

1. Program Learning Outcomes (PLOs):

1. Demonstrate broad knowledge of forest ecology and biology by a. identifying tree species and associated basic silvics of Lake States tree species, and b. applying basic principles of forest ecology.
2. Complete forest measurement activities common to professional foresters by a. interpreting maps and legal descriptions, and b. identifying data collection methods and analyses appropriate to specific situations.
3. Develop sound forest management strategies by a. proposing silviculturally sound techniques to manage forests, and b. using principles of forest finance and financial calculations within the forest decision-making context.
4. Complete and present a forestry capstone project by a. preparing and presenting (written and orally) a sound, option specific management plan and b. demonstrating the ability to write and speak in a professional, technically competent manner
5. Develop confidence in the knowledge, skills and abilities needed to perform as a professional in one's chosen option within the Forestry Program.

The B.S. Forestry Degree Program is assessed as a whole with respect to the above PLOs, though the four distinct options within the B.S. Forestry Degree Program are distinguishable when the option-specific statements that follow are included with the list of PLOs and are assessed as part of PLO4. Note these are different options within the one B.S. Forestry Degree Program.

Forest Ecosystem Restoration and Management	Demonstrate a broad understanding of restoration of terrestrial and aquatic systems and land management decision making based on ecologic, social and economic factors
Forest Management	Demonstrate a broad understanding of forest science and land management
Forest Recreation	Demonstrate a broad understanding of the provision and management of recreational visitor use while balancing multiple forest management objectives
Urban and Community Forestry	Demonstrate a broad understanding of vegetation management policies and practices in urban areas

Assessment of these option specific statements occurs as part the assessment of PLO 4 as the nature of capstone projects tends to be option specific.

2. Focal Learning Outcome:

3

3. Summary of Previous Results (for the focal PLO):

Students Enrolled	Exceeded Expectations ≥ 90%	Met Expectations ≥ 80%	Partially Meets Expectations ≥ 70%	Does Not Meet Expectations < 70%
67	0	44	0	23

The Forestry Program's Basic Skills/Competency Exam is the main assessment vehicle for PLOs 1-3. The Competency Exam is taken by seniors and is composed of (a.) 60 written questions, subsets of which are aligned with PLOs 1-3 and (b.) a field-based tree identification exam linked to PLO 1. Students need a 70% on written portion as a whole and an 80% on the field portion to achieve the Competency Exam milestone required for completion of the forestry program, therefore it also serves PLO 5. The 70% threshold for the written exam was selected as that benchmark as it is commonly used in forestry circles to denote the successful passing of certification exams. The 80% threshold for the field portion of the exam was selected to indicate the importance of one's ability to identify trees within the profession. The 70% threshold was also applied to PLO-specific written exam question subsets used for assessment of PLOs 1-3 respectively.

Note that PLO 3 parts a and b were assessed separately and averaged (using AY 19/20 data) for the results above. The respective by sub part numbers were as follows.

PLO 3 Assessment Results from AY 18/19

PLO	# of students	# met (%)	# not met (%)
3a	63	37 (59%)	26 (41%)
3b	63	37 (59%)	26 (41%)

PLO 3 Assessment Results from AY 19/20

PLO	# of students	# met (%)	# not met (%)
3a	67	45 (67%)	22 (33%)
3b	67	43 (64%)	24 (36%)

4. Description of Previous Actions (for the focal PLO):

The Forestry Program noted the somewhat low quantitative assessment results for PLO 3 from AY 18/19 and focused energies on the fundamentals of PLO 3 in key classes during AY 19/20. Improvements in the quantitative assessments results were evident AY 19/20, with the efforts continuing in AY 20/21. It should be noted that a fair amount of the subject matter in PLO3 is introduced at the senior level thus there is not the chance for reinforcement of such topics in subsequent classes like exists for topics in PLO1 and PLO2. PLO 3 specific subject matter questions that drew Forestry Program attention in AY 18/19 and continued into AY 19/20 included forest-related taxation, forest-related net present value calculations, and identifying appropriate silvicultural prescriptions.

