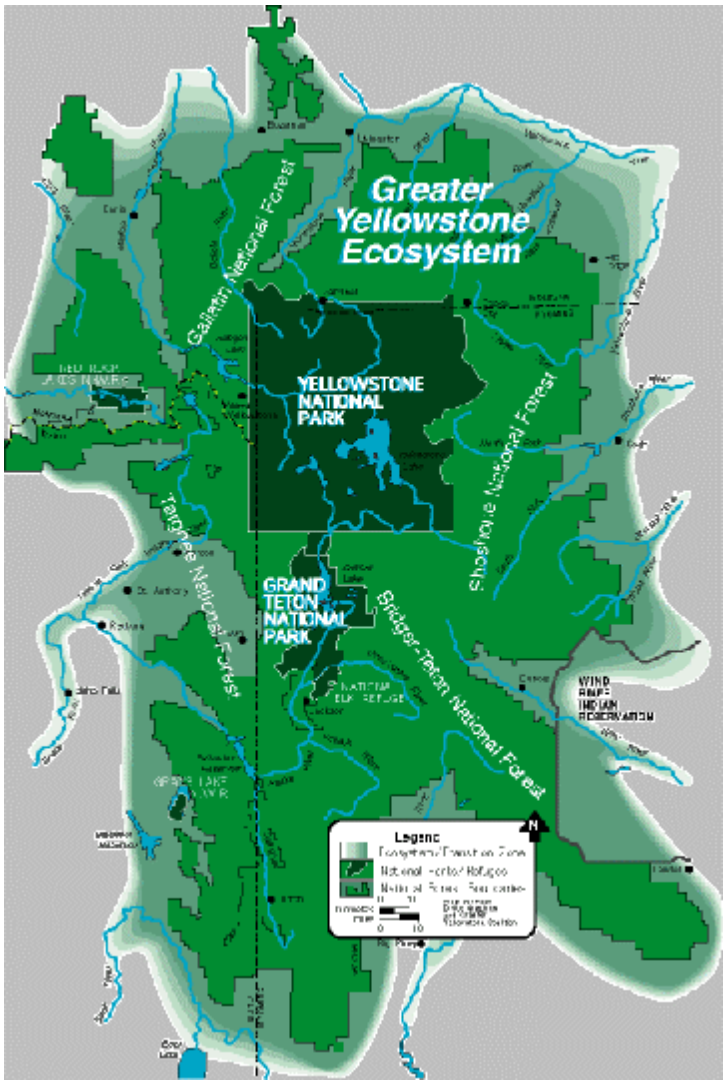
Dr. Jerry Johnson Summer Office 994-5164 or jdj@montana.edu

The context for Land Use Issues in the Greater Yellowstone Ecosystem are the public and private lands of the rural western United States and specifically the area known as the Greater Yellowstone Ecosystem (GYE). Our discussion, research and reading will be closely connected to the states, towns and communities of the west and the twenty two counties of Montana, Idaho and Wyoming adjacent to Yellowstone and Grand Teton National Parks. This course will lay the groundwork for an understanding the legal and political basis for scientific management of natural resources. Readings, field visits and skill-building exercises will equip science educators with the social context of complex ecological issues.

Issues facing policy makers in complex administrative jurisdictions like the Greater Yellowstone Ecosystem require a consideration of the social, legal and economic environment as well as understanding the scientific questions. Both are necessary if society is to successfully address issues like recovery of endangered species, rural sprawl, or wildfire. The laws that govern the development of the vast storehouse of natural resources in the West are based in a time some call the era of the "Lords of Yesterday". They are the product of a more freewheeling period of our economic and political history. They include water law, hardrock mining law, timber and grazing, and the designation of Yellowstone National Park in 1872. These laws play a direct role in how and why the resource agencies manage public lands in the West.

Today, economic, social, and political changes are sweeping the West. The emergent New West is often in conflict with the Old as extractive industry gives way to tourism, retirees, and a service-based economy. While the impacts of our extractive history are well understood, those resulting from rapid land use and social change are less so; from employment patterns to politics, the new west is different from the old.



The course is divided into a background section where the economic history of the region is explained, a section on the laws, traditions and current and future trends of natural resource policy in the West. The final section of the class seeks to place these in context through the use of daily field trips.

The framework for this class is that natural areas matter. As such, rational policy making would suggest that greater ecosystems (such as the Greater Yellowstone) are worth conserving from many points of view including human well-being, inherent social and economic worth, and ecological service provision. The bias such policy making must take is hinged on the question: How fragile are ecosystems and to what extent can they be managed by Man? Two theories exist: one says yes - ecosystems and the organisms in them are an intricately balanced network of dependencies and interactions. As such, a threat or loss of one member of the community may upset the balance and bring

the whole system crashing down among the survivors. If this is the case, policy must reflect recognition of the delicate balance of evolutionary process. Man caused disturbances such as control of wildfire or the eradication of large predators are inherently bad since they are sudden and unanticipated by nature. The reintroduction of a key predator (wolves) is the result of rethinking how the system works.

The other view is that ecosystems are amazingly resilient and very adaptable to change. There are, in fact, many species in a system which compete for biological niches and the loss of one will not threaten the integrity of the system. The community is a collection of redundant species and each copes as best it can by exploiting whatever it can. Evolution in this case is the process of becoming clever enough to make a living out of whatever is available. In the case of wolves, coyotes filled some of the niche left open when wolves were gone. Policy in this case might make the argument that while we have a role to play in the management of greater ecosystems, they can function very well (maybe better) with our help. This has implications for many contemporary issues.

