



THE SOUTH AFRICA PROJECT:
OCEANS, COASTS AND WILDLIFE
Spring 2017
April 22– June 5

ACADEMIC SYLLABUS

Faculty:

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Contact Hours: We will be in close contact, meeting every day throughout the course. There will be a number of “check-in days” where we will schedule student-faculty meetings. If you would like to have a meeting outside of those times, you can certainly approach us and find an appropriate available time, and we will be happy to oblige.

Class Meetings: This Wildlands Studies Project involves seven days per week of instruction and field research, with little time-off during the program. Faculty and staff work directly with students 6-10+ hours a day and are available for tutorials and coursework discussion before and after scheduled activities. Typically, scheduled activities begin at 8am, with breaks for meals. Many evenings include scheduled activities, including guest lectures, structured study time, or journal writing. When at a field site, our activities may start as early as 5 am or end as late as 10 pm (e.g. for dawn/dusk/night wildlife observation). Flexibility is necessary to accommodate a variety of class times which maximize learning opportunities.

Course Credit: Wildlands Studies Project students receive credit for three undergraduate courses. These three courses have distinct objectives and descriptions, and we integrate teaching and learning through both formal learning situations (i.e. lectures and seminars) and field surveys. Academic credit is provided by Western Washington University. Extended descriptions follow in the course description section of this syllabus.

1. **ESCI 497T, Environmental Wildlands Studies (5 quarter units)** – Field study of environmental problems affecting the natural and human-impacted ecosystems of our study region, including the role of human interactions.
2. **ESCI 497U, Environmental Field Survey (5 quarter units)** – In this field-based course we conduct on-site examinations and analyses of environmental problems affecting wildlands and wildlife in our study region.
3. **ESCI 497V, Wildlands Environment and Culture (5 quarter units)** – Field studies course involving on-site research in our field location, studying the relationships among cultural groups and the environment. Using region- and culture-specific case studies, students assess historical and current cultural and environmental uses of wildland and/or wildlife communities. Course examines outcomes of environmental policies and wildland/wildlife management, including both sociological and natural consequences.

Readings: A Course Reader is established for this project and will be provided to students upon commencement of the project. Readings include selections from academic primary literature, technical reports, book chapters, and environmental impact assessments and planning documents. Field guides and textbooks supplement our field activities and are an integral part of our project. We will carry a shared reference library of these on all activities and field trips.

Contents of this syllabus:

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I. Project Overview

South Africa is home to seven terrestrial biomes, or ecological life zones, each with distinct environmental conditions and unique biodiversity including a variety of large mammals, an impressive array of bird species, and rare endemic plants. In fact, the broader Southern Cape region (otherwise known as “Eden”), within which we will be immersed, sees the convergence of South Africa’s three biodiversity hotspots: the Cape Floral Kingdom (with over 9000 recorded plant species), the Succulent Karoo and the Albany Hotspot – and is therefore home to immense biodiversity, with high endemism. In fact, there are few other areas on earth where one is likely to be able to witness such dramatic landscape contrasts simply by travelling 60 miles inland from the coast.

Like its natural diversity, South Africa is similarly rich in cultures, languages and lifestyles. With 11 official languages and nearly as many unofficial languages, South Africa is a true “rainbow nation” with its mix of races, cultures and histories. During our program, we will have an opportunity to meet and interact with South Africans of various ethnic backgrounds: such as Khoisan, Xhosa, European and Asian. We will also have learning exchanges with diverse groups of reserve managers, implementers, academic/scientific researchers, and local community members who share a passion for conservation. These interactions will broaden our horizons and give us unique insight into the lives and perspectives of these peoples and how they are connected with both their natural surroundings and the transformed society of South Africa – which is still coming to terms with its far-reaching Apartheid legacy and ways to secure equality and democracy for a prosperous future.

Our program will commence along South Africa’s famed “Garden Route”, an expansive stretch of Cretaceous coastline encompassing an impressive coastal plain which lies between the Outeniqua and Tsitsikamma mountains to the north and the Indian Ocean to the south. It is a meeting of remnant Afro-temperate coastal forest, fynbos sand dunes and steep-sided gorges that slice through the spectacular ranges of the Cape Fold Mountains. The sweeping stretches of beaches, extensive lakes and estuaries, and the picturesque bays add to this area’s environmental appeal. But, as we will discover, it is the shoreline’s relationship with the power of the ocean which fuels the region’s dynamism. Combinations of wave, tide, currents, and river mouth action create deposition and erosion patterns that always keep the area in flux – with often unpredictable outcomes. As enchanting as the coastal environment is, the undeniable appeal of the Garden Route for many is its abundance of coastal and marine life. From intertidal invertebrate communities to the open pelagic regions which, through seasonal upwelling that boosts productivity, support an array of marine life such as birds, fish rays, sharks, seals, dolphins and whales – often following “bait balls”, tightly packed schooling fish. In recognition of this diversity, a number of marine protected areas (MPAs) have been declared in recent decades, and the South African Government and partner institutions continue to monitor their effectiveness and plan for further MPA revision or expansion programs. As part of this move, three “Hope Spots” have been launched in the region, with the intention to firmly place the coastline on the international marine conservation map.

With such natural wealth, it is of little surprise that this area has sustained human life for hundreds of thousands of years. In fact, evidence suggests that the wider region – known as Eden – supported four hominid species and was essentially “the cradle of human culture, the home of Adam and Eve” (Cowling & Pierce 2009). It was from here that early humans spread out onto Africa’s grasslands and savannahs to eventually inhabit the rest of the continent. Alongside artifacts from the Stone Age (e.g. stone tools) archaeological records show that hunter-gatherers were active in the region for at least 100,000 years through evidence of cave paintings and shell middens. About 2000 years ago, African herders began to enter the area and this was followed by European settlement from the 17th century. Today,

the Eden is a dynamic cultural and ethnic blend. Coastal and urban development continues (as a response to population growth, tourism and inland migration) and this brings its own raft of challenges for future conservation efforts and environmental management.

