

ENVIRONMENTAL MANAGEMENT & PROTECTION

Bachelor of Science degree with a major in Environmental Management & Protection

with concentrations in:

- Environmental Education & Interpretation
- Environmental & Natural Resources Planning
- Environmental & Natural Resources Recreation

Minor in Natural Resources (see Natural Resources)

Minor in Environmental Education & Interpretation

Minor in Environmental & Natural Resources Planning

Minor in Environmental & Natural Resources Recreation

Certificates of Study

- Environmental Education & Interpretation
- Environmental & Natural Resources Planning
- Natural Resources Policy & Administration

Master of Science degree in Natural Resources — Environmental & Natural Resources Sciences option

Department Chair

Steven R. Martin, Ph.D.

Environmental Science & Management

Natural Resources Building 200
707-826-4147, fax 707-826-4145
www.humboldt.edu/environment

The Program

Students completing this program will have demonstrated:

- the ability to apply science to understanding ecosystems and natural resources
- understanding of, and ability to analyze human interactions with the natural environment
- knowledge and skills to seek out the information and resources necessary to understand complex environmental issues
- knowledge and skills to manage human use of environmental resources
- the ability to communicate with a variety of audiences, both orally and in writing.

Environmental Management and Protection (EMP) studies center on relationships between human society and natural ecosystems. Potential careers: environmental

education leader, environmental impact analyst, GIS or remote sensing analyst, environmental information specialist, natural resource specialist, environmental planner, naturalist, park ranger, recreation specialist, rural county planner, wilderness manager.

Environmental Education & Interpretation Concentration

Environmental educators and interpreters are essential for increasing public awareness about the environment, connecting people to places of historic and natural significance, promoting environmental stewardship, and instilling a sense of wonder for the natural world. Students are trained in education, interpretation and communication methods that help diverse audiences understand and appreciate environmental and historic resources and places. Using oral and graphic communication strategies, students create environmental based messages that audiences can relate to, understand, and respond to in constructive ways. While interpretation focuses more on inspiration and relevance, and environmental education focuses more on environmental literacy and informed action, both have a similar end goal of protecting natural and historic resources.

Our program emphasizes hands-on learning, including projects that address community needs. Students learn in the field, classroom, and lab. Graduates are prepared for positions with environmental education centers, national and state parks, nature centers, children's museums, natural resource agencies, conservation groups, park and recreation programs, and other private and non-profit environmental groups.

Environmental & Natural Resources Planning Concentration

Natural resource planners find ways for people to live in harmony with the natural environment, satisfying our needs for space and resources while maintaining a high quality, sustainable environment.

Planners must understand the complexity and dynamics of our biophysical world, from which comes our natural resource base. Planners also work within the context of human social, political, cultural, and economic systems that impose demands on our natural resource base.

Graduates find careers in environmental analysis and land-use planning with consulting firms; local, state, and federal governments; and natural resource-oriented companies and agencies.

Environmental & Natural Resources Recreation Concentration

Natural resource recreation professionals seek to provide high quality recreation opportunities resulting in benefits to the recreating public while protecting the resources from degradation. Natural resource recreation students learn to understand the human nature of the recreation experience, the ecological nature of outdoor recreation resources, and how to manage both people and resources for the benefit of both.

Humboldt's location in a recreation wonderland enhances the educational opportunities through natural laboratories, interaction with recreation providers, and internship placements. Students prepare for careers with federal, state, and local public agencies; consulting firms; and natural resource-oriented private companies.

Preparation

In high school take chemistry, biology, math, geography, and earth science. Take every opportunity to learn to think clearly, write effectively, and speak well.

REQUIREMENTS FOR THE MAJOR

For a description of degree requirements to be fulfilled in addition to those listed below for the major, please see "The Bachelor's Degree" section of the catalog, pp. 61-77, and "The Master's Degree" section of the catalog, pp. 78-80.

Core Courses (all concentrations)

Complete all courses in the major with a C- or better:

BOT 105	(4)	General Botany
SOIL 260	(3)	Into to Soil Science
CHEM 107	(4)	Fundamentals of Chemistry
GSP 101/ GSP 101L	(2/1)	Geospatial Concepts and Lab
EMP 105	(3)	NR Conservation
EMP 210	(3)	Public Land Use Policies & Management
GSP 270	(3)	Geographic Information Science (GIS)

- EMP 305 (3) Environmental Conflict Resolution
 EMP 309B (3) Environmental Communication
 EMP 325 (3) Environmental Law & Regulation
 EMP 435 (2) Grant Proposal Writing
 EMP 482 (2-3) Internship

Environmental Education & Interpretation Concentration

Complete all courses in the major with a C- or better.

