

Consulting Foresters' View of Professional Forestry Education

Thomas J. Straka* and Christopher J. Childers

ABSTRACT

Consulting forestry is an attractive professional specialization and expanding employment opportunities have made it a popular option for forestry students. Association of Consulting Foresters members were asked to rank the importance of the traditional forestry and other courses in the standard accredited forestry curriculum, where additional emphasis was needed, and where specialization should occur. Additional emphasis was recommended in communications skills, financial areas, and technical foundations. Business administration was strongly recommended for a specialization area. Communication skills (technical writing and public speaking) stood out as the primary educational need for additional emphasis.

Consulting forestry has always been an attractive employment opportunity for those interested in private sector professional forestry employment. Consulting foresters offer their services to the public for a fee. They operate as single person firms, partnerships, and corporations with hundreds of employees. Typical clients include nonindustrial private landowners, forest industry, investment and financial institutions, government agencies, banks, trusts, and Native American corporations (Nyland et al., 1983).

As forest industry land area moves into institutional and timber investment management organization control, consulting forestry firms are rapidly increasing their land management base (Alig et al., 2002). Nearly half of the private forest land in the United States is owned by nonindustrial private forest owners (Smith et al., 2001) and much of that land is managed for timber production with a profit motive (Thrift et al., 1997). The majority of these owners do not have forest management plans (Melfi et al., 1997). These trends suggest consulting forestry should be a "growth area" for forestry employment opportunities. Many forestry students recognize this and are seeking ways to enhance their undergraduate education in order to increase their future effectiveness as consulting foresters.

The environment of professional forestry education is changing and consultants have preferences on

the design of forestry curricula. Forestry is gradually being integrated into broader natural resource management programs. Electronic delivery of instruction offers new opportunities for forestry programs, especially in terms of the many laboratories most curricula require. Virtual laboratories might replace some basic forestry field laboratories. Whatever the trend, it is expected that more technically qualified foresters, the type that go into consulting forestry, will be required in the future years (Tombaugh, 1998).

More than 20 years ago Carts (1982) identified "the attributes necessary in the education of a practicing consulting forester." He did not rank the attributes. However, the first attribute he mentions is "speech, composition, and technical report writing." Surely these skills are still very important. He lists foundation courses as important (mathematics, chemistry, physics, economics, and biology). Twenty years ago a two-semester sequence in each of these subjects was common. This certainly would be less common today. Basic forestry technical courses were an important attribute (dendrology, insects and diseases, mensuration, surveying, silviculture, forest economics, forest soils, harvesting and forest roads, taxation, and wood technology). Mensuration is listed as an essential skill and as the "bread and butter" of many consultants. Sociology and psychology were considered important because of the need of the consultant "to understand his relationship with the people of rural America." Ethics was listed last, but with the comment, "All the above knowledge and skills are worthless without the scrupulous integrity required in commerce."

Forestry curricula were evaluated by potential employers of foresters for entry-level competency and skill requirements in 1994 (Brown and Lassoie, 1998). The highest ranked educational needs were public relations, ethics, social skills, and communications skills. Other important areas were field management (for example timber inventory and harvest scheduling), integrated forest management, and basic technical and computer skills. Employers were also asked to rank courses. Besides the core forestry courses, the three highest ranked courses were written expression, aerial photograph interpretation, and public speaking.

Tombaugh (2001) discussed the changing forestry accreditation standards and the need for oral and

Department of Forestry and Natural Resources, Clemson Univ., Box 340317, Clemson, SC 29634-0317. Received 7 Nov. 2005. *Corresponding author (tstraka@clemson.edu). *J. Nat. Resour. Life Sci. Educ.* 35:48-52 (2006).

Article
<http://www.JNRLSE.org>
© American Society of Agronomy
677 S. Segoe Rd., Madison, WI 53711 USA

Abbreviations: ACF, Association of Consulting Foresters; GIS, geographic information system; GPS, global positioning system.

written communication skills throughout the entire curriculum, field instruction and practice, and a technical and computer foundation. The accredited forestry curriculum is not static, but continues to value the same fundamental skills employers have always valued (Sample et al., 1999).

