As the title suggests this course will focus on the interaction of conservation and development in southern Africa.

1. Term-long research focus

In addition to the activities, field trips, lectures and readings that address the “Social and Political Aspects of Development and Conservation in Southern Africa” you will also conduct independent research on a personal research focus. In the first week of the term you will choose a more narrow topic within the broad umbrella of “Development and Conservation” as your research focus. The relationship between conservation and development is one of the main themes of the Africa FSP and many of our activities and readings address this topic. Also, the more hands-on ENVS84 project on the !Nara plant falls within this topic. So we will want you to think about how your topic for 42 relates to the !Nara case study.

Your engagement with your ENVS42 research topic should span the entire term and all the activities of the FSP. In other words, this topic should be one of the lenses through which you view southern Africa. You should conduct primary research as part of this focus. At each location we visit and with each person you meet you should think about what you can learn about your topic. To help you keep this continuing focus we will have you keep a research journal and encourage you to take notes, conduct interviews, and record your thoughts and evolving understanding of your research focus.

You will also need to access appropriate literature. Some literature will be available to you on the course ipads and macbooks. Thoroughly investigate these local resources before turning to web based resources. After you choose your topic, Prof. Bolger will suggest a couple of readings to help you begin your research. For additional literature you will need to access the Dartmouth library resources via the internet using the course computers and ipads or other computers when we are in locations with internet access. Since we will often not have internet, you will have to be strategic about ensuring that you do your library research when internet access is available. One product from this literature research will be an annotated bibliography. The journal and the bibliography are the two primary products of your research - you will not prepare a paper at the end of this research project. The circumstances of the FSP do not lend themselves to paper writing. So think of the journal and the bibliography as alternative ways of capturing and expressing the fruits of your research.
Example research foci (ideally your focus will be even more well-defined, but these could serve as starting points from which you can further focus):

- Wildlife disease/relationship to livestock and human disease
- Ecological effects of livestock fencing
- Game farming
- Ecological effects of cattle ranching
- Landuse conflicts: wildlife conservation versus mining, rural development, agriculture, etc.
- Conflicts over water for wildlife versus people (ag., mining, etc.)
- Ecological impact of waterpoints and boreholes
- Differing approaches to conservation: “fortress” conservation, co-management, local control, etc.
- Economics of wildlife conservation
- Economics and policy of poaching (ivory ban)
- Big game hunting and conservation
- Colonial legacies related to national parks in Africa
- Effects of firewood harvest on biodiversity
- Effects of the focus on charismatic species (“Big Five”)
- Differences between SA and Namibia in conservation management.
- Land restitution and conservation lands
- Management of medicinal plant harvest
- Role of traditional leadership in conservation and development

Some topics will have stronger connections to the research project at Gobabeb than others. We do not want your choice of ES42 research topic to be too constrained by the project at Gobabeb. As long as your project fits within the “conservation and development” umbrella, we think you will find commonality between the two projects. For your ES42 research follow your strongest interests.

2. The deliverables for this course are listed below with the approximate percentage contribution to the final grade.


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<th>Date Due</th>
<th>Course Requirements</th>
<th>Points</th>
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<td></td>
<td>Constructive group discussions</td>
<td>10</td>
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<td></td>
<td>Annotated Bibliography</td>
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<td>Research Journal</td>
<td>50</td>
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<td><strong>Total points</strong></td>
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Approximate Timing:

First week – In discussion with Professor Roebuck, each student identifies their research focus. These choices are captured in a paragraph. These are sent to Prof. Bolger who suggests further reading.

Weeks 1-5 – Students conduct primary research, read and annotate papers, keep research journal.

Week 5 – Lesotho. make brief 3-minute presentations to class.

Week 5 – first days in Namibia. Students submit up-to-date research journal and two annotations to Prof. Bolger for comments. (note: while only two annotations are due, you should be working on others so that you don’t fall behind)

Weeks 6-7 – Students continue primary research, research journals, and continue to add papers to their annotated bibliography.

