

UT 58986

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USFS # SRS 33-RJVA-99-621
DOE # DE-FC02-99ER-62856

**SOUTHERN APPALACHIAN MOUNTAINS
COOPERATIVE ECOSYSTEM STUDIES UNIT**

COOPERATIVE and JOINT VENTURE AGREEMENT

between

**DEPARTMENT OF THE INTERIOR
U.S. Geological Survey--Biological Resources Division
National Park Service**

**DEPARTMENT OF AGRICULTURE
U.S. Forest Service**

DEPARTMENT OF ENERGY

and

**UNIVERSITY OF TENNESSEE (HOST)
Appalachian State University
Western Carolina University
Florida A&M University
Foothills Land Conservancy
Oak Ridge National Laboratory
Joint Institute for Energy and the Environment
Great Smoky Mountains Conservation Association
National Council of the Paper Industry for Air & Stream Improvement
Southern Appalachian Man and Biosphere**

ARTICLE I - BACKGROUND AND OBJECTIVES

- A. This Cooperative and Joint Venture Agreement (hereinafter called agreement) between the U.S. Geological Survey--Biological Resources Division, National Park Service, U.S Forest Service, and the Department of Energy (hereinafter called Federal Agencies), the University of Tennessee and its partner institutions is to establish and maintain the Southern Appalachian Mountains Cooperative Ecosystem Studies Unit. The Southern Appalachian Mountains CESU is associated with a national network of CESUs.
- B. The objectives of the Southern Appalachian Mountains Cooperative Ecosystem Studies Unit (CESU) are to:
- Provide research, technical assistance and education to federal land management, environmental and research agencies and their potential partners;
 - Develop a program of research, technical assistance and education that involves the biological, physical, social, and cultural sciences needed to address resources issues and interdisciplinary problem-solving at multiple scales and in an ecosystem context; and
 - Place special emphasis on the working collaboration among federal agencies and universities and their related partner institutions.
- C. The U.S. Geological Survey--Biological Resources Division (hereinafter called BRD) works with others to provide scientific understanding and technologies needed to support the sound management and conservation of our Nation's biological resources (Secretarial Order No. 3202). In accordance with 16 U.S.C.1a-2j, 16 U.S.C. 5933 and Secretarial Order No. 3202, the BRD is authorized to enter into a cooperative agreement to establish the Southern Appalachian Mountains CESU to assist in providing research, technical assistance and education.
- D. The National Park Service (hereinafter called NPS) is responsible for the management of areas in the National Park System to conserve the scenery, the natural and historic objects, and the wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations (16 U.S.C. 1 et seq.). In accordance with 16 U.S.C.1a-2j and 16 U.S.C. 5933, the NPS is authorized to enter into a cooperative agreement to establish the Southern Appalachian Mountains CESU to assist in providing research, technical assistance and education.
- E. The U.S. Forest Service (hereinafter called USFS) mission is to achieve quality land management under the sustainable multiple-use management concept to meet the diverse needs of the people (16 U.S.C 1641-1646). In accordance with 7 USC 3318 (b) the USFS is authorized to enter into a joint venture agreement to establish the

Southern Appalachian Mountains CESU to assist in providing research, technical assistance and education.

- F. The U.S. Department of Energy's (hereafter called DOE) mission is to ensure the energy security of this nation, maintain the safety, security and reliability of the U. S. nuclear weapons stockpile, clean up the environment from the legacy of the Cold War, and support basic and strategic energy-related research and development, including environmental research in support of the Department's mission. In accordance with Public Law 95-91, The DOE Organization Act, the DOE is authorized to enter into a cooperative agreement to establish the Southern Appalachian Mountains CESU to assist in providing research, technical assistance, and education.
- G. The University of Tennessee, Knoxville (hereinafter called Host University) provides a large, diverse, and solid foundation of programs relevant to a comprehensive approach for the study, analysis and management of the Southern Appalachian Mountains ecosystem. UT Knoxville, as the main campus of Tennessee's State University and Land Grant institutions, serves the state, region, and nation through a broad spectrum of undergraduate, graduate and professional studies, research and creative activity, and public service.
- H. The partner institutions to the Host University include Appalachian State University, Western Carolina University, Florida A&M University, Foothills Land Conservancy, Oak Ridge National Laboratory, Joint Institute for Energy and the Environment, Great Smoky Mountains Conservation Association, National Council of the Paper Industry for Air & Stream Improvement, and the Southern Appalachian Man and Biosphere (hereinafter called Partner Institutions).

