

Self-Evaluation Report

Forestry, Ecology, and Wildlife Program

Alabama A&M University

Volume 1 of 2

For Accreditation by the

SOCIETY OF AMERICAN FORESTERS
2018



Abbreviations and Acronyms

AAC	Academic Advisement Center
AACSB	Alabama Assembly of Collegiate Schools of Business
AACTE	Association of Colleges for Teacher Education
AAHE	Association for Higher Education
AAMU	Alabama Agricultural and Mechanical University
AASCU	Association of State Colleges and Universities
AAUA	Association of University Administrators
ABET	Accreditation Board for Engineering and Technology
ACE	American Council on Education
ACSP	Association of Collegiate Schools of Planning
ADA	American Dietetic Association
AEA	Alabama Education Association
AHEA	American Home Economics Association
AIP	American Institute of Planners
ALA	Alabama Library Association
ALE	Alabama Library Exchange
ANRC	Alabama Natural Resources Council
ANREP	Association of Natural Resource Extension Professionals
ARC	Agricultural Research Center
ARD	Association of Research Directors
ASA	American Society of Agronomy
ASCE	American Society for Civil Engineers
ASN	Alabama Supercomputer Network
ASPRS	American Society of Photogrammetry and Remote Sensing
AWRA	American Water Resources Association
BCUCP	Black Colleges and Universities Comprehensive Program
BES	Biological and Environmental Sciences Department
BLM	Bureau of Land Management
BMPs	Best Management Practices
CC	Carver Complex
CC-BW	Carver Complex-Bonner Wing
CC-TW	Carver Complex-Thomas Wing
CD-ROM	Compact Disk - Read Only Memory
CDS	Career Development Services
CERT	Center for Environmental Research and Training
CFE	Center for Forestry and Ecology
CIAAMU	Confucius Institute at Alabama A&M University
CLA	College Language Association
CMB	Center for Molecular Biology
COE	Center of Excellence
CSGS	Conference of Southern Graduate Schools
CSWE	Council on Social Work Education
DOE	Department of Education
DRC	Developmental Reading Center

EFI	European Forest Institute
EOS	European Optical Society
EPA	Environmental Protection Agency
ESP	Environmental Science Program
FCU	Federal Credit Union
FEWP	Forestry, Ecology and Wildlife Program
FOMP	Forest Operations Management Program
FS	USDA Forest Service
FTE	Full Time Equivalent
FWS	Fish and Wildlife Service
GIS	Geographic Information System
GPS	Global Positioning System
HBCU	Historically Black Colleges and Universities
IEEE	Institute of Electrical and Electronics Engineers
IFT	Institute of Food Technologists
IGARSS	International Geoscience and Remote Sensing Symposium
IP	International Paper
IPM	Integrated Pest Management
LRC	Learning Resources Center
MANRRS	Minorities in Agriculture, Natural Resources and Related Sciences
MGE	Modular GIS Environment
MINFORS	Minorities in Forestry
MWSI	Multicultural Strategic Workforce Initiative
NAACP	National Association for the Advancement of Colored People
NAAL	Network of Alabama Academic Libraries
NAIA	National Association of Intercollegiate Athletics
NAL	National Agricultural Library
NAUFRP	National Association of University Forest Resource Programs
NCAA	National Collegiate Athletic Association
NCATE	National Council for Accreditation of Teacher Education
NCER	National Center for Environmental Research
NEA	National Education Association
NIFA	National Institute of Food and Agriculture
NFU	Nanjing Forestry University
NIPF	Non-Industrial Private Forest
NRCS	Natural Resources Conservation Service
NRES	Natural Resources and Environmental Sciences Department
NRMP	Natural Resource Management Program
NSF	National Science Foundation
NSF CREST	NSF Center of Research Excellence in Science & Technology
ORP	Office of Retention and Persistence
PAB	Planning Accreditation Board
PAF	Personnel Action Forms
REU	Research Experience for Undergraduates
ROTC	Reserve Officers Training Corps

SAAS	Southern Association of Agricultural Scientists
SACS	Southern Association of Colleges and Schools
SAES	School of Agricultural and Environmental Sciences
SAF	Society of American Foresters
SARE	Sustainable Agriculture Research and Education
SAS	Statistical Analysis Systems, Inc.
SCC	Student Counseling Center
SCEP	Student Career Experience Program
SESAP	Southeastern Society of American Foresters
SHSC	Student Health Services Center
SIAC	Southern Intercollegiate Athletic Conference
SOAR	Student Orientation and Registration
SPS	Plant and Soil Science Department
SPSS	Statistical Package for the Social Sciences
SSMART	Systematic Student Mentoring And Recruitment
SSSA	Soil Science Society of America
SSSAJ	Soil Science Society of American Journal
SSTA	Space Science Technology Alliance
SSTI	Small Satellite Technology Initiative
STEP	Student Temporary Employment Position
SWCS	Soil and Water Conservation Society
TAN	Tutorial Assistance Network
THMP	Timber Harvesting Management Program
TMDL	Total Maximum Daily Load Program
TVA	Tennessee Valley Authority
TW	Thomas Wing of Carver Complex Bldg.
USDA	United States Department of Agriculture
USDE	US Department of Energy
USDI	US Department of Interior
USFS	US Department of Agriculture, Forest Service
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
WTARS	Winfred Thomas Agricultural Research Station

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PREFACE

The development and existence of this forestry program is largely a result of its location at an HBCU, and the critical shortage of minorities in the natural resources professions, especially African-Americans. The development of the forestry program, more specifically, the Forestry, Ecology and Wildlife Program (FEWP) at AAMU has been influenced by two major factors: 1) the location of the University in northern Alabama, on the southern edge of the upland hardwood biome, and 2) the influence of our partners, especially the USDA Forest Service.

Over thirty years ago we recognized the opportunity to develop a forestry-oriented program, to meet the obvious needs for the training of minorities. In 1993, the Forest Service recognized this potential and made a significant investment/commitment, which allowed us to build a forestry program, resulting in SAF accreditation in 2002. Prior to SAF reaffirmation in 2008, we had expanded the program by adding a full complement of dedicated faculty, updating and expanding the curriculum, acquiring significant competitive grant funding, improving our recruiting and retention strategies, increasing student involvement in professional forestry activities and expanding faculty capacities in research and outreach activities in support of our teaching program. We had also improved our infrastructure, equipment, and vehicles. Ten years ago, as the program learned of its reaffirmation for the first time, the US economy faced a serious downturn, the nation's first black President was elected, a new Farm Bill would soon be enacted, and the federal government would significantly alter its hiring processes for students and recent graduates. These and other events beyond FEWP's control created both setbacks and opportunities for continued growth in today's dynamic environment.

The program is centered in a complex physiographic region including the Piedmont, Ridge and Valley, Highland Rim, and Coastal Plain. This location produces a wide diversity of topography and soils, on which oak-hickory, oak-pine, and pine forests are the dominant forest types. These mixed forests represent different silvicultural challenges and provide students with the opportunity to be exposed to different forest ecosystems and associated forest management strategies. Forest industry is diverse, as are land ownership patterns in the region. Students are exposed to different aspects of the industry as well as the needs and expectations of the different types of landowners.

Over the past 25 years, AAMU has transformed a small forest operations and business academic program into an accredited professional forestry program with the assistance of some important partners. The USDA Forest Service initiated an effort to build institutional capacity, and other partners joined this effort. These partners provided student financial, internship and employment opportunities, capacity building support for curricula and faculty development, and other resources. Currently, we have seven full-time and one adjunct faculty members, as well as five associated faculty members from our department and one emeritus professor. Our student numbers are currently at 88 (80 undergraduates and 8 graduate students) and growing, as a result of active recruitment and retention efforts. Recent efforts at curriculum development, including new concentration options, have expanded our offerings and increased the flexibility of our academic program for students.

In 2008, members of the SAF site visiting team made some important recommendations for our program. Their helpful advice provided some useful landmarks on the horizon for our program. Achievement, and early maintenance, of accreditation had

always been our program's North Star. With the advantage of more experience and an objective perspective, both AAMU's past SAF visiting teams have looked past what we were in our infancy to what we could soon be and what we might eventually become. Thus, we are eager to engage with the currently scheduled visiting team to not only face some growing pains but to shape and mold this 'developing sapling' for its unique place in the canopy where the fruits of future foresters are grown.

This self-evaluation report is organized into six Chapters. Each Chapter is the product of the self-evaluation of Alabama A&M University's (AAMU) forestry program and addresses one of the six Standards as established by the Society of American Foresters (SAF). Required forms and information are included in Volume 2 of this report, along with supporting Exhibits to document the information provided in selected Standards of Volume 1 of this report.

STANDARD I

FORESTRY PROGRAM MISSION, GOALS, AND OBJECTIVES

Mission Statements

The *Forestry, Ecology, and Wildlife Program* (FEWP), as the part of the total university, seeks to reflect the mission of the traditional land-grant institution, combining education, research, and service to the public and the forestry profession. Alabama A&M University remains committed to being the nation's premier institution for preparing professionally trained African–American foresters. The undergraduate degree program is designed to educate broad-based, ecologically aware resource managers. Such a background will enable our graduates to succeed as professional land managers and practice conservation of forest and other natural resources. Faculty and students in the FEWP conduct basic and apply research of forest ecosystems and resources to provide needed information to land managers, resource planners, scientists, and society. As part of a historically black college or university, the FEWP addresses the needs of capable students who as a group are underrepresented in the forestry profession, as well as the needs of local and regional landowners.

FEWP's mission statement is consistent with the missions of the Department of Biological and Environmental Sciences, the College of Agricultural, Life, and Natural Sciences, and Alabama A&M University:

The *Department of Biological and Environmental Sciences* (BES), in the land-grant tradition, undertakes teaching, research and extension functions and offers three B.S. degree programs in Forestry, Biology, and Environmental Science. The BES further fulfills its instructional mission by also offering M.S. and Ph.D. degree programs in Plant and Soil

Science and an M.S. in Biology. BES undertakes applied food and fiber production, environmental science, and resource management research applicable to the state of Alabama. Its mission also includes basic and applied research that has a national and global impact on specializations in which it has specific capabilities. Under the University's own and national mandates, BES assists developing countries via training, research and demonstration activities. It fulfills the public service (Extension) aspects via applied research, hands-on training programs, specialized seminars, brochures, specialized publications, and short courses for farmers, landowners, community residents, and businesses.

In 2011, our former Natural Resources Science Department merged with the former Biology Department in a different College to become the Biological and Environmental Sciences Department. BES is headed by a Chair and organized into three program areas. These program areas are:

- Forestry, Ecology and Wildlife Program;
- Environmental Sciences Program;
- Biology Program.

This reorganization is aligned with our three undergraduate degree program areas: Forestry, Environmental Sciences, and Biology. An extramurally-funded Center remains associated with BES: the USDA Forest Service Center of Excellence in Forestry (COE; Exhibit III-2).

The College of *Agricultural, Life, and Natural Sciences* (CALNS) operates in the traditional land-grant concept with instructional, research and outreach programs. The College aims to provide a dynamic education to capable individuals who have the

determination to prepare for a career in agriculture, environmental science, family and consumer science, food and animal science, community planning, or related scientific areas.

Alabama Agricultural and Mechanical University (AAMU) is a public, comprehensive 1890 Land-Grant institution, committed to access and opportunity, and dedicated to intellectual inquiry. The application of knowledge and excellence in teaching, research and service is responsive to the needs of a diverse student population and the social and economic needs of the state and region. The University offers contemporary baccalaureate, master's, educational specialist and doctoral level degrees to prepare students for careers in the arts, sciences, business, engineering, education, agriculture, and technology. As a center of excellence, the University is dedicated to providing a student-centered educational environment for the emergence of scholars, scientists, leaders and critical thinkers, who are equipped to excel through their contributions and leadership in the 21st century national and global society.

Specifically, the University is committed to: 1) Excellence in education and creation of a scholarly environment in which inquiring and discriminating minds may be nourished; 2) The education of students for effective participation in local, state, regional, national and international societies; 3) The search for new knowledge through research and its applications; 4) The provision of a comprehensive outreach program designed to meet the changing needs of the larger community; and 5) Programs necessary to adequately address the major needs and problems of capable students who have experienced limited access to education. In cooperation with businesses, industrial companies, and government agencies, and other institutions, Alabama A&M University provides a laboratory where theory is put into practice in a productive environment.

These statements reflect a commitment to the creation of a scholarly environment and a dedication to training professionals to benefit our local community and society as a whole. They also acknowledge the need to provide quality education to all, including disadvantaged and underrepresented segments of society. This was the dream of William Hooper Council, a former slave and founder of Alabama A&M University. Since the early days of training black teachers at the then Alabama Normal School, the goals of the University have evolved as its mission has grown to encompass the broad range of goals and activities mentioned in the statement above. The Department of Biological and Environmental Sciences is one of the three departments on campus that offers doctoral-level research and training.

The FEWP is recognized by the President, Provost, and Dean as a model program for transitioning from a primarily teaching unit to an accredited program with a full range of Land-Grant Institution activities in teaching, research, and service. Additionally, the FEWP strategy for conducting outcomes-based assessment has become the example for the BES Department and the University. Further, there is a great deal of institutional pride in our successes in placing highly-trained students in the forestry profession, research in forest ecosystem assessment, and outreach to minority landowners.

FEWP Goals and Objectives

The following goals (numbered) and short-term objectives (bulleted) evolved from a practical consideration of our mission statement and aid in the implementation of that mission.

1. Continue to be recognized as a premier center for forestry education, research, and extension

- Maintain SAF accreditation
- Maintain membership in the National Association of University Forest Resource Programs (NAUFRP)
- Increase service to minority and other forest landowners
- Conduct cutting-edge forestry research and publish results in peer-reviewed journals and proceedings
- Actively participate in local, state, regional and national professional organizations and committees dealing with natural resources (SESAF, SAF, Alabama Agricultural Land Grant Alliance, Alabama Natural Resources Council, NAUFRP, etc.).

2. Provide excellence in the academic program to prepare students to function effectively as professional foresters

- Continue to conform to SAF standards for forestry education
- Continuously mobilize resources to improve academic materials, including specimen and library collections, laboratories, and vehicles
- Utilize diverse learning environments, including classrooms, field sites, laboratories, libraries, distance education networks, and professional societies
- Incorporate innovative instructional technology into course subject matter presentations
- Further enhance recent concentrations in Ecology, Fish and Wildlife Science, and Forest Business. To develop new concentrations in Outdoor Recreation, Agroforestry or Urban Forestry.

- Continually review and revise courses based on need, relevance, and student feedback

3. Sustain excellence in applied and basic research in forestry, ecology, and wildlife

- Focus research efforts on forest ecosystem products and services, agroforestry, and socio-economic issues
- Collaborate with the USDA Forest Service and other partners to develop, implement, and publish results from research projects
 - Continue to acquire extramural funds to support research focus areas
 - Acquire additional state matching funds to leverage federal grants
 - Expand faculty development opportunities

4. Develop a nationally recognized public outreach program to industrial and non-industrial private forest landowners (NIPFs), especially minority forest landowners

- Expand our relationships with forest landowners and communities, particularly from minorities and underrepresented groups
- Continue to conduct workshops, demonstrations, seminars, and similar outreach activities, particularly on issues of interest to minority forest-landowners
- Continue to offer workshops and training for public and private forestry professionals

5. Enhance the cultural diversity of the forestry and natural resource professions

- Train qualified minorities and women in forestry, ecology, and wildlife

- Work with government agencies, universities, industries and professional societies to enhance forestry career mentoring, especially for minority professionals
- Take part in international forestry and natural resource education

6. Provide career and placement counseling that is in consonance with the academic background, aptitude, and interest of students and graduates

- Continue to work with the USDA Forest Service to provide individualized guidance to forestry students
- Continue to develop relationships with other employers of foresters to provide a variety of job experience opportunities to students
- Continue to support, and make students aware of, campus career placement programs and especially visits by forestry employers to campus
- Continue to encourage exceptional students to pursue graduate training in forestry or a related field

7. Provide an effective support system for AAMU forestry alumni

- Maintain contact with FEWP alumni by offering in-service professional development and opportunities to mentor current forestry students and recent graduates
- Develop an electronic newsletter/bulletin board for alumni and expand our existing web page presence
- Invite alumni to participate in educational and mentoring opportunities with current students and faculty

8. Enhance existing student recruitment and retention systems that are effective at identifying, attracting, and motivating qualified minority students for professional forestry training

- Identify and solicit additional scholarships for attracting outstanding students
- Strengthen faculty-student mentoring
- Foster and strengthen close partnerships with school counselors and recruiters
- Enhance student recruitment in the forestry program

9. Further enhance FEWP to gain departmental status at the University

- Continually acquire a separate budget from the University
- Continue to diversify funding sources for research, teaching and outreach activities that enhance FEWP
- Actively participate in identifying additional space for FEWP offices, classrooms, and laboratories
- Increase student enrollment and completion rates to approximately 100 and 15 students/year, respectively

10. Excellence in Capacity Building and Infrastructure to provide a Professional Curriculum

- Actively participate in identifying additional space to centrally locate forestry offices, classrooms, and laboratories
- Solicit allocations and donations from federal and state agencies and from forest industries and organizations to contribute to the expansion of research and physical facilities for the forestry program

- Implement demonstration and research forest sites, in conjunction with partners, to enhance educational, research and outreach opportunities.

These goals and objectives serve as guidelines and benchmarks for fulfilling our mission and the mission of the University. They were first developed primarily by the faculty in consultation with major stakeholders of our program (USDA Forest Service, Alabama Forestry Commission) and industry (International Paper, MeadWestvaco, and Weyerhaeuser). Students played a significant role in developing specific objectives. These have been updated by the members of the FEWP and with the help of some of these same external partners every five years with specific target objectives. The objectives express our aspirations for the various aspects of our mission. However, we fully recognize that the needs and desires of our constituencies are as dynamic as the forest ecosystem. Therefore, we will exercise flexibility in the implementation of specific objectives while remaining steadfast in pursuit of the goals to achieve our mission.

Periodic Self-Evaluation and Revision of Program Mission, Goals, and Objectives

The program mission, goals, and objectives correspond to the needs of our constituents:

1. Students majoring in forestry at AAMU
2. Students that are not forestry majors, but enroll in forestry courses
3. Alumni of our forestry program
4. Other land-grant institutions, especially 1890 institutions with programs in resource management
5. Local (Madison County, AL) and regional (northern Alabama) communities

6. Forest and/or forest-resource management agencies
7. Forest and/or forest-resource management industries
8. The forestry profession
 - a. Non-industrial, private, forest landowners, especially minority landowners
 - b. The general public of our nation and world

For nearly three decades we have strived to meet the needs of our constituents by implementing our program objectives and goals. Our main clientele group, students majoring in Forestry, have their needs for forestry training and employment met directly by goals and objectives addressing the strength of recruitment and retention strategies, academic program, and job and career placement efforts. Student needs are also being met indirectly by our goals to attain excellence in our research endeavors and develop a nationally recognized outreach program. Forestry students have benefited from forestry and instructional technology equipment purchased by grants to build institutional teaching capacity. These goals also address the needs of other students taking courses we offer, e.g., biostatistics, aerial photography interpretation, and introductory courses in forestry and dendrology.

Other land-grant institutions have their need for multi-institutional collaboration, especially with historically black universities, met by participating with FEWP in research and extension projects. An example of these partnerships is the AALGA Consortium on Forestry Education and Research which is composed of AAMU, Auburn University, Tuskegee University, the Alabama Forestry Commission and the USDA Forest Service's National Forests in Alabama and Southern Research Station.

It is worth noting that most black foresters employed by the USDA Forest Service graduated from this unique and innovative program between FEWP and the agency. FEWP has also placed graduates with the Natural Resources Conservation Service (NRCS), Bureau of Land Management (BLM), US Fish & Wildlife Service (FWS) and various forest industries, and graduate schools. Indirectly, these agencies and industries benefit from our efforts to become a recognized forestry information and education center, to attain excellence in research, and to provide support for alumni.

The general public has been provided information on successful forest management and forestry practices in our efforts to achieve excellence in academic and research programs. Local and regional communities are benefiting from these efforts as well as from our efforts to become recognized as the provider of forestry information, the forestry education center in the region, and a nationally recognized outreach program for non-industrial, private, forest landowners. The Huntsville City forester, city Ecologist, the Redstone Arsenal forestry staff, local NIPF landowners, The Nature Conservancy, and forestry consultants have all benefited from the forestry expertise within the FEWP. FEWP has also supported the state park system, other conservation organizations, the local botanical garden, and the community in our region by designing nature trails and arboretums.

Our objectives reflect our responses to the dynamic social, cultural, economic and environmental needs and values of our constituents. We have regular contact with most of our constituent groups in the provision of training, workshops, management plans, symposia, specific management and policy recommendations and conservation education

programs. Changes in constituents' needs and values are communicated to the program through various means including, but not limited to:

1. Direct written and verbal communication with constituents
2. Changes in staffing and budgets signaling changes in constituents' priorities
3. Student enrollment data and teaching evaluations
4. Successful placement of graduates in forestry or related professional careers
5. Level of public and community participation in FEWP workshops, seminars, demonstrations, and other outreach activities
6. Level of participation and interest by potential students in FEWP recruitment and retention activities.

Our objectives demonstrate our recognition that forestry is an interdisciplinary profession by:

1. Conforming to the education standards of the Society of American Foresters
2. Focusing on a variety of forest resources for academic training and research inquiry
3. Enhancing capstone course which integrates knowledge from several natural resource disciplines in the development of forest management plans
4. Conducting concentrations in wildlife biology, ecology, and forestry business within the forestry major
5. Examining policy and economic (social sciences) and ecological issues related to management of forest resources owned by private, non-industrial, minority, forest landowners.

