

**REWM 4530 / ENR 3900 – Water Resources Seminar**

*Mondays 12:00PM–12:50PM*

*Agriculture 41*

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**Instructor:** Dr. Scott N. Miller

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Office Hours: Thursday & Friday 1–2 or by appointment

**Instructor:** Matt Hayes

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Office Hours: Monday 1–2 or by appointment

**Description:** This course is a survey of topical issues in water resources and associated resource management. We will investigate a range of subjects, most of which are “hot topics” either in the scientific or political arena. Water resources are critical to economic stability, human health, and the environment. Conflict can arise in the management of these resources, especially if they are or become scarce and competing interests are present. Through a review of the scientific literature and popular press we will navigate through several of these national and international issues.

**Objectives:**

1. Enhance critical thinking skills in scientific interpretation and investigation
2. Enhance oral communication and research skills.
3. Improve understanding of scientific and policy-related issues in water resources.
4. Develop an appreciation for the complex and multidisciplinary nature of water resources issues.

**Prerequisites:** REWM 2000 / ENR 3000 or instructor consent

<b>Grading:</b>	Weekly quizzes:	30%
	Weekly discussion prep:	10%
	Class participation:	20%
	Oral presentation and discussion leadership	40%

**Course Organization and Assignments:** The class is subdivided into 12 topic areas, and we will split the class into groups responsible for creating a seminar around the topic. Each group will have the opportunity to identify and distribute scientific literature and materials from the popular press on each issue. The goal is to work on learning skills in both science and how science is translated into public opinion and policy.

### **Audience Responsibilities**

1. For each class, **every student** should be prepared with a series of questions or comments on the reading material. You will each submit your questions, comments, discussion points to the group leader **by 9 AM on Monday morning prior to the class.**
2. Give insightful comments based on the readings and the group presentation. Participation is a significant part of your grade.

### **Group Responsibilities**

1. Identifying and distributing a minimum of **(a) 1 accessible and recent (post 2002) scientific journals, (b) 1 relevant articles from the popular press (newspaper or magazine).** You must have a total of 3 articles. These should be vetted with the professor and/or TA two weeks in advance of your presentation and then made available to all students a week in advance. The idea is to find articles that illuminate the issue from both a science and public perspective, so the popular press articles should tie closely to the science. The intent is to see how scientific information is processed and filtered as it is made available to the public, and good articles will build discussion on both scientific merit and how we might address the issue at hand.
2. Create and administer a **4 question quiz** related to the advance readings (*expected time to complete the quiz: 5 minutes*). The quiz should be easily answered by someone who did the readings, but not by someone who didn't and is just guessing.
3. Deliver **a presentation on the reading materials.** Each presenter within a group must present on a significant portion of the topic. Students are encouraged to meet with the instructor prior to the presentation date to go over the presentation and discussion. The presentation is not meant to re-hash the readings, since the class should already have done the reading, but to highlight key points and raise discussion / encourage critical thinking.
4. Facilitate a **class discussion on the readings.** Your presentation should encourage and facilitate participation of the class. Everyone should have done the readings and come prepared with ideas, and the group should lead an informed discussion on the topic that includes the entire class.

## Preliminary Course Schedule

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Week 1: Syllabus and getting into groups

Week 2: Overview of water resources and hydrology

### Selection of topics for the year

We are going to tackle these 3 topics for sure:

1. Hydrofracking and water quality: "What's going on in Pavillion?"
2. Grazing effects on water resources
3. Ecosystem service; upstream actions, downstream effects

We need to pick 4 more topics from this list, or add your own choices

1. How desert cities survive: what are Las Vegas, LA and Phoenix doing where there's no water?
2. Climate effects on Wyoming water resources: What's the state of the science?
3. Forest fires and impacts to hydrology & water quality
4. Agricultural water use & depletion of large aquifers
5. Trade-offs: big oil vs. agriculture vs. cities
6. Strive on; The Control of Nature is Won, not Given. S. Louisiana and the legacy of massive engineering projects
7. The declines and losses of the greatest lakes in the world: What has happened to Lake Balkash & the Aral Sea?
8. Understanding the scope and scale of huge rivers: the Amazon, Yellow, Yangtze and more
9. Groundwater contamination & human health: Links between surface and groundwater systems
10. Chinatown (not just the movie): water wars in California & the San Joaquin Valley, a tale of deceit. Money, power and betrayal.
11. Beaver impacts to riparian streamflow, nutrient cycling and vegetation ecology.

## Student Support

If you have a physical, learning, or psychological disability and require accommodations, please let me know as soon as possible. You will need to register with, and provide documentation of your disability to, University Disability Support Services (UDSS) in SEO, room 330 Knight Hall, 766-6189, TTY: 766-3073

## Student Code of Conduct

1. Students should exhibit respectful classroom values and behavior by:
  - engaging in appropriate communication, interaction and preparedness
  - demonstrating trust, respect and civility
  - approaching course content as important and necessary
  - meeting all deadlines for assignments and team member obligations
  - turning off cell phones in class
  - avoiding unnecessary talking
  - not reading outside material or doing other work during class
2. Students should contribute to a positive learning environment by:
  - arriving, attending and departing class in a respectful manner
  - taking responsibility for team and individual assignments
  - developing cooperative relationships with other students and faculty
3. Students should support a professional learning environment by:
  - avoiding inappropriate language
  - refraining from unrealistic expectations in dealing with administration, faculty and staff
  - communicating with the instructor if changes could be made to improve the learning environment
4. Students must uphold the academic integrity standards expected by the University of Wyoming. Academic integrity is conceptualized as doing and taking responsibility for one's own work. This includes individual assignments and the assumption of responsibility for work that is turned in as the "work product" of a team. Each team member is equally responsible for the work presented as the output of that team's effort. Each team member must carefully collaborate and have jointly participated in the final output. The University of Wyoming's definition of Academic Dishonesty referenced in the Student Code of Conduct: "An act attempted or performed which misrepresents one's involvement in an academic task in any way, or permits another student to misrepresent the latter's involvement in an academic task by assisting the misrepresentation." These acts include, but are not limited to: "Representing as one's own work material copied or borrowed from any source, written or otherwise, public or private, without proper citation of the source."