ARTICLE II - STATEMENT OF WORK

- A. Each Federal Agency agrees to:
 - 1. Provide administrative assistance, as appropriate, necessary to execute this agreement and subsequent modifications;
 - 2. Conduct, with the Host University and Partner Institutions, a program of research, technical assistance and education related to the Southern Appalachian Mountains CESU objectives and to the extent allowed by each Federal Agencies' authorizing legislation;
 - 3. Provide opportunities for research on federal lands or using federal facilities in cooperation with Federal Agencies, as appropriate, and according to all applicable laws, regulations and Federal Agencies' policies;
 - 4. Provide funds for basic support and salary for release time of Host University and Partner Institution faculty, as appropriate;
 - 5. Provide project funds and/or collaboration to support specific research, technical assistance and education projects, as appropriate;
 - 6. Make available managers to serve on the Southern Appalachian Mountains CESU Manager's Committee;

7. Comply with the Host University's and Partner Institutions' rules, regulations, and policies regarding professional conduct, health, safety, use of services and facilities, use of animals, recombinant DNA, infectious agents or radioactive substances, as well as other policies generally applied to Host University and Partner Institution personnel;
8. Ensure its employees follow the Code of Ethics for Government Employees;
9. Allow Federal Agency employees to participate in the activities of the Host University and Partner Institutions, including serving on graduate committees and teaching courses, as appropriate, and as specifically determined in modifications to the agreement; and
10. Be individually responsible for their agency's role in administering the agreement, transferring funds, and supervision of agency employees, as appropriate.

B. The Host University agrees to:

1. Establish, in consultation with the Federal Agencies and Partner Institutions, the Southern Appalachian Mountains CESU;
2. Conduct, with participating Federal Agencies and Partner Institutions, a program of research, technical assistance and education related to the Southern Appalachian Mountains CESU objectives;
3. Provide release time for faculty to engage in participating Federal Agencies research, technical assistance and education activities related to the Southern Appalachian Mountains CESU objectives, as appropriate;
4. Provide basic administrative and clerical support as appropriate;
5. Provide access for Southern Appalachian Mountains CESU staff to campus facilities, including library, laboratories, computer facilities on the same basis or costs as other faculty members of the Host University to the maximum extent allowable under state laws and regulations;
6. Provide suitable office space, furniture and laboratory space, utilities, computer network access and basic telephone service for Federal Agency personnel or their designated representatives to be located at the Host University, as appropriate;
7. Offer educational and training opportunities to participating Federal Agency personnel or their designated representatives, as appropriate;
8. Encourage its students to participate in the activities of the Southern Appalachian Mountains CESU;
9. Coordinate activities, as appropriate, with the Partner Institutions and develop administrative policies for such coordination; and
10. Establish a Southern Appalachian Mountains CESU Manager's Committee and convene a meeting of this committee, at least annually, to provide advice and guidance, review of the annual work and multi-year strategic plans, and assist in evaluating the Southern Appalachian Mountains CESU.

- C. Each Partner Institution agrees to:
1. Conduct, with participating Federal Agencies and the Host University, a program of research, technical assistance, and education related to the Southern Appalachian Mountains CESU objectives;
 2. Offer educational and training opportunities to participating Federal Agency employees, as appropriate; and
 3. Encourage students and employees to participate in the activities of the CESU.
- D. All Federal Agencies, the Host University and Partner Institutions agree to:
1. Establish and maintain the Southern Appalachian Mountains CESU closely following the CESU Concept Paper (10 November 1997), adapting key elements to local and regional needs, as appropriate;
 2. Develop and adopt a Southern Appalachian Mountains CESU role and mission statement;
 3. Develop a multi-year strategic plan;
 4. Make modifications, as appropriate, to this agreement that individually include a specific "scope of work" statement and a brief explanation of the following:
 - (a) the proposed work and what is being modified in the agreement;
 - (b) the project contribution to the objectives of the CESU;
 - (c) the methodology of the project;
 - (d) the substantial involvement of each party;
 - (e) the project schedule;
 - (f) the specific deliverables;
 5. Coordinate in obtaining all necessary state, federal, and tribal permits and/or permissions from private landowners in order to conduct projects occurring under this agreement;
 6. Follow OMB Circulars A-21, A-87, A-102, A-110, and A-133, as appropriate, and specifically 43 CFR Part 12 (Department of the Interior), 7 CFR Parts 3015-3052 (Department of Agriculture), and 10 CFR Part 600 and 10 CFR Part 605 (Department of Energy).