South Africa is perhaps best known for its impressive terrestrial wildlife communities: from the glorified “Big 5” (elephant, black rhino, lion, leopard and buffalo) to its antelopes, small carnivores and dazzling diversity of birds, insects and plants. This is part of the reason why the nation’s world-renowned parks and reserves attract visitors from around the globe, with interests in wildlife viewing, natural history, photography, and relaxation. Ease of communication (many South Africans speak English, often as a second or third language) and good infrastructure give added appeal to the country as a ‘must-see’ destination. However, as human development continues apace, protected areas are increasingly becoming isolated islands in a sea of burgeoning human population and extensive farmlands. All are inextricably linked: ecotourism, game hunting, and agriculture are among South Africa’s largest industries. Wildlife tourism provides much needed revenue sources and employment opportunities for people yet, at the same time, it poses some challenging questions as to how wildlife and wildlands are ‘managed’ in this context, particularly as the ‘battle’ against rhino poaching escalates. We will explore the various perspectives on this, in terms of how it provides both opportunities and challenges to maintaining, restoring and rewilding natural ecosystems. The balance between community livelihoods and biodiversity conservation forms a central theme of our team’s investigations as we move from the Southern Cape inland toward the more rural Eastern Cape.

II. Learning Objectives

Our South African program gives students the opportunity for hands-on investigations of the ecology and conservation of its unique biomes and the marine and terrestrial species they harbor. We will commence with an initial examination of the natural and cultural history and biogeography of South Africa and, specifically, the Southern Cape. We will then draw upon this knowledge as we delve deeper into the wild and spectacular places this area has to offer, familiarizing ourselves with current coastal and marine research, environmental success stories and persistent challenges, and opportunities facing conservation in this region.

Key goals and activities include:

- i. **Natural history, dynamics and naturalist skills:** What climatic and geological factors underpin the diverse Southern Cape ecosystems? What are the interactions and processes which underpin and drive the region’s ecosystems? Why are these areas so diverse and important to resident and transient species? What key habitats, flora and fauna are present in the area and how would an effective scientific naturalist identify, investigate and document these features? What naturalist skills and competences need to be cultivated in order to become an effective field biologist, both in this region and in other contexts? We will engage in a number of single-day and multi-day field walks through diverse ecosystems to explore these questions for ourselves.
- ii. **Biodiversity conservation and ecological restoration:** What are some of the major conservation pressures and threats to biodiversity? What strategies are being used to tackle these threats? What role can landscape restoration play and how might we improve its uptake and effectiveness? Our team will conduct both terrestrial and marine field surveys alongside local researchers to understand species biology, monitor populations and implement management actions.
- iii. **Wildlife and protected area management:** How has South Africa’s approach to conservation through “sustainable utilization” affected the social and ecological landscape? What are the implications of wildlife translocation and reintroductions? What are extralimital species? What are the impacts of wildlife poaching, culling, and commercial hunting? When are these activities justifiable? We will visit national park and game reserves where all these questions and more are at play. From protecting the beleaguered rhino to managing elephant populations, we will discuss these sensitive issues with rangers, researchers and community members.
- iv. **South African society, culture and politics:** *The ancient:* As an area which supported the first *Homo sapiens*, what can we learn from the way in which our common ancestors interacted with land and sea? What are their legacies and lessons for today? We will visit places of archeological and cultural significance in order to delve into such questions. *The contemporary:* How would one characterize modern-day South African culture? How has Apartheid affected cultural groups and livelihoods in the country and to what extent has the traumatic Apartheid legacy been reconciled? Are traditional cultural practices being sustained or eroded and how does all

this affect biodiversity conservation? *The politics*: Who holds the real balance of power across the mix of ethnicities present? How have Apartheid era policies affected land access, distribution and attitudes toward conservation and how is this being rectified? What are the challenges and opportunities for conservation co-management and community-based stewardship? We will seek answers to these questions as we visit areas and peoples who are best placed to help inform our perspectives.

- v. ***Champions for sustainability, resilience and action***: What prospects are there for sustainable and resilient futures in a southern African context? Which “champions” are leading the way and how? What does it take to play the role of a “champion” in modern-day South Africa? What motivates these people and what are their defining qualities? What can we learn from them and how might society support them? Our search will take us to a number of fascinating locations to meet some inspiring people doing their bit to ensure a brighter future for South Africa.

These topics will be addressed through lectures, discussions, course readings, field activities, visits with local experts, exposure to ongoing research, hiking excursions, and field research projects. The course generally progresses from faculty-led instruction in the beginning (i.e. more lectures and readings) to student-led critical evaluation, analysis, and synthesis toward the end of the program. ***Please note that prior field research experience is not required. All necessary skills of data acquisition will be taught on-site in South Africa.***

Overall, our goal is to develop your skills as a field ecologist and scientific naturalist who can interface between diverse marine and terrestrial environments. We will spend time sharpening our observational, sensory, interrogative and analytical skills by becoming intimate with our surrounds. Aided by the use of field guides, we will learn to identify resident wildlife species through various techniques: from physical traits to track and sign, to calls and nuances in behavior. We will then learn and participate in on-going efforts to monitor wildlife, focusing on techniques that form an important part of the conservation ecologist’s skill set and which can be used to address relevant research questions along the social-ecological spectrum. Ultimately, we will expose you to an integrated approach to ecology: one that instills a deep appreciation for how to identify, address and unite the multiple perspectives available for understanding the natural world. Our primary requirement is that you are enthusiastic, adaptable, genuinely open-minded and ready to learn. We look forward to you joining us and sharing this once-in-a-lifetime experience together.

III. Course Descriptions

We teach these three courses in an integrated format in the field. However, students will receive transcript credit for the following three courses, introduced on page 1:

ESCI 497T, Environmental Wildlands Studies (5 quarter units) – Field study of the natural history as well as the environmental challenges and opportunities for the ecosystems of South Africa’s “Eden”, including human dimensions.

Experiences/Activities: Students will become familiar with the flora, fauna, ecology, geography and natural history of Eden. Students will be instructed in methods of journal recording and critical reflection and will learn directly through observation and experience, as well as through guidebooks, lectures, stakeholder and community interactions, technical keys, and scientific and popular literature. Using principles of conservation ecology, the course will introduce conservation issues that face Eden along the Southern Cape, such as invasive species, habitat degradation, non-sustainable use and climatic events.

