GEOS 2121
ENVIRONMENTAL AND RESOURCE MANAGEMENT

SCHOOL OF GEOSCIENCES

Second semester 2007
Lectures
Monday 12.00pm Chemistry Lecture Theatre 4
Tuesday 12.00pm Chemistry Lecture Theatre 4

Coordinator/Lecturer/Tutor
Dr. Phil McManus
Room 471, Madsen Bldg, telephone 9351-4242 e-mail pmcmanus@mail.usyd.edu.au

Lecturer/Tutor
Dr. Jeff Neilson
Room 437 Madsen Building, telephone 9351 4733, email jneilson@geosci.usyd.edu.au

Tutor
Nathan Wales
Room 450 Madsen Building, telephone 9351 2804, email nwal8800@mail.usyd.edu.au

GEOS 2121 Resource and Environmental Management explores cultural constructions of nature and resources, the evolution of environmental thought and the debates about sustainable development. It integrates environmental, economic, cultural and social considerations, with particular regard to water, mining, forestry and fishing industries in Australia and other countries. The unit includes a fieldtrip to the Hunter Valley to look at geological and geographical issues pertaining to mines, wines and the thoroughbred breeding industries in this region. The unit of study enables students to learn about the economics of resource extraction and the social, cultural and environmental considerations that must be taken into account when developing and implementing environmental and resource management policies. The unit deals with key concepts and principles of environmental and resource management from a societal perspective. The environment, natural resources and explanations of resource and environmental degradation are presented as contested entities. The approach therefore eschews the “one right way” approach to environmental management in favour of an approach based on understanding the diverse and complex societal contexts in which environmental and resource managers operate. These principles are illustrated throughout by means of case studies at a number of scales.
In order to participate fully, students are expected to:

- Attend lectures for an introduction to key themes and for illustrative detail of the case studies presented.
- Keep up with the prescribed readings to reinforce your understanding of the main material. Supplementary reading will deepen this understanding.
- Decide early on in the semester what your essay topic will be, and aim to read as widely as possible for this topic in order to give yourself a geographical and thematic context upon which to relate the lecture material.
- Develop data management and presentation skills in the practical classes, recognising that these are parallel rather than integral to the lecture themes.
- Participate actively in seminar-format discussions, using them as an opportunity to clarify concepts introduced in the lectures, cover key reading material and discuss topical environmental issues.
- Sit a final exam, which will be based on readings, lectures, practicals and key material covered during the discussions.
Assessment

The full semester assessment is as follows:

a) Discussion Reports (Weeks, 2, 6, 10, – due Weeks, 3, 7, 11) 10%
b) One 2000 word essay, due 4.00pm Thursday 13 September 2007 (week 8) 25%
c) Upper Hunter Field report due 4.00pm Thursday 25 October 2007 (week 13) 25%
d) One final 2-hour exam [end of semester] 40%

The essay questions and the tutorial report questions are provided in this unit reader. The Upper Hunter Fieldtrip report questions, readings and other details will be provided at a later date in a separate handout. The examination will consist of both short-answer and essay questions. All assignments must be placed in the 2nd Year Environment drawer outside the Geography Office (Madsen 470). A penalty of 5% per day will be deducted for late assignments unless a valid reason is given for the lateness.

SATISFACTORY COMPLETION OF ALL THESE COMPONENTS IS REQUIRED TO PASS THE UNIT OF STUDY.

Lecture outline

Week 1 The environment and natural resources: contestation and management
Principles of sustainable development 24 July 2007

Week 2 Environmental philosophy
Technology and the philosophy of science 30 July 2007
Anthropocentric environmentalism 31 July 2007

Week 3 Environmental philosophy / geography and environmentalism
Radical environmentalism 6 August 2007
Environmentalism in Australia – a brief history 7 August 2007

Week 4 Population, development and environment
Global overview and population debates in Australia 13 August 2007
Numbers of people: The ultimate resource or the population bomb 14 August 2007

Week 5 Reading week

Week 6 Livelihoods and the environment
Rural poverty and conservation in developing countries 27 August 2007
Payments for environmental services 28 August 2007

Week 7  Global energy and climate change
Minerals, energy and the carbon cycle 3 September 2007
Global institutions to address climate change 4 September 2007

Week 8  Water management in Australia
Use and abuse of a precious resource 10 September 2007
The politics of water allocations and trading 11 September 2007

Week 9  Agriculture and landuse
Land clearing and rural conservation in Australia 17 September 2007
An orientation to the environmental politics of the Upper Hunter 18 September 2007

