Warnell School of Forestry and Natural Resources

University of Georgia

2022-23 Program Review and Assessment

Self-Study

October 1, 2022

UNIVERSITY OF GEORGIA

Warnell School of Forestry & Natural Resources

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Unit Overview of the Warnell School of Forestry and Natural Resources

The Warnell School's mission is to prepare leaders in the conservation and sustainable management of forests and other natural resources; to discover ways to restore and better use the earth's natural resources; and to put into practice forestry and natural resources knowledge. The Warnell School is committed to providing teaching, research, and outreach activities related to the conservation and management of natural resources. Faculty and staff members are highly respected and influential experts in disciplines such as fisheries and wildlife science, forestry, geospatial information technologies, natural resource management, outdoor recreation and tourism, soil and water resources, and sustainability science. Warnell offers a variety of degrees including a Bachelor of Science, Master of Science, Master of Forest Resources, Master of Natural Resources, and Doctor of Philosophy. With approximately 250 undergraduates and 220 graduate students, Warnell provides training for careers across the spectrum of sustainable natural resources management and conservation. Warnell alumni are highly successful and include CEO's of industry-leading organizations as well as top administrators of important government agencies focused on natural resources.

A. Summary of Undergraduate Programs

Warnell's undergraduate instructional goals are built around a professional program that leads to a Bachelor of Science in Forest Resources (BSFR). Undergraduates typically enter the professional program in their second or third year after completing five required UGA core courses, and then complete an additional 60 credit hours within one of four Warnell majors: Fisheries and Wildlife, Forestry, Natural Resource Management and Sustainability (NRMS), and Parks Recreation and Tourism Management (PRTM). Over half of all Warnell professional students are transfers from other institutions. Students in the Fisheries and Wildlife major choose one of three areas of emphasis: Aquatic Science, Wildlife Science, or Pre-Veterinary Wildlife Science. The Forestry major is accredited by the Society of American Foresters. Students in NRMS choose from one of three areas of emphasis: Community Forestry and Arboriculture, Geospatial Information Science, or Water and Soil Resources. In recent years, undergraduate enrollment has declined from around 300 to around 250; however, the retention rate has remained very high, ranging from 93-95% annually.

The Warnell School provides numerous resources to support undergraduate students. The School distributes over $250,000 in scholarship annually, and approximately 20% of students in the professional program receive a Warnell scholarship. Additionally, an emergency fund was recently created to assist Warnell students facing financial difficulty. Furthermore, undergraduates have access to a dedicated Student Services team of support staff who assist with student life activities and academic development. Warnell has a central advisor who, along with faculty mentors, provides guidance to students. The School also has a Writing Instructor who works with multiple courses in addition to individual students. The School recently added a Data Literacy Instructor to the faculty to help students better understand data collection, analysis, interpretation and communication. Finally, there are many opportunities for students to get involved in faculty research labs, where they gain valuable technical experience, develop communication skills, and enhance their professional networks.

B. Summary of Graduate Programs

The Warnell School offers four graduate degrees that provide flexibility for students pursuing research, diversification, specialization, and further professional development. The Master of Forest Resources (MFR) and Master of Natural Resources (MNR) are non-thesis master's degrees. The MFR has two areas of emphasis- Forestry and Forest Business, both of which are accredited by the Society of American Foresters. The Master of Science in Forestry and Natural Resources is a traditional research- (i.e., thesis) based master's degree. The Doctor of Philosophy in Forestry and Natural Resources is a traditional research- (i.e., dissertation) based doctoral degree. Students may choose to further specialize via several areas of emphasis within these degree programs. Students can jointly enroll in three interdisciplinary graduate programs at UGA, the Interdisciplinary Toxicology Program (MS and PhD), the Integrated Plant Sciences Program (MS and PhD), and the Integrative Conservation Program (PhD). Since the last PRAC review, Warnell graduate student enrollment has grown approximately 20%, to approximately 220 currently. Enrollment has increased for all four degrees, but the non-thesis programs (MFR and MNR) have increased most, with nearly a 30% increase since the last PRAC review. Additionally, approximately 75% of Warnell graduate students are supported on assistantships funded by grants or School funds, including approximately $1M annually from the US Department of Agriculture McIntire-Stennis Cooperative Forestry Program.

C. Significant Changes in the Unit Programs Since Previous Review

The previous review of Warnell School programs was completed in academic year 2014-15. Since that time, there have been several School-wide and program-specific changes.

School-wide changes: In 2015, the Warnell School named the current Dean, Dr. Dale Greene, who had served on the faculty since his hire in 1986. Other key administrative leadership in the school has changed since 2015 as well, including Associate Deans for all three mission areas (academic affairs, research, and outreach), the Assistant Dean for Student Affairs, and the Graduate Coordinator, as well as the director of the Center for Forest Business. In addition, nearly half (31) of the 68 faculty and many of the staff have been hired since the last review. Finally, new faculty appointments since 2014 have changed from 12-month (fiscal year) appointments to 9-month (academic year) appointments.

Program-specific changes:

Undergraduate: The Warnell School terminated the Water and Soil Resources major in 2016 and simultaneously created a new major in Natural Resources Management and Sustainability, which has three areas of emphasis: Community Forestry and Arboriculture, Geographic Information Systems, and Water and Soil Resources. In 2017, the name of the major in Natural Resources Recreation and Tourism was changed to Parks, Recreation, and Tourism Management. The school established five new Double Dawgs pathways and created a certificate in Environmental Education. In 2021 faculty thoroughly revised the Student Learning Outcome Assessment Plans for all four undergraduate majors. Finally, entrance requirements for the Professional Program were reduced from completing all 60 hours of the UGA core, to completion of four or five specific courses, depending on the major.

Graduate: In 2019, the name of the MS degree was changed from MS in Forest Resources to MS in Forestry and Natural Resources to reflect the nature of the degree more accurately. Similarly, the name of the PhD degree was changed from PhD in Forest Resources to PhD in Forestry and Natural Resources.

Faculty established 17 new areas of emphasis under the four graduate degrees to allow students to formally identify their disciplinary training. Finally, faculty voted to remove the requirement for GRE test scores for admission to Warnell graduate programs.

D. Major Accomplishments

Since the completion of the prior program review in 2014-15, the Warnell School has had several major accomplishments including:

1. Successful reaccreditation of the BSFR in Forestry and MFR programs by the Society of American Foresters.
2. Increased graduate program enrollment from approximately 185 to approximately 220 students, nearly a 20% increase.
3. Increased annual external research funding over 36% to more than $12 million, with a 49% increase in federal funding.
4. 31% increase in publication of refereed journal articles.
5. Established 9 new endowed professorships and distinguished professorships.
6. Created new fellowships ($2,000 - $3,200) to enhance recruitment of top-tier graduate students. Over $63,500 was awarded to a total of 24 MS and PhD students in 2022.
7. Created a five-year Strategic Plan (see Appendix A), as well as a draft Strategic Plan for Diversity and Inclusive Excellence.
8. Established a Warnell Student Emergency Fund (approx. $20,000 in 2022)
9. Hired 32 new faculty members, over 45% of current Warnell faculty
10. Increased the percentage of female faculty from 12.5% in 2014 to 19.4% in 2022.
11. Completed major revision of Student Learning Outcome Assessment Plans for all four undergraduate majors.
12. Renovation of all instructional space, including audio visual equipment, desks, and carpet, paint and lighting.

E. Faculty Indicators of Quality

The strengths of Warnell faculty contribute directly to the quality of the degree programs in the school by bringing cutting edge knowledge and advances in research directly into the classroom. These strengths are demonstrated by the high levels of performance in publication, professional service, external funding, and research recognition awards as detailed below.

Warnell faculty members across all disciplines have been very productive over the last seven years. There has been a 31% increase in the number of refereed journal articles published by faculty between FY15-21, with many of these published in top quartile journals. Over the last three years, Fisheries and Wildlife faculty have published an average of 45 refereed journal articles per year in top quartile journals; Forestry 33 per year; NRMS 16.3 per year; and PRTM 10.7 per year. This includes publication in top tier journals such as Science, Nature, Global Change Biology, Biological Reviews, Emerging Infectious Diseases, and Tourism Management, among many others. Warnell faculty are also very active in presenting their research across a wide variety of forums, ranging from international to local, making an average of 207 international-level and 135 national-level presentations per year between FY15-21. Many Warnell faculty also serve as editors in leading journals and have leadership roles in professional societies from the regional to the international level.

Warnell faculty have also produced a considerable increase in the amount of external research funds over the past seven years, with a 49% increase in federal research funds and a 36% increase in other extramural funds between FY15-21. This has been accompanied by a 30% increase in the amount of external funding per research EFT. The number of external research proposals submitted by Warnell faculty during this time has increased by 28%, with an average funding success rate of 58%. In the last five years, faculty have received an average of 100 new grant awards per year.

Warnell faculty have received numerous prestigious awards in recognition of their research and scholarly activity, ranging from UGA research awards to international society awards and fellowships. In the last seven years, Warnell faculty have been awarded 1 Creative Research Award, 3 Creative Research Medals, and 4 Early Career Scholar Awards from UGA. Prestigious external awards include the Newcomb Cleveland Prize (the top award given by AAAS for a publication in Science), the AAVP-William C. Campbell One-Health Award, two Fulbright Scholar awards, two NSF CAREER Awards, and the selection of several faculty as Elected Fellows of the AAAS, Ecological Society of America, American Fisheries Society, Linnean Society of London, and American Ornithological Society. Faculty have also received numerous awards in recognition of their work from federal agencies and professional societies, with at least 17 top awards in the last seven years.

F. Facilities

The Warnell School of Forestry and Natural Resources is located in a complex of four buildings on campus. In total, these four buildings provide 16,028 sq. ft. of classroom space, 17,231 sq. ft. of lab space, and 24,660 sq. ft. of office space.

In addition to Warnell's on-campus facilities, the School's programs are supported by research and instructional labs and offices at Whitehall Forest and other locations throughout the state. The following labs and facilities are located within the 750-acre Whitehall Forest:

- Phillips Laboratory & greenhouse – Built in 1993, the Phillips lab (19,180 sq. ft.) is a state-of-the-art analytical chemistry and greenhouse facility for plant, soil and water analyses including sample preparations, digestions, cations, anions, and total nutrients.
- Fisheries Laboratory – The Whitehall fisheries laboratory (9,822 sq. ft.) houses state- of-the-art equipment for fisheries ecology and management research.
- Aquatic Biotechnology and Environmental Laboratory (ABEL) – Completed in 2001, the 8,500-sqare-foot facility (funded by the Georgia Research Alliance) provides for the culture of both marine and freshwater animals along with offices, conference room, and state-of the-art environmental toxicology and aquaculture laboratories under one roof.
- White-tailed Deer Pens & Captive Deer Herd – The current facility, built in 1985 and expanded in 1996, consists of a 19-stall barn (3,080 sq. ft.) and five large outside pens that encompass 6.5 acres.

The Warnell School also manages 22,164 acres of state (Board of Regents) or private (University of Georgia Foundation) lands. The properties are located throughout the state and are representative of the many forest types and many unique habitats located in the state. These lands support the teaching, research, and outreach functions of the school, as well as provide a source of additional income to the School. Of note:

- The Mary Kahrs Warnell Forest Education Center is located within the 1,900-acre Dorothy Warnell Research, Education and Demonstration Forest just north of Savannah, Georgia. It has an indoor classroom with state-of-the art audio and visual equipment (seats 50), large outdoor deck with semi-circular bench seating and fireplace, a catering kitchen, an exhibit area with interactive displays, and 1.3 miles of groomed, interpretive hiking trails.
- The 2500-acre Wheatley Tract near Lake Blackshear is being sold to provide the greatest financial benefit to the School.
- Thompson Mills Forest & State Arboretum, a 330-acre forest donated to the School in 1980, was designated as the state's official arboretum in 1991. It has one of the most varied and valuable collections of conifers in North America, including species from 27 countries, and 90% of the native trees of Georgia. It is located two miles northwest of Braselton, Georgia.
- The 65-acre Cohutta Fisheries Center, located in northwest Georgia, consists of 19 acres of ponds, several raceways, an outreach aquarium and visitor center, and support buildings. After an internal (Warnell) review of the Center, it has been determined that the Warnell School will return the facility back to the US Fish and Wildlife Service on June 30, 2023.

The Warnell School has separate computer labs to support undergraduate and graduate students. In 2015, the undergraduate lab was converted into a laptop support room with wireless printing. The graduate computer lab consists of six workstations, wireless printing, and a chart plotter. The School also has a Geographic Information System (GIS) teaching lab with 44 workstations. In addition, the School has invested heavily in technology to support student learning and research. For example, with Student Technology Fee funds, Warnell has purchased multiple drones fitted with cutting-edge remote sensing equipment for terrestrial and aquatic habitat sampling. In addition, in 2022 the School added a virtual reality support lab for teaching and research. This tech equipment is utilized in a variety of courses and applications to benefit students.

Since the last review, there have been major renovations to all classrooms and several labs throughout the four-building Warnell complex. All classrooms, conference rooms and the auditorium have internet access and enhanced audio-visual components. Laboratories have been updated with the most up-to-date technologies for each lab's disciplinary focus.

G. Issues that Could Affect Academic Programs

Several larger systematic issues could be having significant effects on the Warnell School's academic programs. Some key challenges include the COVID-19 pandemic, which occurred during this review period and greatly minimized recruiting activities in high schools and other venues. The pandemic also may have contributed to lower undergraduate enrollment numbers as students waited for a more traditional college experience to return. Another challenge is the well-documented changing demographic nation-wide, resulting in a smaller pool of students from which to recruit. Finally, national and state economic downturns during this review period significantly affected a variety of resources critical to Warnell's academic programs, but effects were minimized due to the School's Endowment Fund.

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Faculty

College: FANR

Rank Dept: Warnell-Sch Forestry & Nat Res

Based on Instructional Faculty (includes Professor, Associate Professor, Assistant Professor, Instructor, Lecturer and Clinical faculty)

Headcount Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	2	2	2
	Asian	3	5	5
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	1	1
	Two or more races	0	0	0
	White	44	44	43
	Not Reported	7	7	8
	Female	8	11	11
	Male	48	48	48
	Unknown	0	0	0
Total		56	59	59

Degree Metrics

		Fall 2019	Fall 2020	Fall 2021
Degree Status	Terminally Degreed	56	59	59
Highest Degree	Doctorate Degree	56	59	59

Tenure and Rank Metrics

			Fall 2019	Fall 2020	Fall 2021
Full-Time Faculty	Tenure	Professor	30	28	27
		Associate Professor	10	11	12
	Not Tenured on Track	Associate Professor	1	2	1
		Assistant Professor	10	13	13
	Not in a Tenure Type Position	Lecturer	2	2	2
	Subtotal		53	56	55
Part-Time Faculty	Not in a Tenure Type Position	Professor	1	3	2
		Assistant Professor	1	0	0
		Instructor	0	0	1
		Lecturer	1	0	1
	Subtotal		3	3	4
Total			56	59	59

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Undergraduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: BSFR Fisheries and Wildlife

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	1	1	3
	Black or African-American	3	4	6
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	11	10	7
	Two or more races	4	6	3
	White	79	80	84
	Race/Ethnicity Not Reported	1	2	1
	Female	65	62	65
	Male	34	41	39
	Gender Not Reported	0	0	0
	Total	**99**	**103**	**104**

Admission Metrics for Graduates

	FY 2019		FY 2020		FY 2021	
	# of Students	Average	# of Students	Average	# of Students	Average
High School GPA	30	3.91	29	3.84	34	3.87
ACT	29	26	23	27	30	26
SAT	36	1191	32	1188	33	1220

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	2	1	0
	Black or African-American	3	3	1
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	7	4
	Two or more races	1	0	4
	White	39	36	42
	Race/Ethnicity Not Reported	1	0	1
	Female	30	35	34
	Male	16	12	18
	Gender Not Reported	0	0	0
	Total	**46**	**47**	**52**
Degree GPA*		3.38	3.24	3.41
Time To Degree (TTD) in Years*	Freshman	4.13	4.39	3.87
	Transfer	2.56	2.73	2.61

* Based on Graduating Cohort

Academic Program Review Reporting Template

Academic Program Name: BSFR Fisheries and Wildlife
CIP Code: 03060103
College or School: Warnell School of Forestry and Natural Resources
Department: Warnell School of Forestry and Natural Resources
Date of Last Internal Review: 2014-2015

Measures of Quality:			
Student Input – Undergraduate Programs	FY 2019	FY 2020	FY 2021
High School GPA (n)	3.91 (30)	3.84 (29)	3.87 (34)
SAT scores (n)	1191 (36)	1188 (32)	1220 (33)
Student Output – Undergraduate Programs	FY 2019	FY 2020	FY 2021
Average Exit scores or Pass Rate on national/state exams for licensure (as appropriate)	N/A	N/A	N/A
Degree GPA (n)	3.38 (46)	3.24 (47)	3.41 (52)
Employment rates of graduates (if available) http://career.uga.edu/outcomes/co_results_major	59%	47%	51%
Admission into graduate programs (if available) http://career.uga.edu/outcomes/co_results_major	24%	19%	34%

Evaluation of Program Quality:

Briefly describe how the competitiveness of incoming students, their achievement of program learning outcomes, and their post-graduate success reflect the quality of the program. Describe how the research/scholarly productivity of the program faculty reflects the quality of the program within the discipline. Include additional indicators of the program quality as appropriate.

The Fisheries and Wildlife major at the University of Georgia is one of the premier programs in the country for equipping students to become fisheries or wildlife biologists. The curriculum is broad-based and field-oriented. The curriculum includes courses in biology, ecology, wildlife science, animal behavior, animal population dynamics, wildlife habitat and management, animal physiology and nutrition, conservation genetics, wildlife diseases and health, and social sciences related to the human dimensions of wildlife. Some students integrate these courses with requirements to enter veterinary school. Courses are integrated with training in data management and analysis, geographic information systems, and emerging technologies so that students experience and develop a broad understanding of wild animal populations while practicing diagnosing, researching, and developing real solutions to manage the health and use of animal populations and prevent wild animal extinctions. Students regularly participate in internships and faculty-mentored research, and develop management projects or a research thesis, and choose from one of three areas of emphasis:

* Wildlife Sciences – determining the biological and ecological conditions required for sustaining or recovering wild animal populations including how to manage animal environments and understanding and working with multiple stakeholders to make informed decisions and achieve management objectives.

* Aquatic Sciences – developing a broad understanding of the aquatic environment, functioning of individual animals and their populations, how various stakeholders use aquatic resources, and management and decision-making principles to conserve aquatic species and their environments.

* Wildlife Pre-Vet – fulfilling the requirements for entry into veterinary school with courses focused on animal behavior, wildlife physiology, nutrition, and wildlife diseases and population health management.

Career opportunities include employment conservation, management, or regulatory positions within state or federal agencies, research within federal, state, or academic organizations, public, NGO, or private land and wildlife population management, private environmental consulting, and private fisheries or aquaculture ventures.

In 2021, faculty completed a major revision of the Learning Outcome Assessment Plan for this major. Faculty developed general learning outcomes for "introductory", "advanced", and "capstone" levels in five domains: *Discipline Knowledge*; *Data Literacy*; *Application, Analysis, and Decision-Making*; Communication*; and Ethics and Professionalism*. Faculty then mapped the learning outcomes to courses within the major curriculum. Finally, faculty identified specific assessment measures (e.g., assignments, exam questions, surveys) for tracking at the various levels (introductory, advanced, capstone), and established corresponding thresholds for success. Data for the new plan was first collected in the fall of 2021, so most of the data in reported for this review pertains to the previous learning outcome assessment plan. Generally, learning outcomes exceed thresholds during the current review cycle and little or no action occurred as a result; however, occasionally there were issues identified and faculty considered if material needed to be presented differently or if the threshold needed to be updated. For example, each fall and spring semester, students graduating from the Professional Program attend a senior exit interview and fill out a questionnaire and evaluation form to comment on their undergraduate experiences at Warnell. Interviews and evaluations consistently show a high level of satisfaction among students regarding the Fisheries and Wildlife major. Occasionally, a few concerns are expressed, and those results have been used to improve various aspects of the programs.

Fisheries and Wildlife faculty members have been very productive in research and in securing grant funding since the last program review, with substantial increases in the amount of research funding for ongoing projects over that time. Our faculty has consistently maintained a high level of research output in terms of publications. The program reputation is further attested to in that members of our faculty have served as influential leadership roles in the major professional societies, including the American Fisheries Society (AFS), The Wildlife Society (TWS), the American Society of Ichthyologists and Herpetologists (ASIH), and others. Several fields of fisheries and wildlife biology are represented in the faculty, including traditional disciplines of organismal biology, aquaculture, aquatic nuisance species, fisheries and wildlife management, endangered species management, movement ecology, and human dimensions of natural resources. Additionally, a significant number of physical science faculty are actively pursuing transdisciplinary research centered on better understanding Society-Environment relations. Our faculty is highly respected within the disciplines of fisheries and wildlife science, and faculty continue to publish in high profile journals including Science, Nature Scientific Reports, Nature Climate Change, Environmental Science and Technology, etc. Faculty have been recognized with national and regional research awards, including Fulbright fellowships, American Association for the Advancement of Science awards, research medals and honorary citations. For example, Dr. Susan Wilde and co-authors were awarded the Newcomb Cleveland Prize award, a recognition of the best research paper published in Science. Faculty have also

been honored with prestigious teaching awards including the UGA Meigs Distinguished Teaching Professorship and the UGA Russell Award. Many faculty members have been selected to participate in UGA teaching programs including the Lilly Fellows, the Senior Teaching Fellows, senior Writing Fellows, Writing Intensive Fellows programs.

High School GPA and SAT scores continue to be high among Fisheries and Wildlife (BSFR) students. Student success also continues to be high in the program, with average GPA consistently in the range of 3.2-3.4. Students report success finding jobs or continuing to graduate school, with 70 – 84% of graduates proceeding into these two paths over the past three years.

In addition to the insight we can glean from these metrics, there are a number of other factors that attest to the success of the BSFR in Fisheries and Wildlife. Our students have secured prestigious national awards, academic fellowships and assistantships, as well as competitive internships. Students routinely engage in independent research projects through the University of Georgia's Center for Undergraduate Research Opportunities (CURO) program and have presented their research at the annual CURO symposium. In addition, several undergraduate students have published coauthored work with faculty members. Our undergraduates also participate in Xi Sigma Pi, the National Honor Society of Forestry, in addition to other professional societies such as American Fisheries Society and The Wildlife Society, among others.

Measures of Viability:			
Internal Demand for the Program	FY 2019	FY 2020	FY 2021
Standard Faculty Teaching Load for the degree program (e.g. 3/3, 4/3, etc.)	1/1	1/1	1/1
Number of Faculty (tenured/track and non-tenured) supporting the degree program within the department	21	20	21
Number of Faculty (tenured/track and non-tenured) supporting the degree program outside the department	1	1	1
Number of Full-Time faculty teaching in the program	21	20	21
Number of Part-Time faculty teaching in the program	1	1	1
Undergraduate programs: Other External funds for program support. Provide the total amount for the academic year.			

Evaluation of Program Viability:

Briefly describe how recent enrollment trends, prospects for graduates, availability of faculty to provide program instruction, and other metrics reflect the program's near and long term viability. Describe how the program reflects currency in the discipline along with any efforts made to align the curriculum with external demands or standards.

Over the past five years, enrollment has remained steady, with around 100 (99-108) students in the major. The BSFR in Fisheries and Wildlife is currently the most popular major in the school, with more than half of all professional students in the school. Meeting instructional needs has become increasingly challenging

for faculty because since 2014, nearly all new faculty hires have been 9-month rather than 12-month appointments and therefore have lower instructional EFTs. The overall reduction in instructional EFTs has resulted in a need to restructure some course offerings, including eliminating some lower-enrolled elective courses and adding additional instructional support in the form of part-time instructors. Faculty on 9-month appointments typically teach a 1/1 teaching load while those on 12-month appointment typically teach a 2/1 or 2/2 load.

As part of the strategic planning process, one of the strategic goals of the BSFR in Fisheries and Wildlife program is to increase the number of students who choose this major. To reach this goal, the program has increased recruiting efforts by working with high schools and other programs, such as Future Farmers of America and 4-H, to increase awareness of the major. Recruiting efforts have also increased in diverse feeder schools to UGA, largely due to a diversity enhancement grant to the School.

The BSFR Fisheries and Wildlife Program is currently discussing offering a Minor which will not only increase credit hour production but will also provide an opportunity to students who may be undecided on a major to see Fisheries and Wildlife as a viable option.

Graduates are well positioned for careers in the private sector, government agencies, and NGOs, as well as for graduate school. In addition, graduates meet the educational professional certification requirements recommended by the American Fisheries Society. Likewise, the curriculum within the wildlife sciences area of emphasis satisfies the educational requirements to become Certified Wildlife Biologists, as stipulated by The Wildlife Society.

