<tr>
<td>LR 317</td>
<td>655</td>
<td>Beard</td>
</tr>
<tr>
<td>LR 321</td>
<td>280</td>
<td>Wolfe, Gilbert</td>
</tr>
<tr>
<td>LR 325</td>
<td>363</td>
<td>Grad students (could be lab)</td>
</tr>
<tr>
<td>LR 329</td>
<td>138</td>
<td>Grad student (could be lab)</td>
</tr>
</tbody>
</table>

### Table 2. Research Labs – JQL – Wildland Resources Department

<table>
<thead>
<tr>
<th>Faculty Member</th>
<th>Area (sq. ft.)</th>
<th>Occupants</th>
</tr>
</thead>
<tbody>
<tr>
<td>JQL 148</td>
<td>571</td>
<td>Gese</td>
</tr>
<tr>
<td>JQL 146</td>
<td>672</td>
<td>Ramsey</td>
</tr>
<tr>
<td>JQL 145</td>
<td>583</td>
<td>Edwards</td>
</tr>
</tbody>
</table>

### Table 3. Research Labs – BNR – Wildland Resources Department

<table>
<thead>
<tr>
<th>Room #</th>
<th>Area (sq. ft.)</th>
<th>Occupants</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNR 055</td>
<td>672</td>
<td>Ryel (Grow Chamber Fac.)</td>
</tr>
<tr>
<td>BNR 057</td>
<td>186</td>
<td>Baker (summer camp)</td>
</tr>
<tr>
<td>BNR 154</td>
<td>582</td>
<td>Baker</td>
</tr>
<tr>
<td>BNR 110, 112</td>
<td>533</td>
<td>Adler</td>
</tr>
<tr>
<td>BNR 268</td>
<td>631</td>
<td>Conover</td>
</tr>
<tr>
<td>BNR 274</td>
<td>623</td>
<td>Adler</td>
</tr>
<tr>
<td>BNR 276</td>
<td>305</td>
<td>Shultz</td>
</tr>
<tr>
<td>BNR 354, 356</td>
<td>1054</td>
<td>Ryel</td>
</tr>
<tr>
<td>BNR 366</td>
<td>435</td>
<td>Kuhns</td>
</tr>
<tr>
<td>BNR 375</td>
<td>249</td>
<td>Bissonette</td>
</tr>
</tbody>
</table>
Library Overview 2010

Databases in Forestry

ForestScience Info (CAB International)
CAB Abstracts (and Archives) (7,400 journals; from 1910 - )
Web of Science (10,000 + journals; from 1982- )
Aspen Database (USU Digital Commons)

E- Journals in Forestry (46)

Print journals in Forestry (81)

Merrill-Cazier Library

<table>
<thead>
<tr>
<th>Monographs</th>
<th>8,765 titles</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Monographs QK (plant identification, dendrology)</td>
<td>3,135 titles</td>
</tr>
<tr>
<td>• Monographs SD (forestry)</td>
<td>1,543 titles</td>
</tr>
<tr>
<td>• Monographs A-Z other aspect of forest/forestry/forester</td>
<td>4,087 titles</td>
</tr>
<tr>
<td>AV material</td>
<td>136 titles</td>
</tr>
<tr>
<td>Government documents</td>
<td>19,407 titles</td>
</tr>
</tbody>
</table>

Rare books, Digital collections

| Rare books, Digital collections | 25 titles pre 1900 |
| • Ted ("Doc") W. Daniel Photograph Collection. |
| • Utah Juniper photograph collection (7 boxes) |
| • Edward P. Cliff photograph collection, Forest Service activities, |

Electronic collections (ebooks, others) | 960 |

Quinney Library

| Monographs (SD and QK) | 367 titles |
| Documents | 657 titles |
| Journals | 657 titles |
| Thesis | 39 titles |
| AV | 14 titles |
| Reprints | 1449 titles |

Special collection and digital collection

| Special collection and digital collection |
| T.W. "Doc" Daniel Experimental Forest Collection |
| Bureau of Land Management Fire Bibliography |

Teaching

Conference assistance
E- Journals in Forestry (46)