There seems to be consistency in identifying the important attributes of a forestry curriculum. New skills have developed, and computer applications are much more important today, but the fundamentals are little changed. The question is, "What would enhance an undergraduate forestry student's future effectiveness as a consulting forester?" The standard response to that question is for the student to take more business courses. But which business courses are best? Are there other areas just as important? Would the students be better off enhancing their basic technical skills (for example, geographic information systems [GIS] or computer skills)? Would an undergraduate concentration (or minor) in consulting forestry be something the market recognizes? If so, what courses should be in the consulting forestry concentration area? This article addresses these issues and reports on the attributes that consulting foresters themselves regard as important today.

Consulting Forester Survey

The Association of Consulting Foresters (ACF) is the professional organization of consulting foresters in the United States. It was founded in 1948 and currently has more than 600 members. In early 2004 all ACF members with an email address on file in the national ACF database were surveyed in an assessment of forestry educational needs. Prior to the survey, the ACF executive director sent an email to all members explaining the survey, its importance, and asking for cooperation. The emails that were returned as undeliverable were eliminated from the survey. This resulted in 509 valid electronic "forms" being sent to ACF members. A few respondents with computer problems asked for forms to be sent on paper via mail or printed off the forms and returned them via mail. A total of 211 responses were received for a 41% response rate from a single solicitation.

The electronic survey form was designed to be short and simple. It was limited to 13 multiple choice questions and one comment question, which was, "What direction do you see consulting forestry education going in the future?" Consultants were asked to rank traditional forestry courses in terms of need-

ing more emphasis and to identify other areas that were important enough for additional emphasis or to include in a minor. Consultants were asked if they agreed that more business administration emphasis was important, and if so, which courses were most important. Basic demographic data were requested: location (state), years of experience, membership in the national professional forestry organization (Society of American Foresters), gender, level of position, and size of firm. The data were analyzed across these demographics to see if any attribute resulted in significant differences in responses.

Survey Results

Consulting foresters have strong feelings on the need for additional emphasis in certain academic areas (Fig. 1). Especially prevalent was the need for increased communications skills, specifically technical writing and public speaking. Over half of respondents cited technical writing and nearly 40% cited public speaking as needing more emphasis. A need for more emphasis in the broad area of forest resource management and economics was ranked next in importance. This area is usually covered by courses in forest valuation, forest management plans, forest management, and forest economics. These courses improve financial skills and consultants, who often have clients with a profit motive, are likely than the average forester to use these financial skills.

Computer-related skills, such as information technology, GIS, and global positioning systems (GPS), also ranked high. These technologies are common in consulting forestry firms and employers expect new hires to be competent in these areas. Field-oriented technical courses (like silviculture, mensuration, operations, and harvesting), traditionally important to consultants, were also mentioned. Consultants have always made most of their income from grow-

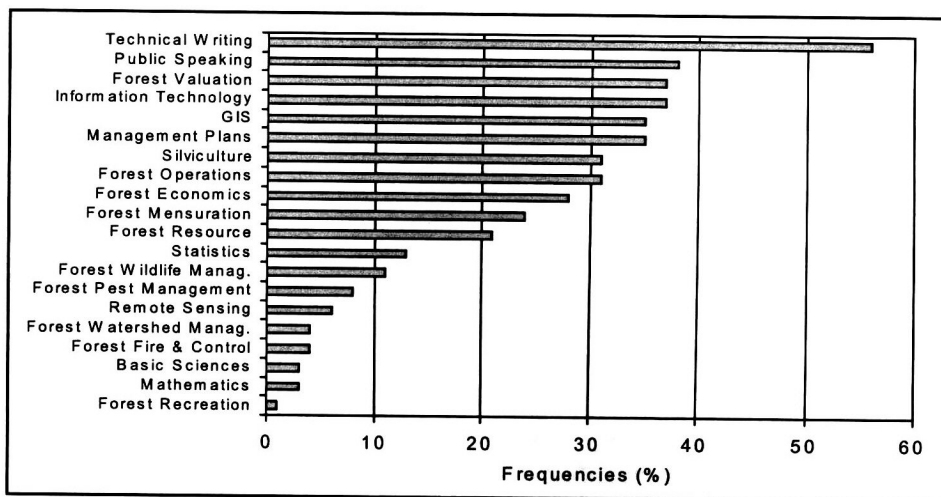


Fig. 1. Courses that require additional emphasis in an accredited undergraduate forestry curriculum for students planning a consulting forestry career.

