

# **Environmental Planning and Policy**

## **GEOG 466/666**

### **Syllabus**

**Instructor:** Dr. Scott D. Bassett

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**Office Hours:** By appointment; however I am generally in my UNR office from 8am until 10am.

**Course Description:** Environmental planning is the practice of urban planning framed within the context of environmental concerns. Emphasis throughout the course is placed on a diverse array of environmental impact assessments as the consequence of land use change. Hydrology, ecology, air quality, geology, and soils will be described within a planning context and framed within the concept of sustainable development. Heavy emphasis is placed on the juxtaposition of land uses and the potential effects of future land use change.

#### **Course Goals:**

Goal 1. Provide a description of the history of environmental planning and its origins.

Goal 2. Provide a knowledge base for how environmental impact assessments may be made at a regional scale, larger than site planning scale.

Goal 3. Familiarize students with current up to date environmental planning and policy practices within a urban context.

#### **Required Text:**

Randolph, John. 2003. Environmental Land Use Planning and Management. Island Press. Washington, D.C.

#### **Additional Readings:**

Ecological Applications. 2004. Volume 14, Issue 2 (The entire issue on the Willamette River Basin, Oregon)

Shearer, A. W., D. A. Mouat, S. D. Bassett, M. W. Binford, C. W. Johnson, And J. A. Saarinen. 2006. Examining development-related uncertainties for environmental management: Strategic planning scenarios in Southern California. Landscape and Urban Planning 77:359-381.

Steinitz, C. 1990. Towards a sustainable landscape with high visual preference and high ecological integrity: the loop road in Acadia national Park. Landscape and Urban Planning 19: 213-250..

#### **Assignments/Exams:**

One exam will be prepared to test individual student knowledge on the material presented in class and present within the required text. A single paper/plan is required to be prepared for this class and should emphasize an aspect of environmental planning and/or environmental policies as related to planning. The paper topic should be approved by the instructor. Papers should be 10 to 15 pages in length with 1.5 line spacing. Graduate students will be required to prepare a

presentation and present their environmental plan to the entire class. Graduate students are expected to use assignments 1 and 2 within their environmental plan, whereas, undergraduate students need only write a paper on some aspect of environmental planning and not necessarily produce an environmental plan for a specific site or region.

Exam/Assignments	Undergrad (%)	Grad (%)
Exam	200 (26.7%)	200 (22.2%)
Assignment 1: Paper/ Project Topic and Policy Identification	100 (13.3%)	100 (11.1%)
Assignment 2: Analysis System Design	100 (13.3%)	100 (11.1%)
Environmental Plan Document Outline	50 (06.7%)	50 (05.5%)
Environmental Plan Presentation	NA	150 (16.7%)
Environmental Plan or Paper (undergrads)	300 (40.0%)	300 (33.3%)
<b>Total</b>	<b>750 (100%)</b>	<b>900 (100%)</b>

**Students enrolled in GEOG 666 (graduate):**

Beyond the requirement of graduate students to present their entire plan and incorporate material prepared in assignments 1 and 2 within the plan, students registered for 666 will be expected to meet with the instructor frequently (once every two weeks) to discuss progress in formulating their environmental plan. You will be expected to show up prepared for these discussions and highlight progress to date. Furthermore, you can expect added guidance into areas where more research may be needed to complete your plan, including specific literature references.

**Grades:**

93-100% (4.0)	= A	90-92.9% (3.7)	= A-
87-89.9 (3.3)	= B+	83-86.9 (3.0)	= B
80-82.9 (2.7)	= B-	77-79.9 (2.3)	= C+
73-76.9 (2.0)	= C	70-73.9 (1.7)	= C-
67-69.9 (1.3)	= D+	63-66.9 (1.0)	= D
60-63.9 (0.7)	= D-	Below 60 (0.0)	= F

**Lecture Attendance Policy:** All students must attend class. Failure to not attend class may result in a zero in many assignments since presentation of material is required.

