

# NATURAL RESOURCES (M.N.R.)

The Master of Natural Resources (MNR) is an interdisciplinary course-based graduate program designed for current and aspiring professionals who wish to enhance their educational credentials for a career in natural resources. The fundamental objective of the MNR graduate program is to integrate and scale various perspectives – ecology and management; planning, policy and society; and tools and technology – into a systems-view of natural resources. This unique professional degree is accessible to students of diverse academic backgrounds and will help graduates develop credentials and skills for the effective management of natural resources. The degree program can be completed entirely online or through a combination of online and on-campus courses. The MNR program can be combined with the certificate program specializing in fire ecology, management and technology. The five MNR degree specializations include the following:

- Environmental education and science communication
- Fire ecology and management
- Fish and wildlife science and management
- Integrated natural resources
- Restoration ecology and habitat management

Please see the College of Natural Resources graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F>) for details and program requirements on earning the Master of Natural Resources.

## Master of Natural Resources. Major in Natural Resources. Integrated Natural Resources Option.

The Integrated Natural Resources Option of the MNR covers a breadth of natural resource science and management subjects. The program provides knowledge and skills to support holistic, integrated approaches to careers in natural resources. The Integrated Natural Resources Option of the MNR consists of 30 semester credits (at least 7 credits from each of three MNR program categories—Ecology and Management; Policy, Planning, and Society; and Tools and Technology—plus 0-7 elective courses and 2 credits for a final portfolio) to total 30 credits. Up to 12 semester credits can be transferred into the program from other institutions. Coursework must include a minimum of 18 credits numbered 500 or above.

Admission to the College of Graduate Studies requires a minimum 3.0 GPA, three letters of reference, and a statement of purpose.

Complete admission and degree information is available online at: <http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources>. (<http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources/>)

Code	Title	Hours
Select a minimum of 7 credits from each of the three categories below:		21
<i>Ecology and Management:</i>		
BE 450	Environmental Hydrology	
ENVS 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total.)	
REM 429	Landscape Ecology	
FISH 535	Limnology	
WLF 575	Behavioral Ecology	
FISH 515	Large River Fisheries	
FISH 525	Aquaculture in Relation to Wild Fish Populations	
FISH 526	Climate Effects & Cons Manage	
FISH 540	Wetland Restoration	
FOR 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total. )	
FOR/ENVS/ REM/WLF 504	Special Topics	
FIRE 526	Fire Ecology	
FOR 560	Mountain Ecology	
FOR 410	Fire Effects and Management	
WLF 511	Wildland Habitat Ecology and Assessment	
REM 440	Restoration Ecology	
REM 456	Integrated Rangeland Management	
REM 459	Rangeland Ecology	
REM 507	Landscape and Habitat Dynamics <sup>1</sup>	
WLF 440	Conservation Biology	
WLF 506	External Speakers	
<i>Policy, Planning, and Society:</i>		
ENVS 520	Introduction to Bioregional Planning	
ENVS 523	Planning Sustainable Places	
GEOG 513	Global Climate Change	
GEOG 535	Climate Change Mitigation	
GEOG 517	Tree Rings and Environmental Change	
GEOG 411	Natural Hazards	
FIRE 454	Air Quality, Pollution, and Smoke	
ENVS 530	Planning Theory and Process	
ENVS/FS 536	Principles of Sustainability	
ENVS 551	Research Methods in the Environmental Social Sciences	
ENVS 552	Environmental Philosophy	
ENVS 577	Law, Ethics, and the Environment	
ENVS 579	Introduction to Environmental Regulations	
FOR 546	Science Synthesis and Communication	
FIRE 554	Air Quality, Pollution, and Smoke <sup>2</sup>	
FOR 584	Natural Resource Policy Development	
FIRE 587	Wildland Fire Policy	
NRS 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total. )	
NRS 504	Special Topics	
NRS 507	Moral Reasoning in Natural Resources	
NRS 555	Human Dimensions of Natural Resources	
NRS 574	Environmental Politics and Policy	