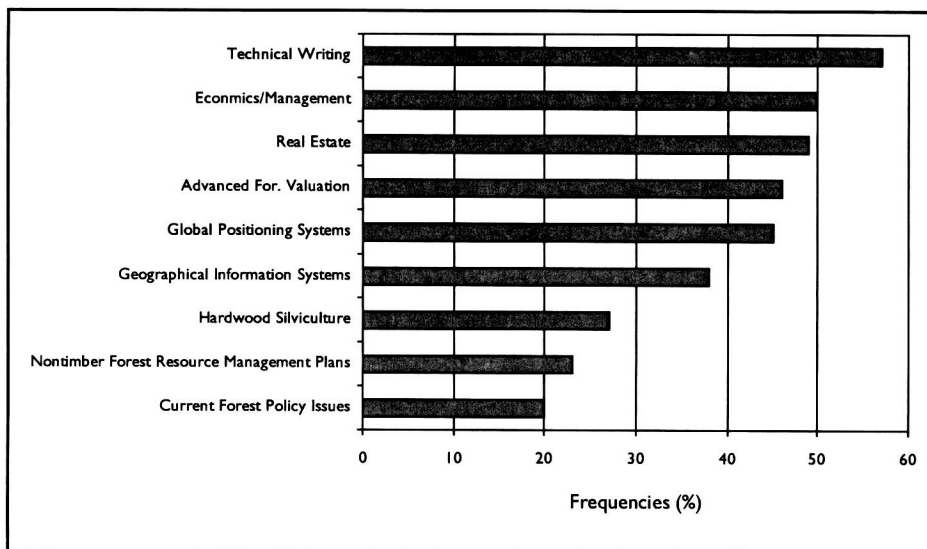


Fig. 2. Advanced courses or course areas that should be included in an accredited undergraduate forestry curriculum for students planning a consulting forestry career.

ing, measuring, and harvesting trees. These areas seem logical for foresters who deal daily with management objectives based on financial returns and timber production.

Figure 2 addressed a related issue. What if a student interested in a consulting career could add an additional course or an advanced course to the standard accredited forestry curriculum? What course should he or she add? The results of that question are consistent with those of Fig. 1. Technical writing came out on top as the most important additional or advanced course. Since the standard curriculum already requires technical writing in some form, this recommendation can be interpreted as a need for advanced technical writing. Surprisingly, public speaking was not strongly recommended as an advanced course.

The next three highest ranked subjects recommended as needing additional emphasis were economics/management, real estate, and advanced forest valuation. This result is similar to Fig. 1, but more specific. Economic and management are broad subject areas, so that recommendation really is for more time spent on the business side of things. Real estate, however, is very specific. This is a basic activity in many consulting firms and this course is mentioned several places in the survey. Usually foresters gain skills in real estate on-the-job and it is not something in a typical forestry curriculum. Today, consultants would like entry-level foresters to have already been introduced to the subject. Advanced forest valuation indicates that consultants would like

foresters more highly versed in finance and financial management. Finance is also part of the real estate subject. So this is a consistent result that follows the trend of Fig. 1.

Technical courses like GPS and GIS rated high. Consultants have always valued on-the-ground technical skills, so it is not surprising that they value "high technology" practical management tools. Specialized courses like hardwood silviculture also translate into fulfilling client needs and were highly rated. Two areas that one normally would not think consultants would mention are nontimber forest resources management plans and current timber policy issues. Apparently their technical needs extend well past timber, as nontimber

management plans would deal with wildlife, recreation, water, and other resources. Likewise, policy would relate to complexities of the legal and environmental issues that come with timber harvesting. Consultants deal with a lot more than timber and Fig. 2 illustrates this.

