



BIOL 4307 Conservation and Restoration Ecology

Biology Program

Department of Natural Sciences

Instructor information

Instructor: J. Rodolfo Valdez Barillas (Call me Dr. Valdez)

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Office hours: MW 11 am -12 pm Scheduled by e-mail appointment via WebEx

Class meeting place and time: Sci & Tech 105 (MWF 10-10:50 am)

Course Description

The first half of the course will introduce the student to **Conservation** as a science and a discipline. We will review the history and theory of conservation, as well as concepts, policy, economics, and case studies. The student will learn about past, current, and future conservation issues from a global perspective and cases that pertain to the Texas Region. During this first half, you will learn about the aspects of our natural world that need protection, what threatens them, why protecting them is important, and how we can do it. The second half of the course focuses on **Restoration**, the logical and ethical response to the failures of conservation, which attempts to repair what was lost through different levels of human intervention. The restoration topics covered in this second half will follow the International Society for Ecological Restoration guidelines and recommendations.

Course learning objectives

Upon course completion, the student will be expected to:

1. Understand the theoretical principles of conservation biology and the role these play in the preservation of life in our planet
2. Understand the role that restoration plays in the recovery of the physical attributes, the community diversity, and the functional dynamics of an ecosystem.
3. Learn about current strategies for conservation and restoration that have failed or have been successful
4. Understand the vital roles that scientific research plays when helping identify the needs, the strategies to monitor and assess the outcome of a conservation program and/or restoration project.



Recommended resources

- An **Introduction to Conservation Biology** by Anna Sher and Richard B. Primack and 2nd edition ISBN: 9781605358987 and 9781605358970
- **Principles of Conservation Biology** by Groom-Meffe-Carroll 3rd edition ISBN: 978-0-87893-518-5
- **Handouts and online resources:** provided by the instructor via Blackboard. I recommend you print these and organize them in a binder or folders on your computer to be used during your Exams.

Course policies

Attendance: You are required to attend every class. In-class group activities will require your input and participation.

Participation: You are expected to have reviewed the course material for the week and material from previous lectures so you come to class ready with questions. Check announcements frequently.

Communication: All communication and inquiries to the instructor should be e-mailed to jvaldezb@tamusa.edu. This e-mail is intended for communication only. No late assignments will be accepted via e-mail unless the instructor has granted an accommodation. All assignments are submitted via Blackboard.

Course Changes: This course syllabus and lecture schedule are subject to change at any time; however, students will be notified via e-mail or during class should it change.

Makeup Exams: Makeup Exams are granted at the instructor's discretion and cannot be expected unless you have previously communicated your absence in written form within a 24-hour window. Students can only make up one exam, and since one half of the Exam is completed as a group you can only receive credit for the individual portion.

Late assignments: one point will be deducted each day after the due date.

Course Evaluation

Exams: The first half of the exam will be taken individually and the second half as a group.

- **First half:** includes multiple choice, true/false questions.
 - This portion is **closed book** and the questions will come from previous quizzes or will read like previous quiz questions.
 - You will have **20 minutes** to complete the first half during the lecture period using Blackboard with **your video camera on.**



- **Second half:** short answer or essay questions.
 - This section may include figures, tables, diagrams, or articles that will be provided on the day of the Exam.
 - This portion is open book; you may use your notes, internet, and other course materials, but can only share information with your group members.
 - You will have **30 minutes** to complete the second half during the lecture period and you will complete and submit one document as a group.
- Each exam will include the material covered during the lectures before the day of the exam and the articles as part of reading assignments. **(Check the schedule for Exam dates)**

Quizzes: Quizzes will be available weekly

- Regular quizzes will be available via Blackboard and completed outside of lecture time. You will have 5 days to complete the quiz and submitted before the Due date and time.
- Your quiz can be taken three times and the highest score will be added to your gradebook.
- Questions will be presented one at a time and no backtracking will be possible; the number of questions may range from 5-10.
- Length of quiz may range from 5 to 10 minutes.