Our program will explore the steps that governmental and non-governmental agencies are taking to address and combat current issues through actions tied to ecological restoration and land management. Students will interact with terrestrial and coastal management personnel to gain insight into current trends. Students will participate in various projects led by researchers and/or land managers to further experiential understanding of challenges and opportunities faced. We will participate in conservation field research and evaluate environmental policy options, focusing on concepts, principles, and the role of environmental research, wildlife management, and conservation planning.

Students will complete an in-depth field journal with detailed scientific naturalist observations, field surveys and nature writing. They will be required to participate in activities and discussions, sharing viewpoints and critiquing arguments or topics encountered. Discussions and role playing are some of the tools used to facilitate these processes. Additionally,

students will be assigned readings from recent scientific literature and will be responsible for participating and leading seminar discussions. Students will prepare a pre-assigned research topic that will address the natural and cultural history pertaining to an area scheduled to be visited. Students will give an oral presentation summarizing their research for peers.

Outcomes: Students will demonstrate knowledge of ecosystems, natural history, and flora and fauna of the Southern Cape. Students will be able to critically analyze and reflect upon the relevance and significance of scientific research presented, conservation projects participated in, and research or management organizations visited. Across these diverse contexts, students will demonstrate their own process of learning by developing skills in field observation and documenting and communicating observations in multiple formats. Students will employ various techniques to present and record their observations, including natural history sketching, narrative writing and mapping.

Evaluation/Assessment:

Oral Presentation	15%
Trail Interpretation	10%
Field Journal	50%
Final Exam	15%
Participation and Discussions	10%

ESCI 497U, Environmental Field Survey (5 quarter units) – Field studies course focusing on field survey methods and on-site biodiversity analysis and assessment as part of individual and group research.

Experiences/Activities: Students will be taught methods of field data collection, analysis and environmental report writing. Students will build species identification lists by using field guides and identification keys, which will be introduced in conjunction with taxonomic concepts. Students will be introduced to research projects and participate in related practical research-implementation efforts, such as biodiversity monitoring. Workshops and field activities will introduce methods of species identification, data collection and analysis. Students will design and complete a number of short field assessments to capture their understanding of how techniques may be applied in the field, as well as how to identify testable questions for research projects and what elements need to be measured to answer those questions. Students will discuss their results in light of current management or conservation issues and should be able to demonstrate how their results compare with or add to current knowledge of their study subject. Students should be able to demonstrate their understanding of the ecological and/or social science processes and concepts that underpin their research, including ethical dimensions. Attention will be given to evaluation, analysis and presentation, including formats for scientific writing and illustration.

Outcomes: Students will develop skills in field observation, data collection, and data interpretation. They will gain the ability to undertake field projects and be able to synthesize, organize, analyse, and present final data in a way that is appropriate for peers and other interested researchers/stakeholders. Students will be able to clearly describe what study they are carrying out, why they are carrying out this study, what methods they are using to carry out this study, and what they expect to learn by conducting this study. Students will display competency using all tools provided to them. Students will be able to discuss their results in light of current management or conservation issues, and demonstrate how their results compare with or add to current knowledge of their study subject. Students will be able to demonstrate proficiency with keys and manuals as well as the methods, principles, analysis, and applications of conservation ecology.

Evaluation & Assessment: Demonstrate synthesized knowledge of field research, analysis, presentation, and application.

Species List	25%
Mid-term Assessment	20%
Revision Quizzes (2 x 5%)	10%
Field Report	20%
Final Exam	15%
Active Participation	10%

ESCI 497V, Wildlands Environment and Culture (5quarter units) – Field studies course studying the relationships among cultural groups and the environment. Using region- and culture-specific case studies, students assess historical and current cultural uses of land, ecosystems and biodiversity, and related social-ecological consequences.

Experiences/Activities: Students will gain familiarity with the social-cultural dimensions of conservation in South Africa. From the hunter-gatherer history of the Khoisan, to the arrival of the Bantu tribes, to Dutch and English colonization and the Apartheid system which followed. The entanglement of these cultural traditions and historical legacies will be addressed throughout the course. Students will visit a number of communities and explore case studies that examine the sensitive and complex interplay between environmental issues and social-cultural well-being. Students will learn about the various ways that local communities are included (or excluded) in conservation and land management programs. Throughout the program students will maintain a cultural dictionary to familiarize themselves with local language, customs and colloquialisms. This course incorporates lectures, talks from community representatives, and visits to culturally significant field sites. Students will be required to compose a paper, on a topic of their choosing, which integrates their own experience and insight with the cultural dimensions of conservation in Eden. This includes reflections on issues, strategies, policies, successes and failures, and of how communities have utilized, impacted and interacted with their natural resources over time.

Outcomes: Students will become acutely aware of how social-cultural dimensions shape conservation and natural resource management in Eden. They will be responsible for reading relevant literature and for presenting and leading seminar discussions. Students will participate in all activities, discussions and lectures, and demonstrate proficiency in the cultural history of the region. They will reflect upon components on ESCI 497T and ESCI 497U and across changing cultural contexts. Where appropriate, students will familiarize themselves with relevant Local Ecological Knowledge (LEK). They will engage with local stakeholders and community members, as required, to deepen their understanding of the inter-linkages between cultural and natural histories and the tensions between ecological, social-cultural, economic and political objectives.

Evaluation & Assessment:

Learning Journal	50%
Opinion Piece/Critique	15%
Local Dictionary	10%
Final Exam	15%
Participation & Discussions	10%

IV. Assessment

The following is an overview of the academic requirements for the program. Some of the assignments are on-going (journal and readings) and some have specific dates (e.g. exams, projects, research papers). Due dates are subject to change in response to local variables and final confirmations. Grades for ESCI 497T, 497U, 497V will be based on the following items:

Course Number	Assessment Item	Date due	Percent of grade
ESCI 497T	Field Journal (Initial Review)	9 th May	15%
	Field Journal (Final Review)	1 st June	35%
	Oral (Area) Presentation	See Schedule	15%
	Final Exam	3 rd June	15%
	Trail Guidance/Interpretation	4 th June	10%
	Active Participation & Discussion	Entire Program	10%
ESCI 497U	Mid-term Assessment (Project Proposal)	10 th May	20%
	Field Research Report (Group)	30 th May	20%
	Revision (Pop) Quizzes (5% x 2)	TBA	10%
	Species List	1 st June	25%
	Final Exam	3 rd June	15%
	Active Participation & Involvement	Entire program	10%

ESCI 497V	Learning Journal (Initial Review)	9 th May	15%
	Learning Journal (Final Review)	1 st June	35%
	Local Dictionary	1 st June	10%
	Final Exam	3 rd June	15%
	Opinion Piece	4 th June	15%
	Active Participation & Engagement	Entire Program	10%

ESCI 497T, Environmental Wildlands Studies (5 quarter credits)

1) Field Journal – 50%

The field journal is an integral part of the Wildlands Studies South Africa program – it serves as a learning tool and an opportunity to closely attend to the environment, document and codify observations and reflect on experiences. The field journal will be an ongoing assignment throughout the course. Several activities will be designed at the beginning of the course which will help outline what characterizes a thorough, well-written, detailed, observation-based field journal. We will focus on various techniques and styles for recording observations in the field journal.