**Assignments:** Assigned work must be completed prior to the start of class. Failure to turn in papers on time will result in a reduction in grade.

**Cheating (i.e. direct copying of work):** Cheating is unacceptable and if done will result in the student receiving an F for the course. Collaboration among students is encouraged, however, all written work must be in the students own words.

**Disability:** If you have a disability and will be requiring assistance, please contact the instructor or the Disability Resource Center (Thompson Building Suite 101) as soon as possible to arrange for appropriate accommodations.

## Environmental Planning and Policy (GEOG 466/666)

<b>Week 1</b> Jan 20	<b>Lecture:</b> Humans and the Environment <b>Goals:</b> Develop an understanding of the human-environment <b>Readings:</b> Randolph Chapter 1
<b>Week 2</b> Jan 27	<b>Lecture:</b> Environmental Planning <b>Goals:</b> Understand what environmental Planning is <b>Readings:</b> Randolph Chapters 2 & 3
<b>Week 3</b> Feb 3	<b>Lecture:</b> Environmental Collaboration <b>Goals:</b> Familiarization with public participation and land conservation techniques <b>Readings:</b> Randolph Chapters 4 & 5
<b>Week 4</b> Feb 10	<b>Lecture:</b> Designing with Nature <b>Goals:</b> Develop smart growth knowledge <b>Readings:</b> Randolph Chapters 6 & 7
<b>Week 5</b> Feb 17	<b>Lecture:</b> Land management agencies <b>Goals:</b> Gain a clear picture of regional agencies and case studies (1.5 hour lecture) <b>Readings:</b> Randolph Chapter 8
<b>Week 6</b> Feb 24	<b>Lecture:</b> Hazards, Ecosystems and Watersheds <b>Goals:</b> Understand what the different environmental hazards are and the difference between ecosystems and watersheds (1.5 hour lecture) <b>Readings:</b> Randolph Chapter 9 & 10
<b>Week 7</b> March 3	<b>Lecture: Exam</b> <b>Goals:</b> Test knowledge base <b>Readings:</b> None
<b>Week 8</b> March 10	<b>Lecture:</b> Geospatial techniques, soils and land use <b>Goals:</b> Understand role of spatial sciences and soils <b>Readings:</b> Randolph Chapter 11 & 12, <b>Assignment 1 due</b>
<b>Week 9</b> March 17	<b>Spring Break</b>
<b>Week 10</b> March 24	<b>Lecture:</b> Surface and Ground water <b>Goals:</b> To familiarize all with some common surface and ground water principles <b>Readings:</b> Randolph Chapter 13 & 15
<b>Week 11</b> March 31	<b>Lecture:</b> Stormwater <b>Goals:</b> Stormwater management familiarization <b>Readings:</b> Randolph Chapter 14
<b>Week 12</b> April 7	<b>Lecture:</b> Landscape Ecology, Forestry and Wetlands <b>Goals:</b> Develop fundamental understanding of the three lecture topics <b>Readings:</b> Randolph Chapter 16, <b>Outline due</b>
<b>Week 13</b> April 14	<b>Lecture:</b> Wildlife habitats and biodiversity <b>Goals:</b> Answer the question what is wildlife habitat/biodiversity? <b>Readings:</b> Randolph chapter 17
<b>Week 14</b> April 21	<b>Lecture:</b> Environmental Land Analysis <b>Goals:</b> Understand the application of Decision Support Tools <b>Readings:</b> Randolph chapter 18, <b>Assignment 2 due</b>
<b>Week 15</b> April 28	<b>Lecture: Class Presentations</b> and Class Summary <b>Goals:</b> Familiarize all with class projects and class synthesis <b>Readings:</b> None
<b>Week 16</b> May 5	<b>Dead Day</b>
<b>Week 17</b>	<b>Lecture:</b> Finals Week ( <b>Final Plan/Paper Due May 10th</b> )

**Preliminary Draft of Assignment 1:**

**ASSIGNMENT 1  
Project/Paper Topic and Policy Identification  
GEOG (466/666)**

**Due:**

**Objective:** To identify environmental policy issues addressed for your project or paper topic.

**Task:** You have been assigned to scour the internet, newspapers and other documents to discover what are the potential environmental planning policy issues that are of interest to your paper topic. Potential topics around which environmental planning issues may be constructed include, but are not limited to biodiversity, sustainability, water quality, water quantity, hazard assessment, etc...

