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# Enhancing Forest Nursery Education: Input from the 2007 Joint Meeting of the Western Forest and Conservation Nursery Association and Forest Nursery Association of British Columbia

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## **KEY WORDS**

seedling quality, native plant regeneration, silviculture

## **Introduction**

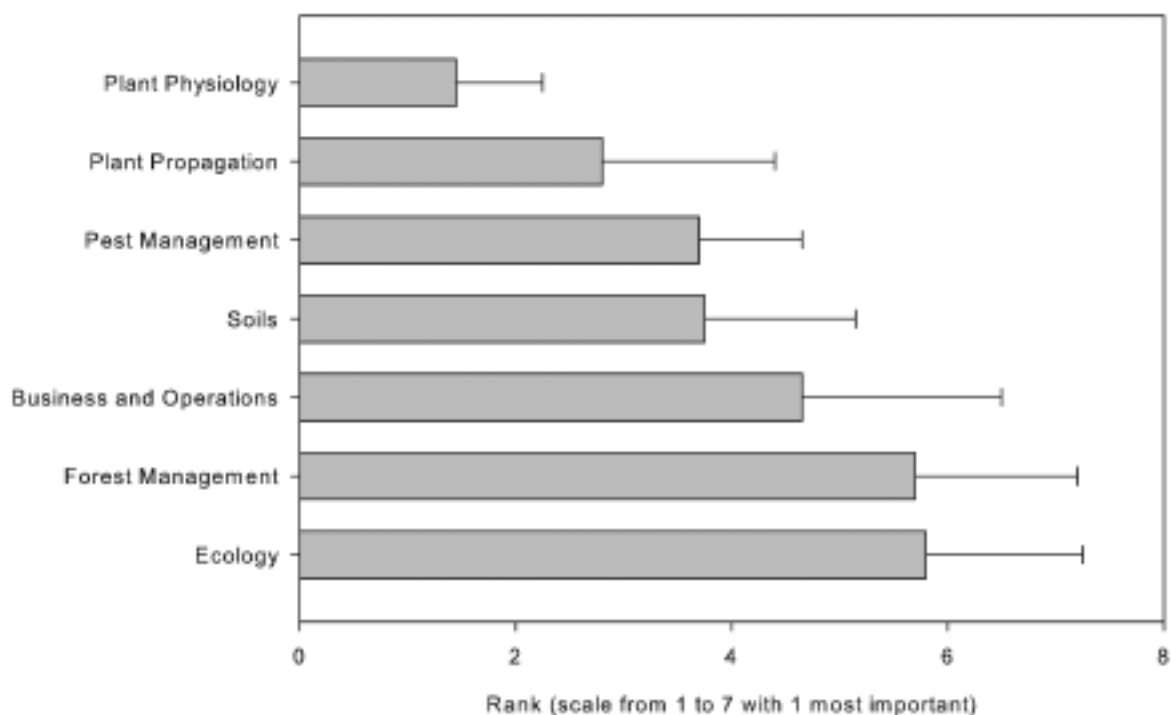
Concern has been noted over the lack of qualified applicants for vacancies in forest nursery positions. The University of Idaho Center for Forest Nursery and Seedling Research is uniquely qualified to address the issue of training given its faculty, staff, and resources. The keystone resource in this regard is the Franklin H Pitkin Forest Nursery, a seedling production facility that operationally grows up to 500,000 plants per year for forestry, conservation, and restoration use in the Inland Northwest. This facility has an on-site research laboratory for conducting seedling quality assessment, and is located near the main campus of the University of Idaho.

