

NATURAL RESOURCES PLANNING & INTERPRETATION

Bachelor of Science degree with a major in Natural Resources Planning & Interpretation—

options in:

- Geographic Information Systems
& Remote Sensing
- Interpretation
- Planning
- Recreation
- Individually Designed

Minor in Geographic Information Technology

Minor in Natural Resources (see Natural Resources)

Minor in Natural Resources Interpretation

Minor in Natural Resources Planning

Minor in Natural Resources Recreation

Certificates of study in

- Geographic Information Systems &
Remote Sensing
- Natural Resources Interpretation
- Natural Resources Planning
- Natural Resources Policy &
Administration

Master of Science in Natural Resources—Natural Resources Planning & Interpretation option

Department Chair

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The Program

NRPI studies center on relationships between human society and natural ecosystems. Potential careers: environmental education leader, environmental impact analyst, environmental journalist, GIS or remote sensing analyst, hydrologist, information specialist, natural resource specialist, natural resources planner, naturalist, park ranger, recreation specialist, rural county planner, soil conservationist.

GIS & Remote Sensing Option

One of the fastest growing fields today is the use of geographic information systems (GIS) and remote sensing technologies to analyze the complex interrelationships between our natural resources and the human systems that depend on those resources. These computer-based technologies allow managers to evaluate large amounts of data over various sized geographic domains in order to be more effective in decision making.

Public and private natural resource and land-use management agencies are rapidly incorporating these technologies, but they lack the understanding to use the systems correctly and fully. Students in this option will provide this important expertise. The strong natural resource background separates our program from similar programs in other universities. Students use the latest GIS and remote sensing software and hardware in the Spatial Analysis Lab and in other labs on campus. Internships and work experience are integral components.

Already one of the highest demand employment areas, the market is projected to expand over the next decade. Graduates find careers with federal, state, and local public agencies; consulting firms; and natural resource-oriented private companies.

Interpretation Option

The philosophy of interpretation is captured by four elements: communication, inspiration, revelation, and experience. Interpretation as a science focuses on how to communicate artfully various histories, cultures, and environments to society. A primary goal is to inspire visitors' understanding and appreciation, a necessary condition for promoting protection of a resource. Thematic interpretation reveals a whole

picture painted on a canvas that includes the person. Finally, interpretation promotes the experience of history, culture, and nature through seeing, feeling, doing, or understanding. Interpreters help link the individual to a place, a time, or a thing.

Learning through hands-on experience, we lead guided walks, write brochures, and design displays. Our program is designed for the student to learn in the field, in the classroom, and in the lab. Students prepare for positions with natural resource agencies, conservation groups, and private and non-profit natural resource organizations.

Planning Option

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.

Recreation Option

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.

Individually Designed Option

A student with a good academic record and a clear concept of personal goals may use 30 units of electives to design his/her own program, building a strong

background in such diverse areas as water quality, resource-oriented business, or environmental politics.

Programs as specialized as Marine Parks Interpretation and as unusual as Environmental Theology and Philosophy have been approved. The program must concern the relationships of people with the natural environment, must not parallel any existing program, and must constitute a scholarly study of the discipline at the baccalaureate level.

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

Core Courses (all options)

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

BOT 105	General Botany
SOIL 260	Into to Soil Science
CHEM 107	Fundamentals of Chemistry
NRPI 105	Natural Resource Conservation
NRPI 210	Public Land Use Policies & Management
NRPI 309	Environmental Conflict Resolution
NRPI 309B	Environmental Communication
NRPI 325	Environmental Law & Regulation
NRPI 377	Intro to GIS Concepts, or
NRPI 376	GIS for the Social Sciences
NRPI 420	Ecosystem Analysis, or
NRPI 430	Natural Resource Mgmt in Protected Areas
NRPI 435	Grant Proposal Writing
NRPI 482	Internship

Geographic Information Systems & Remote Sensing Option

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

Core courses plus:

BIOM 109	Introductory Biometrics
CIS 130	Introduction to Programming
CIS/CS 315	Database Design & Implementation
CIS 318	Programming Database Applications
MATH 105	Calculus for the Biological Sciences & Natural Resources

NRPI 270	Global Positioning System Techniques
NRPI 425	Environmental Impact Assessment
NRPI 470	Intermediate Geographic Information Systems
NRPI 570	Vector GIS Modeling Techniques Seminar, or
NRPI 540	Raster GIS Modeling Techniques
BIOL 330	Principles of Ecology
BIOM 333	Intermediate Statistics
CIS 230	C++ Programming, or
CIS/CS 240	Visual Basic Programming
GEOG 316/316L	Computer Cartography
NRPI 277	Introduction to Remote Sensing, or
FOR 216	Forest Remote Sensing & GIS
FOR 506	Advanced Principles of Remote Sensing & GIS

Individually Designed Option

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

Students must prepare a coherent statement of objectives for pursuing this option. Then, in consultation with an NRPI faculty advisor, the student must name and describe the academic discipline to be studied and the courses to be taken. The objectives and content of the curriculum must concern the relationships of society to the natural environment and must not approximate any other degree program already offered by the university.

