

RANGELAND, WILDLIFE AND FISHERIES MANAGEMENT - BS, AQUACULTURE AND FISHERIES MANAGEMENT TRACK

Texas rangeland, woodland, wetland, and aquatic ecosystems provide the citizens of Texas with a multitude of benefits. These benefits include income, water, recreation, wildlife habitat, and scenic beauty. The population of Texas grew over 15% from 2010 to 2020 to approximately 29 million. This population increase has impacted several key regions in the state, e.g., suburban areas and the Hill Country. However, this rapid population growth and environmental change threaten resilience and sustainability of these vital ecosystems. Educating ecosystem managers skilled in making decisions that promote sustainability and resilience is a primary goal of the faculty and staff of the Department of Rangeland, Wildlife, and Fisheries Management (RWFM). The RWFM curriculum provides graduates with the necessary skills and integrates knowledge from several science disciplines. The synergy that arises from the integration of biological, physical, and social sciences in RWFM gives rise to novel real-world solutions suitable for uncertainty and unprecedented change. The RWFM curriculum is not entrenched in any one discipline or any single ecosystem. It equips students with the breadth and depth of knowledge that is reflective of the diversity in the ecosystems in which we live and the issues we face.

Aquaculture and Fisheries Management Track

This track in the interdisciplinary degree program focuses on integration of applied fisheries management and aquaculture production disciplines, to prepare students for immediate careers or future graduate studies related to fishery resources and sustainable management of captive (aquaculture) and wild (fisheries) fish populations. A multi-disciplinary approach to aquaculture and fisheries management education and research is promoted to prepare students for a great variety of rewarding careers. The Aquaculture and Fisheries Management track combines a strong foundation in chemistry, mathematics, and biology with advanced courses in the applied principles and techniques necessary to sustainably manage wild fish populations or aquaculture production operations. Advanced courses are designed to provide students a broad understanding of these disciplines, incorporating education and applied research of fish biology, physiology, nutrition, disease, population management, habitat management, hatchery management, commercial aquaculture production, restoration and stock enhancement aquaculture, aquatic ecosystem management, and water quality management. The Aquaculture and Fisheries Management track will prepare graduates to be the link between stakeholders, consumers, managers/producers, scientists, and policy makers when handling traditional and emerging, multifaceted issues that occur when managing fisheries or aquaculture production.

Program Requirements

		Semester Credit Hours
First Year		
Fall		
AGEC 105	Introduction to Agricultural Economics	3
BIOL 111	Introductory Biology I	4
ENGL 104	Composition and Rhetoric	3
ESSM 201	Exploring Ecosystem Science and Management	1
MATH 140	Mathematics for Business and Social Sciences	3
Semester Credit Hours		14
Spring		
BIOL 112	Introductory Biology II	4
ENGL 210	Technical and Professional Writing	3
MATH 142	Business Calculus	3
RENR 205	Fundamentals of Ecology	3
RENR 215	Fundamentals of Ecology–Laboratory	1
Semester Credit Hours		14
Second Year		
Fall		
CHEM 119	Fundamentals of Chemistry I	4
POLS 206	American National Government ¹	3
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) ¹		3
Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts) ¹		3
Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) ¹		3
Semester Credit Hours		16
Spring		
CHEM 222	Elements of Organic and Biological Chemistry	3
POLS 207	State and Local Government ¹	3
RWFM 202	Concepts in Applied Plant Biology	3
RWFM 305	Principles and Practices of Wildlife and Fisheries Management	3
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) ¹		3
Semester Credit Hours		15
Third Year		
Fall		
RWFM 321	Communicating Natural Resources	3
RWFM 370	Aquatic Vegetation Management	2
STAT 302	Statistical Methods	3
WFSC 302	Natural History of the Vertebrates	3
WFSC 335	Natural History of the Invertebrates	3
Semester Credit Hours		14

Spring

AGEC 325	Principles of Farm and Ranch Management	3
ESSM 314	Principles of Rangeland Management Around the World	3
WFSC 303	Fish and Wildlife Laws and Administration	3
WFSC 311	Ichthyology	3
WFSC 404	Aquatic Ecosystems	3
Semester Credit Hours		15

Summer

RENr 345	Park Ecology and Management	3
Semester Credit Hours		3

Fourth Year**Fall**

ESSM 351/ RENr 405	Geographic Information Systems for Resource Management	3
RENr 375	Conservation of Natural Resources	3
RWFM 444	Aquaculture Hatchery Management	3
RWFM 445	Fish Health and Diseases	3
WFSC 444	Aquaculture I: Principles and Practices	3
Semester Credit Hours		15

Spring

ESSM 481	Senior Seminar	1
RWFM 446	Fish Physiology	3
WFSC 410	Principles of Fisheries Management	4
WFSC 425	Marine Fisheries	3
WFSC 447	Aquaculture II: Aquatic Animal Nutrition, Feeding and Disease Management	3
Semester Credit Hours		14
Total Semester Credit Hours		120

¹ Graduation requirements include a requirement for 3 hours of International and Cultural Diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/>) courses and 3 hours of Cultural Discourse (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/>) courses. A course satisfying a Core category, a college/department requirement, or a free elective can be used to satisfy this requirement. Select in consultation with an academic advisor.