6. Partnering with industry, agencies, and organizations (e.g., USDA Forest Service, Alabama Forestry Commission, The Nature Conservancy) that manage forest resources from an interdisciplinary perspective

The effectiveness of our curricula in meeting our educational goals is assessed four ways: (1) an annual program review conducted by the USDA Forest Service; (2) annual reports to the Provost and Vice President of Academic Affairs and Research; (3) teaching evaluations from students; and (4) student exit interviews.

In addition to these surveys, output assessment is being further developed by the inclusion of periodic reviews of program accomplishments and resources in terms of program goals and objectives. An advisory panel of external specialists representing the USDA Forest Service, USDA Natural Resources Conservation Service, USDI Fish and Wildlife Service, university forestry graduate programs, and timber industries will be asked to evaluate our performance in attaining the mission, goals, and objectives of our forestry program. This panel will be requested to make comments regarding the attainment of our program mission goals, and objectives from a review of our detailed annual report of accomplishments and resources. Our annual performance report will be modified to include information on:

1. Financial and other support from the University,
2. Financial and other support from public natural resource agencies and forest industries,
3. Faculty activity reports,
4. Student academic progress,
5. Student employment statistics, and

6. Other program accomplishments

Details of accomplished major goals and objectives in Standard 1, 2008 Self-Evaluation Report, are provided in Exhibit I-1. Further details of our program development are outlined in Exhibit II-2 that contains the current COE 5-year plan and evaluation of previous 5-year plans.

STANDARD II

ORGANIZATION AND ADMINISTRATION OF THE FORESTRY PROGRAM

Organization of the University

The Forestry, Ecology & Wildlife Program (FEWP) is one of three programs within the Department of Biological and Environmental Sciences (BES; see AAMU Organizational Chart, Ex II-1). The leader of FEWP is a Coordinator, who reports to the Department Chair. BES is one of four departments within the College of Agricultural, Life and Natural Sciences (CALNS). CALNS is one of four colleges reporting to the Provost and Vice President of Academic Affairs and Research, who is the chief academic officer of the University and is responsible to the President for the effective leadership and conduct of the academic affairs, institutional effectiveness, strategic planning and other day-to-day operations of the University. The President, who is appointed by the Board of Trustees, is, by virtue of overall responsibility, the chief executive officer of Alabama A&M University and reports to the Board. The President of the Faculty Senate and the Student Government Association are non-voting members of the Board of Trustees. The Board of Trustees, appointed by the Governor of the State of Alabama, formulates University policies. The Governor serves as the *ex-officio* member of the Board.

The Department of Biological and Environmental Sciences (BES) has three academic programs:

1. Forestry, Ecology & Wildlife Program (FEWP, Dr. William Stone, Coordinator);
the Forestry undergraduate degree, with concentrations in Forest Management,

Forest Business, Ecology, Fish and Wildlife Science, and Forest Science, is housed here.

2. Environmental Sciences Program (ESP, Dr. Wubishet Tadesse, Coordinator); the Environmental Science undergraduate degree, with majors in Environmental Science and Soil Science, is managed here.
3. Biology (Dr. Florence Okafor, Coordinator); the Biology undergraduate degree with concentrations in Botany, Zoology, Medical Technology, Pre-Medicine, and Environmental Health is housed here.

The current structure of FEWP and BES is a result of a restructuring in August 2011. The changes were motivated by the decision by administrators to consolidate programs and to increase focus on undergraduate education in fewer colleges.

Under the current arrangement, administrative functions are split between the Department and Program Areas. The Department has ten standing faculty committees that coordinate the following functions:

1. Graduate Program - coordinates graduate student admissions to the department, advises on graduate curriculum matters, etc.
2. Curriculum - makes recommendations concerning curriculum and course matters, to be forwarded to college and university-level decision-making bodies.
3. Student Affairs – focuses on matters of interest to students.

4. Library - faculty liaison with the library, makes recommendations on new acquisitions for LRC, etc.
5. Recruitment & Retention - coordinates departmental recruiting and retention efforts, interacts with College and sister departments committees.
6. Greenhouse - coordinates the use of greenhouse for research/teaching purposes.
7. Faculty, staff and student awards – coordinates, reviews, and channels recommendations through the office of the Departmental Chair to the Dean for consideration and submission to Academic Affairs.
8. Information Technology - advises on computer and web-based communications, coordinates such activities as departmental website construction/updating, etc.
9. Faculty Evaluation - makes recommendations to the Chair on faculty performance, assesses and provides advice on faculty work plans, etc.
10. Scholarship – explores and seeks to secure scholarship opportunities for students.

For 2017-2018, Dr. Elica Moss, a member of ESP in BES, is serving as the University Faculty Senate representative for BES; additionally, Dr. Jeanette Jones, member of BES, is serving as Faculty Senate President. Various *ad hoc* committees are organized as needed. Faculty members from all program areas serve on the committees, with representation from each program as appropriate. Faculty regularly rotate among different committees to provide experience with different activities and to garner input

representative of faculty as a whole. Faculty members also serve on university and college level committees.

The Forestry, Ecology & Wildlife Program

The Forestry, Ecology & Wildlife Program (FEWP), also referred to as the forestry program) is the coordinating unit for both the academic programs in forestry and all research/outreach conducted by faculty who are affiliated with the Program. Additionally, FEWP houses the USDA-Forest Service Center of Excellence in Forestry, (see Exhibit II-2 for more information on COE), which provides a separate operating budget for the enhancement of the forestry program, including funds for faculty support, recruitment, travel, educational supplies, student assistance, equipment, etc. Each faculty member is also charged with developing his/her own research or other scholarly activity by initiating and submitting proposals.

A. Administration of the Forestry, Ecology & Wildlife Program (FEWP)

FEWP has been an administrative program under the overall supervision of the departmental Chair and direct supervision of the FEWP Program Coordinator since 2008, in response to internal growth and external changes in BES and the CALNS.

Dating back to the 2003 retirement of Dr. George F. Brown Jr., the forestry program's first leader, FEWP faculty had an extended discussion about the duties, roles, and time requirements for administration of the program. Both the Dean and Departmental Chair recognized that the administration of the forestry program could not be accomplished adequately by one person, nor can that one person be expected to simultaneously administer other programs.

Consequently, in March 2007, FEWP faculty formally recommended reorganization of the forestry program administrative leadership with the establishment of a Program Coordinator and an Assistant Program Coordinator, each with 25% release time to fulfill administrative/program responsibilities. These recommendations were approved by Dr. Robert Taylor, Dean of CALNS. FEWP's faculty recommended that Dr. Kenneth Ward and Dr. William Stone assume the newly approved Program Coordinator and Assistant Program Coordinator positions. When Dr. Kenneth Ward retired in 2014, Dr. Stone was then selected by the FEWP faculty, endorsed by the Department Chair and CALNS' Dean and approved by the Provost to become the FEWP Program Coordinator. At that time, Dr. Naka was similarly selected as the new Assistant Coordinator for student engagement and activities. They have served since September 2014 in these positions.

The program is also served by a Recruitment Coordinator. Dr. Colmore Christian had served in this position since 2008 except when he was appointed to serve as the Interim Associate Provost for Academic Affairs and Dean of Graduate Studies by the Provost and Vice President for Academic Affairs and Research of the University during July 2015 to January 2017. He returned to FEWP in early 2017 and resumed the coordination of recruitment efforts that had been temporarily led by Dr. Xiongwen Chen.

Detailed position descriptions for the program coordinator and assistant program coordinator positions are presented in Exhibit II-3, with an overview presented below:

FEWP Administrative Structure:

1. Program leadership is split into two positions: **Program Coordinator**, with primary responsibilities as spokesman/representative of FEWP and

administration of FEWP and COE budgets; **Assistant Program Coordinator**, with primary responsibilities in student affairs;

2. Coordinator and Assistant Coordinator positions will be rotated among FEWP faculty. Coordinator's term will be five years, with opportunity for a 2-year extension. Assistant Coordinator's term will be two years, with an opportunity for a 2-year extension;
3. Coordinator and Assistant Coordinator, selected on the recommendation of FEWP faculty, the endorsement of the BES Chair and CALNS Dean, are appointed by the Provost. A search committee of FEWP faculty is normally used to gather input from adjunct faculty, partners, staff, and students in FEWP during the recommendation/selection process;
4. Assistant Coordinator does not automatically assume Coordinator position when vacant, but can be considered for it;
5. Compensation: Coordinator and Assistant Coordinator will receive 25% release time;
6. Coordinator must be a tenured faculty member in FEWP; Assistant Coordinator must be at least tenure-track;
7. Coordinator and Assistant Coordinator are assisted by a Program Assistant with responsibilities for administrative details with budgets, requisitions, cooperative agreements, grants, contracts, etc. It should be noted that since 2014, when Dr. Ward retired, the Program Assistant (in that position since

2009) no longer reports to, nor is supervised by, the FEWP Coordinator because the two occupants of these positions are married to each other. The Program Assistant currently reports to and is supervised by the BES Chair. However, when either position is filled by another person, the Program Assistant will report to the FEWP Coordinator and indirectly to the Department Chair.

8. FEWP faculty report directly to the Coordinator for all academic/outreach and research matters;
9. The FEWP Coordinator reports to the Chair of the BES Department and, through him/her, to the Dean of CALNS.

The FEWP Coordinator is responsible for coordinating annual performance evaluations of all forestry faculty members via interaction with the BES faculty evaluation committee. Evaluation Committee recommendations are, in turn, submitted to the Department Chair and the Dean for approval. Annual evaluations are accompanied by face-to-face meetings in a positive mode to reinforce and further encourage accomplishments and to overcome deficiencies. Such meetings generally occur between the FEWP Coordinator and the faculty member; the Department Chair may opt to attend such sessions.

The Coordinator manages the budget provided to FEWP by the University, pertaining to the operation of FEWP. FEWP is the only academic program within a department on campus with its own budget. The FEWP Coordinator is also responsible for coordinating and managing all activities within the USDA Forest Service Center of

Excellence in Forestry (COE) and serves as a primary liaison with minority recruitment initiatives of USDA-FS.

The Assistant Program Coordinator primarily coordinates activities affecting undergraduate students in the forestry program. He or she also assists the Coordinator with administrative responsibilities mentioned above.

Both the Program Coordinator and Assistant Program Coordinator of FEWP are subject to annual evaluations by FEWP faculty, with respect to their administrative functions, in addition to their annual performance evaluations as BES faculty.

Faculty salary scales (see Standard VI), approved by the Board of Trustees, is used in determining faculty salaries. The critical factor in this determination is the rank and years in rank for each person. New faculty positions are filled by utilizing standard AAMU procedures. Search committees are constituted of members selected from within FEWP, complemented by one or two members from other BES programs or other departments. Positions are advertised and candidates solicited. Shortlisted candidates, usually 4-6 are then interviewed via an appropriate electronic medium (e.g., Skype, Zoom, etc.). The top 2-3 candidates are invited to campus for visit and final interview. The Search Committee makes a formal recommendation based on results of campus interviews. At this juncture, the Coordinator recommends the initial rank at the time of hiring and forwards the search committee's recommendation for endorsement by the Department Chair. The recommendation is then forwarded to the Dean for approval and submitted to the Provost and Vice President for Academic Affairs and Research for final approval. The FEWP Coordinator assists the Offices of Academic Affairs and Human Resources in providing clarifications, and in handling all administrative issues.

B. Program Planning

Faculty members within FEWP initiate curriculum and course revisions. After group discussions, recommended actions are completed by the appropriate faculty member, reviewed by FEWP faculty and, if approved, submitted to the Departmental Curriculum Committee, comprised of representatives from each BES program. Approved curriculum changes are then submitted to the CALNS' Curriculum Committee, which in turn makes its recommendations for approval/changes to the Dean. These recommendations are then submitted to the Provost and Vice President for Academic Affairs and Research who is responsible for submitting all recommendations to the University Academic Standards Committee for its consideration and final action. All major curriculum changes are subject to the approval/endorsement of the AAMU Board of Trustees as well as that of the Alabama Commission on Higher Education (ACHE) in some instances.

Research and professional program changes, reviews, and new projects when initiated by the faculty within FEWP are discussed by FEWP faculty members in the context of the overall goals and objectives of the Program. Faculty members are expected to develop research projects that support FEWP priorities and disciplinary interests. However, multi-disciplinary projects with other programs, departments and institutions are also encouraged. FEWP's limited resources (State funds and Center of Excellence funding) are primarily targeted to meet the specific goals for which these funds have been designated. These projects enhance our undergraduate instructional programs and faculty capacity.

C. Undergraduate Admission Requirements

Incoming freshmen and sophomore students enter the University through the University College in accordance with admission standards as outlined in the Undergraduate Bulletin (Exhibit V-1). Students with declared majors are co-advised by faculty in their chosen programs, thus forestry faculty co-advise incoming forestry students. Upon completion of University College requirements, forestry faculty members assume sole advisor responsibilities for these students.

An ACT score of 18 (or equivalent SAT score) is required for general admission to the University. Students with an ACT score below 18 are reviewed on a case-by-case basis to determine if they can be categorized as an “Under-prepared Student with Potential.” Students assessed to have the potential to succeed are granted provisional admission under a special program, which limits their course load, mandates increased advisement and requires the student to take remedial courses to address deficiencies. Some students are required to complete pre-college math and English courses for which they are not awarded college-level credits.

Guidelines for the admission of transfer students are also presented in the University’s Undergraduate Bulletin. In addition to these guidelines, the University is complying with Act 94-202 enacted by the Alabama Legislature in March 1994. This Articulation and General Studies Act provides for a uniform articulation agreement (referenced to in Standard V: Curriculum) among all institutions of higher education as well as a statewide general studies curriculum. Students starting at any institution of higher learning in Alabama must be advised which courses are required at all other institutions in Alabama and which courses can be transferred. This Act forced all universities to review

and modify their curricula to standardize some course offerings. In short, there is an articulation agreement between each student and any four-year institution in Alabama. Students at a junior college or any four-year university can check STARS, a Computer Advising System, to find the required courses for any undergraduate degree program. (<http://stars.troy.edu/stars/advising.htm>).

The transfer procedures across undergraduate degree programs in the State of Alabama have been standardized, which has led to smoother transitions for students. Transfer procedures for out-of-state students are provided in the Undergraduate Bulletin.

D. Quality of Instruction

AAMU places a high priority on instruction since this is a primarily teaching institution. One “policy” or philosophy not specifically stated in the Handbook, but generally practiced by all review committees, is that the awarding of tenure is based primarily on teaching effectiveness and competence, with some evidence of scholarly and professional contributions.

Faculty competence in teaching is evaluated at three (student, peer and administrative) levels. All instructors are evaluated by students taking their course(s). A standard hard copy AAMU Course Evaluation Form (Exhibit V-3) was used in class by students to assess the knowledge of subject, enthusiasm, teaching effectiveness, and ability to work closely with students. An electronic, revised version of the Course Evaluation Form, sent directly to students, was introduced approximately three years ago. The Office of Institutional Planning, Research, and Effectiveness (OIPRE) coordinates the distribution and analysis of student evaluations. Analysis results are shared with relevant Deans, Chairs, and individual faculty members as appropriate.

The FEWP Coordinator reviews each faculty member's performance based on results of analysis of the AAMU Faculty Evaluation Form (Exhibit V-2) that rates each faculty on teaching, research and service as well as providing guidance and recommendation(s) where appropriate. Factors considered in the evaluation process are a faculty's course design, the effectiveness of presentation, grading methods, availability to students, and administrative responsibility. It should be noted that the peer evaluation process for teaching is currently under review and will likely be restructured to include classroom visits by faculty peers. Nominations for the annual university-wide formal recognition of superior teaching performance by individual faculty members may be submitted through the Department Chair and Dean for endorsement and transmission to and for consideration by the Office of Academic Affairs.

D. Supporting Staff

Currently, FEWP has one individual as supporting staff - a Program Assistant (Penny Stone) who supports FEWP full time, half-time for academic duties and half-time in support of forestry research programs (e.g., USDA McIntire Stennis, etc.). Additionally, four Research Associates (Heather Howell, Dawn Helen Czech, Andrew Cantrell and Patience Knight), are supported by various research programs. They interact extensively with FEWP faculty involved with forestry research projects. Finally, Mr. Daryl Lawson, is an Alabama Registered Forester and Certified Burn Manager supported by the USDA Forest Service and the Birmingham Waterworks Board partnership, to work with most of the FEWP faculty and students. He coordinates the forest fire fighting activities of the FIRE DAWGS and leads forest inventory, forest protection, and timber bid preparation related to management of approximately 5,000 ha of mature pine forest that protects Birmingham's

drinking water reservoirs and tributaries. These staff members are making significant contributions to the management and operation of FEWP.

Lack of sufficient research technical staff support remains a concern, although USDA McIntire Stennis has helped to reduce that problem considerably. A future priority will be the addition of more full-time support staff. It should be noted that the lack of field technicians is partially offset by the availability of technical support from the Department with laboratory technicians, computer specialists and greenhouse staff. Additional support is available from the CALNS, which provides research station support at the Winfred Thomas Agricultural Research Station.

E. Budgeting and Planning

FEWP's current planning process is driven by three budgetary streams, namely University sources, USDA-COE and external grants, and contracts. AAMU's budget cycle is from October 1 to September 30. The budget planning process begins in February when the President identifies institutional priorities for the academic year. Budgets are then prepared at the unit level, in our case at FEWP level, and submitted to the Vice President for Business and Finance, through the appropriate channels. The Deans discuss the budgets with faculty and make recommendations to the Provost and Vice President for Academic Affairs and Research who then shares his/her recommendations with the Vice President for Business and Finance. These budgets are reviewed at the Cabinet level and the University's Budget and Finance committee. Revisions of the budgets are returned to the Units, and further adjustments are made. The final budget is prepared by the Vice President for Business and Finance and submitted by the President to the Board of Trustees for consideration and approval.

FEWP's instructional program is supported by AAMU's general fund as allocated in this budgetary process. FEWP faculty salaries are budgeted based upon course loads (25% and 33% per 3-credit hour undergraduate and graduate classes, respectively). Thus, FEWP faculty are compensated for teaching during the academic year and if they are teaching during the summer.

FEWP's salaries not covered by AAMU's general fund must come from external sources – USDA COE funds, grants, and contracts. USDA COE funds are requested by submission of an annual proposal to the USDA Forest Service Southern Research Station in the summer of each year for the fiscal year beginning October 1. These funds provide the equivalent to 1.5 FTE for an average FEWP faculty 12-month salary. These funds provide support to the instructional program and other programmatic activities.

External grants and contracts, such as the USDA McIntire-Stennis program, provide salary support for the duration of the projects.

Consequently, planning in FEWP is dictated first by the teaching requirements, secondly by programmatic priorities that can be supported by COE funds, and finally by the availability and requirements of other externally funded projects. Annual goals and objectives are dictated by the programmatic, departmental, college, and university long-term plans as well as the President's priorities, COE's 5-year plans, and the expected outcomes of externally funded projects.

Every year as a requirement of AAMU's budgetary process, every funded academic unit has to identify its programmatic priorities and how well they have accomplished their goals for the previous year. These outcomes are supposed to drive budgetary allocations. However, this has only occurred to a limited extent. Instead, annual budgets tend to be

consistent from year to year, fluctuating only to the extent that the teaching loads vary. A unit's performance concerning goals has not been the determinant of AAMU's general fund allocation.

The only annual review of the FEWP program is the bi-annual review of the COE (Center Of Excellence) by the USDA Forest Service. The primary purpose of the COE was and continues to be, to enhance the capacity of FEWP to acquire and sustain professional accreditation by SAF. In so doing, FEWP provides the Forest Service and the forestry profession with graduates to diversify the national forestry workforce. The Center of Excellence Team is comprised of Forest Service representatives, other Federal agencies, University officials, and a representative from the Alabama Forestry Commission. Progress in the Center of Excellence is reviewed twice each year, during meetings in the summer, usually in Asheville, NC at the Southern Research Station office, and in the winter at AAMU. At each meeting, the FEWP's progress is presented and critiqued. Programs and activities in FEWP are modified in response to the feedback and discussions in the COE meetings. Our five-year plans (2000-2004, 2005-2009, 2010-2015, and 2016-2020) have shaped the activities of this Center and FEWP. The second five-year plan was approved in 2005 (Exhibit II-4). The plan has also become an instrument to solicit new partners.

F. Outcomes Assessment

The forestry program's educational outcomes were expanded in 2001 with the implementation of the "output assessment" plan referred to in Standard I. Surveys of program graduates, and their employers were developed and conducted (Exhibit III-2) approximately 10 years ago. These surveys, discussed in Standard III, were based on those

developed by the Pinchot Institute for Conservation (Sample et al. 1999) and are designed to assess strengths and weaknesses in the training of forestry students to perform tasks expected of professional foresters, land managers, and natural resource managers and researchers. FEWP's surveys were further modified to include questions developed by the forestry faculty here and at Auburn University. The survey was pre-tested on selected alumni whose suggestions regarding the length and content of the survey were incorporated into the final instruments. Similar surveys will be used in the future to solicit the perspectives of graduates and employers. FEWP plans to use information from these periodic surveys to refine the program's future curriculum, research focus, and outreach efforts. However, over the last decade, the University adopted new student learning outcomes assessment procedures that rely on the annual assessment of assignments in selected core courses (including our Capstone course), and these have been used instead of the previous survey instrument for this SAF-Self Evaluation. Nevertheless, the previous survey instrument is useful for periodic review we plan to conduct in the near future.

