

**College of Natural Resources
Proposed Catalog Changes
Effective Summer 2018**

FISH AND WILDLIFE

1. Add the following courses:

WLF 270 Management and Communication of Scientific Data (2 cr)

Students will learn skills for managing and presenting scientific data. Spreadsheets and basic data management software, summary, and graphical representation. Written presentation of scientific information will include organization, grammar, and citation formats appropriate for scientific reports.

Available via distance: No

Geographical Area Availability: Moscow

Rationale: The skills gained in this class are required for upper-division courses in the Fish and Wildlife curricula, and they are important professional preparation for careers in the fish and wildlife disciplines.

WLF 575 Behavioral Ecology (2 cr)

Behavioral Ecology is the study of evolutionary causes and fitness consequences of behavioral decisions by animals. This course will explore theoretical and empirical approaches to understanding behavioral ecology across a diversity of species, with an emphasis on vertebrates. The format will include short lectures and facilitated discussions of primary literature. The course is open to graduate students and seniors with instructor permission.

Available via distance: No

Geographical Area Availability: Moscow

Rationale: This course covers topics that are relevant to ecology, conservation and management of animal populations. Currently, there is not a graduate-level course that covers similar material. This course was taught as a 504 course during spring 2016, and it would be offered in alternate spring semesters

2. Change the following courses:

WLF 492 Wildlife Management (4 cr)

Gen Ed: Senior Experience

Review of social and biological context for current practice of wildlife management [including a hands on wildlife management project](#). Three lec and one lab a wk; two days of field trips. (Spring only)

Prereq: ~~WLF 316 and WLF 448~~ [WLF 314, Senior standing](#)

Prereq or Coreq: ~~WLF 482 or Fish 481 or Biol 483~~ [WLF 448](#)

Available via distance: No

Geographical Area Availability: Moscow

Rationale: WLF316 was dropped from curriculum and we have revised prerecs and corecs. There is no added workload.

WLF 506 (s) External Speakers (1 cr, max 6)

Students will attend [\(or view recorded\)](#) seminars of fish and wildlife researchers and managers invited to present in our departmental seminar series. Students will read papers of external speakers, lead discussions of papers and assist with hosting speakers. Graded Pass/Fail.

Available via distance: Yes

Geographical Area Availability: Moscow

Rationale: We would like students to be able to receive credit for multiple semesters because the speakers and reading changes each semester.

3. Make the following curricular changes to the **Major in Fisheries Resources** (B.S.Fish.Res.)

Required course work includes the university requirements (see regulation J-3) and:

First and Second Years

BIOL 114	Organisms and Environments	4 cr
BIOL 115	Cells & the Evolution of Life	3 cr
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr
BIOL 213	Principles of Biological Structure and Function	4 cr
COMM 101	Fundamntls Public Speaking	2 cr
ECON 202	Principles of Microeconomics	3 cr
FISH 102	The Fish and Wildlife Professions	1 cr
FISH 202	Fish 202 Fish & Wildlife Applications II	1 cr
FOR 235	Society and Natural Resources	3 cr
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
NR 101	Exploring Natural Resources	2 cr
STAT 251	Statistical Methods	3 cr
WLF 201	Fish and Wildlife Applications I	1 cr
WLF 270	Management and Communication of Scientific Data	2 cr

One of the following (4 cr):

CHEM 101	Introduction to Chemistry I	4 cr
CHEM 111	Principles of Chemistry I	4 cr

One of the following (3 cr):

CHEM 275	Carbon Compounds	3 cr
CHEM 277	Organic Chemistry I	3 cr

One of the following (3 cr):

FOR 221	Principles of Ecology	3 cr
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One of the following (4 cr):

MATH 160	Survey of Calculus	4 cr
MATH 170	Analytic Geometry and Calculus I	4 cr

One of the following (4 cr):

GEOG 100	Physical Geography	3 cr
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	AND	
GEOG 100L	Physical Geography Lab	1 cr
GEOL 101	Physical Geology	3 cr
	AND	
GEOL 101L	Physical Geology Lab	1 cr
PHYS 100	Fundamentals of Physics	3 cr
	AND	
PHYS 100L	Fundamentals of Physics Lab	1 cr
PHYS 111	General Physics I	3 cr
	AND	
PHYS 111L	General Physics I Lab	1 cr

Third and Fourth Years

BIOL 250	General Microbiology	3 cr
BIOL 255	General Microbiology Lab	2 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
FISH 314	Fish Ecology	3 cr
FISH 315	Fish Ecology Lab	1 cr
FISH 415	Limnology	4 cr
FISH 418	Fisheries Management	4 cr
FISH 481	Ichthyology	4 cr
FISH 495	Fisheries Seminar	1 cr
WLF 371	Physiological Ecology of Fish and Wildlife	3 cr
WLF 448	Fish and Wildlife Population Ecology	4 cr

One of the following (2 cr):

FISH 398	Renewable Natural Resources Internship	1-16 cr
WLF 398	Renewable Natural Resources Internship	1-16 cr

~~One of the following (3 cr):~~

ENGL 313	Business Writing	3 cr
ENGL 316	Environmental Writing	3 cr
ENGL 317	Technical Writing	3 cr
ENGL 318	Science Writing	3 cr

One of the following (4 cr):

FISH 422	Concepts in Aquaculture	4 cr
FISH 424	Fish Health Management	4 cr

One of the following (3 cr):

BIOL 310	Genetics	3 cr
GENE 314	General Genetics	3 cr

Courses to total 120 credits for this degree

Distance Education: 50% or more of curricular requirements cannot be completed via distance

Geographical Area: Moscow

Rationale: Based on our assessment results requesting more experience with fish and wildlife data analysis and report writing earlier in the curriculum we are developing and adding this course titled WLF 270 Management and Communication of Scientific Data. The course will be taught to minimize the workload for faculty. To minimize the impact on student credit hours, we are removing the 300 level technical writing requirement.

4. Make the following curricular changes to the **Major in Wildlife Resources** (B.S.Wildl.Res.)

Required course work includes the university requirements (see regulation J-3) and:

First and Second Years

BIOL 114	Organisms and Environments	4 cr
BIOL 115	Cells & the Evolution of Life	3 cr
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr
BIOL 213	Principles of Biological Structure and Function	4 cr
CHEM 101	Introduction to Chemistry I	4 cr
COMM 101	Fundamntls Public Speaking	2 cr
ECON 202	Principles of Microeconomics	3 cr
FISH 202	Fish 202 Fish & Wildlife Applications II	1 cr
FOR 235	Society and Natural Resources	3 cr
NR 101	Exploring Natural Resources	2 cr
STAT 251	Statistical Methods	3 cr
WLF 102	The Fish and Wildlife Professions	1 cr
WLF 201	Fish and Wildlife Applications I	1 cr
WLF 270	Management and Communication of Scientific Data	2 cr

Ecology (3 cr):

FOR 221	Principles of Ecology	3 cr
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One of the following (3 cr):

CHEM 275	Carbon Compounds	3 cr
CHEM 277	Organic Chemistry I	3 cr

One of the following (3-4 cr):

FOR 320	Dendrology	4 cr
REM 341	Systematic Botany	3 cr
REM 252	Wildland Plant Identification	2 cr
	AND	
REM 253	Wildland Plant Identification Field Studies	1 cr

One of the following (4 cr):

