

EMF Major Snapshot

Ecosystem Management & Forestry Major Snapshot

Department of Environmental Science, Policy, & Management

Overview

Conserving and restoring the earth's natural resources requires broad knowledge and experience. The Ecosystem Management and Forestry major offers specializations in Forestry and Natural Resource Management. Students in the program, regardless of concentration, have ample opportunity to acquire interdisciplinary skills in the ecology, stewardship, and management of ecosystems such as forests, woodlands, and grasslands. Within the program, students can choose to emphasize such topics as wildlife biology, water policy, fire science, ecosystem restoration, environmental justice, remote sensing and GIS, and rural sociology.

A [minor in Forestry](#) is available for students who are interested in learning about forestry and renewable resource management as an adjunct to their chosen fields. Students studying topics such as ecology, business administration, and civil engineering may find this minor complementary to their professional career goals.

Advising for the major is available in the Rausser College of Natural Resources' Office of Instruction & Student Affairs, located in 260 Mulford Hall. Students may drop in or schedule an appointment during advising hours: Mon - Fri, 9am-12pm and 1-4pm. Visit [the EMF Major website](#) for more detailed information.

Research Opportunities

In addition to the UC Berkeley [Undergraduate Research Apprenticeship Program \(URAP\)](#), Rausser students can also apply for [the Sponsored Projects for Undergraduate Research \(SPUR\)](#).

Honors Program

Students with a GPA of 3.6 or higher may enroll in [the Rausser College of Natural Resources Honors Program \(H196\)](#) once they have reached upper division standing. To fulfill the program requirements, students design, conduct, and report on an individual research project working with a faculty sponsor.

Forestry, Wildlife Management, & Other Career Options

EMF graduates are well-prepared for graduate school and careers in environmental consulting, public agencies, nonprofit conservation organizations, and private companies. Students also have the option of preparing for professional careers in forestry, wildlife, and range management.

Getting a Degree

To earn a Bachelor of Science from U.C. Berkeley in Ecosystem Management and Forestry, students must fulfill unit and GPA requirements, university and campus requirements, college requirements, and major requirements. Please [see the major advisor](#) for more details about the major requirements.

University & Campus Requirements

- [Entry Level Writing](#)
- [American History & Institutions](#)
- [American Cultures](#) (if taken for a letter grade, this course may overlap with a major requirement)

College and University Unit Requirements

- Two courses in [Reading & Composition \(8 units\): R1A and R1B](#)
- 120 Total Units
- 36 Upper Division Units, 15 of which must be completed in Rausser College (EEP, ERG, ES, ESPM, NST, PLANTBI)

GPA Requirements

Students must maintain a 2.0 cumulative GPA, a 2.0 GPA in their EMF upper division major requirements, and not receive a grade below C- in their major requirements (lower and upper division courses).

Highlighted Courses = Offered in Fall 2025

Lower Division Requirements for all EMF majors

- Chemistry (5 units): [Chem 1A/1AL](#) or [Chem 3A/3AL](#)
- Biology (4 units): [Biology 1B](#)
- Calculus (6-8 units): [Math 16A-B](#) or [Math 51/52](#) [Formerly MATH 1A/1B] or [Math 10A-B](#)
- Statistics: [Stat 20](#) (4 units) or [DATA C8](#) (4 units) + [DATA C88S](#) (3 units) or [ESPM 173](#)* (4 units) or [PBHLTH 142](#) (students who take [MATH 10A](#) and [MATH 10B](#) do not need to take a statistics course)
- Economics (4 units): [ENVECON C1](#) (rec), [Econ 1](#) or [2](#)
- Physical Science (4 units): [EPS 50](#), [Geog 1](#) or [40](#)
- Geographic Information Systems: [ESPM 72](#) or [GEOG 80](#) or [GEOG C188](#)*

One ESPM Environmental Sci Core Course:

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| ESPM 2 : The Biosphere [3] | ESPM 15 : Introduction to Environmental Sciences [3] |
| ESPM 6 : Environmental Biology [3] | ESPM C46 : Climate Change and the Future of California [4] |
| ESPM 10 (L&S C30V): Environmental Issues [4] | |

One ESPM Social Science Core Course:

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| ESPM C11 (L&S C30U): Americans and the Global Forest [4] | ESPM 50AC : Introduction to Culture and Natural Resource Management [4] |
| ESPM C52 : History of Native American Land, Colonialism, and Heritage Preservation [3] | ESPM 60 : Environmental Policy, Administration, and Law [4]* |
| ESPM C22AC : Fires: Past, Present, and Future Interactions with the People and Ecosystems of California [4] | |

Upper Division Requirements for all EMF majors:

15 upper division units must be taken in the Rausser College of Natural Resources (EEP, ERG, ESPM, NST, PMB)

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| One of the following Ecology courses: | <ul style="list-style-type: none"> □ ESPM 137: Landscape Ecology [3] □ ESPM C153: Ecology [3] |
| □ ESPM 102C : Resource Management [4] | |
| □ ESPM 183 : Forest Ecosystem Management and Planning [4] | |