Core courses plus:

- GEOG 106 (3) Physical Geography, **or**
 GEOL 109 (4) Introduction to Geology
 EMP 215 (3) Natural Resources & Recreation
 EMP 253 (3) Interpretive Computer Graphics
 EMP 350 (3) Fundamentals of Environmental Education & Interpretation
 EMP 351 (1) Environmental Interpretation Field Trip
 EMP 353 (3) Environmental Education & Interpretation Graphics
 EMP 430 (3) NR Management in Protected Areas
 EMP 415 (3) Recreation & Park Planning, **or**
 EMP 440 (2) Managing Recreation Visitors
 EMP 450 (3) Applied Environmental Education & Interpretation
 EMP 453 (4) Environmental Education & Interpretation Practicum
 STAT 108 (4) Elementary Statistics
 ZOOL 110 (4) Introductory Zoology

Take a minimum of six units each from **one** technical area and **one** content knowledge area:

Environmental Education – Technical

- CD 256 (3) Middle Childhood Development, **or**
 PSYC 213 (3) The School-Age Child
 REC 330 (3) Adventure Theory & Practice

Interpretive Graphic Design – Technical

- ART 340 (3) Graphic Design II
 ART 343 (3) Graphic Design: Portfolio Development
 ART 356 (3) Museum & Gallery Practices

Botanical

- BOT 300 (3) Plants & Civilization

- BOT 330/BOT 330L (2) Plant Ecology
 BOT 350 (4) Plant Taxonomy
 BOT 354 (4) Agrostology
 FOR 130 (3) Dendrology
 FOR 131 (3) Forest Ecology
 FOR 307 (3) California's Forests & Woodlands

Cultural

- ANTH 394 (4) Regional Survey of North American Archaeology
 HIST 368 (4) Colonial & Revolutionary America
 HIST 371 (4) Civil War & Reconstruction
 HIST 383 (4) California History
 NAS 306 (3) Indigenous Peoples of the Americas
 NAS 325 (3) Native Tribes of California
 NAS 327 (3) Native Tribes of North American Regions
 NAS 331 (3) Indigenous NR Management Practices

Earth Resources

- GEOL 300/GEOL 300L (3/1) Geology of California
 GEOL 303 (3) Earth Resources & Global Environmental Change
 GEOL 305 (3) Fossils, Life & Evolution
 GEOL 306 (3) General Geomorphology
 GEOG 352 (3) Regional Climatology
 GEOG 353 (3) Mountain Geography
 SOIL 360 (3) Origin & Classification of Soils
 SOIL 363 (3) Wetland Soils
 WSHD 458 (3) Climate Change & Land Use

Marine / Aquatic

- BIOL 430 (3) Intertidal Ecology
 FISH 300 (3) Intro to Fishery Biology
 FISH 320 (3) Limnology
 OCN 109/109L (3/1) General Oceanography /Lab
 OCN 301 (3) Marine Ecosystems – Human Impact
 OCN 310 (4) Biological Oceanography

Natural Resource Management

- ANTH 354 (4) Cultural Resource Mgmt.
 EMP 415 (3) Recreation & Park Planning
 FISH 260 (3) Fish Conservation & Mgmt.
 FISH 300 (3) Intro to Fishery Biology
 FOR 315 (3) Forest Management
 FOR 374 (3) Wilderness Area Mgmt.
 RRS 306 (3) Wildland Resource Principles
 SOIL 460 (3) Forest & Range Soils Management
 WLDF 301 (3) Principles of Wildlife Mgmt.
 WSHD 310 (4) Hydrology & Watershed Mgmt.

Zoological

- WLDF 365 (3) Ornithology I
 ZOOL 314 (5) Invertebrate Zoology
 ZOOL 316 (3) Freshwater Aquatic Invertebrates
 ZOOL 354 (4) Herpetology
 ZOOL 356 (3) Mammalogy
 ZOOL 358 (4) General Entomology

Environmental & Natural Resources Planning Concentration

Complete all courses in the major with a C- or better.