GEOL 101	Physical Geology	3 cr
	AND	
GEOL 101L	Physical Geology Lab	1 cr

PHYS 100	Fundamentals of Physics	3 cr
	AND	
PHYS 100L	Fundamentals of Physics Lab	1 cr
PHYS 111	General Physics I	3 cr
	AND	
PHYS 111L	General Physics I Lab	1 cr
SOIL 205	The Soil Ecosystem	3 cr
	AND	
SOIL 206	The Soil Ecosystem Lab	1 cr

One of the following (4 cr):

MATH 160	Survey of Calculus	4 cr
MATH 170	Analytic Geometry and Calculus I	4 cr

Third and Fourth Years

FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
REM 411	Wildland Habitat Ecology and Assessment	2 cr
WLF 314	Ecology of Terrestrial Vertebrates	3 cr
WLF 315	Techniques Laboratory	2 cr
WLF 371	Physiological Ecology of Fish and Wildlife	3 cr
WLF 440	Conservation Biology	3 cr
WLF 448	Fish and Wildlife Population Ecology	4 cr
WLF 492	Wildlife Management	4 cr

One of the following (3 cr):

BIOL 310	Genetics	3 cr
GENE 314	General Genetics	3 cr

~~One of the following (3 cr):~~

ENGL 316	Environmental Writing	3 cr
ENGL 317	Technical Writing	3 cr
ENGL 318	Science Writing	3 cr

One of the following (2-3 cr):

COMM 410	Conflict Management	3 cr
FOR 484	Forest Policy and Administration	2 cr
NRS 250	Environmental Problem Solving	3 cr
NRS 387	Environmental Communication Skills	3 cr
NRS 462	Natural Resource Policy	3 cr
NRS 311	Public Involvement in Natural Resource Management	3 cr
WLF 205	Wildlife Law Enforcement	2 cr

One of the following (2 cr):

FISH 398	Renewable Natural Resources Internship	1-16 cr
WLF 398	Renewable Natural Resources Internship	1-16 cr

Restricted electives

Choose two courses from the following (must receive a grade of C or better):

BIOL 483	Mammalogy	3 cr
BIOL 489	Herpetology	4 cr
FISH 481	Ichthyology	4 cr
WLF 482	Ornithology	4 cr

Courses to total 120 credits for this degree

Distance Education: 50% or more of curricular requirements cannot be completed via distance

Geographical Area: Moscow

Rationale: Based on our assessment results requesting more experience with fish and wildlife data analysis and report writing earlier in the curriculum we are developing and adding this course titled WLF 270 Management and Communication of Scientific Data. To minimize the change in workload for faculty, it will be taught. To minimize the impact on student credit hours, we are removing the 300 level technical writing requirement.

FOREST, RANGELAND, AND FIRE SCIENCES

1. Add the following course:

RMAT 401 Undergraduate Research (1-3 cr)

Directed undergraduate research at the upper division level.

Prereq: Junior or senior standing

Available via distance: Yes

Geographical Area Availability: Moscow

Rationale: By formalizing a course in undergraduate research, we are acknowledging the efforts that are already being put forth by faculty and students through directed study-based research.

2. Change the following courses:

For 310 Indigenous Culture and Ecology (3 cr, max 9)

~~Students will explore how both endemic plant and animal species and native culture have been impacted by non-native species. A roughly 10-day field trip to remote communities requires active and effective participation, hands-on projects are conducted in those communities based on preparatory materials, and a there is a major presentation for Idaho stakeholders upon completion of the field trip. This course is designed to explore the challenge for Indigenous and mainstream science of balancing traditional and modern world cultures at odds with one another through an understanding of multiple ways of knowing with respect to natural resources and ecological understanding. The course covers a range of themes including decolonizing methodologies, Indigenous research methodologies, and Indigenous statistics. Case-studies, collaborations with local tribes, and field trips are used to explore course themes.~~

Prereq: REM 221/FOR 221/ WLF 220 and FOR 235/NRS 235

Available via distance: Yes

Geographical Area Availability: Moscow

Rationale: Since FOR 310 was offered 2 years ago there have been changes in faculty with a new instruction team now re-designing and teaching the course. The proposed change in the course description reflects these changes.

REM 144 Wildland Fire Management (23 cr)

Introduction to wildland fire management including fire behavior, fuels, fire prevention and suppression, fire policy and fire ecology. Includes discussion of current fire management issues.

Available via distance: No

Geographical Area Availability: Moscow

Rationale: In order to prepare students with the skills and experience needed to be successful in their future classes in the Fire Ecology and Management Program, it is important that they learn a base level of information and have ample opportunity to practice field and computational skills. By moving from 2 credits to 3 credits, REM 144 will have the time to sufficiently cover the required material.

REM 410 Principles of Vegetation Monitoring and Measurement (2 cr)

~~On-line~~ This course introduces theory and application of quantitative and qualitative methods for measuring and monitoring ~~designed to give an overview of~~ vegetation ~~measurement techniques for in~~ grasslands, shrublands, woodlands, and forests. Students will gain a solid understanding of how to measure and evaluate ~~and monitor~~ vegetation attributes and design and implement monitoring programs relative to wildlife habitat, livestock forage, fire fuel characteristics, watershed function, and many other wildland values. Class field trip required. Recommended Preparation: A basic statistics course ~~understanding of how to use computer spreadsheets such as~~ and ability to use Excel. (Fall only) Students ~~who desire a hands-on and interactive experience with vegetation measurement~~ are encouraged to also enroll in REM 411 which ~~is a course the~~ builds on the principles ~~delivered in of~~ REM 410 ~~and includes field experiences for~~ wildland habitat assessment.

Prereq: Stat 251 or permission

Available via distance: Yes

Rationale: Proposed changes are to better reflect the course content and to communicate that emphasis of the course is monitoring, which is a fundamental component of natural resource management. New instructor will be teaching the course in 2018.

3. Make the following curricular changes to the **Major in Forestry** (B.S.Forestry):

Required course work includes the university requirements (see regulation J-3) and:

BIOL 114	Organisms and Environments	4 cr
ECON 202	Principles of Microeconomics	3 cr
ENT 469	Introduction to Forest Insects	2 cr
FOR 102	Introduction to Forest Management	1 cr
FOR 235	Society and Natural Resources	3 cr
FOR 275	Forestry Resource Sampling	2 cr
FOR 274	Forest Measurement and Inventory	3 cr
FOR 320	Dendrology	4 cr

FOR 324	Forest Regeneration	3 cr
FOR 330	Forest Soil and Canopy Processes	4 cr
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
FOR 424	Silviculture Principles and Practices	4 cr
FOR 430	Forest Operations	3 cr
FOR 462	Watershed Science and Management	3 cr
FOR 468	Forest and Plant Pathology	2 cr
FOR 484	Forest Policy and Administration	2 cr
MATH 143	Pre-calculus Algebra and Analytic Geometry	3 cr
MATH 144	Analytic Trigonometry	1 cr
NR 101	Exploring Natural Resources	2 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
PHYS 100	Fundamentals of Physics	3 cr
PLSC 205	General Botany	4 cr
REM 144	Wildland Fire Management	2 cr
SOIL 205	The Soil Ecosystem	3 cr
SOIL 206	The Soil Ecosystem Lab	1 cr
STAT 251	Statistical Methods	3 cr

One of the following (2-3 cr):

<u>REM 144</u>	<u>Wildland Fire Management</u>	<u>2 cr</u>
<u>FOR 326</u>	<u>Fire Ecology and Management</u>	<u>3 cr</u>

One of the following (4 cr):

CHEM 101	Introduction to Chemistry I	4 cr
CHEM 111	Principles of Chemistry I	4 cr
Ecology (3 cr):		
FOR 221	Principles of Ecology	3 cr

Advisor Approved Electives or Minor

Complete 13 credits of Advisor Approved Electives OR one of the following Minors:

Business

Ecology

Environmental Communication

Fire Ecology and Management

Fishery Resources

Forest Operations

Horticulture

Natural Resource Conservation

Natural Resources Economics

Renewable Materials

Rangeland Ecology and Management

Soil Science

Wildlife Resources

Courses to total 120 credits for this degree

*Note: A SAT math score of 610 or above, or ACT math score of 27 or above can be used to satisfy the Math 143 and Math 144 requirements.