Measures of Productivity:	FY 2019	FY 2020	FY 2021
Time to Degree in years (n)	4.13 (46)	4.39 (47)	3.87 (52)

Evaluation of Program Productivity:

Briefly describe how the number of students graduating, their time-to-degree, and other indicators, as appropriate, reflect the program's productivity. Describe any institutional or local factors (e.g., course sequencing or availability, high transfer student rate, etc.) that have an impact on students' progression in the program.

The number of Fisheries and Wildlife graduates has remained steady around 50 in recent years, and students have progressed through the major in a timely manner, with most completing their requirements to graduate in four years. The BSFR in Fisheries and Wildlife, like other Warnell majors, is structured as a professional program, where students apply to enter the professional program after completing a set of core requirements. In 2019, faculty voted to reduce the requirements to enter the Warnell professional program to five courses (BIOL 1107/L & 1108/L Principles of Biology I & II, CHEM 1211/L General Chemistry I, MATH 2200 Analytic Geometry and Calculus or MATH 2250 Calculus I, and STAT 2000 Introductory Statistics or BIOS 2010 Elementary Biostatistics), which has provided students with additional flexibility and aimed to increase retention rates by allowing students into upper division Warnell courses sooner in their academic path. All students in the major must complete a capstone experience, either Senior Project (FANR 4500S) or Senior Thesis (FANR 4990). Senior project involves groups of students who work with

a community partner to address management goals and objectives. Students develop a management plan and present the plan to the community partner as well as faculty and students. Senior Thesis provides students with an independent research experience where students identify a question, develop an approach, collect original data, analyze results, interpret findings, and present those findings. The professional program and associated course sequencing combine to allow for an efficient, effective, high-touch approach to academic advising, allowing advisors to closely track students and facilitate their path to graduation.

Exit interviews consistently demonstrate a high level of satisfaction with the major. Students routinely comment on the mentoring they receive from faculty, research experiences, and resources in the School, such as the writing instructor and data literacy instructor. Alumni from this major show a high level of involvement, and Warnell ranks second on campus in the percentage of alumni donating to the School. Success of Warnell alumni is further demonstrated by inclusion of several alums on recent UGA 40 Under 40 lists.

Degree Recommendation Program Faculty:

Check any of the following to recommend categorical action(s) the institution should take concerning this program.

☐ Program MEETS Institution's Criteria

_____ Program is critical to the institutional mission and will be retained.

_____ Program is critical to the institutional mission and is growing or a high demand field and thus will be enhanced.

☐ Program DOES NOT MEET Institution's Criteria

_____ Program will be placed on a monitoring status.

_____ Program will undergo substantive curricular revisions.

_____Program will be deactivated.

_____Program will be voluntarily terminated.

_____Other (identify/add text):

UNIVERSITY OF GEORGIA

Fisheries and Wildlife - BSFR

Fisheries and Wildlife - BSFR

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Fisheries and Wildlife - BSFR

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

While focused on Fisheries and Wildlife, the coursework in this major provides a broad-based foundation in natural resource management. In addition to in-depth knowledge of aquatic and terrestrial animals, it furnishes an understanding of the of the relationships between the physical and biological elements in the environment, an appreciation of the social, political, and economic forces that influence fisheries and wildlife management, and the ability to forge realistic solutions for natural resource problems. The curriculum is field-oriented and offers opportunities to participate in internships and faculty research projects. Students completing the major must choose from one of three possible areas of emphasis: Wildlife Sciences, Aquatic Sciences, and Pre-Veterinary Wildlife Sciences.

Outcome Core - Conservation of Fish & Wildlife

Understand the principles governing conservation and management of fish and wildlife including the interrelations with other natural resources uses

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of principles governing conservation and management of fish and wildlife on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% self-reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Based on course grades and assignment performance, course instructors estimate that more than 60% of passing students meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure

Threshold for success (if available)

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Core - Vertebrate Biology & Natl History

Demonstrate knowledge of the basic biology and natural history of vertebrates

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of the basic biology and natural history of vertebrates on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

4% of students (2 out of 50) reported limited ability in this area.

Analysis of Data

Because <15% of students reported limited ability, our analysis suggest that students are confident in their knowledge of the basic biology and natural history of vertebrates. The percent of students reporting limited ability has been 15% since 2013.

Improvement Based on Analysis

We do not anticipate any change to this learning outcome. We are confident that data from exit interviews provide a reliable measure this outcome. However, faculty should consider raising the threshold.

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

Our analysis based on these data suggest that students are meeting the learning outcome. The estimated percentage of students far exceeds the 60% threshold. Data from all years since 2013 also indicate that students are meeting the outcome.

Improvement Based on Analysis

We do not anticipate any change to this learning outcome at this time. However, we are in the process of revising all of our learning outcomes. To date, faculty have been asked to provide input on learning outcomes and measures. Instructor estimations may not be a reliable measure due to individual subjectivity. In the revision, we will likely develop an alternative way to measure outcome success.

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

Our analysis based on these data suggest that students are meeting the learning outcome. Data from all years since 2013 also indicate that students are meeting the outcome.

Improvement Based on Analysis

We do not anticipate any change to this learning outcome at this time. However, we are in the process of revising all of our learning outcomes. To date, faculty have been asked to provide input on learning outcomes and measures. Instructor estimations may not be a reliable measure due to individual subjectivity. In the revision, we will likely develop an alternative way to measure outcome success.

Measure WILD 3580 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3580 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Comm to Diverse Audiences

Be able to communicate basic wildlife principles and practices to both technical and general audiences in written and oral forms

Measure Exit Interview Questionnaires

Students are asked to rate their ability to communicate basic wildlife principles and practices to technical and general audiences in written and oral forms on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Land Mgmt Methods/Philos

Demonstrate basic knowledge of land management methods and philosophies used by wildlife professionals

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of land management methods and philosophies used by wildlife professionals on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

7% of students (3 out of 42) reported limited ability in this area.

Analysis of Data

The percentage reported was below the 15% threshold and the percent of students reporting limited ability has been 15% since 2013.

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

Our analysis based on these data suggest that students are meeting the learning outcome. Data from all years since 2013 also indicate that students are meeting the outcome.

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 60-79% of passing students met the outcome.

Analysis of Data

Our analysis based on these data suggest that students are meeting the learning outcome. The percentage reported is above the 60% threshold though not as high as we would like. Data from all years since 2013 also indicate that students are meeting the outcome; however, we will continue to monitor this outcome closely to determine if changes are needed.

Improvement Based on Analysis

We do not anticipate any change to this learning outcome at this time. However, we are in the process of revising all of our learning outcomes. Instructor estimations may not be a reliable measure due to individual subjectivity. In the revision, we will likely develop an alternative way to measure outcome success.

Outcome Wildlife - Land Use Policy/Planning

Demonstrate knowledge of land use policy and planning relative to wildlife management

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of land use policy and planning relative to wildlife management on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Plant Biology & Importance

Be able to identify plants and their basic biology and importance in habitat management for wildlife

Measure Exit Interview Questionnaires

Students are asked to rate their ability to identify plants and their basic biology and importance in habitat management for wildlife on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Vertebrate Taxa
Demonstrate detailed knowledge of vertebrate taxa

Measure Exit Interview Questionnaires

Students are asked to rate detailed knowledge of vertebrate taxa on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Wildlife Management
Understand and apply basic principles of wildlife management

Measure Exit Interview Questionnaires

Students are asked to rate their understanding and ability to apply basic principles of wildlife management on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Aquatic Sys & Biota Sampling

Understand the structure and function of aquatic systems and how to sample biota.

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of the structure and function of aquatic systems and how to sample biota on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

0% of students (0 out of 8) reported limited ability in this area.

Analysis of Data

Data indicates students are achieving this learning outcome.

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

Our analysis based on these data suggest that students are meeting the learning outcome. Data from all years since 2013 also indicate that students are meeting the outcome.

Improvement Based on Analysis

We are in the process of revising all of our learning outcomes. Instructor estimations may not be a reliable measure due to individual subjectivity. In the revision, we will likely develop an alternative way to measure outcome success. Even with this potential limitation, the consistency over time suggests that the measure is effective.

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

Our analysis based on these data suggest that students are meeting the learning outcome. Data from all years since 2013 also indicate that students are meeting the outcome.

Improvement Based on Analysis

We are in the process of revising all of our learning outcomes. Instructor estimations may not be a reliable measure due to individual subjectivity. In the revision, we will likely develop an alternative way to measure outcome success. Even with this potential limitation, the consistency over time suggests that the measure is effective.

Outcome Aquatic - Aquatic Taxonomy & Reg Fauna

Be able to identify major aquatic taxonomic groups and regional fauna, and use taxonomic keys

Measure Exit Interview Questionnaires

Students are asked to rate their ability to identify major aquatic taxonomic groups and regional fauna, and use taxonomic keys on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Environmental Factors

Understand how environmental factors affect biota and how to measure key environmental components of aquatic biota

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of how environmental factors affect biota and how to measure key environmental components of aquatic biota on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Fisheries Issues & Case Stud

Be familiar with current and historical fisheries issues/case studies of regional, national or global importance

Measure Exit Interview Questionnaires

Students are asked to rate their familiarity with current and historical fisheries issues/case studies of regional, national or global importance on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Human Activities

Understand how human activities affect habitat and biota, including principles of aquatic resource management tools, such as regulation or manipulation of habitats and populations

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of how human activities affect habitat and biota, including principles of aquatic resource management tools, such as regulation or manipulation of habitats and populations, on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Regional Species

Demonstrate knowledge of regional species (game, nongame and exotic) of economic, ecological, or social importance

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of regional species (game, nongame and exotic) of economic, ecological, or social importance on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Sampling Gear Aquatic Biota
Understand and safely use appropriate sampling gear for aquatic biota (plants, insects, fish, etc)

Measure Exit Interview Questionnaires

Students are asked to rate their understanding and ability to safely use appropriate sampling gear for aquatic biota (plants, insects, fish, etc.) on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Sampling Gear Habitat Data
Understand and safely use appropriate sampling gear for collecting habitat data (dissolved oxygen, temperature, current velocity, conductivity, etc.)

Measure Exit Interview Questionnaires

Students are asked to rate their understanding and ability to safely use appropriate sampling gear for collecting habitat data (dissolved oxygen, temperature, current velocity, conductivity, etc.) on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Statistical Principles

Have a basic understanding of the statistical principles that guide data collection, analysis, and interpretation

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of the statistical principles that guide data collection, analysis, and interpretation on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Statistical Techniques

Demonstrate knowledge of appropriate uses and limitations of elementary statistical techniques used to collect and analyze data.

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of appropriate uses and limitations of elementary statistical techniques used to collect and analyze data on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Survey Design

Have basic knowledge of the design and application of public opinion/value surveys in the management of aquatic resources, with particular emphasis on social, political, and economic issues

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of the design and application of public opinion/value surveys in the management of aquatic resources, with particular emphasis on social, political, and economic issues on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Water Quality Parameters

Have basic knowledge of water quality parameters--how to measure them and how they affect biota

Measure

Students are asked to rate their knowledge of water quality parameters, how to measure them and how they affect biota on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

Feedback

The learning assessment plan for this major is under revision and should be complete for the next reporting cycle.

Files:

LOA Feedback Rubric_Fisheries and Wildlife â€“ BSFR

Program Name: Fisheries and Wildlife - BSFR

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

While focused on Fisheries and Wildlife, the coursework in this major provides a broad-based foundation in natural resource management. In addition to in-depth knowledge of aquatic and terrestrial animals, it furnishes an understanding of the of the relationships between the physical and biological elements in the environment, an appreciation of the social, political, and economic forces that influence fisheries and wildlife management, and the ability to forge realistic solutions for natural resource problems. The curriculum is field-oriented and offers opportunities to participate in internships and faculty research projects. Students completing the major must choose from one of three possible areas of emphasis: Wildlife Sciences, Aquatic Sciences, and Pre-Veterinary Wildlife Sciences.

Outcome Core - Conservation of Fish & Wildlife

Understand the principles governing conservation and management of fish and wildlife including the interrelations with other natural resources uses

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of principles governing conservation and management of fish and wildlife on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% self-reporting limited ability

Data Collected

Miscommunication regarding the transition of LOA plans for this program, as well as revisions to our undergraduate exit interviews, resulted in this information not being collected for 2019-2020.

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Based on course grades and assignment performance, course instructors estimate that more than 60% of passing students meet the outcome

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

The estimation was not completed due to a miscommunication about a change in course number (WILD 4000 to WILD 4100).

Analysis of Data

successful

Improvement Based on Analysis

Outcome Core - Vertebrate Biology & Natl History

Demonstrate knowledge of the basic biology and natural history of vertebrates

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of the basic biology and natural history of vertebrates on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3580 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3580 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Comm to Diverse Audiences

Be able to communicate basic wildlife principles and practices to both technical and general audiences in written and oral forms

Measure Exit Interview Questionnaires

Students are asked to rate their ability to communicate basic wildlife principles and practices to technical and general audiences in written and oral forms on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Land Mgmt Methods/Philos

Demonstrate basic knowledge of land management methods and philosophies used by wildlife professionals

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of land management methods and philosophies used by wildlife professionals on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Land Use Policy/Planning
Demonstrate knowledge of land use policy and planning relative to wildlife management

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of land use policy and planning relative to wildlife management on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Miscommunication regarding the transition of LOA plans for this program, as well as revisions to our undergraduate exit interviews, resulted in this information not being collected for 2019-2020.

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

The estimation was not completed due to a miscommunication about a change in course number (WILD 4000 to WILD 4100).

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Plant Biology & Importance
Be able to identify plants and their basic biology and importance in habitat management for wildlife

Measure Exit Interview Questionnaires

Students are asked to rate their ability to identify plants and their basic biology and importance in habitat management for wildlife on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Vertebrate Taxa
Demonstrate detailed knowledge of vertebrate taxa

Measure Exit Interview Questionnaires

Students are asked to rate detailed knowledge of vertebrate taxa on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Wildlife Management
Understand and apply basic principles of wildlife management

Measure Exit Interview Questionnaires

Students are asked to rate their understanding and ability to apply basic principles of wildlife management on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Aquatic Sys & Biota Sampling
Understand the structure and function of aquatic systems and how to sample biota.

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of the structure and function of aquatic systems and how to sample biota on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Aquatic Taxonomy & Reg Fauna

Be able to identify major aquatic taxonomic groups and regional fauna, and use taxonomic keys

Measure Exit Interview Questionnaires

Students are asked to rate their ability to identify major aquatic taxonomic groups and regional fauna, and use taxonomic keys on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Miscommunication regarding the transition of LOA plans for this program, as well as revisions to our undergraduate exit interviews, resulted in this information not being collected for 2019-2020.

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Instructors estimated that 40-59% of passing students met the outcome.

Analysis of Data

unsuccessful

Improvement Based on Analysis

The faculty determined the learning outcome needed revision and has developed new learning outcomes and assessment tools effective fall 2020.

Outcome Aquatic - Environmental Factors

Understand how environmental factors affect biota and how to measure key environmental components of aquatic biota

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of how environmental factors affect biota and how to measure key environmental components of aquatic biota on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Fisheries Issues & Case Stud

Be familiar with current and historical fisheries issues/case studies of regional, national or global importance

Measure Exit Interview Questionnaires

Students are asked to rate their familiarity with current and historical fisheries issues/case studies of regional, national or global importance on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Human Activities

Understand how human activities affect habitat and biota, including principles of aquatic resource management tools, such as regulation or manipulation of habitats and populations

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of how human activities affect habitat and biota, including principles of aquatic resource management tools, such as regulation or manipulation of habitats and populations, on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Regional Species

Demonstrate knowledge of regional species (game, nongame and exotic) of economic, ecological, or social importance

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of regional species (game, nongame and exotic) of economic, ecological, or social importance on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Sampling Gear Aquatic Biota

Understand and safely use appropriate sampling gear for aquatic biota (plants, insects, fish, etc)

Measure Exit Interview Questionnaires

Students are asked to rate their understanding and ability to safely use appropriate sampling gear for aquatic biota (plants, insects, fish, etc.) on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Sampling Gear Habitat Data

Understand and safely use appropriate sampling gear for collecting habitat data (dissolved oxygen, temperature, current velocity, conductivity, etc.)

Measure Exit Interview Questionnaires

Students are asked to rate their understanding and ability to safely use appropriate sampling gear for collecting habitat data (dissolved oxygen, temperature, current velocity, conductivity, etc.) on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Statistical Principles

Have a basic understanding of the statistical principles that guide data collection, analysis, and interpretation

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of the statistical principles that guide data collection, analysis, and interpretation on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Statistical Techniques

Demonstrate knowledge of appropriate uses and limitations of elementary statistical techniques used to collect and analyze data.

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of appropriate uses and limitations of elementary statistical techniques used to collect and analyze data on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Survey Design

Have basic knowledge of the design and application of public opinion/value surveys in the management of aquatic resources, with particular emphasis on social, political, and economic issues

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of the design and application of public opinion/value surveys in the management of aquatic resources, with particular emphasis on social, political, and economic issues on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Water Quality Parameters

Have basic knowledge of water quality parameters--how to measure them and how they affect biota

Measure

Students are asked to rate their knowledge of water quality parameters, how to measure them and how they affect biota on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

Feedback

The learning assessment plan for this major is under revision and should be complete for the next reporting cycle.

*The revisions to LOA plans for Warnell undergraduate majors are underway and were discussed extensively in fall 2020; therefore, I will hold more formal feedback via the rubric until fall 2021. -Katie Burr

Program Name: Fisheries and Wildlife - BSFR

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

While focused on Fisheries and Wildlife, the coursework in this major provides a broad-based foundation in natural resource management. In addition to in-depth knowledge of aquatic and terrestrial animals, it furnishes an understanding of the of the relationships between the physical and biological elements in the environment, an appreciation of the social, political, and economic forces that influence fisheries and wildlife management, and the ability to forge realistic solutions for natural resource problems. The curriculum is field-oriented and offers opportunities to participate in internships and faculty research projects. Students completing the major must choose from one of three possible areas of emphasis: Wildlife Sciences, Aquatic Sciences, and Pre-Veterinary Wildlife Sciences.

Outcome Core - Conservation of Fish & Wildlife

Understand the principles governing conservation and management of fish and wildlife including the interrelations with other natural resources uses

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of principles governing conservation and management of fish and wildlife on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% self-reporting limited ability

Data Collected

0% of the students reported a limited understanding the principles governing conservation and management of fish and wildlife including the interrelations with other natural resources uses. Exit Interview LOA Assessments were missed for fall 2020 due to miscommunication. Spring and Summer 2021 graduates were assessed.

Analysis of Data

successful

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Based on course grades and assignment performance, course instructors estimate that more than 60% of passing students meet the outcome

Data Collected

The instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

The instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

WILD 4000 no longer exists. While replaced by WILD 4100, this change resulted in the lack of completion of this instructor assessment

Analysis of Data

Improvement Based on Analysis

Outcome Core - Vertebrate Biology & Natl History

Demonstrate knowledge of the basic biology and natural history of vertebrates

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of the basic biology and natural history of vertebrates on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3580 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3580 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Comm to Diverse Audiences

Be able to communicate basic wildlife principles and practices to both technical and general audiences in written and oral forms

Measure Exit Interview Questionnaires

Students are asked to rate their ability to communicate basic wildlife principles and practices to technical and general audiences in written and oral forms on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Land Mgmt Methods/Philos

Demonstrate basic knowledge of land management methods and philosophies used by wildlife professionals

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of land management methods and philosophies used by wildlife professionals on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Land Use Policy/Planning
Demonstrate knowledge of land use policy and planning relative to wildlife management

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of land use policy and planning relative to wildlife management on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

0% of the students reported limited knowledge about land use policy and planning relative to wildlife management. Exit Interview LOA Assessments were missed for fall 2020 due to miscommunication. Spring and Summer 2021 graduates were assessed.

Analysis of Data

successful

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

The instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

WILD 4000 no longer exists. While replaced by WILD 4100, this change resulted in the lack of completion of this instructor assessment

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Plant Biology & Importance
Be able to identify plants and their basic biology and importance in habitat management for wildlife

Measure Exit Interview Questionnaires

Students are asked to rate their ability to identify plants and their basic biology and importance in habitat management for wildlife on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Vertebrate Taxa
Demonstrate detailed knowledge of vertebrate taxa

Measure Exit Interview Questionnaires

Students are asked to rate detailed knowledge of vertebrate taxa on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wildlife - Wildlife Management

Understand and apply basic principles of wildlife management

Measure Exit Interview Questionnaires

Students are asked to rate their understanding and ability to apply basic principles of wildlife management on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 4000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 4000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Aquatic Sys & Biota Sampling

Understand the structure and function of aquatic systems and how to sample biota.

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of the structure and function of aquatic systems and how to sample biota on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Aquatic Taxonomy & Reg Fauna

Be able to identify major aquatic taxonomic groups and regional fauna, and use taxonomic keys

Measure Exit Interview Questionnaires

Students are asked to rate their ability to identify major aquatic taxonomic groups and regional fauna, and use taxonomic keys on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

0% of the students reported a limited ability to identify major aquatic taxonomic groups and regional fauna, and use taxonomic keys. Exit Interview LOA Assessments were missed for fall 2020 due to miscommunication. Spring and Summer 2021 graduates were assessed.

Analysis of Data

successful

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

The instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

The instructor estimated that 60-79% of passing students met the outcome.

Analysis of Data

unsuccessful

Improvement Based on Analysis

Course instructors will evaluate the curriculum to determine where the content could be reinforced.

Outcome Aquatic - Environmental Factors

Understand how environmental factors affect biota and how to measure key environmental components of aquatic biota

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of how environmental factors affect biota and how to measure key environmental components of aquatic biota on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Fisheries Issues & Case Stud

Be familiar with current and historical fisheries issues/case studies of regional, national or global importance

Measure Exit Interview Questionnaires

Students are asked to rate their familiarity with current and historical fisheries issues/case studies of regional, national or global importance on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Human Activities

Understand how human activities affect habitat and biota, including principles of aquatic resource management tools, such as regulation or manipulation of habitats and populations

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of how human activities affect habitat and biota, including principles of aquatic resource management tools, such as regulation or manipulation of habitats and populations, on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Regional Species

Demonstrate knowledge of regional species (game, nongame and exotic) of economic, ecological, or social importance

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of regional species (game, nongame and exotic) of economic, ecological, or social importance on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Sampling Gear Aquatic Biota

Understand and safely use appropriate sampling gear for aquatic biota (plants, insects, fish, etc)

Measure Exit Interview Questionnaires

Students are asked to rate their understanding and ability to safely use appropriate sampling gear for aquatic biota (plants, insects, fish, etc.) on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Sampling Gear Habitat Data

Understand and safely use appropriate sampling gear for collecting habitat data (dissolved oxygen, temperature, current velocity, conductivity, etc.)

Measure Exit Interview Questionnaires

Students are asked to rate their understanding and ability to safely use appropriate sampling gear for collecting habitat data (dissolved oxygen, temperature, current velocity, conductivity, etc.) on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Statistical Principles

Have a basic understanding of the statistical principles that guide data collection, analysis, and interpretation

Measure Exit Interview Questionnaires

Students are asked to rate their understanding of the statistical principles that guide data collection, analysis, and interpretation on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Statistical Techniques

Demonstrate knowledge of appropriate uses and limitations of elementary statistical techniques used to collect and analyze data.

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of appropriate uses and limitations of elementary statistical techniques used to collect and analyze data on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Survey Design

Have basic knowledge of the design and application of public opinion/value surveys in the management of aquatic resources, with particular emphasis on social, political, and economic issues

Measure Exit Interview Questionnaires

Students are asked to rate their knowledge of the design and application of public opinion/value surveys in the management of aquatic resources, with particular emphasis on social, political, and economic issues on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Aquatic - Water Quality Parameters

Have basic knowledge of water quality parameters--how to measure them and how they affect biota

Measure

Students are asked to rate their knowledge of water quality parameters, how to measure them and how they affect biota on questionnaires administered during senior exit interviews.

Threshold for success (if available)

Less than 15% of students reporting limited ability.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FISH 5360 Instructor Estimations

Based on course grades and performance on assignments, course instructors in FISH 5360 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WILD 3000 Instructor Estimations

Based on course grades and performance on assignments, course instructors in WILD 3000 estimate the percentage of passing students that meet the outcome.

Threshold for success (if available)

Course instructors estimate that more than 60% of passing students meet the outcome.

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

New learning outcome assessment plan will be in place for the next cycle.