- Agroforestry systems (0167-4366) from 01/01/1997 to present in SpringerLink Contemporary File
- American forests (0002-8541) 02/01/1994 to present in Academic Search Premier and 3 others
- Bartin Orman Fakültesi dergisi 2001 to present in Directory of Open Access Journals
- BC journal of ecosystems and management (1488-4666) 2001 to present in Directory of Open Access Journals
- Bosque (Valdivia, Chile) 1975 to present in Directory of Open Access Journals
- Canadian journal of forest research (0045-5067) 01/01/1997 to present in NRC Research Press
- CERNE 1996 to present in Directory of Open Access Journals
- European journal of forest research (1612-4669) 04/01/2004 to present in ScienceDirect Freedom Collection
- Fire management notes (0194-214X) 01/01/1995 to 09/30/1999 in MasterFILE Premier
- Fire management today (1554-8996) 01/01/2000 to present in MasterFILE Premier
- Forest & conservation history (0378-1127) from 1995 to present in ScienceDirect Freedom Collection; 1976 to 1994 in ScienceDirect Agricultural & Biological Sciences Backfile
- Forest history (0015-7422) from 1957 to 1974 in JSTOR
- Forest pathology = Journal de pathologie forestière = Zeitschrift für Forstpathologie (1437-4781) from 2000 to present in Blackwell-Synergy
- Forest policy and economics (1389-9341) from 05/01/2000 to present in ScienceDirect Freedom Collection
- Forest products journal (0015-7473) from 03/01/1998 to present in Business Source Premier
- Forest science (0015-749X) from 1955 to present in IngentaConnect
- Forestry (London) (0742-6348) from 1984 to present in IngentaConnect
- Forestry studies in China (1008-1321) from 03/01/2004 to present in SpringerLink Contemporary File
- Frontiers of forestry in China (1673-3517) from 01/23/2006 to present in SpringerLink Contemporary File
- Holz als Roh- und Werkstoff (0018-3768) from 01/01/1997 to 12/31/2008 in SpringerLink Contemporary File
- International journal of wildland fire (1049-8001) from 1991 to present in CSIRO Publishing Journals
- Investigación agraria. Sistemas y recursos forestales (1131-7965) from 1998 to present in Directory of Open Access Journals
- Journal of forest economics (1104-6899) from 2002 to present in ScienceDirect Freedom Collection
- Journal of forest history (0094-5080) from 1974 to 1989 in JSTOR
- Journal of forest research (1341-6979) from 01/01/1997 to 01/24/2008 in LexisNexis Academic
- Journal of forestry (0022-1201) from 1917 to present in IngentaConnect
- Journal of forestry research (1007-662X) from 01/01/1997 to present in SpringerLink Contemporary File
- Journal of tropical forest science (0128-1283) from 01/01/2004 to present in Academic Search Premier
- New forests (0169-4286) from 01/01/1997 to present in SpringerLink Contemporary File
- New Zealand forest industries magazine (1174-0248) from 02/01/1999 to 04/30/2005 in Business Source Premier
- Northern journal of applied forestry (0742-6348) from 1984 to present in IngentaConnect
- Open forest science journal from 2008 to present in Bentham Science Publishers OA from 2008 to present in Directory of Open Access Journals
- Revista árvore (0100-6762) from 2002 to present in Directory of Open Access Journals
- Scandinavian journal of forest research (0282-7581) from 05/01/1999 to 1 year ago in Academic Search Premier
- Silva fennica (Helsinki, Finland : 1967) (0037-5330) from 1998 to present in Directory of Open Access Journals
- Silva lusitana from 2001 to present in Directory of Open Access Journals
- Small-scale forestry from 08/01/2002 to present in SpringerLink Contemporary File
- Southern journal of applied forestry (0148-4419) from 1977 to present in IngentaConnect
- Tree genetics & genomes (1614-2942) from 05/01/2005 to present in SpringerLink Contemporary File
- Tree physiology (0829-318X) to 2008 in Single Journals from 1996 to present in Oxford Journals
- Trees (Berlin, West) (0931-1890) from 01/01/1997 to present in SpringerLink Contemporary File
• Turkish journal of agriculture and forestry (1300-011X) from 1998 to present in Directory of Open Access Journals
• Western journal of applied forestry (0885-6095) from 1986 to present in IngentaConnect
• Wood & wood products (0043-7662) from 06/01/1996 to present in Business Source Premier
• Wood based panels international (0144-7238) from 02/01/1997 to 12/11/1999 in LexisNexis Academic
• Zbornik gozdarstva in lesarstva (0351-3114) from 1999 to present in Directory of Open Access Journals