Distance Education: 50% or more of curricular requirements cannot be completed via distance

Rationale: We want our students to have additional flexibility to take one of two, instead of a single, fire course. This alternative will be especially helpful to our many students who transfer into our program because now they can take an upper-division course if they have not already had a fire course.

4. Make the following curricular changes to the **Major in Fire Ecology and Management** (B.S.Fire.Ecol.Mgmt.):

Required course work includes the university requirements (see regulation J-3) and:

ECON 202	Principles of Microeconomics	3 cr
FOR 235	Society and Natural Resources	3 cr
FOR 274	Forest Measurement and Inventory	3 cr
FOR 326	Fire Ecology and Management	3 cr
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
FOR 427	Prescribed Burning Lab	3 cr
FOR 433	Fire and Fuel Modeling	2 cr
FOR 450	Fire Behavior	2 cr
FOR 484	Forest Policy and Administration	2 cr
NR 101	Exploring Natural Resources	2 cr
NRS 125	Introduction to Conservation and Natural Resources	3 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
PHYS 100	Fundamentals of Physics	3 cr
PHYS 100L	Fundamentals of Physics Lab	1 cr
PLSC 205	General Botany	4 cr
REM 144	Wildland Fire Management	2 cr
REM 407	GIS Application in Fire Ecology and Management	2 cr
REM 459	Rangeland Ecology	2 cr
SOIL 205	The Soil Ecosystem	3 cr
SOIL 206	The Soil Ecosystem Lab	1 cr
STAT 251	Statistical Methods	3 cr

One of the following (3-4 cr):

FOR 330	Forest Soil and Canopy Processes	4 cr
FOR 424	Silviculture Principles and Practices	4 cr
REM 456	Integrated Rangeland Management	3 cr

One of the following (3 cr):

FOR 435	Remote Sensing of Fire	3 cr
REM 429	Landscape Ecology	3 cr

One of the following (4 cr):

BIOL 114	Organisms and Environments	4 cr
BIOL 115	Cells & the Evolution of Life AND	3 cr
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr

One of the following (4 cr):

CHEM 101	Introduction to Chemistry I	4 cr
CHEM 111	Principles of Chemistry I	4 cr

One of the following (3 cr):

ENGL 313	Business Writing	3 cr
ENGL 317	Technical Writing	3 cr

Ecology (3 cr):

FOR 221	Principles of Ecology	3 cr
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One of the following courses (3 cr):

FOR 454	Air Quality, Pollution, and Smoke	3 cr
GEOG 301	Meteorology	3 cr
GEOG 313	Global Climate Change	3 cr

One of the following (3-4 cr):

MATH 143	Pre-calculus Algebra and Analytic Geometry	3 cr
MATH 160	Survey of Calculus	4 cr

One of the following courses (3-4 cr):

FOR 320	Dendrology	4 cr
REM 252	Wildland Plant Identification	2 cr
REM 341	Systematic Botany	3 cr

Advisor Approved Electives or Approved Minor

Complete ~~13~~15 credits of Advisor Approved Electives OR one of the following Minors:

- Rangeland Ecology and Management
- Forest Resources
- Natural Resource Conservation
- Natural Resources Economics
- Fishery Resources
- Wildlife Resources
- Ecology
- Forest Operations
- Renewable Materials

Courses to total 120 credits for this degree

Distance Education: 50% or more of curricular requirements cannot be completed via distance

Geographical Area: Moscow

Rationale: Proposed changes: (1) Add in section break in catalog prior to ECON 202 to avoid confusion of the requirements. (2) Remove NRS 125 as at the time of its inclusion it was believed that this course would focus on leadership skills, but it was recently reworked with different content. (3) Adjust credits of REM 144 from 2-3 credits as this change is happening concurrently. (4) Correct plant identification category to reflect the possible range of credits (2-4) versus (3-4). (5) Adjust credits with advisor approved minors to 15 (3 more from dropping NRS 125 and one less from adjusting REM 144).

5. Make the following curricular changes to the **Major in Rangeland Conservation (B.S.Rangeland.Consv.)**:

This major prepares students to conserve, restore, and manage the vast landscapes known as rangelands. These ecosystems include deserts, prairies, shrublands, and woodlands. The degree program focuses on the scientific study of rangelands and introduces principles for managing and restoring rangelands for maximum benefit and ecosystem sustainability. Required course work includes the university requirements (see regulation J-3) and:

First and Second Years

AVS 109	The Science of Animals that Serve Humanity	4 cr
BIOL 114	Organisms and Environments	4 cr
COMM 101	Fundamntls Public Speaking	2 cr
ECON 202	Principles of Microeconomics	3 cr
FOR 235	Society and Natural Resources	3 cr
NR 101	Exploring Natural Resources	2 cr
REM 151	Rangeland Principles	3 cr
SOIL 205	The Soil Ecosystem	3 cr
SOIL 206	The Soil Ecosystem Lab	1 cr
STAT 251	Statistical Methods	3 cr
REM 252	Wildland Plant Identification	2 cr
REM 253	Wildland Plant Identification Field Studies	1 cr

One of the following (3-4 cr):

<u>AVS 109</u>	<u>The Science of Animals that Serve Humanity</u>	<u>4 cr</u>
<u>AVS 110</u>	<u>Science of Animal Husbandry</u>	<u>3 cr</u>

One of the following (4 cr):

BIOL 213	Principles of Biological Structure and Function	4 cr
PLSC 205	General Botany	4 cr

One of the following (4 cr):

CHEM 101	Introduction to Chemistry I	4 cr
CHEM 111	Principles of Chemistry I	4 cr

One of the following (3-4 cr):

MATH 143	Pre-calculus Algebra and Analytic Geometry	3 cr
MATH 160	Survey of Calculus	4 cr

Ecology (3 cr):

FOR 221	Principles of Ecology	3 cr
NR 321	Ecology	3 cr

Third and Fourth Years

FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
REM 341	Systematic Botany	3 cr
REM 410	Principles of Vegetation Measurement	2 cr
REM 411	Wildland Habitat Ecology and Assessment	2 cr
REM 456	Integrated Rangeland Management	3 cr
REM 459	Rangeland Ecology	2 cr
REM 460	Integrating GIS and Field Studies in Rangelands	2 cr
SOIL 454	Pedology	3 cr

One of the following combinations (3-4 cr):

REM 280	Introduction to Wildland Restoration AND	2 cr
PLSC 419	Plant Community Restoration Methods OR	2 cr
REM 440	Wildland Restoration Ecology	3 cr

One of the following (3 cr):

ENGL 313	Business Writing	3 cr
ENGL 317	Technical Writing	3 cr

One of the following (3 cr):

FISH 430	Riparian Ecology and Management	3 cr
FOR 462	Watershed Science and Management	3 cr

Career Tracks with Advisor Input and Approval (15 cr):

Students must also complete 15 credits of advisors approved electives contributing to a specific career track that may include:

RESTORATION ECOLOGY - Millions of acres of rangeland and forests have been disturbed by fire, invasive plants, and overgrazing. Academic advisors in rangeland conservation have developed a set of electives for students interested in a career in wildland restoration. Completing these career track electives will fulfill requirements for the Restoration Ecology Undergraduate Academic Certificate. Careful selection of courses can also highlight expertise in botany and plant materials to qualify for professions as a botanist.

