



THE BULGARIA PROGRAM:  
REWILDING IN ACTION  
Summer 2024  
June 21 – July 5

## ACADEMIC SYLLABUS

### Faculty:

Lead Instructor: Daniel Couceiro, PhD Candidate at Wageningen University.

### Contact Hours:

We will be together all day, every day, throughout the course. The class will meet every day, with the instructors available for individual meetings.

### Class Meetings:

This Wildlands Studies Program involves instruction and field activities every day, with some scattered time off for breaks, resupplying, showering, and laundry. Faculty and staff work directly with students 10+ hours daily and are available before and after scheduled activities. We begin each day around 6.30 am, with breaks for meals, rest, and study time. Most evenings contain scheduled activities, including discussions, guest lectures, structured study time, wildlife tracking and observation, etc. Each day's activities tend to run long, and some days may end as late as 10 pm (e.g., for wildlife observation). Since we will be spending all our time outdoors, we will need to work around whatever weather conditions come our way. As such, we need to be flexible and able to accommodate a variety of class times and conditions. Fluctuations in weather and tips on wildlife activity will have a significant impact on our daily plans, especially when trekking in Pirin National Park. *I cannot emphasize enough the need to be flexible.* We will try to communicate changes to the plan as soon as they arise, and please know that this is likely to come up every day.

### Course Credit:

Students receive credit for one upper division undergraduate course:

#### **ESCI 437A, Environmental Wildlands Studies (5 quarter / 3.35 semester credits)**

Field-based course studying the environmental problems affecting the natural and human-impacted ecosystems of our study region, including the role of human interactions.

In this program we have formal coursework (i.e., readings, discussions, etc.) and experiential learning in the field. Academic credit is provided by Western Washington University. **Students with special accommodation requests must communicate with the instructor before the program begins.**

### Readings:

We have a course reader; a pdf version will be provided to students in advance of the course. Students need to bring a **printed** copy with them (please print on both sides to save weight, you'll appreciate this when we're backpacking!). **Do not bring a tablet or laptop in lieu of printing.** 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 program. We will carry a shared reference library of these on all activities and backcountry field studies.

### Contents of this syllabus:

- I. Program Overview
- II. Learning Objectives
- III. Course Description
- IV. Grading Scheme
- V. Assessment
- VI. General Reminders
- VII. Academic Schedule & Course Content
- VIII. Reading List

## I. Program Overview

Wildlands Studies' Bulgaria Program allows participants to explore, study, and learn about some of the most interesting conservation topics and trends in Europe. Bulgaria is one of the last biodiversity strongholds of Europe, hosting healthy populations of grey wolves, brown bears and jackals while being subject to the reintroduction of black vultures and the mighty wisent, or European bison. This European wilderness course provides students with the opportunity to track and possibly observe wildlife species – bison, brown bears, grey wolves, and more –and to reflect on the perspectives – local vs. regional, scientific vs. cultural, etc. – by which these species and their ecosystems are managed. A notable focus, as over 80% of European habitats are severely deteriorated, will be exploring the growing and very much needed field of ecological restoration through the lens of the Rewilding Rhodopes initiative, framed within the Nature Restoration Law aimed to restore ecosystems, habitats, and species across the EU's land and sea.

In the first week of the course, we will embark on a multi-day backpacking journey through the gorgeous Pirin National Park. We will start walking early every day to cross different mountain ridges to explore, observe and study the different altitudinal montane belts and habitats, and the wildlife they harbor. While discovering Pirin, we will learn in depth about the principles of conservation biology, natural resource management, and natural reserve design and ecology. Participants will also acquire basic backcountry skills emphasizing naturalist observations, field navigation, and team building. Once we reach the corresponding mountain hut, we will spend the rest of the evening learning about various aspects of biology, ecology, conservation biology, and wildlife management related to our focal species (particularly grey wolves and brown bears), and we will discuss the implications as they relate to the whole of Bulgaria and the European Union. In the process, students will acquire skills in wildlife observations, locating and tracking animals, understanding wildlife behavior, and identifying a variety of native flora and fauna.

