

Briefing Statement COOPERATIVE ECOSYSTEM STUDIES UNITS

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Background

Cooperative Ecosystem Studies Units (CESUs) provide research, technical assistance and education to federal land management, environmental and research agencies and their partners. Their broad scope includes the biological, physical, social, and cultural sciences needed to address natural and cultural resource management issues at multiple scales and in an ecosystem context. Each CESU is composed of federal agencies, a host university, and partner institutions. Cooperative and Joint Venture agreements allow each of the participating federal agencies to efficiently transfer funds and duty-station employees at university partners while maintaining responsibility for agency-sponsored activities within CESUs. CESUs are organized around biogeographic areas (a map is available on the CESU website), and linked together in a CESU Network.

The CESU Network has the following objectives:

- provide resource managers with high-quality scientific research, technical assistance and education,
- deliver research and technical assistance that is timely, relevant to resource managers, and needed to develop and implement sound adaptive management approaches,
- ensure the independence and objectivity of research,
- create and maintain effective partnerships among the federal agencies and universities to share resources and expertise,
- take full advantage of university resources while benefiting faculty and students,
- encourage professional development of federal scientists, and
- manage federal resources effectively.

Federal agencies participate in the CESU Network through a Memorandum of Understanding (MOU). The CESU Network is coordinated by a CESU Council that includes representatives of the federal agency partners. The CESU Council meets regularly.

In 1999, four CESUs were competitively established in the following biogeographic areas: Colorado Plateau, Rocky Mountains, Southern Appalachian Mountains, and North Atlantic Coast. In 2000, a

second competition added four CESUs in the following biogeographic areas: Pacific Northwest (including Southeast Alaska), Desert Southwest, Great Plains, and South Florida/Caribbean. In 2001, two CESUs became operational in the Chesapeake Watershed and Great Basin biogeographic areas.

Current Status

Eleven federal agencies participate in the CESU Network, including the Bureau of Land Management, Bureau of Reclamation, US Fish and Wildlife Service, US Geological Survey, National Park Service, USDA Forest Service, Department of Defense, Department of Energy, Environmental Protection Agency, National Aeronautics and Space Administration, and Natural Resources Conservation Service. A total of 64 universities (including 14 minority institutions) and 16 state, tribal and non-governmental partners participate in ten CESUs; 33 states and territories are represented (see attached list). Numerous research, technical assistance and education projects are underway. Some federal agencies have duty-stationed employees at CESUs.

Following a fourth-round competition, two additional CESUs are being established in 2002 in the Great Lakes-Northern Forest and Gulf Coast areas. A fifth competition is now underway for additional CESUs in up to five biogeographic areas: Californian, Hawaii – Pacific Islands, North and West Alaska, Piedmont – South Atlantic Coast, and Upper and Middle Mississippi Valley. When these CESUs are established in 2003, the Network will be complete.

The first *Report to Congress* is available from the CESU website. A draft of the Strategic Plan for the CESU Network is being prepared and the first inventory of Network-wide projects is being assembled.

For a copy of *CESUs – An Introduction* or additional information and materials, please visit the CESU website at <<http://www.cesu.org/cesu>> or contact:

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Cooperative Ecosystem Studies Units (Host, Federal Agencies and Partner Institutions)

Chesapeake Watershed CESU (Host: University System of Maryland - University of Maryland Center for Environmental Science; University of Maryland, College Park; Frostburg State University)

3 States (and DC) represented by host and partners: Maryland, Pennsylvania, Virginia

Federal Partners:

Bureau of Land Management
US Geological Survey
National Park Service
Department of Defense

Partner Institutions (5):

George Mason University
Pennsylvania State University
University of the District of Columbia*
University of Virginia
Institute of Ecosystem Studies (representing Baltimore Long-Term Ecological Research Project)

Colorado Plateau CESU (Host: Northern Arizona University)

6 States represented by host and partners: Arizona, Colorado, Kansas, Oregon, Nevada, Utah

Federal Partners:

Bureau of Land Management
Bureau of Reclamation
US Geological Survey
National Park Service
USDA Forest Service

Partner Institutions (11):

Arizona State University
Colorado State University
Diné College*
Haskell Indian Nations University*
Oregon State University
University of Arizona
University of Nevada, Reno
Utah State University
The Arboretum at Flagstaff
Museum of Northern Arizona
Navajo Nation Archeology Department

Desert Southwest CESU (Host: University of Arizona)

5 States represented by host and partners: Arizona, California, District of Columbia, New Mexico, Texas

Federal Partners:

Bureau of Land Management
US Geological Survey
National Park Service
USDA Forest Service
Department of Defense

Partner Institutions (6):