The field journal will consist of natural history journal entries, based on both the Grinnell Method and other nature writing approaches which incorporate the student’s personal experiences and observations (see Parker article). The focus of journal entries is a detailed record of observations from an explicit time period in a specific location written in a coherent, readable, and sometimes creative way. It is an in-depth descriptive natural history record. The journal uses different formats: silent observation in a single spot; an ongoing description along a prescribed route; a theme observed several times; a landscape description and the forces that influence it; a focus on relationships among species observed (food webs; other interactions); geological history as seen by the observer; and/or solely on what is encountered with the full and exacting use of the senses. The emphasis is therefore on the phenomena that the student actually senses and experiences, not on what they did, were told or read that day – even though parallels or comparisons may be drawn with this information.

Class notes and personal notes are not included as formal journal entries, although we do encourage students to take notes, as they will be useful for other assignments or examinations. When journals are handed in for review, please ensure that assessable items are clearly indicated. The journal will be collected at three different times during the program – after 1 week to ensure students are on track (non-assessable), after 2-3 weeks (initial review) and after 5.5 weeks (final review).

Field journals will consist of:

i) Grinnell Trip Logs (25%) 4 entries from locations as prescribed by the Instructors. This (adapted) Grinnell Trip Log is a structured, descriptive narrative record of field walks (not in table/gird format). It includes the following essential elements:

1. Date & Time: Head your trip log entry with the date and the start and end time of your trip.	6. Flora: Descriptions of characteristic/notable vegetation seen, i.e. names and habit of plant and tree species, incl. interactions.
2. Location: Give the name of the area and the name of the hiking trail/route. Include start/end GPS coordinates if available.	7. Fauna: Record and description of sightings of any animals seen (incl. behavior) and/or evidence of their tracks, calls and signs.
3. Weather: Start/end conditions and notable weather changes, e.g. temperature, % cloud cover, wind speed, wind direction.	8. General Commentary: A brief personal summary reflection on the walk and/or other notable observations, e.g. geology, soils.
4. Route Description & Map: Concise description of the route travelled, with distances, times, notable markers or changes in direction. On a left page, sketch route map with key features.	9. Species Record & Sketches: Descriptions of 3-5 species observed (e.g. flora, fauna, tracks, signs). Use field guides to support observations. On left page, sketch species and label well.
5. Habitat(s): Description of the area’s ecology, general vegetation type and changes in habitat, including ecotones.	10. Two Questions: Conclude with two detailed questions about ecological phenomena encountered that got you wondering.

This log is a careful summary of observations and field notes taken throughout the day. This entry usually takes 2 hours to write-up, but can take longer depending on the day of record. All entries must include the 10 elements as outlined above.

Grinnell Trip Log entries will be **graded** according to:

- a) *Organization*: Entries are written in an organized way and should follow a logical format that remains consistent with the established criteria. Information should be accessible and related to specific dates and locations.
- b) *Completeness*: Includes essential elements of a field journal and prescribed entries have been completed.
- c) *Accuracy of Content*: Provides an accurate and comprehensive reflection of phenomena encountered during the trip (e.g. correct orientation information and habitats and species encountered).
- d) *Neatness/Readability*: Other readers should be able to use your journal as a reference.
- e) *Effort*: The entries should reflect the serious effort has been invested, and improvement made, throughout the program.

ii) "Today I noticed..." (10%): at least 5 entries throughout the program as determined by the student.

These are entries that begin with the above phrase (or, if done weekly, "This week I noticed...") and leads into a short reflection on specific ecological phenomena observed (e.g. species interactions) that ignited a sense of curiosity or newfound learning. The reflection should try and draw on additional information from field guides or lectures to support, refute, or deepen insight into the ecological observation. Sketches or other graphic representations are highly encouraged.

iii) Nature writing (10%): from locations as prescribed by the Instructors, approximately 5 entries.

These entries involve deeper and more creative reflection and require students to focus in on the ecological aspects of their sensory experiences. Entries should be inspired by and related to the specific place and will be graded according to:

- *Use of language*: Using rich creative language (e.g. metaphor, simile, alliteration, onomatopoeia).
- *Diversity of expression*: Employing a diversity of writing/journaling techniques (e.g. poetry, dialogue).
- *Sensory detail*: Encapsulating a range of sensory detail (sight, sound, smell, touch, etc.).
- *Presence of the narrator*: Writing in a way that shows how you the narrator are interfacing with your surrounds.
- *Natural descriptions*: Making clear links to ecological observations with your writings.
- *Wider reflection*: Using the scene and your observations to generate wider reflections on nature.

iv) Other assignments/field activities as assigned (5%)

Refers to any other specific journal activity or assignment given by the Instructors throughout the program, e.g. field surveys (bird counts), ethology exercises, mapping.

Include a table of contents on the first page of your field journal so entries can be more easily located.

2. Oral Presentation (Individual) – 15%

Students will be assigned a topic a minimum of four weeks before arriving to South Africa. During this time, students will carry out bibliographic research and then complement it with the activities and experiences during the program, if appropriate. An oral presentation of 10 minutes (+5minutes facilitated discussion) and a 1-2 page summary of **bulleted** information will be evaluated for this project. Oral presentations are graded according to:

- *Content*: coverage, relevance, accuracy, depth, originality, creativity
- *Structure*: logical and ordered flow of information, adhering to the 10 minute time limit
- *Style*: engagement/participation of the audience, clarity, demeanor (interested, enthusiastic, good eye contact)
- *Discussion*: ability to answer questions about the topic and generate/facilitate discussion around key points
- *Bullet-point summary*: 1-2 page overview of key points - can be legibly handwritten or typed up. This is a summary and not just your personal notes. Must include your reference list, i.e articles/books/websites/personal sources used (at least three different sources). Cut/paste plagiarism (i.e. verbatim unreferenced material) will not be accepted.