WILDLIFE HABITAT - Many species of wildlife live on rangelands and the management of wildlife habitat is an important and sought after skill. With help from their Academic Advisor, rangeland students can complete a career track that will show expertise in wildlife habitat management and fulfill the requirements for a Minor in Wildlife Resources.

LAND AND LIVESTOCK - This career track is for students interested in "hands-on"

management of rangelands. Academic Advisors work with students to select courses that provide the knowledge and skills needed to manage rangelands with grazing and fire to enhance livestock production while sustaining communities of native plants and animals. Completion of these courses can also satisfy the requirements for a Minor in Animal Science or Soil Science.

WILDLAND FIRE - Wildfire is one of the major forces causing change on rangeland ecosystems. Completing a specific set of advisor approved electives, will enable students to show knowledge of land management related to wildland fire and fulfill the requirements for a Minor in Fire Ecology and Management.

INDIVIDUAL INTEREST – Students can work with their advisor to select specific courses to show expertise in a career track of specific interest that may include Watershed or Riparian Ecologist, Natural Resource GIS Specialist, Environmental Consultant, Tribal Land Manager, Resource Economist, or many other interests related to rangelands.

Courses to total 122 credits for this degree

Distance Education: 50% or more of curricular requirements cannot be completed via distance

Geographical Area: Moscow

Rationale: The intent of these changes is to provide flexibility and to make this degree more accessible to distance students.

Give students a choice between AVS 109 and AVS 110. AVS 109 is a pre-requisite for AVS 110 but, the requirement has in the past been waived for students in the Rangeland Conservation curriculum.

In CNR Principles of Ecology is taught alternating between instructors in three degree programs (FOR 221, REM 221, and WLF 220). These courses are cross-listed and fulfill the Principles of Ecology requirement. Therefore any of those courses should be accepted in our curriculum. NR321 is available online and because it is taught at the junior level, fulfills the ecology requirement.

Giving students a choice between REM 280 and PLSC 419 OR REM 440. REM 440 is only offered in online format and serves online students well. On-campus students in our degree prefer on-campus courses and the combination of REM 280 and PLSC 419 will fulfill the requirement. Advisors can help students choose among these alternatives.

6. Make the following curricular changes to the **Major in Renewable Materials** (B.S.Renew.Mat.):

Required course work includes the university requirements (see regulation J-3) and ~~one of the following options:~~

ACCT 201	Introduction to Financial Accounting	3 cr
ACCT 202	Introduction to Managerial Accounting	3 cr
BIOL 102	Biology and Society	3 cr
BIOL 102L	Biology and Society Lab	1 cr
BLAW 265	Legal Environment of Business	3 cr
COMM 101	Fundamntls Public Speaking	2 cr
ECON 202	Principles of Microeconomics	3 cr
FOR 235	Society and Natural Resources	3 cr

FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
NR 101	Exploring Natural Resources	2 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
PHYS 111	General Physics I	3 cr
RMAT 100	Intro to Renewable Resources	2 cr
RMAT 321	Properties of Renewable Materials	3 cr
RMAT 401	Undergraduate Research	1-3 cr
RMAT 436	Biocomposites	3 cr
RMAT 438	Introduction to Lignocellulosic Chemistry	1 cr
RMAT 444	Primary Products Manufacturing	3 cr
RMAT 450	Biomaterials Deterioration and Protection	2 cr
RMAT 491	Biomaterial Product and Process Development Lab	2 cr
RMAT 495/ MKTG 495	Product Development and Brand Management	3 cr
RMAT 498	Renewable Natural Resources Internship	1-16 cr
STAT 251	Statistical Methods	3 cr

One of the following (4 cr):

CHEM 101	Introduction to Chemistry I	4 cr
CHEM 111	Principles of Chemistry I	4 cr

One of the following (3 cr):

CHEM 275	Carbon Compounds	3 cr
CHEM 277	Organic Chemistry I	3 cr

One of the following (3-4 cr):

ENGL 313	Business Writing	3 cr
ENGL 317	Technical Writing	3 cr

Ecology (3 cr):

FOR 221	Principles of Ecology	3 cr
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One of the following (4 cr):

MATH 160	Survey of Calculus	4 cr
MATH 170	Analytic Geometry and Calculus I	4 cr

~~Restricted Electives (21 cr):~~

ACCT 482	Enterprise Accounting	3 cr
ARCH 154	Introduction to Architectural Graphics	3 cr
ARCH 266	Materials and Methods	3 cr
ARCH 463	Environmental Control Systems I	3 cr
ARCH 464	Environmental Control Systems II	3 cr
BE 485	Fundamentals of Bioenergy and Bioproducts	3 cr
BE 492	Biofuels	3 cr
BE 494	Thermochemical Technologies for Biomass Conversion	3 cr

BUS 101	Introduction to Business Enterprises	3-cr
BUS 190	Integrated Business and Value Creation	3-cr
FIN 301	Financial Resources Management	3-cr
MHR 311	Introduction to Management	3-cr
MKTG 321	Marketing	3-cr
MIS 350	Managing Information	3-cr
MIS 351	Intro to Elec Commerce	3-cr
OM 370	Process Management	3-cr
OM 378	Project Management	3-cr
ENTR 414	Entrepreneurship	3-cr
ENTR 415	New Venture Creation	3-cr
MKTG 424	Pricing Strategy and Tactics	3-cr
OM 456	Quality Management	3-cr
ECON 272	Foundations of Economic Analysis	4-cr
FOR 430	Forest Operations	3-cr
FOR 431	Low Volume Forest Roads	2-cr
FOR 436	Cable Systems	2-cr
LARC 251	Intro Principles of Site Dsgn	3-cr
MSE 434	Fundamentals of Polymeric Materials	3-cr
RMAT 538	Lignocellulosic Biomass Chemistry	3-cr
STAT 301	Probability and Statistics	3-cr

Candidates for the B.S. degree are required to complete a second major, an academic minor or area of emphasis of at least 18 credits. The emphasis area must be approved by the student's academic advisor.

Courses to total 120 credits for this degree

Distance Education: 50% or more of curricular requirements cannot be completed via distance

Rationale: We are proposing two changes to the curriculum:

1. Eliminating the list of restricted electives and replacing that section with the requirement to add a second major, a minor, or an advisor-approved emphasis area clarifies the intent of our current restricted electives requirement and complies with our current accreditation requirements with the Society of Wood Science and Technology (SWST).

2. By adding the RMAT 4xx Undergraduate Research requirement we can better prepare our students for the capstone lab experience (RMAT 491 Biomaterial Product and Process Development Lab). Taken concurrently with RMAT/MKTG 495, students will focus on a specific new product that will be the subject of both RMAT 495 and 491. This change acts on a request made during a focus group discussion with graduating seniors last spring. A final report for RMAT 4xx will assess that students' ability to obtain, analyze, interpret and convey scientific information.