Howard University*
New Mexico State University
Southwest Texas State University
University of California, Riverside
Arizona-Sonora Desert Museum
Gila River Indian Community (in progress)
Sonoran Institute

Great Basin CESU (Host: University of Nevada, Reno)

6 States represented by host and partners: California, Idaho, Kansas, Nevada, Oregon, Utah

Federal Partners:

Bureau of Land Management
US Geological Survey
National Park Service
USDA Forest Service

Partner Institutions (10):

Utah State University
Desert Research Institute
D-Q University*
Great Basin College
Haskell Indian Nations University*
Idaho State University
Oregon State University
University of Nevada, Las Vegas
University of Utah
White Mountain Research Station

Cooperative Ecosystem Studies Units (Host, Federal Agencies and Partner Institutions)

Great Plains CESU (Host: University of Nebraska)

6 States represented by host and partners: Colorado, Minnesota, Nebraska, North Dakota, Oklahoma, Texas

Federal Partners:

Bureau of Land Management
US Geological Survey
National Park Service
USDA Forest Service

Partner Institutions (10):

Colorado State University
Langston University*
Little Priest Tribal College*
South Dakota State University
Texas A&M University
University of North Dakota
University of Minnesota
University of Oklahoma
University of South Dakota
University of Wyoming

North Atlantic Coast CESU (Host: University of Rhode Island)

3 States represented by host and partners: Maryland, New Jersey, Rhode Island

Federal Partners:

US Geological Survey
National Park Service

Partner Institutions (2):

University of Maryland, Eastern Shore*
Rutgers University

Pacific Northwest CESU (Host: University of Washington)

6 States represented by host and partners: Alabama, Alaska, Idaho, Oregon, Vermont, Washington (and British Columbia)

Federal Partners:

Bureau of Land Management
US Fish & Wildlife Service
US Geological Survey
National Park Service
USDA Forest Service

Partner Institutions (12):

Heritage College*
Oregon State University
Tuskegee University*
University of Alaska, Anchorage
University of Alaska, Southeast
University of British Columbia
University of Idaho
University of Oregon
University of Vermont
Washington State University
Western Washington University
Alaska Department of Fish and Game

Rocky Mountains CESU (Host: University of Montana)

4 States represented by host and partners: Idaho, Montana, Utah, Washington

Federal Partners:

Bureau of Land Management
US Geological Survey
National Park Service
USDA Forest Service

Partner Institutions (6):

Montana State University
Salish Kootenai College*
University of Idaho
University of Wyoming
Utah State University
Washington State University

Cooperative Ecosystem Studies Units (Host, Federal Agencies and Partner Institutions)

South Florida - Caribbean CESU (Host: University of Miami)

4 States (and Territories) represented by host and partners: Florida, North Carolina, Puerto Rico, US Virgin Islands

Federal Partners:

Bureau of Land Management
US Geological Survey
National Park Service

Partner Institutions (9):

Barry University*
Florida A&M University*
Florida Atlantic University
Nova Southeastern University
University of Florida
University of North Carolina, Wilmington
University of Puerto Rico
University of the Virgin Islands*
Audubon of Florida

Southern Appalachian Mountains CESU (Host: University of Tennessee)

3 States represented by hosts and partners: Florida, North Carolina, Tennessee

Federal Partners:

US Geological Survey
National Park Service
USDA Forest Service
Department of Energy

Partner Institutions (9):

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

Cooperative Ecosystem Studies Units (Host, Federal Agencies and Partner Institutions)

Two additional CESUs are being established in FY 2002.

Great Lakes-Northern Forest CESU (Host: University of Minnesota)

13 States represented by hosts and partners: Indiana, Iowa, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, New Mexico, New York, Ohio, Vermont, West Virginia, Wisconsin

Federal Partners:

Bureau of Land Management
US Geological Survey
National Park Service
USDA Forest Service
Natural Resources Conservation Service
National Aeronautics & Space Administration

Partner Institutions (23):

Fond du Lac Tribal and Community College*
Haskell Indian Nations University*
Indiana University
Michigan State University
Michigan Technological University
Minnesota State University, Mankato
Southern University and A&M College*
SUNY-College of Environmental Science and Forestry
University of Iowa
University of Massachusetts, Amherst
University of Toledo
University of Vermont
University of Wisconsin, Madison
West Virginia University
American Indian Science and Engineering Society
Great Lakes Commission
The Great Lakes Forest Alliance
International Association of Great Lakes Research
Minnesota Department of Natural Resources
Minnesota Forest Resources Council
National Council for Air and Stream Improvement
The Nature Conservancy of Minnesota
The Science Museum of Minnesota

Gulf Coast CESU (Host: Texas A&M University)

