

NatureServe

SUMMARY REPORT ON VEGETATION CLASSIFICATION DEVELOPMENT FOR USDA FOREST SERVICE, REGION 8

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Prepared for
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Region 8 Fisheries, Wildlife, Range, Botany, and Ecology
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¹ NatureServe is an international organization including regional offices, a central office, US State Natural Heritage Programs, and Conservation Data Centres (CDC) in Canada and Latin America and the Caribbean. Ecologists from the following organizations have contributed the development of the ICEC:

United States

Central NatureServe Office, Arlington, VA; Eastern Regional Office, Boston, MA; Midwest Regional Office, Minneapolis, MN; Southeastern Regional Office, Durham, NC; Western Regional Office, Boulder, CO; Alabama Natural Heritage Program, Montgomery AL; Alaska Natural Heritage Program, Anchorage, AK; Arizona Heritage Data Management Center, Phoenix AZ; Arkansas Natural Heritage Commission Little Rock, AR; Blue Ridge Parkway, Asheville, NC; California Natural Heritage Program, Sacramento, CA; Colorado Natural Heritage Program, Fort Collins, CO; Connecticut Natural Diversity Database, Hartford, CT; Delaware Natural Heritage Program, Smyrna, DE; District of Columbia Natural Heritage Program/National Capital Region Conservation Data Center, Washington DC; Florida Natural Areas Inventory, Tallahassee, FL; Georgia Natural Heritage Program, Social Circle, GA; Great Smoky Mountains National Park, Gatlinburg, TN; Gulf Islands National Seashore, Gulf Breeze, FL; Hawaii Natural Heritage Program, Honolulu, Hawaii; Idaho Conservation Data Center, Boise, ID; Illinois Natural Heritage Division/Illinois Natural Heritage Database Program, Springfield, IL; Indiana Natural Heritage Data Center, Indianapolis, IN; Iowa Natural Areas Inventory, Des Moines, IA; Kansas Natural Heritage Inventory, Lawrence, KS; Kentucky Natural Heritage Program, Frankfort, KY; Louisiana Natural Heritage Program, Baton Rouge, LA; Maine Natural Areas Program, Augusta, ME; Mammoth Cave National Park, Mammoth Cave, KY; Maryland Wildlife & Heritage Division, Annapolis, MD; Massachusetts Natural Heritage & Endangered Species Program, Westborough, MA; Michigan Natural Features Inventory, Lansing, MI; Minnesota Natural Heritage & Nongame Research and Minnesota County Biological Survey, St. Paul, MN; Mississippi Natural Heritage Program, Jackson, MI; Missouri Natural Heritage Database, Jefferson City, MO; Montana Natural Heritage Program, Helena, MT; National Forest in North Carolina, Asheville, NC; National Forests in Florida, Tallahassee, FL; National Park Service, Southeastern Regional Office, Atlanta, GA; Navajo Natural Heritage Program, Window Rock, AZ; Nebraska Natural Heritage Program, Lincoln, NE; Nevada Natural Heritage Program, Carson City, NV; New Hampshire Natural Heritage Inventory, Concord, NH; New Jersey Natural Heritage Program, Trenton, NJ; New Mexico Natural Heritage Program, Albuquerque, NM; New York Natural Heritage Program, Latham, NY; North Carolina Natural Heritage Program, Raleigh, NC; North Dakota Natural Heritage Inventory, Bismarck, ND; Ohio Natural Heritage Database, Columbus, OH; Oklahoma Natural Heritage Inventory, Norman, OK; Oregon Natural Heritage Program, Portland, OR; Pennsylvania Natural Diversity Inventory, PA; Rhode Island Natural Heritage Program, Providence, RI; South Carolina Heritage Trust, Columbia, SC; South Dakota Natural Heritage Data Base, Pierre, SD; Tennessee Division of Natural Heritage, Nashville, TN; Tennessee Valley Authority Heritage Program, Norris, TN; Texas Conservation Data Center, San Antonio, TX; Utah Natural Heritage Program, Salt Lake City, UT; Vermont Nongame & Natural Heritage Program, Waterbury, VT; Virginia Division of Natural Heritage, Richmond, VA; Washington Natural Heritage Program, Olympia, WA; West Virginia Natural Heritage Program, Elkins, WV; Wisconsin Natural Heritage Program, Madison, WI; Wyoming Natural Diversity Database, Laramie, WY

Canada

Alberta Natural Heritage Information Centre, Edmonton, AB, Canada; Atlantic Canada Conservation Data Centre, Sackville, New Brunswick, Canada; British Columbia Conservation Data Centre, Victoria, BC, Canada; Manitoba Conservation Data Centre, Winnipeg, MB, Canada; Ontario Natural Heritage Information Centre, Peterborough, ON, Canada; Quebec Conservation Data Centre, Quebec, QC, Canada; Saskatchewan Conservation Data Centre, Regina, SK, Canada; Yukon Conservation Data Centre, Yukon, Canada

Latin American and Caribbean

Centro de Datos para la Conservacion de Bolivia, La Paz , Bolivia; Centro de Datos para la Conservacion de Colombia, Cali, Valle, Columbia; Centro de Datos para la Conservacion de Ecuador, Quito, Ecuador; Centro de Datos para la Conservacion de Guatemala, Ciudad de Guatemala , Guatemala; Centro de Datos para la Conservacion de Panama, Quarry Heights , Panama; Centro de Datos para la Conservacion de Paraguay, San Lorenzo , Paraguay; Centro de Datos para la Conservacion de Peru, Lima, Peru; Centro de Datos para la Conservacion de Sonora, Hermosillo, Sonora , Mexico; Netherlands Antilles Natural Heritage Program, Curaçao , Netherlands Antilles; Puerto Rico-Departamento De Recursos Naturales Y Ambientales, Puerto Rico; Virgin Islands Conservation Data Center, St. Thomas, Virgin Islands.