ARTICLE III – TERMS OF AGREEMENT

- A. This agreement shall continue for a period of five (5) years from the effective date of execution. The effective date of this agreement shall be determined from the date of the last signature.
- B. By mutual consent and at the end of this agreement, a new agreement, for a separate and distinct (5) year period, can be entered into to continue the activities of the Southern Appalachian Mountains CESU.
- C. For the purposes of this agreement, amendments are changes (edits, deletions, or additions) to the agreement that do not involve the transfer of funds. Amendments may be proposed by any of the Federal Agencies, the Host University or by the Host

University on behalf of any of the Partner Institutions. Amendments shall be in writing, signed and agreed to by all signatories to this agreement.

- D. For the purposes of this agreement, modifications are specific two-party agreements between one of the Federal Agencies and the Host University and/or a Partner Institution in support of the goals of this broad agreement. Modifications will be issued by a Federal Agency, will transfer funds to support the statement of work, and will conform to each Federal Agency's respective procedures.
- E. A separate interagency agreement is required to facilitate transfer of funds from one federal agency to another federal agency.

ARTICLE IV - KEY OFFICIALS

A. The technical representatives for the Federal Agencies are as follows:

1. U.S. Geological Survey--Biological Resources Division

Joseph Clark
U.S. Geological Survey-- Biological Resources Division
University of Tennessee
274 Willington
Plant Science Building
Knoxville, TN 37901-1071
Phone: (423) 974-0739
Email: jclark1@utk.edu

2. National Park Service

John Yancy
National Park Service
Southeast Region
1000 Alabama Street SW
Atlanta, GA 30303
Phone: (404) 562-3279
Fax: (404) 562-3263
Email: john_yancy@nps.gov

3. U.S. Forest Service

Nancy Herbert
U.S. Forest Service
Southern Research Station
200 Weaver Blvd.
Asheville, NC 28804
Phone: (828) 257-4302
Fax: (828) 257-4313
Email: nherbert/srs@fs.fed.gov

4. Department of Energy

Dr. Jerry W. Elwood
Department of Energy
Environmental Sciences Division,
Office of Biological and Environmental Research,
Office of Science, SC-74
19901 Germantown Road
Germantown, Maryland 20874
Phone: (301) 903-4583
Fax: (301) 903-8519
Email: jerry.elwood@science.doe.gov

B. The technical representative for the Host University is:

Dr. George Hopper
Professor and Head
Department of Forestry, Wildlife and Fisheries
The University of Tennessee
P.O. Box 1071
Knoxville, TN 37901
Phone: (423) 974-7988
Fax: (423) 974-4714
Email: ghopper@utk.edu

C. The technical representatives for the Partner Institutions are:

1. Appalachian State University

Dr. Gary Walker
Appalachian State University
572 Rivers Street
Boone, NC 28608
Phone: (704) 262-3025
Fax: (704) 262-2127
Email: meikledb@appstate.edu

2. Western Carolina University

Dr. James Costa
Western Carolina University
Cullowhee, NC 28723
Phone: (704) 227-7244
Fax: (704) 227-7647
Email: costa@wcu.edu

3. Florida A&M University

Dr. Michael Abazinge and Dr. Larry Robinson
Environmental Sciences Institute

320 Gamble Street
Tallahassee, FL 32307
Phone: (805) 599-8553
Fax: (805) 561-2248
Email: mabazinge@famuedu

4. Foothills Land Conservancy

Randolph Y. Brown
Foothills Land Conservancy
614 Sevierville Rd.
Maryville, TN 37804
Phone: (423) 681-8326
Fax: (423) 681-1463
Email:

5. Oak Ridge National Laboratory

Stephen Hildebrand
Environmental Sciences Division
Oak Ridge National Laboratory
Bldg. 1505, MS-6037
Oak Ridge, TN 37381
Phone: (423) 574-7374
Fax: (423) 574-7287
Email: sgh@ornl.gov