6 States represented by hosts and partners: Alabama, Florida, Georgia, Louisiana, Mississippi, Texas

Federal Partners:

Bureau of Land Management
US Geological Survey
National Park Service
USDA Forest Service
Department of Defense
Natural Resources Conservation Service
National Aeronautics & Space Administration

Partner Institutions (16):

Auburn University
Louisiana State University
Mississippi State University
Rice University
Southern University and A&M College*
Texas A&M University, Corpus Christi
Texas A&M University, Galveston
Texas A&M University, Kingsville*
Troy State University
University of Central Florida
University of Florida
University of Georgia
University of Louisiana, Lafayette
University of Texas, Austin
Coastal Conservation Association
The Nature Conservancy of Texas

Building a Virtual Watercooler: The Cooperative Ecosystem Studies Units

BY SARAH DEWEERDT

Federal land management agencies count among their resources 268 million acres administered by the Bureau of Land Management, over 280 national parks, 93 million acres in over 500 national wildlife refuges, the Forest Service's 191 million acres of woodlands and grasslands, thousands of plant and animal species—and precious few biologists. The US Geological Survey (USGS) has only about 750 research biologists to serve the Department of Interior agencies, and the Forest Service has fewer than 400 research biologists. Yet federal agencies' scientific resources are rapidly increasing, thanks to a network of partnerships between agencies and universities known as Cooperative Ecosystem Studies Units (CESUs).

The units, which are organized around biogeographic regions, are aimed at providing research, technical assistance, and education to help federal agencies manage the nation's natural and cultural resources. Four pilot CESUs were initiated in 1999; in just two years, the network has grown to 10 units, with 2 more expected to start in 2002.

Each CESU consists of a host university, several federal agencies, and a varying number of partner institutions, including additional universities, state agencies, and tribal and nongovernmental organizations. A current list of participants in the CESU network includes 60 universities in 30 states, 10 federal agencies ranging from the National Park Service (NPS) to the National Aeronautics and Space Administration, and 17 other partners.

According to Gary Machlis, national CESU council coordinator, the program was designed to create "a watercooler culture"—that is, an interdisciplinary, interagency exchange of ideas among a diverse array of researchers.

Thus, the architects of the program invited the participation of biological, physical, social, and cultural scientists at universities and federal agencies. To add diversity to the research collectives, they stipulated that each CESU include at least one minority institution. Today, 14 historically black colleges and universities, predominantly Hispanic-serving institutions, and Native American tribal colleges participate in the CESU network. Jim Tate, science advisor to the secretary of the Department of the Interior, describes this "broad reach, in both the numbers and kinds of partners they bring in," as one of the primary benefits of the CESUs.

Although new, the CESU network has fostered hundreds of projects, and it's already apparent, says Machlis, that "the watercooler culture pays dividends." The number of cross-agency, ecosystem-scale, interdisciplinary projects is increasing, just as the designers of the CESU program hoped. For example, investigators in the Colorado Plateau CESU are proposing a multi-agency, multi-investigator study of fire regimes in the region's piñon-juniper forests. "We can ensure that the same database type and the same experimental design are employed around the Colorado Plateau," says Rod Parnell, CESU director, resulting in a more comprehensive study than might otherwise have been possible.

CESUs have helped the NPS accomplish many of the goals set out in the agency's Natural Resource Challenge (NRC). This 5-year effort, launched in August 1999, aims to increase scientific research, expertise, and management in the national park system. "It was a windfall for us to have CESUs already in place" when the National Resource Challenge began, says Bob Moon, research coordinator for the NPS Intermountain Region. Through the CESU

program, the agency can quickly identify scientists to help with biological inventories in the parks and boost the scientific knowledge of park staff, both of which are key NRC initiatives, Moon says.

The CESU network has accomplished all this with a lean "virtual" organization. At the national level, the network is supported by a CESU Coordinating Council, which consists of a representative from each participating federal agency. Individual CESUs are administered through cooperative and joint venture agreements with the various agencies. The host university provides space, basic administrative support, and the expertise of faculty and graduate students; the agencies provide administrative and project funding and shape the research agenda. In short, the program relies not on new bureaucracy but on new relationships.

Yet this efficiency poses a challenge for the CESU program. "We're suffering from 'oversuccess.' What wasn't envisioned was the true administrative cost" of pursuing so many projects so soon, says Moon. Both Moon and Parnell say that financial issues, such as the low CESU overhead rate (15 percent) and the funds host universities receive from agencies to cover administrative costs, need to be revisited, perhaps when the CESU program undergoes independent peer review in 2004.

In the meantime, the cooperation and collaboration among CESU participants will continue to evolve, with diverse institutions and researchers aiming to build a scientific resource that matches the nation's abundance of wild lands and species.

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