NatureServe also has partnered with many International and United States Federal and State organizations, which have also contributed significantly to the development of the International Classification. Partners include the following The Nature Conservancy; Provincial Forest Ecosystem Classification Groups in Canada; Canadian Forest Service; Parks Canada; United States Forest Service; National GAP Analysis Program; United States National Park Service; United States Fish and Wildlife Service; United States Geological Survey; United States Department of Defense; Ecological Society of America; Environmental Protection Agency; Natural Resource Conservation Services; United States Department of Energy; and the Tennessee Valley Authority. Many individual state organizations and people from academic institutions have also contributed to the development of this classification.

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PREFACE

This summary report has been prepared to present the results of a continuing agreement between NatureServe, The Nature Conservancy (TNC) and USDA Forest Service Region 8. For ten years, this agreement has provided for the application of the United States National Vegetation Classification (USNVC) standard to Region 8 Forests which has resulted in a basic list of vegetation units (alliances and community associations), which have been presented to the Forest Service on a Forest by Forest basis in a series of reports.

The USNVC has undergone a great deal of change and evolution over this ten year period. It provides a framework for vegetation classification and is intended to serve as a tool for conservation planning and biodiversity protection, as well as resource planning, management, and vegetation mapping. In the southeastern United States, the USNVC has been, and continues to be developed in cooperation with the state Natural Heritage Programs, the USDA Forest Service, and other state and Federal partners. Its development has involved consultation with many individuals and agencies and incorporates information from a variety of publications and other classifications.

The vegetation classification produced through this agreement, and the NatureServe Ecological Systems Classification which is based on it, form the foundation for continuing use of the USNVC on U.S. Forest Service lands in Region 8 for natural resource planning and management. The classification continues to rely on feedback and additional fieldwork to improve its coverage of the individual Forest units. We anticipate that additional activity will continue to refine the classification based on review by Forest Service personnel, review of other vegetation studies, and analysis of data collected during previous field reconnaissance and detailed survey work. The entire National Vegetation Classification is available on-line in a fully searchable database that is updated on a quarterly basis (<http://www.natureserve.org/explorer>).

Comments and suggestions for additions or revisions are welcome and encouraged. Please submit comments to the following address: NatureServe; Southern U. S. Office, 6114 Fayetteville Road, Suite 109, Durham, NC 27713-6284 or by phone or electronic mail: Milo Pyne: 919-484-7857 x 136 (milo_pyne@natureserve.org).

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INTRODUCTION

NatureServe (formerly the Association for Biodiversity Information [ABI]) is a not-for-profit organization dedicated to developing and providing knowledge about the world's natural diversity. Working in partnership with 75 independent Natural Heritage programs and conservation data centers that gather scientific information on rare plants and animals and ecosystems in the U.S., Latin America, and Canada, NatureServe is a leading source for the biodiversity information that is essential for effective conservation action.

NatureServe was formed in July 1999 when The Nature Conservancy and the Natural Heritage Network jointly established an independent organization to achieve their mutual goal of advancing the application of biodiversity information to conservation. NatureServe's databases, staff expertise, and methods reflect more than 25 years of experience, research, and development. NatureServe addresses biodiversity information needs at the regional, national, and international levels, complementing the availability of detailed state or province-level information from individual Natural Heritage programs.

In reviewing the ten-year history of the Forest Service Participating Agreement between TNC and its successors (ABI, NatureServe), it has become apparent that the USDA Forest Service – NatureServe partnership has been the foundation upon which much of the development of the U.S. National Vegetation Classification (USNVC) in the southeastern United States has rested.

HISTORY OF TNC/NATURESERVE AND USDA FOREST SERVICE COLLABORATION

From 1986 to 2004, NatureServe (and its predecessor the Science Division of The Nature Conservancy) were engaged in an agreement with Region 8 of the USDA Forest Service to develop a methodology for the classification of natural communities and vegetation types on the national forests of Region 8 (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia).

An agreement between Region 8 of the Forest Service and The Nature Conservancy dated 1986 states that “it is the responsibility and intention of the Forest Service and the intention of The Nature Conservancy to develop and execute a vegetative community classification system that can possibly be integrated with existing Forest Service cover type and land type classification systems in Region 8”, and continued to state that “the Forest Service and The Nature Conservancy have a common interest in and are organizing efforts to classify and inventory vegetation on National Forests in the South. A major goal is to produce a community description publication for each National Forest which documents the vegetative community types and locations of these community types and vegetation on National Forests in the South. Another goal is to identify high priority examples of community types so that they can be managed to maintain the diversity of natural communities in the South.”

