

# MASTER OF SCIENCE IN ECOLOGY

## Graduate Degree Program in Ecology

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ecology.colostate.edu (<https://ecology.colostate.edu/>)

The Graduate Degree Program in Ecology (GDPE) offers outstanding opportunities for graduate studies ecology. The overall objective of the M.S. in Ecology is to develop students to be science professionals who use their interdisciplinary problem-solving skills to address ecological challenges from local to global scales. Students enrolled in the Plan A (thesis option) program are engaged in independent and collaborative research guided by advisors in the program and aim to have their thesis work published in the peer-reviewed literature. The Plan B option provides a non-thesis alternative available upon special request.

Students interested in graduate work should visit the Graduate Degree Program in Ecology (<https://ecology.colostate.edu/>) website for more information.

## Plan A Effective Fall 2023

Code	Title	Credits
<b>REQUIRED COURSES</b>		
ECOL 505	Foundations of Ecology	3
ECOL 571	Advanced Topics in Ecology	1
ECOL 592	Interdisciplinary Seminar in Ecology	1
ECOL 693	Research Seminar	1
<b>ECOLOGY FUNDAMENTALS</b>		
Select 6 credits not taken elsewhere in the program from the following:		6
ANTH 530	Human-Environment Interactions	
BZ 525	Advanced Conservation & Evolutionary Genomics	
BZ 526/BSPM 526	Evolutionary Ecology	
BZ 535	Behavioral and Cognitive Ecology	
BZ 548	Theory of Population and Evolutionary Ecology	
ECOL 600	Community Ecology	
ECOL 610	Ecosystem Ecology	
ECOL 620	Applications in Landscape Ecology	
ESS 575	Models for Ecological Data	
ESS 660	Biogeochemical Cycling in Ecosystems	
FW 662	Wildlife Population Dynamics	
HORT 576	Advanced Environmental Plant Stress Physiology	
<b>ECOLOGY TOOLS</b>		
Select 3 credits not taken elsewhere in the program from the following:		3
ANTH 554/ ESS 554	Ecological and Social Agent-based Modeling	

AREC 535/ ECON 535	Applied Econometrics	
AREC 635/ ECON 635	Econometric Theory I	
AREC 735/ ECON 735	Econometric Theory II	
CIVE 524/WR 524	Modeling Watershed Hydrology	
ERHS 544/ STAT 544	Biostatistical Methods for Quantitative Data	
ESS 565	Niche Models	
ESS 575	Models for Ecological Data	
FW 551	Design of Fish and Wildlife Studies	
FW 552	Applied Sampling for Wildlife/Fish Studies	
FW 663	Sampling & Analysis Vertebrate Populations	
FW 673/STAT 673	Hierarchical Modeling in Ecology	
GR 503/NR 503	Remote Sensing and Image Analysis	
MATH 530	Mathematics for Scientists and Engineers	
MATH 540	Dynamical Systems	
NR 505	Concepts in GIS	
NR 506	GIS Methods for Resource Management	
NR 512	Spatial Statistical Modeling-Natural Resources	
NR 523/STAT 523	Quantitative Spatial Analysis	
NRRT 765	Applied Multivariate Analysis	
SOCR 522	Micrometeorology	
SOCR 620	Modeling Ecosystem Biogeochemistry	
SOCR 670	Terrestrial Ecosystems Isotope Ecology	
STAR 511	Design and Data Analysis for Researchers I	
STAR 512	Design and Data Analysis for Researchers II	
STAT 520	Introduction to Probability Theory	
STAT 521	Stochastic Processes I	
STAT 530	Mathematical Statistics	
STAT 540	Data Analysis and Regression	
STAT 560	Applied Multivariate Analysis	
STAT 675A	Topics in Statistical Methods: Sampling	
WR 674	Data Issues in Hydrology	
<b>ADDITIONAL ELECTIVES, INDEPENDENT STUDY, RESEARCH, AND THESIS</b>		<b>15</b>
<b>Program Total Credits:</b>		<b>30</b>

A minimum of 30 credits are required to complete this program.

## Plan B Effective Fall 2023

Code	Title	Credits
<b>REQUIRED COURSES</b>		
ECOL 505	Foundations of Ecology	3
ECOL 571	Advanced Topics in Ecology	1
ECOL 592	Interdisciplinary Seminar in Ecology	1
ECOL 693	Research Seminar	1
<b>ECOLOGY FUNDAMENTALS</b>		

**Select 6 credits not taken elsewhere in the program from the following:** **6**

ANTH 530	Human-Environment Interactions
BZ 525	Advanced Conservation & Evolutionary Genomics
BZ 526/BSPM 526	Evolutionary Ecology
BZ 535	Behavioral and Cognitive Ecology
BZ 548	Theory of Population and Evolutionary Ecology
ECOL 600	Community Ecology
ECOL 610	Ecosystem Ecology
ECOL 620	Applications in Landscape Ecology
ESS 575	Models for Ecological Data
ESS 660	Biogeochemical Cycling in Ecosystems
FW 662	Wildlife Population Dynamics
HORT 576	Advanced Environmental Plant Stress Physiology

**ECOLOGY TOOLS****Select 3 credits not taken elsewhere in the program from the following:** **3**

ANTH 554/ ESS 554	Ecological and Social Agent-based Modeling
AREC 535/ ECON 535	Applied Econometrics
AREC 635/ ECON 635	Econometric Theory I
AREC 735/ ECON 735	Econometric Theory II
ESS 565	Niche Models
CIVE 524/WR 524	Modeling Watershed Hydrology
ESS 575	Models for Ecological Data
FW 551	Design of Fish and Wildlife Studies
FW 552	Applied Sampling for Wildlife/Fish Studies
FW 663	Sampling & Analysis Vertebrate Populations
FW 673/STAT 673	Hierarchical Modeling in Ecology
GR 503/NR 503	Remote Sensing and Image Analysis
MATH 530	Mathematics for Scientists and Engineers
MATH 540	Dynamical Systems
NR 505	Concepts in GIS
NR 506	GIS Methods for Resource Management
NR 512	Spatial Statistical Modeling-Natural Resources
NR 523/STAT 523	Quantitative Spatial Analysis
NRRT 765	Applied Multivariate Analysis
SOCR 522	Micrometeorology
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