NRS 576	Environmental Project Management and Decision Making	
SOIL 544	Water Quality in the Pacific Northwest	
<i>Tools and Technology:</i>		
FIRE 451	Fuels Inventory and Monitoring	
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	
NRS 578	LIDAR and Optical Remote Sensing Analysis	
NRS 580	Restoration Ecology Practicum	
ENVS 511	Data Wizardry in Environmental Sciences	
NRS 592	Emerging Media Outreach in Natural Resources	
FIRE 407	GIS Application in Fire Ecology and Management	
REM 507	Landscape and Habitat Dynamics	
REM 520	Advanced Vegetation Measurement and Monitoring	
SOIL 544	Water Quality in the Pacific Northwest	
WLF 540	Conservation Genetics	
WLF 561	Landscape Genetics	
ENVS 450	Environmental Hydrology	
<i>Elective Courses:</i> 1-7		
ENVS/FOR/ NRS/WLF 504	Special Topics	
-OR- any additional courses listed above -OR- advisor-approved electives to bring total to 30 credits		
<i>Final Portfolio:</i>		2
NR 599	Non-thesis Master's Research (Final Portfolio)	
<b>Total Hours</b>		<b>24-30</b>

**Courses to total 30 credits for this degree**

- 1  
REM 507 (Landscape and Habitat Dynamics) can be used to contribute to either the Ecology and Management requirement -OR- the Tools and Technology requirement (but not both).
- 2  
FIRE 554 (Air Quality, Pollution, and Smoke) can be used to contribute to either the Policy, Planning, and Society requirement -OR- the Tools and Technology requirement (but not both).

## Master of Natural Resources. Major in Natural Resources. Environmental Education and Science Communication Option

Code	Title	Hours
NRS 501	Seminar	2
Ecology and Management		8
NRS 560	Place-based Ecology I	
NRS 566	Place-based Ecology II	
Human Dimensions		6
NRS 556	Team Leadership for Environmental Educators	
NRS 565	Science Communication and the Environment	
Policy, Planning, and Society		6
NRS 557	Community Leadership for Environmental Educators	

NRS 563	Place Based Env. Education	
NRS 568	Environmental Education Teaching Practicum II	
Tools and Technology		6
NRS 562	Field Science Teaching	
NRS 564	Teaching Environmental Education in a Winter Environment	
NRS 567	Environmental Education Teaching Practicum I	
NRS 504	Special Topics (Optional: Intro Ecol Data Analysis )	
Case Study Project		4
NRS 599	Non-thesis Master's Research	
NRS 569	Environmental Education Teaching Practicum III	
<b>Total Hours</b>		<b>32</b>

**Courses to total 32 credits for this degree**

## Master of Natural Resources. Major in Natural Resources. Fire Ecology and Management Option.

The Fire Ecology and Management Option provides depth to address wildfire management challenges facing society. Completing this option will help students advance their professional careers in wildland fire management, fuels management, and restoration by advancing knowledge of fire science, ecology, fire-related policy and social issues, and the latest tools and technology. The option also reinforces fundamentals in applied ecology, natural resources management, communications, and other career-advancing knowledge and skills.

The Fire Ecology and Management Option of the MNR consists of 30 semester credits (14 credits of Core Courses; 2-3 credits of Ecology; 4 credits of Tools and Technology; 6 credits of Policy, Planning, and Society; 2 credits of electives; and 2 credits of NR 599 non-thesis research for a final portfolio). Up to 12 semester credits can be transferred into the program from other institutions. Admission to the College of Graduate Studies requires a minimum 3.0 GPA, three letters of reference, and a statement of purpose. Coursework must include a minimum of 18 credits numbered 500 or above.