This collaboration between the Region 8 USDA Forest Service and what was then the Southeastern Conservation Science Department of The Nature Conservancy apparently arose from a mutual need for both a standardized classification system and a standardized vegetation sampling methodology.

This agreement committed the Forest Service and The Nature Conservancy to the joint development of a Natural Community classification system for the region. This vision included the participation of the Natural Heritage Programs of the region. The initial methodology outlined in this 1986 document included the assimilation of existing information on natural communities which had been developed by the states; a preliminary crosswalk of the communities developed by the state Natural Heritage Programs; the production of a report documenting these communities and any evident deficiencies in this list; the development of a “hierarchical classification framework”; an investigation of how this classification could be integrated with other Forest Service cover type and landtype classifications; participation in the development of sampling methodologies; a joint investigation of the Forest Service's databases; priority-

setting for future inventory and protection efforts; and the development of recommendations for future work including a pilot study for the inventory of natural communities in detail on a Forest or group of Forests.

The long-range goal and eventual implementation of this vision included the publication of a “community identification manual” that could be “used by field people”. This initial agreement was signed in August 1986 and was scheduled to remain in force until January 1, 1988. In about 1990, Dorothy Allard became Southeast Regional Ecologist for The Nature Conservancy’s Science Division. The primary portions of the obligations of The Nature Conservancy were completed by her and her colleagues in the 1990-1993 period. Initially, the classification methodology involved the multi-state “crosswalk” or reconciliation of Natural Heritage community types to a common standard as the basis of a regional Natural Community Classification (Allard 1990). These types were documented on the National Forests through a combination of the integration of State Natural Heritage Program (NHP) information and other information from Forest Service publications and databases.

By this time, The Nature Conservancy had already developed a standard database, the Biological and Conservation Datasystem (BCD) which was designed to house information about the taxonomy, nomenclature, and conservation status of the “elements of biodiversity” (plants, animals, and natural communities). This database was in use by most of the members of the network of Natural Heritage Programs and Conservation Data Centers. The most important modules of this database are the “Element Tracking” (ET) file, the “Community Characterization Abstract” (CCA) file, and the “Element Global Ranking” (EGR) file.

In 1993, the design of the “ECOMAP” Hierarchy (National Framework of Ecological Units) was being developed by the USDA Forest Service (ECOMAP 1993), and it was intended that the hierarchical framework of the National Vegetation Classification System (NVC) would parallel this framework.

By 1994, priorities were being set by TNC and the Forest Service for inventory efforts in the South under the leadership of Alan Weakley (who succeeded Dorothy Allard) and Karen Patterson. Some forests identified at this time as priorities included the National Forests in North Carolina (Croatan and Uwharrie), the Kisatchie National Forest in Louisiana, and the Sumter in South Carolina. Work at this time focused on the development of the “Community Characterization Abstract” (CCA) portion of the BCD DataBase.

Also at about this time, the classification itself underwent a major revision. The national decision on the part of The Nature Conservancy to implement a hierarchical classification system involving a combination of two floristic lower levels (the Alliance and the Association) and five upper physiognomic levels (with seven Classes and various Subclasses). This methodological shift was designed to address the lack of a national classification framework for natural communities or vegetation types. This severely hindered efforts to describe these components of Biodiversity and to develop plans for their protection, conservation, and management (Grossman et al. 1994). This lack of a consistent classification system was a major obstacle to using ecological communities as conservation units for national, regional, and global projects.

In addition to the USDA Forest Service, the US Fish and Wildlife Service is another federal agency whose success depends on there being a standardized system of natural community information in order to prioritize their conservation activities. A substantive report (Grossman et al. 1994) was issued in 1994 for the USFWS. This represented a first effort to enumerate the rarest vegetation associations in the United States, for use by the Land Acquisition Priority System (LAPS).

By 1997, with additional work supported by the USGS National GAP Analysis Program, the Alliance level of the classification was fully developed and populated. This resulted in a physiognomic-floristic classification of existing vegetation that could be applied nationally and internationally (TNC 1997). As developed at that time, the system is hierarchical with physiognomic criteria at the highest levels of the hierarchy and floristic criteria at the lower levels. The formation concept, with units modified from UNESCO (1973), guided the development and definition of the physiognomic units, and the association and alliance concepts define the floristic units (see Figure 1). This system allows the broad-scale

geographic application of physiognomic characteristics to be tied to local, site-specific, floristically-defined units (i.e. the plant association). Practically, classifications of vegetation types are seen as useful tools for communication about vegetation patterns, and a classification approach relying on dominant and indicator species has proven useful in interpreting stand similarities. Thus, an ordering of vegetation into types is possible, but within limits.

NatureServe and TNC, in conjunction with the network of Natural Heritage Programs and Conservation Data Centers, began developing a standardized, hierarchical vegetation classification system. This system, now known as the International Ecological Classification Standard (IECS; formerly the International Classification of Ecological Communities [ICEC]), has now been used to classify and describe terrestrial communities across the United States and other parts of the world (Grossman et al. 1994, Grossman et al. 1998) through analysis of community data from a range-wide perspective.