7. Make the following curricular changes to the **Restoration Ecology Undergraduate Academic Certificate:**

REM 221	Principles of Ecology	3-cr
REM 280	Introduction to Wildland Restoration	2 cr
REM 440	Wildland Restoration Ecology	3 cr

REM 459	Rangeland Ecology	2 cr
SOIL 205	The Soil Ecosystem	3 cr

One of the following (3 cr):

REM 221	Principles of Ecology	3 cr
NR 321	Ecology	3 cr

One of the following (3 cr):

FOR 324	Forest Regeneration	3 cr
FOR 326	Fire Ecology and Management	3 cr
LARC 480	The Resilient Landscape	3 cr
PLSC 338	Weed Control	4 cr
PLSC 410	Invasive Plant Biology	3 cr
PLSC 419	Plant Community Restoration Methods	3 cr
REM 429	Landscape Ecology	3 cr
REM 450	Global Environmental Change	3 cr
SOIL 438	Pesticides in the Environment	3 cr
SOIL 454	Pedology	3 cr
WLF 440	Conservation Biology	3 cr

Courses to total 16 credits for this certificate

Distance Education: 50% or more of curricular requirements cannot be completed via distance

Geographical Area: Moscow

Rationale: We added NR321 as an alternative to REM221 because it is distance accessible. We added PLSC 419 to the electives because it is a new course that focuses on restoration. The changes do not add to the departmental workload.

NATURAL RESOURCES

1. Make the following curricular changes to the **Major in Ecology and Conservation Biology** (B.S.Ecol.Cons.Biol.):

Required course work includes the university requirements (see regulation J-3) and:

BIOL 114	Organisms and Environments	4 cr
BIOL 115	Cells & the Evolution of Life	3 cr
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr
BIOL 213	Principles of Biological Structure and Function	4 cr
COMM 101	Fundamntls Public Speaking	2 cr
ENGL 317	Technical Writing	3 cr
FOR 235	Society and Natural Resources	3 cr
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
NR 101	Exploring Natural Resources	2 cr
NR 200	Seminar	1-16 cr
NR 300	Ecology and Conservation Biology Thesis Seminar	1 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
STAT 251	Statistical Methods	3 cr

One of the following (3 cr):

ENGL 317	Technical Writing	3 cr
WLF 270	Management and Communication of Scientific Data	3 cr

One of the following (4 cr):

CHEM 101	Introduction to Chemistry I	4 cr
CHEM 111	Principles of Chemistry I	4 cr

One of the following (3-4 cr):

ECON 202	Principles of Microeconomics	3 cr
ECON 272	Foundations of Economic Analysis	4 cr

One of the following (3-4 cr):

BIOL 314	Ecology and Population Biology	4 cr
FOR 221	Principles of Ecology	3 cr

One of the following (4 cr):

MATH 160	Survey of Calculus	4 cr
MATH 170	Analytic Geometry and Calculus I	4 cr

One of the following (3-4 cr):

FOR 320	Dendrology	4 cr
REM 341	Systematic Botany	3 cr

Choose one of the following (1 cr):

FISH 473	ECB Senior Presentation	1 cr
FOR 473	ECB Senior Presentation	1 cr
NRS 473	ECB Senior Presentation	1 cr
REM 473	ECB Senior Presentation	1 cr
RMAT 473	ECB Senior Presentation	1 cr
WLF 473	ECB Senior Presentation	1 cr

Choose one of the following (3 cr):

FISH 485	Ecology and Conservation Biology Senior Project	1-3 cr - Max 3 cr
FISH 497	Senior Thesis	1-3 cr - Max 6 cr
FOR 497	Senior Thesis	1-4 cr - Max 98 cr
NR 497	Senior Thesis	1-3 cr - Max 3 cr
REM 497	Senior Research and Thesis	1-16 cr
WLF 497	Senior Thesis	1-3 cr - Max 6 cr

And one of the following options:**A. Natural Resources Ecology Option**

...

B. Conservation Biology Option

To graduate in this option, students must achieve a "C" or better in the following seven core courses: BIOL 421, NR 200, REM 429, PHIL 452, WLF 440, and WLF 448.

BIOL 421	Advanced Evolution/Population Dynamics	3 cr
PHIL 452	Environmental Philosophy	3 cr
REM 429	Landscape Ecology	3 cr
WLF 440	Conservation Biology	3 cr
WLF 448	Fish and Wildlife Population Ecology	4 cr

One of the following (3 cr):

BIOL 310	Genetics	3 cr
GENE 314	General Genetics	3 cr

One of the following (3 cr):

ENVS 225	International Environmental Issues	3 cr
NRS 493	International Land Preservation and Conservation Systems	3 cr
REM 450	Global Environmental Change	3 cr

Quantitative Resource Analysis Restricted Electives**One course from the following:**

FOR 472	Remote Sensing of the Environment	4 cr
GEOG 385	GIS Primer	3 cr
NRS 310	Social Science Methods	4 cr
REM 410	Principles of Vegetation Measurement	2 cr
REM 411	Wildland Habitat Ecology and Assessment	2 cr
STAT 422	Survey Sampling Methods	3 cr
STAT 431	Statistical Analysis	3 cr

REM 410, REM 411: Both REM 410 and REM 411 must be completed to satisfy Quantitative Resource Analysis Restricted Elective requirement.

Resource Management Restricted Electives**One course from the following:**

FISH 418	Fisheries Management	4 cr
FOR 424	Silviculture Principles and Practices	4 cr
FOR 462	Watershed Science and Management	3 cr
NRS 386	Social-Ecological Systems	3 cr
NRS 490	Wilderness and Protected Area Management	3 cr
NRS 496	Monitoring Impacts in Protected Areas and Wilderness	3 cr
REM 456	Integrated Rangeland Management	3 cr
WLF 492	Wildlife Management	4 cr

Ecology Restricted Electives (6 cr):

(At least 2 credits from FISH 315, FISH 415, FISH 430, REM 460, and/or WLF 315)

BIOL 478	Animal Behavior	3 cr
ENT 469	Introduction to Forest Insects	2 cr

FISH 314	Fish Ecology	3 cr
FISH 315	Fish Ecology Lab	1 cr
FISH 415	Limnology	4 cr
FISH 430	Riparian Ecology and Management	3 cr
FOR 330	Forest Soil and Canopy Processes	4 cr
FOR 326	Fire Ecology and Management	3 cr
FOR 468	Forest and Plant Pathology	2 cr
GEOG 410	Biogeography	3 cr
PLSC 410	Invasive Plant Biology	3 cr
REM 440	Wildland Restoration Ecology	3 cr
REM 459	Rangeland Ecology	2 cr
REM 460	Integrating GIS and Field Studies in Rangelands	2 cr
WLF 314	Ecology of Terrestrial Vertebrates	3 cr
WLF 315	Techniques Laboratory	2 cr

Organismal Biology Restricted Elective

One course from the following:

BIOL 483	Mammalogy	3 cr
BIOL 489	Herpetology	4 cr
FISH 481	Ichthyology	4 cr
WLF 482	Ornithology	4 cr

Social/Political Restricted Electives

One course from the following:

COMM 410	Conflict Management	3 cr
FOR 484	Forest Policy and Administration	2 cr
GEOG 420	Land, Resources, and Environment	3 cr
HIST 424	American Environmental History	3 cr
NRS 387	Environmental Communication Skills	3 cr
NRS 462	Natural Resource Policy	3 cr
NRS 311	Public Involvement in Natural Resource Management	3 cr
POLS 364	Politics of the Environment	3 cr