Semester break: Upper Hunter Field Trip 24-27 September 2007
PM// TBA

Week 10  Frontiers: forestry and fishing
Public Holiday (Forest frontiers –lecture notes on the web) 1 October 2007
Fish frontiers 2 October 2007

Week 11  Animals and the environment
Defining humans and other animals 8 October 2007
Trade in wildlife – problem or solution? 9 October 2007

Week 12  Resources and indigenous peoples
Resources, nations and indigenous peoples 15 October 2007
Contested geographies of Aboriginal Australia 16 October 2007

Week 13  Impact assessment
Environmental, Social, Strategic and Integrated impact assessment 22 October 2007
Summary: The “environmental crisis” and the future 23 October 2007

Tutorials
Commencing in Week 2, a series of compulsory one hour weekly tutorials will be held through the semester, at the same times as Semester I:

**Weeks 2-13**
- **Monday**  2.00pm – 3.00pm  Madsen Tutorial Room 410
- **Tuesday**  8.00am – 9.00am  Madsen Tutorial Room 410
- **Tuesday**  1.00pm – 2.00pm  Madsen Tutorial Room 410
- **Thursday**  9.00am – 10.00am  Madsen Tutorial Room 410

Commencing in Week 2, students will begin tutorial discussions. At the commencement of the tutorial in the week following the tutorial of weeks, 2, 6 and 10, a 500 word discussion paper must be submitted. The questions to be answered in this discussion paper are listed below.

**Discussion Questions:** There are three discussion reports to be submitted. A 500 word discussion paper for assessment must be submitted at the beginning of the discussion in the following week. These discussion papers are designed to reinforce your learning and help your revision for the exam. These discussion reports should be easy marks for students who are working well at this early stage of the semester. The other questions below are tutorial prompts.

**Week 2 Discussion: Environmental philosophy**
**Discussion question (to be submitted at the beginning of the week 3 tutorial)**

*Why do a range of environmental positions/philosophies exist and what might this mean for the management of Australia’s environment?*

What does anthropocentric mean?
Is business the dominant organisational vehicle in our society?
Will change be driven by market forces?
Do we need a greater or reduced role for government?
What is sustainable development?

**Week 3 Discussion: Environmental Philosophy/Geography and environmentalism**

What are the main differences between biocentric and anthropocentric perspectives on nature? What implications may result from these differences?
Has the development of Australian environmentalism been an inevitable evolution of thought?
Why may environmental history be important?
Why have complex Indigenous understandings of the environment been ignored?
How does contemporary Australia relate to the environment?
How, why, and to what degree, have attitudes changed over time?

**Week 4 Discussion: Population and the Environment**

What is the IPAT formula?
Explain the relationships between population and resource use.
Why is counting population numbers and documenting population change considered important?
What are the main arguments used for and against increased population at the global scale, the national scale and the local scale?
How may human population growth impact upon other species?
Identify and explain patterns of population change in Australia over the past fifty or so years.
Australia’s population should be boosted to 50 million people by 2050. Discuss.

Week 5 Reading Week
There are no lectures and tutorials this week. The week is to be used for reading material for the Upper Hunter Fieldtrip/alternative assignment (same reading list – available in this course reader), the essay and the week 6 tutorial.

Week 6 Discussion: Livelihoods and the environment
Discussion Question (to be submitted at the beginning of the week 7 tutorial):
Does poverty cause environmental degradation? Discuss

Will economic growth lead to improved environmental performance in developing countries?
Does wealth cause environmental degradation?
Can conservation contribute to poverty reduction?
What are Integrated Conservation and Development Projects (ICDPs)? Are they possible? Is there a trade-off between livelihoods and the environment?
What are Payment for Environmental Services (PES) schemes? How do they operate?

Week 7 Discussion: Global energy resources and climate change
Are we sure that anthropogenic global warming is occurring?
Is nuclear energy the solution to achieving carbon reductions?
Is there a technological fix to global warming?
What is the carbon economy?
Why have Australia and the United States each refused to ratify the Kyoto Protocol?
What is the principle of common but differentiated responsibility in the Kyoto Protocol?

Week 8 Discussion: Water management in Australia
What have been the major changes in water management in Australia since the end of WW2? How would Howard’s 2007 National Plan for Water Security change previous arrangements?
How may water trading rights be connected to neo-liberalism?
Have water rights been over-allocated in the Murray-Darling Basin?
Is our water too cheap?
Do we need more dams? Discuss options to meet projected water demand in our major cities.
Week 9 Agriculture and land use

Week 10 Discussion: Frontiers: Forestry and Fishing
Discussion Question (to be submitted at the beginning of the week 11 tutorial):
How are the metaphors of farming and mining linked to the idea of a resource frontier? Are these metaphors appropriate, or can they be critiqued? If so, how?