Just over halfway through the course, we will head to the culturally unique village of Yagodina in the West Rhodope Mountains to dive deeper into bear ecology, research methods, and conflict management. During this segment, students will explore alternative wildlife research methods and land management options. We will also spend a few nights partaking in a bear-watching experience while hidden in an old communist bunker immersed in the forest. At the beginning of the second week we will head into the Eastern Rhodopes, to dive into the field of ecological restoration, its possibilities, needs and limitations. Within the framework of the continent-wide initiative Rewilding Europe and, in particular, Rewilding Rhodopes, we will study the reintroductions of keystone species such as the black vulture and European bison.

Our hands-on field activities will be complemented by meeting with different stakeholders including hunters, biologists, farmers, local community members, wildlife management experts, and conservation leaders. Through these interactions we will explore the ecology of our study species, the complex issues and controversies surrounding how they are managed, as well as their coexistence with people under the circumstances that are unique to depopulated rural Bulgaria, a place where reminiscence of communism in terms of land management lingers in the minds of the Bulgarian people.

Although the course is not taught in a classroom, the academic expectations are high. There will be additional challenges posed by factors such as long days, inclement weather, logistical changes, and physically demanding conditions. As such, we will get the most out of our experiences together if we bring along flexibility, ample patience, a sense of humor, self-motivation, and perhaps most importantly, the desire to work as a team towards a common goal.

## II. Learning Objectives

Students will develop knowledge of and experience in:

1. **Field observation skills through the ecosystems and natural history of Bulgaria.** Field observation and naturalist skills are an integral part of science and promote awareness and understanding of the world. Students will gain experience observing, connecting with, and documenting their surroundings through various techniques, thus becoming able to identify plant and animal species of different European temperate ecosystems and changing patterns and processes. As we immerse ourselves in these different environments, we will learn about the key flora and fauna and hone our skills as naturalists.
2. **Rewilding and ecological restoration.** Students will research the possibilities for ecological restoration, how to implement efficient restoration processes, and the social-economic implications of restoration. Within restoration, we will emphasize rewilding, which aims to restore ecosystems and reverse declines in biodiversity by allowing wildlife and natural processes to reclaim areas no longer under human control. Students will learn about the principles of rewilding and ecological restoration, discuss how rewilding can be applied to restore ecosystems at varying scales, and witness how Bulgaria uses it to create nature-based communities.
3. **Human-wildlife coexistence and conflict.** Human activities are impacting wildlife species at an unprecedented rate, increasing threats to the health and viability of wildlife populations everywhere. Students will learn to recognize how the principles of conservation biology apply to the conservation of apex predators and keystone species in Bulgaria and Europe in general, including proximal and ultimate causes of species decline and extinction, principles of habitat fragmentation and reserve design, and how these principles have (or have not) been used to develop management and recovery plans for threatened or sensitive species. Using wolves and bears in Bulgaria as our foci, we will examine current local perspectives and the cultural, historical, political, social, and economic factors that must be considered to effectively manage human-wildlife conflict in ways that support both the community's and wildlife's needs.
4. **Political, legal, and social dimensions of wildlife species management.** Students will have opportunities to meet biologists, hunters, mountain guides, natural resource managers, farmers and other local stakeholders who have very different perspectives on conservation, sustainability, management, and policy. Students gain additional insight into the current trends and political and management history through readings and real-case scenarios in the very interesting context of a former communist country.
5. **Critical reading, discussion, and evaluation of primary literature in natural and social sciences.** Throughout this course, we rely on primary literature in lieu of a textbook; therefore, students gain a significant amount of experience reading and critically discussing primary literature. Students will read primary literature most days and thus will gain experience to be able to critically evaluate research. Readings will be debriefed with a group discussion, ensuring that students have understood the work and are able to evaluate it critically.

Topics will be addressed through course readings, discussions, field activities, visits with local experts and researchers, extended backcountry excursions, and field research projects. Much of the learning will take place as small group discussions of the readings. **It is absolutely imperative that each student complete all of the required readings before the day's class and actively participate in the discussion.** Students will be expected to critically evaluate, analyze, and synthesize material from the various activities. Our overarching goal is to have students leave the course with extensive knowledge about this region, as well as broader synthesis skills, allowing them to critically evaluate information in their future lives and careers.

