

# *Natural Resources in a Changing Climate*

FOR 6934 (3 credits) Spring, 2015  
Sections 18DE (on campus), 1A43 and 1A44 (distance)

## **Course Description**

Our collective focus has been on protecting natural resources as they are, restoring them to what they were, or using them based on past experience. *The world is changing.* We need to reconsider our objectives and the tools we use to meet them. This course will explore conservation and management tools and their vulnerabilities to global climate change (GCC), how they can be implemented in new ways to maintain or increase their effectiveness, options for integrating the needs of humans and natural resources, and how governance mechanisms might be improved to support adaptation efforts. *Be prepared to think creatively!*

## **Instructor**

Dr. Shirley Baker

Email: [sbaker25@ufl.edu](mailto:sbaker25@ufl.edu)

Telephone: 352-273-3627 (office)

Office: Fisheries and Aquatic Sciences, 7922 NW 71<sup>st</sup> St

Office hours: By appointment

## **Teaching assistant**

Susana Hervas Avila

E-mail: [shervas@ufl.edu](mailto:shervas@ufl.edu)

May also contact through Canvas Conversations or by posting in Discussions.

## **Student Learning Outcomes**

At the end of this course, each student will be able to:

- Explain the mechanisms and broad implications of GCC.
- Analyze vulnerabilities of current conservation and management strategies to GCC.
- Compare strategies to reduce vulnerability of natural resources to GCC.
- Evaluate and design conservation and management tools to adapt to GCC.
- Assess the effectiveness of natural resource policies in adapting to GCC.

**Meeting Times:** This course is taught in a mixed mode for both on-campus and distance students.

**Face-to-face delivery:** M 4 (10:40-11:30), T 2-3 (8:30-10:25)

**Distance delivery:** Lectures will be recorded and posted to the course Canvas site. Discussions will be streamed for live participation and recorded.

## Required Texts/Readings

1. Hansen, L.J. and J.R. Hoffman. 2011. *Climate Savvy; Adapting Conservation and Resource Management to a Changing World*. Island Press, Washington DC. 245 pp.
2. Peer-reviewed literature, technical papers, interactive websites, and outreach documents will be posted on the course Canvas site.

## Class Format, Policies on Attendance and Make-up Exams

### Course format:

This course will consist primarily of lecture and discussion periods. Students are expected to have read assigned materials prior to corresponding class sessions.

### Attendance policy:

Regular attendance and participation in lecture and discussion periods is expected. Absent students are responsible for acquiring missed lecture notes.

### Make-up policy:

No make-up quizzes will be allowed. Social media participation and weekly leadership cannot be made up, although students may “trade” weeks, if necessary. Students may miss one discussion session without penalty; two or more missed discussion sessions cannot be made-up and will result in a grade of “o” for that week. Late assignments will have 10 points deducted for every day late.

## Assignments

### Quizzes:

Quizzes will be posted online following completion of each of the four units; in weeks 3, 7, 10, and 15. Quizzes will be open book and will be available until the following Sunday (6pm). It will be the responsibility of the student to complete the quizzes on their own time.

### Quiz dates:

- Unit 1: 20-25 January
- Unit 2: 17-22 February
- Unit 3: 17-22 March
- Unit 4: 21-26 April

**Social media participation:**

We encounter climate change-related information on an almost daily basis in the media and elsewhere. We will use Facebook to engage in sharing and discussing climate change information outside of the classroom and formal discussion sessions. The intent is to keep the conversation going from week to week, and to have face-to-face and distance students communicate with each other. A participation rubric will be provided.

**Social media dates:**

Week 1: Students must join the course FB group and post an introduction - name, location, major, study topic, and something interesting about themselves. (By Sunday, 11 January, 6pm)

Weeks 2-15: Every subsequent week, students must post links to interesting or controversial GCC-related news or scientific articles, comment on links, and/or post questions for discussion sessions.

**Discussion participation:**

Weekly class discussions will derive from lectures, guest lectures, and assigned readings.