5. Current Assessment Strategies/Measurements/Techniques/Methods (for the focal PLO):

The Forestry Program's Basic Skills/Competency Exam is the main assessment vehicle for PLOs 1-3. The Competency Exam is taken by seniors and is composed of (a.) 60 written questions, subsets of which are aligned with PLOs 1-3 and (b.) a field-based tree identification exam linked to PLO 1. Students need a 70% on written portion as a whole and an 80% on the field portion to achieve the Competency Exam milestone required for completion of the forestry program, therefore it also serves PLO 5. The 70% threshold for the written exam was selected as that benchmark as it is commonly used in forestry circles to denote the successful passing of certification exams. The 80% threshold for the field portion of the exam was selected to indicate the importance of one's ability to identify trees within the profession. The 70%

threshold was also applied to PLO-specific written exam question subsets used for assessment of PLOs 1-3 respectively.

6. Current Assessment Results/Findings/Interpretations (for the focal PLO):

Students Enrolled	Exceeded Expectations ≥ 90%	Met Expectations ≥ 80%	Partially Meets Expectations ≥ 70%	Does Not Meet Expectations < 70%
71	0	54	0	17

Benchmark(s): Expectations are met when a student scores at least a 70% of the Competency exam questions related to PLOs 1-3 respectively.

The Forestry Program was generally pleased with these assessment results relative to PLO 3 as they show the continuing upward trend in recent years in the percentage of students meeting expectations. These results indicate our previously described focused energies on PLO3 topics in classes are having an effect – energies we will continue to dedicate moving forward.

During AY 20/21 PLO 3 topics that proved challenging to students included forest taxation, accounting for risk, scrub oak management and herbicide use. Forest taxation continues to be a difficult topic for forestry students, so efforts to enhance learning of that topic will continue. Similarly, efforts will be focused on scrub oak management and herbicide use to enhance learning of that material. It is unclear if the impact of COVID on how classes were taught or attended during AY 20/21 countered our past focused energies to enhance learning of some of the PLO 3 subject matter.

Once again please note parts a and b were assessed separately and averaged to produce the numbers entered above. The subset results follow for reference.

PLO 3 Assessment Results from AY 20/21

PLO	# of students	# met (%)	# not met (%)
3a	74	58 (78%)	16 (22%)
3b	67	50 (77%)	17 (23%)

7. Current Implications/Actions (for the focal PLO):

The Forestry Program is generally pleased with its efforts and the students' capabilities with respect to PLO 3. As with any assessment endeavor though, attempts to continually improve is always part of the mix. The following thoughts and action strategies were discussed and finalized after the Forestry Program reviewed a draft of this report. A.) Two areas of concern were found for content that most appropriately can be addressed within the FOR 432 (Silviculture) course scrub oak management and herbicide use. Both of these topics have a level of complexity that can present challenges for students. For that reason, specific actions were taken to address those concerns during the fall semester 2021 and will be assessed into the future. In order to provide a more thorough grounding in the application of the principles of vegetation management (and, therefore, herbicide use as a portion of that), a field lab activity was added that specifically targets developing prescriptions for herbicide use. This field activity was added during Fall 2020 and was redesigned for greater rigor for Fall 2021. Overall, this lab activity appeared to have a pronounced impact on student skills in this area, when informally assessed via the lab assignments that were completed and responses during the essay exams that are two of the methods of formative assessment used within the course. Similarly, additional emphasis was placed on the management of scrub oak systems. The complexity in meeting this learning goal by students is in-part due to its strong divergence from management for oak on better quality sites from oak on poor quality sites. On scrub oak sites (i.e. dry, nutrient-poor sites), the common oak species have a strong competitive advantage that allows a broad array of systems to be effective at regenerating oak after harvest. The majority of different systems can be applied and expect to achieve some sort of success. By strong contrast, much of the oak on better quality sites in Wisconsin regenerated during the droughts of the 1930's with much reduced deer populations and regular involvement of wildfires. All of these factors favored this oak regeneration; however, in a current context, successful oak regeneration on higher quality sites is both unpredictable and difficult to achieve. While this may seem like excessive detail for this assessment report, we want for it to be clear why this divergence in management creates complexities for students in application of valid management techniques. For them to do this well, they are applying an exceptionally broad array of skills. Through the course instructor's informal discussion with students and through reviewing all oak silviculture materials used in the class as well as exam and assignment responses, we believe that the instructor has isolated the knowledge gaps that were creating this issue. The delivery of oak content within the field labs was modified during the Fall 2021 offering of this course to address this matter. Time will tell if the changes have addressed the identified areas of scrub oak management and herbicide use. B.) Two areas of concern were also noted within regarding subjects/dispositions closely aligned with the FOR 425 (Forest Management and Finance) course. One of those areas of concern related to the calculation of capital gains tax on timber-based capital