Faculty expertise in silviculture, ecology, nutrition, pathology, and entomology will allow for

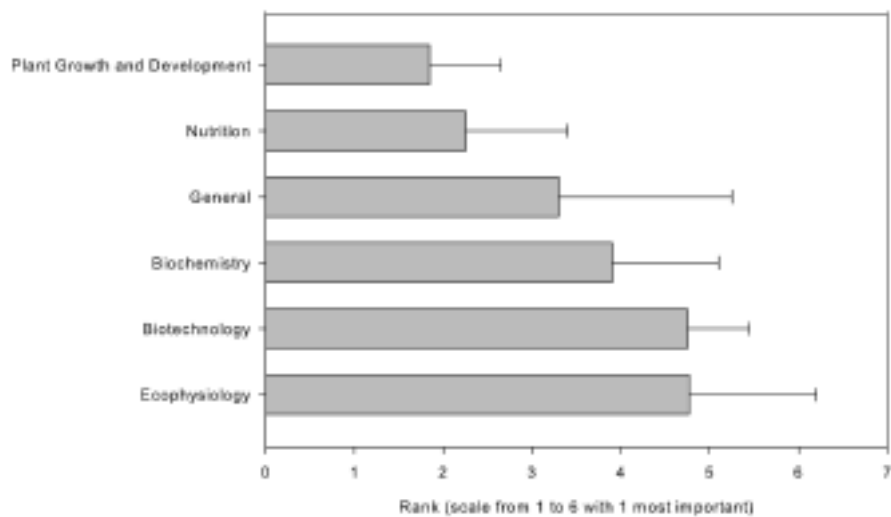
inclusion of a broad set of courses with appropriate personnel directing them. The degree to which these courses should be included, however, is unknown. Thus, it was decided that, for a program of this nature to be successful, a survey was needed to draw input from current nursery professionals into the fold. By addressing the breadth of nursery professionals, in terms of organizational structure, ownership, geographic distribution, and species produced, it is possible to identify the common threads across the profession to provide adequate educational opportunities needed to prepare students for this field. Development of a program that involves stakeholder input to meet the needs of the forest and conservation nursery profession will help to avoid the potential dichotomy that currently exists between training needs and what is provided, as described by Sample and others (1999) pertaining to forestry education in the US.

### Methods

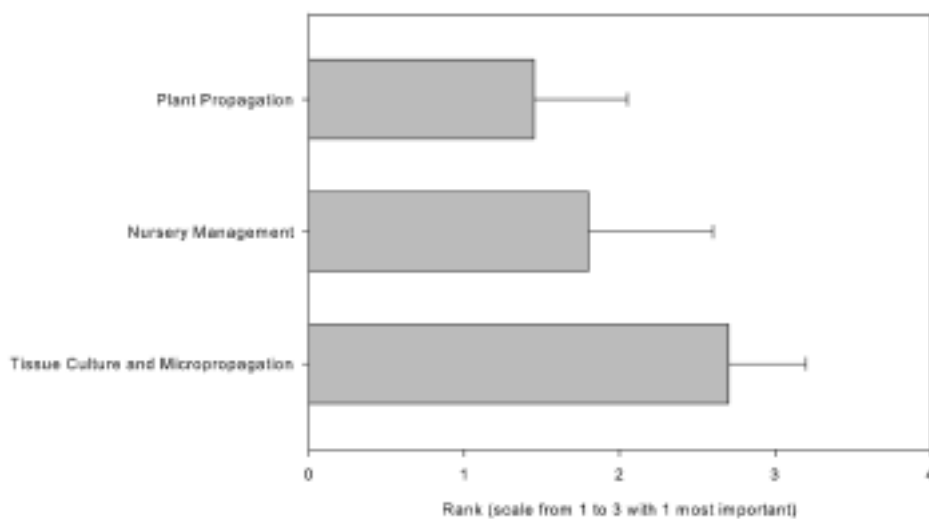
Perusal of current course offerings and identification of potential shortcomings resulted in a list of subject areas that pertain to nursery production. This information was used to collate a survey. Following a short presentation highlighting the current program at the University of Idaho Center for Forest Nursery and Seedling Research, attendees of the Joint Meeting of the Western Forest and Conservation Nursery Association and Forest Nursery Associations of British Columbia in Sidney, British Columbia, Canada (17–19 September 2007) were asked to complete the survey. A list of courses currently required for the Bachelor of Science in Forest Resources was provided to the attendees. Results are presented as interim findings only and will be collated with data collected from other meetings as well.