3. Trail Interpretation/Guidance – 10%

Utilizing their acquired field observation skills and understanding of the Grinnell trip log method, students will prepare guidance for a given hiking trail. These interpretative trail notes will be prepared with the view that they will be used by members of the public, i.e. walkers, who wish to have knowledge on the route, distances, obstacles as well as guidance on the terrain in terms of the habitats, species and ecological, geological or cultural interest areas which may be encountered.

4. Final exam – 15%

Students will take a written exam to evaluate their understanding of the key themes addressed throughout the course. Some 'facts' may be examined; however, the emphasis is more on critical reflection and application of core concepts to scenarios.

5. Active Participation & Discussion – 10%

Includes general engagement with the subject matter and participation in group readings and discussions.

ESCI 497U, Environmental Field Survey (5 quarter credits)

1. Species Sightings List – 25%

Starting at the back of their field journals, students will prepare columns with the following headings:

<i>Place</i>	<i>Date & Weather</i>	<i>Classification (Taxa)</i>	<i>Species Name (Common & Taxonomic)</i>	<i>Habitat</i>	<i>Field Notes</i>	<i>Count</i>
Nature's Valley	7/5: 25% cloud, light SW breeze	Cetacean (Mammal)	1. Bottle-nosed Dolphin (<i>Tursiops aduncus</i>)	Inshore sandy bay	Travelling at speed toward West, juveniles present	15-20

Species list will be ordered chronologically and separated (i.e. ruled off) according to each area visited.

Species lists will be graded according to:

- *Consistency of use*: it is used continuously throughout the program
- *Accuracy*: information entered is accurate
- *Representation*: contains a fair representation of key species encountered per area visited
- *Detail*: brief field notes are expected for each entry and may include notable traits, behavior and interactions.
- Remember that species can and should be entered multiple times across each distinct location, particularly if that reflects the range of a particular species; in other words, the species list is more than just a 'tick box' ("seen this") list.

2. Mid-Term Assessment - 20% (Group work)

Students will develop a research and/or monitoring project proposal with the vision that this will be implemented and continued by other students or citizen scientists in years to follow. The project needs to be:

- Centered around a core social-ecological question
- Demonstrate understanding of the relevant field techniques learned and practiced and/or demonstrate creativity in proposing new or alternative techniques as relevant to the question/problem
- Structured according to research proposal format: Introduction/Rationale/Relevance; Research Questions; Methods & Materials; Ethical Considerations; Preliminary Findings/Results; and Discussion/Recommendations.
- Justified (theoretically and practically) with rationale/links to the 'bigger picture' (e.g. conservation outcomes).
- Supported with stepwise guidance for persons wishing to implement this monitoring program in the future.
- Accompanied by an oral presentation graded according to the same criteria as used for the individual oral presentation.

3. Field Survey Report – 20%

Students will write a detailed field report covering the methods and outcomes of their field survey activities conducted with partner organizations. Grading will be according to:

- *Structure*: Clear logical structure that follows a general, prescribed or adapted format of: Introduction; Area Description(s); Objectives; Methods & Materials; Results; Discussion and that these are outlined in a neat and readable way.
- *Thoroughness*: Each of the above sections is completed with sufficient effort, detail and is easy-to-follow.
- *Reflection*: The report critically reflects on methods and results and identifies limitations and recommendations.

(Note that the above criteria may be adapted according to the wishes of the stakeholders involved)

4. Revision Quizzes– 10%

Short quizzes which assess the student's level of attentiveness, retention of factual information, understanding of field survey techniques performed, and their recollection of field observations/identifications made.

5. Final Exam – 15%

Students will take a written exam to evaluate their understanding of the key survey methods encountered throughout the program. The emphasis will be on how these techniques can be applied in selected scenarios.

6. Active Participation & Involvement – 10%

Students will be evaluated according to their active participation and involvement in all field survey activities, particularly their contribution to group projects.

ESCI 497V, Wildlands Environment and Culture (5 quarter credits)

1. Learning Journal – 50%:

This social-cultural journal is central to your personal development and learning throughout the program. It provides an open non-judgmental space for you to engage in thoughtful reflection, critical insight, creative expression and deepening discussion of your own and others' language, perceptions and worldviews. It is a place for exploring social-cultural-ecological interactions and dynamics.

i) Reflective entries (40%) - at least 12 thorough entries or more if shorter - more regular entries are preferred.

Similar to the "social-ecological autobiography" described by Hayes (2008) in your first mandatory reading, these entries will include regular insightful reflections on learning experiences embedded within specific contexts, particularly concerning interactions with course material, guest speakers, local communities and your peers. Entries should track questions and changes in personal beliefs, perceptions, worldviews and learning, possibly as part of comparative reflection on past experiences/knowledge/places encountered back in your homeland. The entries highlight key learning moments and document information that finds resonance (appeal) or dissonance (conflict) within you. Entries can include poetry, art, or free-writes. **The journal will conclude with a final reflective summary (as the 13th entry, minimum)** which synthesizes your "autobiography" during the program, in terms of reflection on course intentions and identifying how pivotal learning moments have shaped you. **Each entry begins with the phrase: "Right now I feel..."** before continuing on to whatever it is you wish to write about (the theme of the entry itself does not need to be related to your "Right now I feel..." statement).

Include a **table of contents on the first page** of the Learning Journal so entries can be easily located.

Grading criteria is as follows:

- *Depth*: Reflections make an effort to explore, probe, question, query and mine the topic, possibly even returning to the issue again in subsequent entries with a fresh perspective or different angle. Feel free to engage in philosophical discussion.
- *Wider Reflection*: Entries may take the specific topic and put into a broader context and draw comparisons with elsewhere.
- *Connections*: Insightful links are made with: present or past experiences, knowledge, discussions, course themes, literature, etc.
- *Style*: Entries are readable, articulated and make good use of first-person narrative, prose, dialogue, poetry or art.