Week 8 – journal due (Nov. 4); Annotated Bibliography due (Nov. 8).

Assessment: Verbal and/or written feedback will be provided on the individual components along the way but no letter grades are given until a final grade is assigned based on the entire body of work. In general, work that is deeper, more complex and more successfully struggles with the synthesis of observation and theory will receive higher grades.

GUIDELINES FOR EACH COMPONENT OF THE TERM PROJECT

Initial Statement of Research Focus – In the first week you should decide upon a focused area of research for the term. You should browse the reader and the PDF library for ideas. (The PDF library is a searchable database (Mendeley) of articles and is on all the program computers and ipads)

You should compose a paragraph (in electronic form) that describes your research focus. This should be short, 6-8 sentences will suffice. It should capture the state of your knowledge of the subject area and a sentence or two of why you have chosen this topic. We don’t expect a great depth of knowledge at this point in your research progress, but this paragraph will record your starting point for your research and commit you to this research topic. Try to narrow your focus as much as possible. A tight focus helps you to go beyond the generalizations and platitudes that a broader focus often engenders.

Prof Roebuck will see that these paragraphs are forwarded on to me and I will send back brief feedback on each topic including suggesting an article or two to help you begin your research. We fully expect that your research topic will continue to evolve over the course of the term. In fact, this is one of the attributes of research and a term-long research project has the benefit of allowing for this type of intellectual development.
Guidelines for Research Journal

The researcher diary can be seen as an integral part of the development of the researcher and the construction of research knowledge. In the same way that diary writing and reflection act as mediators in the development of teaching, researcher diaries mediate the construction of research knowledge. I strongly believe that my experience of keeping a research diary scaffolded my development in several ways. One was as a repository for thoughts and reflections; another was as a written account of my research journey. Not only was the act of writing scaffolding my knowledge through inner dialogue with more expert other, but the opportunity to re-read and interact with my thoughts was also a strong mediator in understanding my role of researcher and the research process.

Engin 2011

Professor Roebuck will give you a bound blank journal to use as your research journal. You should make regular dated entries into this journal, at least three times per week. (Don’t hesitate to fill this one up and start on a second.) Once per week (choose one day of the week to do this and stick to it) succinctly and thoughtfully answer these three questions. What did I do in the last week to move my research forward? What changes have occurred in my thinking about the topic? What plans do I have to keep my research progressing in the immediate future? (no need to repeat the questions. Just label the entry as “weekly questions” and simply label your answers (1) (2) (3).

Your other journal entries should capture all components of your research process. You can record here your thoughts, notes on interviews or conversations, notes on your reading, etc. (put reading notes in here, but not your annotations – they go in an electronic document – see below). In your journal entries you should try to capture the evolution of your conception of your research topic.

Entries will be of two general types: descriptive and reflective.

**Descriptive:** Notes on reading, interviews or observations. Data. Sketches. Factual accounts of places you went, things you saw, people you spoke to, articles you read. TO DO lists. Notes on literature searches, keywords.

**Reflective:** “Thought” pieces about your evolving understanding of the topic. Critical analysis of an article. “Brainstorming” notes or diagrams. Strategic plans for moving the research forward. Questions you want to answer. Discourse on how you feel about your research. The Engin article is particularly useful for understanding the nature of these types of entries.

Obviously, these are not mutually exclusive categories and both are important to the research process. **However, the reflective components add the most to the depth of the research.** A lot of descriptive material without sufficient reflective processing won’t take you far. So be sure to devote plenty of space and attention to the reflective components. Keep in mind this quote from Rapely (2007):
use the journal as a thinking tool. In some of your entries take the time to try to express the kernel of your research topic clearly and concisely. This will help clarify your thinking and this clarity will help move the research forward.

This is a journal/diary so the point is to use it frequently (i.e. you should be thinking about your research frequently so you should need to make journal entries frequently). If you find you are always behind and have to catch up more than a couple of days with your journal than you are missing the point and the value of the journal and will need to adjust your work flow so that you can make more regular entries. Try to keep the journal handy and jot things down as they come up. The entries don't have to be long – although some of them should reflect longer reflections too.