Feedback

End of report

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Undergraduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: BSFR Forestry

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	1
	White	41	32	26
	Race/Ethnicity Not Reported	0	0	0
	Female	3	2	4
	Male	37	30	23
	Gender Not Reported	1	0	0
	Total	**41**	**32**	**27**

Admission Metrics for Graduates

	FY 2019		FY 2020		FY 2021	
	# of Students	Average	# of Students	Average	# of Students	Average
High School GPA	7	3.85	5	3.74	8	3.85
ACT	4	27	5	28	8	27
SAT	9	1233	6	1221	8	1182

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	1	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	1	0	0
	White	16	22	12
	Race/Ethnicity Not Reported	0	0	0
	Female	3	2	0
	Male	14	19	12
	Gender Not Reported	1	1	0
	Total	**18**	**22**	**12**
Degree GPA*		3.30	3.06	3.35
Time To Degree (TTD) in Years*	Freshman	4.14	4.33	4.87
	Transfer	2.27	2.43	2.17

* Based on Graduating Cohort

Academic Program Review Reporting Template

Academic Program Name: BSFR Forestry
CIP Code: 03050101
College or School: Warnell School of Forestry and Natural Resources
Department: Warnell School of Forestry and Natural Resources
Date of Last Internal Review: 2014-2015

Measures of Quality:			
Student Input – Undergraduate Programs	FY 2019	FY 2020	FY 2021
Undergrad GPA (n) SAT (n)	3.85 (7) 1233 (9)	3.74 (5) 1221 (6)	3.85 (8) 1182 (8)
Student Output – Undergraduate Programs	FY 2019	FY 2020	FY 2021
Degree GPA (n)	3.30 (18)	3.06 (22)	3.35 (12)
Employment rates of graduates (if available) http://career.uga.edu/outcomes/co_results_major	67%	57%	87%
Admission into graduate programs (if available) http://career.uga.edu/outcomes/co_results_major	17%	24%	13%

Evaluation of Program Quality:

Briefly describe how the competitiveness of incoming students, their achievement of program learning outcomes, and their post-graduate success reflect the quality of the program. Describe how the research/scholarly productivity of the program faculty reflects the quality of the program within the discipline. Include additional indicators of the program quality as appropriate.

The BSFR in Forestry is consistently ranked among the top programs of its kind in the U.S. The program prepares students for careers as forestry professionals, teaching students how to sustainably manage forest lands to meet society's demands for wood, clean water, wildlife habitat, recreation, conservation of forest flora and fauna, and climate amelioration. The curriculum stresses hands-on field experience, teamwork, and developing critical thinking skills through problem analysis. Classes give students a sound understanding of forest ecosystems, the ways people view and use the forest, and management tools and concepts applied in forest conservation and management. Topics include soils and hydrology, economics, spatial analysis, silviculture, and harvesting.

In 2021, faculty completed a major revision of the Learning Outcome Assessment Plan for this major. Faculty developed general learning outcomes for "introductory", "advanced", and "capstone" levels in five domains: *Discipline Knowledge*; *Data Literacy*; *Application, Analysis, and Decision-Making*; Communication*; and Ethics and Professionalism*. Faculty then mapped the learning outcomes to courses within the major curriculum. Finally, faculty identified specific assessment measures (e.g., assignments, exam questions, surveys) for tracking at the various levels (introductory, advanced, capstone), and established corresponding thresholds for success. Data for the new plan was first collected in the fall of 2021, so most of the data in reported for this review pertains to the previous learning outcome assessment plan. Generally, learning outcomes exceed thresholds during the current review cycle and little or no action occurred as a result; however, occasionally there were issues identified and faculty considered if

material needed to be presented differently or if the threshold needed to be updated. For example, each fall and spring semester, students graduating from the Professional Program attend a senior exit interview and fill out a questionnaire and evaluation form to comment on their undergraduate experiences at Warnell. Interviews and evaluations consistently show a high level of satisfaction among students regarding the academic programs. Occasionally, a few concerns are expressed, and those results have been used to improve various aspects of the programs.

Forestry faculty members have been very productive in research and in securing grant funding over the last several years, with substantial increases in the amount of research funding for ongoing projects over that time. The faculty have consistently maintained a high level of research output in terms of publications. The program reputation is further attested to in that members of our faculty have served as influential leadership roles in the major professional societies, including the Society of American Foresters (SAF), among others. Several specialty areas of the Forestry field are represented in the faculty, including harvesting, procurement, economics, silviculture, and mensuration among others. Additionally, a significant number of faculty are actively pursuing transdisciplinary research centered on better understanding Society-Environment relations. Our faculty is highly respected within the Forestry discipline nationally and globally, and faculty continue to publish in top-tier journals for the field. Faculty have been recognized with national and regional research awards, including UGA Research Awards and Creative Research Medals. Faculty have also been honored with local, regional, national and international teaching awards including the US Department of Agriculture Excellence in Teaching Award, and the Society of American Foresters Carl Alwin Schenck Award. Many faculty members have been selected to participate in UGA teaching programs including the Lilly Fellows, the Senior Teaching Fellows, senior Writing Fellows, Writing Intensive Fellows programs.

High School GPA and SAT scores continue to be high among Forestry students. Student success also continues to be high in the program, with average GPA consistently in the range of 3.1-3.4. Students report strong success finding jobs or continuing to graduate school, with 81 – 100% of graduates proceeding into these two paths. Students go on to careers with state and federal agencies, the private sector, and non-government organizations, among other opportunities.

In addition to the insight we can glean from these metrics, there are a number of other factors that attest to the success of the BSFR in Forestry. Our students have secured prestigious regional and national awards, academic fellowships, and competitive internships. Students routinely engage in independent research projects through the University of Georgia's Center for Undergraduate Research Opportunities (CURO) program and have presented their research at the annual CURO symposium. In addition, several undergraduate students have published coauthored work with faculty members. Our undergraduates also participate in Xi Sigma Pi, the National Honor Society of Forestry, in addition to other professional societies such as the Society of American Foresters and the Ecological Society of America, among others.

Academic Program Review Reporting Template

Measures of Viability:			
Internal Demand for the Program	FY 2019	FY 2020	FY 2021
Standard Faculty Teaching Load for the degree program (e.g. 3/3, 4/3, etc.)	1/1	1/1	1/1
Number of Faculty (tenured/track and non-tenured) supporting the degree program within the department	16	15	15
Number of Faculty (tenured/track and non-tenured) supporting the degree program outside the department	0	0	0
Number of Full-Time faculty teaching in the program	16	15	15
Number of Part-Time faculty teaching in the program	0	1	1
Undergraduate programs: Other External funds for program support. Provide the total amount for the academic year.			

Evaluation of Program Viability:

Briefly describe how recent enrollment trends, prospects for graduates, availability of faculty to provide program instruction, and other metrics reflect the program's near and long term viability. Describe how the program reflects currency in the discipline along with any efforts made to align the curriculum with external demands or standards.

Enrollment in the Forestry major has declined in recent years, a trend that can be seen at several peer programs as well. The forestry industry itself has experienced major changes in recent years regarding forest ownership, investment, and manufacturing; however, the demand for Warnell Forestry graduates remains very high. One of the biggest challenges we have is to communicate this demand to potential students as they are considering their academic training path. Nonetheless, we have made a concerted effort to modify our recruiting materials to highlight this important point. Furthermore, as part of the strategic planning process, one of the strategic goals of the BSFR in Forestry program is to increase the number of students who choose the Forestry major. To reach this goal, the program has increased recruiting efforts by working with high schools and other programs, such as Future Farmers of America and 4-H, to increase awareness of the major around the state and region. Recruiting efforts have also increased in diverse feeder schools to UGA, largely due to a diversity enhancement grant to the School. Finally, Forestry faculty are currently considering the addition of a Forestry Minor as well, which should help increase awareness about the major outside of the Warnell School.

Despite the declining enrollment, meeting instructional needs has become increasingly challenging for faculty because since 2014, nearly all new faculty hires have been 9-month appointments rather than 12-month appointments, and therefore have lower instructional EFTs. The overall reduction in instructional EFTs has resulted in a need to restructure some course offerings, including eliminating some lower-enrolled elective courses and adding additional instructional support in the form of part-time instructors. Faculty on 9-month appointments typically teach a 1/1 teaching load while those on 12-month appointment typically teach a 2/1 or 2/2 load.

Academic Program Review Reporting Template

Measures of Productivity:	2019	2020	2021
Time to Degree in years (n)	4.14 (18)	4.33 (22)	4.87 (12)

Evaluation of Program Productivity:

Briefly describe how the number of students graduating, their time-to-degree, and other indicators, as appropriate, reflect the program's productivity. Describe any institutional or local factors (e.g., course sequencing or availability, high transfer student rate, etc.) that have an impact on students' progression in the program.

The number of Forestry graduates has varied (12 – 22) in recent years and time to degree averaged 4.18 to 4.87 years during the past three years. The BSFR in Forestry, like other Warnell majors, is structured as a professional program, where students apply to enter the professional program after completing a set of core requirements. In 2019, faculty voted to reduce the requirements to enter the Warnell professional program to five courses (BIOL 1107/L & 1108/L Principles of Biology I & II, CHEM 1211/L General Chemistry I, MATH 2200 Analytic Geometry and Calculus or MATH 2250 Calculus I, and STAT 2000 Introductory Statistics or BIOS 2010 Elementary Biostatistics), which has provided students with additional flexibility and aimed to increase retention rates by allowing students into upper division Warnell courses sooner in their academic path. All students in the major must complete a capstone experience, either Senior Project (FANR 4500S) or Senior Thesis (FANR 4990). Senior project involves groups of students who work with a community partner to address management goals and objectives. Students develop a management plan and present the plan to the community partner as well as faculty and students. Senior Thesis provides students with an independent research experience where students identify a question, develop an approach, collect original data, analyze results, interpret findings, and present those findings. The professional program and associated course sequencing combine to allow for an efficient, effective, high-touch approach to academic advising, allowing advisors to closely track students and facilitate their path to graduation.

Exit interviews consistently demonstrate a high level of satisfaction with the major. Students routinely comment on the mentoring they receive from faculty, research experiences, and resources in the School, such as the writing instructor and data literacy instructor. Alumni show a high level of involvement, and Warnell ranks second on campus in the percentage of alumni donating to the School. Success of Warnell alumni is further demonstrated by inclusion of several alums on recent UGA 40 Under 40 lists.

Academic Program Review Reporting Template

Degree Recommendation Program Faculty:

Check any of the following to recommend categorical action(s) the institution should take concerning this program.

☐ Program MEETS Institution's Criteria

_____Program is critical to the institutional mission and will be retained.

_____Program is critical to the institutional mission and is growing or a high demand field and thus will be enhanced.

☐ Program DOES NOT MEET Institution's Criteria

_____Program will be placed on a monitoring status.

_____Program will undergo substantive curricular revisions.

_____Program will be deactivated.

_____Program will be voluntarily terminated.

_____Other (identify/add text):

UNIVERSITY OF GEORGIA

Forestry - BSFR

Forestry - BSFR

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Forestry - BSFR

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator

Steven Castleberry

Description of Program

Forestry is the profession of sustainably managing forest lands to meet society's demands for wood, clean water, wildlife habitat, recreation, conservation of forest flora and fauna, and climate amelioration. The Forestry major at UGA is the only 4-year degree program in the state of Georgia that is accredited by the Society of American Foresters (SAF), and it meets the educational requirements for the SAF Certified Forester credential. Graduates from this major are also eligible to become state-licensed, registered foresters. The Forestry major provides a firm understanding of forest ecosystems, the way people view and utilize the forest, and the management tools and concepts applied in forest management. The curriculum stresses "hands-on" field experience, teamwork, and developing critical thinking skills through problem analysis.

Outcome Cost-Benefit Analyses

Use basic economic and finance techniques to evaluate the benefits and costs of alternative management regimes

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Ecosystem Component Relationships
Understand interrelationships among plant, animal, and aquatic components of forested ecosystems

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

0% of students (0 out of 12) reported limited ability in this area.

Analysis of Data

successful

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2018 instructor estimated that 80-100% of passing students met the outcome. The Spring 2019 instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Instructors estimated that 0-19% of passing students met the outcome.

Analysis of Data

0-19% is well below the threshold and indicates this learning outcome needs to be evaluated by faculty.

Improvement Based on Analysis

Faculty are evaluating this outcome as part of revising the learning assessment plan for the major.

Outcome Field Sampling of a Forest Stand
Conduct a field sample of a forest stand to enable mapping of timber types, topography, and site features

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Growth and Biological Processes

Understand growth and biological processes of individuals and stands of forest plants and associated responses to environmental factors (e.g., light, water, temperature, and soil nutrients) and their manipulation

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome ID Flora from Sample
Identify and describe common forest flora upon viewing a living specimen or leaf, stem, or wood sample

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Policy Issues
Understand historic and current natural resources issues, legislation, and policy that affect decision-making of private and public forest land managers.

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Silvicultural Treatments

Prescribe silvicultural treatments for forest stands to meet the objectives of the forest landowner /stakeholder, including but not limited to stand regeneration, vegetation control, thinning, fertilization, harvesting, forest health, and controlled fire treatment

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

17% of students (2 out of 12) reported limited ability in this area.

Analysis of Data

2/12 (17%) exceeds the 15% threshold.

Improvement Based on Analysis

This outcome is currently being reconsidered by the faculty and will likely be revised as part of the new learning assessment plan for the major.

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2018 instructor estimated that 80-100% of passing students met the outcome. The Spring 2019 instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

Success

Improvement Based on Analysis

Continued success with this outcome suggests no action is needed.

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Instructors estimated that 80-100% of passing students met the outcome.

Analysis of Data

Success

Improvement Based on Analysis

Based on continued successful completion of this outcome, no changes appear necessary.

Outcome Soil & Hydrological Processes

Understand soil and hydrological processes of forested ecosystems

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Successional Stages & Plant Communities

Identify and describe common successional stages and plant communities of eastern U.S. forests

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wood Volume Estimation

Use forest sampling and mensurational techniques to estimate total and merchantable wood volumes of a forest stand

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

The learning assessment plan for this major is under revision and should be complete for the next reporting cycle.

Feedback

Files:

LOA Feedback Rubric_Forestry â€“ BSFR

Program Name: Forestry - BSFR

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator

Robert Bringolf

Description of Program

Forestry is the profession of sustainably managing forest lands to meet society's demands for wood, clean water, wildlife habitat, recreation, conservation of forest flora and fauna, and climate amelioration. The Forestry major at UGA is the only 4-year degree program in the state of Georgia that is accredited by the Society of American Foresters (SAF), and it meets the educational requirements for the SAF Certified Forester credential. Graduates from this major are also eligible to become state-licensed, registered foresters. The Forestry major provides a firm understanding of forest ecosystems, the way people view and utilize the forest, and the management tools and concepts applied in forest management. The curriculum stresses "hands-on" field experience, teamwork, and developing critical thinking skills through problem analysis.

Outcome Cost-Benefit Analyses

Use basic economic and finance techniques to evaluate the benefits and costs of alternative management regimes

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Ecosystem Component Relationships
Understand interrelationships among plant, animal, and aquatic components of forested ecosystems

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Field Sampling of a Forest Stand
Conduct a field sample of a forest stand to enable mapping of timber types, topography, and site features

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Miscommunication regarding the transition of LOA plans for this program, as well as revisions to our undergraduate exit interviews, resulted in this information not being collected for 2019-2020.

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2019 instructor estimated that 80-100% of passing students met the outcome. The Spring 2020 instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Growth and Biological Processes

Understand growth and biological processes of individuals and stands of forest plants and associated responses to environmental factors (e.g., light, water, temperature, and soil nutrients) and their manipulation

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome ID Flora from Sample
Identify and describe common forest flora upon viewing a living specimen or leaf, stem, or wood sample

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Policy Issues
Understand historic and current natural resources issues, legislation, and policy that affect decision-making of private and public forest land managers.

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Silvicultural Treatments

Prescribe silvicultural treatments for forest stands to meet the objectives of the forest landowner /stakeholder, including but not limited to stand regeneration, vegetation control, thinning, fertilization, harvesting, forest health, and controlled fire treatment

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Soil & Hydrological Processes
Understand soil and hydrological processes of forested ecosystems

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Miscommunication regarding the transition of LOA plans for this program, as well as revisions to our undergraduate exit interviews, resulted in this information not being collected for 2019-2020.

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2019 instructor estimated that 80-100% of passing students met the outcome. The Spring 2020 instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimated that 60-79% of passing students met the outcome.

Analysis of Data

Unsuccessful

Improvement Based on Analysis

The faculty determined the learning outcome and assessment measure required revision. All learning outcomes and measures have been updated effective fall 2020.

Outcome Successional Stages & Plant Communities
Identify and describe common successional stages and plant communities of eastern U.S. forests

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Wood Volume Estimation

Use forest sampling and mensurational techniques to estimate total and merchantable wood volumes of a forest stand

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

The learning assessment plan for this major is under revision and should be complete for the next reporting cycle.

Feedback

Files:

Forestry - BSFR

Program Name: Forestry - BSFR

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator

Robert Bringolf

Description of Program

Forestry is the profession of sustainably managing forest lands to meet society's demands for wood, clean water, wildlife habitat, recreation, conservation of forest flora and fauna, and climate amelioration. The Forestry major at UGA is the only 4-year degree program in the state of Georgia that is accredited by the Society of American Foresters (SAF), and it meets the educational requirements for the SAF Certified Forester credential. Graduates from this major are also eligible to become state-licensed, registered foresters. The Forestry major provides a firm understanding of forest ecosystems, the way people view and utilize the forest, and the management tools and concepts applied in forest management. The curriculum stresses "hands-on" field experience, teamwork, and developing critical thinking skills through problem analysis.

Outcome Cost-Benefit Analyses

Use basic economic and finance techniques to evaluate the benefits and costs of alternative management regimes

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Ecosystem Component Relationships
Understand interrelationships among plant, animal, and aquatic components of forested ecosystems

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Field Sampling of a Forest Stand
Conduct a field sample of a forest stand to enable mapping of timber types, topography, and site features

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Growth and Biological Processes

Understand growth and biological processes of individuals and stands of forest plants and associated responses to environmental factors (e.g., light, water, temperature, and soil nutrients) and their manipulation

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

0% of the students reported a limited understanding of growth and biological processes of individuals and stands of forest plants and associated responses to environmental factors (e.g., light, water, temperature, and soil nutrients) and their manipulation. Exit Interview LOA Assessments were missed for fall 2020 due to miscommunication. Spring and Summer 2021 graduates were assessed.

Analysis of Data

successful

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2020 instructor estimated that 80-100% of passing students met the outcome. The Spring 2021 instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimated that 40-59% of passing students met the outcome.

Analysis of Data

unsuccessful

Improvement Based on Analysis

Faculty will examine where these topics are covered earlier in the curriculum to determine if the concepts are being introduced properly. Changes to curriculum will be made accordingly.

Outcome ID Flora from Sample

Identify and describe common forest flora upon viewing a living specimen or leaf, stem, or wood sample

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Policy Issues

Understand historic and current natural resources issues, legislation, and policy that affect decision-making of private and public forest land managers.

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Silvicultural Treatments

Prescribe silvicultural treatments for forest stands to meet the objectives of the forest landowner /stakeholder, including but not limited to stand regeneration, vegetation control, thinning, fertilization, harvesting, forest health, and controlled fire treatment

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Soil & Hydrological Processes

Understand soil and hydrological processes of forested ecosystems

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Successional Stages & Plant Communities

Identify and describe common successional stages and plant communities of eastern U.S. forests

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

0% of students reported limited ability to identify and describe common successional stages and plant communities of eastern U.S. forests. Exit Interview LOA Assessments were missed for fall 2020 due to miscommunication. Spring and Summer 2021 graduates were assessed.

Analysis of Data

successful

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2020 instructor estimated that 80-100% of passing students met the outcome. The Spring 2021 instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimated that 60-79% of passing students met the outcome.

Analysis of Data

unsuccessful

Improvement Based on Analysis

Faculty will examine the LOA and determine where in the curriculum to address the issue.

Outcome Wood Volume Estimation

Use forest sampling and mensurational techniques to estimate total and merchantable wood volumes of a forest stand

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4010 Instructor Estimations

FORS 4010 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4620 Instructor Estimations

FORS 4620 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

New LOA plan is in place for the next cycle.

Feedback

End of report

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Undergraduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: BSFR Natural Res Mgmt and Sust..

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	1	2	1
	Two or more races	1	1	0
	White	7	11	16
	Race/Ethnicity Not Reported	0	0	0
	Female	5	9	11
	Male	4	5	6
	Gender Not Reported	0	0	0
	Total	**9**	**14**	**17**

Admission Metrics for Graduates

	FY 2019		FY 2020		FY 2021	
	# of Students	Average	# of Students	Average	# of Students	Average
High School GPA	5	3.75	2	3.92	3	3.78
ACT	2	28	2	30	3	29
SAT	5	1250	2	1265	4	1342

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	1
	White	5	3	3
	Race/Ethnicity Not Reported	0	0	0
	Female	3	1	2
	Male	2	2	2
	Gender Not Reported	0	0	0
	Total	**5**	**3**	**4**
Degree GPA*		3.29	3.58	3.71
Time To Degree (TTD) in Years*	Freshman	4.07	3.83	3.56
	Transfer		2.00	2.33

* Based on Graduating Cohort

Academic Program Review Reporting Template

Academic Program Name: BSFR Natural Resource Management and Sustainability
CIP Code: 03010405
College or School: Warnell School of Forestry and Natural Resources
Department: Warnell School of Forestry and Natural Resources
Date of Last Internal Review: 2014-2015

Measures of Quality:			
Student Input – Undergraduate Programs	FY 2019	FY 2020	FY 2021
High School GPA (n) SAT scores (n)	3.75 (5) 1250 (5)	3.92 (2) 1265 (2)	3.78 (3) 1342 (4)
Student Output – Undergraduate Programs	FY 2019	FY 2020	FY 2021
Degree GPA (n)	3.29 (5)	3.58 (3)	3.71 (4)
Employment rates of graduates (if available) http://career.uga.edu/outcomes/co_results_major	60%	33%	67%
Admission into graduate programs (if available) http://career.uga.edu/outcomes/co_results_major	0%	67%	0%

Evaluation of Program Quality:

Briefly describe how the competitiveness of incoming students, their achievement of program learning outcomes, and their post-graduate success reflect the quality of the program. Describe how the research/scholarly productivity of the program faculty reflects the quality of the program within the discipline. Include additional indicators of the program quality as appropriate.

The BSFR in Natural Resources Management and Sustainability (NRMS) was created in 2017 and includes three areas of emphasis: Community Forestry and Arboriculture (COFA), Geospatial Information Science (GIS), and Water and Soil Resources (WSR). The NRMS major emphasizes assessment, conservation, and rehabilitation of the natural landscape's soils, water resources, community forests, wetlands, and species within those systems. The core curriculum is broad-based, furnishing a comprehensive understanding of the physical and biological elements of the natural environment, an appreciation of the social, political, and economic forces that influence natural resources policy decisions, and the ability to analyze natural resources problems to forge realistic solutions. The COFA program prepares students by building an awareness of the issues facing community forestry and arboriculture, providing a foundation in current science and technology for the field, and learning from hands-on experiences. The GIS area of emphasis provides students with a foundation in natural resources management through extensive training in geographic information systems and use of technology to study the natural environment. The WSR area of emphasis promotes the assessment, conservation, and rehabilitation of the soil, water, wetland, and biotic components of the natural landscape.

In 2021, faculty completed a major revision of the Learning Outcome Assessment Plan for this major. Faculty developed general learning outcomes for "introductory", "advanced", and "capstone" levels in five domains: *Discipline Knowledge*; *Data Literacy*; *Application, Analysis, and Decision-Making*; Communication*; and Ethics and Professionalism*. Faculty then mapped the learning outcomes to courses

within the major curriculum. Finally, faculty identified specific assessment measures (e.g., assignments, exam questions, surveys) for tracking at the various levels (introductory, advanced, capstone), and established corresponding thresholds for success. Data for the new plan was first collected in the fall of 2021, so most of the data in reported for this review pertains to the previous learning outcome assessment plan. Generally, learning outcomes exceed thresholds during the current review cycle and little or no action occurred as a result; however, occasionally there were issues identified and faculty considered if material needed to be presented differently or if the threshold needed to be updated. For example, each fall and spring semester, students graduating from the Professional Program attend a senior exit interview and fill out a questionnaire and evaluation form to comment on their undergraduate experiences at Warnell. Interviews and evaluations consistently show a high level of satisfaction among students regarding the academic programs. Occasionally, a few concerns are expressed, and those results have been used to improve various aspects of the programs.

Faculty in NRMS have been very productive in research and in securing grant funding over the last several years, with substantial increases in the amount of research funding for ongoing projects over that time. The faculty has consistently maintained a high level of research output in terms of publications. The program reputation is further attested to in that members of our faculty have served as influential leadership roles in the major professional societies, including the International Society of Arboriculture, American Water Resources Association, Cartography and Geographic Information Society, the Society for Conservation GIS, and others. Several fields of natural resources management are represented in the faculty, including community forestry, hydrology, landscape ecology, disturbance ecology, and natural resources policy and sustainability. Additionally, a significant number of faculty are actively pursuing transdisciplinary research centered on better understanding Society-Environment relations. Our faculty is highly respected within the natural resource management discipline, and faculty continue to publish in top-tier journals for the field. Faculty have been recognized with national and regional research awards, including UGA Research Awards and Creative Research Medals. Faculty have also been honored with local, regional, national and international teaching awards including the UGA Russell and Meigs Awards. Many faculty members have been selected to participate in UGA teaching programs including the Lilly Fellows, the Senior Teaching Fellows, senior Writing Fellows, Writing Intensive Fellows programs.