- *Effort*: Entries are completed regularly throughout the program (at least twice a week) and improve as the course progresses.

ii) Nature writing (10%): from locations as prescribed by the Instructors, approximately 6 entries.

These pieces encourage creative and expressive reflection and require students to illuminate the meeting of both ‘inner’ and ‘outer’ aspects of their lived experiences. Entries should be inspired by and related to the specific place and will be graded according to:

- *Use of language*: Using rich creative language (e.g. metaphor, simile, alliteration, onomatopoeia).
- *Diversity of expression*: Employing a diversity of writing/journaling techniques (e.g. poetry, dialogue).
- *Sensory detail*: Encapsulating a range of rich sensory detail (i.e. sight, sound, smell, touch, etc.).
- *Natural descriptions*: Making links to ecological observations and processes with your writings.
- *Presence of the narrator*: Writing in a way that shows how you as narrator are interfacing with/experiencing your surrounds.
- *Wider reflection*: Using the scene and observations to generate broader perspectives on self, nature and being in the world, or as a social commentary of the experience of being human (‘the human condition’).

2. Local Dictionary – 10%

The local dictionary is a list of cultural-specific words/phrases (i.e. Ethnic words and South African English slang/colloquialisms) encountered during the program that are unique to South Africa. Begin the dictionary on the **back page of your cultural journal** and create a table with the following three columns:

Word or Phrase	Language	Translation
Enkosi	isiXhosa	Thank you

Grading will look for:

- *Accuracy*: Spelling, translation and language groups are correct.
- *Attentiveness*: Demonstrates an attention to new words/phrases encountered during the program.
- *Representative*: The dictionary is used consistently throughout the program and at key cultural exchanges/opportunities.
- *Effort*: Reasonable effort has been invested throughout the program.

3. Opinion Piece/Critique – 15% (individual)

Students will prepare a concise ‘opinion piece’ (approx. 5 pages) on a social-cultural topic of their choice but one that is relevant to key themes and concepts encountered throughout the program. The format of the reflection is relatively open but should be seen as an exercise in science communication, e.g. magazine/newspaper op-ed, critique, review, letter to the editor, investigative report. Your task is to convey a potentially complex social-cultural topic in a succinct, engaging and argumentative way. This popular piece must explore various perspectives on the topic (e.g. as encountered with guests, in literature or group discussion), including your own views. In this regard, aim to include, interweave and/or refer to personal stories/experiences that help illustrate your point, the complexities and/or the possible shifting positions/contexts of the theme. The piece should include some reference to literature, e.g. “According to...”

Grading criteria is as follows:

- *Structure*: the reflection is logically-ordered according to the chosen format and potentially publishable.
- *Style*: the writing style is succinct and engaging and effectively communicates key message(s)/themes.
- *Argumentative*: the reflection highlights different perspectives (even if they are not your own) and, if appropriate/relevant, takes a well-argued position on one of them.
- *References*: the reflection draws on and refers to available literature which brings additional perspectives/opinion/theory.

4. Final Exam – 15%

Students will demonstrate an understanding of – and ability to critically reflect on – key social-cultural issues encountered during the program.

5. Active Participation & Engagement – 10%

Students will be evaluated according to active participation in everyday activities as well as their attitude and involvement when engaging with guests and local hosts. In this particular course, it is important that the student demonstrates a genuinely open mind, a willing attitude, and a respectful etiquette in interacting with team members and local groups. Finally, the student's consistent and positive contribution to the team dynamic (e.g. by embracing assigned roles and responsibilities) will be taken closely into account.

V. Grading Scheme

To convert final grade percentages to letter grades for each course that will appear on your transcript, we will use the following grading scheme:

Grade	Percentage	Grade	Percentage	Grade	Percentage	Grade	Percentage	Grade%
		B+	82.5 - 87.4	C+	65.0 - 69.9	D+	52.5 - 57.4	
A	92.5 - 100	B	75.0 - 82.4	C	62.5 - 64.9	D	45.0 - 52.4	F < 40.0
A-	87.5 - 92.4	B -	70.0 - 74.9	C -	57.5 - 62.4	D -	40.0 - 44.9	

VI. General Reminders

Academic Integrity is as relevant in this field course as it is at your home institution. Plagiarism, using the ideas or materials of others without giving due credit, cheating, or putting forth another student's work as your own will not be tolerated. Any plagiarism, cheating, or aiding another to cheat (either actively or passively) will result in a zero for the assignment. Cases of academic dishonesty may be reported to your home institution.

Assignment deadlines are necessary so course instructors can get the grading done on time. These deadlines need to be enforced so that diligent students aren't penalized for being punctual. Therefore, work submitted late may receive a lower grade than equivalent work submitted on time. If you think circumstances may keep you from completing your work on time, talk to the instructor before the assignment is due.

Participation and attendance are crucial throughout this project. Because of the demanding schedule and limited time, all components of the program are mandatory (unless indicated) and missing even one lecture can have a proportionally greater effect on your final grade. Hence, it is important to be prompt and prepared (i.e., with required equipment) for all activities.

Students with special needs should meet with the lead instructor as soon as possible to discuss any special accommodations that may be necessary.

VII. Academic Schedule & Course Content

The anticipated daily itinerary is outlined in the following table, but scheduling is subject to change according to local conditions (e.g. weather, tides, availability of guest researchers/managers/community members, and 'strategic opportunism'). We seek your cooperation in allowing for some flexibility with the programming.