What is a resource frontier?
Is over-exploitation possible?
How may technology influence the construction of a frontier mentality?
What evidence can you cite of resource management moving away from a frontier mentality?
What, if anything, makes forestry unique as a resource management activity?
How may resource management promote or restrict environmental justice?
Explain the changing relationships between forests and employment in countries such as Australia and Canada.

Week 11 Discussion: Animals and the Environment
How do we define what is an animal (bird, fish, virus)?
How do we construct other animals as being like humans, and how do we draw barriers between humans and other animals? Give examples.
In what ways are animals consigned particular places and excluded from other places in resource and environmental management?
Should we be changing our cities/lives to greater accommodate animals (native birds, mice, spiders, cockroaches, crocodiles)?
How may animals challenge human spatial orderings?

Week 12 Discussion: Resources and Indigenous People
Indigenous people have been managing country for thousands of years – what could be more sustainable? Discuss.
What are some of the major differences between various forms of indigenous environmental management and scientific environmental management?
On what points do indigenous people and wilderness advocates agree and disagree regarding environmental management?
How are introduced species constructed in some indigenous environmental management practices?
Contemporary indigenous people are often on the lowest scale of wealth, health and longevity indices – why should they manage the land sustainably according to introduced models of environmental management?

Week 13 Discussion: Impact Assessment
What are the origins of impact assessment?
What are the strengths and weaknesses of traditional forms of environmental impact assessment?
What is Strategic Environmental Assessment (SEA)?
What are cumulative impacts?
Will newer forms of impact assessment overcome the weaknesses of traditional approaches to impact assessment?
Academic Honesty and Plagiarism

The role of the University of Sydney is to create, preserve, transmit and apply knowledge through teaching, research, creative works and other forms of scholarship. A commitment to academic excellence and high standards of ethical behaviour is essential in this undertaking. As such, the University requires all students to act honestly, ethically and with integrity in their dealings with the University, its employees, members of the public and other students.

In February 2006, a new policy covering the issue of student plagiarism in coursework Units of Study offered by the University was introduced. The policy requires all students to sign and submit plagiarism compliance statements to each School or Department of which they are a student member.

The School of Geosciences requires a signed compliance statement for each Unit of Study offered by the School in which students are enrolled. Students should download from the School of Geosciences website (http://www.geosci.usyd.edu.au/current/plagiarism.html), print and complete the Unit of Study Plagiarism Compliance Statement, the Cover Sheet for Individual Assignments and the Cover Sheet for Group Assignments as required.

Students should take particular note of section B 5-7, which defines plagiarism and distinguishes between negligent plagiarism and dishonest plagiarism.

If you have any questions regarding the policy and its implementation, please speak to your Unit of Study coordinator or lecturer, or the School's Student Liaison Officer on 9351 2886 or by email: b.mcmillen@geosci.usyd.edu.au.
Essay assignments

Choose one of the following six essay topics. Essays should be a maximum of 2000 words and should have the word length written on the title page. The due time and date is 4.00pm on Thursday 13 September 2007. Essays are to be placed in the Geography 2 Environment box in front of the Madsen office.

The essay topics are as follows:

1. “The conservation movement is a struggle for the hearts and minds of the members of a generally apathetic public who find it more difficult to deal with the welfare of future generations than their own pressing needs and personal problems” (Mosley, 1999, 9).

Discuss the above statement with reference to the history of conservation and sustainable development, and to a recent environmental issue in Australia.

2. Summarise the history of sustainable development at the international scale and in Australia. Explain how this history may relate to the issue of climate change at various scales.

3. What is Free Market Environmentalism and how may it contribute to, or detract from, the effective management of Australia’s mineral reserves such that it leads to better environmental outcomes?

4. What are the main differences between eco-feminism, deep ecology and a Christian approach to the environment? Explain how these differences may lead to different environmental management and outcomes for a particular natural resource of your choosing.

5. “Among geographical representations, the concept of overpopulation holds a special purchase on the popular imagination” (Christophers, 2007, 40).

Given that there are over 6.7 billion people in the world, explain the significance of this population number, its distribution and its growth in relation to a critical analysis of the concepts of overpopulation and sustainable development.