The University, through OIPRE, has mandated that each academic program must develop and annually report on assessment standards. A minimum of two assessment standards per academic program are proposed. FEWP has identified the capstone course, complemented by performance on assignments in selected core courses as the primary elements of its outcomes assessment strategy (Exhibit III-4.). SLO Standards were adapted from SAF core competencies that FEWP has used to evaluate its self for the past decade. Institutional procedures for the assessment of these Standards has evolved several times in the past 10 years, but FEWP continues to rely on the Forest Plan and Defense in the Capstone course for several of the Standards. Standards are/were also assessed on key

assignments (such as term papers, lab reports, and/or portions of exams) in required forestry courses including as *Forest Ecology*, *Mensuration*, and *Wildlife-Forestry Relationships*. These have evolved somewhat over time as assessment results have indicated needed changes in the assessment procedures themselves. For example, Dr. Stone previously used a traditional term paper and performance on class recitations to assess core competencies in his *Wildlife-Forestry Relationships* course that was one of the methods for the program's assessment of "Sound Judgement in Use of Forest Ecology" student learning outcome standard. However, he recently overhauled his course in 2015 and eliminated the term paper in favor of 5 lab reports that students compose from field data they collect. Thus, the program's assessment measure switched to performance on the final exam in the *Forest Ecology* course, a more appropriate tool for that assessment. Dr. Stone has developed and used a matrix to convert scores on all class assignments into scores on student learning outcomes for the course, so his approach may be used in other core courses in the program that are linked to the Capstone assessment.

During the senior year FEWP students are required to participate in a two-course capstone program - *Forest Ecological Management* (NRE 474) in the Fall and *Forest Ecological Management Project* (NRE 497) in the Spring semester. Working in assigned teams, these students develop a Forest Management Plan for a private landowner, and in the process are forced to apply the technical skills developed and academic knowledge gained during the course of their studies. Each team member participates in field data collection, data analysis and plan preparation. Furthermore, each team member participates in the presentation and defense of the plan to faculty, fellow students, the landowner, and guests. A round-robin style of questioning of each student afterward allows faculty

members to gain information on each student's individual performance on the Plan as well as their overall preparation as a professional forester. A matrix of scores for specific levels of performance on each part of the Forest Plan was developed to assist faculty in evaluating the performance of each student in the course. Teams are then required to revise their plan based on feedback received during and after the presentation before individual grades are finalized. Samples of such plans are in Exhibit III-5.).

Recently, an opportunity to use an independent assessment instrument for graduating seniors, the Alabama Registered Forester exam, has been offered to students in FEWP by the committee that administers the exam for the Alabama Forestry Commission. We are currently exploring this opportunity to enhance our student learning outcomes assessment strategy.

STANDARD III

FORESTRY PROGRAM STUDENTS

The Forestry, Ecology, and Wildlife Program (FEWP) has carefully developed a program to recruit, retain, and place forestry students in pursuit of its mission to educate broad-based, ecologically sensitive resource managers. As part of a Historically Black College or University (HBCU), the FEWP seeks to address the needs of capable students who are, as a group, underrepresented in the forestry profession. The primary asset of the student program is and has been for some time, the significant support that the USDA Forest Service has placed at AAMU's disposal and the more recent support offered by the Alabama Forestry Commission (AFC) and forest industries. The USDA FS, AFC, and forest industries have benefited in their effort to diversify their workforce from our student program.

An internal review (Fraser and Wyche 2000) of the USDA Forest Service recruitment and career placement Multicultural Workforce Strategic Initiative (MWSI) program indicated the following: 58% of the students graduate, 45% of the graduates have gone on to serve in the Forest Service, 63% of those who have gone onto the Forest Service have been retained. The most successful USFS-MWSI recruitment program at AAMU in the past has been for students who entered into the administrative stream (business major trained in forestry). In 2017, we expanded the curriculum to formally offer a Forestry Business Concentration. Our stakeholders and we felt that this was needed to remain relevant to the changing business conditions in the private forestry sector. However, the Forest Management and Forest Science Concentrations remain the most popular among

our students. All of our students that went to work for the private industry graduated with these concentrations that were our original curricula accredited by SAF.

Unfortunately, the Forest Service stopped the MWSI in favor of Pathways Program. The last student in MWSI graduated in 2015. Historically about half of our minority students were enrolled in this program. The program used to offer tuition support of \$2500 per semester and guaranteed employment through STEP and SCEP programs. The MWSI liaison was a Forest Service employee located on campus. They used to provide career and placement counseling and service for about 25 students at a time, many of whom were majoring in forestry and some of them in related fields. They also supervised the students while they were on campus and worked with them and other units of the Forest Service to place the students in summer employment positions leading up to permanent placement as professional foresters with the USDA Forest Service. Obviously, this development led to concern for the quantity and quality of our future students.

Furthermore, during the past decade, the state legislature discontinued funding of the Diversity Scholarship Program that attracted white students and other “minority” groups to the student body of AAMU. The funding was part of a desegregation lawsuit that run its course. We used some of these diversity scholarships to support white students, especially women during their forestry training. However, other University scholarships and financial aid opportunities have combined to continue to support our growing proportion of female and Caucasian students and improve the demographic diversity of our student body in the past decade.

The SRAP (Summer Research Apprenticeship Program) sponsored in part by the USDA Forest Service and coordinated by the FEWP has been and continues to be a successful recruitment effort (a 69% graduation rate and 75% retention rate). We have been able to offer an SRAP experience every year for the past 5 years with additional funding that should last into the 2020s. The format and the length of the format have changed over the years, and we are making changes to try to increase the commitment of SRAP participants to become students in our program.

In a snapshot of 2015, there were 41 students (Appendix G) enrolled in the forestry program assigned to forestry faculty advisers: 13 seniors, 9 juniors, 8 sophomores and 11 freshmen. There were 36 males and 5 females on the list. Between 2008 and 2017, 85 students graduated (Appendix F) from the program: 63 were black, and the rest were white. Forty-three of these graduates are employed (Table III.1) by the USDA Forest Service, and three are currently in graduate school. One recent graduate is seeking admission to graduate school. Three are employed by Weyerhaeuser Co., and five others are employed by a mix of federal agencies and eight by private organizations. Three are employed in non-forestry jobs or unknown. In the Fall of 2017, ten new freshmen entered the program, two transferred in at the junior level, and four others rejoined the program following brief leaves for military service, temporary employment or maternity leave. We also teach our *Introduction to Forestry* course in the Spring for students to change their major or declare Forestry as a major and enter into FEWP. This Spring of 2018, we enrolled 8 more freshmen into this course and our program. Examination of current enrollment data in Appendix G would appear to indicate that our student numbers will drop considerably in the future because of the low number of underclassmen in the “pipeline”, but recent success

recruiting transfer students during their junior year has allowed us to maintain and enhance our enrollment and completion rate in the past couple of years. We are confident that this can be sustained and are increasing our efforts to recruit at junior colleges and other HBCU's that do not offer an accredited forestry degree.

The relative importance of FEWP's contribution to diversifying the forestry profession is self-evident. In 1998 for example, AAMU graduated nine black foresters, whereas, only eight black foresters graduated from all the other forestry programs in the USA, combined. In the USDA Forest Service, 22 of the 38 black forestry professionals

Table III.1. Current Employment of AAMU Forestry Graduates - 2008-2017

Employer	Number	%
USDA Forest Service	44	61
Weyerhaeuser Co.	3	4
Bureau of Indian Affairs	1	2
Graduate School	3	4
US Corps of Engineers	1	2
Tree Service Companies	3	4
Power Companies	3	4
Federation of Southern Cooperatives	1	2
Landscaping, Horticulture	2	3
Department of Defense	2	3
Vegetation management companies	1	2
TVA	1	2
Non-forestry	3	4
Graduate school –applying to grad school	2	3
Total	70	100

are AAMU graduates. In the Alabama Forestry Commission, six of the seven black natural resources professionals are AAMU graduates. The FEWP has accomplished these successes because high attention was paid to recruitment, retention, professional development, and placement as well as sound academic training.

Recruitment and Retention

The FEWP follows the University's recruitment and retention guidelines published in the undergraduate catalog (Exhibit VI-1). We make every effort to ensure that our recruitment and retention of students reflects cultural, ethnic, and gender diversity. However, as a program located at an HBCU and one that aspires to enhance cultural diversity at the large scale (within the forestry profession), we specialize in training "minority" students that compose the majority of students at this University. As a Historically Black College or University, a majority (80%) of our students are black. Only 15% of the student body is white. The remaining 5% are American Indian, Asian, Hispanic, Alaskan, and non-resident alien students. Females make up a greater proportion (about 60%) of the student body than males (37%) at the University. Students currently enrolled in forestry are predominantly black males (75%). A majority (about 60%) of our graduates were black males. Female students compose a 20% of our current forestry students. Forestry students are representative of the student body's ethnic distribution, but not its gender ratio. Women are under-represented in our major compared to the University population. The FEWP participates in many of the programs mentioned in the University's Strategic Recruitment Plan including High School Senior Day. In addition, the FEWP participates in recruitment events sponsored by the College of Agricultural, Natural and Life Sciences including Science Exploration Day and Ag Week. These events allow us to interact directly with the students. The Apprenticeship Program (SRAP), in particular, has allowed students to conduct research with members of the forestry faculty prior to entering the University for their freshmen year. The FEWP regularly participates in the University's

Youth Motivation Task Force, Operation Jumpstart and other efforts aimed at student retention.

New initiatives to recruit transfer students from junior colleges and other universities, undeclared majors at AAMU, and attract students to AAMU with summer research programs for undergraduates have been going on regularly but with mixed results. We have a partnership with the Birmingham Waterworks Board (BWVB, Exhibit II-1) to manage their forests. Each summer since this project started in 2005, FEWP has hosted activities with the Young Water Ambassadors in the Lake Purdy area. The Ambassadors are junior and senior high school students from mostly urban areas in Jefferson County, Alabama. These students are selected by the BWVB to participate in a summer learning program that exposes students and teachers to various educational activities including limnology on our boat and catching fish at Lake Purdy. These activities are sponsored by businesses and educators from across the State and provide training opportunities that encourage students to pursue a college degree. About 100 high school students and teachers participate each year in the program. However, very few of them were recruited into our program. Some have joined the Environmental Science Major at AAMU, and so we are still hopeful to attract some of these students in the future.

The main benefit of the partnership with BWVB is our student involvement in managing their forests. Every year, students enrolled in the *Forestry Field Techniques I* course spent a week cruising the forests at Lake Purdy. The data have been used to conduct timber sales. Their estimates are consistently within 5% of the volume later reported from the mill where the timber is processed. Furthermore, we take students from the required spring junior core courses (multiclass trip) for an overnight stay at Oak Mountain State

Park to measure other aspects of the Lake Purdy forests such as habitat suitability indices, evaluate timber harvesting operations, and assess forest health. Last year we expanded this to a 2-night, 3-day field trip and added some forest ecology and hydrology exercises.

In an effort to identify factors that influence the recruitment, retention, and persistence of students in forestry, ecology, and wildlife at Alabama A&M University, Dr. Fraser (now retired) in 2007 conducted an internal survey of 33 current students and alumni in 2003-2004. Most of the respondents identified AAMU as their first choice because they could receive specific training that would give them opportunities to obtain better jobs. The fact that AAMU was an HBCU, and financial assistance was readily available was also very important. Most of these alumni were well qualified for entry; however, some had reservations about their English and mathematics preparation. Their motivations for attending were financial security, raising a family and becoming someone of consequence. Many had parents who had not gone to college and had relatively low combined annual incomes. So, they relied on either grants or loans for most of their school expenses. Most of these students entered AAMU with a good sense of self and confidence because they could get along with people of varying cultures and they had a high drive to achieve. Almost all of the alumni gave a high rating to the reputation and presence of the forestry program at AAMU and these factors were very important in influencing their decision to enter the program. Job and internship opportunities, as well as scholarships, were also very important considerations.

With the termination of tuition support from Forest Service MWSI, we lost the capability to offer an upfront incentive to minority students and probably affects our comparative advantage to recruit some of the high-quality minority students. On the other

hand, we are able to hire more students to work on our research since the McIntire-Stennis funds became available to HBCUs in 2009, thus increasing our retention rates. The Summer Research Apprenticeship Program, sponsored by the USDA Forest Service, is also an effort to increase our recruitment and retention since the reduction and elimination of MWSI support. Other opportunities for student recruitment and support are being sought to backfill the loss of financial support from this innovative and successful program.

Time and again the University is offering incentives for out-of-state students. The latest initiative announced by the office of admission Undergraduate Admissions in Fall 2017 is the Normalite Opportunity Scholarship offered to eligible out-of-state full-time and first-time freshman students. Recipients need to maintain a minimum cumulative GPA of 2.8 and must complete a minimum of 30 credit hours per academic year. Students from the counties just north of Alabama – Tennessee state line are considered in-state students.

Word of mouth has also been a powerful tool for recruitment. Since our last reaccreditation, we have seen an increase in transfer students, of students that are related to our alumni, and number of white students who commute from local counties in North Alabama and South Tennessee.

Advising

Several major challenges that a science-based professional program at an HBCU faces include: a poor academic preparation from neglected and under-supported schools, lack of exposure beyond rural isolation, low household income, lower educational level of parents, and upbringing in single-parent homes. Some of them are parents themselves. Such social factors collectively result in underachievement, lower graduation rates, and reduced

self-confidence. The FEWP is fully cognizant of these challenges and confronts them daily. In addition, the FEWP aspires to tackle the larger societal challenge – under-representation of select minorities in the forestry profession. Our strategies for tackling these challenges include early mentoring for freshmen students, encouraging participation in the Forestry Club activities, and building relationships between faculty and students in summer research experiences, field techniques courses, and work-study positions throughout the year. The bonds and relationships that form between faculty and students early on are maintained throughout the students' academic careers at AAMU. The second example is the FEWP's efforts to bring students - while they are largely a ward of the Freshmen Academy - into the *First-Year Experience*, *Introduction to Forestry*, *Dendrology*, and *Technology in Agriculture and Biosciences* courses, which are aimed at acquainting them with the natural resources profession. In addition, upon completion of their sophomore year, students attend *Forestry Field Techniques I* (two weeks in December) and *Forestry Field Techniques II* (two weeks in May) when they interact daily with faculty members during field tours and outdoor laboratory classes. Finally, job experience (summer internships) with the USDA FS, state forestry agencies, and forest industry provide additional real-life experiences that are invaluable to the students upon their graduation from the program.

The University has published policies for academic advisement in its undergraduate and graduate handbooks. These policies include mandatory consulting with an academic advisor before the beginning of each semester. The Academic Advisement and Support Services primarily assist students in the Freshmen Academy (underclassmen) with class selection, testing, and academic scheduling advice. The AAMU Writing Center is open from 8 a.m to 5 p.m Monday through Friday for students to receive tutorial instruction in

English or just to have someone proofread a term paper. The AAMU Writing Center is an on-campus, student-centered facility designed to encourage peer interaction, establish writing as a multi-disciplinary goal, and support the idea that writing enhances learning. The mission of the AAMU Writing Center is to assist undergraduate students in any stage of the writing process through peer-to-peer consultations, small group instruction, and workshops. Through these methods, the AAMU Writing Center strives to create an academic community of strong and confident writers at Alabama A&M University.

The Tutorial Assistance Network (TAN) team is dedicated to retaining and graduating AAMU students. They provide tutoring and Supplemental Instruction (SI) to help students increase their understanding of course materials; increase their performance in their courses; improve their academic performance; and network with other students in their subject area.

Finally, the Office of Retention and Persistence (ORP) is a multi-faceted, comprehensive department designed to facilitate and improve student success, retention and graduation rates. Intrusive academic intervention is an integral part of ORP, enhancing overall student academic and social development (see Standard IV for more details).

The FEWP follows the university's policies and procedures regarding academic advisement. The first contact that students have with our program is the NRE 281 course: *Introduction in Forestry*. The course is taught by Dr. Colmore Christian who serves as co-advisor for underclassmen in Freshmen Academy who are declared forestry majors. In that role, he advises freshmen and sophomores in our forestry program on course selection while they are still in Freshmen Academy. He assigns students to FEWP faculty advisors.

On exiting Freshmen Academy, students who declare forestry as a major have their transcripts reviewed by an assigned FEWP faculty member who then advises the students on scheduling courses in order to graduate in a timely manner. Checklist of the course sequence from the appropriate undergraduate bulletin, and recently Degree Works, are used to guide both the student and the advisor. Advisees meet at least once a semester with their advisor in order to monitor progress towards the forestry degree. We have also been organizing mandatory advising sessions for the freshmen and sometimes for all of our forestry majors. These sessions are also attended by faculty members in forestry to remain current on academic policies and procedures to improve timely graduation of students. This effort has also proved beneficial for students' ability to graduate without encountering as many problems in their approved curriculum.

AAMU operates a state-of-the-art Career Development Services (CDS) center to assist students in preparing for and locating appropriate employment opportunities. Their website describes the services offer by CDS, including building skills in writing resumes and cover letters, interviewing, and identifying current summer jobs and career opportunities.

Students must register with CDS to be cleared for graduation and are subsequently provided with electronic updates of job openings that fit their career profile, can record and conduct mock interviews, and find majors and careers based on their interests through Handshake, Interviewstream, and FOCUS 2.

During our annual "Ag Week" to celebrate the anniversary of the College of Agricultural, Life and Natural Sciences, graduate students lead workshops on resume

writing, interviewing skills, and professional attire. Academic advisors also provide career counseling for students when meeting with them about course scheduling. There are plenty of opportunities for the students to meet potential employers. Members of the forestry faculty occasionally have forestry, and other natural resource professionals (including alumni) to guest lectures in their courses and provide career information to the forestry students. Finally, the FEWP arranges job interviews between forestry employers and students on campus. The University has Career Development Services to assist students in preparing for and locating appropriate employment opportunities. The University has Career Fairs twice a year. Most of the annual professional meetings that we take the students to such as SAF National Convention, SESAF Annual Meeting, and MANRRS National Conference have career fairs. We had four students who got jobs with the Forest Service at the 2016 SAF National Convention in Milwaukee, WI.

Environment

The FEWP fosters a nurturing yet professional environment for forestry students. As discussed above, the students who enter the program come from diverse backgrounds. Most are first-generation college students while others come from a lineage of AAMU graduates. A large number of the students come from some of the poorest counties in Alabama and surrounding states, many have lived all their lives in small, predominantly black communities and attended high schools that are poorly equipped and staffed. The average ACT score for students currently in the forestry program is 17 and ranges from 13 to 24. These scores place the onus on AAMU to provide not only academic training but also opportunities for remedial education, health care, cultural exposure, social interaction and professional mentoring.

John & Ella Byrd McCain Health and Counseling Center promotes the well-being of the Alabama A&M University community and strives to generate a healthy campus culture by providing integrative healthcare services based on industry best practices by promoting physical, emotional, and spiritual development in a safe, supportive, and confidential environment. The Center has a clinic that operates during business hours to provide care for acute illnesses and referrals to the emergency room of Huntsville Hospital for other illnesses. All full-time students pay a health care fee, as part of their regular tuition, which makes them eligible to receive care by the doctors and nurses that staff the Health and Counseling Center (see Standard IV for additional information). The Center also provides mental health and wellness counseling to students such as individual counseling, group-support counseling, group counseling, preventive health care counseling, mental health referral services, and workshops on study skills, stress, and test-taking.

Students at AAMU have a number of cultural, entertainment and intellectual outlets on campus and in the surrounding community. Most of the forestry students have indicated they attended university-sponsored events such as Homecoming, Founder's Day, Convocation, Holiday mixers, America Reads, NAACP (National Associate for the Advancement of Colored People) meetings, and the Honda Campus All-Star Challenge. Most are or have been members of AAMU's marching band, and belong to on- or -off-campus church groups. Almost all are members of one of the campus professional organizations: the Forestry Club, Environmental Science Club, and MANRRS. They are also avid AAMU football and basketball fans and enjoy on-campus entertainment at Movies-Night, Dust-to-Dawn dances, concerts and the International Food Festival.

Students also take advantage of theater performances, concerts, and musicals at the University of Alabama Huntsville, Oakwood University, local high schools, or Huntsville's Von Braun Center.

FEWP faculty members serve as advisors, mentors and role models to forestry students. A relatively recent internal survey of 33 current students and alumni in 2003-2004 (Fraser 2007) indicated a high degree of student interest in attending professional forestry meetings, informal meetings with the faculty, camping in the forest, forestry field competition as well as skill developing activities such as chain-saw and fire-fighting training and outreach activities. Many of these are activities undertaken by the faculty during summer camp, field trips, and research projects. Many of our students work off-campus, which creates time management problems.

Results from Dr. Fraser's 2007 student survey corroborate the importance of creating the right environment for the students. Overall, they seemed to have had a very positive experience at AAMU and identified satisfaction with courses in their major field while overcoming concerns about student housing, facilities, and services. During their stay at AAMU, they increased their involvement in a range of outdoor activities, e.g., camping, rock climbing, etc. while developing important skills such as time management, effective study, etc. Interactions with their on-campus friends, relatives, and faculty were very important to these students, and they project a very positive view of their instructors whom they found to be encouraging, respectful, informed and supportive. Group-study and access to the internet were very important, and so it seems was their opportunity to speak up in class and to have frequent opportunities to discuss their grades and course assignments with the instructors. Most of the students remained focused in school spending

time on their homework, studying and involving themselves in volunteer and forestry club activities. However, long hours at work (average of 18 hours a week) and a disproportionate amount of time on watching TV may explain why the majority felt they did not always submit their best effort. Most students seem to be unencumbered by family, job or personal problems and found time to stay in contact with relatives and off-campus friends.

