

## **Syllabus**

### **BIOL 3350 - Biodiversity of Ecuador**

**Summer 2025, with preparation in Spring 2025**

**May 14<sup>th</sup> – 24<sup>th</sup>**

### **Meeting Dates, Times, and Locations:**

#### **Class online:**

Weekly from January – May 2025

#### **Ecuador:**

Wednesday, May 14<sup>th</sup> – Saturday, May 24<sup>th</sup>, 2025

#### **Instructor:**

Dr. Joshua Banta

Hudnall-Pirtle-Roosth Building (HPR) room 129

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Office Hours: Immediately after class or by appointment.

**Course Description:** This course provides an immersive experience in conservation and ecology, combining online preparatory work with hands-on activities in Ecuador. The online portion (January - May 2025) will include weekly video lectures and discussion boards. The in-country portion (May 2025) will involve fieldwork, conservation activities, and student presentations.

**Course Objectives (by the end of this course, you should be able to):**

- Conduct Ecological Field Research: Design, execute, and analyze field research projects focused on topics such as species composition, forest ecology, and the impact of altitude on biodiversity.
- Apply Conservation Biology Principles: Integrate theoretical knowledge of conservation biology into practical, real-world scenarios, including habitat restoration, species rehabilitation, and carbon sequestration projects.
- Evaluate Ecosystem Dynamics: Assess and compare the ecological characteristics of various ecosystems, including cloud forests, tropical rainforests, and lowland tropical forests, with a focus on their biodiversity and conservation status.
- Engage in Professional Conservation Practices: Participate in and critically evaluate conservation initiatives, such as eco-tourism, community conservation, and NGO-driven projects, understanding their role in biodiversity preservation.
- Understand the Role of Conservation in Cultural Contexts: Recognize the intersection of conservation efforts with local cultural practices and community involvement, particularly within the context of Ecuadorian society.
- Promote Sustainable Practices: Advocate for and implement sustainable conservation practices, including the use of indigenous vegetation in carbon sequestration corridors, and understand their broader ecological and social impacts.

**Required Course Material:**

- For the online portion:
  - Reliable high-speed internet connection
  - Laptop or desktop computer with audio capabilities
  - Access to Canvas for course materials and discussions
- While in Ecuador:
  - See the packing list.

**Grading:**

- Online Quizzes: 20%
- Discussion Board Participation: 30%
- Journal Entries: 20%
- In-Country Presentation: 30%

Final grades in the course will be determined as follows:

90 – 100% = A      80 – 89.999% = B      70 – 79.999% = C  
60 – 69.999% = D      < 60.000% = F

**Correspondence:** You are required to activate the email address that is listed for you on Canvas and to check it regularly. You must check this email address at a minimum every Monday for the entire duration of the spring 2025 semester, for any correspondence from me. You are also required to check the Canvas site with the same frequency for any announcements. You will be held responsible for any information, including deadlines, that I communicate to you via your email address listed on Canvas and/or through the announcements on the Canvas course site. The information could come from one or both places (email and/or Canvas announcements), so you must check BOTH places.

**Due Dates and Deadlines:** You are required to have this course visible in your calendar on Canvas. To do so, make sure the box for the course has a check mark. You will be held responsible for all of the due dates and deadlines for this course that are indicated in your Canvas calendar.

**Quizzes:** During the online portion of this course, quizzes will be embedded into pre-recorded videos on Canvas. In other words, you will take the quizzes as you watch videos. The quiz questions will automatically pop up on your screen as you go along. The due dates of the quizzes will be indicated in your Canvas calendars. The videos with the embedded quizzes will be available at least one week before the due dates. The quizzes will tentatively be due every Monday.

**Discussion Board:** During the online portion of this course, you will be required to post items to the Discussion Board on Canvas. The assignments and the deadlines will be indicated in your Canvas calendars. The Discussion Board posts will tentatively be due every Monday. Further details will be provided separately.

**Journal:** During the time in Ecuador, students will keep a daily journal of their experiences. At the end of the trip, the journals will be graded. The purpose of this assignment is to encourage reflective thinking and to document the learning process.

