Repositioning Rangeland Education for a Changing World

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Importance of Rangelands: Land Area

- Earth: 47%
- USA: 36%
- Western USA: 80%
Importance of Rangelands: Uses
Undergraduate Rangeland Education Challenges

- Small enrollments in degree programs
- Reductions in teaching resources
- Loss of faculty positions
- Curriculum content and delivery
- Faculty preparedness
- Student awareness and recruitment
- Too few students to meet job demand
Rangeland Degree Program and Curriculum

• 27 universities offer undergraduate degree programs
• Curriculum formalized in 1970s
• Basis for SRM accreditation and OPM hiring standards
• Degree characterized by 6 core courses:
  – Principles of range management
  – Range plants
  – Range ecology
  – Range inventories and assessment
  – Range improvements
  – Ranch or rangeland planning
• No significant changes in curriculum in last 40 years
Addressing Curriculum Challenges

• Clarify emerging issues and the knowledge and skills needed by future rangeland professionals

• Revitalize rangeland curricula and instruction

• Provide simple and free access to quality teaching resources for new and current faculty
Needs Assessment

• Focus groups with stakeholders
• Survey of recent range student graduates
• Use findings to:
  – Identify current and future rangeland issues
  – Identify associated knowledge and skills
  – Identify important gaps in education
  – Build a forward-looking rangeland education program
  – Modernize SRM accreditation and OPM hiring standards
Focus Groups with Stakeholders

• Focus groups in 8 western states
• Variety of stakeholders; 8-12 per group
• Discussion questions:
  – What will rangelands look like in 10-15 years – economically, environmentally, socially and institutionally?
  – What topics/issues should range graduates have in-depth knowledge of to be effective land managers, successful land owners, or respected rangeland advisors?
  – What alternative class formats/teaching approaches will help people become more effective rangeland ecologists or managers?
Survey of Recent Range Graduates

• Internet survey of range graduates from past 6 years
• Survey questions ask:
  – Level of knowledge gained in core topics (resource mgmt., quantitative concepts, social sciences, communication skills, and natural sciences.
  – Courses or skills inadequately covered in degree program.
  – Level of proficiency needed and regularly used in several topics in your current job.
  – Topics/skills you commonly use that you wish you had learned more about in degree program.
Online Clearinghouse of Educational Resources

• Searchable catalog of online, workshop-style, and traveling field courses:
  – Undergraduate, graduate and certificate programs
  – 152 range-related courses at 13 universities
  – To be posted on Rangelands West website (rangelandswest.org)

• Innovative online, open-source instructional materials:
  – Peer-reviewed, thematic modules
  – Multimedia format includes narratives, simulations, animations, case studies, tutorials, image collections, manager interviews, reference materials, and assignments
Online Clearinghouse of Educational Resources

- Open-source materials developed/posted in 2 stages:
  - Initial set of modules emphasizing fundamental aspects of rangeland ecology and management
    - Subsequent set of modules meeting curriculum needs identified by needs assessment

- Proposed initial modules:
  - What are Rangelands?
  - Virtual Exploration of Rangeland Ecosystems
  - Ecology and Management of Grazing
  - Understanding Ecosystem Dynamics through Repeat Photography
Virtual Exploration of Rangeland Ecosystems

World Rangelands Learning Experience website (wrangle1.com)
Course Delivery Across Institutional Borders

• Next step in curriculum delivery – entire courses
• Develop a consortium to share courses and instructors
• Similar to:
  – Great Plains IDEA (Great Plains Interactive Distance Education Alliance)
  – ACCEPtS (Alliance for Cooperative Course Exchange in the Plant Sciences)
• Work with Institute for Academic Alliances (IAA) at Kansas State University
Faculty Teaching Development

- Professional development workshops
- Webinars
- Symposia
- Mentorship program
Student Recruitment

- Market research
- Activities and products posted online and disseminated via professional/popular publications
- Similar to Agronomy for ME (www.agronomy.org)
Acknowledgements

• USDA-Higher Education Challenge Grant (2010-2013)
• Range Science Education Council
• Rangelands West Partnership
• John Taylor, Rangelands Australia
• Cody Sheehy, University of California, Davis