assets and the second area of concern was with respect to the disposition of students relative to their confidence in financial decision making. Similar to the previous, financial decision making with respect to Forest Management truly pushes students into areas and levels complexities they have never considered before and we believe this is directly tied to the two areas we are highlighting in this section of this report. First, very few if any senior students in forestry have ever had to complete tax forms involving capital gains taxation in their personal lives and recognizing that is key to the changes made to address this noted area of concern. Starting with the Fall 2021 semester the instructor has now made capital gains taxation a topic that is introduced early on and then re-emphasized and made more complex throughout the course. The instructor has chosen to first address the topic within a more personally relatable arena (buying stocks and selling stocks on the stock market) in order to have students learn the basic mechanics involved. The instructor then adds complexity to the process by changing the scenario from the stock market to the forest management arena. Time will tell if these changes improve students' grasp of this topical area.

8. Dissemination of Findings:

This final report was reviewed prior to and discussed one last time by Forestry Faculty/Staff at its September 17, 2021 staff meeting. The report was accepted and approved by a vote of 10-0-1 at that meeting. The Forestry Program will share the assessment findings with the College of Natural Resources administration, the Forestry Advisory Committee, and most likely the next reaccreditation document submitted to the Society of American Foresters.

Forestry Curriculum Map

Table 1 details the B.S. Forestry Degree Program courses in which the PLOs are primarily embedded. It is important to recognize that some aspects or sub-components of respective PLOs are embedded in all courses required within the B.S. Forestry Degree Program. PLO 4 is capstone-focused, so the Forestry Program's deliberate and intentional PLO scaffolding is evident in this Curriculum Map.

Table 1. Forestry Curriculum map indicating the courses in which PLOs are embedded (D=developing, M=mastery).

Forestry Program PLO Map					
Course	PLO1	PLO2	PLO3	PLO4	PLO5 (Disposition)
FOR 120					D
FOR 232	D, M				D
NRES 250	D	D			D
FOR 319 and 320 or NRES 475 two-week portion ¹	D	D			D
FOR 321		D, M			D
FOR 322	D	D, M			D
FOR 332	D, M		D		D
NRES 372			D		D
Required summer work experience					D
FOR 425			D, M		D
FOR 432	M	M	M		D
FOR 436 (for. management option)			M	D, M	M
FOR 444 (urban & comm. for. option)				D, M	M
NRES 459 (for. ecosystem rest. & mgmt. option)				D, M	M
FOR 485 (for. recreation option)				D, M	M
Basic Skills/Competency Exam	M	M	M		M

¹ Students complete either (a.) FOR 319 and FOR 320, or (b.) NRES 475 as part of the required CNR Summer Field Experience

5-year Assessment Plan

Forestry Program Five-Year Assessment Plan

Note: This plan includes tasks related to program assessments and assumes individuals in remain in their current roles/positions throughout the five-year window.