High School GPA and SAT scores of NRMS students are the highest among all Warnell students. Student success also continues to be high in the program, with average GPA consistently in the range of 3.3-3.7. Graduates of the BSFR in NRMS are in high demand, and accordingly, students report strong success finding jobs or continuing to graduate school, with 60 – 100% of graduates proceeding into these two paths. Students go on to careers with state and federal agencies, the private sector, and non-government organizations, among other opportunities.

In addition to the insight we can glean from these metrics, there are a number of other factors that attest to the success of the BSFR in NRMS. Our students have secured prestigious regional and national awards, academic fellowships, and competitive internships. Students routinely engage in independent research projects through the University of Georgia's Center for Undergraduate Research Opportunities (CURO) program and have presented their research at the annual CURO symposium. In addition, several undergraduate students have published coauthored work with faculty members. Our undergraduates also participate in Xi Sigma Pi, the National Honor Society of Forestry, in addition to other professional societies previously mentioned.

Academic Program Review Reporting Template

Measures of Viability:			
Internal Demand for the Program	FY 2019	FY 2020	FY 2021
Standard Faculty Teaching Load for the degree program (e.g. 3/3, 4/3, etc.)	1/1	1/1	1/1
Number of Faculty (tenured/track and non-tenured) supporting the degree program within the department	9	9	9
Number of Faculty (tenured/track and non-tenured) supporting the degree program outside the department	1	1	1
Number of Full-Time faculty teaching in the program	9	9	9
Number of Part-Time faculty teaching in the program	0	0	0
Undergraduate programs: Other External funds for program support. Provide the total amount for the academic year.	N/A	N/A	N/A

Evaluation of Program Viability:
Briefly describe how recent enrollment trends, prospects for graduates, availability of faculty to provide program instruction, and other metrics reflect the program's near and long term viability. Describe how the program reflects currency in the discipline along with any efforts made to align the curriculum with external demands or standards. In the 5 years this major has existed, enrollment has steadily increased, and career opportunities currently outnumber graduates. One of the strategic goals of the BSFR in NRMS program is to increase the number of students who choose this major. To reach this goal, program faculty and Warnell staff have increased recruiting efforts by working with high schools and other programs, such as Trees Atlanta, to increase awareness of the major around the state and region. Recruiting efforts have also increased in STEM schools and diverse feeder schools to UGA. Finally, faculty in this major are currently considering the addition of a minor, which should help increase awareness about the major outside of the Warnell School as well.

Measures of Productivity:	2019	2020	2021
Time to Degree in years (n)	4.07 (5)	3.83 (3)	3.56 (4)

Evaluation of Program Productivity:
Briefly describe how the number of students graduating, their time-to-degree, and other indicators, as appropriate, reflect the program's productivity. Describe any institutional or local factors (e.g., course sequencing or availability, high transfer student rate, etc.) that have an impact on students' progression in the program.

The number of Natural Resources Management and Sustainability graduates is low, though the increasing enrollment indicates that the number of graduates will eventually increase. Students have progressed through the major in a timely manner, with many completing their requirements to graduate in under four years. The BSFR in NRMS, like other Warnell majors, is structured as a professional program, where students apply to enter the professional program after completing a set of core requirements. In 2019, faculty voted to reduce the requirements to enter the Warnell professional program to five courses (BIOL 1107/L & 1108/L Principles of Biology I & II, CHEM 1211/L General Chemistry I, MATH 2200 Analytic Geometry and Calculus or MATH 2250 Calculus I, and STAT 2000 Introductory Statistics or BIOS 2010 Elementary Biostatistics), which has provided students with additional flexibility and aimed to increase retention rates by allowing students into upper division Warnell courses sooner in their academic path. All students in the major must complete a capstone experience, either Senior Project (FANR 4500S) or Senior Thesis (FANR 4990). Senior project involves groups of students who work with a community partner to address management goals and objectives. Students develop a management plan and present the plan to the community partner as well as faculty and students. Senior Thesis provides students with an independent research experience where students identify a question, develop an approach, collect original data, analyze results, interpret findings, and present those findings. The professional program and associated course sequencing combine to allow for an efficient, effective, high-touch approach to academic advising, allowing advisors to closely track students and facilitate their path to graduation.

Exit interviews consistently demonstrate a high level of satisfaction with the major. Students routinely comment on the mentoring they receive from faculty, research experiences, and resources in the School, such as the writing instructor and data literacy instructor. Alumni from this major show a high level of involvement, and Warnell ranks second on campus in the percentage of alumni donating to the School.

Academic Program Review Reporting Template

Degree Recommendation Program Faculty:

Check any of the following to recommend categorical action(s) the institution should take concerning this program.

☐ Program MEETS Institution's Criteria

_____Program is critical to the institutional mission and will be retained.

_____Program is critical to the institutional mission and is growing or a high demand field and thus will be enhanced.

☐ Program DOES NOT MEET Institution's Criteria

_____Program will be placed on a monitoring status.

_____Program will undergo substantive curricular revisions.

_____Program will be deactivated.

_____Program will be voluntarily terminated.

_____Other (identify/add text):

UNIVERSITY OF GEORGIA

Natural Resource Management and Sustainability - BSFR

Natural Resource Management and Sustainability - BSFR

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Natural Resource Management and Sustainability - BSFR

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Water and Soil Resources major emphasizes assessment, conservation, and rehabilitation of the soil, water, and wetland components of the natural landscape. The core curriculum is broad-based, furnishing a comprehensive understanding of the physical and biological elements of the natural environment, an appreciation of the social, political, and economic forces that influence natural resources policy decisions, and the ability to analyze natural resources problems to forge realistic solutions. Through appropriate choice of electives, students can meet the educational requirements to become a Certified Soil Scientist (by the Soil Science Society of America) and/or prepare for the certified hydrologist exam offered by the American Institute of Hydrologists. Students may also pursue certificates in Water Resources or Environmental Ethics.

Outcome Basic Soil & Water Chemistry

Understand the significance of basic soil and water chemical properties such as pH, DO, and specific conductance

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Basic Soil Properties

Describe basic soil physical (texture, structure, strength, porosity, moisture characteristics) and chemical properties (pH, CEC/AEC, base saturation, total and labile nutrients)

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

14% of students (1 out of 7) reported limited ability in this area.

Analysis of Data

successful but near the threshold

Improvement Based on Analysis

This learning outcome and measure are being considered by faculty as part of a revision to the learning outcome assessment plan.

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2018 instructor estimated that 60-79% of passing students met the outcome. The Spring 2019 instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

Results are mixed for the 2 semesters.

Improvement Based on Analysis

Faculty are evaluating this outcome and measure as part of a revision to the learning outcome assessment plan for the major.

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimated that 0-19% of passing students met the outcome.

Analysis of Data

0-19% is well below the threshold.

Improvement Based on Analysis

Faculty are evaluating this outcome and measure as part of a revision to the learning outcome assessment plan for the major.

Outcome Channel Surveying & Manning's Equation

Survey a channel cross-section and slope and apply Manning's equation

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Climatological Data

Find and utilize climatological data (such as precipitation and evaporation data)

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Continuity Equation

Apply the continuity equation to a problem

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Darcy's Law

Understand and apply Darcy's Law

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Hydraulic Head

Understand and calculate hydraulic head

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Hydrologic Statistics
Calculate and use standard hydrologic statistics, such as flow recurrence and duration curves

Measure Exit Interview Questionnaires
Exit Interview Questionnaires

Threshold for success (if available)
less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations
FANR 3060 Instructor Estimations

Threshold for success (if available)
80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations
WASR 4110 Instructor Estimations

Threshold for success (if available)
80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Sampling Techniques
Understand sampling techniques for water chemistry, soils, fish, macroinvertebrates, and channel conditions

Measure Exit Interview Questionnaires
Exit Interview Questionnaires

Threshold for success (if available)
less than 15% reporting limited ability

Data Collected
20% of students (1 out of 5) reported limited ability in this area.

Analysis of Data
20% exceeds the 15% threshold

Improvement Based on Analysis

Faculty are evaluating this outcome and measure as part of a revision to the learning outcome assessment plan for the major.

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2018 instructor estimated that 40-59% of passing students met the outcome. The Spring 2019 instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

Results are mixed for the 2 semesters.

Improvement Based on Analysis

Faculty are evaluating this outcome and measure as part of a revision to the learning outcome assessment plan for the major.

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimated that 40-59% of passing students met the outcome.

Analysis of Data

40-59% is below the threshold for success

Improvement Based on Analysis

Faculty are evaluating this outcome and measure as part of a revision to the learning outcome assessment plan for the major.

Outcome Soil Assessment & Treatment

Understand techniques for assessing soil conditions and prescribing site preparation and fertilization treatments

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Soil Profiles & Distribution

Describe soil profiles and distribution on the landscape for major physiographic regions

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Soil Properties & Tree Growth

Describe general relationships between soil properties and tree growth

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome USGS Flow and Water Chemistry Data

Find and utilize USGS flow and water chemistry data

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

An extensive revision is underway for the learning outcome assessment plan for this major. The new plan should be in place for the next reporting cycle.

Feedback

Files:

LOA Feedback Rubric_Natural Resource Management and Sustainability â€“ BSFR

Program Name: Natural Resource Management and Sustainability - BSFR

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Water and Soil Resources major emphasizes assessment, conservation, and rehabilitation of the soil, water, and wetland components of the natural landscape. The core curriculum is broad-based, furnishing a comprehensive understanding of the physical and biological elements of the natural environment, an appreciation of the social, political, and economic forces that influence natural resources policy decisions, and the ability to analyze natural resources problems to forge realistic solutions. Through appropriate choice of electives, students can meet the educational requirements to become a Certified Soil Scientist (by the Soil Science Society of America) and/or prepare for the certified hydrologist exam offered by the American Institute of Hydrologists. Students may also pursue certificates in Water Resources or Environmental Ethics.

Outcome Basic Soil & Water Chemistry

Understand the significance of basic soil and water chemical properties such as pH, DO, and specific conductance

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Basic Soil Properties
Describe basic soil physical (texture, structure, strength, porosity, moisture characteristics) and chemical properties (pH, CEC/AEC, base saturation, total and labile nutrients)

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Channel Surveying & Manning's Equation
Survey a channel cross-section and slope and apply Manning's equation

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Miscommunication regarding the transition of LOA plans for this program, as well as revisions to our undergraduate exit interviews, resulted in this information not being collected for 2019-2020.

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2019 instructor estimated that 40-59% of passing students met the outcome. The Spring 2020 instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

Unsuccessful in fall 2019. Successful in spring 2020.

Improvement Based on Analysis

The faculty determined that revisions to the learning outcome and assessment method were needed. The new LOA plan will be effective as of fall 2020.

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Climatological Data

Find and utilize climatological data (such as precipitation and evaporation data)

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Continuity Equation
Apply the continuity equation to a problem

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Darcy's Law
Understand and apply Darcy's Law

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

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Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Hydraulic Head

Understand and calculate hydraulic head

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

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Analysis of Data

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Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Hydrologic Statistics
Calculate and use standard hydrologic statistics, such as flow recurrence and duration curves

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

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Analysis of Data

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WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Sampling Techniques
Understand sampling techniques for water chemistry, soils, fish, macroinvertebrates, and channel conditions

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

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Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

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Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Soil Assessment & Treatment

Understand techniques for assessing soil conditions and prescribing site preparation and fertilization treatments

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Miscommunication regarding the transition of LOA plans for this program, as well as revisions to our undergraduate exit interviews, resulted in this information not being collected for 2019-2020.

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2019 instructor estimated that 60-79% of passing students met the outcome. The Spring 2020 instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

Unsuccessful in fall 2019. Successful in spring 2020.

Improvement Based on Analysis

The faculty determined that revisions to the learning outcome and assessment method were needed. The new LOA plan will be effective as of fall 2020.

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimated that 0-19% of passing students met the outcome.

Analysis of Data

unsuccessful

Improvement Based on Analysis

The faculty determined that revisions to the learning outcome and assessment method were needed. The new LOA plan will be effective as of fall 2020.

Outcome Soil Profiles & Distribution

Describe soil profiles and distribution on the landscape for major physiographic regions

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Soil Properties & Tree Growth

Describe general relationships between soil properties and tree growth

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome USGS Flow and Water Chemistry Data

Find and utilize USGS flow and water chemistry data

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

An extensive revision is underway for the learning outcome assessment plan for this major. The new plan should be in place for the next reporting cycle.

Feedback

Based on the forthcoming revisions, I will hold off on formal feedback via the rubric until fall 2021 - Katie Burr

Program Name: Natural Resource Management and Sustainability - BSFR

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Water and Soil Resources major emphasizes assessment, conservation, and rehabilitation of the soil, water, and wetland components of the natural landscape. The core curriculum is broad-based, furnishing a comprehensive understanding of the physical and biological elements of the natural environment, an appreciation of the social, political, and economic forces that influence natural resources policy decisions, and the ability to analyze natural resources problems to forge realistic solutions. Through appropriate choice of electives, students can meet the educational requirements to become a Certified Soil Scientist (by the Soil Science Society of America) and/or prepare for the certified hydrologist exam offered by the American Institute of Hydrologists. Students may also pursue certificates in Water Resources or Environmental Ethics.

Outcome Basic Soil & Water Chemistry

Understand the significance of basic soil and water chemical properties such as pH, DO, and specific conductance

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Basic Soil Properties

Describe basic soil physical (texture, structure, strength, porosity, moisture characteristics) and chemical properties (pH, CEC/AEC, base saturation, total and labile nutrients)

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Channel Surveying & Manning's Equation

Survey a channel cross-section and slope and apply Manning's equation

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Climatological Data

Find and utilize climatological data (such as precipitation and evaporation data)

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Exit Interview LOA Assessments were missed for fall 2020 due to miscommunication. Spring and Summer 2021 graduates were assessed, but no Natural Resource Management & Sustainability students completed the assessment.

Analysis of Data

Improvement Based on Analysis

Exit Interview LOA Assessments were missed for fall 2020 due to miscommunication. Spring and Summer 2021 graduates were assessed, but no Natural Resource Management & Sustainability students completed the assessment.

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2020 instructor estimates that 0-19% of passing students met the outcome. The Spring 2021 instructor estimates that 0-19% of passing students met the outcome.

Analysis of Data

unsuccessful

Improvement Based on Analysis

Instructors will evaluate curriculum to determine where the missed content should be added to reinforce this learning outcome.

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimates that 80-100% of passing students met this outcome.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Continuity Equation

Apply the continuity equation to a problem

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Darcy's Law

Understand and apply Darcy's Law

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Hydraulic Head

Understand and calculate hydraulic head

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Hydrologic Statistics
Calculate and use standard hydrologic statistics, such as flow recurrence and duration curves

Measure Exit Interview Questionnaires
Exit Interview Questionnaires

Threshold for success (if available)
less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations
FANR 3060 Instructor Estimations

Threshold for success (if available)
80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations
WASR 4110 Instructor Estimations

Threshold for success (if available)
80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Sampling Techniques
Understand sampling techniques for water chemistry, soils, fish, macroinvertebrates, and channel conditions

Measure Exit Interview Questionnaires
Exit Interview Questionnaires

Threshold for success (if available)
less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Soil Assessment & Treatment

Understand techniques for assessing soil conditions and prescribing site preparation and fertilization treatments

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Soil Profiles & Distribution
Describe soil profiles and distribution on the landscape for major physiographic regions

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Exit Interview LOA Assessments were missed for fall 2020 due to miscommunication. Spring and Summer 2021 graduates were assessed, but no Natural Resource Management & Sustainability students completed the assessment.

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The Fall 2020 instructor estimates that 80-100% of passing students met the outcome. The spring 2021 instructor estimates that 80-100 % of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimates that 0-19% of passing students met this outcome.

Analysis of Data

unsuccessful

Improvement Based on Analysis

Instructors will evaluate curriculum to determine where content should be added/changed to reinforce this learning outcome.

Outcome Soil Properties & Tree Growth
Describe general relationships between soil properties and tree growth

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome USGS Flow and Water Chemistry Data

Find and utilize USGS flow and water chemistry data

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FANR 3060 Instructor Estimations

FANR 3060 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure WASR 4110 Instructor Estimations

WASR 4110 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

New learning outcome assessment plan will be in place for next cycle.

Feedback

New assessment plan is in place for next cycle.

End of report

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Undergraduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: BSFR Parks, Rec & Tourism Mgmt

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	0	2	1
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	2	2	1
	Two or more races	0	1	1
	White	27	21	19
	Race/Ethnicity Not Reported	0	1	0
	Female	15	11	8
	Male	14	16	14
	Gender Not Reported	0	0	0
	Total	**29**	**27**	**22**

Admission Metrics for Graduates

	FY 2020		FY 2021		FY 2022	
	# of Students	Average	# of Students	Average	# of Students	Average
High School GPA	10	3.79	7	3.81	7	3.90
ACT	11	26	8	28	6	26
SAT	12	1169	8	1291	9	1245

Degrees Metrics for Graduates

		FY 2020	FY 2021	FY 2022
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	0	0	2
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	2	1
	Two or more races	0	0	1
	White	16	10	13
	Race/Ethnicity Not Reported	0	1	0
	Female	7	8	5
	Male	9	5	12
	Gender Not Reported	0	0	0
	Total	**16**	**13**	**17**
Degree GPA*		3.26	3.43	3.29
Time To Degree (TTD) in Years*	Freshman	4.30	4.05	4.05
	Transfer	2.56	2.61	3.67

* Based on Graduating Cohort

Academic Program Review Reporting Template

Academic Program Name: BSFR Parks, Recreation, and Tourism Management
CIP Code: 03020700
College or School: Warnell School of Forestry and Natural Resources
Department: Warnell School of Forestry and Natural Resources
Date of Last Internal Review: 2014-2015

Measures of Quality:			
Student Input – Undergraduate Programs	FY 2019	FY 2020	FY 2021
High School GPA (n)	3.87 (5)	3.79 (10)	3.81 (7)
SAT (n)	1193 (8)	1169 (12)	1291 (8)
Student Output – Undergraduate Programs	FY 2019	FY 2020	FY 2021
Degree GPA (n)	3.31 (10)	3.26 (16)	3.43 (13)
Employment rates of graduates (if available) http://career.uga.edu/outcomes/co_results_major	90%	64%	75%
Admission into graduate programs (if available) http://career.uga.edu/outcomes/co_results_major	10%	14%	25%

Evaluation of Program Quality:

Briefly describe how the competitiveness of incoming students, their achievement of program learning outcomes, and their post-graduate success reflect the quality of the program. Describe how the research/scholarly productivity of the program faculty reflects the quality of the program within the discipline. Include additional indicators of the program quality as appropriate.

The BSFR in Parks, Recreation, and Tourism Management (PRTM) prepares students for a variety of natural resource recreation and tourism-based careers. Students learn to better understand the role that people play in sustainable outdoor recreation and tourism, and what makes tourism sustainable. Students also learn how to cultivate environmental awareness through outdoor recreation, how to manage wilderness areas to accommodate visitors, and the business skills needed to run a successful eco-tourism or recreation enterprise. Students develop real-world skills and tools needed to identify, understand, and manage complex human-environment issues. This includes an emphasis on understanding significant historical developments, developing services and programs, managing for recreational impacts, and recognizing the importance of sustainable development. The curriculum offers opportunities for students to study abroad on one of Warnell's many study abroad programs including Antarctica, Australia, Fiji, New Zealand, and the United Kingdom. Many students in this major also complete the coursework for the Environmental Education Certificate, which helps make their skills even more marketable for employers.

In 2017, faculty voted to change the name of major from Natural Resources Recreation and Tourism to the current name (PRTM) to reflect the degree and training more accurately. In 2021, faculty completed a major revision of the Learning Outcome Assessment Plan for this major. Faculty developed general learning outcomes for "introductory", "advanced", and "capstone" levels in five domains: Discipline Knowledge; Data Literacy; Application, Analysis, and Decision-Making; Communication; and Ethics and

Professionalism. Faculty then mapped the learning outcomes to courses within the major curriculum. Finally, faculty identified specific assessment measures (e.g., assignments, exam questions, surveys) for tracking at the various levels (introductory, advanced, capstone), and established corresponding thresholds for success. Data for the new plan was first collected in the fall of 2021, so most of the data in reported for this review pertains to the previous learning outcome assessment plan. Generally, learning outcomes exceed thresholds during the current review cycle and little or no action occurred as a result; however, occasionally there were issues identified and faculty considered if material needed to be presented differently or if the threshold needed to be updated. For example, each fall and spring semester, students graduating from the Professional Program attend a senior exit interview and fill out a questionnaire and evaluation form to comment on their undergraduate experiences at Warnell. Interviews and evaluations consistently show a high level of satisfaction among students regarding the academic programs. Occasionally, a few concerns are expressed, and those results have been used to improve various aspects of the programs.

Faculty members in PRTM have been very productive in research in recent years, with substantial increases in the amount of funding, publications, and presentations. The program reputation is further attested to in that members of our faculty have served as influential leadership roles in the major professional societies, including the American Tourism Society, The US Travel Association, the Travel and Tourism Research Association, National Recreation and Park Association, and Society of Outdoor Recreation Professionals, among others. Faculty in PRTM are actively pursuing transdisciplinary research centered on better understanding Society-Environment relations. Faculty are highly respected within the disciplines of PRTM and continue to publish in high tier journals in the field. Faculty have also been honored with local, regional, national, and international teaching awards including the UGA Meigs Distinguished Teaching Professorship and the UGA Russell Award, among others. Faculty members have been active in UGA teaching programs including the Lilly Fellows, the Senior Teaching Fellows, senior Writing Fellows, and Writing Intensive Fellows programs.

High School GPA and SAT scores are high among PRTM students. Student success also continues to be high in the program, with average GPA consistently in the range of 3.2-3.4. Students report strong success finding jobs or continuing to graduate school, with 78 – 100% of graduates proceeding into these two paths. Students go on to careers with state and federal agencies, the private sector, and non-government organizations, or graduate school, among other opportunities.

In addition to the insight we can glean from these metrics, there are a number of other factors that attest to the success of the BSFR in Parks, Recreation, and Tourism Management. Students have secured prestigious national awards, academic fellowships, and competitive internships. Students routinely engage in independent research projects through the University of Georgia's Center for Undergraduate Research Opportunities (CURO) program and have presented their research at the annual CURO symposium. In addition, several undergraduate students have published coauthored work with faculty members. Our undergraduates also participate in Xi Sigma Pi, the National Honor Society of Forestry, in addition to other professional societies such as those previously mentioned.

Academic Program Review Reporting Template

Measures of Viability:			
Internal Demand for the Program	FY 2019	FY 2020	FY 2021
Standard Faculty Teaching Load for the degree program (e.g. 3/3, 4/3, etc.)	1/1	1/1	1/1
Number of Faculty (tenured/track and non-tenured) supporting the degree program within the department	7	7	7
Number of Faculty (tenured/track and non-tenured) supporting the degree program outside the department	0	0	0
Number of Full-Time faculty teaching in the program	7	7	7
Number of Part-Time faculty teaching in the program	0	0	0
Undergraduate programs: Other External funds for program support. Provide the total amount for the academic year.	N/A	N/A	N/A

Evaluation of Program Viability:

Briefly describe how recent enrollment trends, prospects for graduates, availability of faculty to provide program instruction, and other metrics reflect the program's near and long term viability. Describe how the program reflects currency in the discipline along with any efforts made to align the curriculum with external demands or standards.

Over the past five years, enrollment has declined in the PRTM major from around 30 to around 20. The cause of this decline is not readily apparent but may have been influenced by the COVID-19 pandemic and resulting reduced recruitment efforts. One of the Warnell School Strategic Plan goals is to increase enrollment in the PRTM major. To reach this goal, the program and Warnell staff have increased recruiting efforts by working with high schools and other programs to increase awareness of the major. Recruiting efforts have also increased in diverse feeder schools to UGA, largely due to a diversity enhancement grant to the School.

Faculty supporting the PRTM major are currently able to meet the program's instructional needs. However, meeting those needs has become increasingly challenging because since 2014, nearly all new faculty hires have been 9-month appointments rather than 12-month appointments, and therefore have lower instructional EFTs. The overall reduction in instructional EFTs has resulted in a need to restructure some course offerings, including eliminating some lower-enrolled elective courses and adding additional instructional support in the form of part-time instructors. Faculty on 9-month appointments typically teach a 1/1 teaching load while those on 12-month appointment typically teach a 2/1 or 2/2 load.

The PRTM faculty are currently discussing offering a Minor which will not only increase credit hour production but will also provide an opportunity to students who may be undecided on a major to see PRTM as a viable option.