Courses to total 120 credits for this degree

2. Make the following curricular changes to the **Major in Natural Resources (M.N.R.)**:

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

~~The Master of Natural Resources (MNR) is an interdisciplinary course-based graduate program designed for mid- and executive-level 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 — ecological, the human dimension, planning, policy and law, and practical tools — 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 consists of 30 semester credits (five credits from each of four MNR program categories — Ecology & Management, Law, Human~~

~~Dimensions, Policy, Planning, and Tools & Technology, eight elective course credits from the MNR curriculum, and two credits for a case study project). Up to 12 semester credits can be transferred into the program from other institutions. General MNR requirements apply.~~

~~The MNR program can be combined with two different certificate programs specializing in restoration ecology and fire science. Admission to the College of Graduate Studies requires a minimum graduate point average (GPA) of 3.0, three letters of reference, and the Graduate Record Examination (GRE).~~

~~Complete admission and degree information available online at www.MyMNR.net. Coursework must include a minimum of 18 credits numbered 500 or above.~~

~~**A minimum of five credits from each of the four categories below (20 cr):**~~

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 various perspectives – ecology; 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 Integrated Natural Resources Option of 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 7 elective course credits and 2 credits for a final project). 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 graduate point average (GPA) of 3.0, 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/master-of-natural-resources>.

A minimum of seven credits from each of the three categories below (21 cr):

Ecology and Management (minimum of 7 cr)

BE 450	Environmental Hydrology	3 cr
FISH 540	Wetland Restoration	3 cr
FOR 426	Global Fire Ecology and Management	3 cr
FOR 526	Fire Ecology	3 cr
REM 440	Wildland Restoration Ecology	3 cr
REM 459	Rangeland Ecology	2 cr
REM 560	Ecophysiology	3 cr
<u>FISH 515</u>	<u>Large River Fisheries</u>	<u>2 cr</u>

FISH 525	Aquaculture in Relation to Wild Fish Populations	2 cr
REM 456	Integrated Rangeland Management	3 cr
WLF 440	Conservation Biology	3 cr
REM 507	Landscape and Habitat Dynamics	3 cr

~~FOR 426, FOR 526: Either FOR 426 or FOR 526 may be used to satisfy the requirements of this degree.~~ [*REM 507 Landscape and Habitat Dynamics can be used to contribute to either the Ecology and Management requirement–OR- the Tools and Technology requirement \(but not both\).](#)

Human Dimensions in Natural Resources

Policy, Planning, and Society (minimum of 7 cr)

NRS 572	Human Dimensions of Restoration Ecology	3 cr
ENVS 536	Principles of Sustainability	3 cr
ENVS 552	Environmental Philosophy	3 cr
NR 507	Moral Reasoning in Natural Resources	3 cr

Policy, Planning, and Law

NRS 573	Planning & Decision Making for Watershed Management	3 cr
NRS 574	Environmental Politics and Policy	3 cr
NRS 580	Restoration Ecology Practicum	2 cr
FOR 584	Natural Resource Policy Development	3 cr
FOR 587	Wildland Fire Policy	2 cr
REM 456	Integrated Rangeland Management	3 cr
FOR 546	Science Synthesis and Communication	3 cr
FOR 554	Air Quality, Pollution, and Smoke	3 cr

[*FOR 554/ 454 Air Quality, Pollution, and Smoke can be used to contribute to either the Policy, Planning, and Society requirement –OR- the Tools and Technology requirement \(but not both\).](#)

Tools and Technology (minimum of 7 cr)

BUS 552	Management of Scientific Innovation	3 cr
NRS 593	PR and Communications in Natural Resource Management	3 cr
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	3 cr
NR 525	Scientific Graphics Design	3 cr
POLS 553	Public Management Techniques	3 cr
REM 410	Principles of Vegetation Measurement	2 cr
REM 507	Landscape and Habitat Dynamics	3 cr
REM 407/ REM 510	GIS Application in Fire Ecology and Management	2 cr
NRS 580	Restoration Ecology Practicum	2 cr
FOR 451	Fuels Inventory and Management	3 cr
NRS 592	Emerging Media Outreach in Natural Resources	3 cr
WLF 540	Conservation Genetics	1-3 cr
WLF 561	Landscape Genetics	2 cr

Elective Courses (~~8~~minimum of 7 cr):

Electives or additional courses from categories above~~from the MNR Curriculum~~

78 cr**~~Case Study~~ Final Project (2 cr):**~~Case Study Project~~

2-cr

NR 599Non-thesis Research1-16 cr**Courses to total 30 credits for this degree****Master of Natural Resources. Major in Natural Resources. Environmental Education and Science Communication Option.**

...

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

~~The Master of Natural Resources (MNR) is an interdisciplinary course-based graduate program designed for mid- and executive-level 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 – ecological, the human dimension, planning, policy and law, and practical tools – 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. General MNR requirements apply.~~

~~The MNR program can be combined with two different certificate programs specializing in restoration ecology and fire science. Admission to the College of Graduate Studies requires a minimum graduate point average (GPA) of 3.0, three letters of reference, and the Graduate Record Examination (GRE).~~

~~Complete admission and degree information available online at www.MyMNR.net. Coursework must include a minimum of 18 credits numbered 500 or above.~~

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 various perspectives – ecology; 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 science.

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 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; with 2 credits of non-thesis research for a final project). Up to 12 semester credits can be transferred into the program from other institutions. Admission to the College of Graduate Studies requires a minimum graduate point average (GPA) of 3.0, three letters of reference, and a statement of purpose. Coursework must include a minimum of 18 credits numbered 500 or above.

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

Fire Science and Management Core Courses: A minimum of 15 credits (15~~14~~ cr):

FOR 426	Global Fire Ecology and Management	3 cr
FOR 451	Fuels Inventory and Management	3 cr
FOR 526	Fire Ecology	3 cr
FOR 546	Science Synthesis and Communication	3 cr
FOR 557	Advanced Fire Behavior	3 cr
FOR 587	Wildland Fire Policy	2 cr
NR 599	Research	1-16 cr

~~FOR 426, FOR 526: Either FOR 426 or FOR 526 may be used to satisfy the requirements of this degree.~~

Ecology and Management Course Group (minimum of 2-3 cr):

REM 440	Wildland Restoration Ecology	3 cr
REM 459	Rangeland Ecology	2 cr
REM 507	Landscape and Habitat Dynamics	3 cr

*REM 507 Landscape and Habitat Dynamics can be used for either the Ecology requirement –OR– the Tools and Technology requirement (but not both).