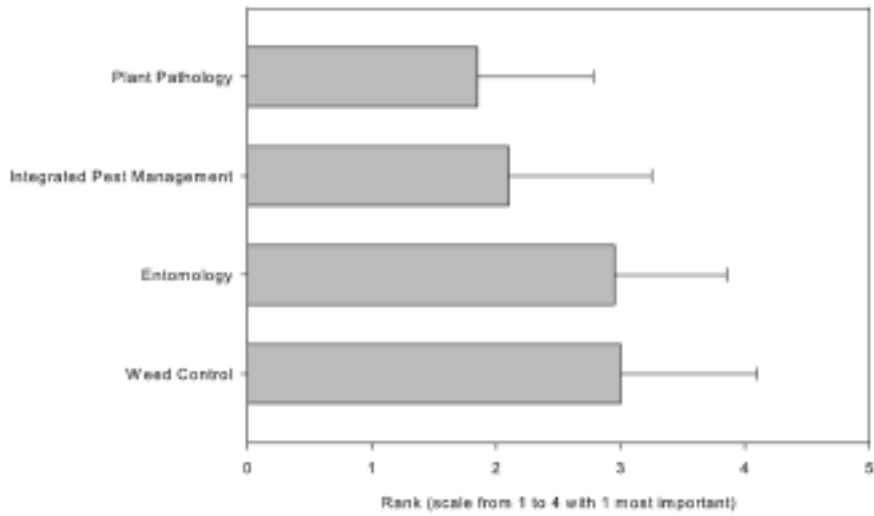
**Figure 1.** Responses to being asked to rank broad subjects in order of importance (1 is most important; bar represents standard deviation). N = 78.



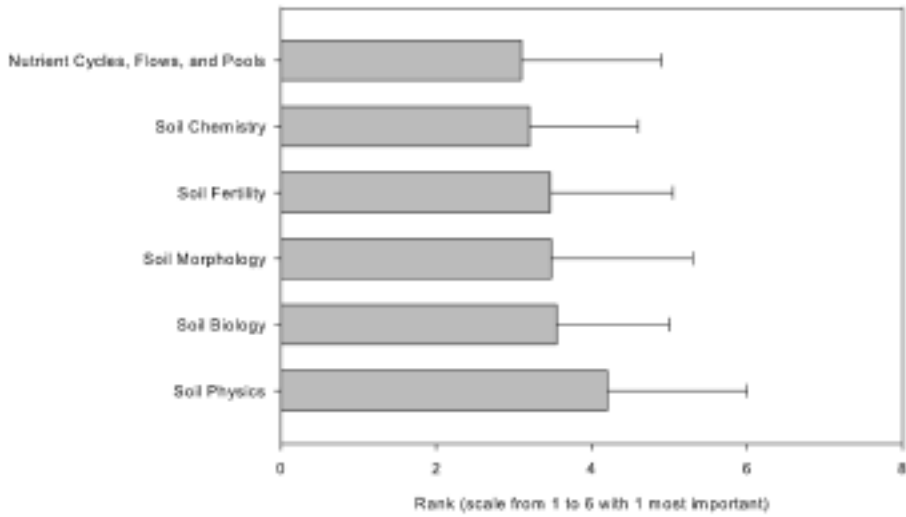
**Figure 2.** Ranking of potential courses in the field of plant physiology in order of importance (1 is most important; bar represents standard deviation).