Academic Program Review Reporting Template

Measures of Productivity:	2019	2020	2021
Time to Degree in years (n)	3.80 (10)	4.30 (16)	4.05 (13)

Evaluation of Program Productivity:

Briefly describe how the number of students graduating, their time-to-degree, and other indicators, as appropriate, reflect the program's productivity. Describe any institutional or local factors (e.g., course sequencing or availability, high transfer student rate, etc.) that have an impact on students' progression in the program.

The number of Parks, Recreation, and Tourism graduates has ranged from 10-16 in recent years. Students have progressed through the major in a timely manner, with most completing their requirements to graduate in four years. The BSFR in PRTM, like other Warnell majors, is structured as a professional program, where students apply to enter the professional program after completing a set of core requirements. In 2019, faculty voted to reduce the requirements to enter the Warnell professional program to five courses (BIOL 1103/L & 1104/L Concepts of Biology and Organismal Biology, CHEM 1110/L Elementary Chemistry, MATH 1101 Introduction to Mathematical Modeling or MAH 1113 Precalculus, and STAT 2000 Introductory Statistics or BIOS 2010 Elementary Biostatistics), which has provided students with additional flexibility and aimed to increase retention rates by allowing students into upper division Warnell courses sooner in their academic path. All students in the major must complete a capstone experience, either Senior Project (FANR 4500S) or Senior Thesis (FANR 4990). Senior project involves groups of students who work with a community partner to address management goals and objectives. Students develop a management plan and present the plan to the community partner as well as faculty and students. Senior Thesis provides students with an independent research experience where students identify a question, develop an approach, collect original data, analyze results, interpret findings, and present those findings. The professional program and associated course sequencing combine to allow for an efficient, effective, high-touch approach to academic advising, allowing advisors to closely track students and facilitate their path to graduation.

Exit interviews consistently demonstrate a high level of satisfaction with the major. Students routinely comment on the mentoring they receive from faculty, research experiences, and resources in the School, such as the writing instructor and data literacy instructor. Alumni from this major show a high level of involvement, and Warnell ranks second on campus in the percentage of alumni donating to the School.

Academic Program Review Reporting Template

Degree Recommendation Program Faculty:

Check any of the following to recommend categorical action(s) the institution should take concerning this program.

☐ Program MEETS Institution's Criteria

_____Program is critical to the institutional mission and will be retained.

_____Program is critical to the institutional mission and is growing or a high demand field and thus will be enhanced.

☐ Program DOES NOT MEET Institution's Criteria

_____Program will be placed on a monitoring status.

_____Program will undergo substantive curricular revisions.

_____Program will be deactivated.

_____Program will be voluntarily terminated.

_____Other (identify/add text):

UNIVERSITY OF GEORGIA

Parks, Recreation and Tourism Management - BSFR

Parks, Recreation and Tourism Management - BSFR

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Parks, Recreation and Tourism Management - BSFR

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The focus of the Natural Resources Recreation and Tourism major is to provide undergraduate and graduate students with an understanding and appreciation for the management of natural resources for outdoor recreation and nature-based tourism opportunities. An integral part of the NRRT major involves helping students to better understand the “human dimension” aspects of managing natural resources. The NRRT major seeks to provide students with practical real-world skills and tools needed to identify, understand, and manage complex human-environment issues. This includes an emphasis on understanding significant historical advancements, developing services and programs, managing for recreational impacts, and recognizing the importance of sustainability.

Outcome Administration and Management

Understand the administration and management of biophysical and social aspects of natural resources

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Central Theories of Human Dimensions

Comprehend the central theories of human dimensions, recreation and social science as they apply to the management of natural resources

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

0% of students (0 out of 10) reported limited ability in this area.

Analysis of Data

Success

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Instructor estimated that 20-39% of passing students met the outcome.

Analysis of Data

20-39% is well below the threshold for success

Improvement Based on Analysis

Faculty are evaluating this outcome and measure as part of the larger revision to the learning outcome assessment plan for the major.

Outcome Communication to Diverse Audiences

Appreciate and utilize various forms of communication and technological tools that relay information pertaining to environmental and natural resources issues to diverse audiences

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Cost-Benefit Analyses

Appreciate the social, political, and ethical aspects of making natural resource management decisions and the related consequences of those decisions to our natural resources

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Data Analysis of Biophysical Impacts

Understand and apply appropriate methods and techniques for collecting and analyzing data related to measuring biophysical impacts on the natural resource

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Data Analysis of Human Dimensions

Understand and apply appropriate methods for collecting and analyzing data related to measuring the human dimensions/social science of natural resource issues

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Environmental Interpretation & Education

Understand and apply the methods, principles, and philosophies of environmental interpretation and environmental education as used by natural resource agencies

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

9% of students (1 out of 11) reported limited ability in this area.

Analysis of Data

Success

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Instructor estimates that 80-100% of passing students met the outcome.

Analysis of Data

Success

Improvement Based on Analysis

Outcome Policy Issues

Appreciate the historic and current natural resources issues, legislation, and policies that affect public land managers and their decision-making processes

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Sustainability

Comprehend and apply the principles of sustainability to the planning, development and management of ecotourism and protected areas resources and visitors

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

The learning assessment plan for this major is under revision and should be complete for the next reporting cycle.

Feedback

Files:

LOA Feedback Rubric_Parks, Recreation and Tourism Management â€“ BSFR

Program Name: Parks, Recreation and Tourism Management - BSFR

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The focus of the Natural Resources Recreation and Tourism major is to provide undergraduate and graduate students with an understanding and appreciation for the management of natural resources for outdoor recreation and nature-based tourism opportunities. An integral part of the NRRT major involves helping students to better understand the “human dimension” aspects of managing natural resources. The NRRT major seeks to provide students with practical real-world skills and tools needed to identify, understand, and manage complex human-environment issues. This includes an emphasis on understanding significant historical advancements, developing services and programs, managing for recreational impacts, and recognizing the importance of sustainability.

Outcome Administration and Management

Understand the administration and management of biophysical and social aspects of natural resources

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Central Theories of Human Dimensions

Comprehend the central theories of human dimensions, recreation and social science as they apply to the management of natural resources

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Communication to Diverse Audiences

Appreciate and utilize various forms of communication and technological tools that relay information pertaining to environmental and natural resources issues to diverse audiences

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Miscommunication regarding the transition of LOA plans for this program, as well as revisions to our undergraduate exit interviews, resulted in this information not being collected for 2019-2020.

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Instructor estimated that 60-79% of passing students met the outcome.

Analysis of Data

unsuccessful

Improvement Based on Analysis

The faculty determined that revisions to the learning outcome and assessment method were needed. The new LOA plan will be effective as of fall 2020.

Outcome Cost-Benefit Analyses

Appreciate the social, political, and ethical aspects of making natural resource management decisions and the related consequences of those decisions to our natural resources

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Data Analysis of Biophysical Impacts

Understand and apply appropriate methods and techniques for collecting and analyzing data related to measuring biophysical impacts on the natural resource

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Data Analysis of Human Dimensions

Understand and apply appropriate methods for collecting and analyzing data related to measuring the human dimensions/social science of natural resource issues

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Environmental Interpretation & Education

Understand and apply the methods, principles, and philosophies of environmental interpretation and environmental education as used by natural resource agencies

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Policy Issues

Appreciate the historic and current natural resources issues, legislation, and policies that affect public land managers and their decision-making processes

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Miscommunication regarding the transition of LOA plans for this program, as well as revisions to our undergraduate exit interviews, resulted in this information not being collected for 2019-2020.

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Instructor estimated that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Sustainability

Comprehend and apply the principles of sustainability to the planning, development and management of ecotourism and protected areas resources and visitors

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

The learning assessment plan for this major is under revision and should be complete for the next reporting cycle.

Feedback

Based on the forthcoming revisions, I will hold off on formal feedback via the rubric until fall 2021 - Katie Burr

Program Name: Parks, Recreation and Tourism Management - BSFR

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The focus of the Natural Resources Recreation and Tourism major is to provide undergraduate and graduate students with an understanding and appreciation for the management of natural resources for outdoor recreation and nature-based tourism opportunities. An integral part of the NRRT major involves helping students to better understand the “human dimension” aspects of managing natural resources. The NRRT major seeks to provide students with practical real-world skills and tools needed to identify, understand, and manage complex human-environment issues. This includes an emphasis on understanding significant historical advancements, developing services and programs, managing for recreational impacts, and recognizing the importance of sustainability.

Outcome Administration and Management

Understand the administration and management of biophysical and social aspects of natural resources

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Central Theories of Human Dimensions

Comprehend the central theories of human dimensions, recreation and social science as they apply to the management of natural resources

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Communication to Diverse Audiences

Appreciate and utilize various forms of communication and technological tools that relay information pertaining to environmental and natural resources issues to diverse audiences

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Cost-Benefit Analyses

Appreciate the social, political, and ethical aspects of making natural resource management decisions and the related consequences of those decisions to our natural resources

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

0% of students reported a limited appreciation of the social, political, and ethical aspects of making natural resource management decisions and the related consequences of those decisions to our natural resources. Exit Interview LOA Assessments were missed for fall 2020 due to miscommunication. Spring and Summer 2021 graduates were assessed.

Analysis of Data

successful

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimates that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Data Analysis of Biophysical Impacts

Understand and apply appropriate methods and techniques for collecting and analyzing data related to measuring biophysical impacts on the natural resource

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Data Analysis of Human Dimensions

Understand and apply appropriate methods for collecting and analyzing data related to measuring the human dimensions/social science of natural resource issues

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Environmental Interpretation & Education

Understand and apply the methods, principles, and philosophies of environmental interpretation and environmental education as used by natural resource agencies

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Policy Issues

Appreciate the historic and current natural resources issues, legislation, and policies that affect public land managers and their decision-making processes

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

Analysis of Data

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

Analysis of Data

Improvement Based on Analysis

Outcome Sustainability

Comprehend and apply the principles of sustainability to the planning, development and management of ecotourism and protected areas resources and visitors

Measure Exit Interview Questionnaires

Exit Interview Questionnaires

Threshold for success (if available)

less than 15% reporting limited ability

Data Collected

0% of students reported a limited understanding and ability to apply the principles of sustainability to the planning, development, and management of ecotourism and protected areas resources and visitors. Exit Interview LOA Assessments were missed for fall 2020 due to miscommunication. Spring and Summer 2021 graduates were assessed.

Analysis of Data

successful

Improvement Based on Analysis

Measure FORS 4270 Instructor Estimations

FORS 4270 Instructor Estimations

Threshold for success (if available)

80-100% of passing students estimated to meet the outcome

Data Collected

The instructor estimates that 80-100% of passing students met the outcome.

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

New LOA plan is in place for next cycle.

Feedback

End of report

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Graduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: MFR Forest Resources

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	1	4	3
	Asian	0	0	1
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	1	1
	White	20	22	20
	Race/Ethnicity Not Reported	0	1	1
	Female	2	3	2
	Male	19	25	24
	Gender Not Reported	0	0	0
	Total	**21**	**28**	**26**

Admission Metrics

	FY 2019		FY 2020		FY 2021	
	# of Students	Average	# of Students	Average	# of Students	Average
Application	21		13		18	
Offered	17		12		16	
Graduate GPA	1	4.00	0		0	
Under GPA	17	3.24	12	3.37	16	3.13
GMAT Total	0		0		0	
GRE Quantitative	0		0		0	
GRE Verbal	0		0		0	
GRE Writing	17	3.1	10	3.3	14	3.3
Rev GRE Quantitative	17	151.9	12	151.5	16	149.4
Rev GRE Verbal	17	154.5	12	152.9	16	151.8

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	1
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	0
	White	11	11	11
	Race/Ethnicity Not Reported	0	0	0
	Female	1	0	2
	Male	10	11	10
	Gender Not Reported	0	0	0
Total		**11**	**11**	**12**
Degree GPA*		3.81	3.47	3.66
Time To Degree (TTD)*		1.86	1.84	1.69

*Based on Graduating Cohort

Academic Program Review Reporting Template

Academic Program Name: MFR Forest Resources
CIP Code: 03050210
College or School: Warnell School of Forestry and Natural Resources
Department: Warnell School of Forestry and Natural Resources
Date of Last Internal Review: 2014-2015

Measures of Quality:			
Student Input – Graduate Programs	FY 2019	FY 2020	FY2021
Undergraduate GPA (n)	3.24 (17)	3.37 (12)	3.13 (16)
Student Output – Graduate Programs	FY 2019	FY 2020	FY 2021
Graduate GPA (n)	3.81 (11)	3.47 (11)	3.66 (12)
Research/scholarly output, internal/external honors, placements and placement rates of graduate students, etc. (as appropriate). Please define what measures are used and how they are interpreted.	N/A	N/A	N/A
External Quality Assurance (e.g., professional accreditation, surveys, market rankings)	SAF Accred.	SAF Accred.	SAF Accred.

Evaluation of Program Quality:

Briefly describe how the competitiveness of incoming students, their achievement of program learning outcomes, their scholarly/research productivity during the program, and their post-graduate success reflect the quality of the program. Describe how the research/scholarly productivity of the program faculty reflects the quality of the program within the discipline. Include additional indicators of the program quality as appropriate.

The Master of Forest Resources (MFR) combines business and forestry knowledge to prepare students for a range of career options related to the business of forestry. This non-thesis degree includes coursework at both Warnell and the Terry College of Business to blend business courses with advanced forestry coursework—the only program of its kind in the country. This program is offered through UGA's Center for Forest Business, a leading knowledge center for the timberland investment and operations industry, and is housed in the Warnell School. The MFR is accredited by the Society of American Foresters.

Undergraduate GPA scores are high among MFR students, and student success also continues to be high in the program, with average GPA consistently in the range of 3.5-3.8. Students report strong success finding jobs after completing the MFR and go on to careers with state and federal agencies, the private sector, and non-government organizations, among other opportunities, and work in areas such as Timberland Investment Management Organizations, Real Estate Investment Trusts, Forest Management Consultants, Conservation experts, Policy and Economic Development, Wood Procurement, and Forestry Industry.

Forestry faculty members have been very productive in research and in securing grant funding over the last several years, with substantial increases in the amount of research funding for ongoing projects over

that time. The faculty have consistently maintained a high level of research output in terms of publications. The program reputation is further attested to in that members of our faculty have served as influential leadership roles in the major professional societies, including the Society of American Foresters (SAF), among others. Several specialty areas of the Forestry field are represented in the faculty, including harvesting, procurement, economics, silviculture and mensuration among others. Additionally, a significant number of faculty are actively pursuing transdisciplinary research centered on better understanding Society-Environment relations. Our faculty is highly respected within the Forestry discipline nationally and globally, and faculty continue to publish in top-tier journals for the field. Faculty have been recognized with national and regional research awards, including UGA Research Awards and Creative Research Medals. Faculty have also been honored with local, regional, national, and international teaching awards including the US Department of Agriculture Excellence in Teaching Award, and the Society of American Foresters Carl Alwin Schenck Award. Many faculty members have been selected to participate in UGA teaching programs including the Lilly Fellows, the Senior Teaching Fellows, senior Writing Fellows, Writing Intensive Fellows programs.

Measures of Viability:			
Internal Demand for the Program	FY 2019	FY 2020	FY 2021
Standard Faculty Teaching Load for the degree program (e.g. 3/3, 4/3, etc.)	1/1	1/1	1/1
Number of Faculty (tenured/track and non-tenured) supporting the degree program within the department	10	10	11
Number of Faculty (tenured/track and non-tenured) supporting the degree program outside the department	Terry?	Terry?	Terry?
Number of Full-Time faculty teaching in the program	27	26	26
Number of Part-Time faculty teaching in the program	0	0	0
Graduate programs: Other External funds for program support. Provide the total amount for the academic year.	$175,000	$175,000	$191,500

Evaluation of Program Viability:

Briefly describe how recent enrollment trends, prospects for graduates, availability of faculty to provide program instruction, and other metrics reflect the program's near and long term viability. Describe how the program reflects currency in the discipline along with any efforts made to align the curriculum with external demands or standards.

In recent years, enrollment of the MFR program has remained steady around 25 students. Students in this selective program are supported on assistantship funds that are largely generated through a biennial Timberland Investment Conference that is organized by the Center for Forest Business. Revenue from this conference directly supports MFR graduate assistantships; in 2019 the conference generated around $350,000 to support assistantships in 2019 and 2020, and in 2021 the conference generated $383,000, which

will be divided across 2021 and 2022. Continued support from the conference is critical to the ongoing success of the MFR program.

Graduates of the MFR program are in very high demand and attract some of the highest salaries of students in any Warnell programs. Prospects are continually highest in the private sector; however, opportunities exist for federal and state agencies and non-governmental organizations as well. Recent graduates are employed by a variety of Timberland Investment Management Organizations, Real Estate Investment Trusts, consulting firms, and in forest industry, among other places.

The MFR program is widely recognized as the premier Forest Business program in the nation. Students experience small class sizes with individualized attention and guidance for their graduate studies. Although enrollment has been consistent in recent years, meeting instructional needs has become increasingly challenging for faculty. Since 2014, nearly all new faculty hires have been 9-month appointments rather than 12-month appointments, and therefore have lower instructional EFTs. The overall reduction in instructional EFTs has resulted in a need to restructure some course offerings, including eliminating some lower-enrolled elective courses and adding additional instructional support in the form of part-time instructors. Faculty on 9-month appointments typically teach a 1/1 teaching load while those on 12-month appointment typically teach a 2/1 or 2/2 load.

Measures of Productivity:	2019	2020	2021
Time to degree in years (n)	1.86 (11)	1.84 (11)	1.69 (12)

Evaluation of Program Productivity:

Briefly describe how the number of students graduating, their time-to-degree, and other indicators, as appropriate, reflect the program's productivity. Describe any institutional or local factors (e.g., course sequencing or availability) that have an impact on students' progression in the program.

The number of MFR graduates has remained constant (11-12) in recent years. Students have completed the degree requirements in a timely fashion, averaging less than 2 years to graduation, indicating that students have access to courses and other resources needed to graduate. Furthermore, exit interviews consistently demonstrate a high level of satisfaction with the program. Students routinely comment on the mentoring they receive from faculty and the opportunity to gain real-world experience during their graduate program. Alumni show a high level of involvement in the School; for example, Warnell ranks second on campus in the percentage of alumni donating to the School. Success of Warnell MFR alumni is further demonstrated by inclusion of alums on recent UGA 40 Under 40 lists.

Academic Program Review Reporting Template

Degree Recommendation Program Faculty:

Check any of the following to recommend categorical action(s) the institution should take concerning this program.

☐ Program MEETS Institution's Criteria

_____Program is critical to the institutional mission and will be retained.

_____Program is critical to the institutional mission and is growing or a high demand field and thus will be enhanced.

☐ Program DOES NOT MEET Institution's Criteria

_____Program will be placed on a monitoring status.

_____Program will undergo substantive curricular revisions.

_____Program will be deactivated.

_____Program will be voluntarily terminated.

_____Other (identify/add text):

UNIVERSITY OF GEORGIA

Forest Resources - MFR

Forest Resources - MFR

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Forest Resources - MFR

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator Dr. Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Master of Forest Resources is a terminal degree, suitable for students who want additional instruction and training in Forest Resources. The MFR requires a minimum of 33 semester hours of graduate-level course work, but additional courses may be required by the student's Advisory Committee. No thesis is required.

Outcome Knowledge of Course Material

Demonstrate knowledge of material presented in courses taken during the degree program

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Demonstrate knowledge of the subject area that is significantly beyond that expected of an upper-level undergraduate student

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment

Overall Accomplishment

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 10 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas
Clearly express ideas verbally

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Feedback

Files:

LOA Feedback Rubric_Forest Resources â€“ MFR

Program Name: Forest Resources - MFR

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator Dr. Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Master of Forest Resources is a terminal degree, suitable for students who want additional instruction and training in Forest Resources. The MFR requires a minimum of 33 semester hours of graduate-level course work, but additional courses may be required by the student's Advisory Committee. No thesis is required.

Outcome Knowledge of Course Material

Demonstrate knowledge of material presented in courses taken during the degree program

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Demonstrate knowledge of the subject area that is significantly beyond that expected of an upper-level undergraduate student

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment

Overall Accomplishment

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas

Clearly express ideas verbally

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Feedback

Files:

Forest Resources - MFR

Program Name: Forest Resources - MFR

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Dr. Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Master of Forest Resources is a terminal degree, suitable for students who want additional instruction and training in Forest Resources. The MFR requires a minimum of 33 semester hours of graduate-level course work, but additional courses may be required by the student's Advisory Committee. No thesis is required.

Outcome Knowledge of Course Material

Demonstrate knowledge of material presented in courses taken during the degree program

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (o of 11 students) reported limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Demonstrate knowledge of the subject area that is significantly beyond that expected of an upper-level undergraduate student

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (o of 11 students) reported limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment

Overall Accomplishment

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (o of 10 students) reported limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas

Clearly express ideas verbally

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (o of 11 students) reported limited ability

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Feedback

Files:

Forest Resources - MFR

End of report

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Graduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: MNR Natural Resources

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	1	1	0
	Black or African-American	0	0	1
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	1
	Two or more races	0	0	1
	White	10	11	16
	Race/Ethnicity Not Reported	0	0	0
	Female	6	6	12
	Male	5	6	7
	Gender Not Reported	0	0	0
	Total	11	12	19

Admission Metrics

	FY 2019		FY 2020		FY 2021	
	# of Students	Average	# of Students	Average	# of Students	Average
Application	10		9		29	
Offered	6		9		23	
Graduate GPA	0		1	3.72	0	
Under GPA	6	3.18	8	3.50	23	3.38
GMAT Total	0		0		0	
GRE Quantitative	0		0		0	
GRE Verbal	0		0		0	
GRE Writing	6	3.7	9	4.1	23	3.9
Rev GRE Quantitative	6	148.2	9	153.6	23	149.0
Rev GRE Verbal	6	152.5	9	156.3	23	153.7

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	0	1	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	0
	White	5	6	7
	Race/Ethnicity Not Reported	0	0	0
	Female	0	4	5
	Male	5	3	2
	Gender Not Reported	0	0	0
Total		5	7	7
Degree GPA*		3.88	3.89	3.88
Time To Degree (TTD)*		1.26	1.47	1.38

*Based on Graduating Cohort

Academic Program Review Reporting Template

Academic Program Name: MNR Natural Resources
CIP Code: 03010105
College or School: Warnell School of Forestry and Natural Resources
Department: Warnell School of Forestry and Natural Resources
Date of Last Internal Review: 2014-2015

Measures of Quality:			
Student Input – Graduate Programs	FY 2019	FY 2020	FY2021
Undergraduate GPA (n)	3.18 (6)	3.50 (8)	3.38 (23)
Student Output – Graduate Programs	FY 2019	FY 2020	FY 2021
Graduate GPA (n)	3.88 (5)	3.89 (7)	3.88 (7)
Research/scholarly output, internal/external honors, placements and placement rates of graduate students, etc. (as appropriate). Please define what measures are used and how they are interpreted.	N/A	N/A	N/A
External Quality Assurance (e.g., professional accreditation, surveys, market rankings)	N/A	N/A	N/A

Evaluation of Program Quality:

Briefly describe how the competitiveness of incoming students, their achievement of program learning outcomes, their scholarly/research productivity during the program, and their post-graduate success reflect the quality of the program. Describe how the research/scholarly productivity of the program faculty reflects the quality of the program within the discipline. Include additional indicators of the program quality as appropriate.

The Master of Natural Resources (MNR) is a non-thesis, terminal degree that includes at least 33 hours of graduate-level coursework. This highly flexible degree can be tailored to suit many areas of specialization in natural resources fields. Students can choose from disciplinary areas such as Community Forestry and Arboriculture, Environmental Education, Fisheries Science, Forest Biology, Geospatial Information Science (GIS), Parks, Recreation and Tourism, Policy and Sustainability, Water and Soil Sciences, and Wildlife Science. The MNR is also popular among students interested in Warnell Double Dawgs pathways. Students in the MNR program are mentored by a major professor along with an advisory committee of at least two other faculty members.

Undergraduate GPA scores are high among MNR students, and student success also continues to be high in the program, with average GPA consistently above 3.8. Students report success finding jobs after completing the MNR and go on to careers with state and federal agencies, the private sector, and non-government organizations, among other paths.

Nearly half of all Warnell faculty directly support the MNR program through teaching or mentoring students. Faculty members involved in this program have been very productive in research and in securing grant funding over the last several years, with substantial increases in the amount of research

funding for ongoing projects over that time. The faculty have consistently maintained a high level of research output in terms of publications and professional presentations. The program reputation is further attested to in that members of our faculty have served as influential leadership roles in the major professional societies representing the fields of fisheries and wildlife, natural resources policy, parks and tourism, and community forestry and arboriculture, among others. A significant number of faculty who contribute to the MNR program are actively pursuing transdisciplinary research centered on better understanding Society-Environment relations. Faculty are highly respected within the Natural Resources field both nationally and globally, and faculty continue to publish in top-tier journals for their respective fields. Faculty have been recognized with national and regional research awards, including UGA Research Awards and Creative Research Medals. Faculty have also been honored with local, regional, national, and international teaching awards including the UGA Russel Award and Meigs Distinguished Teaching Professorship. Many faculty members have participated in UGA teaching programs including the Lilly Fellows, the Senior Teaching Fellows, senior Writing Fellows, Writing Intensive Fellows programs.