Student Club Activities

Since 2000, we have sought to increase student participation in professional and extracurricular activities that benefit them and our community. Our main student organization is the Forestry Club that became a student chapter of the Society of American Foresters (SAF) in 2002, following our program SAF accreditation. Besides for a few exceptions such as for lack of procuring airplane tickets on time, we have always participated in the SAF National conventions with 4 to 16 students. Our quiz bowl teams have also participated in all the student quiz bowls organized in conjunction with those SAF conventions. The Forestry Club members also participate regularly in the SESAF (Southeastern SAF) Annual Meeting. SESAF include Alabama, Florida, and Georgia and it is held in each state on a rotation base. Since 2006, SESAF annual meetings include a student quiz bowl, a student poster contest, and a student mentoring program. Going to SESAF is convenient and students enjoy the SESAF meetings that are close-by and shorter than the national conventions. Two faculty members went to the last SESAF meeting in Georgia in January 2018 with 12 students that once again enjoyed the smaller regional meeting. The quiz bowl team did very well this time, beating Auburn University and the University of Florida, but losing to the University of Georgia in the final round. The

previous year, AAMU fell to Abraham Baldwin Agricultural College in the final round of quiz bowl at SESAF.

In 2003, forestry students with forest ecological interests chartered a campus ecology chapter of SEEDS (Strategies for Ecology Education, Development and Sustainability) with the Ecological Society of America. This membership included modest funding to initiate some ecological research and activities on our campus and in our community. The club has also participated in other activities of a more ecological nature including tree planting, learning tree outreach at elementary schools, installing birdhouses, leading Earth day hikes and exhibiting at a city nature park, and helping install outdoor classrooms at local middle school.

Participation in SEEDS has helped us send students on the semiannual ESA SEEDS field trips to LTER sites, where the students meet world-class researchers, learn about their work, and carry out a small project during the several days of their stay. The SEEDS program covers all of the travel, lodging, and meal expenses of the students. Select students are then offered an opportunity to attend an ESA SEEDS organized Leadership Training, often in collaboration with the USDA Forest Service. A number of our undergraduates have benefited from these opportunities.

In 2004, the AAMU Forestry Club joined the ASFC (Association of Southern Forestry Clubs) and began competing in the Southern Forestry Conclaves. In 2009, we hosted the forestry conclave on the AAMU campus at the Winfred Thomas Agricultural Research Station and the Stihl Competition at the AAMU Agribition Center. Hosting a forestry conclave is an honor and major undertaking for all forestry schools, especially for

a small program like ours. It was the dedication of our students, our alumni, our faculty and the help from Alabama Forestry Commission that made the 2009 Southern Forestry Conclave a very successful event. In 2012, forestry students also chartered a student chapter of The Wildlife Society, and some of these students have traveled to the State and National Wildlife Society meeting, participated in fishing trips and other wildlife-related activities.

Last year, the Forestry Club and 3 faculty members participated in the Forestry Conclave in Texas on 03/16-19/2017 hosted Stephen F. Austin University. AAMU team did very well in this event, ending in 7th place out of 13 participants. The result should look even better when considering that North Carolina State University and University of Kentucky did not participate and our score was 174.75. 2.5 point less than Auburn University and only 0.25 point less than Louisiana Tech. Involvement in the forestry conclaves has been very beneficial for our students to keep them abreast of forestry profession and to establish contact with their future employers and colleagues.

Besides professional forestry activities across the state and nation, students are interested in participating in AAMU campus student events as well. In 2003, the Forestry Club became a registered student organization on campus. We participate with other campus organizations to improve student life on campus. Students have participated in cleaning events in Madison County, in Huntsville, and on campus. Our club has taken a particular interest in making other students aware of our forestry major by designing and building a forestry club float for the annual homecoming parade in downtown Huntsville. People look forward to seeing our float, and we have won several prizes in the homecoming parade float contest. Students also elect a king and queen to participate in the coronation

activities during the homecoming events. In addition to these activities, club members have designed posters and other display information to advertise our club activities, along with other campus organizations, at several student rallies on campus.

Two events related to Earth Day that the Forestry Club and the local chapter of SAF participate are the *Annual Earth Day Festival & Farmer's Market* organized by Monte Sano State Park and *Celebrating Earth Day at Hays Nature Preserve* hosted by Huntsville's Operation Green Team. At both events, the Forestry Club set up booths and display forestry, wildlife and wildland firefighting equipment. Visitors at the booth are attracted by stuffed animals, dripping torches, and sometimes by the sight of a Wood-Mizer portable mill.

Every year the Forestry Club and the Fire Dawgs (our Student Wildland Firefighting Crew) partners with the US Forest Service Bankhead National Forest to launch *AAMU Forestry Fair*. This year (April 12, 2018) will be our ninth forestry fair. We provide lunch and t-shirts for student attendees from MLK, Lakewood, Rolling Hills and Dawson Elementary Schools and other local schools, sometimes including middle and high school students. The purpose of the Alabama A&M Forestry Fair is to provide information to youth participants about the sustainable management of forest resources and the role of forests and forest products in their daily lives. A key point to be made during these events is that through sustainable management we can enjoy the many benefits of growing forests while also harvesting trees for the thousands of useful products that improve our quality of life. The goal is accomplished through a variety of fun, hands-on activities led by forestry and wildlife professionals from several local natural resource organizations. The events

have included a special appearance by Smoky the Bear, a moon bounce, lunch, and prize giveaways.

Fire Dawgs

FEWP has always considered proficiency in wildland firefighting as an important part of forestry education and has sent students in early 2000s to participate in fire training opportunities such as Alabama Fire Academy. However, Daryl Lawson, our Project Forester, and Balsie Butler, the Fire Chief of Alabama Forestry Commission (AFC) and our alumnus, took fire training to a higher level. As part of the fire training program and to provide students with firefighting skills, FEWP formed a partnership with AFC. In 2010, thirty students from our program participated in a groundbreaking endeavor, forming the nation's first student wildland fire-fighting crew of its kind recognized by the U.S. Forest Service. This strong partnership and the willingness to afford forestry students such an opportunity has led the Forest Service to provide safety equipment and fund the first year of insurance for the students.

The Alabama State Forester at the time, Linda Casey, and AAMU President Dr. Andrew Hugine signed a memorandum of understanding between AFC and AAMU to establish a mutually agreeable framework for complementing the AFC's firefighting resources. Daryl and Balsie were able to secure a General Liability Insurance Policy when few insurance agencies provide coverage for wildland firefighters. They were also able to secure Workmen's Comp Insurance through the Association of Volunteers Fire Departments.

This joint venture has provided the students the opportunity to assist in the suppression of wildland fires in Madison and neighboring counties, allowing hands-on experience and the observance of “live” fire conditions. They have also been the “Fire Dawgs” team members start as observers and later can participate in prescribed burn fires after receiving certification.

Last year fifty-nine Fire Dawgs participated in suppression efforts on five wildfires when activated by the Alabama Forestry Commission. These included the Bucks Pocket State Park wildfire, the Union Grove wildfire in Marshall County, Alabama. Fire Dawgs assisted the Alabama Forestry Commission when activated under our MOU on Lookout Mountain Mentone wildfire. This fire totaled 1500 acres in rough, steep mountainous terrain. Twenty-five certified Fire Dawgs, and eight underclassmen observers and lookouts used hand tools and blower in rocky steep mountainous terrain to put out the fire.

International Program in China

Dr. Wang is very involved with research and student exchanges with a couple of Universities in China. Our main partner is Nanjing Forestry University. Students and faculty from AAMU have been going to China since 2009 but the first time that we took forestry students to China was in 2013 since then the number of forestry students going to China has been increasing. In 2017 the program was centered on forestry and environmental studies. Ten participants out of twelve were forestry students.

The program started as an NSF REU-G grant and has been supplemented by other resources. Usually, students will spend five to six weeks of this summer program in China. AAMU students and faculty mentors visit Nanjing Forestry University (NFU) to conduct

collaborative research with both faculty members from AAMU and faculty members from NFU on the NFU campus, using NFU facilities. The goal of the REUG program in China is to provide U.S. students in science and engineering first-hand research experience in China, an introduction to the development of science and technology in China, and an orientation to the Chinese culture and language.

The 2017 program was designed to stimulate your interest in research in general, and in a variety of environmental and ecological sciences through active full-time participation in a meaningful five-week research project. In addition, it is designed to instill an appreciation of the scientific method and the rigors of conducting scientific research, as well as an appreciation of the creativity needed to conduct relevant and interesting research. The program aimed to help students develop confidence and independence in carrying out meaningful research on a topic of current interest and generate a willingness to accept responsibility to report results to their peers (both in China and US). During the trip there student also visited Beijing Forestry University, and they were introduced to forestry and environmental/ecological issues. They learned to gain valuable hands-on experience in a laboratory or the field and gained valuable experience with a foreign culture. It has helped them learn to think creatively to deal with a variety of cultural differences, and communicate with others who may not share the same worldviews.

NFU has also sent their students to AAMU, some of them as regular students and one group during the summer of 2017. AAMU has a Confucius Institute on campus and some of our students participate in the Chinese Club activities, and a couple of them are learning Mandarin through classes offered on campus.

Competence

A decade ago, during our first reaccreditation, FEWP faculty members acknowledged the need for revamping our curriculum, especially our “capstone” course in forestry for our graduating seniors, to integrate the knowledge they have acquired in their undergraduate courses and enhance their problem-solving and decision-making skills. The capstone is at that time was NRE 489 *Forest Ecological Management*. Following discussion among FEWP faculty, it was determined that some adjustments in the curriculum were necessary to facilitate this course. We removed the Silvics course from the curriculum, and most of the material covered in *Silvics* is covered now in *Dendrology*. The course that we included is NRE 474 Forest Ecological Management 2 credits, unofficially called “the pre-capstone course.” This course is taught in the Fall semester and is required of all forestry students. The students will enroll in this course in the Fall, prior to the Spring semester in which they take the capstone course. This course enables them to collect preliminary data on the property that they will use for their forest management plan and prepare them for the capstone course the following semester. The capstone course itself was renamed NRE 497 *Forest Ecological Management Project* to reflect its new approach—a capstone course with teams of students applying their accumulated knowledge to identify, analyze, and solve real forest ecosystem management problems. Student teams prepare a written management plan for a given property, taking into account ecological, economic, social, and legal constraints.

Another change in our curriculum was the split of *Forest Field Techniques* course that used to be offered in summer, in two courses *Field Techniques I* (offered in the Fall semester and conducted in December during the winter break) and *Field Techniques II*

(offered in the Spring semester and conducted in May between the Spring and Summer semesters). The reason for this change included lack of financial assistance for the Summer semester and increased the opportunity to get summer jobs.

As discussed in Standard VI, FEWP currently integrates problem-solving and decision-making skills in upper-division courses that require students to perform analytical homework problems involving practical and synthetic problem-solving skills. An example of this can be found in the *Wildlife-Forestry Relationships* course, where students use information from forest measurements and forest ecology courses to predict wildlife habitat suitability, and then predict changes in habitat suitability caused by changes in forest management and operations. Additionally, in our required *Forestry Field Techniques I and II* courses, students are given an opportunity to observe as well as practice problem-solving and decision-making skills used by professional forest managers in the field. Furthermore, because forestry faculty members are helping in instructing these courses, organizing multiclass trips and teaching joint labs, students receive a variety of resource perspectives on an issue and must integrate the knowledge presented by several instructors to understand the implications of available forest management strategies fully.

Assessing learning outcomes is partly achieved using a survey of alumni (Exhibit V-2) to determine competencies in key career areas and an alumni employer's survey (Exhibit V-2) to assess how our graduates are performing on the job in general as well as in key competency areas. In recent employer surveys, six supervising foresters (or natural resources professional) who responded indicated that their AAMU forestry graduate had an adequate foundation of forestry knowledge with no additional training needed or only minor on-the-job training needed to conduct current duties. This was an improvement over

the same survey conducted in 2001 when six of nine supervising foresters responded that AAMU forestry employees needed moderate on the job training to conduct their duties. Another improvement from the previous survey was the preponderance of supervisors (4 of 6) that felt our alumni were *more capable* than other foresters with the same experience. Previously there was almost uniform agreement that AAMU-trained foresters are “*as capable and trained as well*” as other forestry employees with the same level of experience. Only two supervisors gave our alumni that relatively lower rating this time. Respondents to the previous 2001 surveys indicated the need for additional hands-on training in the forest as well as for wildlife management training. We used this feedback to initiate more field trips in courses and applied experiential learning in forestry core courses such as *Dendrology*, *Mensuration*, *Silviculture*, and *Forestry Field Techniques*. Also, the Fish Science Concentration provides numerous field experiences. The *Wildlife Techniques* Course is designed to improve our students’ education with hands-on learning in the field and laboratory. Perhaps more importantly, the greater opportunities that students have had in recent years to work on research projects with faculty, staff and students should further enhance our students’ ability to perform the practical duties that are expected of them on the job once they graduate.

Comparison of responses to the employer survey and alumni survey (Tables III.2 and III.3) on questions of specific forestry competencies yielded some interesting findings. The 20 AAMU forestry alumni and six employers had almost identical rankings for 12 competencies they considered important/not so important. They agreed that six competencies are of the highest importance – Oral and Written Communications, Tree/plant identification, Ethics, Collaborative Problem Solving and Silvicultural systems.

There were five competencies both groups considered least important – Foreign Languages, Range management, Rural Community Development, Forest Engineering/transportation, and Forest Soils. The other area of agreement was Forest Pathology.

There was a range (5 to 18) of ranking discrepancies between alumni and employers on the other 17 competencies. On seven of the competencies, our alumni rated the importance of the competencies higher, and for the other ten, the employers rated the competencies higher. In some of these areas, the difference is stark especially in forestry (Forest inventory and biometry and Forest ecology) and related fields (Conservation biology, Wildlife biology, Resource economics, Resource management planning) which were much higher rated by employers than alumni. Alternatively, alumni placed higher importance on Watershed Management and Fire Dynamics. This disconnect is currently being addressed as our recent and current crop of students have benefited from their and faculty involvement in Forest Ecosystems Assessment, and McIntire-Stennis research which requires a wider appreciation of forest-related fields.

Table III.2. Scores and rankings (1 to 3 scale, with 1 = very poor and three = very good) by alumni and employers of the **importance** of competencies in professional subjects.

Score		Competence	Rank		
Alumni	Employer		Alumni	Employer	Difference
2.25	2.67	Conservation biology	25	7	18
2.38	2.67	Wildlife biology	23	7	16
2.59	2.83	Forest inventory and biometry	17	4	13
2.56	2.67	<i>Managerial leadership</i>	18	7	11
2.62	2.83	<i>Forest Ecology</i>	14	4	10
2.41	2.50	<i>Resource economics</i>	22	14	8
2.62	2.67	<i>Resource management planning</i>	14	7	7
2.50	2.50	<i>Financial management</i>	21	14	7
2.65	2.67	<i>Resource policy and law</i>	12	7	5
2.56	2.50	Human resource management	18	14	4
2.37	2.33	Forest soils	24	23	1
1.69	1.50	Foreign language	29	28	1
3.00	3.00	Oral communication skills	1	1	0
3.00	3.00	Written communication skills	1	1	0
2.94	3.00	Tree/plant identification	3	3	0
2.87	2.83	Ethics	4	4	0
2.80	2.67	Silvicultural systems	7	7	0
2.19	2.17	Forest engineering/transportation	26	26	0
1.88	2.00	Rural community development	27	27	0
2.81	2.67	Collaborative problem solving	6	7	-1
1.81	1.33	Range management	28	29	-1
2.65	2.50	Forest Pathology	12	14	-2
2.69	2.50	<i>Organizational development</i>	9	14	-5
2.69	2.50	<i>Government relations</i>	9	14	-5
2.56	2.33	<i>Wildland/protected areas</i>	18	23	-5
2.73	2.50	<i>Landscape analysis/geographic</i>	8	14	-6
2.62	2.33	<i>Watershed management</i>	14	23	-9

Table III.3. Scores and Rankings (1 to 5 scale, with 1 = very poor and 5 = very good) of the by 20 alumni and 6 employers of the **quality** of AAMU forestry graduates in professional competencies.

Score		Competence	Rank		
Alumni	Employer		Alumni	Employer	Difference
3.22	3.44	Managerial leadership	25	20	5
3.54	3.72	Collaborative problem solving	16	12	4
4.00	4.25	Ethics	8	4	4
3.33	3.44	Organizational development	22	20	2
3.45	3.63	Wildlife biology	19	17	2
3.92	3.90	Forest Ecology	10	9	1
4.47	4.39	Tree/plant identification	2	1	1
4.00	4.00	Landscape analysis/GIS	8	7	1
4.28	4.27	Forest inventory and biometry	3	3	0
3.82	3.72	Wildland/protected management	12	12	0
3.54	3.65	Resource management planning	16	16	0
3.45	3.53	Fire dynamics	19	19	0
3.73	3.68	Conservation biology	14	14	0
3.87	3.74	Resource economics	11	11	0
3.14	3.21	Rural community development	26	26	0
2.78	2.93	Forest engineering/transport Systems	27	27	0
2.50	2.62	Range management	28	28	0
3.27	3.39	Financial management	23	23	0
2.29	2.45	Foreign language	29	29	0
4.50	4.37	Silvicultural systems	1	2	-1
3.25	3.33	Human resource management	24	25	-1
4.17	4.05	Forest Pathology	4	5	-1
3.78	3.68	Resource policy and law	13	14	-1
4.13	4.04	Written communication skills	5	6	-1
4.13	4.00	Oral communication skills	5	7	-2
4.08	3.90	Forest soils	7	9	-2
3.58	3.61	Watershed management	15	18	-3
3.40	3.35	Government relations	21	24	-3
3.50	3.42	Alternative dispute resolution	18	22	-4

Interestingly, there was little difference in the ranking of the quality of the professional preparation of the alumni, both in their estimation and in the eyes of their employers (Table V. 3). There was almost no disagreement on 23 of the 29 competencies by which our alumni were rated. Of the six with some small difference, half were rated higher by alumni, and the other half rated higher by their employers. Employers seem to indicate they expected more managerial leadership, collaborative problem-solving skills, and ethics in alumni. Whereas, alumni seem to think their expertise in watershed management, government relations, and alternative dispute resolution were better developed than they were credited by employers. These differences seem to be more perceptual and probably will change as alumni assume more leadership roles and they bring to bear their perceived ability to work well with others.

This outcomes assessment provided useful information by which we modified our program. We developed a Forestry Business Concentration for the Forestry major because employers indicated the importance of business skills to the successful forestry professional. It is interesting to note that the AAMU forestry program twenty-five years ago had an appeal to Business majors that were successful in finding employment in forest industries as well as government agencies upon graduation. We are confident that this combination of training remains in high demand by employers despite the ownership changes in the forest industry since then.

Another area for improvement based on surveys responses is in the area of writing and oral communication. Although alumni and employers ranked the quality of our graduates relatively high (above average) in this area, the pre-eminent importance placed on these skills by both groups suggests that any additional improvement in these areas

would be worthwhile. We already require writing assignments in most upper division courses, especially lab reports and term papers. However, faculty members are very aware of problems that our older students continue to have with spelling and other basic grammatical skills. Further efforts to correct poor grammar on tests, e-mail messages, and other written communication must be made to change bad writing habits formed by students' years prior to entering college. Recruiting higher quality students with better writing skills would also help us to improve in this area. This is often, but not always, accomplished by offering more lucrative scholarships to students who are considering a career in medicine or some other biological field. Unfortunately, the resources for doing this have not been forthcoming from the University or forest employers. The other option is to partner with secondary schools and develop the interest in forestry early while their communication skills are still being developed. We tried to engage students through NACEE (North Alabama Center for Educational Excellence) by mentoring some of them, but we were unable to recruit them. Another option that we have occasionally used in the past is the involvement of our students with the FFA by mentoring high school students who compete in FFA forestry contests.

Outcome Assessment of Objectives for Excellence in the Undergraduate Program

Outcome 1. Instruction

To attain a consistently high quality of teaching and effective instruction as determined by peer and student evaluations, employer satisfaction, and professional registration or licensing.

Student evaluation of faculty teaching of 2006 fall semester courses averaged 3.56 on a 4.0 scale. Mean scores for student evaluation of faculty teaching during Spring 2007 averaged 3.5 on a 4.0 scale for 16 courses instructed by FEWP faculty with a range of 2.47 to 3.86. Course evaluations during Fall 2007 averaged 3.5 on a 4.0 scale with a range of 3.02 to 3.95 (Exhibit II-3). Course evaluations from previous and following years were similar. Recent evaluations were difficult to obtain because they were not sent consistently to the faculty. Furthermore, they were not very informative because currently, the university asks students to conduct the course evaluation electronically (through a link sent by email) which has a very low response rate. A 2008 employer surveys of our graduates indicate that our students are trained as well or better than forestry graduates at other Universities. All employers felt that our graduates had all of the skills necessary to complete their current tasks and great potential for career advancement in their organization. Additionally, several employers commented that our alumni brought fresh perspectives and new ideas to the decision making process in their organization because of being an AAMU alumnus. While most of our graduates need some on the job training once they are hired, this is typical of all new forestry graduates regardless of their alma mater. Results of alumni and employer surveys conducted in 2001 were similar to these findings for the 2008 outcome assessment surveys. Following our accreditation by the Society of American Foresters in 2002, most of our

graduates have only recently become eligible (because of a criterion for a 2-year period of employment in forestry) to seek professional registration as Foresters. In the State of Alabama, we know of two alumni that have sought and gained professional registration by the Alabama Board of Registrants.

