**LIFE SCIENCES - CONCENTRATION IN NATURAL RESOURCES MANAGEMENT - M.S.**
**ASSESSMENT Report**
**2007-2008**

I. **Mission of the Program**

The mission of the NRM program is to provide undergraduate and graduate students with a high quality science education that includes experience with a research and field projects. The program provides a scientific and technical background that empowers students to successfully pursue science and technology careers, or, proceed on to advanced graduate studies.

II. **Program Goals**

Our overall goal is to develop broadly literate students with a comprehensive knowledge of the natural resources sciences with the ability to critically analyze and apply their knowledge to the world around them. More specifically for our graduate program, our goal is to produce students who can successfully complete a research project and who are prepared for a career in resources management or a related field or entrance into a Ph.D. program.

III. **Program Student Outcomes**

A student receiving an M.S. in Life Science with a concentration in NRM will:

1. Have mastery of principle natural resource management and policy knowledge.
2. Utilize scientific methodology and technology to make sound management decisions in the various fields of NRM.
3. Be able to critically analyze information and effectively impart scientific and policy knowledge with peers, mentors, and other professionals in the scientific community.
4. Effectively communicate scientific ideas, information, and results, both verbally and in writing, that (1) demonstrate consistent logic; (2) are well organized; (3) state and defend a thesis; and (4) demonstrate competent use of language.
5. Effectively read and write and critically evaluate relevant professional literature.
6. Attain employment in forestry, natural resources management, environmental science, or related fields or advance to a doctoral program.

IV. **Means of Assessing if Student Outcomes for the Program are met**

1. Have mastery of principle natural resource management and policy knowledge.

**First Means of Assessment for Outcome Identified Above:**

1a. Means of Program Assessment & Criteria for Success: Course grades and evaluations; successful students will receive an average grade of "B" or better on class tests. The final exam or project in Life Science 600 (Research Methods) will be used as assessment tools this year.

**Second Means of Assessment for Outcome Identified Above:**

1b. Means of Program Assessment & Criteria for Success: The general knowledge component of the thesis defense will be used as the assessment tool this year.

Measure of success – 80% or more of our students will successfully meet our criteria.

2. Utilize scientific methodology and technology to make sound management decisions in the various fields of NRM.

**First Means of Assessment for Outcome Identified Above:**
2a. Means of Program Assessment & Criteria for Success: Thesis and Thesis Defense; Successful students will write an acceptable thesis and pass their thesis defense.

**Second Means of Assessment for Outcome Identified Above:**
2b. Means of program Assessment & Criteria for Success: Course grades and evaluations of laboratory courses; Successful students will receive an average grade a "B" or better on laboratory reports and exams which include designing and carrying out experiments. Topics in NRM (FOR 620) will be used as assessment tools this year.

Measure of success – 80% or more of our students will successfully meet our criteria.

3. Be able to critically analyze information and effectively impart scientific and policy knowledge with peers, mentors, and other professionals in the scientific community.

**First Means of Assessment for Outcome Identified Above:**
3a. Means of Program Assessment & Criteria for Success: Thesis and Thesis Defense; Successful students will write an acceptable thesis and pass their thesis defense.

**Second Means of Assessment for Outcome Identified Above:**
3b. Means of Program Assessment & Criteria for Success: Graduate Seminar-successful students will receive a "B" or better in the seminar.

**Third Means of Assessment for Outcome Identified Above:**
3c. Means of Program Assessment & Criteria for Success: Course grades and evaluations for courses other than graduate seminar, particularly for courses involving written and oral reports; Successful students will receive an average grade of "B" or better for written and oral reports presented during these courses. The final grades for Advanced Topics in NRM (FOR 620) will be used as assessment tools this year.

Measure of success – 80% or more of our students will successfully meet our criteria.

4 & 5. Effectively communicate scientific ideas, information, and results, both verbally and in writing, that (1) demonstrate consistent logic; (2) are well organized; (3) state and defend a thesis; and (4) demonstrate competent use of language. Effectively read and write and critically evaluate relevant professional literature.

**First Means of Assessment for Outcome Identified Above:**
4&5a. Means of Program Assessment & Criteria for Success: Thesis and Thesis Defense; Successful students will write an acceptable thesis and pass their thesis defense.

**Second Means of Assessment for Outcome Identified Above:**
4&5b. Means of Program Assessment & Criteria for Success: Graduate Seminar-successful students will receive a "B" or better in the seminar.

6. Attain employment in forestry, natural resources management, environmental science, or related fields or advance to a doctoral program.

**First Means of Assessment for Outcome Identified Above:**
6a. Means of Program Assessment & Criteria for Success: Tracking students receiving Master's Degrees in the program in 2007-2009 using a modified student satisfaction survey with 75% of respondents indicating continuing their education or are employed in NRM or related area.

Measure of success - 75% of the respondents will indicate that they are satisfied or very satisfied with their preparation for work or graduate school.

## V. Summary of Data Collected from the Means of Assessment

1. Have mastery of principle biological knowledge.
   1a. 100% (13/13) of students in LSci600 and.
   1b. Five students completed thesis in NRM

2. Utilize scientific methodology and technology to make sound management decisions in the various fields of NRM.
   2a. Five students wrote and successfully defended their thesis.
   2b. 100% of students in FOR 620 received a "B" or better.

3. Be able to critically analyze information and effectively impart scientific and policy knowledge with peers, mentors, and other professionals in the scientific community.
   3a. Five students wrote and successfully defended their thesis.
   3b. 100% (13/13) received a "B" or better n LSci650 Graduate Seminar
   3c. 100% of students in FOR 620 received a "B" or better.

4. Effectively communicate scientific ideas, information, and results, both verbally and in writing, that (1) demonstrate consistent logic; (2) are well organized; (3) state and defend a thesis; and (4) demonstrate competent use of language. Effectively read and write and critically evaluate relevant professional literature.
   4a. Five students wrote and successfully defended their thesis.
   4b. 100% (13/13) received a "B" or better n LSci650 Graduate Seminar

6. Attain employment in forestry, natural resources management, environmental science, or related fields or advance to a doctoral program.
   6a. Of the five students that successfully defended their thesis two were accepted into Ph.D. programs and the remaining three are employed in an NRM field.

## VI. Use of Data Results

Our graduate students met our criteria for success for all of our objectives. However, we feel that there is still room for improvement in terms of writing skills. Several of our graduate classes require some type of written reports and/or research papers and students are required to turn in outlines, rough drafts, and final papers to facilitate the writing process. We also continue to encourage students to use the writing center and to take Technical Writing within the English Department if warranted. This year Dr. Edward Martinez is devoting more time in Research Methods to thesis construction and writing skills.

We continue to strongly encourage thesis advisors to work with students to get the thesis in a more acceptable format prior to the student's defense and physical departure from NMHU.