Figure 2 is based on consultants identifying emphasis areas from a list of categories and courses. They did not have an opportunity to suggest courses that were not on the list. Table 1 is based on respondents being able to suggest courses not included in the Fig. 2 list and that is why Table 1 has some very specific course titles. Small business management was most often mentioned, along with forest engineering/surveying. Many consultants are small businessmen and it is not surprising that they mentioned this need. Traditionally services like forest road design and surveying are fundamental consulting skills. So a need for more forest engineering and surveying makes sense.

The general area of financial skills also was listed as important in Table 1. Real estate, taxation, and

Table 1. Additional courses or areas that consulting foresters considered important enough to give added emphasis in an accredited undergraduate forestry curriculum for students planning a consulting forestry career (number of responses in parentheses).

• Small Business Management (8)	• Hydrology (2)
• Forest Engineering (6)	• Harvest planning (2)
• Surveying (6)	• Ethics (2)
• Real Estate (4)	• Urban Forestry (1)
• Taxation (4)	• Forest Management (1)
• Natural Resource Law (3)	• Sociology (1)
• Timber Procurement (3)	• Interpersonal Communications (1)

Table 2. Importance of business administration and liberal arts courses as part of a consulting forestry minor or emphasis area.

Course	Important	Somewhat important	Neutral	Somewhat unimportant	Unimportant
	-----%-----				
Accounting	50	34	12	2	1
Economics	63	23	10	2	0
Finance	60	23	14	1	0
Business Law	66	21	9	2	1
Organization and Management	69	20	8	1	1
Marketing	65	24	8	1	0
Taxation	65	23	10	0	0
Consulting Forestry Business Capstone	86	7	3	1	1
Liberal Arts Courses	21	31	24	16	7

natural resource law are common client demands for consultants.

It is likely that natural resources law refers to practical aspects of federal and state regulations, like best management practices and endangered species. Many consulting practices have specialties in real estate and taxation. Other skills listed in Table 1 related very closely to perceived client needs.

Ninety-one percent of respondents considered business administration to be vital in a forestry curriculum designed for consulting foresters. Table 2 shows the importance of individual business administration subjects. All traditional foundation subjects rated fairly high and no subject stood out as especially important. Accounting was rated the lowest. Forestry students wanting to take business courses as preparation for consulting would do well with the traditional foundation set of courses in a business administration minor.

Highest ranked was a consulting forestry capstone course as an addition to the business administration minor. This would be an integrative course, bringing the business administration concepts together in a forestry consulting framework.

Comments show this should be a practical course and utilize local consulting foresters along with case studies. Consultants often complain forestry graduates are not well-rounded, but liberal arts ranked very low as an addition to a minor. Later comments showed they wanted broader course work in social sciences and the humanities; perhaps this is how the question should have been stated.

Respondents were also asked to rank specific areas that needed more emphasis; that is, areas that would be appropriate for a minor in consulting forestry besides business administration. These results were consistent with the earlier tables and figures. The three most highly suggested emphasis areas for minors were: forest real estate and appraisal, small business management, and technical writing/public

speaking. Economics, planning, law, and forest engineering/surveying were also mentioned. All of these areas were expected after the earlier results.

Fifty-two percent of respondents thought the specific emphasis areas mentioned in Tables 2 and 3 were most appropriate for a forestry minor or concentration. The remaining respondents thought business administration would make the better minor.

So roughly half of consulting foresters would prefer to emphasize business administration as a minor and the other half would prefer to emphasize another specific area. It is clear that business administration is a recommended path for additional emphasis. Another path involves the specific areas commonly identified among the tables and figures. Curriculum committees and students should have little problem in identifying viable options for additional emphasis.

Table 3. Other suggested emphasis areas for an accredited undergraduate forestry curriculum for students planning a career in consulting forestry (number of responses in parentheses).