Assessment Year and Activities	Deadline	Person(s) Responsible
<u>(AY21/22–PLO 4 & PLO 5 relative to PLO 4)</u>		
Assess the results near the end of each semester	Dec 2021 and April 2021	Instructors of Capstone Courses
Conduct the Disposition Survey near the end of FOR 425 in each semester	Dec 2021 and April 2022	Vokoun and Doruska
Note indirect assessment of PLO 4 probably not possible via the Forestry Advisory committee or Intern Supervisors as PLO 4 is capstone-project based...		
Write the Assessment Report	Summer 2022	Doruska
Review the Report and Develop Action Steps	Early Fall 2022	Forestry Faculty
<u>(AY22/23–PLO 1 & PLO 5 relative to PLO 1)</u>		
Offer the Competency Exam, Compile and Assess the results near the end of each semester	Dec 2022 and April 2023	Hauer and the Forestry Faculty / Hauer / Forestry Faculty
Conduct the Disposition Survey near the end of FOR 425 in each semester	Dec 2022 and April 2023	Vokoun and Doruska
Conduct Informal Assessment via the Forestry Advisory Committee	Spring 2023	Forestry Faculty
Conduct Informal Assessment via the Intern Supervisors	Summer 2023	Vokoun
Write the Assessment Report	Summer 2023	Doruska
Review the Report and Develop Action Steps	Early Fall 2023	Forestry Faculty

<u>(AY23/24–PLO 2 & PLO 5 relative to PLO 2)</u>		
Offer the Competency Exam, Compile and Assess the results near the end of each semester	Dec 2023 and April 2024	Hauer and the Forestry Faculty / Hauer / Forestry Faculty
Conduct the Disposition Survey near the end of FOR 425 in each semester	Dec 2023 and April 2024	Vokoun and Doruska
Conduct Informal Assessment via the Forestry Advisory Committee	Spring 2024	Forestry Faculty
Conduct Informal Assessment via the Intern Supervisors	Summer 2024	Vokoun
Write the Assessment Report	Summer 2024	Doruska
Review the Report and Develop Action Steps	Early Fall 2024	Forestry Faculty
<u>(AY24/25–PLO 3 & PLO 5 relative to PLO 3)</u>		
Offer the Competency Exam, Compile and Assess the results near the end of each semester	Dec 2024 and April 2025	Hauer and the Forestry Faculty / Hauer / Forestry Faculty
Conduct the Disposition Survey near the end of FOR 425 in each semester	Dec 2024 and April 2025	Vokoun and Doruska
Conduct Informal Assessment via the Forestry Advisory Committee	Spring 2025	Forestry Faculty
Conduct Informal Assessment via the Intern Supervisors	Summer 2025	Vokoun
Write the Assessment Report	Summer 2025	Doruska
Review the Report and Develop Action Steps	Early Fall 2025	Forestry Faculty
<u>(AY25/26–PLO 4 & PLO 5 relative to PLO 4)</u>		
Assess the results near the end of each semester	Dec 2025 and April 2026	Instructors of Capstone Courses
Conduct the Disposition Survey near the end of FOR 425 in each semester	Dec 2025 and April 2026	Vokoun and Doruska
Note indirect assessment of PLO 4 probably not possible via the Forestry Advisory committee or Intern Supervisors as PLO 4 is capstone-project based...		
Write the Assessment Report	Summer 2026	Doruska
Review the Report and Develop Action Steps	Early Fall 2026	Forestry Faculty

Congratulations!

This report met the required criteria:

- List all the PLOs
- Include a curriculum map covering all the PLO
- Include a 5-year assessment plan covering all the PLOs
- Report current assessment results for a focal PLO

For individual feedback, please read the feedback scoring and comments listed below. Each report was carefully reviewed by two reviewers. Please study each reviewer's comments to get a comprehensive meta-assessment of your assessment practices. The reviewers included many comments on how annual assessment reports can be improved next time if needed.