Outcome 2. *Curriculum*

To develop a diverse forestry curriculum that meets the requirements for SAF accreditation but is flexible enough to accommodate a diversity of subjects.

Substantial progress has been made to enhance the forestry curriculum in the past ten years. Now in the Forestry major, besides the historical Forest Management and Science concentrations, we offer the following: Fish & Wildlife, Forestry Business, and Ecology.

Outcome 3 *Recruitment*

Recruit 25 freshmen and 10 transfer students per year.

Currently, we are close to that number. Last year we had one of the largest classes that we ever had since 2000: 17 in both Field Techniques and 19 in Forest Mensuration. We graduated nine students in May 2017 and five in December 2017. We have a large capstone class this year and are expected to have similar numbers. However, these numbers do not look sustainable in the near future. The number of students in the major forestry

classes has fallen into levels of the historical average. This latest fall in numbers may be the result of a shortage of three faculty in a program of eight. We had two retirements and one faculty working as an administrator for a couple of years. We already have seven faculty, and we are in the final stage to hire the eighth faculty

Outcome 4 *Retention*

To retain at least 60% of freshmen, 70% of sophomores and 90% of the upper classes.

One of our most challenging problems is the low freshmen retention rate. We lose more than half of our freshmen in the program who change their major or drop out of the University for various reasons, including financial and academic problems. Also, this is probably due in part to infrequent contact with these students during Spring semester when there are no forestry courses at these lower levels. We have improved retention of upper classmen with more student activities and bi-weekly student employment opportunities for forestry students, but the challenges of retention of the lower division students have not been overcome. More mentoring of freshmen and sophomore students by faculty and upperclassmen would likely help, but establishing and maintaining these mentoring relationships have proven difficult with the numerous demands on mentors' time.

Outcome 5 *Placement*

Assist 100% of FEWP graduates in finding forestry-related employment or graduate education opportunities.

We are still able to help almost all of our graduates, even without the assistance of a liaison human resources officer of our major employer who used to be located on campus. For students not placed with this agency, many other organizations are interested in hiring our students and graduates, such that 100% placement is virtually guaranteed for current students as well as graduates. These organizations routinely visit our campus to recruit students, and currently, there are more positions than we have students to fill them. The faculty have been active forwarding the available positions announcement to students and alumni and often write a letter of recommendation for them.

Outcome 6. *Accreditation*

Sustain SAF accreditation

Currently, the FEWP is preparing for a review of SAF re-accreditation for the second time since becoming accredited in 2002. Since that time, the program has grown in many aspects. We got reaccredited in 2008, and we look forward to our site visit in March 2018. Our only major weakness used to be institutional support (“hard money”) for the program in comparison to extramural support (“soft money”) which was identified

during the initial accreditation visit in 2002. However, the reliable funding through McIntire-Stennis projects has made our financial situation more stable.

Outcome 7. *Partnership support*

To provide all students with opportunities for internships or employment with federal, state and industry partners

See results for Outcome 5 above. One thing we continue to seek is additional scholarship support for students in forestry. Forest industry support has been waning, but we hope that we will see changes soon. At least, they are hiring our students.

Outcome 8. *Scholarship/mentoring support*

To provide scholarship opportunities and organized mentoring programs for all students.

Sadly, we have not made much progress on this important outcome, but not from a lack of trying. Mentoring relationships can be difficult to establish because they are inherently informal relationships that depend on personalities and are subject to change over time. Success in this area is also difficult to measure tangibly. We have sought to increase our advisor-student contact quality and quantity, but have not documented

concrete results other than mandatory advisor sessions we began to require in 2004.

Fraser's conclusions drawn from the 2007 survey of students and alumni provide some perspective of how our students view the forestry program, the profession and their experiences at AAMU and in the field. There was obvious bias in the survey response. Those who responded were some of the more successful alumni who had participated in the program. They entered with good scores, were highly motivated, had a great deal of self-confidence, and were adaptable. They seem to have handled their perceived deficiencies in math and other subject matters with some aplomb. In fact, they made it clear that they did not allow family, friends or their jobs to interfere unduly with their schoolwork. They seemed to have interacted well with the faculty in the institution and benefited from these interactions. In the process, they improved their interpersonal skills and became more active in outdoor activities. They seem to have transitioned well into the workforce and were making some progress. However, it is too early to tell since most had not assumed supervisory responsibilities and about a third were thinking of leaving their jobs. Given this caveat, there seem to be some lessons we could learn from this group.

Financial matters seem to have been one of the major concerns of these students. They were from lower-middle-class families who went to school not quite sure of how they were going to pay their way. Most had little resources of their own and got little financial assistance from their parents. So, they had to rely on grants, loans, and jobs to pay their way through school. Most were attracted to the program by the availability of financial assistance and jobs on matriculation.

Most of the students were seeking a higher level of education than their parents, and by their own admission, they were not very well prepared in some subject areas. However, they seem to have been able to negotiate college because they had a deep desire and they engaged their professors as instructors and advisors. In turn, they seem to have been encouraged and motivated by their instructors.

Most of the students had very limited experiences with a range of outdoor activities. However, over the course of their stay at AAMU more of them seem to have become involved in many of the more common outdoor activities (e.g., camping or hunting).

It was remarkable that these students seem to have negotiated the cultural transitions from home to university, to a specialized program, to the highly specialized profession with such ease. However, they did admit that they were gregarious, culturally adventurous, and capable of developing very close relations with people around them while maintaining good relations with family and friends at a distance (over 100 miles away from home).

These findings suggest that AAMU's forestry program and their partners are doing some things correctly. The USDA Forest Service MWSI program was a vital part of the success of these students because many may not have been able to afford to go to school otherwise. Even today, despite some financial support some students still seem to struggle financially if one were to judge by the number who work 20 or more hours a week. Second, the time and effort faculty and staff spent with these students seem to be very important to their success. These findings make clear that these students responded well to significant personal assistance in dealing with technical material as well as in staying motivated.

Finally, experiential education seems to be paying dividends with these students who are more engaged now in the outdoors, are developing informed views about nature and are more culturally competent. In turn, they have developed the ability in remote places where they were the first of their ethnicity to be employed.

Scholarships, work-study opportunities, tutoring, internships, experiential education, cultural competence and nurturing of student motivation seem to be the keys to success with this group of students. Unfortunately, the paucity of data prevents us from being more definitive. Similar studies covering a wider cross-section of students could provide some insights into why students drop-out while others persist and help us to understand the keys to success.

These activities are important as Dr. Fraser found in his survey. There seems to be general agreement among most of the alumni that the forestry faculty were knowledgeable, interested and active in preparing the students some would have liked to have a forestry website, more involvement with other university programs and traveling to professional forestry but were very happy with Summer Camp, Forestry Club, etc. As a result, most of the respondents felt their views of nature were changed as a result of taking forestry classes, prepared to enter the workforce when they completed their program, AAMU's forestry program was about equal in rigor to other forestry programs, and they were equally trained as the graduates from other programs. Not all of the students graduated from the forestry program at AAMU because they faced difficulties with finances, family obligations, etc.

STANDARD IV

PARENT INSTITUTION SUPPORT

The Strength of the Institution

Alabama A&M University (AAMU) is an 1890 land-grant institution. It's most recent, and continuous commitment to resource management dates back to 1969 when the institution first introduced a B.S. degree in Natural Resource Management. This major was a broad interdisciplinary program, which included soil, water, forest, and agricultural resource management. It was soon realized that the program lacked specialization. A metamorphosis towards today's forestry program thus began. This evolution coincided with changes in the academic department that houses FEWP. Following is an interrelated chronology of both:

Forestry, Ecology & Wildlife Program (FEWP)		Department of Biological and Environmental Sciences (NRES)	
1969	B.S. Natural Resource Management Program (NRMP) introduced	1969	Department of Natural Resource and Environmental Studies organized
1976	NRMP modified into a B.S. in Timber Harvesting Management Program (THMP) with a strong business minor	1973	M.S. in Plant and Soil Science offered
1986	THMP program modified into a B.S. in Forest Operations Management Program (FOMP)	1986	Department name changed to Department of Plant and Soil Science
1989	Initial expression of interest in forestry program by USDA/FS	1988	Ph.D. in Plant and Soil Science initiated. First such program at an HBCU
1993	FOMP modified to a B.S. in Forestry with Forest Management and Forest Science options	1994	Department's teaching and research reorganized into five centers — the Center for Forestry and Ecology being one of these centers

Forestry, Ecology & Wildlife Program (FEWP)		Department of Biological and Environmental Sciences (NRES)	
2007	Forestry program name changed to Forestry, Ecology & Wildlife Program in conjunction with departmental reorganization	2007	Department name changed to Department of Biological & Environmental Sciences and reorganized into three program areas
2017	Forestry program modifies concentrations to include Forest Business (new), and Fish and Wildlife Science (combined previous concentrations)	2011	Biology Department merged with Natural Resources and Environmental Sciences to become Biological and Environmental Sciences Department
		2011	School of Agricultural and Environmental Sciences becomes College of Agriculture, Life and Natural Sciences

The main reason for providing this historical glimpse is to underscore the longstanding commitment by this small land-grant institution to the department in general and to the forestry program in particular over a span of nearly 30 years. It also shows institutional support in a unique manner. The institution's academic program leaders have encouraged and endorsed logical and progressive changes both in the forestry degree program as well as in the academic department that houses it. It has, for example, permitted specialization from a generalized natural resource management program to a very highly specialized timber harvesting program, etc. as the historical facts above denote.

Breadth and Accessibility

The faculty, staff, facilities and fiscal resources of the Department of Biological and Environmental Sciences are freely shared with the forestry program. The department houses the following programs in addition to FEWP: Environmental Science Program (ESP), and the Biology Program. The following examples may provide an insight in

programmatic interrelationships: aerial photo interpretation and remote sensing/GIS needs of forestry programs (teaching and research) are being met by ESP resources; nutrient analysis of forest soils is also being largely conducted in ESP; tissue culture and molecular biology aspects are being provided by faculty and staff in Biology and ESP. To some extent, programs function with 'lowered walls' in this Department and this administrative arrangement may be unique to our microcosm. FEWP also accrues numerous benefits from the agricultural experiment station component, including the Winfred Thomas Agricultural Research Station. Lastly, a three-university, instate Consortium for Forestry Education and Research, including Auburn University, Tuskegee University, and AAMU, as well as the USDA Forest Service's Southern Research Station and National Forests of Alabama, and the Alabama Forestry Commission supports member institutions' academic and research programs. In many ways, such a cooperative configuration is unique to today's Alabama.

Institutional Weaknesses

Ten years ago, the single greatest institutional weakness that impacted FEWP was the lack of secure state support for the program. Unlike most faculty at AAMU, FEWP faculty did not guarantee their academic year salaries from state allocations. Coverage of general fund salaries for FEWP faculty required a supplemental budget (COE) during the academic year. Over most of the life of the program, FEWP faculty have been hired with the expectation that their academic year salaries would be covered by a combination of University and COE support, with summer salaries being the responsibility of faculty through external funding. In 2008, the SAF site visit team recommended that FEWP seek participation in the USDA McIntire-Stennis (M-S) forestry research program. A rewrite of the Farm Bill legislation that year opened the door for HBCUs like AAMU to participate in M-S. With the advent of USDA McIntire-Stennis forestry research funding beginning in

2009, and especially with the expansion and enhancement of State support in the past several years, this stable support of FEWP faculty issue has largely been resolved. All current forestry faculty are involved in USDA McIntire-Stennis supported research over the summer and academic year. Our newest faculty member was similarly supported on M-S administrative funds when he first joined, but has since joined a new M-S project as Co P.I. with Dr. Naka. We anticipate filling a faculty vacancy this year in a similar manner until she can acquire her own research funding including an M-S project of her own.

Past under-funding of the University by the State of Alabama resulted in inadequate maintenance and deterioration of facilities and equipment. However, major upgrades were brought about through external funding, including the construction of the Agricultural Research Center in 2004, which houses FEWP and more recent renovation of both Carver Complex and Carter Hall where colleagues in our Department are housed. These additions to our facilities provided us with additional laboratory and classroom space and have allowed us to consolidate our program. In recent years we have acquired additional lab and office space for our forestry program in the Carver Complex and in the campus' Greenhouse building. We now have an almost ideal configuration for collaboration with colleagues and interaction with both graduate and undergraduate students, whose educational experiences are further enhanced via greater exposure to our research activities. Since January 2018, we have had issues with the Agricultural Research Center building following freezing weather near 0° F that compromised our heating system with related water damage from burst pipes. We were not the only ones on campus affected by this 'perfect storm'. However, progress has been made quickly to restore heat and return functionality to labs and offices that were affected. Fortunately, our teaching space in the

ARC building was not impacted by the recent events, and our students are well prepared for roughing it in class and related labs.

FEWP faculty feel there is a need for additional University support, both financial and infrastructural, to support instructional needs for our undergraduate program. We need to increase the quality and number of our students and improve our ability to keep the students we have, which requires greater efforts at both recruitment and retention. There is currently a major effort within CALNS to improve recruiting, and retention, which is promising, but more support for faculty efforts is needed, including salary support/release time, in addition to funding to cover travel and other costs in support of recruiting. Additional financial and equipment needs for instruction include a new van, primarily to transport our students for our field-oriented courses (especially our winter and summer field courses). We have attempted to address most of these needs through the supplemental budget request mentioned above and detailed below under Financial Support (Exhibit VI-1).

University purchasing and accounting systems have historically been challenging; there have been some recent improvements, but problems still persist in the timely processing of purchases, travel, and related budget administration procedures. Forms have still largely been computerized and approvals migrated to the BANNER systems that are electronic, but many financial procedures still must be completed by manually and physically moving paperwork through several offices for approval signatures. Often, if unanticipated supplies or repairs are needed to continue a project, given the nature and urgency of the problem the researcher cannot wait to complete the formally accepted approval process, and therefore incurs out-of-pocket spending and submits claim for future

reimbursements. These procedures are very time consuming, requiring faculty members to spend a disproportionate amount of their time handling administrative issues. Improvements continue to be made for electronic processing such as the use of BOX and other documents deposit procedures to aid the flow of required documents.

Our internet server has undergone major improvements in the last decade although we still experience infrequent outages, which have hampered communications, both on and off campus.

We are working with a seasoned administration that shares the common goal of further strengthening and improving FEWP, which is already a strong and vibrant program. To achieve this goal, FEWP faculty strongly believes that the issues outlined above will be addressed in a positive manner. We are hopeful that we can continue to work toward resolving any future problems.

Financial Support

The academic budgets (also referred to as unrestricted or State funds) for the Forestry, Ecology & Wildlife Program for the past three years were:

	<u>14-15</u>	<u>15-16</u>	<u>16-17</u>
Direct allocations	\$547,513	\$526,843	\$532,776

As a result of the accreditation process, the University clarified and increased its support and commitment by providing a separate budget to the Forestry, Ecology and Wildlife Program beginning in 2000. The FEWP budget has been gradually increasing since, primarily because of increases in faculty numbers, salary and the number of courses taught (primarily graduate courses, developed previously in support of the Center for Forest Ecosystems Assessment). FEWP experienced a drop in the budget needed for faculty

instruction in 2014 following the retirement of two faculty members and in 2015, the temporary reassignment of Dr. Christian to the central administration also affected our budget. Courses were taught by existing faculty and an adjunct faculty member (Dr. Heather Howell). In 2016, we added an assistant professor, and in 2018, we will add another. Based on anticipated faculty promotions our budget will likely increase to \$550,000 next year and then to \$600,000/year in the next 5 years. It should be noted that FEWP's budget covers direct expenses within the Program. Indirect support of FEWP (laboratory, computer, recruitment, greenhouse, office, etc. expenses) is still provided through the BES budget. The main significance of a separate FEWP budget is to recognize the importance of FEWP as a provider of a forestry instructional program and academic appropriations. The budgets for the FEWP Program at AAMU and the Center of Excellence (USDA-FS) for 2017-2018 are as follows:

<u>DESCRIPTION</u>	<u>FEWP/AAMU</u>	<u>COE/USDA</u>
Salaries – Faculty	\$357,181	\$100,000
Other Salaries - Secretary	15,880	0
Fringe Benefits	131,689	35,000
Student Wages	4,500	8,000
Office Supplies	2,000	0
Instructional Supplies	1,000	0
Other Supplies	1,000	4,828
Telephone	3,000	0
Postage	1,000	0
Subscriptions	0	0
Membership	4,000	0
Printing	3,000	0
Publicity and Promotion	2,000	0
Computer Support	0	0
Travel	8,000	15,000
Main & Repairs (machine/equip)	3,500	4,360
Main & Repair (Auto)	2,500	0
Furniture/Equipment	5,000	0
Indirect Costs	<u>0</u>	<u>16,718</u>
TOTALS	\$544,250	\$183,906

Some further explanation of the above budget figures for the FEWP/AAMU accounts is necessary. Figures for instructional salary represent the amounts officially budgeted for the program when the budget is received at the beginning of the fiscal year. However, these amounts have consistently been less than those requested by FEWP, based on projections of the number of courses to be taught during the academic year. Additional funds have been made available each year to cover the shortfall in the original budget, on an as-needed basis. Thus, the *actual* instructional salary provided to FEWP is larger than that reported in each of the year's mentioned above. Also, recall that this FEWP budget reflects primarily the instruction budget for 8 faculty at 50% of nine months (plus fringe).

An additional reason the forestry program has attained a level of development sufficient to justify SAF reaccreditation has been its track record in attracting extramural grants; a penchant shared equally by BES faculty. Of significant importance is the effect of the changes in funding of the USDA Forest Service Center of Excellence in Forestry (Exhibit III-2). These grants can be broadly classified into 3 general categories or any combinations thereof: 1) Funds for student support, either at the undergraduate or graduate levels; 2) Support for programmatic enhancement; and, 3) Support for mission-oriented research. The changes to the federal hiring processes with Pathways led to a reduction and the elimination of the USDA Forest Service Multicultural Workforce Strategic Initiative (MWSI) in 2014. Thus, financial resources directly available to students through MWSI and COE were impacted. However, the approximately \$200,000 capacity building grant and opportunities for cooperative research projects and other funds from USDA Forest Service through our long partnership has remained. In total, USDA Forest Service funding amounts to nearly \$400,000/year for FEWP faculty, staff, and students.

Other external grants and contracts from USDA-NIFA, National Science Foundation, USDA-Office of Advocacy and Outreach, State of Alabama Department of Conservation and Natural Resources, Alabama Forestry Commission, Birmingham Waterworks and Sewer Board contribute another \$300,000 annually for FEWP research, educational, work training, and extension endeavors. This does not count direct student employment by the private sector and Alabama Power company for summer employment opportunities and internships for some of our students.

During the past decade, a major impact on FEWP has been the NSF-CREST-sponsored Center for Forest Ecosystems Assessment (CFEA; see exhibit IV-1 for more detail). The effort to secure CFEA was led primarily by FEWP faculty (R. Fraser was the PI on the grant proposal; Co-PIs included Yong Wang, Ken Ward, and William Stone all FEWP faculty at time of submission of the proposal); Dr. Yong Wang served as the Director of CFEA for most of its existence. Additionally, most of the faculty who have been supported by CFEA are members of FEWP (typically, at 10-15% salary support for six FEWP faculty members) and most of the graduate students with assistantship support from CFEA were advised by FEWP faculty. CFEA allowed FEWP to expand its research efforts as never before, with a several-fold increase in graduate students and the addition of several full-time support staff in research, technical and clerical positions. CFEA funding totaled \$5 million over five years. NSF-CREST funding was renewed in 2010 for an additional 5 years. With no-cost extensions, it ended this past year, but several projects that were initiated under this program have been continued in one form or another using McIntire-Stennis funds and other sources of external funding.

In 2000 the citizens of Alabama approved a bond issue to support agricultural research capacity enhancements of equipment and buildings. Approximately \$5.5 million was committed to AAMU for a new building for Food Science, Plant Science, and Forestry. Construction of this 33,710 square foot facility, the Agricultural Research Center (ARC), was completed in 2004. FEWP is now located in the eastern wing of ARC. This has enabled FEWP to consolidate all faculty offices while providing two new forestry laboratories and a new conference room. Labs are equipped for both teaching and research, which has increased contact between faculty and forestry students, allowing for more effective mentoring and advisement.

McIntire-Stennis Funding

In 2009, FEWP was able to obtain USDA-NIFA McIntire-Stennis funding for forestry research projects. In the beginning, the program did not receive a full cash state matching funds from Alabama but rather was partially funded in-kind by the state. However, as of 2015, FEWP has been receiving full cash match to federal funds. In 2017, the program received \$314,300 in federal funds and \$314,330 in state matching funds. The McIntire-Stennis grant program has provided much stability to FEWP in terms of base-level research funding, and faculty and graduate student salaries. The funding has been split among six various faculty projects (and one administrative account). This source of funding is anticipated to provide continuity to our forestry research program as NSF-CREST funding is completed and also serve to provide preliminary research funding to leverage additional forestry research funding in the future.