Discussion sessions will typically take place each Tuesday morning for one hour, following a guest lecture or class activity. Students will be expected to actively participate in every discussion. There will be 13 weekly discussion sessions during the semester. Students must participate in at least 12 sessions; students may miss one discussion session without penalty. A grading rubric will be provided.

Distance students should participate live via the interactive streaming session, whenever possible. If you cannot participate live, you will be expected to watch the recorded discussion and post a 2-3 sentence reaction on the Facebook group wall.

Face-to-face students who must miss a class discussion session (with justification) may watch the recording and post a reaction as an alternative.

**Weekly leadership:**

Each week, two individuals will be expected to take a leadership role: face-to-face students will lead discussion participation, and distance students will lead the social media participation. The number of times that an individual will take a leadership role will depend on the number of students enrolled in each section (on campus or distance delivery). A rubric will be provided.

**Policy Brief:**

All students will develop a "Policy Brief" over the course of the semester. Each of six assignments must be submitted to the e-learning platform by 6 pm on specific Sundays (see schedule). The assignment will be graded, edited, and returned. When submitting the next assignment (e.g., Assignment #2), students are expected to submit

the new section as well as respond to instructor/TA comments on the previous section (e.g., Assignment #1). Information on developing a Policy Brief, and a grading rubric, will be provided.

Assignment #1: Introduction	18 January
Assignment #2: Body structure outline	1 February
Assignment #3: Body	15 February
Assignment #4: Supporting material	1 March
Assignment #5: Recommendations	22 March
Assignment #6: Completed product	5 April

**Peer policy brief grading:**

All students will be expected to grade the completed policy briefs of several other students using a simple scale. Peer grading scores will contribute to the final grade of each student on Assignment #6. Students will receive points for participating in peer grading. Grading rubrics will be provided.

**Evaluation of Student Learning**

Quizzes, 4 @ 10 pts each	40 points
Social media participation, 15 weeks @ 2 pts each	30 points
Discussion participation, 12 required @ 10 pts each	120 points
Weekly leadership, 2 @ 10 pts each	20 points
Policy brief assignments, 6 @ 20 pts each	120 points
Peer grading, 1 @ 10 pts each	10 points
<b>TOTAL</b>	<b>340 points</b>

**Grading Scale**

Final grades will be assigned based on the percentage of total points earned. For additional information on UF grading policies, see

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

- A = 90-100% = 306-340 points
- B+ = 85-89% = 289-305 points
- B = 80-84% = 272-288 points
- C+ = 75-79% = 255-271 points
- C = 70-74% = 238-252 points
- D = 60-69% = 204-237 points
- F = < 60% = <203 points

<b>Schedule</b>			
<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Reading</b>
<b>Unit 1: Introduction to GCC and Natural Resources</b>			
<b>1</b>			
	6 January	Introduction to course: GCC and creative thinking <i>Discussion</i> – Policy brief topics	Hanson 1-5, 213-219
<i>FB Introduction: 11 January, 6pm</i>			
<b>2</b>	12 January	GCC and its effects: What you need to know	Hanson 6-23
	13	Guest lecture: Dr. Andrea Dutton – SLR and coastal processes <i>Discussion</i>	TBA
<i>Assignment #1, Introduction: 18 January, 6pm</i>			
<b>3</b>	19 January	Holiday – Martin Luther King Day	
	20	Vulnerability of current conservation and management paradigms <i>Discussion</i>	Hanson 24-34
<i>Quiz #1: Open 20-25 January, 6pm</i>			
<b>Unit 2: A new framework for adapting conservation and resource management</b>			
<b>4</b>	26 January	Adaptation and mitigation	Hanson 35-54
	27	Guest lecture: Dr. Tim Martin – Forest management for adaptation and mitigation <i>Discussion</i>	TBA
<i>Assignment #2, Body structure outline: 1 February, 6pm</i>			
<b>5</b>	2 February	Assessing vulnerability of systems and species	Hanson 55-69
	3	Guest lecture: Dr. Martha Monroe – Perceptions of climate change <i>Discussion</i>	TBA
<b>6</b>	9 February	Developing strategies to reduce vulnerability	Hanson 70-87
	10	Guest lecture: Dr. Luke Flory - Potential effects of climate change on non-native species invasions	TBA