Measures of Viability:			
Internal Demand for the Program	FY 2019	FY 2020	FY 2021
Standard Faculty Teaching Load for the degree program (e.g. 3/3, 4/3, etc.)	1/1	1/1	1/1
Number of Faculty (tenured/track and non-tenured) supporting the degree program within the department	28	26	26
Number of Faculty (tenured/track and non-tenured) supporting the degree program outside the department	0	0	0
Number of Full-Time faculty teaching in the program	28	26	26
Number of Part-Time faculty teaching in the program	0	1	1
Graduate programs: Other External funds for program support. Provide the total amount for the academic year.			

Evaluation of Program Viability:

Briefly describe how recent enrollment trends, prospects for graduates, availability of faculty to provide program instruction, and other metrics reflect the program's near and long term viability. Describe how the program reflects currency in the discipline along with any efforts made to align the curriculum with external demands or standards.

Enrollment in the MNR program has steadily increased in recent years from around 10 to over 20, which is an all-time high. This program is gaining popularity due to its flexibility and utility, but also likely because the MNR is part of four Warnell Double Dawgs pathways, including three housed entirely in Warnell and one partnership with the Odum School of Ecology BA program. Students in the program are typically self-funded, but some are supported on Teaching Assistantships. In addition, MNR program enrollment

increases corresponded with a digital marketing campaign (focused on the MNR program) that ran for a 3-month period in the spring of 2020.

Graduates of the MNR are prepared for a variety of natural resources positions, including those with federal and state agencies, private consulting firms, and non-governmental organizations. Graduates are often particularly well positioned for positions in geospatial information science, natural resources policy, environmental interpretation and education, and community forestry.

Students in the MNR program experience small class sizes with individualized attention and guidance for their graduate studies. Faculty supporting the MNR program are currently meeting the instructional needs of the program. However, meeting those needs has become increasingly challenging for faculty in recent years. Since 2014, nearly all new faculty hires have been 9-month appointments rather than 12-month appointments, and therefore have lower instructional EFTs. The overall reduction in instructional EFTs has resulted in a need to restructure some course offerings, including eliminating some lower-enrolled elective courses and adding additional instructional support in the form of part-time instructors. Faculty on 9-month appointments typically teach a 1/1 teaching load while those on 12-month appointment typically teach a 2/1 or 2/2 load.

Measures of Productivity:	2019	2020	2021
Time to degree in years (n)	1.26 (5)	1.47 (7)	1.38 (7)

Evaluation of Program Productivity:

Briefly describe how the number of students graduating, their time-to-degree, and other indicators, as appropriate, reflect the program's productivity. Describe any institutional or local factors (e.g., course sequencing or availability) that have an impact on students' progression in the program.

The number of MNR graduates has increased in recent years, corresponding with increased enrollment. Students have completed the degree requirements in a timely fashion, averaging less than 1.5 years to graduation, indicating that students have access to courses and other resources needed to graduate. Furthermore, exit interviews consistently demonstrate a high level of satisfaction with the program. Students routinely comment on the mentoring they receive from faculty and the opportunity to gain real-world experience during their graduate program. Alumni also show a high level of involvement in the School; for example, Warnell ranks second on campus in the percentage of alumni donating to the School.

Academic Program Review Reporting Template

Degree Recommendation Program Faculty:

Check any of the following to recommend categorical action(s) the institution should take concerning this program.

☐ Program MEETS Institution's Criteria

_____Program is critical to the institutional mission and will be retained.

_____Program is critical to the institutional mission and is growing or a high demand field and thus will be enhanced.

☐ Program DOES NOT MEET Institution's Criteria

_____Program will be placed on a monitoring status.

_____Program will undergo substantive curricular revisions.

_____Program will be deactivated.

_____Program will be voluntarily terminated.

_____Other (identify/add text):

UNIVERSITY OF GEORGIA

Natural Resources - MNR

Natural Resources - MNR

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Natural Resources - MNR

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Master of Natural Resources is a terminal degree, suitable for students who want additional instruction and training in Forest Resources. The MNR requires a minimum of 33 semester hours of graduate-level course work, but additional courses may be required by the student's Advisory Committee. No thesis is required.

Outcome Knowledge of Course Material

Demonstrate knowledge of material presented in courses taken during the degree program

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 4 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Demonstrate knowledge of the subject area that is significantly beyond that expected of an upper-level undergraduate student

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 4 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment

Overall Accomplishment

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 4 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas
Clearly express ideas verbally

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 4 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Continued success with all or nearly all learning objectives suggests no changes are required at this time.

Feedback

Files:

LOA Feedback Rubric_Natural Resources â€“ MNR

Program Name: Natural Resources - MNR

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Master of Natural Resources is a terminal degree, suitable for students who want additional instruction and training in Forest Resources. The MNR requires a minimum of 33 semester hours of graduate-level course work, but additional courses may be required by the student's Advisory Committee. No thesis is required.

Outcome Knowledge of Course Material

Demonstrate knowledge of material presented in courses taken during the degree program

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

14% (1 out of 7 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Demonstrate knowledge of the subject area that is significantly beyond that expected of an upper-level undergraduate student

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

14% (1 out of 7 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment

Overall Accomplishment

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

14% (1 out of 7 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas
Clearly express ideas verbally

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

14% (1 out of 7 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Continued success with all or nearly all learning objectives suggests no changes are required at this time.

Feedback

Files:

Natural Resources - MNR

Program Name: Natural Resources - MNR

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Master of Natural Resources is a terminal degree, suitable for students who want additional instruction and training in Forest Resources. The MNR requires a minimum of 33 semester hours of graduate-level course work, but additional courses may be required by the student's Advisory Committee. No thesis is required.

Outcome Knowledge of Course Material

Demonstrate knowledge of material presented in courses taken during the degree program

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Demonstrate knowledge of the subject area that is significantly beyond that expected of an upper-level undergraduate student

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment

Overall Accomplishment

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 9 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas

Clearly express ideas verbally

Measure MFR/MNR Final Oral Exam Assessments

MFR/MNR Final Oral Exam Assessments

Threshold for success (if available)

less than 15% demonstrating limited ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Feedback

Files:

Natural Resources - MNR

End of report

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Graduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: MS Forestry and Natural Resourc..

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	1	1	0
	Black or African-American	1	2	1
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	1	1	3
	Two or more races	4	6	8
	White	76	76	82
	Race/Ethnicity Not Reported	8	8	6
	Female	40	47	53
	Male	51	47	46
	Gender Not Reported	0	0	1
	Total	**91**	**94**	**100**

Admission Metrics

	FY 2019		FY 2020		FY 2021	
	# of Students	Average	# of Students	Average	# of Students	Average
Application	11		87		64	
Offered	9		71		43	
Graduate GPA	0		3	3.56	0	
Under GPA	9	3.18	69	3.46	42	3.53
GMAT Total	0		0		0	
GRE Quantitative	0		0		0	
GRE Verbal	0		0		0	
GRE Writing	9	3.5	71	3.7	42	4.0
Rev GRE Quantitative	9	147.0	71	153.0	42	152.1
Rev GRE Verbal	9	151.4	71	153.8	42	155.9

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	0	0	1
	Black or African-American	1	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	0
	White	13	32	26
	Race/Ethnicity Not Reported	3	1	3
	Female	10	16	13
	Male	7	17	17
	Gender Not Reported	0	0	0
Total		**17**	**33**	**30**
Degree GPA*		3.88	3.88	3.88
Time To Degree (TTD)*		0.33	1.02	1.82

*Based on Graduating Cohort

Academic Program Review Reporting Template

Academic Program Name: MS Forestry and Natural Resources
CIP Code: 03050210
College or School: Warnell School of Forestry and Natural Resources
Department: Warnell School of Forestry and Natural Resources
Date of Last Internal Review: 2014-2015

Measures of Quality:			
Student Input – Graduate Programs	FY 2019	FY 2020	FY2021
Undergraduate GPA (n)	N/A	3.46 (69)	3.53 (42)
Student Output – Graduate Programs	FY 2019	FY 2020	FY 2021
Graduate GPA (n)	3.88 (17)	3.88 (33)	3.88 (30)
Research/scholarly output, internal/external honors, placements and placement rates of graduate students, etc. (as appropriate). Please define what measures are used and how they are interpreted.	N/A	N/A	N/A
External Quality Assurance (e.g., professional accreditation, surveys, market rankings)	N/A	N/A	N/A

Evaluation of Program Quality:

Briefly describe how the competitiveness of incoming students, their achievement of program learning outcomes, their scholarly/research productivity during the program, and their post-graduate success reflect the quality of the program. Describe how the research/scholarly productivity of the program faculty reflects the quality of the program within the discipline. Include additional indicators of the program quality as appropriate.

The Master of Science (MS) in Forestry and Natural Resources is a research-based master's degree with a thesis and includes at least 30 hours of graduate-level coursework. The MS is designed for students who plan to pursue an academic, research, or staff specialist career, and for those who plan to pursue a PhD. This degree can be tailored to suit many areas of specialization in natural resources fields; students can choose from areas of emphasis in Community Forestry and Arboriculture, Fisheries Science, Forestry, Forest Biology, Forest Business, Geospatial Information Science (GIS), Parks, Recreation and Tourism, Policy and Sustainability, Water and Soil Sciences, Environmental Education, and Wildlife Science. Students work with a major professor and advisory committee of at least two additional faculty to guide course selection, research, and the thesis.

Undergraduate GPA scores are high among MS students, and student success also continues to be high in the program, with average GPA consistently near 3.9. Students report strong success finding jobs after completing the MS and go on to careers with state and federal agencies, the private sector, non-government organizations, and many pursue PhD programs, among other paths.

Nearly all Warnell faculty directly support the MS program through teaching or mentoring students. Faculty members involved in this program have been very productive in research and in securing grant

funding over the last several years, with substantial increases in the amount of research funding for ongoing projects over that time. The faculty have consistently maintained a high level of research output in terms of publications and professional presentations. The program reputation is further attested to in that members of our faculty have served as influential leadership roles in the major professional societies representing the fields of forestry, fisheries and wildlife, natural resources policy, parks and tourism, and community forestry and arboriculture, among others. A significant number of faculty who contribute to the MS program are actively pursuing transdisciplinary research centered on better understanding Society-Environment relations. Faculty are highly respected within the Natural Resources field regionally, nationally and globally, and faculty continue to publish in top-tier journals for their respective fields. Faculty have been recognized with national and regional research awards, including UGA Research Awards and Creative Research Medals. Faculty have also been honored with local, regional, national, and international teaching awards including the UGA Russel Award and Meigs Distinguished Teaching Professorships. Many faculty members have participated in UGA teaching programs including the Lilly Fellows, the Senior Teaching Fellows, senior Writing Fellows, Writing Intensive Fellows programs.

Measures of Viability:			
Internal Demand for the Program	FY 2019	FY 2020	FY 2021
Standard Faculty Teaching Load for the degree program (e.g. 3/3, 4/3, etc.)	1/1	1/1	1/1
Number of Faculty (tenured/track and non-tenured) supporting the degree program within the department	66	66	65
Number of Faculty (tenured/track and non-tenured) supporting the degree program outside the department	0	0	0
Number of Full-Time faculty teaching in the program	66	66	66
Number of Part-Time faculty teaching in the program	1	1	1
Graduate programs: Other External funds for program support. Provide the total amount for the academic year. USDA McIntire-Stennis Funds Warnell Graduate Student Fellowship endowments	 $526,000	 $526,000	 $517,000 $20,000

Evaluation of Program Viability:

Briefly describe how recent enrollment trends, prospects for graduates, availability of faculty to provide program instruction, and other metrics reflect the program's near and long term viability. Describe how the program reflects currency in the discipline along with any efforts made to align the curriculum with external demands or standards.

Enrollment in the MS in Forestry and Natural Resources program has steadily increased in recent years to around 100, which is an all-time high. The program is growing largely due to recent faculty hires in the

School, which have resulted in an expanded research enterprise. Students in the program are typically financially supported on Research Assistantships funded by grants, but some students receive partial support as Teaching Assistants. External research funding has exceeded $11M in recent years, a new record high. In addition to support from grant funding, top-ranked MS students receive a Warnell School graduate student fellowship. The fellowships were created in 2019 to enhance recruitment of top-tier graduate students to the School and were expanded in 2021 to include MS students. A total of $20,000 was awarded to seven MS students in 2021. Additionally, the Warnell School receives approximately $1M annually from the U.S. Department of Agriculture National Institute of Food and Agriculture McIntire-Stennis Cooperative Forestry Program. These funds are used to support student assistantships in support of forestry research. Approximately $520,000 of the $1M allocation has directly funded MS research assistantships in recent years. These funds are critical to the continued growth and success of the MS program in Forestry and Natural Resources.

Graduates of the MS in Forestry and Natural Resources program are well prepared for a variety of natural resources positions, including biologists and human dimensions specialists with federal and state agencies, private consulting firms, and non-governmental organizations. Graduates are particularly well positioned for research positions, including pursuing PhDs.

Students in the MS in Forestry and Natural Resources program experience small class sizes with individualized attention and guidance for their graduate studies. Faculty supporting the MS program are currently meeting instructional needs; however, in recent years meeting those needs has become increasingly challenging for faculty. Since 2014, nearly all new faculty hires have been 9-month appointments rather than 12-month appointments, and therefore have lower instructional EFTs. The overall reduction in instructional EFTs has resulted in a need to restructure some course offerings, including eliminating some lower-enrolled elective courses and adding additional instructional support in the form of part-time instructors. Faculty on 9-month appointments typically teach a 1/1 teaching load while those on 12-month appointment typically teach a 2/1 or 2/2 load.

Measures of Productivity:	2019	2020	2021
Time to degree in years (n)	2.49 (40)	2.51 (30)	2.43 (30)

Evaluation of Program Productivity:

Briefly describe how the number of students graduating, their time-to-degree, and other indicators, as appropriate, reflect the program's productivity. Describe any institutional or local factors (e.g., course sequencing or availability) that have an impact on students' progression in the program.

The number of MS in Forestry and Natural Resources graduates has increased in recent years, corresponding with increased enrollment. Students have completed the degree requirements in a timely fashion, averaging around 2.5 years to graduation, indicating that students have access to courses and other resources needed to graduate. Furthermore, exit interviews consistently demonstrate a high level of satisfaction with the program. Students routinely comment on the outstanding mentoring they receive from faculty as well as the high-quality resources for research and training. Each student in the MS program is assigned office space; however, office (and research) space is becoming limiting and will need to be addressed if the program continues to grow.

Academic Program Review Reporting Template

Degree Recommendation Program Faculty:

Check any of the following to recommend categorical action(s) the institution should take concerning this program.

☐ Program MEETS Institution's Criteria

_____Program is critical to the institutional mission and will be retained.

_____Program is critical to the institutional mission and is growing or a high demand field and thus will be enhanced.

☐ Program DOES NOT MEET Institution's Criteria

_____Program will be placed on a monitoring status.

_____Program will undergo substantive curricular revisions.

_____Program will be deactivated.

_____Program will be voluntarily terminated.

_____Other (identify/add text):

UNIVERSITY OF GEORGIA

Forestry and Natural Resources - MS

Forestry and Natural Resources - MS

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Forestry and Natural Resources - MS

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Master of Science is a research degree designed for students who want to specialize in particular academic or scientific areas. This degree is for students who plan an academic, research, or staff specialist career, and for those students who plan to pursue a PhD. The MS requires a thesis and minimum of 30 semester hours of graduate level course work, but additional courses may be required by the student's Advisory Committee.

Outcome Clarity of Writing

Provide the committee with a clearly written thesis

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating limited ability

Data Collected

0% (0 of 25 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Data Analysis

Analyze the data used in the thesis in an accurate and competent manner using appropriate statistical, or other methodological, techniques

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 25 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Experimental Design

If conducting original research, use an appropriate experimental design, sufficient to meet the project objectives

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 24 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of General Science

Have knowledge of general science that is significantly beyond that expected of an upper-level undergraduate student.

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 30 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Mgmt Applications

Have knowledge of management applications in their discipline. The student should be able to demonstrate understanding of how scientific information is used in the context of natural resource management

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 31 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Pertinent Lit

Demonstrate knowledge of pertinent literature through what they have written in their thesis

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the thesis. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 25 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Have knowledge of the subject area that is significantly beyond that expected of an upper-level undergraduate student. The student should be able to demonstrate understanding of complex scientific and technical issues relevant to the area of research

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 31 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment

Overall Accomplishment

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the thesis. The

committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 17 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 24 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas

Verbally express thoughts and ideas, and respond to questions in a clear and accurate manner

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the thesis. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 5 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 25 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 31 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Continued success with all or nearly all outcomes suggests no changes are needed at this time.

Feedback

Files:

LOA Feedback Rubric_Forestry and Natural Resources â€“ MS

Program Name: Forestry and Natural Resources - MS

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Master of Science is a research degree designed for students who want to specialize in particular academic or scientific areas. This degree is for students who plan an academic, research, or staff specialist career, and for those students who plan to pursue a PhD. The MS requires a thesis and minimum of 30 semester hours of graduate level course work, but additional courses may be required by the student's Advisory Committee.

Outcome Clarity of Writing

Provide the committee with a clearly written thesis

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating limited ability

Data Collected

4% (1 of 26 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Data Analysis

Analyze the data used in the thesis in an accurate and competent manner using appropriate statistical, or other methodological, techniques

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

4% (1 of 26 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Experimental Design

If conducting original research, use an appropriate experimental design, sufficient to meet the project objectives

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 25 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of General Science

Have knowledge of general science that is significantly beyond that expected of an upper-level undergraduate student.

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 25 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Mgmt Applications

Have knowledge of management applications in their discipline. The student should be able to demonstrate understanding of how scientific information is used in the context of natural resource management

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 25 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Pertinent Lit

Demonstrate knowledge of pertinent literature through what they have written in their thesis

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the thesis. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

4% (1 of 26 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Have knowledge of the subject area that is significantly beyond that expected of an upper-level undergraduate student. The student should be able to demonstrate understanding of complex scientific and technical issues relevant to the area of research

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 25 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment

Overall Accomplishment

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the thesis. The

committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 23 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 19 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas

Verbally express thoughts and ideas, and respond to questions in a clear and accurate manner

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the thesis. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 5 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

4% (1 of 26 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 25 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Continued success with all or nearly all outcomes suggests no changes are needed at this time.

Feedback

Files:

Forestry and Natural Resources - MS

Program Name: Forestry and Natural Resources - MS

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Master of Science is a research degree designed for students who want to specialize in particular academic or scientific areas. This degree is for students who plan an academic, research, or staff specialist career, and for those students who plan to pursue a PhD. The MS requires a thesis and minimum of 30 semester hours of graduate level course work, but additional courses may be required by the student's Advisory Committee.

Outcome Clarity of Writing

Provide the committee with a clearly written thesis

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating limited ability

Data Collected

0% (0 of 22 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Data Analysis

Analyze the data used in the thesis in an accurate and competent manner using appropriate statistical, or other methodological, techniques

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 22 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Experimental Design

If conducting original research, use an appropriate experimental design, sufficient to meet the project objectives

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 22 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of General Science

Have knowledge of general science that is significantly beyond that expected of an upper-level undergraduate student.

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 21 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Mgmt Applications

Have knowledge of management applications in their discipline. The student should be able to demonstrate understanding of how scientific information is used in the context of natural resource management

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 21 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Pertinent Lit

Demonstrate knowledge of pertinent literature through what they have written in their thesis

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the thesis. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

5% (1 of 22 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Have knowledge of the subject area that is significantly beyond that expected of an upper-level undergraduate student. The student should be able to demonstrate understanding of complex scientific and technical issues relevant to the area of research

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 21 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment

Overall Accomplishment

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the thesis. The

committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 22 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 21 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas

Verbally express thoughts and ideas, and respond to questions in a clear and accurate manner

Measure MS Thesis Defense Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the thesis. The committee also rates the students overall accomplishment as related to the thesis. This outcome is evaluated on number 5 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 22 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Measure MS Final Oral Exam Assessments

After the thesis defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance related to 1) verbal expression of ideas, 2) knowledge of the subject area, 3) knowledge of general science, and 4) knowledge of management applications, as demonstrated in the final oral exam. The committee also rates the students overall accomplishment as related to the oral exam. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 21 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Feedback

Files:

Forestry and Natural Resources - MS

End of report

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Graduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: PHD Forestry and Natural Resour..

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	3	2	2
	Black or African-American	0	1	1
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	2
	Two or more races	1	2	1
	White	39	41	38
	Race/Ethnicity Not Reported	17	19	18
	Female	22	24	25
	Male	37	40	36
	Gender Not Reported	1	1	1
	Total	60	65	62

Admission Metrics

	FY 2019		FY 2020		FY 2021	
	# of Students	Average	# of Students	Average	# of Students	Average
Application	1		30		42	
Offered	0		21		32	
Graduate GPA	0		19	3.75	30	3.84
Under GPA	0		20	3.54	32	3.52
GMAT Total	0		0		0	
GRE Quantitative	0		1	600.0	0	
GRE Verbal	0		1	500.0	0	
GRE Writing	0		20	3.7	32	3.7
Rev GRE Quantitative	0		20	156.2	32	154.7
Rev GRE Verbal	0		20	153.6	32	154.7

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	0	1	1
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	1	0	0
	Two or more races	0	0	1
	White	0	6	9
	Race/Ethnicity Not Reported	1	1	6
	Female	0	2	8
	Male	2	6	9
	Gender Not Reported	0	0	0
Total		2	8	17
Degree GPA*		3.84	3.86	3.87
Time To Degree (TTD)*		4.16	3.87	4.41

*Based on Graduating Cohort

Academic Program Review Reporting Template

Academic Program Name: PHD Forestry and Natural Resources
CIP Code: 03050210
College or School: Warnell School of Forestry and Natural Resources
Department: Warnell School of Forestry and Natural Resources
Date of Last Internal Review: 2014-2015

Measures of Quality:			
Student Input – Graduate Programs	FY 2019	FY 2020	FY2021
Undergraduate GPA (n)	N/A	3.54 (20)	3.52 (32)
	FY 2019	FY 2020	FY 2021
Graduate GPA (n)	3.84 (2)	3.86 (8)	3.87 (17)
Research/scholarly output, internal/external honors, placements and placement rates of graduate students, etc. (as appropriate). Please define what measures are used and how they are interpreted.	N/A	N/A	N/A
External Quality Assurance (e.g., professional accreditation, surveys, market rankings)	N/A	N/A	N/A

Evaluation of Program Quality:

Briefly describe how the competitiveness of incoming students, their achievement of program learning outcomes, their scholarly/research productivity during the program, and their post-graduate success reflect the quality of the program. Describe how the research/scholarly productivity of the program faculty reflects the quality of the program within the discipline. Include additional indicators of the program quality as appropriate.

The Doctor of Philosophy (PhD) in Forestry and Natural Resources is a research-based doctoral degree with a dissertation and includes at least 30 hours of graduate-level coursework. This terminal degree can be tailored to suit many areas of specialization in natural resources fields; students can choose from disciplinary areas such as Community Forestry and Arboriculture, Fisheries Science, Forestry, Forest Biology, Forest Business, Geospatial Information Science (GIS), Parks, Recreation and Tourism, Policy and Sustainability, Water and Soil Sciences, Environmental Education, and Wildlife Science. The PhD is designed for students who plan to pursue a career in academia, research, or other specialist positions. Students in the PhD program work with a major professor and advisory committee consisting of at least three additional faculty to guide course selection, research, and the dissertation. Admission to the PhD in Forestry and Natural Resources program requires an MS degree.

Undergraduate GPA scores are high among PhD students, and student success also continues to be high in the program, with average GPA consistently above 3.8. Students report strong success finding jobs after completing the PhD, and go on to careers in academia, with state and federal agencies, the private sector, and non-government organizations, among other paths.

Nearly all Warnell faculty directly support the PhD program through teaching or mentoring students.

Academic Program Review Reporting Template

Faculty members involved in this program have been very productive in research and in securing grant funding over the last several years, with substantial increases in the amount of research funding for ongoing projects over that time. Faculty supporting the PhD program have also consistently maintained a high level of research output in terms of publications and professional presentations. The program reputation is further attested to in that members of our faculty have served as influential leadership roles in the major professional societies representing the fields of forestry, fisheries and wildlife, natural resources policy, parks and tourism, and community forestry and arboriculture, among others. A significant number of faculty who contribute to the PhD program are actively pursuing transdisciplinary research centered on better understanding Society-Environment relations. Faculty are highly respected within the Natural Resources field regionally, nationally and globally, and faculty continue to publish in top-tier journals for their respective fields. Faculty have been recognized with national and regional research awards, including UGA Research Awards and Creative Research Medals. Faculty have also been honored with local, regional, national, and international teaching awards including the UGA Russel Award and Meigs Distinguished Teaching Professorships. Many faculty members have participated in UGA teaching programs including the Lilly Fellows, the Senior Teaching Fellows, senior Writing Fellows, Writing Intensive Fellows programs.

