



Title:

Ecological Restoration Certificate

Transcript title:

Ecological Restoration Cert

Rationale for Program:

Western Washington University (WWU), Huxley College on the Peninsulas (HCOP) has developed the Ecological Restoration Certificate in partnership with the San Juan Islands Conservation District. The Ecological Restoration Certificate integrates local WWU instructors with Natural Resource agencies in the San Juan Islands to proactively address imminent threats to our environment by restoring, conserving, and designing methods for adaptive management at a watershed scale. Through this certificate program, students will be provided the skillsets to frame projects in ecological theory, conduct technical fieldwork, and collect and analyze field data using software such as ARCGIS and R studio. This certificate compliments the goal of Huxley College by preparing tomorrow's interdisciplinary problem solvers by integrating educational course work, faculty-student collaboration, applied research, and professional and community collaborations. This certificate will add an additional level of accreditation that will both network and attract future employers within the environmental sector in the San Juan archipelago and beyond.

Total Credits: 20

Introduction:

Western Washington University's Huxley College on the Peninsulas Ecological Restoration Certificate provides an additional level of accredited skillsets for the strategic management of Western Washington's natural resources within the age of rapid climate change. The program combines academic coursework delivered via a series of quarterly face-to-face evening courses with hands-on field-based practicum seminars that will proactively address imminent threats to our environment by restoring, conserving, and designing methods for adaptive management at a watershed scale. Students will gain skills that combined both visionary ecological thinking with proficiency in current computational and field methodology. Upon successful completion of this certificate program, students will be able to:

- Design field sampling protocols and manage data to answer environmental questions

- Apply basic statistical techniques to professionally communicate environmental data
- Utilize spatial data, spatial data sources, and gain practical experience in GIS applications
- Communicate statistical information, field methods, and statistical analyses to a broader audience.

Why Consider?

A background in ecological restoration provides a specialty that pertains to a broad range of careers. Understanding challenges in the field of natural resources and opportunities for resiliency and carbon sequestration offers relevant skills to shape the next generation of managers and practitioners tasked to address the landscape stresses of climate change. Participants are provided a comprehensive background in a series of ecological restoration techniques, theoretical rationale for restoration, and hands-on techniques currently used in the field. The following skills and area of specialty have been derived from communication with regional land management agencies and private industry partners who are looking for employees with a range of conservation, management, and interpersonal skills.

Contact Information:

Academic Program Director for Huxley College on the Peninsulas
Jenise M. Bauman, Ph.D.
Western Washington University
1000 Olympic College Way
Poulsbo, WA 98370
(360) 394-2756
Jenise.Bauman@wwu.edu

Program Coordinator & Advisor: Huxley College on the Peninsulas
Alex Tadio
Western Washington University
915 N Broadway Ave, Everett WA 98201
360-650-4485
tadioa@wwu.edu

Sample Careers:

Conservation Scientists | Natural Resource Managers | Environmental Engineers | Environmental Communications | Environmental Analyst | Environmental Advocate | Government Agency Employee | Sustainability Officer | Water Resource Manager | Environmental Consultants | Forest Service Employee | Educators

How to Apply:

To apply to the Ecological Restoration Certificate, please submit the following to Alex Tadio (tadioa@wwu.edu):

Resume outlining your education and professional history. Make sure to include your name, W#, major(s), minor(s), year (e.g., Jr.), current GPA, and planned date of graduation.

Letter of intent stating why you are interested in completing the Ecological Restoration Certificate, how your prior education and work experience has prepared you for this certificate, and your career goals.

Non-matriculated individuals must complete the Special Student Enrollment form, found on WWU's website by typing "special student enrollment" in the search field. Please contact the Alex Tadio at 360-650-4485 for the particular dates of acceptance of these forms. Aside from regular tuition and course fees, there is a small additional enrollment fee associated with this certificate.

Pre-requisites preferred: Associates or equivalent in Environmental Science, Biology, Applied Science or related field. Or, instructor permission.
Grade Requirements: A grade of C+ or better is required for a student's certificate courses, and supporting courses for certificates.

Projected enrollment per year: 8-12 students

Space Needed: space is provided by existing sites of HCOP, therefore, no space is needed for this program.

Choose 20 credits of the following:

Required Courses:

ESCI 471 –Forest Restoration in the PNW (2 credits)

This two-credit hour course will combine lectures with field practicums that cover techniques for assessing forest health, native plant propagation, fire ecology, and biochar production and utilization.

ESCI 472 – Monitoring Restored Habitat (2 credits)

This course is designed for students to learn and practice field methods and data analysis used for the biological assessment of restoration forest, nearshore, wetland and riparian ecosystems of the Salish Sea.

ENVS 499C Natural Resource Co-Management and Indigenous Allyship (3 credits)

This course explores the history of colonial European contact, the historic context of the land treaties developed in the Pacific Northwest, and the relevance of those treaties today for co-management opportunities for tribes of the Salish Sea region.

Choose 13 credits from the among courses:

ESCI 325 Fundamentals of Ecology (3 credits)

This course is an investigation of the complex interactions of organisms with each other and with their physical surroundings, explored in the context of populations, communities, ecosystems and landscapes.

ENVS 320 Introduction to GIS (4 credits)

This course provides an introduction to the field of Geographic Information Science (GIS) and ArcGIS software. It includes a combination of theoretical and practical elements, providing both a conceptual understanding of and hands-on experience with the analysis and visualization of geospatial data.

ESCI 328 Introduction to Ecosystem Management (5 credits)

This course expands on the principles of ecology that are fundamental to the development of sustainable land use systems with regard to their ecological significance in natural resource management. The importance of ecosystems and the services they provide to human society will be identified and discussed within the framework of ecological principles.

ESCI 340 Biological Statistics (5 credits)

Study of data analysis at an introductory and intermediate level and statistical tests commonly used in the biological and environmental sciences. Descriptive statistics, hypothesis testing, analysis of variance, regression and correlation, experimental design. Computer that runs R studio is required.

ESCI 470 – Ecological Restoration (5 credits)

Investigates the theory and practice of ecological restoration, including methods for evaluating the success of restoration projects. Incorporates physical and ecological as well as economic and cultural considerations. Students work in groups on actual restoration projects.

ESCI 499J: Environmental Statistics using R (2 credits)

This course will provide an extension for the ESCI 340 and expands on ANOVA models and linear regressions into more complex models (such as generalized linear models) and introduces multivariate statistical approaches.