### III. Course Description

Students will receive transcript credit for the following course introduced on page 1:

#### **ESCI 437A, Environmental Wildlands Studies (5 quarter / 3.35 semester credits)**

Field-based course studying the environmental problems affecting the natural and human-impacted ecosystems of our study region, including the role of human interactions.

##### Experiences/Activities

Students will learn concepts and principles of environmental studies, conservation biology and ecology, wildlife management and conservation planning methods, and data collection and analysis techniques. Students will examine outcomes of environmental policies and wildlife management, including both sociological and natural consequences, and evaluate environmental policy options. Along the way, students will consider concepts and principles of environmental research, ethics, land and wildlife management, and the role of culture in wildland management.

Students will complete an in-depth course-long field journal with detailed scientific observations, field inventories, analysis of environmental issues and the role of various stakeholders with whom they will be able to interact with during the course. They will be required to participate in activities and discussions, sharing viewpoints and critiquing arguments or topics encountered. Debates, roundtables, and role-playing are some of the tools used to facilitate these processes.

##### Outcomes

Students will gain the ability to critically read and evaluate scientific and policy literature, as well as texts written for popular audiences. They will gain knowledge of wildland natural history and policy, with a specific emphasis on Bulgaria and European trends. Students will discuss and critique the literature in conjunction with other information they have learned in this program from local experts, personal observations, and other relevant readings. They should be able to demonstrate an understanding of basic ecological, management, and policy concepts as they relate to Europe, including community ecology and species interactions, wildlife-human conflicts, effects of climate change, etc. By the end of the course, students will be able to apply their knowledge of natural and social science to new scenarios and clearly demonstrate comprehension of the material.

Students will also acquire knowledge on the climate, ecology, geography, natural history, cultural history, and conservation challenges of Europe, in general, and Bulgaria, in particular, through direct observations, presentations, lectures, and interactions from instructors as well as local stakeholders, experts, and community members. Technical keys, guidebooks, scientific papers, and popular literature will be used to accomplish these goals.

Students will develop skills in field observation and employ various techniques to present and record their natural history observations. Students will be able to conduct basic field research and be able to synthesize, organize, and present their data in a way that is appropriate to the audience and subject matter. They will discuss their results considering current management or conservation issues, and they will be able to demonstrate their understanding of the ecological and/or social science processes and concepts that underlie research.

#### IV. Grading Scheme

Letter grade	Percentage
A	92.5 - 100
A-	90.0 - 92.4
B+	87.5 - 89.9
B	82.5 - 87.5
B-	80.0 - 82.4
C+	77.5 - 79.9

Letter grade	Percentage
C	72.5 - 77.4
C-	70.0 - 72.4
D+	67.5 - 69.9
D	62.5 - 67.4
D-	60.0 - 62.4
F	< 60.0

#### V. Assessment

The following is an overview of the academic requirements. Some of the assignments are ongoing (journal and readings) and some have specific dates (Final Exam). **Due dates are subject to adjustment in response to weather and logistical changes.** Final grades for the course listed above will be based on the following items:

Assessment Item	Date Due	% of Grade
Bear & Land Management Research Proposal & Presentation	6/30	15
Bison Reintroduction Research Project & Presentation	7/03	15
Field Journal	6/26; 7/03	30
Reading, Discussions, and Class Participation/Leadership	Ongoing	20
Final Exam (short answer/essay)	7/04	20

#### Research Projects: 30%:

Each student will participate in two field studies, one research proposal on carnivore land management oriented towards minimizing conflict, and one written study analyzing the ongoing efforts and future landscape of the European bison reintroduction, each based on our hands-on experience. Working in small teams, you will gather and analyze data from multiple sources (papers, on-site stakeholders, reports, etc.), develop research questions and methods, write a report, and present it to the rest of the class. The final grade includes detailed written reports in your field journal, as well as preparation, participation, and fieldwork. Students will be evaluated on their participation during the collaborative fieldwork, on the final written product, and on their oral presentation to their classmates and instructors.

#### Field Journal: 30%

The field journal is an integral part of the Bulgaria course. It serves as a learning tool, a place for reflection upon experience, and a record of your experience as a whole. 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. 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); and what is encountered with the full and intentional use of the senses. The emphasis is on the phenomena that the student actually senses and experiences, not on what they were told or read that day – even though references may be drawn from this information.