Measures of Viability:			
Internal Demand for the Program	FY 2019	FY 2020	FY 2021
Standard Faculty Teaching Load for the degree program (e.g. 3/3, 4/3, etc.)			
Number of Faculty (tenured/track and non-tenured) supporting the degree program within the department	66	66	65
Number of Faculty (tenured/track and non-tenured) supporting the degree program outside the department	0	0	0
Number of Full-Time faculty teaching in the program	59	58	57
Number of Part-Time faculty teaching in the program	0	0	1
Graduate programs: Other External funds for program support. Provide the total amount for the academic year. USDA McIntire-Stennis Funds Warnell Graduate Student Fellowship endowments	 $263,000 $26,400	 $263,000 $43,950	 $259,000 $63,550

Evaluation of Program Viability:

Briefly describe how recent enrollment trends, prospects for graduates, availability of faculty to provide program instruction, and other metrics reflect the program's near and long term viability. Describe how the program reflects currency in the discipline along with any efforts made to align the curriculum with external demands or standards.

Enrollment in the PhD in Forestry and Natural Resources program has steadily increased in recent years to around 70, which is an all-time high. The program is growing largely due to recent faculty hires in the School, which have resulted in an expanded research enterprise. Students in the program are typically financially supported on Research Assistantships funded by grants, but some students receive partial support as Teaching Assistants. External research funding has exceeded $11M in recent years, a new record high. In

addition to support from grant funding, top-ranked PhD students receive a Warnell School graduate student fellowship. The fellowships were created in 2019 to enhance recruitment of top-tier PhD students to the School. The total amount of fellowships awarded has grown from $26,400 in 2019 to over $63,500 in 2022. Additionally, the Warnell School receives approximately $1M annually from the U.S. Department of Agriculture National Institute of Food and Agriculture McIntire-Stennis Cooperative Forestry Program to support graduate student (MS and PhD) assistantships in support of forestry research. Approximately $260,000 of the $1M allocation has directly funded PhD student assistantships in recent years. These funds are critical to the continued growth and success of the PhD program in Forestry and Natural Resources.

Graduates of the PhD in Forestry and Natural Resources are well prepared for a variety of research and/or teaching intensive positions, including academia and federal and state agencies, but PhD graduates also find employment opportunities with private industry and non-governmental organizations. Graduates who intend to pursue a career in academia often obtain positions as postdoctoral research associates before moving into positions as assistant professors.

Students in the PhD in Forestry and Natural Resources program experience small class sizes with individualized attention and guidance for their graduate studies. Faculty supporting this program are currently meeting instructional needs; however, in recent years meeting those needs has become increasingly challenging for faculty. Since 2014, nearly all new faculty hires have been 9-month appointments rather than 12-month appointments, and therefore have lower instructional EFTs. The overall reduction in instructional EFTs has resulted in a need to restructure some course offerings, including eliminating some lower-enrolled elective courses and adding additional instructional support in the form of part-time instructors. Faculty on 9-month appointments typically teach a 1/1 teaching load while those on 12-month appointment typically teach a 2/1 or 2/2 load.

Measures of Productivity:	2019	2020	2021
Time to degree in years (n)	4.42 (8)	4.34 (18)	4.04 (15)

Evaluation of Program Productivity:

Briefly describe how the number of students graduating, their time-to-degree, and other indicators, as appropriate, reflect the program's productivity. Describe any institutional or local factors (e.g., course sequencing or availability) that have an impact on students' progression in the program.

The number of PhD in Forestry and Natural Resources graduates per year has increased in recent years, corresponding with increased enrollment. Students have completed the degree requirements in a timely fashion, averaging under 4.5 years to graduation, indicating that students have access to courses and other resources needed to graduate. Furthermore, exit interviews consistently demonstrate a high level of satisfaction with the program. Students routinely comment on the outstanding mentoring they receive from faculty as well as Warnell's high-quality resources and facilities for research and training. Each student in the PhD program is assigned office space; however, office (and research) space is becoming limiting and will need to be addressed if the program continues to grow.

Academic Program Review Reporting Template

Degree Recommendation Program Faculty:

Check any of the following to recommend categorical action(s) the institution should take concerning this program.

☐ Program MEETS Institution's Criteria

_____Program is critical to the institutional mission and will be retained.

_____Program is critical to the institutional mission and is growing or a high demand field and thus will be enhanced.

☐ Program DOES NOT MEET Institution's Criteria

_____Program will be placed on a monitoring status.

_____Program will undergo substantive curricular revisions.

_____Program will be deactivated.

_____Program will be voluntarily terminated.

_____Other (identify/add text):

UNIVERSITY OF GEORGIA

Forestry and Natural Resources - PHD

Forestry and Natural Resources - PHD

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Forestry and Natural Resources - PHD

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Doctor of Philosophy degree is frequently required for research and staff specialist positions, and is nearly always required for university faculty positions. The PhD is often regarded as a degree of specialized education within a relatively narrow field of expertise.

Outcome Clarity of Writing

Demonstrate clarity of writing and good use of grammar

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 20 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

13% (1 of 8 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Data Analysis

Analyze the data used in the disseration in an accurate and competent manner using appropriate statistical, or other methodological, techniques

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 8 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Experimental Design

Demonstrate knowledge of experimental design through the selection of an appropriate design(s) for their experiment(s)

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 8 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of General Science

Have knowledge of general science that is significantly beyond that expected of an MS student in the same field.

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

5% (1 of 20 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Mgmt Application

Have in-depth knowledge of management applications in their discipline. The student should be able to demonstrate a high level of understanding of how scientific information is used in the context of natural resource management.

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 5 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 20 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Pertinent Lit

Demonstrate a high level of knowledge and understanding of pertinent literature though what they have written in their dissertation

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 8 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Demonstrate knowledge of the subject area that is significantly beyond that expected of an MS student in the same field.

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also

rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 20 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment
Overall Accomplishment

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 19 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 7 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas
Have the ability to clearly answer questions and verbally express ideas

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 20 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 5 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 8 students) demonstrating limited ability.

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Continued success in all or nearly all outcomes suggest no changes are required at this time.

Feedback

Files:

LOA Feedback Rubric_Forestry and Natural Resources â€“ PHD

Program Name: Forestry and Natural Resources - PHD

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Doctor of Philosophy degree is frequently required for research and staff specialist positions, and is nearly always required for university faculty positions. The PhD is often regarded as a degree of specialized education within a relatively narrow field of expertise.

Outcome Clarity of Writing

Demonstrate clarity of writing and good use of grammar

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

10% (1 of 10 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 16 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Data Analysis

Analyze the data used in the disseration in an accurate and competent manner using appropriate statistical, or other methodological, techniques

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 out of 10 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Experimental Design

Demonstrate knowledge of experimental design through the selection of an appropriate design(s) for their experiment(s)

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 out of 9 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of General Science

Have knowledge of general science that is significantly beyond that expected of an MS student in the same field.

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 out of 16 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Mgmt Application

Have in-depth knowledge of management applications in their discipline. The student should be able to demonstrate a high level of understanding of how scientific information is used in the context of natural resource management.

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 5 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 out of 16 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Pertinent Lit

Demonstrate a high level of knowledge and understanding of pertinent literature though what they have written in their dissertation

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 out of 10 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Demonstrate knowledge of the subject area that is significantly beyond that expected of an MS student in the same field.

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also

rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

6% (1 out of 16 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment
Overall Accomplishment

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 out of 12 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 out of 9 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas
Have the ability to clearly answer questions and verbally express ideas

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 out of 16 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 5 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 out of 10 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Continued success in all or nearly all outcomes suggest no changes are required at this time.

Feedback

Files:

Forestry and Natural Resources - PHD

Program Name: Forestry and Natural Resources - PHD

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Doctor of Philosophy degree is frequently required for research and staff specialist positions, and is nearly always required for university faculty positions. The PhD is often regarded as a degree of specialized education within a relatively narrow field of expertise.

Outcome Clarity of Writing

Demonstrate clarity of writing and good use of grammar

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 7 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 12 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Data Analysis

Analyze the data used in the disseration in an accurate and competent manner using appropriate statistical, or other methodological, techniques

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 12 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Experimental Design

Demonstrate knowledge of experimental design through the selection of an appropriate design(s) for their experiment(s)

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 12 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of General Science

Have knowledge of general science that is significantly beyond that expected of an MS student in the same field.

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 4 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 7 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Mgmt Application

Have in-depth knowledge of management applications in their discipline. The student should be able to demonstrate a high level of understanding of how scientific information is used in the context of natural resource management.

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 5 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 7 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Pertinent Lit

Demonstrate a high level of knowledge and understanding of pertinent literature though what they have written in their dissertation

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 1 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 12 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Knowledge of Subject Area

Demonstrate knowledge of the subject area that is significantly beyond that expected of an MS student in the same field.

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also

rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 3 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 7 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Overall Accomplishment
Overall Accomplishment

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 7 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on the overall assessment.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 11 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Outcome Verbal Expression of Ideas
Have the ability to clearly answer questions and verbally express ideas

Measure PhD Comprehensive Exam Assessments

After the student successfully completes the doctoral comprehensive exam, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) clarity of writing, 2) verbal expression of ideas based on the thesis, 3) knowledge of the subject area, 4) knowledge of general science, and 5) knowledge of management application. The committee also rates the students overall accomplishment as related to the comprehensive exam. This outcome is evaluated on number 2 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 7 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Measure PhD Dissertation Defense Assessments

After the dissertation defense, the graduate advisory committee completes a rubric, which asks them to rate the student's performance relative to 1) knowledge of pertinent literature, 2) data analysis, 3) experimental design, 4) clarity of writing, and 5) verbal expression of ideas based on the dissertation. The committee also rates the students overall accomplishment as related to the dissertation. This outcome is evaluated on number 5 in the rubric.

Threshold for success (if available)

Less than 15% of students demonstrating unsatisfactory ability

Data Collected

0% (0 of 12 students) demonstrating limited ability

Analysis of Data

successful

Improvement Based on Analysis

Additional Narrative (if applicable)

Feedback

Files:

Forestry and Natural Resources - PHD

End of report

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Undergraduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: CER0 Cert Environmental Educati..

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	1	1	1
	Two or more races	0	0	0
	White	18	18	19
	Race/Ethnicity Not Reported	1	1	0
	Female	16	16	16
	Male	4	4	4
	Gender Not Reported	0	0	0
	Total	**20**	**20**	**20**

Admission Metrics for Graduates

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	0
	White	4	5	4
	Race/Ethnicity Not Reported	0	0	0
	Female	4	3	4
	Male	0	2	0
	Gender Not Reported	0	0	0
	Total	**4**	**5**	**4**
Degree GPA*		3.54	3.35	3.57

* Based on Graduating Cohort

Environmental Education Certificate | PRAC Review Summary

Warnell School of Forestry & Natural Resources

What is the primary purpose of the certificate program?

The **purpose of the Environmental Education Certificate Program (EECP)** is to build students' environmental content knowledge, communication skills, critical thinking ability about environmental issues, and commitment to being an environmentally responsible citizen. There are four educational objectives of the EECP. As a result of participating in this certificate program, students will be able to:

1. Create new knowledge (environmental knowledge, natural history knowledge, etc.) related to environmental and life sciences;
2. Develop effective teaching and communication skills appropriate for environmental education (EE);
3. Implement a variety of strategies for assessing EE learning outcomes; and
4. Demonstrate content knowledge, teaching ability, and assessment strategies through an experiential learning capstone course.

There is a **documented need** for the EECP. A total of 17 colleges and universities from across the nation were identified (from Vermont to Florida to Alaska) as offering an EE certificate or degree at the undergraduate or graduate level. Only one (6%) offered an undergraduate EE degree, while the other 16 (94%) offered either a Master's degree or certificate in EE. In the southeast, the closest EE-related program to UGA is at Montreat College in North Carolina where they offer a Master's degree in EE. In addition, the majority of these programs emphasized contextual experiences (e.g., pedagogy) over content knowledge (e.g., ornithology, entomology, ecology, etc.). However, unlike existing programs, the EECP at UGA requires a balance of experiential learning (context) and environmental and life science coursework (content) for successful completion. Therefore, offering an EE certificate at the undergraduate level at UGA provides students with a program of study that equally emphasizes content and contextual learning. This approach is aligned with current professional guidelines (North American Association for Environmental Education, 2010) and with UGA's initiative to provide students with experiential learning opportunities.

The EE Certificate will bolster a students' resume when applying for environmental educator positions at locations such as Sandy Creek Nature Center operated by Athens-Clarke County, Charlie Elliott Wildlife Center operated by the Georgia Department of Natural Resources, and the National Park Service.

What students does it serve?

UGA undergraduate student demand for the EE certificate was evident based on a survey completed in Spring, 2015. The EECP Directors (Irwin and Fuhrman) collaborated with a team of undergraduate and graduate students enrolled in an EE service-learning course to collect data across the UGA campus regarding student interest in a EE certificate. Of the 152 questionnaires

completed, 137 (90%) UGA students agreed that an EE certificate should be offered. Specifically, when asked about their familiarity with the field of EE, freshmen, sophomores, and juniors reported knowing the least. These students have become a target audience for recruiting.

What resources support the program?

The only resources required are administrative support and that is provided by the office of the Associate Dean for Student Affairs at Warnell. Drs. Irwin and Fuhrman serve as the Co-Directors for the EECP and are responsible for recruitment and ensuring students meet the requirements to earn the Certificate; this includes facilitating the capstone experience where specialized mentoring and attention are given to each Certificate participant.

How many students have enrolled in and completed the certificate over the past three years?

Between Fall, 2018 and Spring, 2022, 47 undergraduate students have enrolled and 27 undergraduate students have completed the Environmental Education Certificate.

What evidence documents the quality of the program and its value to the students?

The EECP Co-Directors co-instruct the Capstone Teaching Experience (FANR 5950) where students receive mentoring and guidance as they plan, implement, and reflect on a field teaching experience in environmental education. Each student engages in a series of reflection meetings with the Co-Directors during the required capstone and data are collected on the learning outcomes attributed directly to the Certificate. Even during the pandemic, students used Zoom technology to teach their environmental education activity with creativity, enthusiasm, and a deep content knowledge of Georgia natural history. Many students used live animals as message ambassadors during their teaching demonstrations (online and face-to-face) and indicated that their public speaking ability was enhanced because of the Certificate.

All students are video recorded while teaching and each student and the Co-Directors engage in a reflective meeting about the recorded performance. During this meeting, a scoring sheet is used to document specific elements of their performance aligned with what the literature suggests equates to effective instructional practices. At least 75% of the effective teaching behaviors identified in the literature were demonstrated by Certificate students and at least 80% of the content of the student reflections with the Co-Directors related directly to student growth in communication. This was especially true for students who recorded themselves teaching without a live audience (due to COVID). One student shared, “Teaching to yourself is difficult and I had

to build in pauses in my talking to allow viewers to answer my questions to themselves. Those pauses forced me to slowdown, though, and watching myself in those moments helped me identify specific non-verbal behaviors I commonly do." In fact, some students indicated that the Certificate helped them successfully acquire positions as environmental educators at Georgia 4-H Centers, state parks, and nature centers and even helped them as they transitioned to Graduate School.

Should the certificate program be continued?

Yes.

UNIVERSITY OF GEORGIA

Environmental Education - CER0

Environmental Education - CER0

Cycles included in this report:
Oct 1, 2020 to Sep 30, 2021

Program Name: Environmental Education - CER0

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Kris Irwin and Nick Fuhrman

Co-directors

Description of Program Environmental Education Certificate Program

The Environmental Education Certificate Program (EECP) requires a total of 18 undergraduate credit hours. The course requirements are broken down into five components: 1) Foundations of Environmental Education (3 credits); 2) Science Content Knowledge (3 credits); Communication Skills (6 credits); Program Development/Evaluation (3 credits); and Teaching Capstone (3 credits). Through course work and experiential learning, the EECP will prepare undergraduate students interested in the environment and helping the public gain a deeper understanding of it. With the EECP, students will be prepared to pursue jobs at 4-H Centers, nature centers, museums, science centers, aquariums, zoos, state and federal natural resource agencies, and city/county parks and recreation departments.

Outcome Demonstrate mastery through capstone

Demonstrate content knowledge, teaching ability, and assessment strategies through an experiential learning capstone course

Measure Implement a variety of strategies for assessing learning

4.1 Measure 1 – Evaluation of student teaching experience.
All Environmental Education Certificate Program (EECP) students must work with the co-directors to develop a lesson plan about an environmentally-related topic and then teach that lesson plan. In pre-COVID times, students would teach their lesson before a live audience and it would be video-recorded for the student and the co-directors to watch and reflect on successes and setbacks. During this past year, in-person teaching experiences were limited and students instead video-recorded their teaching without a live audience. A list of teaching behaviors was developed based on non-formal teaching and learning literature and used to determine which effective teaching strategies were implemented by students after watching them teach. These characteristics should be demonstrated whether the student was teaching before a live audience or recording their lesson to themselves. This list was used to guide conversations between the co-directors and the student during a reflection exercise at the conclusion of the capstone.

Threshold for success (if available)

Students will demonstrate competency in teaching by (a) first submitting a detailed lesson plan of what they will teach during their capstone teaching experience to the EECP co-directors for feedback (reflecting how learning needs will be addressed of their teaching audience) and (b) demonstrating at least 75% of the effective teaching behaviors on the teaching behaviors observation sheet completed by the two EECP Co-Directors.

Data Collected

Six students implemented the capstone teaching requirement during this reporting cycle which required them to submit a lesson plan proposal to the Co-Directors for review. The lesson plan proposal required students to submit measurable learning objectives for their lesson along with teaching strategies for addressing each of the learning objectives and accurate science-based content that would be taught. Students then implemented their lesson plan with an audience of primarily youth (ages 8 through 16) or in a video-recorded format to be watched by students at a later time. The co-directors watched the videos and determined whether the lesson contained elements of effective teaching strategies outlined in the literature.

Analysis of Data

The Co-Directors worked together with the individual students to review and improve their lesson plan proposal. Multiple revisions of the lesson plans were required as the Co-Directors realized that

students were not as confident in their ability to develop a lesson plan with clear objectives and appropriate assessment strategies (given the intended learning environment). The Co-Directors worked collaboratively with each student through mentoring meetings as their lesson plan was developed. The Co-Directors noted that all six students demonstrated at least 75% of the effective teaching behaviors identified in the literature.

Improvement Based on Analysis

The Co-Directors felt that the one-on-one mentoring meetings with students worked effectively at determining students' reactions to often teaching before an audience for the first time (two of the students had never taught a lesson before the EE Certificate). In addition, to provide structure to the capstone teaching requirement, the Co-Directors will develop a syllabus with guidance as to approximate dates during the semester when key milestones should be met. These include mentoring meetings with the co-directors, lesson plan development should be finalized, teaching should be demonstrated, and when final reflection meetings should take place with the co-directors.

Outcome Develop teaching & communication skills

Develop effective teaching and communication skills

Measure Assessment of student reflective journals

Assessment of student reflective journals

Threshold for success (if available)

A minimum of 80% of the student reflective journals must include qualitative responses, which demonstrate competence in teaching and communicating.

Data Collected

All students participated in a reflection exercise with the Co-Directors prior to their graduation. The reflection was designed to identify specific courses that students believed contributed most significantly to their content knowledge, pedagogical and communication skills, and program development/evaluation abilities and to reflect on the students' capstone teaching experience. Students also shared recommendations for making the Certificate experience even more interdisciplinary. Students also kept a reflective journal/notes after observing themselves teaching on video. Co-Directors reflected with each student to determine if their reactions to the teaching and overall certificate contained evidence of their personal growth in teaching and interpersonal communication.

Analysis of Data

Co-directors determined that at least 80% of the content of the student reflections related directly to student growth in communication. This was especially true for students who recorded themselves teaching without a live audience (due to COVID). One student shared, "Teaching to yourself is difficult and I had to build in pauses in my talking to allow viewers to answer my questions to themselves. Those pauses forced me to slowdown, though, and watching myself in those moments helped me identify specific non-verbal behaviors I commonly do." Following review of the student reflection data (the co-directors keep detailed notes after each student reflection meeting), the co-directors discussed the possibility of asking students to tape a pre-recorded lesson not before a live audience in the future. These videos can be housed on a website similar to the EECP's webpage where other students can benefit from watching their peers teach.

Improvement Based on Analysis

Based on this data, the co-directors will continue to implement the reflection exercise and will host a group reflective meeting at the end of each semester. Several of this past years pre-recorded lessons from EECP students will be shared online through the EECP website as examples to inspire creative teaching in future EECP students.

Additional Narrative (if applicable)

Feedback

Files:

Environmental Education - CER0

End of report

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Undergraduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: CER0 Cert Water Resources

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	0
	White	0	1	0
	Race/Ethnicity Not Reported	0	0	0
	Female	0	0	0
	Male	0	1	0
	Gender Not Reported	0	0	0
	Total	**0**	**1**	**0**

Admission Metrics for Graduates

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	0
	White	0	0	1
	Race/Ethnicity Not Reported	0	0	0
	Female	0	0	0
	Male	0	0	1
	Gender Not Reported	0	0	0
	Total	**0**	**0**	**1**
Degree GPA*				2.98

* Based on Graduating Cohort

PRAC Review - Fall 2022

Undergraduate Water Resources Certificate

1. *What is the primary purpose of the certificate program?*

   The UGA Water Resources Certificate Program provides incentives and structure in water-related fields to prepare students for professional employment and enable greater multi-disciplinary communication among future water-resource professionals.

2. *What students does it serve?*

   Water touches upon every major on campus (e.g., law, economics, business, history, culture, languages, art, music, engineering, geology, geography, ecology, agriculture, forestry, marine sciences, family and consumer sciences, public health, and many more)

   The Water Resources Certificate is open to all students at the University of Georgia. We have graduated students from programs in

   - Agricultural and Applied Economics
   - Terry College of Business
   - College of Agriculture and Environmental Sciences
   - College of Environment and Design
   - Chemistry
   - Civil and Environmental Engineering
   - Crop and Soil Sciences
   - Ecology
   - Environmental Health Sciences
   - Forest Resources
   - Geography
   - Geology
   - German
   - Marine Sciences
   - Natural Resources Management and Sustainability
   - Water and Soil Resources

3. *How does it complement or add value to existing degree programs?*

   We provide a framework for integrating the science and management of water into every major on campus to promote a wider recognition and awareness in the role that water plays in their major.

4. *What resources (faculty, administrative, other) support the program?*

   The program coordinator (Professor Todd Rasmussen) manages the program with administrative support provided by Jenny Yearwood. The Water Resources Faculty assist in student mentoring and teaching, with over 300 professionals currently supporting the program.

5. *How many students have enrolled in and completed the certificate over the past three years?*

   A total of 49 students have graduated with an undergraduate certificate in Water Resources from Spring 2019 to Spring 2022.

6. *What evidence documents the quality of the program and its value to students?*

   The program director works directly with students and faculty from across campus, and many of them participate in extra-curricular water activities (conferences, community events). There is a level of enthusiasm present that demonstrates the vibrancy associated with understanding and managing water resources.

   Specifically, the certificate faculty host the biennial Georgia Water Resources Conference that attracts professionals from across the state and region. Water-resources students assist with organizing the conference as well as presenting at the conference, providing an opportunity to learn about important water resources as well as careers. Many of our students obtain productive employment as a result of their involvement in this conference.

7. *Should the certificate program be continued?*

   Our students and faculty appreciate the ability to integrate water into their individual majors, and note that it affords them additional skills that assist in their careers.

   It is important to note that the University of Georgia is the only Land-Grant University in country that lacks a USGS-administered Water Resources Research Institute (Georgia's is located at the Georgia Institute of Technology).

   The Water Resources program at our university rely on our Water Resources Faculty and the Certificate Program to provide the backbone of our teaching, research, and outreach activities related to water resources in Georgia.

UNIVERSITY OF GEORGIA

Water Resources - CER0

Water Resources - CER0

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Water Resources - CER0

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator Robert Bringolf, Todd Rasmussen
Associate Dean for Academic Affairs

Description of Program

The Water Resources Certificate Program prepares students for related careers in environmental science and management. Protecting the long-term ecological health of our rivers and streams is an important national goal. Yet, our society has ever-increasing demands for inexpensive supplies of high-quality water.

The Program provides a common curriculum to meet the educational needs of the next generation of environmental scientists and managers. Many of the courses provide hands-on experiences in an outdoor setting to learn about water resources.

The purpose of the program is to train students to manage our scarce water resources for the maximum benefit of the world's population, while at the same time preserving the ecologic integrity of our aquatic resources.