**Homework to hand in:** To illustrate you have completed the assigned task you must hand in a hard copy of your topic and a background description of the issue(s) addressed. (send in a digital copy within one day of the assignment due date). References must be clearly cited.

**Grading:** The overall grade for this assignment will be based on the background research into your paper topic and the overall value of references used to identify the issues surrounding your topic. In general, if you clearly articulate a topic and the issue(s) you will receive at least 85 points on this assignment. The last 15 points will be assigned according to how you compare with your peers.

## **Preliminary Draft of Assignment 2:**

### **ASSIGNMENT 2 Design a System or Component thereof GEOG (466/666) Due:**

**Objective:** To design an environmental system which can be used to develop and assess a potential planning design.

**Task:** You are tasked for designing a system that could be used for informing or evaluating a plan. The system may be focused (i.e. deer breeding habitat preference) or general (i.e. water supply). The design should clearly state all assumptions and contain specific quantitative (i.e. buffer distances) or qualitative (how do people feel?) parameters. Students should consider doing this assignment based on the issue(s) presented in assignment 1 thereby allowing the potential inclusion of the system design into your final project/paper.

**Homework to hand in:** A two to five page document describing your system design. You may and should use issues derived from assignment 1. Be as specific as possible. As with prior assignments, please hand in a digital copy.

**Grading:** In general, if your document contains a well thought out line of reasoning supported by literature (i.e. specific references) in two to five pages you will receive a minimum grade of 85. A system design with assumptions is fine; however, assumptions must be clearly stated. The last 15 points will be based on how well you convey your issues to the reader.

#### **Example: (Jaguar Potential Habitat)**

The jaguar, *Panthera onca*, is the largest cat native to the Western Hemisphere, ranging in weight from 68 to 100kg). Jaguar habitat is diverse and varies with location. At the southern and northern edges of their range, they inhabit more arid areas that include oak-pine woodlands and riparian corridors. In arid locales they appear to prefer lower mountain areas. Highly adaptable to a variety of vegetation communities, the jaguar's potential habitat appears to be related to their prey base (Oliviera 1994).

A large carnivore, the jaguar feeds on a variety of prey, which consists of peccaries and other large mammals, turtles, and fish. Livestock may be taken, creating a problem for ranchers. Along the U.S./Mexico border, javelina and deer are mainstays of their diet. As an ambush predator, the jaguar requires adequate cover. When hunting, it's uniquely patterned fur provides excellent camouflage. The jaguar may stalk prey or hide and wait for the opportunity to pounce from an area of dense cover (Arizona Game and Fish 1999; Taber et al. 1997).

Jaguars must range over large areas. Their average home range is 54.3 sq km during the dry season. Dry season area requirements should be used in the potential habitat model because of the arid conditions of the study region. Daily movements within this range vary in accordance with the abundance of prey species. Typical jaguar habitat, driven by the habitat requirements of prey species, consists of a mosaic of large trees consisting of conifers, oaks, or cottonwoods surrounded by or interwoven within relatively open areas. Forest areas serve as cover from which the jaguar may pounce and catch its prey, while open areas provide foraging areas where

prey may be located. The jaguar will carry its prey up to 185m to a tree for consumption (Hoogsteign and Mondolfi 1992; Crawshaw and Quigley 1991).

The large habitat area required by individual jaguars creates difficulties. Most potential habitat exists within lower elevations of mountainous areas. Elevations above 2000 m are less favorable for habitation. A single montane area is not sufficient to guarantee the survival of the species. Adequate lowland corridors through which jaguars may move between mountain ranges in safety are essential. Free movement through large areas is required for breeding. With the presence of people in the lowlands, movement corridors are disrupted, and jaguars are seen as a threat. Ranchers know that jaguars take livestock and traditionally have shot jaguars on sight. A change of attitude toward the jaguar, especially in Mexico, must come if the species is to survive (Hoogsteign and Mondolfi 1992).