Class notes and personal notes are not included as formal journal entries, although we encourage students to take notes, as they will be useful for other assignments or examinations. Personal notes should be put in a separate (ungraded) field notebook. After an initial check early on, the field journal will be collected near the end of the program. Field journals will consist of:

1) Grinnell Trip Logs – 15% (Three entries from locations as prescribed by the instructors.) This format is slightly modified from the traditional Grinnell Journal format taught by Joseph Grinnell, focusing less on creating a permanent record of natural history for future researchers and more on training students to think like a naturalist by linking abiotic components such as weather, aspect, soil, or landscape history with changes they are seeing in plants, animals, or habitat. The Grinnell Trip Log format is a structured, descriptive, narrative record of field walks (not in table/grid format), consisting of the following elements:

1. <b>Date &amp; Time:</b> Head your trip log entry with the date and the start and end time of your trip.	6. <b>Flora and Fauna Patterns and Interactions: Descriptions of Characteristic/Notable Vegetation and Animals</b> seen (including tracks, call, sign, etc.). This section importantly also includes <b>interactions, behavior, phenology or other ecological patterns</b> (e.g. for a plant, what the fruiting/flowering stage was, pollinators present, aspect, interactions with epiphytes, birds present, etc.).
2. <b>Location:</b> Give the name of the area and the name of the hiking trail/route. Include start/end GPS coordinates if available.	
3. <b>Weather:</b> Starting conditions, including <b>temperature, % cloud cover, wind speed</b> (e.g. leaves rustling), <b>wind direction</b> , and notable changes	7. <b>General Commentary and Landscape-scale Patterns:</b> A brief personal summary reflection on the walk (a few sentences) and at least 2 larger scale observations linking flora or fauna to geology, soils, fire or storm evidence, land use history, aspect, succession, etc.
4. <b>Route Description &amp; Map:</b> Concise description of the route travelled, with distances, times, and notable markers or changes in direction. Sketch a <b>route map</b> with key features <b>including scale and north arrow</b> .	8. <b>Species List &amp; Sketches:</b> A list of at least 10 plant and 10 animal species, observed (e.g. flora, fauna, tracks, calls). For 3-5 of them, a more detailed description and sketch with labels and scale is required. Use field guides to support observations.
5. <b>Habitat(s):</b> Description of the area's <b>general habitat types</b> (e.g. wet sclerophyll forest), and a <b>few dominant plant species</b> .	9. <b>Two Questions:</b> 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 1-2 hours to write but can take longer depending on the day of record. All entries must include the 9 elements as outlined above.

Grinnell Trip Log entries will be graded according to:

- *Organization:* Entries must be 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.
- *Completeness:* Includes the essential elements (including all bolded tasks) of a field journal
- *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).
- *Neatness/Readability:* Other readers should be able to easily use your journal as a reference.
- *Effort:* The entries show that serious attention/effort has been invested and that there is improvement throughout the program. While a very short entry might indicate a lack of effort, a very long one doesn't necessarily satisfy this requirement either. The effort put into each entry is evidenced by the quality of your prose, not the quantity. Be sufficient and concise.

2) Nature Writing / Other Journal Entries– 10% (from different locations as prescribed by the instructors)

These entries may involve creative reflection and require students to focus on the ecological aspects of their sensory experiences. Other entries may be very quantitative in nature. These may include calculations, predictions, tables of field data, or short essays or proposals about conservation problems and solutions. Entries will be inspired by and related to specific places and experiences. They will be graded according to a subset of these criteria as appropriate for a given assignment:

- *Language & Expression*: Employing rich language and/or a diversity of creative writing techniques (e.g., poetry, dialogue, point of view). We will discuss in detail a variety of journaling techniques.
- *Sensory Detail*: Encapsulating a range of sensory details (sight, sound, smell, touch, etc).
- *Presence of the Narrator*: Writing in a way that shows how a specific narrator interacts with their surroundings (e.g. experiences, thoughts, feelings, memories).
- *Natural Descriptions*: Describing a specific location through geological, ecological, and biological observations, incorporating prior knowledge where appropriate.
- *Wider reflection*: Using the scene and your observations to generate wider reflections on the wider ecosystem and nature as a whole.
- *Accuracy*: Provides an accurate and comprehensive reflection of phenomena encountered.
- *Effort*: The quality of the work developed in the journal. Again, is not about quantity, it is about quality.
- *Legibility*: other people need to be able to read them.