Core courses plus:

- GSP 216 (3) Introduction to Remote Sensing
 EMP 360 (3) Intro to Natural Resource Planning Methods
 EMP 365 (3) Local Government Planning
 BIOL 330 (4) Principles of Ecology, **or**
 WLDF 301 (3) Principles of Wildlife Mgmt.
 FOR 130 (3) Dendrology
 ECON 423 (3) Natural Resource Economics
 EMP 420 (3) Ecosystem Analysis
 EMP 425 (3) Environmental Impact Assessment
 EMP 460 (3) Environmental Planning for Public Lands
 EMP 462 (3) Coastal & Marine Planning
 EMP 475 (4) Senior Planning Practicum
 GEOG 106 (3) Physical Geography
 STAT 108 (4) Elementary Statistics, **or**
 STAT 109 (4) Intro Biostatistics

Two of the following:

- FISH 260 (3) Fish Conservation & Mgmt.
 FISH 320/FISH 320L (3/1) Limnology/Practicum
 FISH 460 (3) Adv. Fish Conservation & Management
 FOR 315 (3) Forest Management
 FOR 321 (3) Fire Ecology
 FOR 374 (3) Wilderness Area Mgmt.
 FOR 423 (3) Wildland Fuels Mgmt.
 GEOL 303 (3) Earth Resources & Global Environmental Change
 GEOL 306 (3) General Geomorphology
 GEOL 308 (3) Natural Disasters
 EMP 430 (3) NR Management in Protected Areas
 EMP 440 (2) Managing Recreation Visitors
 RRS 306 (3) Wildland Resource Principles
 SOIL 360 (3) Origin & Classification of Soils

- SOIL 460 (3) Forest & Range Soils Management
- SOIL 468 (3) Intro to Agroforestry
- WLDF 301 (3) Principles of Wildlife Management

Environmental & Natural Resources Recreation Concentration

Complete all courses in the major with a C- or better.

Core courses plus:

- FOR 374 (3) Wilderness Area Mgmt.
 - EMP 215 (3) Natural Resources & Recreation
 - EMP 253 (3) Interpretive Computer Graphics
 - EMP 350 (3) Fundamentals of Environmental Education & Interpretation
 - EMP 351 (1) Environmental Interpretation Field Trip
 - EMP 415 (3) Recreation & Park Planning (alternate years)
 - EMP 425 (3) Environmental Impact Assessment
 - EMP 430 (3) NR Management in Protected Areas
 - EMP 440 (2) Managing Recreation Visitors Lecture (alternate years)
 - STAT 108 (4) Elementary Statistics
 - FOR 131 (3) Forest Ecology, **or**
 - RRS 370 (3) Wildland Ecology Principles, **or**
 - BIOL 330 (4) Principles of Ecology
- One of the following recreation courses:
- REC 310 (3) Recreation for Special Groups
 - REC 320 (3) Organization, Administration & Facility Planning
 - REC 330 (3) Adventure Theory & Practice
 - REC 335 (3) Tourism Planning & Development
- One of the following communication courses:
- COMM 312 (4) Group Communication
 - COMM 322 (4) Intercultural Communication
 - COMM 411 (4) Organizational Communication
- One of the following business courses:
- BA 210 (4) Legal Environment of Business
 - BA 340 (4) Principles of Marketing
 - BA 370 (4) Principles of Management

- Two of the following management courses:
- FISH 260 (3) Fish Conservation & Mgmt.
 - FISH 300 (3) Intro to Fishery Biology
 - FOR 315 (3) Forest Management
 - RRS 306 (3) Wildland Resource Principles
 - SOIL 460 (3) Forest & Range Soils Management
 - WLDF 301 (3) Principles of Wildlife Management

- EMP 309B (3) Environmental Communication
- EMP 415 (3) Recreation & Park Planning, **or**
- EMP 440 (2) Managing Recreation Visitors
- EMP 430 (3) NR Management in Protected Areas



REQUIREMENTS FOR THE MINORS

Natural Resources Minor (see Natural Resources)

Environmental Education & Interpretation Minor

- EMP 215 (3) Natural Resources & Recreation
- EMP 253 (3) Interpretive Computer Graphics [or equivalent]
- EMP 350/EMP 351 (3/1) Fundamentals of Environmental Education & Interpretation, **and** Field Trip
- EMP 353 (3) Environmental Education & Interpretation Graphics
- EMP 430 (3) NR Management in Protected Areas
- EMP 450 (3) Applied Environmental Education & Interpretation

Environmental & Natural Resources Planning Minor

- GEOG 106 (3) Physical Geography
- EMP 105 (3) Natural Resource Conservation
- EMP 210 (3) Public Land Use Policies & Management
- EMP 360 (3) Intro to Natural Resource Planning Methods

Plus two of the following:

- EMP 325 (3) Environmental Law & Regulation
- EMP 365 (3) Local Government Planning
- EMP 425 (3) Environmental Impact Assessment

Environmental & Natural Resources Recreation Minor

- FOR 374 (3) Wilderness Area Mgmt.
- EMP 210 (3) Public Land Use Policies & Management
- EMP 215 (3) Natural Resources & Recreation
- EMP 305 (3) Environmental Conflict Resolution, **or**