Requirements:

- NRPI Core Courses
 - One of the following courses:

FOR 231	Forest Ecology, or
RRS 370	Range Ecology Principles, or
BIOL 330	Principles of Ecology, or
WLDF 301	Principles of Wildlife Mgmt
 - STAT 108 **or** BIOM 109 (Must be approved in conjunction with the courses below.)
 - 30 units of additional courses that meet the stated objectives of the curriculum.
- While the content of the curriculum is developed in consultation with an NRPI advisor based on the stated objective, the program must be approved by the department faculty as a whole. The criteria for approval will include:
- demonstration of a baccalaureate level of scholarship in the discipline, and

- judgement that there is a rigorous and coherent pattern of course work serving the objective.

Interpretation Option

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

Core courses plus:

GEOL 109	Introduction to Geology
GEOG 106	Physical Geography
NRPI 215	Natural Resources & Recreation
NRPI 253	Interpretive Computer Graphics
NRPI 350	Introduction to Natural Resource Interpretation
NRPI 351	Natural Resource Interpretation Field Trip
NRPI 353	Interpretive Graphics
NRPI 450	Advanced Natural Resource Interpretation
NRPI 453	Interpretation Practicum - Graphic, or
NRPI 454	Interpretation Practicum - Oral
STAT 108	Elementary Statistics
ZOOL 110	General Zoology
ANTH 104	Cultural Anthropology, or
GEOG 105	Cultural Geography

Take six units each from two of the areas listed below:

Botanical

BOT 300	Plants & Civilization
BOT 330/330L	Plant Ecology
BOT 350	Plant Taxonomy
BOT 354	Agrostology
BOT 450	Advanced Plant Taxonomy
FOR 230	Dendrology
FOR 231	Forest Ecology

Cultural

ANTH 394	Archaeology of North America
HIST 368	Colonial & Revolutionary America
HIST 371	Civil War & Reconstruction
HIST 383	California History
NAS 306	Native Peoples of No. America

Earth Resources

ENGR 448	River Hydraulics
GEOG 352	Regional Climatology
GEOL 350	General Geomorphology
SOIL 360	Origin & Classification of Soils
GEOL 300/300L	Geology of California, or
GEOL 303	Earth Resources & Global Environmental Change, or
GEOL 305	Fossils, Life, & Evolution

Environmental Education

PSYC 213	The School-age Child
PSYC 414	Psychology of Adolescence and Young Adulthood
REC 210	Recreation Leadership
REC 330	Outdoor Education
REC 340	Camp Organization and Counseling
TFD 322	Creative Drama
TFD 324	Puppetry
ENGL 323	Children's Literature
COMM 422	Children's Communication Development
CD 255	Early Childhood Development
CD 257	Supervised Work with Children
CD 356	Curriculum Development for Early Childhood
CD 358	Supervised Work with Children
CD 446	Structure and Content of Children's Thinking
CD 463	Administration of Early Childhood Programs

Graphics

ART 105B	Beginning Drawing, or
ART 105C	Color & Design
ART 108	Beginning Graphic Design
ART 112	Scientific Drawing I
ART 250	Beginning Photography
ART 340	Intermediate Graphic Design I
ART 343	Advanced Graphic Design
ART 356	Museum & Gallery Practices
JMC 156	Video Production
JMC 134	Photojournalism and Photoshop
JMC 334	Advanced Photojournalism and Photoshop

Marine / Aquatic

BIOL 430	Intertidal Ecology
FISH 320	Limnology
OCN 310	Biological Oceanography
OCN 109	General Oceanography, or
FISH 300	Introduction to Fishery Biology

Natural Resource Management

FISH 300	Intro to Fishery Biology
FOR 315	Forest Management
FOR 374	Wilderness Area Mgmt.
RRS 306	Rangeland Resource Principles
SOIL 460	Forest & Range Soils Mgmt.
WLDF 301	Principles of Wildlife Mgmt.
WSHD 315	Watershed Management
NRPI 440	Managing Recreation Visitors Lecture

Zoological

WLDF 365	Ornithology I
ZOOL 314	Invertebrate Zoology
ZOOL 316	Freshwater Aquatic Invertebrates
ZOOL 352	Natural History of the Vertebrates
ZOOL 354	Herpetology
ZOOL 356	Mammalogy
ZOOL 358	General Entomology

Planning Option

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

Core courses plus:

