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) Intro 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)
### 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 / 108H (4) Elementary Statistics
- ZOOL 110 (3) 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
- GEOL 352 (3) Regional Climatology
- GEOL 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

#### Zoological
- WLD 260 (3) Fish Conservation & Mgmt.
- FISH 260 (3) Fish Conservation & Mgmt.
- WLD 260L (3) Limnology/Practicum
- WLD 460 (3) Adv. Fish Conservation & Management
- FOR 375 (3) Forest Management
- FOR 374 (3) Wilderness Area Mgmt. & Fire Ecology
- FOR 423 (3) Wildland Fuels Mgmt.
- GEOL 303 (3) Earth Resources & Global Environmental Change
- GEOL 306 (3) General Geomorphology
- GEOL 308 (3) General Geomorphology
- 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

Two of the following:
- FISH 260 (3) Fish Conservation & Mgmt.
- FISH 320/320L (3/1) Limnology/Practicum
- WLD 460 (3) Adv. Fish Conservation & Management
- FOR 315 (3) Forest Management
- FOR 314 (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) General Geomorphology
- 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 Theory & Practice
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

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 353  (3) Environmental Education & Interpretation
EMP 355  (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 Resources 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 215  (3) Natural Resources & Recreation
EMP 305  (3) Managing Recreation Visitors Lecture (alternate years)

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