Faculty Salaries

FEWP faculty salaries had been historically lower than other faculty at AAMU, and also did not compare favorably with the salaries in counterpart forestry (or other natural resource) programs in the southeast and elsewhere. However, in 1998, due largely to the accreditation process, the salaries of the forestry faculty were brought in line with other faculty at the University. In 1999, the University adopted a new minimum faculty salary schedule, in an attempt to bring faculty salaries up to the 85th percentile of the average salaries in the universities in the South; the current faculty salary scale for AAMU was most recently updated in 2008-2009 and is presented on following table:

Rank	Degree	0	1	2	3	4	5	6	7
Instructor	Masters	\$36,452	\$36,817	\$37,185	\$37,556	\$37,932	\$38,311	\$38,694	\$39,081
	Doctorate	\$38,274	\$38,657	\$39,043	\$39,434	\$39,829	\$40,227	\$40,629	\$41,036
Assistant Professor	Masters	\$44,091	\$44,532	\$44,979	\$45,428	\$45,882	\$46,341	\$46,804	\$47,273
	Doctorate	\$48,991	\$49,481	\$49,976	\$50,476	\$50,980	\$51,491	\$52,005	\$52,525
Associate Professor	Masters	\$53,273	\$53,806	\$54,344	\$54,887	\$55,436	\$55,991	\$56,551	\$57,116
	Doctorate	\$59,192	\$59,785	\$60,382	\$60,987	\$61,597	\$62,212	\$62,835	\$63,463
Professor	Masters	\$70,831	\$71,539	\$72,255	\$72,977	\$73,707	\$74,444	\$75,189	\$75,940
	Doctorate	\$78,702	\$79,488	\$80,283	\$81,086	\$81,897	\$82,715	\$83,542	\$84,378

The average faculty salaries in 2016-17 in FEWP, AAMU, the state and the minimums for nine-month appointments are:

	FEWP Mins 16-17	Approx. Univ. Avg* 16-17	Approx. State Avg* 16- 17
Professor	78,702	86,519	110,698
Associate Professor	59,192	70,077	81,740
Assistant Professor	48,991	57,651	67,653

* From Alabama Commission on Higher Education: Faculty Salaries by Gender and Rank 2016-17, 4-year colleges/universities

In the past 10 years, FEWP faculty salaries have remained stable, now averaging more than AAMU overall at each rank. Faculty members received a one-time 2% COLA in 2015/16 academic year, which was the first raise since 2006.

Professional Improvement and Travel

Each forestry faculty member, at a minimum, attends at least two professional meetings annually. Such travel is supported by the state (institutional), federal (Title III Professional Development Grants) and extramural grant funds. The travel funds available to FEWP faculty generally exceed what is available to other Departmental faculty members and is far greater than what is available to other faculty members throughout the rest of the University.

University Counseling and Student Support Services

Office of Retention and Persistence – ORP is a multi-faceted, comprehensive department designed to facilitate and improve student success, retention and graduation rates. Intrusive and proactive academic intervention is an integral part of ORP, enhancing overall student academic and social development. All retention initiatives are designed to assist students in becoming successfully acclimated to the university. ORP is located in

Council Hall. Hours of operation are 8:00 a.m. – 5 p.m., but after-hours appointments are scheduled when students are unable to meet during regular hours. Drop-in tutoring is available at campus satellite centers at select dates and times.

The Freshman Academy – The Freshman Academy is the primary unit providing university academic support services. It is focused on building a strong foundation for incoming, transferring and continuing students. Incoming freshman students are required to take part in the pre-semester preparatory academic summer programs - Student Orientation and Registration (S.O.A.R.) and Bulldog Days, as well as, take the basic university orientation classes (ORI 101, 102) that help students understand college life and how to be successful academically. If a student's GPA is high enough, they can apply to join the University Honors Program for a more intellectually-challenging experience with a focus on academic excellence and community service. Learning communities are available for students to join that enable them to reside, take classes, and study with a cohort of other students. The Freshman Academy also works with faculty to identify students (of any classification) in danger of failing classes before drop dates through Early and Midterm Academic Alert Reports that provide feedback about class performance for students and their advisors. The Freshman Academy also offers opportunities for service-based learning and volunteering.

Tutorial Assistance Network (TAN) – The Freshman Academy also runs the TAN which coordinates and maintains a campus-wide peer tutorial program. Tutors are available in most academic courses and offered at no additional cost to the student. Individual and small group tutorial sessions are provided for those students who are

interested in regular weekly tutorial assistance. Walk-in tutoring is available in some courses for students who only require occasional help.

Centers for Excellence in Teaching and Learning – The AAMU Centers for Excellence in Teaching and Learning provides services for two audiences: 1.) Faculty and staff are given instruction in the most effective strategies for engaging and teaching today's college students including the use of instructional technology, and distance education, which includes web-based instruction and oversight of instruction on off-site campuses; 2.) Student and adult learners through Center for Extended Studies are supported with options for credit from military service, test preparation classes (GRE, GMAT), and certificate programs.

AAMU Leadership Catalyst Institute – The AAMU Leadership Catalyst Institute is designed to provide the participant with a robust experience that will foster individualized personal growth, increase leadership competence/leadership efficacy, better management skills, experiential leadership opportunities/case studies, utilization of better team building strategies, and encourage the leader to engage in reflection as a tool to remain a solid leader. Students will receive a Certified Student Leader designation and be eligible to eventually become a Student Leadership Educator on campus.

Career Development Services – Career Development Services (CDS) helps prepare students for professional success through counseling, resume reviews and referrals, mock interviews, career fairs and expos, professional development workshops and presentations, testing, and club sponsorship. Students are encouraged to register with CDS and submit a resume before they are receiving their diploma.

Office of Community Colleges Relations and Global Initiatives – AAMU's International Programs helps to provide students with the opportunity to obtain a relevant and meaningful international experience in college by informing, supporting, and preparing students for appropriate international academic travel and study. This office also assists in transferring students from other institutions to AAMU. This is particularly relevant to FEWP given the number of transfer students we have received in the past decade.

Student Health and Counseling Services - The John and Ella Byrd McCain Health and Counseling Center, which is operated under the Office of Student Affairs, seeks to promote the well-being of the Alabama A&M University community and generate a healthy campus culture by providing integrative healthcare services based on industry best practices by promoting physical, emotional, and spiritual development in a safe, supportive, and confidential environment. The Student Health Center is an outpatient center that provides both clinical and educational functions (services) for all students while enrolled at Alabama A&M University. A walk-in system is employed, and students may report for service at any time the center is open. The health center is opened from 8:00 A.M. - 5:00 P.M., Monday – Friday and closed on Saturday and Sunday and when school is not in session. Services obtained at the emergency room(s) must be of an acute/serious nature. Other minor services can be obtained at a walk-in clinic (referral needed). Services offered include a medical clinic for routine acute and preventive medical care (including a primary medical provider), women's and men's health care, lab or in-house lab work, pharmacy, allergy treatments (at direction of patient's allergist), vaccinations, and health education (including outreach programming and campus health events). Mental health services include private counseling sessions and group sessions supporting drug

rehabilitation, LGBTQIA students, and staff, female student issues. Most physical and mental health services are provided with no out of pocket charge (i.e., covered by Student Health Insurance)

Council Federal Credit Union (FCU) – The Council FCU is available for all students to open checking, savings, or loan accounts. The FCU is based on campus and includes free notary services.

Confucius Institute at Alabama A&M University

In 2014, the Confucius Institute at Alabama A&M University (CIAAMU) was created with a partnership between the university and the Confucius Institute Headquarters in China. Since its establishment, CIAAMU has focused on Chinese language teaching and promoting Chinese cultural exchange and cooperation between the US and China, including jointly developing academic exchange programs with its partner school, Nanjing Forestry University (NFU). CIAAMU provides opportunities for FEWP students to learn Mandarin Chinese through credit and non-credit courses. In addition, academic exchange programs provide opportunities for FEWP to host Chinese forestry students from NFU through both short-term (summer) and long-term (semester or degree-length) bases.

A National Science Foundation Research Experience for Undergraduates (REU) grant, as well as support from the Chinese government, has allowed FEWP students, staff, and faculty to travel to China to experience Chinese culture and collaborate on short-term research projects through an annual 4-week summer travel program. A majority of the FEWP faculty members and administrators have traveled to China under

this program. Last summer, 7 undergraduate students in forestry travelled to China for international education and research opportunities. Forestry undergraduates have been travelling to conduct research with faculty at Nanjing Forestry University and others during the summer for over 5 years. Results of some of those have been presented by students at the SAF national convention and related scientific meetings.

Learning Resources Center (Library)

FEWP has worked closely with the Learning Resources Center (LRC) at AAMU over the past seventeen years to build the library's resources to ensure that the needs of the faculty and students are met. As part of the USDA Forest Service Center of Excellence, the capacity enhancement component has included two main thrusts, forestry program enhancement and library enhancement. It was recognized from the first proposal submitted for the Center of Excellence in Forestry that an investment in the library was needed to achieve the necessary level of support for an accredited program in forestry. Between 1996 and 2007, approximately \$525,000 was invested in the LRC from Center of Excellence funds to enhance the library's capacity. Since 2008, approximately \$12,000 to \$45,000 annually has been dedicated to maintaining and improving these resources. These investments have been above the resources and manpower utilized by the University to support the forestry program.

For the past fiscal year (2017-2018), the LRC has continued to enhance and maintain information resources for education, research and outreach in forestry by renewing current sources and identifying additional resources. These resources were in all formats, such as books, software, journals, and online databases. In addition, computers

and printers were purchased, upgraded, and maintained to improve workflow and provide more effective services for faculty, students and patrons. The LRC has also secured a Grammarly site-license for students and faculty allowing for use of the website and Microsoft Office plug-in to improve writing and grammar usage, and to reduce the amount of incidental plagiarism. FEWP has also funded the acquisition of foreign language software to improve communication skills (in particular, Mandarin Chinese). The LRC continues the partnerships and electronic linkages between AAMU and University schools and departments within the National Agricultural Library (NAL), the Network of Alabama Academic Libraries (NAAL), and other libraries.

LRC services include high-quality resources, services, and instruction to students, staff, and faculty independent of time and place. These services include access to the entire library collection, including books (print and electronic) and print journals, as well as electronic journal resources via EBSCOhost (Full Text, Citation, and Abstract). Recent acquisitions related to forestry have included ExpertGPS software for use in timber cruising, a collection of SAF-published forestry books, and a subscription to TimberMart-South for use in *Forest Resource Economics* and *Forest Ecological Management Project* (capstone).

Basic LRC Holdings Description:

599 Book Titles (Forestry) including e-books

60 Journal Subscriptions and online database subscriptions (i.e., JSTOR, JOVE, Bio-one 1&2, EBSCO Forestry and STEM)

The LRC has approximately 87,000 sq. ft. which have a collection of over 300,000 volumes. The seating capacity is 1000 and includes conference rooms, a computer lab, an auditorium, and a convenience store. Recent updates to the LRC have included a Makerspace with access to 3D printers and modeling software. In addition, the LRC has a forestry display near the main circulation desk that has information on forestry, FEWP, and a selection of texts, pictures, equipment, and wood products. A brief video of FEWP students' testimonials will soon be added to complement the forestry display.

Computer Support

A description of the basic computer system available and the associated services is given in Section 2 of this standard, below. All FEWP faculty have relatively new desktop and/or laptop PCs with all necessary hardware and software to perform their duties (site-wide SAS license, site-wide ArcGIS license). Additionally, multiple laboratories are dedicated to teaching and student use for GIS and SAS, including one associated with FEWP and located in the Agricultural Research Center. FEWP is currently slated to join REMSsoft's Educational Partner Program this Spring providing the program a site-license for their Spatial Planning System and offering students the opportunity to learn how to use industry-standard forest modeling and analysis software. The ARC computer lab, used for the teaching of selected FEWP courses, was originally established with the support of International Paper Corporation and has been updated over time using COE funds. Most FEWP students have their own personal computer systems and only use university lab space for site-licensed programs. Individual computing capability has not been an issue. Teaching, learning, and assessment for students and faculty are facilitated through

university-licensed and web-based Blackboard, GradesFirst, and Degree Works software packages.

All university students are provided with Google-based email, storage and other software services (Google Docs, etc.). In addition, Microsoft Office 365 (both web and PC based) are also provided, at no additional cost, to each student and faculty for the duration of their tenure at the university. In addition, faculty, staff, and students have access to Bulldog Central print and mailing services for printing projects too large or complex for the program or departmental labs and offices.

Facilities for Teaching and Research

The Forestry, Ecology and Wildlife Program (FEWP) at AAMU is currently housed in the Agricultural Research Center (ARC). FEWP is located in the eastern wing of ARC, which was constructed in 2004 at a total size of 33,710 square feet. Funding for construction of ARC came from an Agricultural Bond Issue approved by Alabama voters, which supports agricultural and forestry programs at Alabama's Land Grant Institutions. FEWP has space dedicated to eight faculty offices, one office for a research associate affiliated with the USDA Forest Service, three laboratories (forestry/forest products, wildlife and a computer/GIS), one library area and a graduate student room, as well as access to a conference room, reading room, and a secretary/administrative assistant reception area. Together, these areas total more than 10,600 square feet. ARC also has an auditorium equipped for audiovisual activities and computer use, with a seating capacity of 100. The remainder of the eastern wing of ARC is occupied by additional faculty and staff of the Department of Biological and Environmental Sciences (BES, within which is

FEWP), including faculty offices and two research labs dedicated to molecular genetics/biotechnology and soil microbiology. The western wing of ARC is occupied by faculty and staff of the Department of Food and Animal Sciences.

The forestry/wood products laboratory is equipped for both educational and research activities and includes tables and seating for 16 students; there is also a storage room, used primarily for forestry equipment and instructional supplies. The lab is used by FEWP faculty to teach a variety of courses, particularly those with lab sections, including forest products, forest mensuration, silviculture, dendrology and forest pest management. The forestry/GIS laboratory is equipped with 12 computers, with access to advanced GIS (ARC GIS), remote sensing software (ERDAS), office, and advanced data analysis software; there is also an HP printer/scanner and 42" color plotter housed in this lab. The wildlife laboratory is mainly equipped for research and teaching activities in wildlife and ecology, including wildlife anatomy and identification and insect ecology/pest management (including sorting of collections and curation of a growing insect/arthropod collection). The lab has seating and table space for up to 12 students and includes a wet lab, within which is a fume hood. There is cabinet space for storage of specimens and supplies and a storage room primarily used for field equipment used in both research and instructional activities. The wildlife lab also provides major support for research activities associated with the McIntire-Stennis funded research, including storage space for equipment/supplies and collections and space for sorting of field samples. The Gordon White forestry library area contains a large number of books, journals and other literature, some of which has been donated by faculty and other friends of the program and is used by students and faculty for a variety of activities, including instruction. Part of FEWP's

ARC space is occupied by a graduate student room, with partitioned space and desks for 9 students, all of whom are associated with FEWP.

ARC has a security system which restricts access to the building and the laboratories, reading room, library and graduate student area. Access is provided by key cards, which are assigned to faculty, staff and students who require access during off-hours. Key card use is authorized by Departmental Chairs (BES and Food and Animal Sciences), in conjunction with the Dean of CALNS and the Director of Physical Facilities.

Outside of ARC, BES is primarily located in the nearby Bonner (BW) and Thomas wings (TW) of Carver Complex (CC. CC-TW is a two-story structure of approximately 30,000 square feet, approximately half of which is allocated to the Department. Laboratories within the Department are also well equipped with the latest state-of-the-art instruments for various research and instructional activities in such areas as plant molecular biology and tissue culture, soils, plant physiology, phytopathology, entomology/pest management, GIS and remote sensing, and water and soil analyses.

In addition to ARC, FEWP, as part of BES, has access to computers, statistical, graphics and computing facilities in Carver Complex. Additionally, there are three computer labs two of these are located in Carver Complex and one in ARC (computer/GIS lab mentioned above); all three are available for use by forestry students. These labs provide access to general software as well as professional software packages in each specific area.

All of these labs have a distance learning capability, to which students are exposed through such courses as *Technology in Agriculture and Biosciences* (required in the

forestry curriculum). One of these labs in Carver has been associated with the Hydrology, Soil Climatology and Remote Sensing Center within BES (now part of the Environmental, Soil and Water Science program) and is equipped with 20 computers for use by departmental faculty and students. There are five other computer labs accessible to forestry students elsewhere on campus with similar capabilities (excluding GIS software). Networking and computing facilities available to the faculty include the Alabama Supercomputer Network (ASN) and the Internet; SAS and ArcGIS are available to all faculty members within the Department

A 10,650 square foot greenhouse facility with two head houses and two labs between Carver Complex and ARC is available for use by BES personnel including FEWP faculty. Additional research laboratories and storage areas located away from Carver Complex include specialized shade houses and research greenhouses at the Winfred Thomas Agricultural Research Station (WTARS), located approximately eight miles north of campus. The WTARS is an essential component of the College's and Department's programs, serving as an outdoor instructional and research laboratory for students and faculty to perform basic and applied research in forestry, environmental and agricultural sciences. The total area of the WTARS is 907 acres, of which 500 acres have been allocated to BES. A natural resources and environmental sciences field research facility was constructed in 1998-99 at WTARS, supporting departmental teaching and research. This facility includes four 1,600 square foot laboratories dedicated to agronomy, horticulture, forestry/pest management, and environmental science/soil science.

In 2017, the student firefighting crew, AAMU Fire Dawgs, and the associated staff member, Daryl Lawson, moved from the campus greenhouse to the Alabama Forestry

Commission (AFC) office building in Brownsboro, AL. The AFC was not using the building space, and the move offered more flexibility and easier access to field sites for the firefighting program. This facility provides several offices and a storage area for firefighting and other forestry equipment.

Materials and Equipment – Instruction and Research

Field/Lab facilities/equipment/supplies- Currently, sufficient materials and equipment have been acquired by the FEWP to adequately furnish a class of 24 students taking any of the forestry field courses. Most of this equipment has been purchased in the past year and is in excellent condition. Currently, FEWP has 2 vans, both of which are old and in need of replacement, dedicated to the program. Vans are used primarily for instructional purposes (field trips, etc.), while pickups are used for a variety tasks, including field research activities. Vans for traveling to the field and to scientific conferences are also available from our Department and College, including our recent trip to the SESAF conference in Pine Mountain Georgia. Additionally, there are multiple trucks, vans, minivans, and SUVs associated with FEWP, but dedicated to particular externally funded projects, primarily for field research activities. Additionally, a 20-foot boat is available to support instructional and research activities associated with the fisheries curriculum. We also have purchased two smaller john boats with motors for research and an electroshocking boat to enhance our growing research in water resources and aquatic ecology with colleagues in our BES Department. A Wood-Mizer portable sawmill was purchased in 2016 to provide support for instruction and research in wood products. Additional important materials/supplies and equipment include:

Li-COR 8100 soil flux system, several hand-held GPS units and one back-pack unit, digital cameras, compasses, cruising vests, prisms, D-tapes, DMEs, increment borers, logger's tapes, hardhats, camping supplies, leaf presses, insect collecting/trapping (malaise traps, Lindgren funnels, etc.) supplies, insect curation/collection supplies, fire rakes and flaps, Pulaski's, Biltmore sticks, calipers, bark gauges, altimeters, Wheeler pentaprism tree caliper, planimeter, Spiegel telescopes, clinometers, wildlife field study equipment (trapping devices), flagging/labeling supplies, first aid supplies, camping equipment, tree/log marking supplies, dissecting microscopes (sufficient to supply wood products classes), one high quality stereo-microscope for insect taxonomic work, leaf collection supplies (leaf presses, mounting materials), drip torches, chain saws, height poles, pole pruners, air and water quality meters, CO₂ monitors, radio transmitters and receivers, refrigerator (freezer), mist nets, backpack electro-fisher, head lamp, digital max/min thermohydrometer, digital scale, soil temperature sensor, laminating machine, chemical safety lab hood, insect cabinets with drawers, aquatic soil corer, large capacity forced convection oven, PAR Ceptometer, DVD/CD recorder, data loggers.

Several other laboratories are also available to FEWP personnel and forestry students for instruction and research, in addition to those already mentioned. These include the Departmental Teaching Lab and the Horticultural Landscaping Studio, both of which are occasionally used for such courses as *Forest Pest Management*, *Dendrology*, *Silviculture*, *Mensuration* and *Forestry Field Techniques*; the FEWP field laboratory at WTARS and the Departmental Tissue Culture Laboratory, used mostly by faculty and graduate students to accomplish research objectives and by undergraduates to learn about specific research techniques. Field areas accessible for instruction and research include an

arboretum containing several dozen species of trees located on the campus of AAMU, a small upland hardwood forest (approximately 20 acres) located on university property and WTARS, approximately 200 acres of which is dedicated to the FEWP for instructional and research purposes. Undergraduates frequently have field trips to this property in labs, and the student SAF chapter and Forestry Club hosted the 2009 Southern Forestry conclave at WTARS and the associated 2009 Stihl TimberSports contest at the campus Agribition Center. Several new projects at WTARS have recently expanded acres dedicated to forestry (including 62 acres of short-leaf pine).

Forestry students also have access to Auburn University's Solon Dixon Forestry Camp, as well as the Rural Training and Research Center (Federation of Southern Cooperatives) for field-oriented coursework and other activities, primarily during the Forestry Field Techniques courses taught in the spring and fall and required of all forestry students.

Classroom facilities/equipment/supplies- FEWP faculty have individual computer projectors and laptops for classroom and presentation use. Additionally, audiovisual equipment associated with the ARC auditorium and conference room is available for use by forestry faculty for instructional and other purposes and is slated to be upgraded in the near future. Departmental computer-teaching labs (including a teaching lab and dedicated GIS facility) mentioned earlier are also available to FEWP faculty for teaching/research and to forestry students for additional study, tutorials, etc. Formerly, courses were officially held in classroom buildings on campus, but labs were scheduled in the ARC building. However, beginning in 2016 we have been able to schedule only forestry courses in our lab instructional spaces officially and exclude the University from offering

non-forestry courses there, thanks to a new software program used by the Registrar's Office.