**Presentation:** Students will prepare and deliver presentations on topics assigned by the instructor, relevant to their experiences in the cloud forest ecosystem. The assignment involves two phases: preparation before the trip, where students will conduct research and develop their presentations, and delivery during the trip, where presentations will be scheduled in the evenings. The presentations should cover key aspects of the assigned topics, highlight their relevance to fieldwork, and engage the audience through discussions. Evaluations will be based on content accuracy, research depth, clarity, use of visual aids, and audience engagement. Further guidelines will be provided closer to the trip.

**Online Course Schedule (January - May 2025)**  
**Subject to change**

- Week 1:** Introduction to Conservation and Ecology
- Week 2:** Biodiversity and Ecosystem Services
- Week 3:** Threats to Biodiversity
- Week 4:** Conservation Strategies
- Week 5:** Protected Areas and Wildlife Management
- Week 6:** Community-Based Conservation
- Week 7:** Restoration Ecology
- Week 8:** Climate Change and Conservation
- Week 9:** Sustainable Development
- Week 10:** Conservation Policy and Legislation
- Week 11:** Case Studies in Conservation
- Week 12:** Preparing for Fieldwork
- Week 13:** Cultural and Ethical Considerations
- Week 14:** Research Methods in Ecology
- Week 15:** Final Preparations for Ecuador

## **In-Country Schedule (May 2025)**

### **Subject to change**

#### **Day 1: Arrive & Orientation**

- Arrival at Mariscal Sucre International Airport in Quito, Ecuador.
- Transfer to a nearby hotel for overnight accommodation.
- Dinner and orientation session to get to know fellow students and discuss the upcoming activities.

#### **Day 2: Zuro Loma & Yanacocha to Tandayapa**

- Drive to Zuro Loma, a cloud forest reserve on the slopes of Pichincha Volcano.
- Launch the research project on the effects of altitude on species composition, focusing on hummingbirds and tanagers.
- Lunch at Yanacocha reserve, followed by a drive down the Old Nono-Mindo Road for bird data collection.
- Arrive at Tandayapa Bird Lodge.
- Evening: Student presentations.

#### **Day 3: Lower Tandayapa Valley & Set Up Feeder Project**

- Morning walk around the lodge to observe birds feeding on moths.
- Visit various spots in Tandayapa Valley for bird altitude project data collection.
- Design and set up a nectar preference study using feeders at the lodge.
- Dusk walk to see crepuscular species like the Lyre-tailed Nightjar.
- Evening: Student presentations.

#### **Day 4: Paz de Aves & Butterfly Farm**

- Visit Paz de Aves, a private reserve known for its conservation and eco-tourism efforts.
- Observe the Andean Cock-of-the-rock males' display.
- Lunch and visit to Mariposas de Mindo, a butterfly farm.
- Evening: Student presentations.

#### **Day 5: Upper Tandayapa & Reptiles**

- Explore higher elevations of the Tandayapa Valley, focusing on geology, soils, and vegetation differences.
- Afternoon session with reptile experts from Tropical Herping.
- Evening: Student presentations.

#### **Day 6: Zipline & Jocotoco Foundation**

- Zipline through the cloud forest to explore biodiversity from the canopy.
- Lunch and meeting with the Jocotoco Foundation team to learn about their conservation efforts.
- Evening: Student presentations.

#### **Day 7: Rio Silanche Sanctuary**

- Visit Rio Silanche Bird Sanctuary to explore lowland tropical forest.
- Focus on differences in ecosystems at lower altitudes and community conservation work.
- Evening: Student presentations.

#### **Day 8: Mashpi & Moths**

- Explore the Mashpi region, known for its unique biodiversity.
- Evening session setting up moth light traps to examine insect diversity.
- Evening: Student presentations.

#### **Day 9: Carbon Sequestration & Corridor Management**

- Visit Milpe Bird Sanctuary to learn about carbon sequestration and corridor development.
- Preliminary data analysis and group presentations on research projects.
- Evening: Final student presentations and last dinner at the lodge.

#### **Day 10: Animal Hospital & Rehabilitation Centre and Tourism**

- Visit Parque Condor to learn about the rehabilitation of birds of prey.
- Afternoon visit to Mitad del Mundo, the equator monument, and other local sights.
- Evening: Farewell dinner and reflections.

**Day 11: Departure**

- Transfer to Mariscal Sucre International Airport for departure.