Tools and Technology Course Group (minimum of 4 cr):

REM 407	GIS Application in Fire Ecology and Management	2 cr
<u>REM 510</u>	<u>GIS Application in Fire Ecology and Management</u>	<u>2 cr</u>
REM 410	Principles of Vegetation Measurement	2 cr
REM 411	Wildland Habitat Ecology and Assessment	2 cr

Policy, Planning, and Society Law Course Group (minimum of 6 3 cr):

NRS 573	Planning & Decision Making for Watershed Management	3 cr
FOR 584	Natural Resource Policy Development	3 cr

Human Dimensions Course Group (3 cr):

NRS 572	Human Dimensions of Restoration Ecology	3 cr
ENVS 536	Principles of Sustainability	3 cr
NR 507	Moral Reasoning in Natural Resources	3 cr
<u>FOR 454</u>	<u>Air Quality, Pollution, and Smoke</u>	<u>3 cr</u>

[FOR 554](#) [Air Quality, Pollution, and Smoke](#)

[*FOR 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 \(but not both\).](#)

[Final Project \(2 cr\):](#)

[NR 599](#) [Non-Thesis Research](#)

[1-16 cr](#)

Additional [elective](#) graduate courses to total [a minimum of 30 credits](#) (~~2-3 cr~~)

Courses to total 30 credits for this degree

Distance Education: 100% of requirements can be completed via distance

Geographical Area: Anywhere access to the worldwide web is available

Rationale: (Integrated Option) The MNR faculty voted to remove the original “case study” project descriptor in order to allow for a broader interpretation of the final, culminating experience for students. This enables faculty to work with students to determine the type of project that would be of greatest value to a particular student’s career aspirations. We are therefore requesting that “case study” be replaced with “final” to allow for greater flexibility.

The MNR faculty also voted to remove the GRE requirement, as the faculty does not believe this exam reflects whether students are prepared to be successful in the program; this is also consistent with the Environmental Science MS degree program. In addition, a “statement of purpose” requirement is included in the list of requirements for admission, to maintain consistency with the Office of Graduate Admissions.

The MNR degree program is also relevant and designed for aspiring professionals, not only “mid- and executive level professionals”. We therefore propose changing the phrase to read, “current and aspiring professionals”.

The Restoration Ecology Certificate program has been discontinued, so we also request that mention of the Restoration Ecology Certificate be removed.

The myMNR.net website will no longer be active after Fall of 2017. We have updated the new, permanent, web address for the program.

Previously, the “elective” credits were to be selected “from the MNR curriculum”. The faculty would like these electives to include any and all courses the Advisor and the student identify as relevant to the student’s coursework. Therefore, we wish to remove the phrase “from the MNR curriculum”.

Additionally, we seek to update the current course offerings to incorporate relevant new courses that have been developed since the program was created, and to remove courses no longer being taught consistently. Also, to better reflect the faculty’s current perception of “Human Dimensions” as a field of study, we wish to combine the existing “Human Dimensions” and “Policy, Planning, and Law” bins into one bin called, “Policy, Planning, and Society”. This more accurately reflects the faculty’s desired emphasis for this group of courses. As such, we wish to change the credit requirements as shown

above. The overall effect is that at least 21 credits are to be selected from within categories, with seven additional elective credits and two credits for the final project. (fire option) The Master of Natural Resources graduate program has three options, and each option requires a 2 credit non-thesis research project which serves to culminate the learning expectations of the degree. When the Fire Ecology and Management option was established the intent was to require such a non-thesis research project. However, the first bin of electives did not make this clear nor is it specifically explained in the description text. This proposed change seeks to make the text clear and in line with the other MNR options.

The MNR faculty voted to remove the original “case study” project descriptor in order to allow for a broader interpretation of the final, culminating experience for students. This enables faculty to work with students to determine the type of project that would be of greatest value to a particular student’s career aspirations. We are therefore requesting that “case study” be replaced with “final” to allow for greater flexibility.

The MNR faculty also voted to remove the GRE requirement, as the faculty does not believe this exam reflects whether students are prepared to be successful in the program; this is also consistent with the Environmental Science MS degree program. In addition, a “statement of purpose” requirement is included in the list of requirements for admission, to maintain consistency with the Office of Graduate Admissions.

The MNR degree program is also relevant and designed for aspiring professionals, not only “mid- and executive level professionals”. We therefore propose changing the phrase to read, “current and aspiring professionals”.

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NATURAL RESOURCES AND SOCIETY

1. Add the following courses:

NRS 592 Emerging Media Outreach in Natural Resources (3 cr)

This course introduces students to basic media skills in photography, audio, video, microblogging, social media, content management, basic coding — and blog on a topic of their choice. Students also will

explore and share their field experience through a variety of media, and will engage and examine social media uses for advertising, marketing and public relations outreach in natural resources.

Available via distance: Yes

Geographical Area Availability: Online

Rationale: This course has been offered successfully online during the summer as a special topics graduate course in the College of Natural Resources and provides an opportunity for media application experience for graduate students. Because it is typically offered as a summer online course, it will not add to the existing workload of faculty.

2. Change the following courses:

NRS 506 Fundamentals of Research (42 cr)

Research approaches, designs, and methods [ologies](#) as applied in [biophysical and social science](#) natural resources, ~~leisure, and tourism~~ professions. [Cooperative: open to WSU degree-seeking students.](#) ~~(Fall only)~~

Prereq: Basic Statistics

Available via distance: No

Geographical Area Availability: Moscow

Rationale: Course is being reduced from 4 to 2 credits to expedite and focus attention on the most important aspects of research design. A reduction in credits will also increase student enrollment and allow for expedited instruction as warranted.

3. Make the following curricular changes to the **Natural Resource Conservation Major** (B.S.Nat. Resc.Consv.):

Required Course work includes the university requirements (see regulation J-3) and:

NRS 125	Introduction to Conservation and Natural Resources	3 cr
NRS 235	Society and Natural Resources	3 cr
NRS 310	Social Science Methods	4 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
NRS 387	Environmental Communication Skills	3 cr
ECON 202	Principles of Microeconomics	3 cr
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
NR 101	Exploring Natural Resources	2 cr
STAT 251	Statistical Methods	3 cr
FOR 221	Principles of Ecology	3 cr
NRS 498	Internship	1-6 cr

One of the following (3-4 cr):

MATH 143	Pre-calculus Algebra and Analytic Geometry	3 cr
MATH 160	Survey of Calculus	4 cr
MATH 170	Analytic Geometry and Calculus I	4 cr

And one of the following emphases:**A. Conservation Planning and Management Emphasis**

To graduate a student must earn an average GPA 2.30 or higher in all NRS courses.

NRS 311	Public Involvement in Natural Resource Management	3 cr
NRS 364	Politics of the Environment	3 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
NRS 411	Environmental Project Management and Decision Making	4 cr
NRS 462	Natural Resource Policy	3 cr
NRS 475	Conservation Planning and Management	4 cr
NRS 498	Internship	1-16 cr
PSYC 101	Introduction to Psychology	3 cr
SOC 101	Introduction to Sociology	3 cr

One of the following (4 cr):

BIOL 102	Biology and Society AND	3 cr
BIOL 102L	Biology and Society Lab	1 cr
BIOL 115	Cells & the Evolution of Life AND	3 cr
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr

One of the following (2-4 cr):

COMM 101	Fundamntls Public Speaking OR	2 cr
	One semester of a foreign language course	3-4 cr

One of the following (3 cr):

ENGL 207	Persuasive Writing	3 cr
ENGL 208	Personal & Exploratory Writing	3 cr

One of the following (3 cr):

ENGL 313	Business Writing	3 cr
ENGL 316	Environmental Writing	3 cr
ENGL 317	Technical Writing	3 cr
ENGL 322	Environmental Literature and Culture	3 cr

One of the following (3 cr):

ENVS 225	International Environmental Issues Seminar	3 cr
IS 322	International Environmental Organizations	3 cr

One of the following (3 cr):

AGEC 477	Law, Ethics and the Environment	3 cr
ENVS 479	Introduction to Environmental Regulations	3 cr

NRS 386	Social-Ecological Systems	3 cr
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One of the following (3 cr):