		<i>Discussion</i>	
<i>Assignment #3, Body: 15 February, 6pm</i>			
7	16 February	Using climate and biological models	Hanson 88-105
	17	Guest lecture: Dr. Wendell Cropper – Using climate models in natural resource management <i>Discussion</i>	TBA
<i>Quiz #2: Open 17-22 February, 6pm</i>			
<b>Unit 3: Conservation and management tools: Putting the framework into action</b>			
8	23 February	Place-based conservation and management: GCC and Protected areas, corridors, and ecosystem restoration	Hanson 107-122, 136-146, 147-158
	24	Guest lecture: Dr. Nick Funicelli – Marine Protected Areas; An idea whose time has come <i>Discussion</i>	TBA
<i>Assignment #4, Supporting material: 1 March, 6pm</i>			
Spring Break, March 2-6			
9	9 March	GCC and Species-based conservation and management	Hanson 147-158
	10	Guest lecture: Dr. Kai Lorenzen – Active enhancement and restoration approaches: Captive breeding, assisted migration <i>Discussion</i>	TBA
10	16 March	Limiting vulnerability to non-native species, pests, and diseases	Hanson 159-168
	17	Guest lecture: Dr. Jiri Hulcr – GCC impact on biogeography of forest pests and diseases <i>Discussion</i>	Kurz et al. 2008
<i>Quiz #3: Open 17-22 March, 6pm</i>			
<i>Assignment #5, Recommendations: 22 March, 6pm</i>			
<b>Unit 4: Adaptive governance, policy, and regulation</b>			
11	23 March	Baker in CA at conference	
	24		
12	30 March	Climate-savvy harvest management	Hanson 169-179
	31	Guest lecture; TBA <i>Discussion</i>	TBA
<i>Assignment #6, Completed policy brief: 5 April, 6pm</i>			

<b>13</b>	6 April	Incorporating pollutants into GCC adaptation	Hanson 180-188
	7	Reconciling human needs with effective conservation and resource management <i>Discussion</i>	Hanson 189-198
<b>14</b>	13 April	Guest lecture: Dr. Jack Payne	TBA
	14	Guest lecture: Dr. Bob Swett - <i>Discussion</i>	TBA
<i>Peer grading: Due 19 April, 6pm</i>			
<b>15</b>	20 April	Implementing adaptive governance	Hanson 199-212
	21	Guest lecture; TBA <i>Discussion</i>	TBA
<i>Quiz #4: Open 21-26 April 6pm</i>			

## Other Information

### **Academic Honesty, Software Use, UF Counseling Services, Services for Students with Disabilities**

In 1995 the UF student body enacted an honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students.

In adopting this honor code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the university community. Students who enroll at the university commit to holding themselves and their peers to the high standard of honor required by the honor code. Any individual who becomes aware of a violation of the honor code is bound by honor to take corrective action. The quality of a University of Florida education is dependent upon community acceptance and enforcement of the honor code.

**The Honor Pledge: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.**

On all work submitted for credit by students at the university, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior.

Students should report any condition that facilitates dishonesty to the instructor, department chair, Student Honor Council, or Student Conduct and Conflict Resolution in the Dean of Students Office.

*(Source: 2011-2012 Undergraduate Catalog)*

It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor.

This policy will be vigorously upheld at all times in this course.

## **Software Use:**

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

## **Campus Helping Resources**

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)*  
Counseling Services  
Groups and Workshops  
Outreach and Consultation  
Self-Help Library  
Training Programs  
Community Provider Database
- *Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

## **Students with Disabilities**

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues.

0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)