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Code	Title	Hours
Fire Science and Management Core		14
FIRE 451	Fuels Inventory and Monitoring	
FIRE 526	Fire Ecology	
FOR 546	Science Synthesis and Communication	
FIRE 557	Advanced Fire Behavior	
FIRE 587	Wildland Fire Policy	
<i>Ecology and Management</i>		3
FISH 526	Climate Effects & Cons Manage	
REM 429	Landscape Ecology	
FOR 560	Mountain Ecology	
FOR 516	Hydrologic Effects of Forest Management	
WLF 511	Wildland Habitat Ecology and Assessment	
FISH 540	Wetland Restoration	

FOR 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total. )
FOR/REM/ ENVS/WLF 504	Special Topics
REM 440	Restoration Ecology
REM 459	Rangeland Ecology
REM 507	Landscape and Habitat Dynamics <sup>1</sup>
WLF 440	Conservation Biology
FOR 410	Fire Effects and Management
GEOG 517	Tree Rings and Environmental Change
WLF 506	External Speakers
<i>Tools and Technology</i> 4	
ENVS 551	Research Methods in the Environmental Social Sciences
ENVS 511	Data Wizardry in Environmental Sciences
FIRE 454	Air Quality, Pollution, and Smoke
NRS 592	Emerging Media Outreach in Natural Resources
NRS 578	LIDAR and Optical Remote Sensing Analysis
NRS 580	Restoration Ecology Practicum
FIRE 407	GIS Application in Fire Ecology and Management
REM 507	Landscape and Habitat Dynamics <sup>1</sup>
REM 520	Advanced Vegetation Measurement and Monitoring
WLF 555	Statistical Ecology
ENVS 450	Environmental Hydrology
FIRE 554	Air Quality, Pollution, and Smoke
<i>Policy, Planning, and Society</i> 6	
ENVS 523	Planning Sustainable Places
GEOG 513	Global Climate Change
GEOG 535	Climate Change Mitigation
ENVS 530	Planning Theory and Process
FIRE 554	Air Quality, Pollution, and Smoke
FIRE 454	Air Quality, Pollution, and Smoke
ENVS 577	Law, Ethics, and the Environment
FOR 584	Natural Resource Policy Development
FS 536	Principles of Sustainability or ENVS 536 Principles of Sustainability
NRS 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total. )
NRS 504	Special Topics
NRS 507	Moral Reasoning in Natural Resources
NRS 555	Human Dimensions of Natural Resources
NRS 574	Environmental Politics and Policy
NRS 576	Environmental Project Management and Decision Making
NRS 588	NEPA in Policy and Practice
<i>Final Portfolio</i> 2	
NR 599	Non-thesis Master's Research
<i>Elective Courses:</i> 1	
ENVS/FOR/ NRS 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total. )

ENVS/FOR/ NRS/REM/ WLF 504	Special Topics
WLF 506	External Speakers
-OR- any additional courses listed above -OR- advisor-approved electives to bring total to 30 credits	
<b>Total Hours</b>	<b>30</b>

**Courses to total 30 credits for this degree**

<sup>1</sup>  
REM 507 (Landscape and Habitat Dynamics) can be used for either the Ecology and Management requirement -OR- the Tools and Technology requirement (but not both).

<sup>2</sup>  
FIRE 454 or FIRE 554 (Air Quality, Pollution, and Smoke) can be used to contribute to either the Policy, Planning and Society requirement -OR- the Tools and Technology requirement (but not both).

## Master of Natural Resources. Major in Natural Resources. Restoration Ecology and Habitat Management Option.

Complete admissions and degree information is available online at <http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources> (<http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources/>).

Code	Title	Hours
Restoration Ecology and Habitat Management Core:		
ENVS 579 or NRS 588	Introduction to Environmental Regulations NEPA in Policy and Practice	3
FISH 540	Wetland Restoration	3
NR 599	Non-thesis Master's Research (Final Portfolio)	2
NRS 580	Restoration Ecology Practicum	2
REM 440	Restoration Ecology	3
REM 507 or REM 429	Landscape and Habitat Dynamics Landscape Ecology	3
Ecology and Management (choose two courses):		5-6
FISH 515	Large River Fisheries	
FOR 560	Mountain Ecology	
FOR 516	Hydrologic Effects of Forest Management	
WLF 511	Wildland Habitat Ecology and Assessment	
FISH 525	Aquaculture in Relation to Wild Fish Populations	
FISH 535	Limnology	
FOR 410	Fire Effects and Management	
FIRE 526	Fire Ecology	
REM 429	Landscape Ecology (if not taken in the Core)	
REM 456	Integrated Rangeland Management	
REM 459	Rangeland Ecology	
SOIL 422	Environmental Soil Chemistry	
SOIL 446	Soil Fertility	
SOIL 544	Water Quality in the Pacific Northwest	
WLF 440	Conservation Biology	
Tools and Technology (choose 3 credits):		3