Print Journals in Forestry (81)
• Agricultural and forest meteorology.
• Agricultural meteorology.
• American forestry.
• American forests.
• American forests and forest life.
• Branch lines / Faculty of Forestry, the University of British Columbia.
• Bulletin (South Africa. Dept. of Agriculture and Forestry)
• Bulletin / Union of South Africa, Department of Agriculture and Forestry)
• Bulletin - Department of Agricultural Technical Services.
• The Caribbean Forrester.
• Communicationes Instituti Forestalis Fenniae.
• Connecticut woodlands.
• Conservation.
• Cornell Plantations magazine.
• East Texas historical journal.
• Environmental history.
• Environmental history review : EHR : a publication of the American Society for Environmental History.
• Farming in South Africa.
• Field and stream
• Fire control notes.
• Fire management notes / U.S. Department of Agriculture, Forest Service.
• Fire management today.
• Focus on renewable natural resources.
• Forest pathology = Journal de pathologie forestière = Zeitschrift für Forstpathologie.
• Forest products journal
• Forest science
• Forest watch : the citizens’ forestry magazine.
• ForesTalk.
• Forester (Princeton, N.J.)
• The forester.
• ForestReport / sponsored by Ministry of Forests, Forestry Division.
• The Forestry chronicle
• Forestry & irrigation.
• Forestry quarterly.
• Forestry research: what's new in the west.
• Forests and people
• Fox forest notes.
• Garden and forest.
• Georgia forestry
• Harvard Forest papers
• The international forestry review.
• The International journal of wildland fire
• Journal of industrial ecology
• The Journal of the South African Forestry Association = Tydskrif van die Suid-Afrikaanse Bosbouvereniging
• The Journal of world forest resource management
• Kansas fish and game
• Lin yeh shih yen so yen chiu pao kao chi k’an / Bulletin of Taiwan Forestry Research Institute.
- LSU forestry notes.
- The Lumberman.
- Minnesota forestry notes.
- Mississippi farm research.
- Physiological chemistry and physics and medical NMR.
- Quarterly journal of forestry
- Range improvement notes.
- Research briefs.
- Ringyō Shikenjō kenkyū hokoku
- Roosevelt wild life annals of the Roosevelt Wild Life Forest Experiment Station of the New York State College of Forestry at Syracuse University.
- Roosevelt wild life bulletin ... of the Roosevelt Life Forest Experiment Station of the New York College of Forestry at Syracuse University.
- School of Forest Resources biennial report.
- Science bulletin (South Africa, Dept. of Agriculture and Forestry)
- Science bulletin / Union of South Africa, Dept. of Agriculture and Forestry
- Scottish forestry.
- Scottish forestry journal.
- Southern forestry notes.
- T'ai-wan lin yeh k'o hsüeh.
- Texas forest news.
- Texas trees.
- Theoretical and applied climatology
- The Timberman.
- Tree planters' notes / U.S. Department of Agriculture, Forest Service.
- Trees : structure and function
- Tropical woods.
- Unasylva (English)
- Unasylva / Food and Agricultural Organization of the United Nations.
- Urban forests.
- West Virginia agriculture and forestry.
- Western journal of applied forestry.
- Wood and fiber science : journal of the Society of Wood Science and Technology
- Wood, combined with Wood products.
Additional Facilities and Programs that Enhance Undergraduate Forestry Education at Utah State University

**Berryman Institute**- The Berryman Institute is a national organization based in the Department of Wildland Resources at Utah State University and the Department of Wildlife & Fisheries at Mississippi State University.

**CEEM (Continuing Education in Ecosystem Management)**- This highly successful program prepares natural resources professionals to meet the challenges of implementing ecosystem management. Participants gain an understanding of how the human dimension, ecology, and economics function and interact, and apply this understanding in ecosystem and landscape management. Learning is in an interdisciplinary environment and the intended audience is natural resource professionals from all disciplines involved in wildland management.
[http://www.cnr.usu.edu/htm/students/grad-degrees/mnr/ceem](http://www.cnr.usu.edu/htm/students/grad-degrees/mnr/ceem)