6. Joint Institute for Energy and the Environment

John Sheffield
Joint Institute for Energy and the Environment
600 Henley Street, Suite 314
Knoxville, TN 37996
Phone: (423) 974-3939
Fax: (423) 974-4609

7. Great Smoky Mountains Conservation Association

Edgar Faust
Great Smoky Mountains Conservation Association
P.O. Box 216
Knoxville, TN 37901
Phone: (423) 637-8339
Fax: (423) 523-8186

8. National Council of the Paper Industry for Air & Stream Improvement

Dr. T. Bently Wigley
National Council of the Paper Industry for Air & Stream Improvement
P.O. Box 340362
Clemson University

Clemson, SC 29634
Phone: (864) 656-0840

9. Southern Appalachian Man and Biosphere
Dr. Robb Turner
Southern Appalachian Man and Biosphere
317 Conference Center Bldg.
Knoxville, TN 37996-4138
Phone: (423) 974-4585
Fax: (423) 974-4609

ARTICLE V – AWARD

- A. Award under this agreement is as specified in the incorporated budget (Article XI 1.).
- B. Upon signature of all parties and upon satisfactory submission of a budget from the Host University, the Federal Agencies will obligate funds as follows:

U.S. Geological Survey--Biological Resources Division
\$10,000 is awarded to the Host University to carry out this agreement.

National Park Service
\$10,000 is awarded to the Host University to carry out this agreement.

U.S. Forest Service
\$10,000 is awarded to the Host University to carry out this agreement.

Department of Energy
\$10,000 is awarded to the Host University to carry out this agreement.

- C. Payments will be made by the Federal Agencies for work in accordance with OMB Circulars A-21, A-110, A-102, A-133 and specifically, 43 CFR Part 12 (Department of the Interior), 7 CFR Parts 3015-3052 (Department of Agriculture), and 10 CFR Part 600 and 10 CFR Part 605 (Department of Energy).
- D. A 15% indirect cost rate will be paid on work covered by the agreement and all its modifications. An exception is that the US Forest Service cannot reimburse "state cooperative institutions" for indirect costs, pursuant to 7 USC 3103(16) and 7 USC 3319. Indirect costs may be used to satisfy USFS cost-sharing requirements.

No indirect cost will be charged by the Host University for funds transferred directly from a participating Federal Agency to a Partner Institution via a modification to the agreement.

In accordance with DOE Order 481.1-1 and DOE Manual 481.1-1, the Department of Energy's "Work for Others" program requires full cost-recovery (which may exceed a

15% indirect cost rate) for non-DOE funded work by DOE laboratories, including Oak Ridge National Laboratory.

In addition, the Oak Ridge National Laboratory is a Federally Funded Research and Development Center owned by the Department of Energy. DOE funds transferred to the host institution and/or to any of the non-DOE partner institutions of the Southern Appalachian Mountain CESU through this Cooperative and Joint Venture Agreement cannot be transferred either directly or indirectly to the Oak Ridge National Laboratory for any purpose. DOE is required to use a different and separate funding instrument other than this Cooperative and Joint Venture Agreement to transfer DOE funds to the Oak Ridge National Laboratory for the purpose of supporting any of its activities as a partner institution covered under this CESU agreement.

- E. Award of additional funds or in-kind resources will be made through modifications to the agreement. Copies of all modifications to the agreement shall be kept on file with the Host University.
- F. Nothing herein shall be construed as obligating the Federal Agencies to expend, or as involving the Federal Agencies in any contract or other obligation for the future payment of money, in excess of appropriations authorized by law and administratively allocated for specific work.

ARTICLE VI - PRIOR APPROVAL

Prior approvals are in accordance with OMB Circulars A-110 or A-102, specifically 43 CFR Part 12 (Department of the Interior), 7 CFR Parts 3015-3052 (Department of Agriculture), and 10 CFR Part 600 and 10 CFR Part 600 (Department of Energy).