6. Using the examples of a developed country and a developing country of your choosing, should these countries be pursuing policies of mitigation and/or adaptation in regard to climate change? What emphasis would you give to these approaches in relation to each other in these particular countries? Why?
Staff Feedback on the Unit of Study Evaluation (USE))
GEOS2121 Environmental and Resource Management
(formerly GEOG 2421 Resource and Environmental Management)

Dr. Phil McManus has taught in the equivalent of this unit every year since 1999, with the exception of 2004. In 2005 it became a 6 credit point unit and was very well received by students in 2005 and 2006. While the unit code, name and format is different in 2007 as a result of wider restructuring within the School of Geosciences, I anticipate that the unit will be popular again this year because it is building on feedback from previous years.

I believe that it is important to incorporate student feedback into teaching in order to promote better learning outcomes. Given the history of the unit of study outlined above, it is useful to provide detailed feedback on the 2006 SAT process and highlight changes for 2007. In 2006, 36 of 58 students enrolled in the unit of study completed the USE (a 62% response rate).

The teaching in this unit is design to help students to learn. In 2006 89% of students agreed or strongly agreed that “the learning outcomes and expected standards of this unit of study were clear to me). Nobody disagreed or strongly disagreed with this statement. You are likely to get as much out of this unit as you put into it in terms of your own organisation and study. Previous surveys have highlighted that sometimes students feel that each topic in this unit was not dealt with sufficiently. There is a perception that in this subject there is a lot of material to cover, and sometimes students are looking for more depth in areas in which they are particularly interested (fantastical). The lectures, however, are only a way into the themes and ideas of GEOS2121. It is generally possible for students to develop their particular interests through the essay questions. Some students also pick up these themes in other units of study, or in their Honours year. The reading resources are designed to encourage, inspire and challenge students to take the lecture material further in their own learning.

Prompt and constructive feedback on essays, reports, tutorial papers and practicals is very important in encouraging student learning. 69% of students agreed or strongly agreed that “feedback from assessment was useful in helping me to learn”. This response is down from an 85% response rate in 2005. 9% of students disagreed with this statement in 2006. The responses appear to relate to the tutorial papers. This is the USE question on which student satisfaction tends to fluctuate most from year to year. Prompt return of all student work with helpful feedback is an aspect of the course that we will again monitor closely in 2007.

In 2006, 92% of students agreed or strongly agreed that “the teaching in this unit of study helped me to learn effectively”. The teaching is designed to enable students to learn, allowing for the different learning styles of students. Learning resources are provided in different formats. The tutorial reader is designed to make regular reading easy, and to be used as a resource in the future. The essay questions are designed to encourage students to develop
research skills. While there are many resources listed in the course reader, students are encouraged to find additional resources.

In the past many students have appreciated the challenging nature of this unit. For example; "I really enjoyed this unit of study. It helped challenge my views and taught me much about research and also how to approach problems and how to think" and "Really got you thinking about enviro issues in a broad sense and not just trying to learn information presented." These comments reflect the aim of education and what we are trying to do in this unit of study.

There have been some changes in the introduction of GEOS2121 to replace GEOG2421 between 2006 and 2007. Other than the usual updating of reference material, lecture notes and presentations, the main changes are the personnel, the fieldtrip, the contact time and the focus of the unit.

We welcome Dr. Jeff Neilson as a lecturer and tutor for a block of four weeks in the middle of the semester. Jeff completed his PhD in geography at the University of Sydney, and is now undertaking postdoctoral work. He has experience in resource management, including in the mining industry. He will be delivering lectures that include livelihoods and the environment, water management in Australia, as well as material relating to global energy and climate change.

In previous years the fieldtrip has been over five days to the Eden/Bombala region to study forestry issues. In 2007 there is a new fieldtrip to the Upper Hunter to study coal mining, viticulture and thoroughbred breeding. This fieldtrip will relate to lectures on sustainable development, resource management, energy resources, water management, agriculture and climate change. The fieldtrip has been shortened to four days. The fieldtrip, and some other lectures by Phil McManus, will also include material that is relevant to students from geology and geophysics backgrounds.

The contact time has been reduced by one hour per week with the deletion of a practical component to the unit of study. This brings the unit of study into line with other 6 credit point workloads, and was also suggested by some students in the 2006 USE. The reduction of the tutorial/practical block from 2 hours to a 1 hour tutorial should assist students in timetabling their classes and avoiding timetable clashes in 2007.

Finally, to assist students with their time management, the assessment is conducted throughout the semester and the essay topics can be commenced well before the submission deadline. We are fortunate to be building upon a successful unit of study, but if students have suggestions for improvements throughout the semester we are happy to discuss ideas and accommodate good suggestions if it is possible.