The hierarchy for the Terrestrial System (Grossman et al. 1998) has seven levels, with five physiognomic levels (formation class, formation subclass, formation group, subgroup and formation) and two floristic levels (alliance and association). The basic unit of the physiognomic portion of the classification is the "formation", a "community type defined by dominance of a given growth form in the uppermost stratum (or the uppermost closed stratum) of the community, or by a combination of dominant growth forms" (Whittaker 1962, see also Schrader-Frechette and McCoy 1993).

For the past decade, TNC, NatureServe and the international network of Natural Heritage Programs and Conservation Data Centers (CDC) have been developing the USNVC. It has received widespread support from state, federal, academic, and international partners (Jennings 1993, Greenall 1996, Loucks 1996, FGDC 1997). For the first time, vegetation of all types, whether mountain bogs, shortleaf pine woodlands, or limestone glades can be treated together in one system. This classification serves many natural resource management purposes including conservation planning, biodiversity protection, scientific research, inventory, and mapping.

A MULTI-AGENCY EFFORT FOR VEGETATION CLASSIFICATION

In addition to the basic agreement which provided support for the development of the classification on the National Forests, other projects have included:

- Southern Appalachian Species Viability Database [completed early 2003]
- Research Natural Area work (ca. 1997-1998) – classification report and attribution
- Attribution of Alliances to Section & Subsection
- Element Global Ranking (EGR - National Project – Ecology component)
- Forest Inventory and Analysis (FIA) Project (Linking plot data to alliances)
- Cherokee National Forest (Classification, Key to associations, Shortleaf Pine Report)

Other NatureServe Southeast Clients whose projects have supported the development of the US NVC and whose efforts have complimented those of the USDA Forest Service include: the US National Park Service (17 Parks Inventory and Mapping Project; Great Smoky Mountains Mapping); the US Department of Defense (Ft. Benning, AL/GA classification and mapping); The Nature Conservancy (Ecoregional Planning; Resource Management and Restoration Planning and Implementation); and the USGS - BRD - GAP Analysis Program (single state and multi-state mapping).

Over time, additional research pointed to the utility of a classification based more explicitly on vegetation as a more reliable and repeatable means of characterizing forest composition. This, in part, led to the establishment of the United States National Vegetation Classification (US NVC) among the four regions of The Nature Conservancy in the 1994-1996 period, with subsequent refinements (Anderson et al. 1998, Grossman et al. 1994, Grossman et al. 1998, Weakley et al. 1996, Weakley et al. 1998).

The continuation of the collaboration with the USDA Forest Service on this basis led to the development of a more robust sampling methodology which included the collection of about 900 geo-referenced sampling plots (measuring 20 by 50 meters [0.1 hectare]) in the majority of Region 8 National Forests from about 1998 to 2003. Earlier non-plot-based observations and other data (e.g. literature reports, other data sets) were also incorporated into the US NVC for those forests on which TNC / NatureServe did not collect plots. In addition, much information from other datasets (e.g. Natural Heritage Program, USDA Forest Service) were incorporated into the analyses that resulted in the final classifications.

As the NatureServe sampling and/or general reconnaissance activities were concluded in a given forest or group of forests, the data were analyzed and a standard report on the Alliances and Associations of the Forest (or group of forests) was issued (initially as paper documents, and subsequently as Adobe .pdf files in addition to paper books).