ARTICLE VII - REPORTS AND/OR DELIVERABLES

- A. OMB Circulars A-110 or A-102, specifically 43 CFR Part 12 (Department of the Interior), 7 CFR Parts 3015-3052 (Department of Agriculture), and 10 CFR Part 600 and 10 CFR Part 605 (Department of Energy) establish uniform reporting procedures for financial and technical reporting.
- B. As appropriate, the Host University will convene periodic meetings of Southern Appalachian Mountains CESU Federal Agencies and Partner Institutions (hereinafter called cooperators) for the purpose of collaboration and coordination of CESU activities. The first meeting will be convened within 90 days from the date this agreement is executed. Five (5) copies of the meeting minutes will be delivered to each Federal Agency.
- C. A role and mission statement will be adopted and agreed to by all Southern Appalachian Mountains CESU cooperators within 120 days from the date this agreement is executed. Five (5) copies of the adopted mission statement will be delivered to each Federal Agency.

- D. Annual work plans will be developed to guide the specific activities of the Southern Appalachian Mountains CESU and will:
1. Describe the Southern Appalachian Mountains CESU ongoing and proposed research, technical assistance and education activities;
 2. Describe anticipated projects and products; and
 3. Identify faculty, staff and students involved in the Southern Appalachian Mountains CESU during the year.
- The first annual work plan (for FY1999) will be delivered 120 days from the date this agreement is executed. Five (5) copies of the annual work plan will be delivered to each Federal Agency.
- E. A multi-year strategic plan will be developed to generally guide the Southern Appalachian Mountains CESU and will be delivered within 12 months from the date this agreement is executed. Five (5) copies of the multi-year strategic plan will be delivered to each Federal Agency.

ARTICLE VIII - PROPERTY UTILIZATION AND DISPOSITION

Property utilization and disposition is in accordance with OMB Circulars A-110 or A-102, specifically 43 CFR Part 12 (Department of the Interior), 7 CFR Parts 3015-3052 (Department of Agriculture), and 10 CFR Part 600 and 10 CFR Part 605 (Department of Energy).

ARTICLE IX - TERMINATION

Termination of this agreement is in accordance with OMB Circulars A-110 or A-102, specifically 43 CFR Part 12 (Department of the Interior), 7 CFR Parts 3015-3052 (Department of Agriculture), and 10 CFR Part 600 and 10 CFR Part 605 (Department of Energy), and requires approval of each of the Federal Agencies and the Host University.

ARTICLE X – REQUIRED/SPECIAL PROVISIONS

A. REQUIRED PROVISIONS:

1. **NON-DISCRIMINATION:** All activities pursuant this agreement and the provisions of Executive Order 11246; shall be in compliance with requirements of Title VI of the Civil Rights Act of 1964 (78 Stat. 252 42 U.S.C. § 2000d et seq.); Title V, Section 504 of the Rehabilitation Act of 1973 (87 Stat. 394; 29 U.S.C. § 794); the Age Discrimination Act of 1975 (89 Stat. 728; 42 U.S.C. § 6101 et seq.); and with all other Federal laws and regulations prohibiting discrimination on grounds of race, color, national origin, handicap, religious or sex in providing of facilities and service to the public.
2. **CONSISTENCY WITH PUBLIC LAWS:** Nothing herein contained shall be deemed to be inconsistent with or contrary to the purpose of or intent of any Act

of Congress or the laws of the District establishing, affecting, or relating to the agreement.

3. APPROPRIATIONS (Anti-Deficiency Act, 31 U.S.C. 1341): Nothing herein contained in this agreement shall be construed as binding the Federal Agencies to expend in any one fiscal year any sum in excess of appropriations made by Congress, for the purposes of this agreement for that fiscal year, or other obligation for the further expenditure of money in excess of such appropriations.
4. OFFICIALS NOT TO BENEFIT: No Member of, Delegate to, Resident Commissioner in, Congress shall be admitted to any share or part of this agreement or to any benefit to arise therefrom, unless the share or part benefit is for the general benefit of a corporation or company.
5. LOBBYING PROHIBITION: The parties will abide by the provisions of 18 U.S.C. 1913 (Lobbying with Appropriated Moneys), which states:
No part of the money appropriated by any enactment of Congress shall, in the absence of express authorization by Congress, be used directly or indirectly to pay for any personal service, advertisement, telegram, telephone, letter, printed or written matter, or other device, intended or designed to influence in any manner a Member of Congress, to favor or oppose, by vote or otherwise, any legislation or appropriation by Congress, whether before or after the introduction of any bill or resolution proposing such legislation or appropriation: but this shall not prevent officers or employees of the United States or of its departments or agencies from communicating to Members of Congress on the request of any Member or to Congress, through the proper official channels, requests for legislation or appropriations which they deem necessary for the efficient conduct of the public business.