Outcome Outcome #01
Identify the physical, chemical, and biological processes that shape water resources and their management

Measure

Students who earn a Water Resources Certificate will acquire an improved understanding of the biophysical, social, and institutional aspects of terrestrial and aquatic systems.

Threshold for success (if available)

80-100% of students earn a satisfactory rating on the seminar summary component of the certificate

Data Collected

18/18 (100%) earned a satisfactory rating on the seminar summary assignment

Analysis of Data

Success

Improvement Based on Analysis

No action required.

Additional Narrative (if applicable)

Feedback

Files:

LOA Feedback Rubric_Water Resources â€“ CER0

Program Name: Water Resources - CER0

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator Robert Bringolf, Todd Rasmussen

Certificate director Todd Rasmussen

Description of Program

The Water Resources Certificate Program prepares students for related careers in environmental science and management. Protecting the long-term ecological health of our rivers and streams is an important national goal. Yet, our society has ever-increasing demands for inexpensive supplies of high-quality water.

The Program provides a common curriculum to meet the educational needs of the next generation of environmental scientists and managers. Many of the courses provide hands-on experiences in an outdoor setting to learn about water resources.

The purpose of the program is to train students to manage our scarce water resources for the maximum benefit of the world's population, while at the same time preserving the ecologic integrity of our aquatic resources.

Outcome

Measure Measure A - Pre/post testing

An exam addressing the learning objectives will be administered to students upon their enrollment in the certificate program. The exam consists of 5 questions per learning objective with tiered-rigor. The same exam will be given to students again at the end of their last semester. Mean pre-exam scores will be compared with post-exam scores to determine if learning outcomes are being met.

Threshold for success (if available)

50% mean test score improvement

Data Collected

No data collected in this cycle.

Analysis of Data

New LOA plan was approved during the current cycle. Data collection and reporting will begin in the next cycle.

Improvement Based on Analysis

Program director will begin collecting necessary data in the next cycle.

Measure Measure C - seminars

Undergraduate students are required to attend six water resources seminars to enhance and enrich content that they receive in their coursework. Summaries of each seminar attended are used to assess what students are taking away from attending seminars. These summaries will be scored based on a rubric developed for a standard set of response prompts/questions.

Threshold for success (if available)

Threshold for success is a mean rubric score of 4.0

Data Collected

No data collected during this cycle.

Analysis of Data

New LOA plan approved during this cycle so no data to analyze.

Improvement Based on Analysis

Data collection and analysis will begin in the next cycle.

Additional Narrative (if applicable)

This is a new LOA plan approved during the current cycle.

Feedback

Files:

Water Resources - CER0

Program Name: Water Resources - CER0

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Robert Bringolf, Todd Rasmussen

Certificate director Todd Rasmussen

Description of Program

The Water Resources Certificate Program prepares students for related careers in environmental science and management. Protecting the long-term ecological health of our rivers and streams is an important national goal. Yet, our society has ever-increasing demands for inexpensive supplies of high-quality water.

The Program provides a common curriculum to meet the educational needs of the next generation of environmental scientists and managers. Many of the courses provide hands-on experiences in an outdoor setting to learn about water resources.

The purpose of the program is to train students to manage our scarce water resources for the maximum benefit of the world's population, while at the same time preserving the ecologic integrity of our aquatic resources.

Outcome Outcome #01

Identify the physical, chemical, and biological processes that shape water resources and their management

Measure Instructor assessment Part A

Based on course grades and performance on assignments, certificate coordinators estimate the percentage of passing students that meet learning outcome Part A: Physical, chemical, and biological aspects of water resources. • Draw and describe the water cycle. • Explain the major physical and chemical properties of water. • Delineate a watershed and describe how it contributes to surface water and groundwater quantity and quality. • Create a conceptual diagram for a pond that includes material, energy, and biological inputs. • Compare and contrast lentic with lotic ecosystems. • Summarize the long-term effects of the environmental disasters (e.g., Horizon oil spill) on ecosystems and fisheries

Threshold for success (if available)

60% of students meet the learning outcome

Data Collected

Instructors estimate 80-100% of students meet the outcome.

Analysis of Data

Successful

Improvement Based on Analysis

Continue to monitor

Outcome Outcome #02

Demonstrate how legal, economic, social, political, and cultural factors affect water resource management

Measure Instructor assessment Part B

Instructors estimate the percentage of students receiving the certificate who have met learning outcome Part B: Legal, economic, social, political, and cultural aspects of water resources • Describe how continuous, perennially flowing streams are regulated in the United States. • Summarize the

federal, state, and local agencies that manage water resources in the US. • Outline the policies and management practices used to minimize point and nonpoint source pollution. • Identify the social, economic, political, cultural, and legal factors that influence water management

Threshold for success (if available)

60% of students meet the outcome

Data Collected

Instructors estimate 80-100% of students meet the outcome

Analysis of Data

Successful

Improvement Based on Analysis

Continue to monitor

Outcome Outcome #03

Explain the effects of water utilization and management on ecosystems and ecosystem services

Measure Instructor assessment Part C

Instructors estimate the percentage of students receiving the certificate who have met learning outcome Part C: Management of water resources to sustain human uses while protecting ecological functions.• Explain the concerns of downstream states (Florida, Alabama) relative to how Georgia uses and manages shared rivers. • Identify the factors and data required for managing a shared water resource. • Outline the components of a water-resources management plan and how you would evaluate its performance over time • Summarize methods for flood prevention in the context of global climate change.

Threshold for success (if available)

60% of students meet outcome

Data Collected

Instructors estimate 80-100% of students meet this outcome

Analysis of Data

Successful

Improvement Based on Analysis

Continue to monitor

Additional Narrative (if applicable)

Feedback

End of report

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Undergraduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: CER0 Cert Water Resources

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	0
	White	0	1	0
	Race/Ethnicity Not Reported	0	0	0
	Female	0	0	0
	Male	0	1	0
	Gender Not Reported	0	0	0
	Total	**0**	**1**	**0**

Admission Metrics for Graduates

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	0
	White	0	0	1
	Race/Ethnicity Not Reported	0	0	0
	Female	0	0	0
	Male	0	0	1
	Gender Not Reported	0	0	0
	Total	**0**	**0**	**1**
Degree GPA*				2.98

* Based on Graduating Cohort

UNIVERSITY OF GEORGIA

Water Resources - CER0

Water Resources - CER0

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Water Resources - CER0

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator Robert Bringolf, Todd Rasmussen
Associate Dean for Academic Affairs

Description of Program

The Water Resources Certificate Program prepares students for related careers in environmental science and management. Protecting the long-term ecological health of our rivers and streams is an important national goal. Yet, our society has ever-increasing demands for inexpensive supplies of high-quality water.

The Program provides a common curriculum to meet the educational needs of the next generation of environmental scientists and managers. Many of the courses provide hands-on experiences in an outdoor setting to learn about water resources.

The purpose of the program is to train students to manage our scarce water resources for the maximum benefit of the world's population, while at the same time preserving the ecologic integrity of our aquatic resources.

Outcome Outcome #01
Identify the physical, chemical, and biological processes that shape water resources and their management

Measure

Students who earn a Water Resources Certificate will acquire an improved understanding of the biophysical, social, and institutional aspects of terrestrial and aquatic systems.

Threshold for success (if available)

80-100% of students earn a satisfactory rating on the seminar summary component of the certificate

Data Collected

18/18 (100%) earned a satisfactory rating on the seminar summary assignment

Analysis of Data

Success

Improvement Based on Analysis

No action required.

Additional Narrative (if applicable)

Feedback

Files:

LOA Feedback Rubric_Water Resources â€“ CER0

Program Name: Water Resources - CER0

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator Robert Bringolf, Todd Rasmussen

Certificate director Todd Rasmussen

Description of Program

The Water Resources Certificate Program prepares students for related careers in environmental science and management. Protecting the long-term ecological health of our rivers and streams is an important national goal. Yet, our society has ever-increasing demands for inexpensive supplies of high-quality water.

The Program provides a common curriculum to meet the educational needs of the next generation of environmental scientists and managers. Many of the courses provide hands-on experiences in an outdoor setting to learn about water resources.

The purpose of the program is to train students to manage our scarce water resources for the maximum benefit of the world's population, while at the same time preserving the ecologic integrity of our aquatic resources.

Outcome

Measure Measure A - Pre/post testing

An exam addressing the learning objectives will be administered to students upon their enrollment in the certificate program. The exam consists of 5 questions per learning objective with tiered-rigor. The same exam will be given to students again at the end of their last semester. Mean pre-exam scores will be compared with post-exam scores to determine if learning outcomes are being met.

Threshold for success (if available)

50% mean test score improvement

Data Collected

No data collected in this cycle.

Analysis of Data

New LOA plan was approved during the current cycle. Data collection and reporting will begin in the next cycle.

Improvement Based on Analysis

Program director will begin collecting necessary data in the next cycle.

Measure Measure C - seminars

Undergraduate students are required to attend six water resources seminars to enhance and enrich content that they receive in their coursework. Summaries of each seminar attended are used to assess what students are taking away from attending seminars. These summaries will be scored based on a rubric developed for a standard set of response prompts/questions.

Threshold for success (if available)

Threshold for success is a mean rubric score of 4.0

Data Collected

No data collected during this cycle.

Analysis of Data

New LOA plan approved during this cycle so no data to analyze.

Improvement Based on Analysis

Data collection and analysis will begin in the next cycle.

Additional Narrative (if applicable)

This is a new LOA plan approved during the current cycle.

Feedback

Files:

Water Resources - CER0

Program Name: Water Resources - CER0

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Robert Bringolf, Todd Rasmussen

Certificate director Todd Rasmussen

Description of Program

The Water Resources Certificate Program prepares students for related careers in environmental science and management. Protecting the long-term ecological health of our rivers and streams is an important national goal. Yet, our society has ever-increasing demands for inexpensive supplies of high-quality water.

The Program provides a common curriculum to meet the educational needs of the next generation of environmental scientists and managers. Many of the courses provide hands-on experiences in an outdoor setting to learn about water resources.

The purpose of the program is to train students to manage our scarce water resources for the maximum benefit of the world's population, while at the same time preserving the ecologic integrity of our aquatic resources.

Outcome Outcome #01

Identify the physical, chemical, and biological processes that shape water resources and their management

Measure Instructor assessment Part A

Based on course grades and performance on assignments, certificate coordinators estimate the percentage of passing students that meet learning outcome Part A: Physical, chemical, and biological aspects of water resources. • Draw and describe the water cycle. • Explain the major physical and chemical properties of water. • Delineate a watershed and describe how it contributes to surface water and groundwater quantity and quality. • Create a conceptual diagram for a pond that includes material, energy, and biological inputs. • Compare and contrast lentic with lotic ecosystems. • Summarize the long-term effects of the environmental disasters (e.g., Horizon oil spill) on ecosystems and fisheries

Threshold for success (if available)

60% of students meet the learning outcome

Data Collected

Instructors estimate 80-100% of students meet the outcome.

Analysis of Data

Successful

Improvement Based on Analysis

Continue to monitor

Outcome Outcome #02

Demonstrate how legal, economic, social, political, and cultural factors affect water resource management

Measure Instructor assessment Part B

Instructors estimate the percentage of students receiving the certificate who have met learning outcome Part B: Legal, economic, social, political, and cultural aspects of water resources • Describe how continuous, perennially flowing streams are regulated in the United States. • Summarize the

federal, state, and local agencies that manage water resources in the US. • Outline the policies and management practices used to minimize point and nonpoint source pollution. • Identify the social, economic, political, cultural, and legal factors that influence water management

Threshold for success (if available)

60% of students meet the outcome

Data Collected

Instructors estimate 80-100% of students meet the outcome

Analysis of Data

Successful

Improvement Based on Analysis

Continue to monitor

Outcome Outcome #03

Explain the effects of water utilization and management on ecosystems and ecosystem services

Measure Instructor assessment Part C

Instructors estimate the percentage of students receiving the certificate who have met learning outcome Part C: Management of water resources to sustain human uses while protecting ecological functions.• Explain the concerns of downstream states (Florida, Alabama) relative to how Georgia uses and manages shared rivers. • Identify the factors and data required for managing a shared water resource. • Outline the components of a water-resources management plan and how you would evaluate its performance over time • Summarize methods for flood prevention in the context of global climate change.

Threshold for success (if available)

60% of students meet outcome

Data Collected

Instructors estimate 80-100% of students meet this outcome

Analysis of Data

Successful

Improvement Based on Analysis

Continue to monitor

Additional Narrative (if applicable)

Feedback

UNIVERSITY OF GEORGIA
Office of Institutional Research

Program Review Graduate

College: Forestry and Nat Res
Dept: School of Forestry and Nat Res
Program: CERG Cert Water Resources

Enrollment Metrics Fall Snapshot

		Fall 2019	Fall 2020	Fall 2021
Demographic	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	1
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	0
	White	2	3	1
	Race/Ethnicity Not Reported	0	0	0
	Female	2	3	1
	Male	0	0	1
	Gender Not Reported	0	0	0
	Total	**2**	**3**	**2**

Admission Metrics

Degrees Metrics for Graduates

		FY 2019	FY 2020	FY 2021
Degrees Awarded	American Indian or Alaskan Native	0	0	0
	Asian	0	0	0
	Black or African-American	0	0	0
	Hawaiian or Other Pacific Islander	0	0	0
	Hispanic or Latino	0	0	0
	Two or more races	0	0	0
	White	3	0	1
	Race/Ethnicity Not Reported	0	0	0
	Female	1	0	1
	Male	2	0	0
	Gender Not Reported	0	0	0
Total		**3**	**0**	**1**
Degree GPA*		3.79		3.85

*Based on Graduating Cohort

Graduate Water Resources Certificate

1. *What is the primary purpose of the certificate program?*

   The UGA Water Resources Certificate Program provides incentives and structure in water-related fields to prepare students for professional employment and enable greater multi-disciplinary communication among future water-resource professionals.

2. *What students does it serve?*

   Water touches upon every major on campus (e.g., law, economics, business, history, culture, languages, art, music, engineering, geology, geography, ecology, agriculture, forestry, marine sciences, family and consumer sciences, public health, and many more)

   The Water Resources Certificate is open to all students at the University of Georgia. We have graduated students from programs in

   - Agricultural and Applied Economics
   - Civil and Environmental Engineering
   - College of Environment and Design
   - Ecology
   - Environmental Health Sciences

3. *How does it complement or add value to existing degree programs?*

   We provide a framework for integrating the science and management of water into every major on campus to promote a wider recognition and awareness in the role that water plays in their major.

4. *What resources (faculty, administrative, other) support the program?*

   The program coordinator (Professor Todd Rasmussen) manages the program with administrative support provided by Jenny Yearwood. The Water Resources Faculty assist in student mentoring and teaching, with over 300 professionals currently supporting the program.

5. *How many students have enrolled in and completed the certificate over the past three years?*

   A total of five students have graduated with an graduate certificate in Water Resources from Spring 2019 to Spring 2022.

6. *What evidence documents the quality of the program and its value to students?*

   The program director works directly with students and faculty from across campus, and many of them participate in extra-curricular water activities (conferences, community

events). There is a level of enthusiasm present that demonstrates the vibrancy associated with understanding and managing water resources.

Specifically, the certificate faculty host the biennial Georgia Water Resources Conference that attracts professionals from across the state and region. Water-resources students assist with organizing the conference as well as presenting at the conference, providing an opportunity to learn about important water resources as well as careers. Many of our students obtain productive employment as a result of their involvement in this conference.

7. *Should the certificate program be continued?*

   Our students and faculty appreciate the ability to integrate water into their individual majors, and note that it affords them additional skills that assist in their careers.

   It is important to note that the University of Georgia is the only Land-Grant University in country that lacks a USGS-administered Water Resources Research Institute (Georgia's is located at the Georgia Institute of Technology).

   The Water Resources program at our university rely on our Water Resources Faculty and the Certificate Program to provide the backbone of our teaching, research, and outreach activities related to water resources in Georgia.

UNIVERSITY OF GEORGIA

Water Resources - CERG

Water Resources - CERG

Cycles included in this report:
Oct 1, 2018 to Sep 30, 2019
Oct 1, 2019 to Sep 30, 2020
Oct 1, 2020 to Sep 30, 2021

Program Name: Water Resources - CERG

Reporting Cycle: Oct 1, 2018 to Sep 30, 2019

Academic Program Coordinator Robert Bringolf

Associate Dean for Academic Affairs

Description of Program

The Water Resources Certificate Program prepares students for related careers in environmental science and management. Protecting the long-term ecological health of our rivers and streams is an important national goal. Yet, our society has ever-increasing demands for inexpensive supplies of high-quality water.
The Program provides a common curriculum to meet the educational needs of the next generation of environmental scientists and managers. Many of the courses provide hands-on experiences in an outdoor setting to learn about water resources.
The purpose of the program is to train students to manage our scarce water resources for the maximum benefit of the world's population, while at the same time preserving the ecologic integrity of our aquatic resources.

Outcome

Measure

A learning outcome assessment plan is under development for this graduate certificate.

Threshold for success (if available)

Data Collected

Analysis of Data

Improvement Based on Analysis

Additional Narrative (if applicable)

A new learning outcome assessment plan is expected to be in place by the next reporting cycle.

Feedback

Files:

LOA Feedback Rubric (NR)_Water Resources â€“ CERG

Program Name: Water Resources - CERG

Reporting Cycle: Oct 1, 2019 to Sep 30, 2020

Academic Program Coordinator Robert Bringolf, Todd Rassmussen

Certificate director Todd Rassmussen

Description of Program

The Water Resources Certificate Program prepares students for related careers in environmental science and management. Protecting the long-term ecological health of our rivers and streams is an important national goal. Yet, our society has ever-increasing demands for inexpensive supplies of high-quality water.
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The purpose of the program is to train students to manage our scarce water resources for the maximum benefit of the world's population, while at the same time preserving the ecologic integrity of our aquatic resources.

Outcome

Measure Measure B - portfolio

Students enrolled in the certificate program are required to develop a professional portfolio. The portfolio will demonstrate student development as a water resource professional based on products produced while in the program.

Threshold for success (if available)

Mean rubric score of 120 for graduate students

Data Collected

No data collected in this cycle

Analysis of Data

New assessment plan since last cycle. No data to analyze in this cycle.

Improvement Based on Analysis

Data collection and analysis will begin in the next cycle.

Measure Measure A - pre/post test

An exam addressing the learning objectives will be administered to students upon their enrollment in the certificate program. The exam consists of 5 questions per learning objective with tiered-rigor. The same exam will be given to students again at the end of their last semester. Mean pre-exam scores will be compared with post-exam scores to determine if learning outcomes are being met.

Threshold for success (if available)

The threshold for success is 60% increase between mean pre- and post-exam scores.

Data Collected

No data collected in this cycle.

Analysis of Data

New LOA plan in this cycle so no data to analyze.

Improvement Based on Analysis

Data collection and analysis will begin in the next cycle.

Additional Narrative (if applicable)

This LOA plan was finalized during the current cycle but no data was collect. First reporting will begin in the next cycle.

Program Name: Water Resources - CERG

Reporting Cycle: Oct 1, 2020 to Sep 30, 2021

Academic Program Coordinator Robert Bringolf, Todd Rassmussen

Certificate director Todd Rassmussen

Description of Program

The Water Resources Certificate Program prepares students for related careers in environmental science and management. Protecting the long-term ecological health of our rivers and streams is an important national goal. Yet, our society has ever-increasing demands for inexpensive supplies of high-quality water.
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The purpose of the program is to train students to manage our scarce water resources for the maximum benefit of the world's population, while at the same time preserving the ecologic integrity of our aquatic resources.

Outcome Outcome #01

Identify the physical, chemical, and biological processes that shape water resources and their management.

Measure Measure A - Instructor assessment Part A

Based on exam grades, assignments, and course grades, instructors estimate the percentage of students receiving the certificate who have met learning outcome Part A: Physical, chemical, and biological aspects of water resources. • Draw and describe the water cycle. • Explain the major physical and chemical properties of water. • Delineate a watershed and describe how it contributes to surface water and groundwater quantity and quality. • Create a conceptual diagram for a pond that includes material, energy, and biological inputs. • Compare and contrast lentic with lotic ecosystems. • Summarize the long-term effects of the environmental disasters (e.g., Horizon oil spill) on ecosystems and fisheries

Threshold for success (if available)

80% of graduate students meet the outcome

Data Collected

Instructors estimate 80-100% of students meet the outcome

Analysis of Data

Successful

Improvement Based on Analysis

Continue to monitor

Outcome Outcome #02

Demonstrate how legal, economic, social, political, and cultural factors affect water resource management

Measure

Instructors estimate the percentage of students receiving the certificate who have met learning outcome Part B: Legal, economic, social, political, and cultural aspects of water resources • Describe how continuous, perennially flowing streams are regulated in the United States. • Summarize the federal, state, and local agencies that manage water resources in the US. • Outline the policies and management practices used to minimize point and nonpoint source pollution. • Identify the social, economic, political, cultural, and legal factors that influence water management

Threshold for success (if available)

80% of graduate students meet outcome

Data Collected

Instructors estimate 80-100% of graduate students met outcome

Analysis of Data

Successful

Improvement Based on Analysis

Continue to monitor

Outcome Outcome #03

Explain the effects of water utilization and management on ecosystems and ecosystem services

Measure Instructor assessment Part C

Instructors estimate the percentage of students receiving the certificate who have met learning outcome Part C: Management of water resources to sustain human uses while protecting ecological functions.• Explain the concerns of downstream states (Florida, Alabama) relative to how Georgia uses and manages shared rivers. • Identify the factors and data required for managing a shared water resource. • Outline the components of a water-resources management plan and how you would evaluate its performance over time • Summarize methods for flood prevention in the context of global climate change.

Threshold for success (if available)

80% of graduate students meet the outcome

Data Collected

Instructors estimate 80-100% of graduate students met the outcome

Analysis of Data

Successful

Improvement Based on Analysis

Continue to monitor

Additional Narrative (if applicable)

Feedback

Files:

Water Resources - CERG

End of report

Harley Langdale, Jr. Center for Forest Business
Warnell School of Forestry and Natural Resources

- **What is the primary mission of the C/I/P?**
  The University of Georgia's Harley Langdale, Jr. Center for Forest Business integrates pioneering academic research and sound financial methods to provide education and service to forest industry, investors, and landowners throughout the world.

- **How does the C/I/P enhance the unit's academic, research, or outreach programs?**
  The Center for Forest Business offers a graduate-level educational program leading to a Master of Forest Resources (MFR) in Forest Business Management. In partnership with the Terry College of Business, the MFR in Forest Business is designed to help students develop the necessary skills for positions of leadership in forest operations management, timberland investing, or education in the private or public sector.

  Our research priorities focus on issues critical to all aspects of forest business, and especially sustaining and enhancing the competitiveness of Georgia's wood fiber supply. The Center supports its faculty in various research projects.

  The Center for Forest Business serves the forest business community by coordinating and implementing the Sustainable Forest Initiative which is housed in the Center. It also hosts the biennial Timberland Investment Conference in forestland investing, economics, and finance.

- **How is s the C/I/P organized (including budgetary, physical, and human resources) to achieve this mission?**
  The Center for Forest Business has a director, the Georgia SFI coordinator, an Administrative Assistant and 13 participating faculty including the Dean of the Warnell School of Forestry and Natural Resources. These are all housed in the Warnell School of Forestry and Natural Resources.

  It has an advisory committee comprised of 15 forestry industry leaders across the United States.

  The director and faculty salaries funded by Warnell. The Sustainable Forestry Initiative funds the SFI coordinator, and the Admin Asst. is split between SFI and Timberland Investment Conference.

  Assistantships and other student expenses come from the Timberland Investment Conference and five different endowments.

- **What metrics are the best measures of productivity and excellence in achieving the mission?**
  Graduates of the MFR in Forest Business Management are in very high demand for employment and graduates from this program garner some of the highest starting salaries of all Warnell programs. The Timberland Investment Conference, hosted by the Center for Forest Business, generates substantial revenue to support the MFR, MS, and PhD programs in Warnell. For example, in 2021 the Conference netted over $416,000, of which 92% directly supported graduate student assistantships.

- **According to those metrics, how well does the C/I/P achieve its mission?**
  Graduate employment is 100%. Salaries are well above undergrads.

Conference attendance consistently exceeds 300 participants. The most recent conference, in November 2021, had 380+ attendees.

SFI funding is ~$160K/year

- **Should the C/I/P be continued?**
  Yes. This Center has existed since 1997 and provides a unique education experience for students wanting to enter the private industry business workforce. Our students are highly recruited and are 100% employed.

- **If so, what changes using existing resources would enhance the C/I/P's effectiveness?**
  Increased funding to continue to attract the best students.

  An online certificate and/or degree is also being explored.

- **If so, what are the unit's priorities for additional resources to enhance its effectiveness?**
  Graduate Fellowships are a priority with the development staff.