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.

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
- Land restitution and conservation lands
- Ecological effects of livestock fencing
- Role of traditional leadership in conservation and development
- Game farming
- Ecological effects of cattle ranching
• Landuse conflicts: wildlife conservation versus mining, rural development, agriculture, etc.
• Wildlife’s role in rural food security
• 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.
• Sustainability of medicinal plant harvest

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.

Most of you have been exposed to the Conservation/Development nexus through ENVS39 or similar courses. However, if you are unsure about the meaning of the term you can ask Prof. Fox or consult the Dressler et al. article from your ENVS40 readings (there they use a related term, “community based natural resource management” to represent a similar constellation of topics.)

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

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<th>Course Requirements</th>
<th>Points</th>
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<tr>
<td>Constructive group discussions</td>
<td>10</td>
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<tr>
<td>Annotated Bibliography</td>
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<tr>
<td>Research Journal</td>
<td>50</td>
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<tr>
<td><strong>Total points</strong></td>
<td><strong>100</strong></td>
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**Approximate Timing:**
First week – In discussion with Professor Fox, each student identifies their research focus. These choices are captured in a paragraph. These are sent to Prof. Bolger who suggests several initial readings.
Weeks 1-5 – Students conduct primary research, read and annotate papers, keep research journal.
Week 3 – Make brief 3-minute presentations to class.
Week 5 – first day in Namibia. Students submit up-to-date research journal and two annotations (in electronic form) 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 and Annotated Bibliography due (Nov. 1). ENVS42 wraps up when we arrive at Gobabeb to begin ENVS84.

**Assessment:** Verbal and 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, 4-8 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. **These should be submitted to Prof Fox in electronic form before you leave Hamakuya.** Prof Fox 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 characteristics 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 Fox 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.) Your 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.

In addition to those entries, once per week (choose one day of the week to do this and stick to it) briefly 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).

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):

*Writing is thinking. It is natural to believe that you need to be clear in your mind what you are trying to express first before you can write it down. However, most of the time the opposite is true. You may think you have a clear idea, but it is only when you write it down that you can be certain that you do.* (p.25)

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 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 should read the article by Engin that illustrates 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

Researchers 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. The focus of your annotated bibliography should be more narrow than your overall research focus. To achieve a satisfactory degree of depth and complexity through only 6 annotations will require a relatively tight focus. (see below)
2. A total of six annotations are required. 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. (see examples)
3. While the article should be the main focus of the annotation you should include your own ideas and observations where appropriate. (see examples)
4. Each annotation should be around 400-500 words, although slightly longer entries are acceptable.

5. 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.

6. All six annotations should be submitted in a single document in electronic form in MS Word. Be sure you make a backup copy of your document (preferably on your own flashdrive) each time you modify it.

7. **Thesis statement.** The document that contains your six annotations should begin with a one-paragraph thesis statement. This statement should evolve through time as your understanding and conception of your topic changes. This statement should contain a maximum of 250 words, and should concisely and specifically describe the ideas that unite these six articles and your associated thoughts and observations. The paragraph should refer to each annotation with a number, (1)-(6), and explain how each fits and supports the thesis.

**What goes in the Annotated Bibliography versus the Research Journal.** A funnel is a commonly used metaphor for the research process. The broad mouth of the funnel represents the full breadth of a researcher’s interests in a topic. However, there is a necessary tradeoff between breadth and depth. So to achieve the depth and complexity necessary in original research requires the researcher to focus her research activities more narrowly. In this course, use the research journal to record the full range of your interest and the varied ways in which your topic plays out in the different sites we visit. But in the annotated bibliography you should take on a narrow subset of the broader topic. This will allow you to address that subtopic in more depth, complexity and originality. This focus should develop through the term to the point where you can express it succinctly as a thesis statement.

**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
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government social grants like pension funds (Topnar) and child support grants (Hamakuya) a
we visited and is supported indirectly by Africa Foundation), funding is a major challenge. Finally,

Phinda, Malealea, Hamakuya, and Timbavati). The National School Nutrition Program is also working to

communities can take, particularly if they already have community or household garden projects (like
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).