**CEFM (Continuing Education in Fuels Management)**- Continuing Education in Fuels Management (CEFM) addresses the need for fire and fuels management programs which incorporate realistically projected changes in vegetation, fuels and fire behavior over time. This course prepares managers to analyze and plan such vegetation and fuels management projects and by the completion of the course participants will be able to develop more effective fuels projects. CEFM is based on a hands-on approach to learning and participants will apply a series of tools to inventory fuels and vegetation, predict fire behavior, and predict change in vegetation structure. Participants will inventory a project area and apply concepts and tools to conduct an analysis of current condition and fire risk, and to propose and evaluate alternative fuels treatments. A critical component of the evaluation of alternatives will be an assessment of future conditions including longevity of treatment effects and maintenance activities.
[http://www.cnr.usu.edu/htm/students/grad-degrees/mnr/cefm](http://www.cnr.usu.edu/htm/students/grad-degrees/mnr/cefm)

**Western Aspen Alliance**- A joint venture between Utah State University’s College of Natural Resources and the USDA Forest Service Rocky Mountain Research Station, whose purpose is to facilitate and coordinate research issues related to quaking aspen (*Populus tremuloides*) communities of the west.

**Ecology Center**- The Utah State University (USU) Ecology Center is an administrative structure in the University that supports and coordinates ecological research and graduate education in the science of ecology, and provides professional information and advice for decision makers considering actions that affect the environment.
[http://www.usu.edu/ecology/](http://www.usu.edu/ecology/)

**Forage and Range Research Lab**- The Forage & Range Research Laboratory (FRRL) is composed of a multidisciplinary team that has developed the critically important plant materials presently used on Western U.S. rangelands. The mission of the FRRL is to
provide improved plant materials and management alternatives for sustainable stewardship of rangelands and pastures in the Western U.S.
http://www.ars.usda.gov/Main/docs.htm?docid=3826

Forestry Extension- Extension programs include urban forestry and arboriculture (including care of trees and woodlands in cities and towns), rural forestry (including work with forest landowners and the forest products industry and including forest health), and forestry in the wildland-urban interface (including firewise landscaping and appropriate development).
http://extension.usu.edu/forestry/

Forestry Sciences Laboratory- The Logan Forestry Sciences Laboratory is a branch of the Rocky Mountain Research Station, USDA Forest Service. Research conducted at the laboratory is varied and includes projects focused on restoration of aspen and disturbed ecosystems, population and disturbance ecology of bark beetles, and assessment of monitoring techniques and evaluation trends in aquatic ecosystems. We work closely with students and faculty in multiple colleges at Utah State University.
http://www.fs.fed.us/rmrs/

Green Canyon Field Station- Maintained by the Ecology Center, the Green Canyon Field Station provides land and water for growing trees for various class and research purposes. Currently, we have a plantation of ponderosa pine (used for Silviculture class exercises) and a clonal planting of aspen (used for Forest Pathology and Silviculture exercises) growing there. Our space there is underutilized, but because of the low elevation, growing trees can often be difficult.
http://www.usu.edu/ecology/

T.W. Daniel Experimental Forest- the forest was established in 1936. One section belongs to USU and three sections to the USDA Forest Service. The TWD Forest has a long history of use for teaching, research and demonstration. Early research, as represented by more than 125 papers, dissertations and theses, provides a solid background for ongoing basic and applied research in forest ecology, silviculture, disturbance ecology and ecosystem management.
http://www.cnr.usu.edu/htm/facstaff/daniel-forest

USU Herbarium- The goal of the USU Herbarium is to serve as a primary source of information on the flora and fungi of the Intermountain region, both native and introduced. Also, to foster increased understanding and appreciation of the floristic diversity of the Intermountain Region.
http://herbarium.usu.edu/

USU RS/GIS Lab- The RS/GIS Laboratory provides an environment where faculty, staff and students work together to advance knowledge in the application of geospatial technologies in ecosystem science and natural resource management.
http://www.gis.usu.edu/
Utah Avalanche Center- The Utah Avalanche Center in Logan is operated by the Wasatch-Cache National Forest with help from the Cache Valley community through the Friends of Utah Avalanche Center-Logan. The Utah Avalanche Center in Logan is committed to providing avalanche safety education to the community. We offer free avalanche awareness talks throughout the winter, specially designed for particular backcountry user groups (snowmobilers, non-motorized, and mixed-up users).
http://www.avalanche.org/~uac/BRAIC/