RANGELAND ECOLOGY

NRM 5302:001
Spring 2023

Instructor: Dr. Rob Kinucan
Room 109, Turner RAS Building
Phone: 837-8204
Office Hours: TW, 10:00 – 12:00 & by arrangement
Lecture: T, 1:00 – 3:30 p.m., RAS 129

Course Objectives:
Course objectives are to: 1) integrate paleoecology (the study of the interaction of organisms and their environment across geologic timescales) and ecological theory into an understanding of modern rangeland ecosystems, 2) develop an appreciation of rangeland ecology principles within an historical context, 3) promote an appreciation of seminal literature in the development of the discipline, 4) nurture critical evaluation of philosophies in range ecology, and 5) enrich knowledge and appreciation of the theoretical underpinnings of applied rangeland management. As a result of taking this course you should: 1) be able to describe the development of rangeland ecosystems and their structural and functional characteristics, 2) understand the origin and evolution of rangelands, 3) recognize the historical development of plant/range ecology, and 4) understand ecological succession models applied in natural resource management.

The Master's programs in Range and Wildlife Management address student learning objectives (SLOs), which state students should be able to: 1) apply statistical concepts and procedures to natural resource data, 2) evaluate literature and references to substantiate an applied research project, 3) examine, select, and utilize appropriate resources, materials, and data collection instruments to implement research projects, 4) justify and defend research questions and design, and 5) demonstrate knowledge of the fundamentals and advanced concepts of range and wildlife management. This course specifically addresses items 2, 4 and 5.

Grades:

2 take home* examinations @ 100 pts. ea.	200 points
Bibliography	100 points
Class participation	200 points
Total	500 points

*The exams are take-home, open book, open note.

Grade assignment: 90-100 = A; 80-89= B; 70-79 = C; 60-69 = D; < 60 = F

Elective Book: Real, L. A. and J. H. Brown (eds.), Foundations of Ecology – Classic Papers with Commentaries. 1991. The University of Chicago Press.

This book is not required but contains several of the papers we will be reading and discussing throughout the semester. Furthermore, it contains a variety of classic papers in ecology, many of which will be mentioned or referred to throughout the semester. If you have a serious interest in ecology, particularly plant ecology, this is a great library reference to possess. The papers you are expected to read are available in our course Blackboard site.

Tentative Assignment Schedule:
Exam 1 – assigned March 20, 2023. Due March 27, 2023.
Exam 2 – assigned May 5, 2023. Due May 15, 2023.
Bibliography – assigned February 7, 2023. Due April 25, 2023. Follow the journal style and format of Rangeland Ecology and Management or Journal of Wildlife Management. State the format you followed.

Class Organization:

1. This is a seminar course, and in this format each participant will be expected to lead discussion on multiple occasions for several assigned readings. Leading these discussions, as well as participating in discussions led by others, will constitute most of your class participation grade. It is important for everyone to be prepared for each session.
2. As graduate students you are professionals, and I expect you to have proficiencies beyond those expected of undergraduates. You should be capable of utilizing library resources, locating, and obtaining literature sources, executing written and spoken English at a post-graduate level, and organizing and expressing thoughts in a concise and logical manner. I expect assignment submissions to be typed in a style and format appropriate for graduate-level work. As learned academics and professionals, I assume you conduct yourselves in a respectful, professional, honest, and ethical manner. Our relationship will be built on mutual trust and respect, and the expectation of professional integrity.
3. Learning and understanding complex ideas and concepts often requires more than simply skimming the material. Developing thorough understanding will take intense effort to master and may require reading the same literature multiple times and searching sources external to regular classroom activities.
4. I learn something new each day, and leading a graduate seminar is no different. Throughout the years I have gained a wealth of insight and knowledge from students, colleagues, and producers – that's what makes this job fun! I look forward to continuing the same experience in this class. Learning and teaching is a two-way street!
5. Web links, outside readings and assignments, and student grades are available in Blackboard (Bb) through the SRSU website. Bb is a great portal for information exchange, and I use it extensively. You will access and submit exams through Blackboard. I will use the plagiarism software SafeAssign in Bb for assignments. On some occasions, class assignments may be given in Bb in lieu of meeting in the classroom.
6. Attendance and class participation are important factors for you to achieve the grade you desire. I appreciate the value of professional development and field research, and I will make accommodations for legitimate absences.
7. I place a premium on original work, therefore cheating or plagiarism is not acceptable.
8. It is Sul Ross State University policy to provide reasonable accommodations to students with disabilities. Accessibility Services Guidelines and Procedures can be reviewed on the SRSU website under student services.

Topical Outline

I. Course Overview (week 1)

II. Definition and Scope (week 1)
- A. Rangelands and Uses
- B. Past and Present of Range Management
- C. Rangelands as Ecosystems

III. The Origin and Evolution of Rangelands (weeks 2, 3, 4, 5)
- A. Biotic History
- B. Climate and Paleoclimate
- C. Pre-Pleistocene
- D. Pleistocene
- E. Holocene
- F. Historical

IV. Historical Development of the Discipline (weeks 5, 6, & 7)

V. Community Dynamics and Controlling Factors (weeks 8, 9, 10, 11, 12, 13, 14)
- A. Community Concepts
- B. Succession
    1. Primary succession
    2. Secondary succession
    3. Successional models (historical development)
- D. Management Implications
    1. Range sites
    2. Habitat types
    3. Ecological sites
- E. Disturbance and Stability

VI. Wrap-up (week 15)