The answers probably lie in the middle and for each issue; the answers will differ with respect to the amount and kinds of management we can successfully pursue given the political dynamics of the moment. That management is driven in part by laws, in part by social and economic values, and in large part by forces outside of the immediate system.

Today, the Greater Yellowstone Ecosystem is undergoing significant changes because of the growth of tourism, in-migration of population, a changing regional and national economy, and because of significant political pressures from many quarters.

This course will lay the groundwork for an understanding of the legal and political basis for scientific management of natural resources on public and private lands in the Greater Yellowstone Ecosystem. Readings, field visits and skill-building exercises will equip science educators with the social context of complex ecological issues.

Issues facing policy makers in complex administrative jurisdictions like the Greater Yellowstone Ecosystem require a consideration of the social, legal and economic environment as well as understanding the scientific questions. Both are necessary if society is to successfully address issues like recovery of endangered species, rural sprawl, or wildfire. The laws that govern the development of the vast storehouse of natural resources in the West are based in a time some call the era of the "Lords of Yesterday". They are the product of a more freewheeling period of our economic and political history. They include water law, hardrock mining law, timber and grazing, and the designation of Yellowstone National Park in 1872. These laws play a direct role in how and why the resource agencies manage public lands in the West.

Today, economic, social, and political changes are sweeping the West. The emergent New West is often in conflict with the Old as extractive industry gives way to tourism, retirees, and a service-based economy. While the impacts of our extractive history are well understood, those resulting from rapid land use and social change are less so; from employment patterns to politics, the new west is different from the old.

Day/Date	Topic	Reading/Activity
	Intro. To Class And Natural Resource Policy **Morning: will focus on the roots of the conservation movement and provide the social underpinnings of ecology and natural resource policy** **Issues Trends, History and Current Thinking About Natural Resource Policy Theory and Science** **The afternoon will be a short (2-3hour) hike to view the Gallatin Valley and area land use patterns. Please bring water and wear walking shoes. The trail is steep in places, you may want walking sticks (ski poles). Weather can range from hot sun to rain.** **Assignment will be to generate questions relevant to students with respect to science and land use change.** Turner - The Problem of the West http://www.theatlantic.com/issues/95sep/ets/turn.htm Aldo Leopold (1949) The Land Ethic *This essay is excerpted from A Sand County Almanac* http://www.luminary.us/leopold/land_ethic.html Johnson, J. D. (1998). The New West Boom Towns, the Ecological Trap, and Migration. Montana Policy Review. 8(1). View is in google docs or down load it here: www.montana.edu/wwwpo/jj350/**ecological**%20**trap**.doc	
TBA		
	Sprawl and Tourism in the New West **Tourism (and tourist services) is not only a dynamic part of the modern western economy; it brings with it its own set of interesting scientific questions. We will examine the theoretical and policy issues associated with the world's largest economic activity and visit some of the implications of tourism.** **This day will be a field visit to several areas of high development impact. In the event of terrible weather, we will shuffle our days around. Please bring raingear, water, etc.** **Physical fitness requirement: this field trip requires walking up to 2 miles on moderate slopes on established trails. We will lunch in Big Sky or take away (TBA).** Johnson, J.D (2004) Impacts of Tourism-Related In-Migration: The Greater Yellowstone Region In: R. Buckley *Environmental Impacts of Ecotourism.* Buckley, R.C. 2003. *Case Studies of Ecotourism*. CAB International Oxford. http://books.google.com/books?id=wueZG01A9YoC&pg=PA25&lpg=PA25&dq=Impacts+of+Tourism-Related+In-Migration:+The+Greater+Yellowstone+Region&source=bl&ots=Pm_2KZix_e&sig=_DG45YbwZT75QfzOFLT-uhQfXwc&hl=en&ei=pZPBTb-	

DJ8XKiAK4heGhCQ&sa=X&oi=book_result&ct=result&resnum=4&sqi=2&ved=0CDEQ6AEwAw#v=onepage&q=Impacts%20of%20Tourism-Related%20In-Migration%3A%20The%20Greater%20Yellowstone%20Region&f=false

The Reclamation Economy

This day will be spent on the road to Butte to visit the Berkley Pit in Butte, America.

Lunch will be on the road at an ethnically accurate Pasty shop in Butte. For those with an aversion to meat please make arrangements or order the salad.

We will visit a working mine and mill – wear sensible shoes. This is sometimes a long day so if you are going to meet family or friends, please be advised.

Pat Williams
Seeing Montana's Restoration Economy
http://www.headwatersnews.org/p.criley070606.html

http://www.clarkfork.org/dry-cottonwood/dry-cottonwood-creek-ranch.html

The Changing Socioeconomic Setting of the West

The "New West" is a catch-all phrase that encapsulates social, economic and ecological shifts in public orientation as well policy and practice.

Hansen, Andrew J., Ray Rasker, Bruce Maxwell, Jay J. Rotella, Jerry D. Johnson, Andrea Wright Parmenter, Ute Langner, Warren B. Cohen, Rick L. Lawrence, Matthew P. V. Kraska, (2002): Ecological Causes and Consequences of Demographic Change in the New West. BioScience: Vol. 52, No. 2, pp. 151–162. Download a pdf at:
http://www.bioone.org/doi/abs/10.1641/0006-3568%282002%29052%5B0151:ECACOD%5D2.0.CO%3B2

On this day we will visit with Casey Anderson's Montana Grizzly Encounter to talk about habitat needs in a changing west. A morning visit is often best so please be prepared to leave on time.