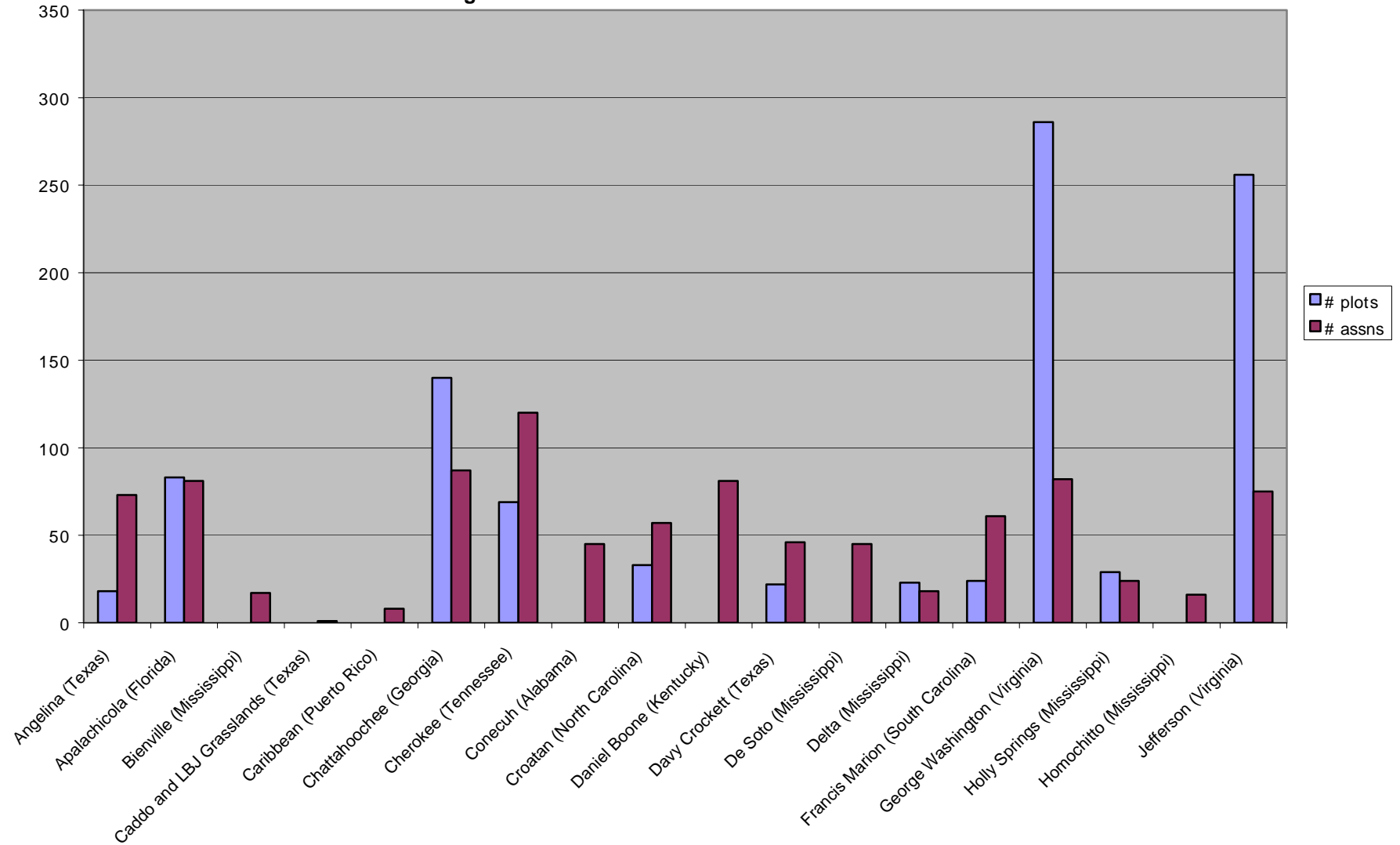
In several cases (East Gulf Coastal Plain, Cumberlands/Southern Ridge and Valley), combined reports were issued for several Forests in a TNC Ecoregion. This procedure supported both conservation planning and ecological classification in those regions. In addition, with the data collected in a group of Appalachian Forests (Bankhead, Chattahoochee, Oconee, Talladega), an analysis of this large dataset was conducted, reducing possible redundancy of associations recognized on these forests.

Following are some tables and charts which illustrate the numbers of plots taken by NatureServe (where applicable), numbers of NVC Associations attributed to each forest in the region, and the products that have been produced in fulfillment of this contract.

Table of Products - USDA Forest Service / NatureServe Participating Agreement

Product	date
Bienville, De Soto, Homochitto NFs (Mississippi; Book, .pdf)	2004
Croatan NF (North Carolina; Book, .pdf)	2004
Delta, Holly Springs, Tombigbee NFs (Mississippi; Book, .pdf)	2004
Francis Marion NF (South Carolina; Book, .pdf)	2004
Nantahala - Pisgah NFs (North Carolina; Book, .pdf)	2004
Ouachita, Ozark, St. Francis NFs (Arkansas; Book, .pdf)	2004
Sumter NF (South Carolina; Book, .pdf)	2004
Uwharrie NF (North Carolina; Book, .pdf)	2004
Kisatchie NF (Louisiana; Book, .pdf)	2004
Land Between the Lakes (Kentucky, Tennessee; Book, .pdf)	2004
Alliances on Region 8 National Forests (spreadsheet)	2002
Associations on Region 8 National Forests (spreadsheet)	2002
Cherokee NF (Tennessee; Final; Book, .pdf)	2002
Florida NFs (Final; Book, .pdf)	2002
Texas NFs (Final; Book, .pdf)	2002
Chattahoochee - Oconee NFs (Georgia; Final; Book, .pdf)	2001
Cherokee NF (Tennessee; Interim; Book)	2001
Daniel Boone NF (Kentucky; Final; Book, .pdf)	2001
G. Washington - Jefferson NFs (Virginia; Final; Book [VADNH])	2001
Talladega - Tuskegee NFs (Final; Book, .pdf)	2001
William B. Bankhead NF (Alabama; Final; Book)	2000
Chattahoochee NF (Georgia; Interim; Book)	2000
Cumberland / S. Ridge and Valley NFs (Interim; Book)	2000
Ozark - Ouachita NFs (Arkansas; Final; Book)	2000
Carolina Piedmont NFs (North & South Carolina; Book)	1999
East Gulf Coastal Plain NFs (Alabama, Mississippi; Book)	1998
Ozark - Ouachita NFs (Arkansas; Interim; Book)	1998