- Forest Real Estate and Appraisal (15)
- Small Business Management (10)
- Technical Writing/Public Speaking (9)
- Natural Resource Law (6)
- Business Ethics (3)
- Forest Engineering (3)
- Land Management Planning (2)
- Surveying (2)
- Forest Economics (2)
- Forest Imaging (1)
- Industrial Forestry Operations (1)
- Property Tax (1)
- Wildlife Management (1)

Demographic factors like gender, age, years of experience, region, position in the firm, and size of firm were analyzed for significant differences in response patterns. There was little difference in results when these factors were considered. Consultants appear to have fairly uniform feelings on educational needs and the marginal differences in response patterns yielded no statistically significant differences across these parameters.

Respondents were given a chance to make comments. The comments were extensive and positive. Consultants are satisfied with the current forestry curricula across the country. They are quick to point out changes that would make graduates more valuable employees, but realize the forestry programs are producing graduates for a diverse job market. Typical comments were: "More business and technology," "Expanded business area should include real estate, appraisal, taxation, and small business management," and "More well-rounded graduates." Most consultants recognized the need to keep up with technology and change. Thus, forestry curricula are expected to be dynamic and to keep up with this change.

Conclusion

Forestry consultants were very consistent in identifying areas in the standard forestry curriculum that could use more emphasis, at least for foresters who expect to work in the consulting profession. Communication skills stood out as a primary need. Emphasis on the financial areas that are the foundation of consulting forestry were also stressed: business administration, real estate, taxation, appraisal, valuation, and small business management. Technical skills are a foundation and are recommended for more emphasis.

Business administration is a good minor for the student planning to be a consulting forester. But just as good were several specific areas that are consistent with the areas consultants identified as being important. Whether it is additional courses or a whole minor, it is clear that communications, financial areas, and technical areas are where students ought to specialize.

This study provides excellent insight into the attributes of forestry education that current consultants deem important to future employment as a consultant. Forestry faculty working on a curriculum or forestry students planning on the most effective use of limited electives should gain valuable insight into the educational foundation of the consulting forestry profession.

Acknowledgment

This research was supported by the first Practicing Foresters Institute Trust endowment grant.

References

- Alig, R., J. Mills, and B. Butler. 2002. Private timberlands: Growing demand, shrinking land base. *J. For.* 100:32-37.
- Brown, T.L., and J.P. Lassoie. 1998. Entry-level competency and skill requirements of foresters. *J. For.* 96:8-14.
- Carts, C.B. 1982. Forestry education: Are we filling the needs of the practicing forester? *Consultant* 27:24-26.
- Melfi, F.M., T.J. Straka, A.P. Marsinko, and J.L. Baumann. 1997. Landowner attitudes toward South Carolina's Forest Stewardship Program. *Southern J. Appl. For.* 21:158-163.
- Nyland, R.D., C.C. Larson, and H.L. Shirley. 1983. *Forestry and its career opportunities*. McGraw-Hill Book Co., New York.
- Sample, V.A., P.C. Ringgold, N.E. Block, and J.W. Giltmier. 1999. Forestry education: Adapting to the changing demands on professionals. *J. For.* 97:4-10.
- Smith, B.W., J.S. Vissage, D.R. Darr, and R.M. Sheffield. 2001. *Forest resources of the United States, 1997*. USDA Forest Service Gen. Tech. Rep. NC-219. North Central Research Station, St. Paul, MN.
- Thrift, T.G., T.J. Straka, A.P. Marsinko, and J.L. Baumann. 1997. Forest resource management plans: Importance of plan components to nonindustrial private forest landowners in South Carolina. *Southern J. Appl. For.* 21:164-167.
- Tombaugh, L.W. 1998. The forces of change driving forestry education. *J. For.* 96:4-7.
- Tombaugh, L.W. 2001. Changing standards for a dynamic profession: Forestry education accreditation. *J. For.* 99:4-9.

About the Authors...

Thomas J. Straka and Christopher J. Childers

Thomas J. Straka is a professor of forestry and natural resources at Clemson University. He teaches in the area of forest resource management and economics. He also served 8 years on the forestry faculty at Mississippi State University and has 5 years of industrial forestry experience. His interests include consulting forestry and his research output often relates to industrial and consulting applications.

Christopher J. Childers was a graduate student at Clemson University when this study was completed.

He is currently an entry-level consulting forester working for Kiker Forestry & Realty in Wadesboro, NC.