ENVS 450	Environmental Hydrology	
ENVS 511	Data Wizardry in Environmental Sciences	
WLF 555	Statistical Ecology	
FIRE 451	Fuels Inventory and Monitoring	
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	
NRS 578	LIDAR and Optical Remote Sensing Analysis	
PLSC 419	Plant Community Restoration Methods	
FIRE 407	GIS Application in Fire Ecology and Management	
NRS 592	Emerging Media Outreach in Natural Resources	
REM 410	Principles of Vegetation Monitoring and Measurement	
or REM 520	Advanced Vegetation Measurement and Monitoring	
WLF 540	Conservation Genetics	
WLF 561	Landscape Genetics	
Policy, Planning, and Society (choose two courses):		5-6
ENVS 523	Planning Sustainable Places	
FIRE 587	Wildland Fire Policy	
GEOG 513	Global Climate Change	
GEOG 535	Climate Change Mitigation	
ENVS 548	Drinking Water and Human Health	
ENVS 579	Introduction to Environmental Regulations	
FOR 584	Natural Resource Policy Development	
FS 536	Principles of Sustainability	
NRS 507	Moral Reasoning in Natural Resources	
NRS 576	Environmental Project Management and Decision Making	
NRS 588	NEPA in Policy and Practice	
Additional elective graduate credits to total a minimum of 30 credits		
<b>Total Hours</b>		<b>29-31</b>

**Courses to total 30 credits for this degree**

## Master of Natural Resources. Major in Natural Resources. Fish and Wildlife Science and Management Option.

All listed courses are available online. Additional courses are available for on-campus students and could be substituted for some of the courses below with advisor permission.

18 credits must be from 500 level courses.

Complete admissions and degree information is available online at <http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources> (<http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources/>).

Code	Title	Hours
<i>Core courses (11 credits)</i>		
NRS 555	Human Dimensions of Natural Resources	3
FISH 598 & NR 599	Internship and Non-thesis Master's Research	4
or FISH 502	Directed Study	
FOR 546	Science Synthesis and Communication	3
WLF 506	External Speakers	1

Select 8 credits of Fish & Wildlife Science Courses:		8
FISH 411	Fish Physiology	
FISH 525	Aquaculture in Relation to Wild Fish Populations	
FISH 535	Limnology	
FISH 526	Climate Effects & Cons Manage	
FISH 515	Large River Fisheries	
FISH 511	Fish Physiology	
FISH 540	Wetland Restoration	
FISH 550	Ecology & Conservation of Freshwater Invertebrates	
FISH 551	Freshwater Invertebrate Field Methods	
REM 411	Wildland Habitat Ecology and Assessment	
WLF 440	Conservation Biology	
WLF 530	Riparian Ecology	
WLF 540	Conservation Genetics	
WLF 545	Wildlife Habitat Ecology	
WLF 561	Landscape Genetics	
WLF 562	Landscape Genetics Lab	
WLF 575	Behavioral Ecology	
Select one course in Quantitative & Statistical Methods:		2-3
STAT 419	Introduction to SAS/R Programming	
STAT 422	Survey Sampling Methods	
STAT 431	Statistical Analysis	
ENVS 511	Data Wizardry in Environmental Sciences	
WLF 550	Statistical Distributions and their Applications in Ecology	
WLF 552	Ecological Modeling	
WLF 551	Applied Mixed Effects Modeling	
Select one course in Policy, Planning & Society:		2-3
ENVS 523	Planning Sustainable Places	
ENVS 520	Introduction to Bioregional Planning	
BIOP 530	Planning Theory and Process	
ENVS 577	Law, Ethics, and the Environment	
ENVS 579	Introduction to Environmental Regulations	
FOR 584	Natural Resource Policy Development	
FIRE 587	Wildland Fire Policy	
NRS 475	Local and Regional Environmental Planning	
NRS 574	Environmental Politics and Policy	
NRS 576	Environmental Project Management and Decision Making	
NRS 588	NEPA in Policy and Practice	
Electives from below -OR- any additional courses listed above to total 30 credits:		4-6
WLF 503	Workshop	
WLF 555	Statistical Ecology	
BE/ENVS 450	Environmental Hydrology	
FIRE 451	Fuels Inventory and Monitoring	
FIRE 526	Fire Ecology	
FIRE 554	Air Quality, Pollution, and Smoke	
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	
NRS/REM 440	Restoration Ecology	
NRS 472	Remote Sensing of the Environment	