Phil McManus
June 2007
Readings
Unless otherwise specified, the following readings are located in the Geosciences Library, including through electronic access. Books that are of particular relevance to many of the course themes include:


Useful journals include Sustainable Development, Local Environment, Journal of Environmental Management, Organization and Environment, Environmental Politics, The Journal of Rural Studies and Capitalism, Nature, Socialism. These journals are available online through The U. of Sydney library.

Prescribed and supplementary reading
In order to follow the course themes, key readings are prescribed each week. These readings are in your Course Reader. For examination purposes, it will be assumed that you have covered this prescribed reading. There is also suggested supplementary reading to increase the breadth of your understanding of the course material and to assist you in library research for your essays. Reading is organised by course theme, as follows:

Week 1 The environment and natural resources: contestation and management/sustainability

A) Prescribed Reading: (This is an overview and an introduction: You need to do the reading for the week 2 tutorial in the same week as you look at this reference).

B) Supplementary reading:

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Week 2 Environmental Philosophy

A) Prescribed reading:

B) Supplementary reading:
General:

Deep Ecology:

Ecofeminism:
Figgis, P, 1999, *Taking paradise and putting up parking lots: the role of women in reclaiming the environment*, Sydney, Department of Women (Fisher Research 333.7082 4)


Free Market Environmentalism


Socialism and Marxism:


Christianity:

Week 3 Geography and Environmentalism

A) Prescribed Reading:

B) Supplementary Readings:
Week 4 Population, development and environment

A) Prescribed reading:

B) Supplementary reading:
Ehrlich, Paul, 1971, The population bomb, Ballantine, Friends of the Earth. [304.66/21]
Ehrlich, Paul and Anne Ehrlich, 1990, The population explosion, Brookvale, Simon and Schuster. [Fisher research 304.6/66]

Week 5 (see Upper Hunter Fieldtrip Reading list at the end of the weekly tutorial readings)

Week 6 Livelihoods and the environment

A) Prescribed Reading

B) Supplementary Reading


Wallace, S. (2007). Last of the Amazon: in the time it takes to read this article, an area of Brazil’s rain forest larger than 200 football fields will have been destroyed. National Geographic, 211(1), pp40-71.


WWF (2007). Gone in an instant: How the Trade in Illegally Grown Coffee is Driving the Destruction of Rhino, Tiger and Elephant Habitat. WWF-Indonesia, Jakarta, 60 pages (available at www.panda.org)

Week 7 Global energy and climate change

A) Prescribed Reading:

B) Supplementary Readings:


Week 8 Water management in Australia

A) Prescribed Readings

B) Supplementary Reading


Week 9 Agriculture and landuse

A) Prescribed Readings

B) Supplementary Reading


Week 10 Frontiers: Forestry and Fishing

A) Prescribed Reading:
B) Supplementary Readings:

Forests


Robbins, P. and Fraser, A., 2003, “A forest of contradictions: producing the landscapes of the Scottish Highlands”, *Antipode*, 35, 1, 94-118


Fish


McDowall, R.M., 2006, Crying wolf, crying foul, or crying shame: Alien salmonids and a biodiversity crisis in the southern cool-temperate galaxiid *fishes? Reviews in Fish Biology and Fisheries*, 16, (3-4), pp 233-422


Waitt, Gordon and Hartig, Kate, 2000, "Ecologically Sustainable Fishing in Theory and Practice: individual transferable quotas in Australia's South East Fishery", *Australian Geographer*, 31 (1), pp.87-114


Week 11 Animals and the Environment

A) Prescribed Reading:

B) Supplementary readings:


Franklin, A, 2006 Animal nation: *the true story of animals and Australia*. UNSW Press, Sydney


Risan, L.R. The boundary of animality. *Environment and Planning D: Society and Space* 23(5) pp.787-793


Week 12 Resources and Indigenous Peoples

A) Prescribed Reading:

B) Supplementary Readings:


See also numerous articles in *Geographical Research*, volume 45, number 2, June 2007.

Week 13A: Impact assessment

A) Prescribed reading:

B) Supplementary reading:

Week 13B: The ‘Environmental Crisis’ and the Future
A) Prescribed Reading:
None

B) Supplementary readings:
The following references are provided to enable students to become familiar with the Upper Hunter and issues relevant to the fieldtrip prior to actually attending the fieldtrip, and to assist students completing their fieldtrip assignment. Week 5 has been set aside as a Reading Week to enable students to undertake this reading.


Websites:
- [http://www.hunterregion.com/hedc.shtml](http://www.hunterregion.com/hedc.shtml) HUNTER ECONOMIC DEVELOPMENT CORPORATION