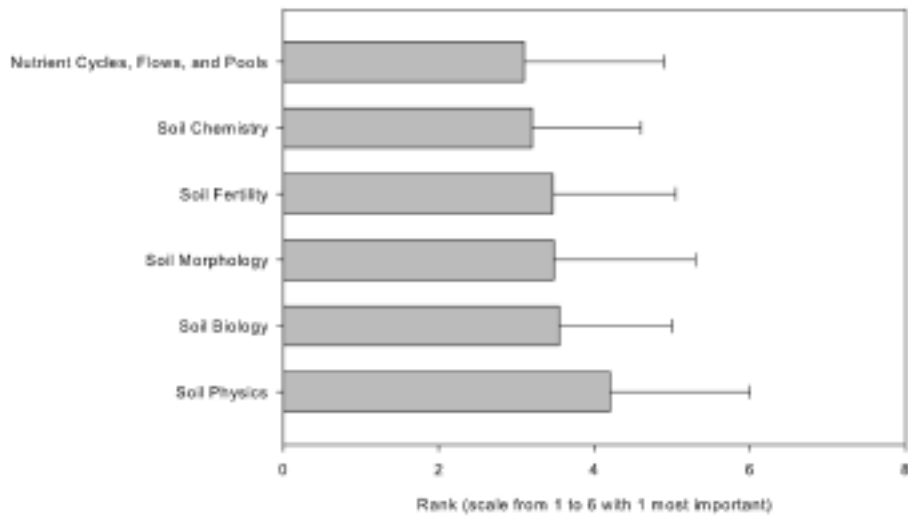
**Figure 3.** Ranking of potential courses in the field of plant propagation in order of importance (1 is most important; bar represents standard deviation).



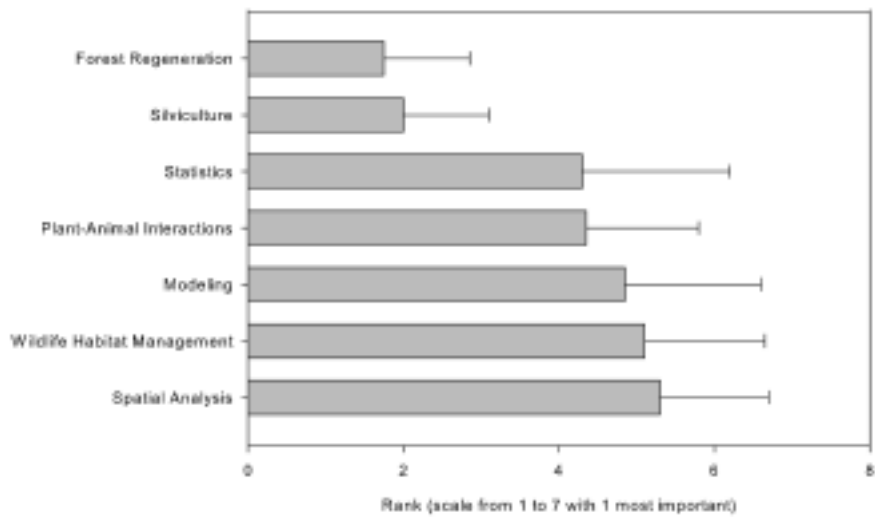
**Figure 4.** Ranking of potential courses in the field of pest management in order of importance (1 is most important; bar represents standard deviation).



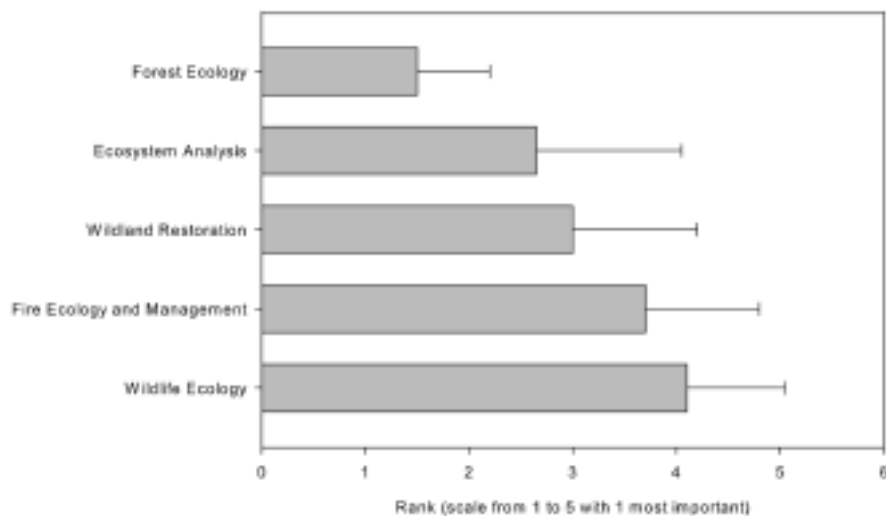
**Figure 5.** Ranking of potential courses in the field of soils in order of importance (1 is most important; bar represents standard deviation).