Potential jaguar habitat includes two parts, cover habitat and feeding habitat. All potential habitat is below 2000 m elevation. Cover habitat contains large trees to allow the jaguar to consume its prey in peace and sufficient density of vegetation to provide cover. Feeding habitat includes areas of open vegetation close to cover habitat. Feeding habitat must be within 185 m of cover habitat. The combined area of feeding and cover habitat must exceed 54.3 sq km for a single individual to survive. Smaller areas should be eliminated as potential habitat unless they are connected by movement corridors. Movement corridors represent areas connected by cover habitat. Cover habitat corridors should be located away from human residences. Although specific distances from residences are unknown a potential cover habitat corridor located at least 100 m from a residence is assumed to be distant enough. Furthermore, any corridor at least 10 m in width would easily support movement of a jaguar.

The jaguar itself is a single species that may be representative of the health of an environmental system through its dependence on an array of prey species and large area required for survival. Loss or gains in potential jaguar habitat would be reflective of changes in habitat conditions above. These losses or gains would be indicative of the overall environmental health of natural areas.

#### ***Literature Cited***

Arizona Game and Fish 1999. *The Arizona Game and Fish Department's Jaguar Page.*

[www.gf.state.az.us/frames/fish-wild/jaguar.htm](http://www.gf.state.az.us/frames/fish-wild/jaguar.htm)

Crawshaw, P. G., Jr., and H. B. Quigley 1991. Jaguar spacing, activity and habitat use in a seasonally flooded environment in Brazil. *Journal of Zoology* 223:357-370.

Hoogsteign, R., and E. Mondolfi. 1992. *The Jaguar*. Caracas:Armitano.

Oliviera, T. G. 1994. Jaguar. In *Neotropical Cats: Ecology and Conservation*, 75-88. San Luis, Brazil:Edufma.

Taber, A. B., A. J. Novaro, N. Neris, and F. H. Colman. 1997. The food habits of sympatric jaguar and puma in Paraguayan Chaco. *Biotropica* 29(2):204-213.

**Final Project  
Environmental Plan  
GEOG (666)**

**Due:**

**Objective:** To construct an environmental plan representative of an environmental planning issue or composite of issues.

**Task:** You must create an environmental plan which depicts a vision for an environmental resource into the future. The plan must contain a spatial manifestation of environmental resources along with written documentation highlighting your forecasting information. Any systems analyses must be clearly presented and whenever possible highlighted in a quantitative (i.e. area of wetland, length of stream network, etc...) and narrative fashion. The plan should clearly articulate a vision for the future, the means to arrive at this future and any potential methods for monitoring the trend into the future.

**Homework to hand in:** The final plan must be turned in both in hard copy and digital form. Where maps cannot be digitally entered a hard copy will suffice. A 10 minute presentation about the plan must be completed during the last day of class.

**Grading:** The overall grade for this assignment will be derived from how well you can convey your plan to the class and the final written report.

*Presentation:* The presentation must be concise and can not exceed 13 minutes (you will be timed). Thus, the major components of your plan should be presented and the audience of students will be allowed up to 5 minutes for questions.

*Written Plan:* The written plan will be evaluated based on your issue and how well you address the environmental concerns of the issue. The plan must contain a clear definition of your goals and objectives. A vision for the future should be articulated based on the goals and objectives. Any maps must be easily read and clearly identify plan elements. Any information utilized to construct the plan must be clearly defined. Ways to monitor your plan into the future should be suggested. The overall grade will be determined on how well you relate and integrate all the items described above into a document. Written portions of the plan will typically be 8-20 pages double-spaced exclusive of references, maps and figures. The actual length of the plan is less of a concern than the communication of the plan through your prose.