Region 8 National Forests - Plots and Associations 1



Region 8 National Forests - Plots and Associations 2

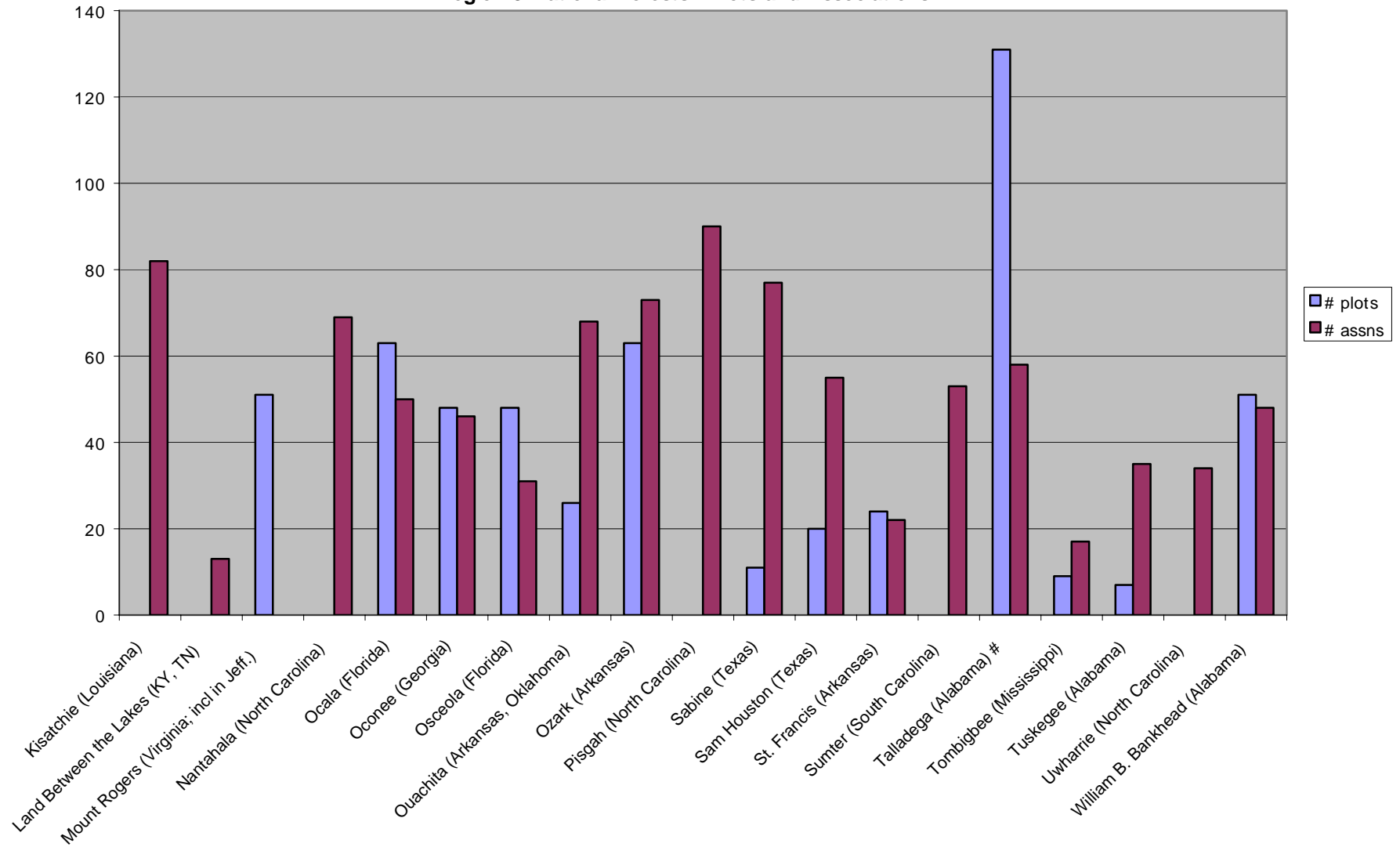


Table of Region 8 National Forests with Numbers of Plots and Associations

National Forest (State)	survey date	report date	num plots	num assns
St. Francis (Arkansas)	2002	2004	24	22
Delta (Mississippi)	2002	2004	23	18
Holly Springs (Mississippi)	2002	2004	29	24
Tombigbee (Mississippi)	2002	2004	*9	17
Croatan (North Carolina)	2002	2004	33	57
Francis Marion (South Carolina)	2002	2004	*24	61
Apalachicola (Florida)	2001	2002	83	81
Ocala (Florida)	2001	2002	63	50
Osceola (Florida)	2001	2002	48	31
Angelina (Texas)	2001	2002	18	73
Davy Crockett (Texas)	2001	2002	22	46
Sabine (Texas)	2001	2002	11	77
Sam Houston (Texas)	2001	2002	20	55
Cherokee (Tennessee)	2000-2001	2002	69	120
Daniel Boone (Kentucky)	**	2001	n/a	81
Talladega (Alabama) #	2000	2001	131	58
Tuskegee (Alabama)	2000	2001	7	35
Oconee (Georgia)	2000	2001	48	46
George Washington (Virginia)	2000	2001	286	82
Jefferson (Virginia)	2000	2001	256	75
Mount Rogers (Virginia; incl. in Jeff.)	2000	****	51	****
Chattahoochee (Georgia)	1999-2000	2001	140	87
William B. Bankhead (Alabama)	1999	2000	51	48
Ouachita (Arkansas, Oklahoma)	1998	2000	*26	68
Ozark (Arkansas)	1998	2000	*63	73
Bienville (Mississippi)	1996-1997 *	1998 *****	n/a	17
Conecuh (Alabama)	1996-1997 *	1998 *****	n/a	45
De Soto (Mississippi)	1996-1997 *	1998 *****	n/a	45
Homochitto (Mississippi)	1996-1997 *	1998 *****	n/a	16
Kisatchie (Louisiana)	1994-1995	***	n/a	82
Nantahala (North Carolina)	1994-1995	***	n/a	69
Pisgah (North Carolina)	1994-1995	***	n/a	90
Uwharrie (North Carolina)	1994-1995	***	n/a	34
Sumter (South Carolina)	1994-1995	***	n/a	53
Land Between the Lakes (KY, TN)	**	***	n/a	13
Caribbean (Puerto Rico)	x	x	x	8
Caddo and LBJ Grasslands	x	x	x	1