POLS 101	Introduction to Political Science and American Government	3 cr
POLS 275	American State and Local Government	3 cr

One of the following (4 cr):

CHEM 101	Introduction to Chemistry I	4 cr
CHEM 111	Principles of Chemistry I	4 cr
GEOL 101	Physical Geology AND	3 cr
GEOL 101L	Physical Geology Lab	1 cr

One of the following (3-4 cr):

NRS 472/ FOR 472	Remote Sensing of the Environment	4 cr
FOR 435	Remote Sensing of Fire	3 cr
NRS 440/ REM 440	Wildland Restoration Ecology	3 cr

One of the following (6-83-4 cr):

BIOL 314	Ecology and Population Biology	4 cr
FOR 326	Fire Ecology and Management	3 cr
NRS 472	Remote Sensing of the Environment	4 cr
REM 429	Landscape Ecology	3 cr
REM 340	Ethnobotany	2 cr
REM 440	Wildland Restoration Ecology	3 cr
NRS 450/ REM 450	Global Environmental Change	3 cr
REM 459	Rangeland Ecology AND	2 cr
REM 460	Integrating GIS and Field Studies in Rangelands	2 cr
WLF 440	Conservation Biology	3 cr

Contract Courses (12-18 cr)

Students must submit a contract for a minimum of 12 credits, completed through prior consultation and approval from the faculty advisor. Courses taken to fulfill major requirements above cannot be double counted for contract courses. All contract courses must be upper division (University of Idaho 3xx, 4xx, or 5xx level courses).

Students may fulfill their contract requirement by completing a University approved minor, certificate, or approved study abroad experience. Students are encouraged to make choices that strengthen their

expertise and demonstrate proficiency in an area of professional interest. See the University of Idaho General Catalog for a list of approved minors and certificates (<http://www.uidaho.edu/registrar/classes/catalogs>).

Courses to total 120 credits for this degree

B. Conservation Science Emphasis

To graduate a student must earn an average GPA of 2.00 or higher in all courses taught in the College of Natural Resources and complete an approved professional work experience in natural resources.

[NRS 311](#) [Public Involvement in Natural Resource Management](#) [3 cr](#)

One writing course, such as (3 cr):

ENGL 207	Persuasive Writing	3 cr
ENGL 208	Personal & Exploratory Writing	3 cr
ENGL 313	Business Writing	3 cr
ENGL 316	Environmental Writing	3 cr
ENGL 317	Technical Writing	3 cr

One of the following (3-4 cr):

NRS 411	Environmental Project Management and Decision Making	4 cr
NRS 475	Conservation Planning and Management	4 cr
NRS 490	Wilderness and Protected Area Management	3 cr

One of the following (4 cr):

CHEM 101	Introduction to Chemistry I	4 cr
CHEM 111	Principles of Chemistry I	4 cr

One of the following (4 cr):

BIOL 114	Organisms and Environments	4 cr
BIOL 115	Cells & the Evolution of Life	3 cr
	AND	
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr

One of the following (3 cr):

NRS 364	Politics of the Environment	3 cr
NRS 462	Natural Resource Policy	3 cr

Natural Resource Science Restricted Electives (33 cr)

At least 15 cr from the following groups must be at the 400-level:

Fishery Science (6 cr):

FISH 314	Fish Ecology	3 cr
FISH 315	Fish Ecology Lab	1 cr
FISH 415	Limnology	4 cr

FISH 418	Fisheries Management	4 cr
FISH 422	Concepts in Aquaculture	4 cr
FISH 424	Fish Health Management	4 cr
FISH 430	Riparian Ecology and Management	3 cr

Fire Ecology and Management (2-3 cr):

FOR 326	Fire Ecology and Management	3 cr
FOR 433	Fire and Fuel Modeling	2 cr
FOR 450	Fire Behavior	2 cr
FOR 454	Air Quality, Pollution, and Smoke	3 cr

Forestry and Renewable Materials (69 cr):

FOR 275	Forestry Resource Sampling	2 cr
FOR 320	Dendrology	4 cr
FOR 324	Forest Regeneration	3 cr
FOR 330	Forest Soil and Canopy Processes	4 cr
FOR 424	Silviculture Principles and Practices	4 cr
FOR 425	Forest and Soil Nutrient Cycling	3
FOR 430	Forest Operations	3 cr
FOR 431	Low Volume Forest Roads	2 cr
FOR 436	Cable Systems	2 cr
FOR 462	Watershed Science and Management	3 cr
FOR 468	Forest and Plant Pathology	2 cr
FOR 472	Remote Sensing of the Environment	4 cr

Renewable Materials (6 cr):

RMAT 321	Properties of Renewable Materials	3 cr
RMAT 436	Biocomposites	3 cr
RMAT 438	Introduction to Lignocellulosic Chemistry	1 cr
RMAT 444	Primary Products Manufacturing	3 cr
RMAT 450	Biomaterials Deterioration and Protection	2 cr
RMAT 491	Biomaterial Product and Process Development Lab	2 cr
RMAT 495/ MKTG 495	Product Development and Brand Management	3 cr

Rangeland Ecology and Management (6 cr):

REM 341	Systematic Botany	3 cr
REM 410	Principles of Vegetation Measurement	2 cr
REM 411	Wildland Habitat Ecology and Assessment	2 cr
REM 440	Wildland Restoration Ecology	3 cr
REM 452	Western Wildland Landscapes	2 cr
REM 456	Integrated Rangeland Management	3 cr
REM 459	Rangeland Ecology	2 cr
REM 460	Integrating GIS and Field Studies in Rangelands	2 cr

Wildlife Science (6 cr):

WLF 314	Ecology of Terrestrial Vertebrates	3 cr
WLF 315	Techniques Laboratory	2 cr
WLF 440	Conservation Biology	3 cr

WLF 448	Fish and Wildlife Population Ecology	4 cr
WLF 482	Ornithology	4 cr
WLF 492	Wildlife Management	4 cr

Courses to total 120 credits for this degree

Distance Education: 50% or more of curricular requirements cannot be completed via distance

Geographical Area: Moscow

Rationale: NRS recently underwent a large shift of faculty joining the department with geospatial and ecological expertise. By incorporating the spatial and ecological courses that are taught by NRS faculty into a restrictive electives bin, it will expose students to the full breadth of our faculty expertise, increase student awareness and skills in the geospatial and ecological sciences, and support learning objectives that facilitate students working in cross-disciplinary teams to solve problems within social-ecological systems using sound scientific and management approaches.

In addition, we noticed an error in the 2017-18 catalog where only “One of the following” courses was listed as a requirement to satisfy 6-8 credit requirements. Having two restricted electives bins with one course each solves this discrepancy.

Conservation Science Track:

NRS 311- need to add this because we already require NRS 411 in this option, and 311 is a prerequisite

NRS 498- rationale is to get all NRC majors an internship experience regardless of option due to strategic plan need for high-impact practices for undergraduates

WLF 220- needed because it is now cross listed with FOR/REM221.

RMAT course reconfiguration in the degree program- because we needed to add the 311 prerequisite course to our curriculum (3 cr), we needed to reduce the number of credits in the electives bins. Through our experience we have found that many students lack the prerequisites to take upper level RMAT coursework. Therefore we have combined the RMAT bin with the Forestry bin, and required 9 credits to be taken from that combined bin (rather than 12 credits across the two former RMAT and Forestry bins).

No additional workload is needed to implement these changes.