

STANDARD I

MISSION, GOALS, AND OBJECTIVES

SCHOOL OF NATURAL RESOURCES AND AGRICULTURAL SCIENCES

The School of Natural Resources and Agricultural Sciences (SNRAS) supports degree programs in two areas, Natural Resource Management, and Geography. Natural resource management consists of making and implementing decisions to develop, sustain, and protect natural systems to meet human needs and values. Geography seeks to explain how physical environments are organized spatially, and how humans distribute themselves in relation to physical features and human activity. The School of Natural Resources and Agricultural Sciences' mission is to generate and provide knowledge and to train students for the successful long-term management of natural renewable resources in Alaska and the circumpolar world, and to discover, describe, explain, and interpret the spatial characteristics of the northern regions of the Earth.

SUMMARY OF FORESTRY PROGRAM HISTORY & DEVELOPMENT

The forestry program at UAF did not come about by accident and has not remained static. Its origin and evolution have been guided by the Land Grant University philosophy and the mandates of our mission to the people of Alaska. Acting on the information and formal recommendations of an extensive review and analysis of the SNRAS instructional programs by faculty, curriculum specialist, employers, students and graduates, the faculty of the Department of Forest Sciences assessed the quality of their program (1990-91) with attention to clientele needs, individual course objectives and content, limitations and strengths, and directions for the 21st century. The results of this review included: the addition of elective courses; the development of a geographic information system teaching facility; enhanced cohesiveness of the departments' faculty; and affirmation of the need to seek professional accreditation for our forestry program. Initial SAF accreditation was awarded in 1996 with a recommendation to document field

enhancements to the program in a progress report in 1998. Such a report was submitted and accepted with commendation by SAF. An interim status report was submitted in 2001 and our SAF accreditation extended until 2006. Highlights of developments noted in the 2001 report were the addition of a 15-station computer lab, implementation of an Outcomes Assessment Plan, the enhancement of field equipment, and the continued development of our Senior Thesis program.

SNRAS is currently comprised of four departments: Forest Sciences; Plant, Animal, and Soil Sciences; Resources Management; and Geography. SNRAS is the principal unit carrying out UAF's land grant mission and is committed to sustainable management of terrestrial ecosystems. The Agricultural and Forestry Experiment Station (AFES) is the research and public service component of the School.

SNRAS carries out programs that are relevant to the needs of the state of Alaska. We are dedicated to producing graduates who will fulfill the requirements of Alaska's business, industry, and government employers. We recognize the need to build on the strengths and to maintain the continuity of current research programs and to use the expertise of our faculty. We acknowledge that it is essential to position ourselves to take advantage of new developments in science and technology, to form productive partnerships with collaborating institutions, and to secure supplementary research funding from federal, state, and private organizations. It is also important that SNRAS contribute to the overall mission of the University of Alaska Fairbanks (UAF) and that our programs complement those of other research, teaching, and service units.

SNRAS adopted a new strategic plan in 2004 which reflects significant changes that have occurred in recent years. This Strategic Plan 2004 is included in Appendix A. Briefly, the plan is organized around 5 emphasis areas rather than around departments per se. This recognizes and promotes interdepartmental collaboration to fulfill our broad mission and operationally discourages rigid program boundaries. The 5 emphasis areas are Geographic Information, Management of Ecosystems, Natural Resource Use and Allocation, High-latitude Soils, and High-latitude Agriculture. The forestry program draws from and contributes to all 5 areas but most directly relates to the Management of

Ecosystems. Given these emphasis areas our goals and objectives are organized by the functional categories of teaching, research, and service.

FORESTRY PROGRAM MISSION, GOALS AND OBJECTIVES

MISSION

The Department of Forest Sciences derives its mission from that of SNRAS and the school's Strategic Plan 2004. The mission for the Department of Forest Sciences is to generate and provide knowledge to students and resource users that is important to the successful long-term management of forest resources in Alaska and the circumpolar world.

GOALS

The goals of the Department of Forest Sciences are divided into three functional areas: teaching, research, and public service. While we recognize the 41 goals enumerated in the school's Strategic Plan 2004, the following represents a reformulation specific to the Department of Forest Sciences.

Teaching:

- 1) To produce graduates who are highly competitive in obtaining professional employment, who have the knowledge to perform well on the job and who are valued for work in Alaska and the circumpolar north.

We have designed a basic curriculum that illustrates the standard principles of natural resources management applicable to a forested landscape anywhere in the world. However, we pay particular attention to boreal forest systems and conditions unique to the circumpolar north. Some of these conditions are permanently and seasonally frozen soils, extremes of temperature and solar radiation, and tree and wildlife species indigenous to high latitude lands.

- 2) To maintain close student interaction with faculty and provide opportunity for students to obtain practical professional experience as part of their education.

We incorporate fieldwork and trips into our courses, offer internship opportunities with management and research organizations, assist our students in obtaining relevant summer employment, and foster professional association through the Society of American Foresters (SAF) and other organizations in Alaska.

- 3) To prepare students for lifelong learning and responsible participation in decision making about the use of natural resources.

This is accomplished throughout the University core curriculum and through our conscious efforts to include courses such as "Natural Resource Economics," "Perspectives in Natural Resources Management," "Introduction to Environmental Ethics and Actions," and "Resource Planning."

The basic measurable outcomes of our efforts are students employed in forestry related positions, the number of natural resources management students emphasizing forestry, and the number of students going on to forestry related graduate study. In addition, the satisfaction of alumni and their employers indicate our program's success.