Forestry Specialization		
□ ESPM 105 A, B, C, D : 8-week Forestry Field Program (“Summer Camp”) in the northern Sierra Nevada (11 units).		
□ ESPM 102B & 102BL : Natural Resource Sampling [4] or ESPM C110A : Ecological Analysis [4] *	□ ESPM 108A : Trees: Taxonomy, Growth & Structure [3]	
□ ESPM 182 : Forest Operations and Management [3]	□ ESPM 134 : Fire, Insects, & Disease in Forest Ecosystems [3]	
One of these two Environmental Policy courses: □ ESPM 102D : Climate & Energy Policy [4] □ ESPM 60 : Environmental Policy, Administration, & Law [4]*		ESPM 185 : Applied Forest Ecology [4]
Electives 6-8 Units. Two courses from the following: *courses can only apply to one requirement. They cannot double count		
□ ESPM C110A : Ecological Analysis	□ ESPM 116B : Grassland and Woodland Ecology [4]	□ ESPM 120 : Science of Soils [3]
□ ESPM 121 : Development & Classification of Soils [3]	□ ESPM C129 : Biometeorology [3]	□ ESPM C130 : Terrestrial Hydrology [4]
□ ESPM 131 : Soil Microbiology and Biogeochemistry [3]	□ ESPM 157 : Data Science in Global Change Ecology [4]	□ ESPM 164 : GIS & Environmental Science [3]
□ ESPM C172 : Remote Sensing of the Environment [4]	□ ESPM 173 : Introduction to Analysis of Ecological Data*	□ ESPM 174A : Applied Time Series Analysis for Ecology and Environmental Sciences
□ ESPM 181A : Fire Ecology	□ ESPM 186 : Grassland and Woodland Management and Conservation	□ GEOG 180 : Field Methods for Physical Geography
□ GEOG 185 : Earth System Remote Sensing	□ GEOG C188 : Geographic Information Systems [4]*	GEOG C183 : Cartographic Representation

Natural Resource Management Specialization:	
Two Options (Choose A or B)	
Choice A: select one field studies experience	Choice B
□ UC Forestry Camp (11 units, ESPM 105A-D) or □ Biology & Geomorphology of Tropical Islands – Moorea (13 units, ESPM C107) or □ UCNRS CA Ecology (15 units, BIO/ENVS 188) □ Three additional electives approved by NRM affiliated Faculty (see list below)	□ Design your own six course concentration with NMR faculty approval with at least one elective from each of the following categories: <ul style="list-style-type: none"> • Ecosystem Knowledge • Ecosystem Measurement & Assessment • Ecosystem Value & Policy • Ecosystem Management

Restricted Electives by Concentration for Natural Resource Management Specialization

A. Ecosystems Knowledge

[ESPM 108A](#): Trees: Taxonomy, Growth & Structures

[ESPM 108B](#): Forest Genetics

[ESPM 111](#): Ecosystem Ecology

[ESPM 112](#): Microbial Ecology

[ESPM 113](#): Insect Ecology

[ESPM 114](#): Wildlife Ecology

[ESPM C115A](#): Freshwater Ecology

[ESPM 115B](#): Coral Ecology

[ESPM 115C](#): Fish Ecology

[ESPM 116B](#): Grassland and Woodland Ecology

[ESPM 120](#): Science of Soils

[ESPM 121](#): Development and Classification of Soils

[ESPM C129](#): Biometeorology

[ESPM C130](#): Terrestrial Hydrology

[ESPM 131](#): Soil Microbial Ecology

[ESPM C180](#): Air Pollution

[INTEGBI 157LE](#): Ecosystems of California

Highlighted Courses = Offered in Spring 2026

B. Ecosystem Measurement & Assessment

[ESPM 102B & BL](#): Natural Resource Sampling & Sampling Lab

[ESPM C110A](#): Ecological Analysis

[ESPM 139A](#): Genetics of Amphibian Declines CURE

[ESPM 157](#): Data Science in Global Change Ecology

[ESPM 164](#): GIS & Environmental Science

[ESPM C172](#): Remote Sensing of the Environment

[ESPM 173](#): Introduction to Analysis of Ecological Data

[ESPM 174A](#): Applied Time Series Analysis for Ecology and Environmental Sciences

[GEOG 180](#): Field Methods for Physical Geography

[GEOG C188](#): Geographic Information System

C. Ecosystems Value and Policy

[ESPM 101A](#): The Politics and Practice of Sustainability Transitions

[ESPM 102D](#): Climate and Energy Policy

[ESPM 155AC](#): Sociology & Political Ecology of Agro-Food Systems

[ESPM 161](#): Environmental Philosophy and Ethics

[ESPM 162](#): Bioethics & Society

[ESPM C162A](#): Health, Medicine, Society and Environment

[ESPM 163AC](#): Environmental Justice: Race, Class, Equity & Justice

[ESPM 168](#): Political Ecology

[ESPM 169](#): International Environmental Politics

[ESPM C176](#): Climate Justice

D. Ecosystem Management

[ESPM C103](#): Principles of Conservation Biology

[ESPM 106](#): American Wildlife: Management and Policy in the 21st Century

[ESPM 134](#): Fire, Insects & Disease in Forest Ecosystems

[ESPM 152](#): Global Change Biology

[ESPM C167](#): Environmental Health & Development

[ESPM 181A](#): Fire Ecology

[ESPM 182](#): Forest Operations Management

[ESPM 185](#): Applied Forest Ecology

[ESPM 186](#): Management & Conservation of Grassland & Woodlands