Date	2017		Location	Lecture Topics & Activities	Assessment Due	Readings Due	
BH	Sat	22-Apr	AM		Arrival George Airport 13:35	497T: Oral Presentations (OP) as scheduled	
			PM	Sedgefield	Overview / Safety Briefing / Logistics / Welcome Dinner		
	Sun	23-Apr	AM		Area Introductions / Literature Discussion / Shopping	497T: OP - GRNP	M1 Hayes 2009: Into the field... M2 Parker (n.d.). Natural history...
			PM	Sedgefield	Field & Cultural Journals / Introduction Bird ID		
	Mon	24-Apr	AM	Rondevlei	Bird Surveys / Ecology Introduction		
		LOW 08:36	PM	Sedgefield	Student Check-In / Responsibilities		
	Tue	25-Apr	AM	Goukamma	Day Walk (20km) / Area Introduction	497T: OP - Goukamma	
		LOW 09:15	PM	Buffalo Bay	Coastal Ecology / Habitats / Naturalist Journaling		
	Wed	26-Apr	AM	Buffalo Bay	Grinnell Introduction / Debrief		M3 Wells 2008: Identification Methods
		NEW MOON	PM	Buffalo Bay	Garden Route Dolphin Introduction / Rocky Shores		M4 Hammond 2008: Mark-Recapture
Thur	27-Apr	AM	Brenton-on-Sea	Walk to Brenton / Taxi to Knysna / Dolphin Survey	497T: OP - Knysna		
	LOW 10:33	PM	Knysna	Dolphin Survey / Shopping / Cultural History / Xhosa Dinner			
Fri	28-Apr	AM	Knysna	Dolphin Survey / Discussion		M5 Sitas et al. 2013: Opportunities	
	LOW 11:14	PM	Knysna	14:00 Judah Square ; 18:00 Seahorse Introduction		M6 Fourie-Basson 2015: Rastafari...	
Sat	29-Apr	AM	Knysna	Knysna Estuary / Shore Survey		M7a Le Maitre et al. 2011: OR	
		PM	Platbos	Historical Significance / Discussion		M7b Carruthers et al. 2011: A Native...	
BH	Sun	30-Apr	AM	Platbos	Outeniqua Trail Hike - Forest Ecology		Cowling & Pierce 2009: Discovering Eden (Chpt 1)
			PM	Millwood	Nature Writing Introduction		
	Mon	01-May	AM	Millwood	Grinnell Naturalist Journaling		Cowling & Pierce 2009: The Peopling of Eden (Chpt 2)
			PM	Rondebossie	Debrief / Discussion		
	Tue	02-May	AM	Rondebossie	Grinnell Naturalist Journaling		
	LOW 14:21	PM	Diepwalle	Debrief / Discussion			
Wed	03-May	AM	Diepwalle	Grinnell Naturalist Journaling		M8 Kerwath et al 2013: MPA ...	
	1Q MOON	PM	Fisanthoek	Debrief / Discussion			
Thu	04-May	AM	Fisant / Kranshoek	Coastal Ecology / Geology			
	LOW 17:55	PM	Plettenberg Bay	Logistics/Shopping			

Fri	05-May	AM		Self-Time		M9 Van de Voorde et al 2015: Differential reactions...
	LOW 06:52	PM	Plettenberg Bay	Naturalist Skills / Field Survey Technique Introduction		
Sat	06-May	AM		Group 1: Pelagic Survey	497T: OP - Robberg Penin.	
		PM	Plettenberg Bay	Group 2: Dolphin Survey	497T: OP - Plettenberg Bay	
Sun	07-May	AM		Group 2: Pelagic Survey		
		PM	Plettenberg Bay	Group 1: Dolphin Survey		
Mon	08-May	AM		Township Formalization & Xhosa Language (Qolweni)	497T Field Journal &	<i>Cowling & Pierce 2009:</i>
	LOW 08:45	PM	Plettenberg Bay	Environmental Communication (Lunchbox Theatre)	497V Cultural Journal	<i>The Human Footprint (Chpt 6)</i>
Tue	09-May	AM		Robberg (Group 1) - D1 Intertidal & Nwriting D2 Grinnell		
	LOW 09:14	PM	Plettenberg Bay	Group 2 - Literature Discussion		
Wed	10-May	AM		Robberg Hike (Group 2) - D1 Intertidal Nwriting D2 Grinnell		
	<i>FULL MOON</i>	PM	Plettenberg Bay	Group 2 - Literature Discussion		
Thu	11-May	AM		Mid-term Projects		<i>Cowling & Pierce 2009:</i>
	LOW 10:10	PM	Plettenberg Bay	Mid-term Projects		<i>The Evolution of Eden (Chpt 5)</i>
Fri	12-May	AM		Mid-term Presentation	497U: Mid-Term Assessment	
	LOW 10:39	PM	Plettenberg Bay	Sustainable Farming / Organic Agriculture		
Sat	13-May	AM	Keurbooms	Pack-up & Coastal Hike (Forest Hall)		
		PM	Forest Hall	Paleontology / Recreational Fishing Research	497T: OP - Nature's Valley	
Sun	14-May	AM		Sustainable Farming / Eco-Tourism	497T: OP - Tsitsikamma	M10 Faasen & Watts 2007 – Local Community Reaction....
		PM	Khoiania	Debrief / Discussion		
Mon	15-May	AM	Kurlannd	Community Recycling / Wildlife Sanctuaries	497U: Field Survey Report 1	
		PM	Nature's Valley	14:00 NVT Welcome & Introduction		
Tue	16-May	AM		Marine Debris Salt River Hike		
		PM	Nature's Valley	Debrief / Discussion		
Wed	17-May	AM		Mosquito Fish / Nature Writing		
		PM	Nature's Valley	Mosquito Fish / Nature Writing		M11 Dickinson et al 2010: Citizen Sc
Thu	18-May	AM		Seine Netting / Estuary Monitoring / Fish Recruitment		
		PM	Nature's Valley	Seine Netting / Estuary Monitoring / Fish Recruitment		
Fri	19-May	AM		Bird Ringing / Pollination Research		
	<i>2Q MOON</i>	PM	Nature's Valley	Adopt-a-River Crags Eco Club mini-sass		
Sat	20-May	AM	Eden to Addo	Pack-up & Review		M12 Swaisgood & Sheppard 2010...
		PM	Corridor 1	Wildlife Corridor Connectivity / Mapping		
Sun	21-May	AM	Eden to Addo	Private Partnerships in Conservation		
		PM	Corridor 2	Corridor Connectivity / Mapping		