Research:

- 1) To focus on solving problems dealing with forest resources important in Alaska and the circumpolar north.

We foster close contact with Alaskan state and private organizations to identify research needs, through our school's Board of Advisers (BOA), the Alaska Northern Forest Cooperative, and via research funded by the McIntire-Stennis Act and state and federal agencies dealing with forestry issues.

- 2) To emphasize research that promotes long-term forest ecosystem sustainability and economic growth.

Long-term ecological studies, funded by the National Science Foundation (NSF) include basic forest ecosystem studies, modeling efforts, climate change studies, and research on policy and economics conducted in cooperation with our Department of Resources Management, the Institute of Arctic Biology, and the IGERT program.

The Department of Forest Sciences' research is focused on a series of topics identified by state and national research planning groups, resource managers, user groups, and scientific peers. Recently, the university, state and federal agencies, and forest land

owners and user groups have established the Alaska Northern Forest Cooperative in order to share knowledge and assess research needs. A new research and demonstration forest area has been designated by legislative action (2005) and will involve close coordination and planning with the Alaska Department of Natural Resources, Division of Forestry.

Measurable outcomes of research efforts include success in publication/ dissemination of results and in obtaining external funding. Formats for publications include: scientific articles in refereed journals, books and book chapters, papers presented at professional and scientific meetings, bulletins or technical manuals, and other publications and presentations.

Service:

- 1) To contribute to improved forest resource management by continuing and expanding user-oriented instruction for private and public resource managers in Alaska.

We sponsor and conduct workshops, seminars, short-courses as well as informal one-on-one instruction via our extension forester and service activities of other faculty members.

- 2) Improve efficiency of forest resource management in Alaska through transfer of information to resource users and the public.

Information transfer is accomplished through the research publications mentioned above, and a series of user-oriented publications, public forums, and by using radio and television media. Measurable outcomes of our public service/extension efforts include print and other media productions, participation in and rating of public forums and technical workshops, and public and professional perceptions of changes in forest resource management in Alaska over time.

The goals are presented and reviewed annually by our BOA. In addition, these goals appear in the publication *Agroborealis*, UAF catalog, SNRAS brochures, and the Curriculum Review, Program Assessment, Self-Study and UAF Accreditation documents.

OBJECTIVES

The objectives of the Department of Forest Sciences program are: (1) to equip students with the skills for the long-term sustainable management of Alaska's forest and related resources, to foster critical thinking ability, and to provide the insight needed to devise and successfully implement forest management programs in a society of many social perspectives; (2) to develop knowledge that promotes the sustainable management of forest resources and (3) to translate the research results for use in sustainable management of forest resources.

We attempt to educate students to recognize the diversity of clientele they must serve, and the diversity of problems they may be employed to work on. Our focus is on developing the intellectual virtues of critical reflection, empirical inquiry, and intellectual honesty, in the context of becoming a technically competent and ethically responsible professional.

These objectives are carried out by a diversity of highly qualified faculty working with a sound curriculum and outstanding research programs in an academic setting that fosters healthy debate, interchange of ideas, and problem solving.

Specific objectives listed in the SNRAS Strategic Plan 2004 that are particularly relevant to the Department of Forest Sciences are the following:

Teaching:

- Maintain accreditation from the Society of American Foresters for the undergraduate forestry emphasis program within the Natural Resources Management major.
- Establish a professional master's degree program
- Continue five percent annual increase in majors and graduates for five years.
- Increase the use of teleconferencing to enhance our distance-delivery capabilities.

Research:

- Foster or develop new funding sources for research problems important to Alaska communities, resources professionals, and unique Alaska problems and issues.
- Vigorously work to initiate or adapt national funding priorities to reflect the geographic, social, economic, management, climate, and ecological realities of Alaska.
- Develop additional expertise in forest health in coordination with partner agencies.
- Increase faculty and federal partnerships in integrated pest management and entomology.
- To enhance the market potential for Alaska products, obtain faculty or partners who can aid in post-harvest technology, food science, and the expanding nutraceutical and pharmaceutical marketplace.

Service:

- Offer instruction for practicing resource management professionals in: geographic information systems (GIS), soil science, and ecosystem management.
- Offer instruction for resource users and the public in crop and livestock management, horticulture, and forest management.
- Build a network of Internet linkages that will provide a comprehensive interactive information system on boreal forest research results.

In addition to the above, the Forest Science Department has the following more specific and short-term objectives with regards to the undergraduate curriculum and teaching function:

- Examine the impact of alternate year course offerings on student's progress towards graduation.
- Review the instructional responsibilities for the Forest Health & Protection course.
- Review the instructional responsibilities for the Forest Harvest & Utilization course.

- Continue to enhance teaching effectiveness via creativity and technological innovations.
- Explore the relevance of on-line learning and other distance-delivery technologies to the forestry curriculum and students.
- Continue to seek opportunities for meaningful field experiences for undergraduates.

PROCESS FOR PERIODIC REVIEW OF MISSION, GOALS, AND OBJECTIVES

Our mission, goals, and objectives are systematically reviewed within the University, School, and department self-evaluation structure. Thus, there is a periodic review and update of the University of Alaska Fairbanks Strategic Plan, plus a review and update of the School of Natural Resources & Agricultural Sciences Strategic Plan, generally every 5 years. In addition, a UAF Program Review process that addresses academic programs is conducted on a 5 year cycle. Faculty and departments are well represented in the SNRAS planning process which reviews and updates the overall mission, goals, and objectives.