Assignments: This may include a scientific article summary and critiques or in-class activities

- Please read the instructions on how to write an article summary and critique.
- Depending on the assignment, submission may happen during the lecture or after.
- Most assignments will be conducted as a group using a shared Word document.

Conservation & Restoration actions:

- You will earn 20 points after attending or participating in any of the following activities throughout the semester:
 - Conservation or Restoration related conference, talk, and speaker.
 - Volunteering on a research project led by A&M faculty, graduate students, or academics from outside the University
 - Volunteering for the Science Olympiad
 - Volunteering at a Park or protected area
 - Visiting and documenting a conservation project or restoration project in San Antonio
- You will earn points based on the number of volunteer hour or 5 points for each event.
- I will need an e-mail from the event coordinator confirming your hours, a poster or e-mail announcing the speaker series, or an e-mail from the researcher or volunteering coordinator you helped during the semester



GRADING (Number of quizzes and assignments may be adjusted based on student course load)

Assessment	Cumulative pts
Exams (3+final) 100pts/each	400
Quizzes (12) 10pts/each	120
Assignments (4) 10pts each	40
Conservation & Restoration actions	20
Total	580

Calculation of Final Grades

- A = 90 – 100 points
- B = 80 – 89.9 points
- C = 70 – 79.9 points
- D = 60 – 69.9 points
- F = <59.9 points

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Week	Course topics	Posting date
1	Introduction to syllabus and blackboard	
	Introduction to Conservation	
2	What is Biodiversity	Assignment 1
	Value of Biodiversity	
	Conservation Economics and Ethics	Quiz 1
3	Threats to Biodiversity	
	Habitat loss	
	Habitat fragmentation	Quiz 2
4	Individual/Group Exam 1 (February 17)	
	Biological Impacts of Climate Change	
	Exotic and invasive species	Quiz 3
5	Populations and Conservation Genetics	
	Populations and Conservation Genetics	
	Conservation Ex-Situ	Quiz 4
6	Conservation Science and Policy	Assignment 2
	Conservation Science and Policy	
	Approaches to Conservation & Protected Areas 1	Quiz 5
7	Approaches to Conservation & Protected Areas 1	
	Conservation Game	
	Conservation Game	Quiz 6
8	Spring Break	
9	Restoration	
	What is Ecological Restoration? (Concepts & definitions)	
	Stakeholder engagement, Traditional Knowledge, and Reference Ecosystems	
	Ecosystem Recovery Assessment	Quiz 7
10	Individual/Group Exam 2 (March 24)	Assignment 3
	Restoration and species response to climate change	
	Economic Rationale for Restoring Degraded Ecosystems	Quiz 8
11	Project planning, funding, and assessment	
	Project vision, targets, and objectives	
	Restoration treatment prescription	Quiz 9
12	Project analysis and logistics	
	Post-implementation and project maintenance	
	Landscape and Global Restorations	Quiz 10
13	Individual /Group Exam 3 (April 21)	
	Restoration of Arid and Semi-Arid lands	
	No Class-Study Day	Quiz 11
14	Restoration of grasslands and Shrublands	Assignment 4
	Restoration of Tropical Forests	
	Restoration of mining degraded lands	Quiz 12
15	Restoration Case Studies 1	
	Restoration Case Studies 2	
	Restoration Case Studies 3	
16	Final Exam (December 09-15)	



IMPORTANT POLICIES AND RESOURCES

Academic Accommodations for Persons with Disabilities The Americans with Disabilities Act of 1990, as amended, and the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights protection for individuals with disabilities. Title II of the ADA and Section 504 of the Rehabilitation Act require that students with disabilities be guaranteed equal access to the learning environment through the provision of reasonable and appropriate accommodation of their disability. If you have a disability that may require accommodation, please contact Disability Support Services (DSS) for the coordination of services. The phone number for DSS is (210) 784-1335 and email is dss@tamusa.edu.