You will read and discuss the article by Engin that helps to both illustrate journal entries as well as describes the value of a journal to a researcher. Some of these values as expressed by Borg (2001) are:
Guidelines for Annotated Bibliography

Research scholars use annotated bibliographies to identify and abstract an academic discourse, school of thought, or specific topical area. An annotated bibliography can assist a researcher in identifying gaps, weaknesses, contradictions, or unresolved controversies in the literature under review. These can then be used as the basis for theses for further research. This part of the assignment asks you to undertake an annotated bibliography of important literature for your research focus.
Annotations:

1. Each annotation should clearly, concisely and critically convey the main points of the source material you are annotating. It is not merely a “book report”, you need to evaluate and not just summarize the material. Your annotation should demonstrate your “intellectual ownership” of the material. Be sure to think about each article and convey its' significance in your own words – don’t merely paraphrase the abstract. Strive to convey specific information from the source in your annotation.

2. Each annotation should be around 400-500 words, although slightly longer entries are acceptable.

3. While conducting your research for the annotated bibliography, you should also be developing your own “point of view” or thesis about your research focus. This will enable you to assemble and synthesize your source material in an original way. It will also help guide your further research by allowing you to home in on the most relevant source material. Your annotations should reflect this developing perspective.

4. Annotations should be in electronic form in MS Word (Quickoffice on the Ipads). Be sure you make a backup copy of your document (preferably on your own flashdrive) each time you modify it.

5. A total of six annotations are required.

How to locate source material. You will find some material already in the pdf library on the program computers and you should find other relevant sources using a search engine and the electronic resources of the Dartmouth library. You can access these resources whenever we have internet access

   I recommend a proper search engine like Web of Science (note: Google Scholar is useful for quickly accessing some things, but it is not a good academic search engine that will allow you to thoroughly search the literature.)

Since you only submit six annotations you must choose your source material carefully. Make sure that it is directly relevant and helps move your research forward and deeper. Do not choose articles just to fulfill the quota of 6 articles. Be sure to take the time to understand the article thoroughly and integrate them thoughtfully with your research thesis and your personal observations.

Format to use for the references in your bibliography. For simplicity, I would like you to use the APA format. You can find detailed instructions for this on this website (http://www.dianahacker.com/resdoc/manual.html). For instructions on how to reference different kinds of source material see the section “APA list of references” that is under the “Social Sciences/Documenting Sources” pull down menu. A web archive of this page is available in the “dropbox” folder on each computer so that you can consult this even if you don't have internet access. I've provided an example of the journal article format below.
Here is an example of the reference style for a Journal article. See the archive for other kinds of sources:


Read these illustrative examples from previous groups. Pay particular attention to how these students demonstrate “intellectual ownership” by expressing the article’s ideas in their own words. You have the impression that the student is speaking to you not the author of the article. Also, notice how they place the specifics of the article into the larger context of their own emerging research thesis.


This article examines national surveys that used the Community Childhood Hunger Identification Project (CCHIP) index to measure food security in South Africa over a 10-year period, reviewing the survey’s food security components to establish whether they covered food access, utilization, and availability. The authors find that overall food security has improved in South Africa between 1999 and 2008. Security of food access was reflected in responses regarding experiences of hunger, and results showed that the percent of food-secure South Africans improved from 25% in 1999 to 48% in 2008. Using data from National Food Consumption Survey spanning the same period, the authors found a higher prevalence of food insecurity in rural areas. The number of underweight and stunted children (indicating nutrient deficiencies) aged 1-9 years decreased over the same period, while there was an increased prevalence of wasting. However, the findings suggest that nutrient density of the diets of South African children are still insufficient to meet their nutritional needs, and inventories of household earnings show that most households do not have sufficient monthly salaries to procure a healthy balanced diet. Dietary diversity (measured by the number of items stocked in surveyed household cupboards) is alarmingly low, particularly for rural and poor households. Studies suggest a minimum of seventeen items needed to maintain a healthy, well-balanced diet, and among poor households surveyed the mean number of food items was eight.