It should be noted that the FEWP has its own university budget, independent of that of the department. This budget includes funding for the purchase of instructional supplies and equipment exclusively for FEWP's use. Previously, funding for the purchase of instructional materials (especially materials needed specifically for forestry courses) was obtained primarily from external sources, especially the USDA Forest Service capacity building enhancement project.

Future Needs, Plans, and Goals – FEWP

The major goal for the FEWP at AAMU is to sustain and grow a SAF-accredited program, including adding to and enhancing our forestry concentrations. Every member of the current complement of FEWP faculty has been trained and certified as Online Instructors. Consideration is, therefore, being given to the possibility of offering some of our forestry courses as either hybrid or online options in the near future.

The quality and availability of facilities, equipment, and supplies dedicated to instruction and research have been critical to the accomplishment of this goal. One of the critical needs of FEWP continues to be the replacement of FEWP's aging fleet of two vans used for field instructions. Although current AAMU facilities are adequate to support an accredited program, the need for additional space is still an issue. Office space has always been a problem with respect to staff and graduate students, and additional dedicated laboratory space is needed for FEWP faculty. Additionally, the USDA Forest Service

Research Work Unit housed at AAMU is empty at this time with a goal to be filled in the near future.

Part of FEWP's growth in the past several years can be attributed to the COE and Center for Forest Ecosystems Assessment, which was responsible for the rapid growth in FEWP's graduate program, but which also provided resources to hire additional technical and support staff. While the addition of McIntire-Stennis funds have helped to provide stability to the program, the closing of the CFEA project means that additional avenues of funding and support to further expand the FEWP program will need to be explored by the Program in collaboration with the administration as efforts to further develop this flagship program and point of pride for the University advances.

Finally, the transition from in-class paper 'course evaluations' to the electronic format a couple years ago has presented several challenges, including technical issues and poor student response rates. This matter, which no doubt is of concern at the level of the university's administration, has implications for our ability to undertake comprehensive program evaluation as well as for individual faculty promotion and tenure application in the long-term. We are hopeful and confident that this matter will be resolved in the near future.

STANDARD V

FORESTRY CURRICULUM

General

Our educational objective is to educate broad-based, ecologically aware forest managers, providing them with a background sufficient to begin professional careers in forest management for multiple purposes with either private organizations or public agencies. The distinctive quality of our program is that we are the first (and currently only) four-year program in Forestry (Bachelor of Science) at any historically black college or university. Because of that, one of the program's goals is to enhance the workforce diversity of the forestry profession at large, including both public agencies and private organizations. Because forestry is a complex field with a wide variety of potential future job responsibilities, meeting this goal requires students to complete course work in subject areas which provides professional breadth. The 17 required courses (56 credits) in our Forestry major were designed to provide students with a broad-based background in forestry. In addition to the 17 required courses, each student must select a 21-credit Concentration in a sub-discipline of Forestry. Two-thirds of the Concentration must be composed of courses from the Forestry Electives list. Specific curricula for the required Forestry courses and the five 21-credit concentration areas (Ecology, Fish and Wildlife Science, Forest Business, Forest Management and Forest Science) are shown in Appendices A and B of this report. The creation of specialized Concentration areas using a restricted set of Forestry Electives is the most far-reaching change to our curriculum in the past decade.

The Forest Management concentration (see Exhibit V-1 and Appendix B) was designed to meet the needs of students who plan to immediately pursue professional forest land management as a career. In order to design a curriculum with the necessary breadth, we solicited input from a curriculum committee composed of professionals representing forest industries, the USDA Forest Service, the National Forest System, and the Alabama Forestry Commission. The GS-118 standards for professional foresters and the SAF accreditation standards were also utilized in the development of this curriculum. It is, therefore, by its nature a very broad-based curriculum and does not leave room for many free electives. The specified forestry electives for this concentration were changed in 2011 from *Aerial Photo Interpretation*, *Natural Resources Management*, *Wildlife-Forestry Relationships*, *Introduction to GIS*, and *Wood Products* to *Wood Products*, *Forest Recreation*, *Forest Fire Ecology and Management*, *Forest Operations Systems and Management*, any other Forestry elective class. Both *Intro to GIS* and *Wildlife-Forestry Relationships* became required forestry courses for all Forestry majors starting in 2011.

The Forest Science concentration (see Exhibit V-1, Appendix B) is designed for students who intend to pursue post-graduate education or to design their own flavor of forestry with at least 14 of the 21 credits coming from a list of forestry electives. Forestry electives are junior and senior forestry and natural resources courses taught by the FEWP faculty that are not specifically required for the forestry degree. More flexibility is allowed in the Forest Science curriculum so that the student, with the help of his or her academic advisor, may take courses designed to prepare him or her for specialization in a certain subject area. The Forest Science student therefore has greater latitude, with seven hours of free electives and fourteen hours of forestry electives allowed for graduation. The free

electives can also be selected in order to prepare the student for a specialty in graduate school and/or for advanced training in statistics or technical writing. The student's academic advisor must approve all electives. Additionally, it should be noted that the flexibility in the Forest Science curriculum facilitates the pursuit of specialty areas such as forest management above. Ten years ago, the forestry program included a 21 credit minor in wildlife biology and an 18-credit minor in Fisheries where only 9 credits could overlap in Major and Minor. In 2011, the University Standards Committee and the Alabama Commission of Higher Education approved the recommendation of faculty to incorporate the two minors totally with the Forestry B.S. degree as two 21-credit concentrations patterned after the example of Forest Management and Science. This paved the way for the approval of two additional concentrations in 2015 (Ecology) and 2017 (Forest Business) and the merger of Fisheries and Wildlife Biology into one concentration (2017). Ten years ago, forest management and forest science were essentially 18-credit hour concentrations of the Forestry B.S. degree. Today there are five 21-credit concentrations in the Forestry degree.

Since the last accreditation review, we have made some important changes to our required curriculum to improve the educational offerings we have for our students. These changes were made in response to advice or concerns expressed by FEWP faculty, our external curriculum advisory committee and our 2008 SAF accreditation committee. Also, in 2008, the University began using the on-line BANNER system for course registration. In the past year, we have begun to use BANNER for student advising as well through BANNER's DegreeWorks program. As the University migrated our curriculum over to this new system for verifying graduation requirements, the separate but overlapping

requirements for curricula in Forest Management BS and Forest Science BS were combined into Forestry BS with separate 21-credit hour concentrations in Forest Management and Forest Science. It became clear that the required forestry courses were similar with a few alterations. Changes were:

- a. Requirement of an introductory GIS course (NRE 365) and a forest wildlife habitat course (NRE 387) for all Forestry majors, and
- b. Elimination of a 4-hour course in *Calculus I* (MTH 125) as a requirement in the Forest Science concentration.

The curriculum changes allowed us to maintain some flexibility in course selection or define and develop program specialties by restricting flexibility in the selection of forestry electives. Flexibility is most reflected in the Forest Science concentration under which students must select a minimum of 14 credits of any forestry elective courses that are listed in the Undergraduate Bulletin. More specialized concentrations are then derived by further restricting the choice of forestry electives by requiring a certain set of forestry electives (and also free electives in the case of the Forest Business concentration) to define specialized subdisciplines or related forestry subject areas (e.g., forest business, forest management, ecology, and fish and wildlife science, etc.) that students wish to pursue beyond the required forestry courses.

Another significant change in our curriculum discussed at the first accreditation review involved further development and modification of the capstone course, *Forest Ecological Management*. In 2008, we began to offer the capstone experience in two senior courses totaling 6 credits rather than one 3-credit course. Upon further discussion, the consensus among FEWP faculty was that a new 2 –credit prerequisite course in the Fall

was needed to fully prepare students for the 4 credit capstone course in the Spring. Because of the difficulty in adding more coursework to a tight curriculum, the most feasible alternative was to eliminate an existing course that was already required of all students. FEWP faculty felt that our *Silvics* (NRE 374, 3-hours) course was best suited for formal elimination. Course content in *Silvics* was modified and moved to the required *Dendrology* and *Silviculture* courses. This allowed *Forest Ecological Management* to be moved to the *Fall semester, reduced by one credit hour and redefined in the University's Undergraduate Bulletin*. Students are required to take this course in the fall semester of their senior year as a prerequisite to taking the new 4-credit, capstone course, *Forest Ecological Management Project*, the following spring semester. This enables students to collect field data and otherwise prepare them for project/plan completion during the capstone course, which was not formerly possible. Also, the Spring capstone course was rescheduled to an all-day field course/computer lab course on Fridays. This did require slightly adjusting the scheduling of *Silviculture* (and other courses) to free-up the capstone instructor's schedule to be available to seniors all day on Friday.

Other significant changes to the forestry curriculum involved splitting our 6-credit Forestry Field Techniques course in the summer semester to two 3-credit courses formally offered in the Fall and Spring semesters. However, the bulk of the work in these courses is completed immediately following both semesters during a two-week long intensive field experience in December and May. This change was made for several reasons including the need for students to start their summer forestry employment earlier in May, the separation of federal financial aid awards during summer from the awarding process during the regular academic year, and the University's faculty salary changes for the summer semester. The

transition had already been occurring informally prior to the formal change in 2013-2014 AY by external grants from the Forest Service that facilitated the winter field experience in December, among other things.

Finally, in 2014, the general education requirements were modified slightly to conform to the same requirements for the accredited forestry program at Auburn University. Prior to 2014, the Alabama Commission of Higher Education (ACHE) recognized two different Forestry degrees in the State and assigned different C.I.P. codes to them. However, the general education requirements and major requirements were similar once AAMU's forestry degree became accredited. The ACHE desired the Deans at the two universities that were responsible for the forestry programs to design a common list of general education requirements for the two programs to aid students at two-year colleges in the State to transfer seamlessly to either forestry program. Thus, in 2014, AAMU changed its required sequence courses from literature to history, added an *Introduction to Philosophy* course or other suitable ethics course, and replacing *Introduction to Plant Science* with *Biology II and Lab*. However, in 2016, *Introduction to Plant Science*, which had remained a Forestry elective when dropped as a requirement, was re-required following changes to State articulation agreements to identify at least 64 transferable hours in our curriculum at the freshman or sophomore level.

Interrelating Coursework and Integrating Pedagogy

Courses in forestry (Exhibit V-2) are naturally interrelated. Our program emphasizes this fact in several different ways. *Introduction to Forestry* is the first place the student is exposed to the interrelationships among the various forestry specializations. Students are introduced to forest biology and ecology, forest measurements, forest utilization, and forest policy and shown how all those factors interact to influence forest management.

Other courses also emphasize the interactions through the utilization of concepts learned in one course to carry out assignments in others. *Silviculture* and *Forest Mensuration*, for instance, are co-requisites. The labs for the two courses are consecutive adding up to five hours at a time, and this allows instructors to travel to sites close by and further away. Furthermore, several of the exercises are related. Students learn compass and pacing skills in *Forest Mensuration*, for instance, and then use those skills to produce stand maps in *Silviculture*. They then use the stand maps developed in *Silviculture* to set up a stratified random cruise in *Forest Mensuration*. Timber cruising techniques are introduced in *Forest Mensuration*, and they are used to perform regeneration surveys in *Silviculture*. Growth and yield models are introduced in *Forest Mensuration* and then used to evaluate management strategies in *Forest Ecological Management*. Economic analyses introduced in *Forest Resource Economics* are also utilized in *Forest Ecological Management Project*. Statistical concepts introduced in *Biostatistics* are further reinforced in *Forest Mensuration*. Forest protection, covered by *Forest Pest Management* and *Forest Fire & Ecology* courses, is discussed as a goal of *Silviculture*. Implications of issues

described in *Natural Resource Policy* are discussed in relation to public lands management in *Forest Ecological Management*.

Forestry is a profession that quite naturally leads to this interrelated approach, but it also requires offering instruction with various teaching styles and methods including lecture, discussion, mathematical problem solving, recitation, computer applications and simulations, individual and group projects, and field and lab experiences. Nearly all required forestry courses and many forestry electives in our curriculum include a lab section. This is an important part of the course for students to practice what the professors preach in lecture and other classroom instructional delivery methods. Once again, this begins in *Introduction to Forestry* with field trips to forests to discuss and demonstrate ecological and management principles. These students include a portion of our participants from the Forestry Summer Research Apprenticeship program that have already been informed about field safety procedures, but we cover them again for everyone to practice the most important job in forestry: staying safe. Years ago, our faculty and staff crafted a field and lab safety instruction handout to review with students. This is distributed and discussed in the apprenticeship program, in lower level courses, and in *Forest Ecology* lab where transfer students may be first exposed to outdoor instruction. Two years ago, a student inadvertently stepped on a nest of yellow jackets in *Forest Ecology* lab in a city park across the street from our building on campus, but the instructor was prepared with first aid and knowledge of the students' potential allergies to wasps and medicines. All of our vans have a first aid kit in them that gets replaced every other year. Members of the FIRE DAWGS fire-fighting team, as well as participants in forestry labs and other field trips, complete our medical information sheet and waiver. This was especially handy when

a student had a medical emergency during our Spring multiclass field trip in Birmingham three years ago. The faculty had names and numbers of parents, medical information, and location of nearby clinics and hospitals. The student recovered quickly thanks to quick action of staff, fellow students, and medical personnel. The Dean was gratified that we were able to handle the situation satisfactorily. Of course, FIRE DAWGS use radios for communication and safety, wear personal protection equipment, and drill in safety procedures. This has kept their safety record spotless for nearly a decade.

Other courses where a diverse set of instructional methods are used include *Wildlife-Forestry Relationships* where lecture content is placed on-line using Blackboard Learn, lectures are occasionally given, field trips are used to acquire original data, students write lab reports in technical writing format, and one of the labs is held in conjunction with other courses in the Spring junior core. Also, students in this course read forestry articles from the Journal of Forestry for discussion in class. *Forestry Field Techniques I and II* is another example where a variety of learning methodologies are combined to achieve student learning outcomes. These courses utilize timber cruising, problem-solving, journal writing, and field tours to provide students with a breadth of forest experiences and learning methodologies. *Forest Resource Economics* is another course where the lecture is combined with computer applications and simulations to demonstrate the present net value of various alternative forestry investments through time. Of course, the capstone course series, *Forest Ecological Management*, and *Forest Ecological Management Project* are the best examples where students conduct a forest resource inventory in the field, acquire property information from remote sensing in the G.I.S. lab, use forest visual simulators, apply habitat suitability models, use growth and yield models, perform economic analyses

and compose a written forest plan as a group project. The plan is presented orally to the faculty and public and then defended before the forestry faculty.

In summary, FEWP has recognized the need to emphasize the interrelatedness of the various subject matters and integration of various learning pedagogies to achieve competencies in forest ecology, measurement management and economics and policy. FEWP has made a strong effort accomplish this goal beginning with *Introduction to Forestry*. The best realization of interrelatedness is found in *Forestry Field Techniques I and II* which consist of field labs and tours covering practices in forest mensuration, surveying, silviculture, wood products, non-timber forest products, wildlife forest operations, forest recreation and forest soils with the variety of instructional methodologies described previously. The capstone course series brings the breadth of forestry disciplines, synthesis of curriculum competencies and variety of learning platforms together for the “final exam.” Students definitely feel well tested after completing this challenging experience.

Reinforcement of Skills

A. Written Communication

In addition to 15 hours of English Composition and Humanities courses required in the Forestry curricula, writing is reinforced within the Forestry curricula through several different mechanisms. Students are introduced to technical and scientific writing during the *Introduction to Forestry* course. They are required to write term papers or class reports in several classes (*Introduction to Forestry*, *Natural Resource Management*, *Forest Pest Management*, *Silviculture*, *Natural Resource Policy*, *Forest Recreation*, *Wildlife-Forestry Relationships*), take essay exams in several courses (*Silviculture*, *Natural Resource Policy*,

Forest Resource Economics, Natural Resource Management, Forest Pest Management), write critiques of issue-oriented papers (*Natural Resource Conservation Management*), maintain field notebooks (*Forest Pest Management, Forestry Field Techniques I and II*), write lab reports (*Silviculture, Forest Mensuration*) and forest management plans (*Forest Ecological Management Project*). *Silviculture* students are required to write a term paper on the silvicultural strategies typically employed in a region outside the South.

B. Oral Communication

Oral communication is also reinforced in several forestry courses. Students are required to take part in several debates on current forestry controversies in *Natural Resource Conservation and Management*. Classroom presentations are required in *Wildlife-Forestry Relationships, Forest Recreation, Wood Products* and *Natural Resource Policy*. Other classes encourage students to participate in classroom discussions. Seniors must orally present their group project (Forest Plan) in the *Forest Ecological Management Project* capstone course, and defend it to the faculty.

C. Computer Skills

Computer skills are emphasized through the use of spreadsheets (*Forest Mensuration, Forest Resource Economics, Forest Ecological Management and Project*), word processing (courses that require papers or/and reports), presentation software (courses that require presentations) and utilization of computer growth and yield models (*Forest Mensuration, Forest Ecological Management*). Students are also required to take one computer course (*Technology in Agricultural and Biosciences*) in general education requirements to demonstrate computer literacy. Future plans for the curriculum include

converting about eight courses to an online format, but the faculty agree that the entire curriculum would suffer in quality if certain core courses were converted to being entirely on-line.

D. Critical and Analytical Thinking

These skills, and problem-solving skills in general are emphasized in a variety of ways. Students are assigned sides (pro or con) in debates, and written critique assignments conducted in *Natural Resource Conservation and Management* and *Environmental Policy and Law* and are required to think critically about problems assigned in ways with which they might disagree. In *Forest Resource Economics* students are assigned problems they must solve analytically. In *Forest Ecological Management* and *Forest Ecological Management Project*, students must develop a management strategy that will satisfy a set of landowner's objectives presented to them. This often means analyzing alternative management prescriptions and balancing prescriptions with a present net value with the desires of the landowner. *Forest Mensuration* also stresses problem-solving skills in the design of a forest inventory system. In *Natural Resource Policy* students are expected to critically analyze a natural resource within a public policy framework.

E. Current and Historical Issues

Natural Resource Policy is the course in which current and historical issues is most emphasized, but other courses present various issues as well, beginning in *Introduction to Forestry* with a description of the history of the U.S. Forest Service. In *Natural Resource Conservation and Management*, current controversies in forestry make up the topics for several classroom debates. These topics include issues like the banning of clearcutting in

National Forests, the Endangered Species Act, the benefits of timber harvests on National Forests for local economies, and others. In addition, students are required to critique published opinion pieces on current environmental/conservation issues and are expected to increase their knowledge of natural resource conservation history. In *Silviculture*, Best Management Practices are discussed, along with professional foresters' obligation to follow them. Forest management plans written in *Forest Ecological Management* must include implementation of BMPs. The benefits of maintaining corridors of undisturbed forest are also described during the discussion of harvest planning in *Forest Operations and Management* and *Forest Ecological Management Project*.

F. Professional Ethics

Professional ethics are also first introduced in *Introduction to Forestry* with a description of the range of approaches to forest management from preservation to exploitation, and a discussion of the current SAF Canon of Ethics. Ethics is discussed during various other classes in the context of policy in *Natural Resource Policy*, sustainability in *Silviculture* and *Forest Ecological Management*, ecosystem management in *Introduction to Forestry and Forest Ecological Management*, timber sales and forest business in *Forest Resource Economics*, and work quality in *Forestry Field Techniques* and *Forest Mensuration*. The *Natural Resource Conservation & Management* course provides a framework for the continued consideration of ethics as they relate to a variety of subjects, through class discussions/debates and writing assignments on often controversial issues related to the environment and natural resource conservation.

G. Course Evaluations

Each course taught in FEWP is evaluated by the students taking the class. These evaluations provide a seven-point scale for the students to rate various aspects of the course, including the material presented, the style of presentation, and the promptness of grade reporting and instructor feedback. These evaluations are averaged, and instructors are informed of their averages, along with College and University averages. Instructors use these evaluations to identify their strengths and weaknesses and make improvements where warranted. Course evaluations are one of the criteria used to evaluate faculty yearly performance, and therefore are a factor in tenure and promotion process. Examples of course evaluation forms, along with recent evaluation summaries are included in Exhibit V-3.

Instructors are also expected to keep abreast of the latest developments in forestry science and be able to pass those developments on to students. Attending national and regional conferences is therefore encouraged. Faculty are provided the opportunity every year to identify books or other media that will enhance the Drake Learning Resource Center (Library) collection of up-to-date reference materials (COE provides resources to obtain additional books and media).

In 2016, the University placed its course evaluations on-line using the BANNER system and alerted students (using the student e-mail system) to complete these surveys for enrolled courses near the end of the semester. The procedure was initially difficult to use because of technical problems with both the students' email accounts and the BANNER system. Consequently, the response rate of students to surveys dropped substantially (25%-50%) from previous levels (90-100%) when the evaluation was directly administered in

class with the paper forms. Efforts have been undertaken by the University's Office of Institutional Research and Planning, but students are not required to complete these to remain in good standing at the University, and thus the completeness of evaluation and feedback from students using this approach has not recovered to former levels.

H. Curriculum Evaluation

In the past, a skills matrix was developed just before the 2002 SAF accreditation for the purpose of evaluating how well the curriculum covers the various skills developed in the various forestry courses. Skills included in this survey include 27 skills identified by Sample et al. (1999) as important to forestry employers, as well as eight others suggested by previous SAF reviewers and AAMU faculty. Instructors were asked to evaluate their own courses on a scale of 0 to 3 as to the amount of emphasis placed on each skill. Results of this survey (with means adjusted to be directly comparable) are presented in Table V-1.