**3) Point-Counter Point 5%:** There will be a special entry in the field journal where students will pick a contentious topic from the course and create a diagram expressing the complexity of the issue. Students will identify **each** of the various stakeholders involved in the controversy, their various perspectives, and the values/evidence/scientific merits supporting and/or refuting their various positions. The write-up could be formatted as a detailed and organized diagram and an accompanying short essay, bullet points, or other form of discussion. Regardless of the presentation method, students must demonstrate a thorough comprehension of the complexity of the issue at hand, and how the various perspectives relate to one another.

### **Readings, discussion, and Class Participation: 20%**

We will discuss readings as a group, with two students leading each discussion. Ideally, students will read the readings once before the course begins and then leave themselves ample time to read the papers a second time before discussions, as some may take longer than others to digest. Grades will be based on student participation in the discussions and on participation in other activities (e.g., leader of the day, meetings with biologists, etc.).

We don't insist that each student understand every paper at the onset of each discussion, but if the paper is unclear, students need to seek clarification during discussion; **bringing questions is as welcome as bringing understanding.** Participating in group discussions can range from sharing a deep understanding of the reading, to asking questions that help us all gain clarity and sharing a totally different viewpoint of the one expressed in the particular paper or book. The important part is to show that you are engaging with the material and thinking about things critically.

Participation includes general engagement with the subject matter and participation in group reading discussions, research projects, and group work. Students will be evaluated according to active participation in everyday activities (e.g., loading the vans, cleaning, etc.), 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 an open mind, a willing attitude, and a respectful disposition when interacting with team members and local groups. Finally, the student's positive contribution to the team effort and dynamic will be evaluated.

To give the opportunity to all students to be proactive towards the needs of the group, each student will be leader of the day once. This will involve waking classmates up at a pre-determined time, helping the class transition between activities, helping the instructors navigate, supporting any classmate with any concern or situation they may have, etc. We will assign leaders of the day at the beginning of the course.

### **Final exam: 20%**

There will be one final exam to evaluate understanding of the key themes addressed throughout the course. The exam will consist of short essay questions based on readings, class discussions, and presentations. Some facts may be examined; however, the emphasis is more on critical reflection and applying core concepts and principles to real conservation scenarios.

## 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 aiding another to cheat (either actively or passively), will result in a zero for the assignment and will be reported to your home institution.

**Assignment deadlines** are established to enable everyone to participate with course activities. Therefore, deadlines are firm. If you believe that extenuating circumstances have prevented you from completing your work on time, make sure to discuss this with the faculty before the work is due.

**Participation and attendance** are absolutely crucial throughout this program. Students are expected to make multiple contributions to every class discussion, ask questions of guest speakers, and be demonstrably engaged during every course activity. Because of the demanding schedule and limited time, all components of the program are mandatory and missing even one class can have a proportionally greater effect on your final grade. So, it is important to be prompt and prepared (i.e., with required equipment) for all activities.

## VII. Reading List

### Required Reading

The course reader will be provided via email as a PDF file about a month before the course begins. A schedule will be included so you know which readings will be discussed each day. **It is imperative that students read the assigned papers before discussion.** Every student must contribute to every discussion; as a small group, it will be clear who comes prepared and who does not. Other books and scientific papers will be made available on these topics through the course library, which we will have with us.

### Recommended Pre-Course Readings

We cover a great deal of content in this two-week course. **We highly recommend reading the introductory readings from the course reader before arriving.**

### Optional

If students are looking for additional resources, we recommend the following:

1. [Standards of practice to guide Ecosystem Restoration](#)
2. [Rewilding Ecosystems: Bringing Large Mammals Back: Large Carnivores in Europe](#)
3. [The revival of wolves and other large predators and its impact on farmers and their livelihood in rural regions of Europe](#)
4. [The situation of the wolf in the European Union](#)
5. [Balkan Biodiversity](#)