NRPI 277	Introduction to Remote Sensing
NRPI 310	Introduction to Natural Resource Planning
NRPI 360	Natural Resource Planning Methods
BIOM 109	Intro Biometrics
BIOL 330	Principles of Ecology
FOR 230	Dendrology
ECON 423	Natural Resource Economics
NRPI 425	Environmental Impact Assessment
NRPI 460	Natural Resource Agency Planning
NRPI 465	Rural Community Planning
NRPI 475	Senior Planning Practicum
GEOG 106	Physical Geography

Two of the following:

FISH 320/320L	Limnology/Practicum
FISH 460	Princ. of Fishery Mgmt
FOR 315	Forest Management
FOR 321	Fire Ecology
FOR 374	Wilderness Area Mgmt
FOR 423	Wildland Fuels Mgmt
GEOL 303	Earth Resources & Global Environmental Change
GEOL 308	Natural Disasters
GEOL 350	General Geomorphology
NRPI 440	Managing Recreation Visitors
RRS 306	Rangeland Resource Principles
SOIL 360	Origin & Classification of Soils
SOIL 460	Forest & Range Soils Management
SOIL 468	Introduction to Agroforestry
WLDF 301	Principles of Wildlife Management
WSHD 315	Watershed Management

Recreation Option

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

Core courses plus:

FOR 374	Wilderness Area Management
NRPI 215	Natural Resources & Recreation
NRPI 253	Interpretive Computer Graphics
NRPI 350	Introduction to Natural Resource Interpretation
NRPI 351	Natural Resources Interpretation Field Trip
NRPI 415	Recreation Planning Workshop (alternate years)
NRPI 425	Environmental Impact Assessment
NRPI 440	Managing Recreation Visitors Lecture (alternate yrs.)
STAT 108	Elementary Statistics
FOR 231	Forest Ecology, or
RRS 370	Range Ecology Principles, or
BIOL 330	Principles of Ecology

Choose one additional NRPI-prefix course.

One of the following:

REC 310	Recreation for Special Groups
REC 320	Organization, Administration, & Facility Planning
REC 330	Outdoor Education
REC 335	Tourism Planning & Development
REC 340	Camp Organization & Counseling

One of the following:

COMM 311	Business & Professional Communication
COMM 312	Group Communication
COMM 322	Intercultural Communication
COMM 411	Organizational Communication
PSYC 457	Group Dynamics & Procedures

One of the following:

BA 210	Legal Environment of Business
BA 345	Marketing Essentials
BA 355	Essentials of Financial & Management Accounting
BA 375	Management Essentials

Two of the following:

FISH 300	Introduction to Fishery Biology
FOR 315	Forest Management
RRS 306	Rangeland Resource Principles
SOIL 460	Forest & Range Soils Mgmt
WLDF 301	Principles of Wildlife Mgmt
WSHD 315	Watershed Management

REQUIREMENTS FOR THE MINORS

Geographic Information Technology Minor

BIOM 109	Introductory Biometrics, or
STAT 108	Elementary Statistics
GEOG 316	Computer Cartography
NRPI 377	Intro to GIS Concepts, or
NRPI 376	GIS for the Social Sciences
NRPI 470	Intermediate Geographic Information Systems
NRPI 270	Global Positioning System Techniques or
GEOG 216	Introduction to Mapping Sciences
NRPI 277	Introduction to Remote Sensing, or
FOR 216	Forest Remote Sensing & Geographic Information Systems

Natural Resources Minor (see Natural Resources)

Natural Resources Interpretation Minor

NRPI 215	Natural Resources & Recreation
NRPI 253	Interpretive Computer Graphics [or equivalent]
NRPI 350/351	Introduction to Natural Resource Interpretation/Field Trip
NRPI 353	Interpretive Graphics
NRPI 430	Natural Resource Mgmt in Protected Areas
NRPI 450	Advanced Natural Resource Interpretation

Natural Resources Planning Minor

GEOG 106	Physical Geography
NRPI 105	Natural Resource Conservation
NRPI 210	Public Land Use Policies & Management
NRPI 310	Introduction to Natural Resource Planning
Plus two of the following:	
NRPI 325	Environmental Law & Regulation
NRPI 360	Natural Resource Planning Methods
NRPI 425	Environmental Impact Assessment

Natural Resources Recreation Minor

FOR 374	Wilderness Area Mgmt
NRPI 210	Public Land Use Policies & Management
NRPI 215	Natural Resources & Recreation
NRPI 309	Environmental Conflict Resolution, or
NRPI 309B	Environmental Communication
NRPI 415	Recreation Planning Workshop or
NRPI 440	Managing Recreation Visitors
NRPI 430	Natural Resource Mgmt in Protected Areas