NRS 552	Current Lit in Remote Sensing
NRS 578	LIDAR and Optical Remote Sensing Analysis
NRS 580	Restoration Ecology Practicum
FOR 560	Mountain Ecology
FOR 516	Hydrologic Effects of Forest Management
REM 456	Integrated Rangeland Management
REM 459	Rangeland Ecology
REM 507	Landscape and Habitat Dynamics
REM 520	Advanced Vegetation Measurement and Monitoring
REM/WLF/ FISH/NRS/ FOR 504	Special Topics
SOIL 544	Water Quality in the Pacific Northwest

Total Hours

27-31

Courses to total 30 credits for this degree

## Natural Integrated Natural Resources

1. The student will master and integrate information and knowledge from ecological, social, economic and political perspectives – into a systems view of natural resource issues.
2. The student will be able to synthesize ideas and information to identify, analyze and problem-solve natural resource issues; demonstrate an application of this synthesis.
3. The student will be able to demonstrate oral, written and visual techniques to communicate complex natural resource ideas.
4. The student will understand diverse viewpoints and perspectives and apply these to the natural resources professions; demonstrate reflection and expanded understanding as applied to one's professional goals.
5. The student will be able to define and apply sustainable stewardship and/or management of natural resources as an ethical, socially responsible practice; understand ethical dilemmas and make ethical choices.

## Fire Ecology and Management

1. The student will master and integrate information and knowledge from ecological, social, economic and political perspectives – into a systems view of fire ecology and management issues.
2. The student will be able to synthesize ideas and information to identify, analyze and problem-solve fire ecology and management issues; demonstrate an application of this synthesis.
3. The student will be able to demonstrate oral, written and visual techniques to communicate complex natural resource ideas with relevance to fire ecology and management.
4. The student will understand diverse viewpoints and perspectives and apply these to the fire ecology and management; demonstrate reflection and expanded understanding as applied to one's professional goals.
5. The student will be able to define and apply sustainable stewardship and/or management of wildland fire and natural resources as an ethical, socially responsible practice; understand ethical dilemmas and make ethical choices.

## Restoration Ecology and Habitat Management

1. The student will master and integrate information and knowledge from ecological, social, economic and political perspectives – into a systems view of restoration ecology and habitat management issues.
2. The student will be able to synthesize ideas and information to identify, analyze and problem-solve restoration ecology and habitat management issues; demonstrate an application of this synthesis.
3. The student will be able to demonstrate oral, written and visual techniques to communicate complex natural resource ideas with relevance to restoration ecology and habitat management.
4. The student will understand diverse viewpoints and perspectives and apply these to restoration ecology and habitat management; demonstrate reflection and expanded understanding as applied to one's professional goals.
5. The student will be able to define and apply sustainable stewardship and/or management of natural resources and wildlife habitat as an ethical, socially responsible practice; understand ethical dilemmas and make ethical choices.

## Fish and Wildlife Science and Management

1. The student will master and integrate information and knowledge from ecological, social, economic and political perspectives – into a systems view of fish and wildlife science and management issues.
2. The student will be able to synthesize ideas and information to identify, analyze and problem-solve fish and wildlife science and management issues; demonstrate an application of this synthesis.
3. The student will be able to demonstrate oral, written and visual techniques to communicate complex natural resource ideas with relevance to fish and wildlife science and management.
4. The student will understand diverse viewpoints and perspectives and apply these to fish and wildlife science and management; demonstrate reflection and expanded understanding as applied to one's professional goals.
5. The student will be able to define and apply sustainable stewardship and/or management of natural resources, fisheries, and wildlife habitat as an ethical, socially responsible practice; understand ethical dilemmas and make ethical choices.