These findings contribute to my understanding of national trends in household food insecurity in South Africa, but also illustrate some of the challenges associated with determining levels of food insecurity. While a decline in the percentage of households experiencing hunger clearly indicates better food security, it does not incorporate all dimensions (like utilization and stability of access) considered in current definitions. A variety of approaches to measuring food insecurity can therefore find vastly different results, which makes directing policy measures challenging to the say the least.

A few components of the article relate more to my research topic, as currently established. Two alternative ideas mentioned for improving child nutrition (other than
creating incomes) are 1) to promote subsistence farming and 2) to improve awareness of nutrient contents, particularly of indigenous fruits and vegetables. These strategies are tangible steps conservation groups and others doing development in local communities can take, particularly if they already have community or household garden projects (like Phinda, Malealea, Hamakuya, and Timbavati). The National School Nutrition Program is also working to address nutrient deficiencies, but as with the Orphans and Vulnerable Children school lunch program (which we visited and is supported indirectly by Africa Foundation), funding is a major challenge. Finally, government social grants like pension funds (Topnar) and child support grants (Hamakuya) are shown to increase women’s purchasing power and access to food. This further supports the fact that income generation (from tourism, for example) is directly correlated to food security. The sustainability of such reliance on social grants should be considered, and their viability as a long-term solution is put into question by international trends like nutrition transition with the westernization of indigenous diets (Damman et al).


In my research I have questioned the use of fixed stocking rates for cattle management. I felt that such static population numbers are not based in natural system cycling, but I had nothing to support my claims until I read this paper by Vetter. Hers was the first to provide a useful theoretical framework that weighs the pros, cons, and general applicability of stocking rate-based cattle management.

Vetter contends that there are two different ecological paradigms in grazing management: equilibrium models and non-equilibrium models. Equilibrium models stress biotic feedback loops, such as how cattle density affects vegetation productivity, which subsequently affects cattle density. This paradigm encourages the use of rangelands assessments to establish a fixed stocking-rate. Non-equilibrium models, on the other hand, claim that variable abiotic factors such as rainfall variation better explain rangeland productivity. This paradigm thus encourages the use of opportunistic stocking rates to increase cattle density to take advantage of wet years and lower cattle density during dry years.

Vetter contends that most rangelands fall in a spectrum between the aforementioned models. Rangelands that have consistent rainfall and steady-resource bases follow equilibrium model more closely, while rangelands with inconsistent rainfall and highly variable productivity follow non-equilibrium models more closely, yet all rangelands have elements of both models.

Commercial cattle-owners generally manage their land more according to equilibrium theory and communal owners generally follow practices based on non-equilibrium theory. But there is extensive overlap in their practices, especially in their responses to droughts. I have found academics and commercial owners are quick to criticize communal cattle management, claiming communities degrade their rangelands. But I have yet to find convincing data that supports this stereotype. Such a stereotype assumes most communal rangelands operate under equilibrium conditions, which may not be the case. On the contrary, I would argue that because of the Apartheid, black communities were relegated to poor rangeland, with more variable rainfall and productivity. The most
consistent grazing lands were reserved for commercial white farmers. As such communal grazing occurs more in rangelands that more closely follow non-equilibrium theory, while commercial rangeland follows equilibrium theory more. Thus, fixed stocking rates may be better on South Africa’s commercial land, whereas opportunistic stocking strategies may better fit communal lands.

Namibia has the opposite phenomenon as South Africa as the most consistent rangeland is communally owned land in the north, and the least productive land is managed commercially in the south. Thus, I would argue that land ownership in South Africa is, compared to Namibia, better allocated to facilitate cattle production, and perhaps this allocation may help explain the precipitous decline in Namibian cattle production since the 1970s (Dave Joubert, pers. comm., 10/22/2014).