Outcomes Data

Evaluation of the Pre-Test of the Self-Assessment Survey of the Forestry Major (Spring 2013)

A pre-test of the self-assessment survey of the forestry major was performed using 58 forestry students from three classes; Forest and Range Ecogeography class – F310 (12 students), Silviculture class – F325 (20 students) and in Natural Resource Policy and Sustainability – NR425 (26 students).

The Students

Students in the pre-test of the survey represented three concentrations; Forest Management (40%), Forest Fire Science (31%) and Forest Biology (29%). The majority of students had attended NR220 and F230 at Pingree Park (78%).

Juniors had the largest representation in the survey (38%), and with equal proportions of sophomores (25%) and seniors (23%). Freshman made up the smallest group representing only 14% of the students surveyed.

Forestry Field Skills

Students were asked to rank their level of agreement with 13 statements addressing their field and technical skills. These skills include tree identification, navigating in the woods, the use of GPS, timber cruising and tree measurements. Responses to the 13 questions were averaged to obtain an overall score for each student. In analyzing this data it was assumed that the level of agreement was directly related to the student’s skill level. To avoid this problem in future surveys, the questions in this section were revised using a scale directly related to their skill level: 1 – poor, 2 – fair, 3 – good, 4 – very good, 5 – excellent.

The student’s assessment of their field skills was directly related to whether they attended NR220 and F230 at Pingree Park. Students who did not attend Pingree Park (23%) assessed their field skills as being fair (2) to good (3), while student who attended Pingree Park (77%) assessed their field skills as being very good (4) to excellent (5). Of this latter group, only 26% of the students rated their skills as being excellent.

Forest Policy

Students were asked to rank their level of familiarity with 13 concepts of policies affecting forest management and planning. Responses to the seven questions were averaged to obtain an overall score for each student.

Student’s knowledge of forest policy was correlated to the number of years in the program. First year students (14%) indicated that they were not at all familiar (1) or slightly familiar (2).
with forest policy and planning concepts. In contrast, student in the program at least three years (86%) indicated that they were moderately familiar (4) or very familiar (5) with these concepts.

**Forest Management and Timber Harvesting**

Students were asked to rank their level of agreement with 12 statements about forest management strategies and 10 statements about timber harvesting. In each section, six statements had reverse wording (questions 3.4, 3.7, 3.8, 3.9, 3.11, 3.12, 4.1, 4.3, 4.4, 4.5, 4.7 and 4.9). This was done to force the students taking the survey to carefully read the questions. Prior to computing an overall scale, points were assigned to each of these statements so that the reverse worded questions were assigned the opposite number of points than the positively worded statements.

Ninety-eight percent of the students agreed (4) or strongly agreed (5) that forest management enhances ecosystem services. Students were less convinced about the role timber harvesting plays in maintaining forest health and enhancing ecosystem services. Thirty-seven percent of the students somewhat agreed (3) to the positive statements regarding timber harvesting and 63% agreed (4) with these statements. No students strongly agreed (5) with these statements.

**Forest Health**

An overall scale was computed for each student by averaging their responses to a set of questions designed to assess their awareness of the role insects and diseases play in forest health (questions 5.1 to 5.7). Three of the questions (5.2, 5.3 and 5.5) had reverse wording. This was done to force the students taking the survey to carefully read the questions. Prior to computing an overall scale and subscales, points were assigned to each of these question so that the reverse worded questions were assigned the opposite number of points than the positively worded questions. Two subscale were calculated, the first being the mean of questions 5.1, 5.3, 5.4 and 5.5, and the second as the mean of questions 5.2, 5.6 and 5.7. The first subscale addressed the role of insects and diseases in maintaining a healthy forest, while the second subscale addressed the role timber harvesting plays in controlling insect and disease outbreaks.

While 100% of the students agreed that forest insects and diseases play a role in maintaining healthy forests and timber harvesting is an important management tool in controlling outbreaks, the majority of students (63%) only somewhat agreed (3) with these statements. In contrast, 64% of the students agreed (4) that insects and diseases play a positive role in maintaining forest health, while 34% of the students only somewhat agreed (3) with these statements. With respect to timber harvesting, only 21% of the students agreed (4) that
thinning and logging can control insect and disease outbreaks once they have started; while 73% only somewhat agreed (3).

**Collaboration and Communication Skills**

An overall scale was computed for each student by averaging their responses to a set of questions designed to assess their awareness on the importance of collaborations (questions 6.1, 6.2, 6.3, 6.4) and their ability to effectively communicate (questions 7.1, 7.2, 7.3).

Sixty-one percent of the students were moderately (4) to extremely aware (5) of the importance of collaboration in being an effective communicator, in problem solving and in multidisciplinary efforts, while 31% were somewhat aware (3).

**Technology Proficiencies**

An overall scale was computed for each student by averaging their responses to a set of questions designed to assess their proficiencies in using a variety of software packages (questions 8.1 to 8.8) and three subscales, where the first subscale is the mean of questions 8.1, 8.2 and 8.3, the second subscale is the response to question 8.4 and the third subscale is the mean of questions 8.7 and 8.8. The first subscale is a measure of the student’s proficiencies in the use of word processing software, spreadsheets and presentation software, the second subscale is on their proficiency in the use of GIS, and the third subscale is a measure of their proficiency in the use of two specific software packages used in our classes.

Fifty percent of the students were unskilled (3) in the use of a suite of software packages commonly used in our classes. Only 33% of the students rated themselves as being skilled (4) to very skilled (5) in the use of all the software packages. Ninety-one percent of the students rated their proficiency in the use of word processing software, spreadsheets and presentation software as being skilled (4) to very skilled (5). In contrast, their skill in the use of GIS software followed patterns in the number of years in the program. Juniors and seniors (57%) were skilled (4) to very skilled (5) in the use of GIS software, while freshmen and sophomores (31%) indicated that they had little (2) to no exposure (1) in the use of GIS. Students showed the lowest proficiency in the use of the Forest Vegetation Simulator and Forest Fire Simulators. Forty-five percent of the students indicated that they had little (2) to no exposure (1) to the software packages, while only 26% indicated they were skilled (4) to very skilled (5) in the use of the software.

**Modification to the Survey**

Based on the results of the pre-test survey, several modifications were made to the self-assessment survey.
1. Five new sections consisting of 15 new statements were added to the survey to assess our student’s competencies with respect to the SAF accreditation standards: Ecology and Biology, Management of Forest Resources, and Forest Resource Policy, Economics, and Administration. The statements for these new sections are taken almost word for word from the SAF Accreditation Handbook.

2. Statements were modified and a new scale directly related to their skill level was used to assess our student’s field and technical skills: 1 – poor, 2 – fair, 3 – good, 4 – very good, 5 – excellent.