6. LIABILITY PROVISION:
Governmental Parties

The Federal Agencies, Host University and Partner Institutions which are governmental parties, accept responsibility for any property damage, injury, or death caused by the acts or omissions of their respective employees, acting within the scope of their employment, to the fullest extent permitted by law, including laws concerning self-insurance.

To the extent work by governmental parties is to be performed through sub-contract by non-governmental entities or persons, the governmental party sub-contracting work will require that subcontracted entity or person to meet provisions (a),(b), and (c) for non-governmental parties stated below.

Non-governmental Parties

Work provided by non-governmental entities or persons, will require that entity or person to:

- (a) Have public and employee liability insurance from a responsible company or companies with a minimum limitation of one million dollars (\$1,000,000) per person for any one claim, and an aggregate limitation of three million dollars (\$3,000,000) for any number of claims arising from anyone incident. In

- subsequent modifications, the parties may negotiate different levels of liability coverage, as appropriate. The policies shall name the United States as an additional insured, shall specify that the insured shall have no right of subrogation against the United States for payments of any premiums or deductibles due thereunder, and shall specify that the insurance shall be assumed by, be for the account of, and be at the insured's sole risk; and
- (b) Pay the United States the full value for all damages to the lands or other property of the United States caused by such person or organization, its representatives, or employees; and
 - (c) Indemnify, save and hold harmless, and defend the United States against all fines, claims, damages, losses, judgments, and expenses arising out of, or from, any omission or activity of such person organization, its representatives, or employees.

Non-governmental Partner Institutions shall provide the Federal Agencies confirmation of such insurance coverage, prior to beginning specific work authorized herein and specified in subsequent modifications.

B. SPECIAL PROVISIONS:

1. Joint publication of result is encouraged; however, no party will publish any results of joint effort without consulting the other. This is not to be construed as applying to popular publication of previously published technical matter. Publication may be joint or independent as may be agreed upon, always giving due credit to the cooperation and recognizing within proper limits the rights of individuals doing the work. In the case of failure to agree as to the manner of publication or interpretation of results, either party may publish data after due notice (not to exceed 60 days) and submission of the proposed manuscripts to the other. In such instances, the party publishing the data will give due credit to the cooperation but assume full responsibility of any statements on which there is a difference of opinion.
2. That the results of any cooperative studies may be used for development of theses in partial fulfillment of requirements for advanced degrees and nothing herein shall delay theses publication.
3. Individual modifications shall include specific plans for data management, sharing, and archiving, as appropriate.

ARTICLE XI – DOCUMENTS INCORPORATED BY REFERENCE

A. The following are to be incorporated into this agreement:

1. Budget for funds awarded in this agreement
2. DI-2010, Certifications for the Host University and Partner Institutions regarding debarment, suspension and other responsibility matter, drug-free workplace requirements and lobbying.

ARTICLE XII - AUTHORIZING SIGNATURES

The following authorizing signatures are attached:

U.S. DEPARTMENT OF THE INTERIOR

- A. U.S. Geological Survey--Biological Resources Division
- B. National Park Service

U.S. DEPARTMENT OF AGRICULTURE

- C. U.S. Forest Service

D. DEPARTMENT OF ENERGY

E. UNIVERSITY OF TENNESSEE

- F. Appalachian State University
- G. Western Carolina University
- H. Florida A&M University
- I. Foothills Land Conservancy
- J. Oak Ridge National Laboratory
- K. Joint Institute for Energy and the Environment
- L. Great Smoky Mountains Conservation Association
- M. National Council of the Paper Industry for Air & Stream Improvement
- N. Southern Appalachian Man and Biosphere

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

A. U.S. Geological Survey--Biological Resources Division

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

B. National Park Service

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

C. U.S. Forest Service

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

D. Department of Energy

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

H. University of Tennessee

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

F. Appalachian State University

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

G. Western Carolina University

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

H. Florida A&M University

_____ Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

I. Foothills Land Conservancy

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

J. Oak Ridge National Laboratory

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

K. Joint Institute for Energy and the Environment

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

M. Great Smoky Mountains Conservation Association

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

N. National Council of the Paper Industry for Air & Stream Improvement

Date

ARTICLE XII - AUTHORIZING SIGNATURES (cont.)

O. Southern Appalachian Man and Biosphere

Date