n/a = Surveyed without plots, or others' data used

* plots not entered into database

** Report based on data collected by others

*** No specific report previously issued

**** Included with other Forests in state

***** Part of 1998 E. Gulf Coastal Plain Report

x = not surveyed; incomplete

Includes Oakmulgee Division

NATIONAL FORESTS SURVEY AND INVENTORY STATUS

Angelina National Forest (Texas) – An inventory for plant communities was conducted in the National Forests of Texas in 2001, and additional data from the Ecological Classification System (ECS) were integrated into the analysis. There were 18 plots collected in this forest and 73 NVC associations are currently attributed to it. A report of Texas Forests was produced in 2002.

Apalachicola National Forest (Florida) – An inventory for plant communities was conducted in the National Forests of Florida in 2001. There were 83 plots collected in this forest and 81 NVC associations are currently attributed to it. A report of Florida Forests was produced in 2002.

Bienville National Forest (Mississippi) – A series of plant community reconnaissance surveys were conducted in the National Forests of the East Gulf Coastal Plain of Alabama and Mississippi in 1996-1997. A report on these Forests (and a related key) was produced in 1998. There are 17 NVC Associations currently attributed to this Forest. An updated southern Mississippi report is being produced in 2004.

Caddo and Lyndon B. Johnson National Grasslands (Texas) – These units were not inventoried and no specific data has been developed about their plant communities. There is one NVC association currently attributed here. No report has been produced.

Chattahoochee National Forest (Georgia) – Inventories for plant communities were conducted in this National Forest in 1999 and 2000. There were 140 plots collected in this forest and 87 NVC associations are currently attributed to it. An interim report was produced in 2000, a final one in 2001.

Cherokee National Forest (Tennessee) – Inventories for plant communities were conducted in this National Forest in 2000 and 2001. There were 69 plots collected in this forest and 120 NVC associations are currently attributed to it. An interim report was produced in 2001, a final one in 2002.

Conecuh National Forest (Alabama) – A series of plant community reconnaissance surveys were conducted in the National Forests of the East Gulf Coastal Plain of Alabama and Mississippi in 1996-1997. A report on these Forests (and a related key) was produced in 1998. There are 45 NVC associations currently attributed to this forest. Some additional inventory work was done in 2003.

Croatian National Forest (North Carolina) – An early reconnaissance survey effort in 1994-1995 resulted in numerous plant communities being attributed to this forest. In addition, other data from the region has also been integrated into the U.S. National Vegetation Classification and additional inventory work was conducted in 2002. There were 33 plots collected in this forest and 57 NVC associations currently attributed to it. A report is being produced in 2004.

Daniel Boone National Forest (Kentucky) – Early inventory efforts (1991-1993) by The Nature Conservancy and the Kentucky Nature Preserves Commission resulted in several plant communities being attributed to this forest. In addition, other data has also been integrated into the U.S. National Vegetation Classification. There are 81 NVC associations currently attributed to it. A final report was produced in 2000.

Davy Crockett National Forest (Texas) – An inventory for plant communities was conducted in the National Forests of Texas in 2001, and additional data from the Ecological Classification System (ECS) were integrated into the analysis. There were 22 plots collected in this forest and 46 NVC associations are currently attributed to it. A report of Texas Forests was produced in 2002.

De Soto National Forest (Mississippi) – A series of plant community reconnaissance surveys were conducted in the National Forests of the East Gulf Coastal Plain of Alabama and Mississippi in 1996-1997, and other field data were integrated into the classification. A report on these Forests (and a related key) was produced in 1998. There are 45 NVC associations currently attributed to this forest. An updated southern Mississippi report is being produced in 2004.

Delta National Forest (Mississippi) – An inventory for plant communities was conducted in the National Forests of northern Mississippi in 2002. There were 23 plots collected in this forest and 18 NVC associations are currently attributed to it. A report is being produced in 2004.

Francis Marion National Forest (South Carolina) – Early reconnaissance survey efforts resulted in several plant communities being attributed to this forest. In addition, other data from the region has also been integrated into the U.S. National Vegetation Classification, and additional inventory work was conducted in 2002-2003. There were 24 plots collected in this forest and 61 NVC associations are currently attributed to it. A report is being produced in 2004.