Academic Learning Center All currently enrolled students at Texas A&M University-San Antonio can utilize the Academic Learning Center for subject-area tutoring. The Academic Learning Center is an appointment based center where appointments are made through the Navigate platform. Students access Navigate through Jagwire in the Student Services tab. The Center is active on campus outreaching to students to highlight services offered. You can contact the Academic Learning Center by emailing tutoring@tamusa.edu or calling (210)-784-1332. Appointments can also be made through JagWire under the services tab.

Counseling Resources As a college student, there may be times when personal stress interferes with your academic performance and/or negatively impacts your daily functioning. If you or someone you know is experiencing life stressors, emotional difficulties, or mental health concerns at Texas A&M University – San Antonio, please contact the Student Counseling Center (SCC) located in Modular C, Room 166 (rear entrance) or call 210-784-1331 between the hours of 8:00AM and 5:00PM, Monday – Friday. After-hours crisis support is available by calling 210-784-1331 (select option “2”). Please contact UPD at 911 if harm to self or harm to others is imminent.

All mental health services provided by the SCC are free, confidential (as the law allows), and are not part of a student’s academic or university record. SCC provides brief individual and group therapy, crisis intervention, consultation, case management, and prevention services. For more information, please visit www.tamusa.edu/studentcounseling

Emergency Preparedness JagE Alert is Texas A&M University-San Antonio’s mass notification. In the event of an emergency, such as inclement weather, students, staff and faculty, who are registered, will have the option to receive a text message, email and/or phone call with instructions and updates. To register or update your information visit: <https://tamusa.bbcportal.com/>

More information about Emergency Preparedness and the Emergency Response Guide can be found here: <https://www.tamusa.edu/upd/index.html>



Financial Aid and Verification of Attendance According to the following federal regulation, 34 CFR 668.21: U.S. Department of Education (DoE) Title IV regulation, a student can only receive Title IV funds based on Title IV eligibility criteria which include class attendance. If Title IV funds are disbursed to ineligible students (including students who fail to begin attendance), the institution must return these funds to the U.S. DoE within 30 days of becoming aware that the student will not or has not begun attendance. Faculty will provide the Office of Financial Aid with an electronic notification if a student has not attended the first week of class. Any student receiving federal financial aid who does not attend the first week of class will have their aid terminated and returned to the DoE. Please note that any student who stops attending at any time during the semester may also need to return a portion of their federal aid.

Meeting Basic Needs If you face challenges securing food, housing or other basic needs, you are not alone, and A&M- San Antonio can help during this time of crisis. We invite you to learn about the many resources available to support you by visiting the [Dean of Student's website](#) or by reaching out via dos@tamusa.edu. Additionally, it is not unusual for students to encounter temporary illness or injuries that may interfere with your academic success. Students may request temporary illness/disability assistance by reaching out to the [Dean of Student's Office](#) (210) 784-1354. If you are comfortable doing so, please notify the professor of any issues so that they may provide additional resources.

Military Affairs Veterans and active-duty military personnel are welcomed and encouraged to communicate, in advance if possible, and in special circumstances (e.g., upcoming deployment, drill requirements, disability accommodations). You are also encouraged to visit the Patriots' Casa in-person room 202, or to contact the Office of Military Affairs with any questions at military.va@tamusa.edu, or (210)784-1397.

Religious Observances Texas A&M University-San Antonio recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes for regular session classes.

Respect for Diversity We understand that our students represent diverse backgrounds and perspectives. When we are equity-minded, we are aware of differences and inequalities and are willing to discuss them so we can act to resolve them. The University is committed to building cultural competencies, or the attitudes, skills, and knowledge that enable individuals and organizations to acknowledge cultural differences and incorporate these differences in working with people from diverse cultures. Respecting and accepting people different than you is vital to your success in the class, on campus, and as a future professional in the global community. While working together to build this community we ask all members to:

- Share their unique experiences, values, and beliefs.
- Be open to the views of others.
- Honor the uniqueness of their colleagues.



- Value each other's opinions and communicate respectfully.
- Keep confidential discussions that the community has of a personal (or professional) nature.
- Use this opportunity together to discuss ways in which we can create an inclusive environment in this course and across the A&M-San Antonio community.