This table showed that AAMU's curriculum generally emphasized similar skills as were found to be important by Sample et al. (1999). Significant skills gap were recognized and dealt with accordingly. For example, in Landscape analysis/GIS, Forest Management students are now required to take an introductory GIS course (was a restricted elective for Forest Science students). Additionally, *Forestry Field Techniques*, *Silviculture*, and *Forest Mensuration* courses now provide exercises in the utilization of GIS/GPS to produce stand maps previously drawn by hand from hand compass and pacing transects data.

The gap in forest pathology was addressed through the introduction of the *Forest Pest Management* course while the gap in alternative dispute resolution is emphasized in courses such as *Natural Resources Policy*, *Forest Recreation*, and *Environmental Policy and Law*. Lastly, we are addressing the gap in human resource management through new

business-related courses that will be included in the proposed Forestry Business concentration.

Table V-1. Results of 2008 faculty survey on emphasizing various skills important in forestry and a comparison with the importance of employers according to the Pinchot Institute (Sample et al. 1999) where possible.

#	Skill	AAMU	Pinchot
1	Professional Ethics	8.5	9.3
2	Written Communication	10.0	9.2
3	Oral Communication	7.9	9.1
4	Silvicultural Systems	7.9	8.4
5	Resource Management	9.4	8
6	Forest Ecology	9.4	8
7	Forest Inventory and Biometry	6.4	7.8
8	Tree/Plant Identification	6.7	7.7
9	Landscape Analysis/GIS	4.3	7.7
10	Watershed Management	7.0	7.6
11	Human Resource Management	5.8	7.6
12	Resource Economics	7.0	7.5
13	Financial Management	6.7	7.5
14	Fire Dynamics	6.7	7.3
15	Alternative Dispute Resolution	5.2	7.3
16	Organizational Development	4.9	7.2
17	Forest Soils	6.7	7.2
18	Wildlife Biology	7.3	7
19	Resource Policy and Law	7.9	7
20	Government Relations	6.7	7
21	Forest Pathology	7.6	6.8
22	Conservation Biology	6.4	6.8
23	Forest Engineering/Transportation Systems	6.1	6.3
24	Rural Community Development	5.2	5.9
25	Wildland/Protected Areas Management	5.2	5.8
26	Range Management	4.6	4.3
27	Foreign Language	3.6	3.6
28	Teamwork	10.0	n/a
29	Problem Solving	9.7	n/a
30	Leadership	9.4	n/a
31	Historical and Current Issues	9.4	n/a
32	Forest Entomology	9.4	n/a
33	Critical Thinking	9.1	n/a
34	Computer Competence	7.6	n/a
35	Analytical Thinking	6.7	n/a

As a complement to the self-survey, FEWP had implemented two surveys to provide external evaluations of our efforts, an alumni survey and an employer survey (Exhibit III-1). Both alumni and employers were asked to evaluate the importance of the skills listed to the current job responsibilities of the alumnus and the quality of training evident in each skill set. Summaries of these surveys are presented in Tables III-4 and III-5.

Alumni and employer surveys indicated more gaps in quality of education than did faculty self-evaluations. This result may have been attributable to several factors, such as the difference in scales of importance and quality used in the survey itself, incomplete comprehension or forgetfulness of students or an overestimate of education quality by faculty. Prior to 2008, the curricula had been changed to address some of these deficiencies. The addition of four wildlife biology courses to the curriculum since 2001 should address the deficiency in wildlife biology indicated by the surveys. Future surveys were planned for use to further improve our curricula. However, this approach did not allow us to immediately assess and correct our deficiencies before the students graduated. Also, the University was developing its own “real-time” student learning outcomes assessment that we were required to do as part of the institution to meet accreditation standards for SACS.

Therefore, we adopted a new approach of assessing our students learning outcomes utilizing the new expanded Capstone course series: Forest Ecological Management (NRE 474) and Forest Ecological Management Project (NRE 497). The seniors in the capstone courses craft a management plan for a real forest property, present it to the faculty and the public and defend it before the faculty each Spring. An assessment matrix was created to evaluate each plan and indicate which core competencies, or student learning outcomes,

were deficient and made improvements to required core courses that provided the students with these competencies. In addition, core competencies are identified and evaluated annually on specific assignments in selected core courses much like the forest plan is used in the Capstone experience. Additionally, FEWP supplements this information with scores achieved by students competing in the Southern Forestry conclave and SAF quiz bowls. Results of these efforts are presented and discussed in Standard III.

Recently, the FEWP has been offered an opportunity for seniors to apply for, and take, the State of Alabama Board of Registration exam for Foresters. This would allow FEWP to evaluate our student performance in the future with an independent qualifying exam in the profession, monitor our students' scores, and compare our students' performance with those of Auburn University, a respected SAF-accredited University. This evaluation process may be implemented as soon as 2019.

I. Procedure for Curriculum Changes

Changes in any curriculum at AAMU must be approved by the University Academic Standards Committee. Prior to submission to that committee, the curriculum changes must be approved by both Departmental and College Curriculum Committees. The University committee meets at least twice a semester and once in the summer, more often as necessary, while the department and college committees are called when a request is made. Changes in curricula can be made as quickly as a month. In order for changes to be binding on a student, however, they must be printed in the catalog, which is updated annually at the beginning of Fall semester. So the actual window of making binding changes in the curriculum is once every year.

The curriculum and Academic Standards committees are generally receptive to curriculum changes as long as they are well justified and do not threaten accreditation or deviate from State of Alabama requirements. Several FEWP faculty have extensive experience with the University curriculum process at all levels, having served on departmental, College and University curriculum committees, as well as being involved in developing and proposing major curriculum changes, including the introduction of new concentrations. We foresee no serious problems changing the Forestry curriculum in the future to meet the changing needs of our students.

STANDARD VI

FORESTRY PROGRAM FACULTY

Staffing

The Forestry, Ecology & Wildlife Program (FEWP) at Alabama Agricultural and Mechanical University currently has seven tenure-track faculty, because one open position (due to retirement) is to be filled within months as a candidate has already been selected. There are also two adjunct faculty, and one Professor Emeritus. All faculty have Ph.D. degrees, report to the FEWP Program Coordinator, and have all their primary academic responsibilities in FEWP.

The faculty members of FEWP always strive to provide the highest quality of instruction. They are a diverse, academically proficient, and dynamic group. All but one of the faculty are graduates of schools with SAF-accredited forestry programs, while one of the faculty was trained in Northeast Forestry University, Harbin, China. Nearly all faculty members had taught at the college level prior to joining AAMU and generally now have over 10 years of teaching experience (Appendix C). Some of the faculty members have lived and worked as professional foresters outside of the United States in China, Albania, Ukraine, and Dominica. No two faculty members got their Ph.D. from the same university or have the same academic specialization, but there are areas of overlap as well as synergistic interests. Faculty have earned degrees in biometrics, wildlife management, silviculture, entomology, forest recreation, economics, and operations. All but one of the specialized forestry courses (GIS) are taught by FEWP faculty with the requisite professional specialization in the subject matter.

A criterion for selection of every faculty member in FEWP is the search committee's determination that the candidate has the required forestry background knowledge and skills, teaching ability, as well as tenure and promotion potential. All except for our newest faculty member have been tenured, and three have been promoted. Faculty involvement in teaching and research is, therefore, a normal expectation in FEWP. This is seen as beneficial to faculty in this generation of rapidly expanding knowledge, as well as in adopting instructional innovations. As a result, faculty members in FEWP are generally on 50% teaching: 50% research (50/50) nine-month appointments with an additional three-month summer employment, available and expected.

FEWP also has teaching, technical and student advising support from other faculty in the Department, College, University, and external partners. Five colleagues (Appendix D) outside FEWO but in our department of Biological and Environmental Sciences, (BES) teach required courses (*Introduction to Plant Science*, *Introduction to Geographic Information Systems*, *Aerial Photo-Interpretation*, and *Seminar*) and assist in advising forestry majors. In addition, faculty members in another department, Urban and Community Planning, teach social science courses required by or available as electives to students majoring in forestry. Until recently the USDA Forest Service had a Research Work Unit located at AAMU, with a couple Forest Service scientists serving as adjunct faculty members. These faculty members cooperated in the training, teaching, and advising of both undergraduate and graduate students in FEWP. One of the former Program Coordinators, Dr. George Brown, continues to be involved in the program by assisting with some teaching and outreach activities.

The faculty is directly supported in its efforts by six staff members (see Standard II E) who provide clerical, budgetary and technical support as well as assistance in research, outreach and student recruitment efforts. Staff in the BES department and at the Winfred Thomas Agricultural Research Station (WTARS) also assist FEWP faculty in technical activities.

Promotion of diversity is the main reason for the USDA Forest Service support for AAMU. Our program offers a culturally diverse work and academic environment. Although we currently have an all-male faculty, we recently interviewed two female candidates for our open position and are processing the paperwork for offering the position to one of them. Students, faculty, and staff work in a culturally- and gender-diverse environment in the Department, College and University. Overall, AAMU is considered the most diverse university campus in Alabama.

The faculty of FEWP functions as a unit. Curriculum issues are deliberated and voted upon by the entire Program's faculty before being sent for review and action by the department, college, and university administrators, resulting in a relatively strong autonomy of the Program.

The faculty keep the curriculum current and relevant to the program's educational goals and objectives by periodic re-evaluation and update in the courses required and offered by us. For example, the capstone course used to be a 3 credit hour, 3 lecture a week course. It is now a two-course capstone series with a 2-credit pre-capstone followed by a 4-credit capstone course, the latter being on Fridays from 8:00 a.m. to 3:00 p.m., allowing the students to spend a substantial amount of time at the landowner's property, collect data, and learn, as well as reinforce, their technical skills (tree measurements and timber

cruising, tree grading, habitat assessment, etc.). The faculty provides effective academic guidance for students by examining their needs and goals, as well as how realistic their planned load is based on off-campus workload, family situation, and previous GPA. The program's growth is a testimony to the resourcefulness of the faculty, the strong support from all levels at the university, and the sustained interest of the USDA Forest Service. The university's commitment to the Forestry program was cemented when FEWP was given a separate budget akin to other academic departments, although it is not an actual department. The USDA Forest Service has continued its commitment to FEWP by identifying and still supporting the forestry program as one of their "Center of Excellence" programs.

Academic and Professional Competency

Although we are at a primarily teaching institution, research is of critical importance to faculty for a number of reasons, including the fact that it allows us to involve students in data collection and other research activities, which helps with student financial support and retention. This Department is one of only four at AAMU approved to award Doctorate degrees. As such, faculty members are expected to provide intellectual leadership by conducting research and other scholarly activity and publishing their findings, by participating in appropriate professional and scientific organizations, by seeking self-improvement through sabbaticals or other scholarly activities, and by research, study and practical experiences aimed at professional development. Faculty members are required to display excellence in research in order to secure promotion and tenure. Excellence at the institution is usually measured in terms of research funding and refereed publications, although faculty also strive to become leaders in their field, as a measure of their scholarly success .

For most faculty members in FEWP, the USDA Forest Service Center of Excellence Program initially provided a level of base funding for their research efforts. Using this as a stepping-stone, most have built their research programs by obtaining additional extramural support. And in the recent years since the last reaccreditation, we started to receive McIntire-Stennis formula funds that have been available to other forestry programs around the country for decades but not to our program. This funding has also helped strengthen the level of financial support for the faculty and their research efforts.

Total current funding for FEWP is \$2,334,000, including the University budget, the USDA Forest Service Center of Excellence, and 30 additional externally funded grants and agreements. Until recently, the faculty in our program also received a large proportion of a \$5,000,000 5-year National Science Foundation (NSF) grant, but the grant ended on 9/30/2016, with a no-cost extension until 9/30/2017. This was the second \$5 million 5-year NSF grant from the NSF's Center for Research Excellence in Science and Technology (CREST) program. This CREST center provided FEWP faculty the opportunity for significant professional development through collaborations within and outside our institution, invited presentations, research, graduate teaching, presentations at professional meetings, submissions to peer-reviewed publications, and involvement in other scholarly activities. CREST also supported much of the faculty for 2 summer months per year. In addition to NSF, more grants and cooperative agreements were obtained from other agencies, companies, and entities such as the USDA-NIFA, USDA Forest Service Southern Research Station, the Tennessee Valley Authority, USDA-Office of Advocacy and Outreach, State of Alabama Department of Conservation and Natural Resources, Alabama Forestry Commission, Birmingham Waterworks and Sewer Board, the Confucius Institute,

and others. Under the Birmingham Water Works Board grant, students take part in a timber inventory, tree marking, sale, harvest monitoring and inspection, and postharvest evaluation, all under the guidance of forestry faculty, but especially under the leadership of Daryl Lawson, an adjunct faculty/instructor with previous consulting experience and background with both industry and state forestry agencies. At the same time, under the Confucius Institute and the NSF REU programs, undergraduate students were able to visit China over a period of a month in the summer of the last several years and carry out short research projects (see the section “Confucius Institute at Alabama A&M University”).

The research topics of the various projects cover a substantial diversity of subjects, including forest ecology and silviculture, wildlife ecology and response to forest management treatments, environmental impacts, agroforestry, watershed management, endangered bats, breeding bird habitats, infiltration within riparian buffers, biomass assessments, effects of forest management on wildlife habitat, impacts of honey bee pollination, biological control of imported fire ants, assessing training needs of non-industrial private forest landowners, and exploring opportunities for underserved landowners and minority businesses in the forest products industry. Faculty members have published the results in articles in refereed publications, including in the SAF’s Forest Science, as well as many other prestigious outlets. They have also written reports to funding agencies and have published in technical and popular media. In addition, most faculty members submit multiple research proposals every year, many of which get funded.

The faculty maintain connection with the forestry professional and scientific communities in various ways. They participate and present at conferences, seminars and professional meetings, take part and even lead professional organizations such as the local

Mountain Lakes SAF Chapter, State Wildlife Chapter Chair, and sections of several scientific or professional societies. Multiple faculty members usually attend the local and regional SAF meetings, accompanied by students. We have similar attendance at the annual SAF conventions where we also bring forestry students. Some of the students present research, even more of them compete on the Quiz Bowls, and nearly all take advantage of the opportunity to network and apply for jobs.

In addition to SAF, faculty are members of a number of professional and natural resources organizations such as the Forest Products Society, International Society of Arboriculture, Ecological Society of America, Wildlife Society, American Association for the Advancement of Science, International Association for Society and Natural Resources, National Network of Forest Practitioners, Nature Conservancy, Audubon Society, Entomological Society of America, Alabama Forestry Association, Alabama Christmas Tree Association, and the Association for Temperate Agroforestry.

FEWP faculty members have gone beyond service to their professional association memberships and job descriptions to serve their department, school, university, community, state, and region. FEWP faculty members are well represented at all levels of AAMU by serving on committees in FEWP, the department, school, and university. They provide consultation and lectures to local community organizations as the Elk Valley Forestry Association, Madison County Master Gardeners, Huntsville Botanical Garden, Huntsville Land Trust, Madison County Beekeepers Association, Tennessee Valley Audubon Society, Flint River Conservation Association, and 4-H Clubs. They also participate in state level organizations such as the Alabama Clean Water Action Plan Steering Committee, Alabama Farmers Federation, Alabama Urban Forestry Association,

Alabama Natural Resource Council, Alabama Ornithological Society, Alabama Consortium on Forestry Education & Research, Alabama Christmas Tree Association, Alabama Forestry Commission, and BMP Grant Oversight and Implementation Subcommittee and Outreach Advisory Committee.. Regionally, FEWP faculty members serve on the Southern Agroforestry Workshop Planning Committee, the Master Tree Farmers Program Steering Committee, the Bioregional Advisory Council of the National Community Forestry Center, the Tennessee River Basin Clean Water Partnership Steering Committee and the Southern Forest Futures Project.

In order to ensure growth and development of FEWP faculty, travel grants are provided, through Center of Excellence funds and FEWP's institutional budget, to attend meetings. Faculty can also benefit from professional development grants or sabbatical leave. Finally, faculty members have benefited from seminars within the Department, College, and University.

Teaching and Instruction

FEWP faculty teach nearly all of the core courses required for the Forestry undergraduate degree (Appendix B). Other, non-forestry faculty in our Department of Biological and Environmental Sciences and the Agribusiness/Business programs teach other core and restricted elective core courses.

FEWP faculty teach courses in their major fields of specialization. Most of the faculty members have had teaching experiences in similar or related courses, prior to joining AAMU, and at the moment all but our newest faculty member have been teaching for over 10 years.

FEWP faculty members are also encouraged to team-teach courses. For example, the *Forestry Field Techniques I and II* courses, draws on the services of all other FEWP faculty as well as Alabama Forestry Commission and the USDA Forest Service to provide a meaningful, integrated, experiential learning experience for the forestry students. FEWP faculty also invite their colleagues and guest speakers into their classrooms. And all faculty take an active role in the two capstone series courses, where the students work in teams over two semesters to collect data and develop forest management plans for real landowners, based on the desired management goals and constraints.

Each of the forestry students is advised by an individual faculty member. Therefore, FEWP faculty have the time and opportunity to develop close professional relationships with the students. At the same time, students have the opportunity to interact with faculty in small classes (average size of about a dozen) and during office hours (10 posted hours, as mandated in AAMU's *Faculty Handbook*). The FEWP prides itself on the close relationship between faculty and students, which is fostered in the students' first year in the *Introduction to Forestry* course, nurtured in the *Dendrology* and *Forestry Field Techniques* courses and comes to fruition in specialized courses such as *Silviculture*, *Forest Ecology*, *Mensuration*, *Natural Resources Policy*, and *Forest Ecological Management*, among others.

Hands-on active learning with emphasis not only on technical but also on soft skills are used throughout the curriculum. Field experiences are one of the most frequently used and effective teaching tools available to the faculty. Not only are they incorporated in nearly all forestry courses, but students are also encouraged to work on research projects with the faculty. Students are also strongly encouraged and helped to accept internships

and cooperative learning experiences with federal and state agencies and private industry. The fire hands-on prescribed burn experiences and fire training, in particular, have helped with retention, but also with the competitiveness of our students when they apply for internships and later jobs with the federal land management agencies.

The faculty's instructional capability is greatly enhanced by the computer laboratory in our building (ARC Bldg.), as well as another one (CCS Bldg.) in a separate building, where the students have access to computing resources and specialized packages such as GIS software. Several courses require students to use these facilities and quantitative and technical computer skills. In addition, almost all courses require papers, projects, and presentations. Faculty also use the course management system Blackboard® to enhance course material access and assignment submission.

Faculty competence in teaching is evaluated at three (student, peer and administrative) levels and is a factor in the tenure review process. All instructors are evaluated by students taking their course. A standard AAMU Course Evaluation Form (Exhibit V-3) is used by students to assess knowledge of the subject, enthusiasm, teaching effectiveness, and ability to work closely with students. The FEWP Coordinator then reviews each faculty member's performance using the AAMU Faculty Evaluation Form as a guide.

Faculty are evaluated using an Evaluation Form (Exhibit VI-2) that rates each faculty on teaching, research and service as well as providing guidance and recommendation(s) where appropriate. Factors considered in the evaluation process are a faculty's course design, the effectiveness of presentation, grading methods, availability to students, and administrative responsibility. Faculty members are also evaluated by the

number of theses advised, thesis/dissertation committees they serve on, courses taught or developed, and professional and educational meetings attended.

The procedures and policies for both tenure and promotion are detailed in Section 4 Performance, Promotion and Tenure from the latest June 2017 Faculty Handbook (pages 51-74). Minimum qualifications for each rank and for tenure are given along with application forms, evaluation criteria and checklists of qualifications (with points allowed per category), which are used by each evaluation team. All applications are reviewed by departmental, school, and University-wide Promotion and Tenure Committees, all of which are comprised of senior faculty members elected by the faculty at the appropriate level. These committees take into consideration the comments made by the chairs and deans before making a final recommendation to the Provost. Procedures, dates, details, and forms are all specified and are available to all faculty members.

Advising and Graduate Training

AAMU is a “student-centered institution,” and student advising is seen to be a very important part of each faculty’s responsibilities. FEWP is also part of the graduate program in our parent Department of Biological and Environmental Sciences. As such, FEWP has the responsibility for maintaining a viable graduate program and therefore faculty members are expected to advise and train graduate students.

All members of the faculty also share the undergraduate advising load. Advisees per faculty vary from 3 to 20 or so. There are currently 80 students enrolled in FEWP. Thus, the current ratio of full-time equivalent teaching faculty to advisees is seven to 80 or

approximately one faculty for every eleven students. Most faculty members usually have at least one graduate student, funded through a variety of sources, including the NSF CREST, cooperative agreements, McIntire-Stennis, and others. The faculty also serve on the committees of graduate students in the department, college, and even other universities (UAH, Auburn, etc.), in related disciplines.

FEWP faculty members also serve as advisors for student organizations such as the Student Chapter of the Society of American Foresters, Fire Dawgs (the firefighting group), Ecological Society of America SEEDS (promotes human diversity in the field natural resources and ecology) or mentors for students belonging to under-represented groups such as MANRRS (Minorities in Agriculture Natural Resources and Related Sciences) that support career advancement of women or racial minorities. One FEWP member serves as a Department faculty co-advisor to the NRES Graduate Student Association.

Workload Balance

Faculty workloads have fluctuated recently due to two retirements but were stabilized by the employment of an adjunct faculty (a former Ph.D. graduate of our program), a graduate teaching assistant, and several undergraduate teaching assistants. Faculty morale has been boosted by the relatively recent availability of McIntire-Stennis Formula Funds and the continued support of the Forest Service.