**Figure 6.** Ranking of potential courses in the field of business and operations in order of importance (1 is most important; bar represents standard deviation).



**Figure 7.** Ranking of potential courses in the field of forest management in order of importance (1 is most important; bar represents standard deviation).



**Figure 8.** Ranking of potential courses in the field of forest ecology in order of importance (1 is most important; bar represents standard deviation).

## Results

### Demographics

A total of 77 surveys were returned. Of those, 34% of respondents are growers, 49% are managers, 14% are researchers, and 1% are students. The employment base was 65% in the private sector, 29% in government, and 4% in academia. For 8% of respondents, the highest level of education completed is high school; 31% have some college education; 35% have a bachelor's degree; and 23% have a graduate degree. Finally, respondents have worked an average of  $19 \pm 9$  years in the nursery trade.

### Response to the Need for Nursery Education

A total of 86% of respondents reported that educational opportunities were currently inadequate for students interested in forest nursery production. The other 14% did not indicate a yes or no answer, but did complete the remainder of the survey. As well, 86% of respondents reported that a nursery minor would be an effective way to address this problem. Respondents reported the most important subject area component (Figure

1) of such a nursery minor program was plant physiology, followed by plant propagation, pest management, soils, business and operations, forest management, and ecology. Potential specific subjects were ranked for each of those options (Figures 2 through 8).

A total of 94% of respondents reported that a nursery minor should include practical work experience; 3% felt that it should not. A total of 68% felt it should occur during the summer months, 52% during the fall semester, 56% during the spring semester. When broken down further, 42% felt it should be administered by a university; 31% reported that such a practicum should occur at a government nursery; and 71% reported that it should occur at a private nursery.

A total of 49% of respondents felt that nursery minor students should be required to complete a senior research project associated with nursery production.

## Discussion and Future Directions

From the demographic data, we obtained a relatively good idea of the composition of those who

attended the meeting. As one might expect, most participants are professionals. Of particular relevance to this paper, however, is the low student attendance, which could be symbolic of the greater problem of within-profession recruitment and replacement. Without student attendees, are we missing an opportunity to engage new people in our profession? Without a professional organization dedicated to recruitment of future nursery production employees, it is incumbent on professionals to work together in this regard.

In terms of course work, the high emphasis on plant physiology identifies this subject area as one of key importance. Within plant physiology, 2 courses, plant growth and development and nutrition, received consistently high grades. The general subject area of plant propagation ranked second and, not unexpectedly, highlights the importance of this subject matter in the forest nursery production field. Forest management and ecology scored relatively low, likely indicating that these subject areas are adequately covered within the existing Forest Resources degree.

It is clear that practical work experience is viewed as valuable, with 94% of respondents identifying that this should be part of a minor program. This is an area that, again, can be achieved through partnership. Ensuring the availability of professional development opportunities for students will help them from both an educational perspective and a career development perspective. Sample and others (1999) identified that paid summer internships were a strong opportunity to recruit into forestry. We can refine this mentality to the nursery perspective, and work together to develop learning objectives for any student intern.

In conclusion, current needs in nursery education may be addressed through a program such as a minor to accompany an undergraduate degree. Stakeholder input has highlighted subject areas such as plant physiology and plant propagation as being of high importance in this education. As more data points are added to the pool from

additional surveys, results will be analyzed in detail and used to inform decision-making as we work towards new educational programs.

### **Acknowledgments**

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### **Reference**

Sample VA, Ringgold PC, Block NE, Giltmier JW. 1999. Forestry education: adapting to the changing demands. *Journal of Forestry* 97(9):4-10.