NRESS Student Learning Outcomes (SLOs) - Degree Option: 
Natural Resources and Environmental Studies (NRES), PhD

The Natural Resources and Environmental Studies (NRES) PhD degree within the Natural Resources 
and Earth Systems Science PhD Program trains scientists and scholars whose research addresses 
problems dealing with the allocation and distribution of natural resources, related policies at the 
local to global scale, and ethical and societal factors that affect resource management. Through 
interdisciplinary coursework and doctoral research, we train researchers who can independently 
pursue the process of science and scholarship, effectively apply their research to both solve basic 
questions in natural resource and environmental studies and apply their work to issues of relevance 
to society and the environment, especially in this era of global change.

NRES PhD students are supervised and evaluated by their Ph.D. Guidance and Dissertation 
Committees. Each committee must include members from more than one academic department, 
and students are strongly encouraged to include at least one off-campus member. Doctoral 
candidates in NRES must pass three examinations during their PhD studies, each of which includes 
both written and oral sections:

1. A Comprehensive Examination consisting of extensive answers (written over three weeks) to 
a question from each PhD Guidance Committee member, and a subsequent oral 
presentation to the committee, during which they will ask for clarification of the student’s 
answers;
2. A Dissertation Proposal Examination consisting of a written dissertation proposal, a public 
seminar on the proposal, public question-and-answer period, and private defense of their 
work to their PhD Guidance Committee.
3. A Final Defense of their dissertation consisting of a written dissertation, a public seminar on 
the dissertation, public question-and-answer period, and private defense of their work to 
their Dissertation Committee.

These dissertation proposal and defense presentations are open to the public, and all three 
examinations are overseen by a committee of experts consisting of faculty on the Ph.D. Guidance 
and Dissertation Committees. These three examinations ensure that NRES PhD graduates achieve 
the following learning outcomes:

- Critically review and cogently synthesize relevant literature and identify need for new 
  research.
- Draw on previously published work to independently design and execute new experiments 
or field manipulations or develop models with a high degree of sophistication. The design 
  and execution of an experiment or the building of a model should demonstrate an 
  understanding of good laboratory, field or modeling practices.
- Structure a coherent and convincing academic argument.
- Lead the writing of manuscripts describing their research and its impacts that are suitable 
  for publication in peer-reviewed journals or appropriate professional outlets for their 
  particular sub-discipline and be able to describe their research in presentations at national 
  meetings of major relevant scientific societies, and at national and international symposia 
  hosted by other professional organizations. The general expectation is that the final 
  dissertation will include three first-authored publications submitted to or accepted in a peer-
  reviewed journal, or ready for submission.
- Articulate how their research relates to a broader context outside of academia, and how 
  their expertise will be applicable in the execution of complex research problems.

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