Questions	Reviewer 1			Reviewer 2		
	Completed	Partial	Absent	Completed	Partial	Absent
Program Learning Outcomes (PLOs)						
All PLOs are listed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLOs reflect the knowledges, skills, and dispositions that indicate the scope of the program and student achievement expectations.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The focal PLO(s) is identified.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reviewer 1 Comments:	The PLO are well written and easily understood.					
Reviewer 2 Comments:	Well organized					
Current Curriculum Map						
The curriculum map is sufficiently detailed to be useful for evaluating the program.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The curriculum map clearly depicts the courses/experiences that will allow students to meet all program learning outcomes.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reviewer 1 Comments:	The uploaded document is comprehensive and shows the entire curricular map.					
Reviewer 2 Comments:	Is FOR 436 the only course that has the sub-components for PLO4? Or all PLO 3 (FOR 332, 372, 425, 432 also provides aspects for PLO4 (capstone-focused)?					
Summary of Previous Results						
A concise abstract of results (less than 500 words) describes previous assessment results with enough information for comparison with current results, if applicable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reviewer 1 Comments:	The information describing the previous results is clear and gives a measurable comparison of data from previous years.					
Reviewer 2 Comments:	No Comments					

Description of Previous Actions

There is an explicit statement of the changes (or not) to curriculum, instruction, or assessment methods based on previous assessment of the focal PLO.

Reviewer 1 Comments:

The data obtained from the previous reviews shows a directed action plan with addressing the concerns of the PLO.

Reviewer 2 Comments:

No Comments

Current Assessment

Strategies/Measures/Techniques/Methods

Direct and/or indirect assessment methods are employed as appropriate.

A concise description of assessment methodology (e.g. course, semester, instrument, constituency, method of analysis) is sufficiently detailed as to be repeatable.

Reviewer 1 Comments:

Some comments that are missing and will help strengthen the description of this statement are as follows:

1. Is this assessment part of a class?
2. Is the assessment a requirement part of the major?
3. At what point in the semester do they have to take the exam?
4. What rubric of evaluation method is being used to assess the exam?

Reviewer 2 Comments:

No Comments

Benchmark and Additional Attachment

An explicit benchmark of student achievement expectations is provided and justified.

Useful materials (e.g. descriptions of assignments, rubrics) are attached as appendices as necessary.

Reviewer 1 Comments:

It would be beneficial to include documentation describing the rubrics or evaluation methods for the exam.

Reviewer 2 Comments:

No Comments

Current Assessment

Results/Findings/Interpretation

What was measured (e.g. number of sections, number of students, level of student achievement) is documented and student achievement is meaningfully summarized.

Figures and/or tables are used when necessary for clarity and to depict trends.



Results are discussed in the context of the stated benchmark(s) and/or previous results.



Reviewer 1 Comments:

Results describe how the area is going to address then findings of the research. It describes the weaknesses, but perhaps elaborating some more on how these weaknesses be addressed like implementing modules or other similar assessments to forest taxation could help make the statement be clearer.

Reviewer 2 Comments:

No Comments

Current Implications/Actions

It is explained how the results can be used to improve student achievement through changes to curriculum, instruction, and/or assessment methods.



Reviewer 1 Comments:

This statement is clear and how the area is going to proceed looks to address the results from the analysis.

Reviewer 2 Comments:

Thank you for the very thorough information. For future assessment we hope the instructor does not withhold (isolate) information/knowledge on reviewing oak silviculture materials; reexamine introduction to capital gains taxation.

Dissemination of Findings

The report has been shared with and approved by the faculty.



Reviewer 1 Comments:

No Comments

Reviewer 2 Comments:

No Comments

Updated Five-Year Assessment Plan

The plan covers (at least) five years.



The plan makes explicit when, where, and how each PLO will be assessed and when it will be reported.



The plan will result in all PLOs being assessed and reported within a 5-year cycle.



Reviewer 1 Comments:

The plan is clear with how the assessments will be evaluated and who is responsible.

Reviewer 2 Comments:

No Comments