Mon	22-May	AM	Eden to Addo	Biodiveristy Surveys /Trapping		
		PM	Corridor 3	Wildlife Corridor Connectivity / Mapping		M13 Crane 2006: Biodiversity...
Tue	23-May	AM	Eden to Addo	Trail Guidance / Qualities of Wilderness / Nature Writing	497T: OP - Baviaanskloof	
		PM	Baviaanskloof	Interpretative Trail Guidance		
Wed	24-May	AM		Pathways into Environmentalism		M14 McDonald et al. 2009.
		PM	Baviaanskloof	Local Ecological Knowledge / Rock Art / Medicinal Plants		The Nature of Peak...
Thu	25-May	AM	Baviaanskloof			
	<i>NEW MOON</i>	PM	Sewefontein	Community-based Tourism		
Fri	26-May	AM	Baviaanskloof			<i>Cowling & Pierce 2009:</i>
		PM	Kamerkloof	AgroEcosystems / Community Tourism (Bo-kloof / S'fontein)	497T: OP - Addo NP	<i>Into the Thick of It (Chpt 3)</i>
Sat	27-May	AM	Baviaanskloof	Toward Living Landscapes /Private Wildlife Conservancy	497T: Field Journal	
		PM	Makkedaat	Wildlife Management & Monitoring	497V: Learning Journal	
Sun	28-May	AM	Baviaanskloof	Pack-up & Departure		
		PM	Addo NP	Wildlife Surveys (Night Survey)		
Mon	29-May	AM	Addo NP	Mega-Herbivore Management & Tourism Trade-offs		M15 Kerley et al. 2003:
		PM	Alexandria	Dune Ecosystems & Wildlife Tracking	497T: OP - GFRR	Jumbos or Bust?
Tue	30-May	AM	Great Fish			
		PM	River Reserve	Introduction to GFRR & Current Management Issues		M16 Cocks et al. 2012: God is my...
Wed	31-May	AM		Rhino Management / Monitoring / Anti-Poaching	497T: Trail Guidance Due	
		PM	GFRR	Private Game Reserve Management / Community Support		
Thu	01-Jun	AM		Bird Hide: Waterhole Wildlife Surveys		M17 Shackleton et al 2009: Beyond...
	<i>1Q MOON</i>	PM	GFRR			
Fri	02-Jun	AM		Bird Hide: Waterhole Wildlife Surveys		<i>Cowling & Pierce 2009:</i>
		PM	GFRR	Results Synthesis and Presentation		<i>Back to the Garden (Chpt 7)</i>
Sat	03-Jun	AM		Results Synthesis and Presentation	497U: Field Survey Report 2	
		PM	GFRR	Program Review & Exam Preparation / Adams Krantz		
Sun	04-Jun	AM		Final Exam	497T, U, V: Final Exam	
		PM	GFRR	Program Wrap-up & Reflection	497V: Cultural Essay	
Mon	05-Jun	AM	Port Elizabeth	Pack-up & Departure		
		PM	GFRR	Visit SAMREC. Course Closes 16:30		

VIII. Mandatory Reading List: Readings to be covered and discussed during the program (provided upon arrival)

- Carruthers, J., L. Robin, J. P. Hattingh, C. A. Kull, H. Rangan, and B. W. van Wilgen. 2011. A native at home and abroad: The history, politics, ethics and aesthetics of acacias. *Diversity and Distributions* 17: 810–821.
- Cocks, M., T. Dold, and S. Vetter. 2012. “God is my forest” – Xhosa cultural values provide untapped opportunities for conservation. *South African Journal of Science* 108: Art# 880, 1–8.
- Cowling, R. M., and S. Pierce. 2009. *East of the Cape: Conserving Eden*. Fernwood Press, Simon’s Town.
- Crane, W. 2006. Biodiversity conservation and land rights in South Africa: Whither the farm dwellers? *Geoforum* 37:1035–1045.
- Dickinson, J. L., B. Zuckerberg, and D. N. Bonter. 2010. Citizen Science as an Ecological Research Tool: Challenges and Benefits. *Annual Review of Ecology, Evolution, and Systematics* 41:149–172.
- Faasen, H., and S. Watts. 2007. Local community reaction to the “no-take” policy on fishing in the Tsitsikamma National Park, South Africa. *Ecological Economics* 64:36–46.
- Hayes, M. A. 2009. Into the field: Naturalistic education and the future of conservation. *Conservation Biology* 23:1075–1079.
- Kerley, G. I. H., B. G. S. Geach, and C. Vial. 2003. Jumbos or bust: Do tourists’ perceptions lead to an under-appreciation of biodiversity? *South African Journal of Wildlife Research* 33:13–21.
- Kerwath, S. E., H. Winker, A. Götz, and C. G. Attwood. 2013. Marine protected area improves yield without
- Laszlo, K. C. 2012. From systems thinking to systems being: The embodiment of evolutionary leadership. *Journal of Organisational Transformation & Social Change* 9:95–108.
- Le Maitre, D. C., M. Gaertner, E. Marchante, E.-J. Ens, A. Pauchard, P. J. O’Farrell et al. 2011. Impacts of invasive Australian acacias: Implications for management and restoration. *Diversity and ...* 17:1015–1029.
- Lidicker, W. Z., and R. R. Swaisgood, and J. K. Sheppard. 2011. Letters to the Editor: Hope vs Realism and response: Reconnecting People to Nature is a Prerequisite. *BioScience* 61:94–95.
- Parker, A. (n.d.). Natural history and naturalist skills.
- Reisinger, R. R. and L. Karczmarski 2010. Population size estimate of Indo-Pacific bottlenose dolphins in the Algoa Bay region, South Africa. *Marine Mammal Science* 26(1): 86-97.
- Shackleton, C. M., G. Cundill, and A. T. Knight. 2009. Beyond Just Research: Experiences from Southern Africa in Developing Social Learning Partnerships for Resource Conservation Initiatives. *Biotropica* 41:563–570.
- Sitas, N., H. Prozesky, K. Esler, and B. Reyers. 2014. Exploring the Gap between Ecosystem Service Research and Management in Development Planning. *Sustainability* 6:3802–3824.
- Swaisgood, R. R., and J. K. Sheppard. 2010. The Culture of Conservation Biologists: Show Me the Hope! *BioScience* 60:626–630.
- Van de Voorde, S., M. Witteveen, and M. Brown. 2015. Differential reactions to anthropogenic disturbance by two ground-nesting shorebirds. *Ostrich* 86:43–52.
- Wells, R. S. 2009. Identification Methods. Pages 593–599 in W. F. Perrin, B. Würsig, and H. G. M. Thewissen, editors. *Encyclopedia of Marine Mammals*, 2nd edition. Academic Press, San Diego.