The Six-Drop Rule Students are subject to the requirements of Senate Bill (SB) 1231 passed by the Texas Legislature in 2007. SB 1231 limits students to a maximum of six (6) non-punitive course drops (i.e., courses a student chooses to drop) during their undergraduate careers. A non-punitive drop does not affect the student's GPA. However, course drops that exceed the maximum allowed by SB 1231 will be treated as "F" grades and will impact the student's GPA.

Statement of Harassment and Discrimination Texas A&M University-San Antonio is committed to the fundamental principles of academic freedom, equality of opportunity, and human dignity. To fulfill its multiple missions as an institution of higher learning, A&M-San Antonio encourages a climate that values and nurtures collegiality, diversity, pluralism, and the uniqueness of the individual within our state, nation, and world. All decisions and actions involving students and employees should be based on applicable law and individual merit. Texas A&M University-San Antonio, in accordance with applicable federal and state law, prohibits discrimination, including harassment, on the basis of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, gender identity, or gender expression. Individuals who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the appropriate offices within their respective units.

Texas A&M University-San Antonio faculty are committed to helping create a safe learning environment for all students and for the university as a whole. If you have experienced any form of sex- or gender-based discrimination or harassment, including sexual assault, sexual harassment, domestic or dating violence, or stalking, know that help and support are available. A&M-San Antonio has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. The university strongly encourages all students to report any such incidents to the university. Please be aware that all A&M-San Antonio employees (other than those designated as confidential resources such as counselors and other healthcare providers) are required to report information about such discrimination and harassment to the university. This means that if you tell a faculty member about a situation of sexual harassment, sexual violence, or other related misconduct, the faculty member must share that information with the university's Title IX Coordinator. If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact the Student Counseling Center at (210) 784-1331, Modular C.

Students' Rights and Responsibilities: The purpose of the following statement is to enumerate the essential provisions for the student freedom and responsibility to learn at Texas A&M University-San Antonio. All students are required to follow all policies and regulations as set



forth by The Texas A&M University System. This includes the [A&M-San Antonio Student Code of Conduct](#).

Students' Rights

1. A student shall have the right to participate in a free exchange of ideas, and there shall be no university rule or procedure that in any way abridges the rights of freedom of speech, expression, petition and peaceful assembly as set forth in the U.S. Constitution.
2. Each student shall have the right to participate in all areas and activities of the university, free from any form of discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, genetic information, veteran status, gender identity, or gender expression in accordance with applicable federal and state laws.
3. A student has the right to personal privacy except as otherwise provided by law, and this will be observed by students and University authorities alike.
4. Each student subject to disciplinary action arising from violations of university student rules shall be assured a fundamentally fair process.

Students' Responsibilities

1. A student has the responsibility to respect the rights and property of others, including other students, the faculty and the administration.
2. A student has the responsibility to be fully acquainted with the published University Student Rules found in the Student Handbook, Student Code of Conduct, on our website, University Catalog and students must comply with them and the laws of the land.
3. A student has the responsibility to recognize that student actions reflect upon the individuals involved and upon the entire university community.
4. A student has the responsibility to recognize the University's obligation to provide an environment for learning.
5. A student has the responsibility to check their university email for any updates or official university notification.
6. We expect that students will behave in a manner that is dignified, respectful, and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

Writing, Language, and Digital Composing Center

The Writing, Language, and Digital Composing Center supports graduate and undergraduate students in all three colleges as well as faculty and staff. Tutors work with students to develop reading skills, prepare oral presentations, and plan, draft, and revise their written assignments.



Our language tutors support students enrolled in Spanish courses and students composing in Spanish for any assignment. Our digital studio tutors support students working on digital projects such as e-portfolios, class presentations, or other digital multimedia projects. Students can schedule appointments through JagWire under the Student Services tab. Click on “Writing, Language, and Digital Composing Center” to make your appointment. The Center offers face-to-face, synchronous online, and asynchronous digital appointments. More information about what services we offer, how to make an appointment, and how to access your appointment can be found on our website at <https://bit.ly/WLDCCenter>.