George Washington National Forest (Virginia) – In 2000, the Virginia Natural Heritage Program (VANHP) conducted an inventory for plant communities in the National Forests of Virginia. There were 286 plots collected in this forest and 82 NVC associations are currently attributed to it. A report was produced in 2001 by VANHP.

Holly Springs National Forest (Mississippi) – An inventory for plant communities was conducted in the National Forests of northern Mississippi in 2002. There were 29 plots collected in this forest and 24 NVC associations are currently attributed to it. A report is being produced in 2004.

Homochitto National Forest (Mississippi) – A series of plant community reconnaissance surveys were conducted in the National Forests of the East Gulf Coastal Plain of Alabama and Mississippi in 1996-1997. A report on these Forests (and a related key) was produced in 1998. There are 18 NVC associations currently attributed to this forest. An updated southern Mississippi report is being produced in 2004.

Jefferson National Forest (Virginia) – In 2000, the Virginia Natural Heritage Program (VANHP) conducted an inventory for plant communities in the National Forests of Virginia. There were 256 plots collected in this forest and 75 NVC associations are currently attributed to it. A report was produced in 2001 by VANHP.

Kisatchie National Forest (Louisiana) – An early reconnaissance survey effort in 1994-1995 resulted in numerous plant communities being attributed to this forest. In addition, other data from the region has also been integrated into the U.S. National Vegetation Classification. There are 82 NVC associations currently attributed to it. A report is being produced in 2004.

Land Between The Lakes National Recreation Area (Tennessee) – A specific inventory for plant communities has not been conducted in this Unit, but other data from the region has been integrated into the U.S. National Vegetation Classification. There are 13 NVC associations currently attributed to it. A report is being produced in 2004.

Mount Rogers National Recreation Area (Virginia) – This area was included in the inventories implemented by the Virginia Natural Heritage Program (VANHP) in 2000 in the National Forests of Virginia. These reports were produced by VANHP in 2001.

Nantahala National Forest (North Carolina) – A variety of data from the National Forests of the region have been integrated into the U.S. National Vegetation Classification. There are 69 NVC associations currently attributed to this Forest. A report is being produced in 2004.

Ocala National Forest (Florida) – An inventory for plant communities was conducted in the National Forests of Florida in the Fall of 2002. There were 63 plots collected in this forest and 50 NVC associations are currently attributed to it. A report of Florida Forests was produced in 2002.

Oconee National Forest (Georgia) – An inventory for plant communities was conducted in this National Forest in 2000. There were 48 plots collected in this forest and 46 NVC associations are currently attributed to it. A report was produced in 2001.

Osceola National Forest (Florida) – An inventory for plant communities was conducted in the National Forests of Florida in the Fall of 2002. There were 48 plots collected in this forest and 31 NVC associations are currently attributed to it. A report was produced in 2002.

Ouachita National Forest (Arkansas) – An inventory for plant communities was conducted in this National Forest in the Fall of 1998. There were 26 plots collected in this forest and 68 NVC associations are currently attributed to it. An interim report was produced in 1998, a final one in 2000. A complete report of all Arkansas Forests is being produced in 2004.

Ozark National Forest (Arkansas) – An inventory for plant communities was conducted in this National Forest in the Fall of 1998. There were 63 plots collected in this forest and 74 NVC associations are currently attributed to it. An interim report was produced in 1998 and a final one in 2000. A complete report of all Arkansas Forests is being produced in 2004.

Pisgah National Forest (North Carolina) – A variety of data from the National Forests of the region have been integrated into the U.S. National Vegetation Classification. There are 90 NVC associations currently attributed to this Forest. A report is being produced in 2004.

Sabine National Forest (Texas) – An inventory for plant communities was conducted in the National Forests of Texas in the 2001, and additional data from the Ecological Classification System (ECS) were integrated into the analysis. There were 11 plots collected in this forest and 77 NVC associations are currently attributed to it. A report of Texas Forests was produced in 2002.

Sam Houston National Forest (Texas) – An inventory for plant communities was conducted in the National Forests of Texas in 2001, and additional data from the Ecological Classification System

(ECS) were integrated into the analysis. There were 20 plots collected in this forest and 55 NVC associations are currently attributed to it. A report of Texas Forests was produced in 2002.

St. Francis National Forest (Arkansas) – An inventory for plant communities was conducted in this National Forest in 2002. There were 24 plots collected in this forest and 22 NVC associations are currently attributed to it. A report is being produced in 2004.

Sumter National Forest (South Carolina) – An early reconnaissance survey effort in 1994-1995 resulted in numerous plant communities being attributed to this forest. In addition, other data from the region has also been integrated into the U.S. National Vegetation Classification. There are 53 NVC associations currently attributed to it. This forest was included in a “Carolina Piedmont” report produced in 1999 and a final report is being produced in 2004.

Talladega National Forest (Alabama) – An inventory for plant communities was conducted in the National Forests of Alabama (exclusive of the Conecuh) in the 2000. There were 131 plots collected in this forest and 58 NVC associations are currently attributed to it. Of the 131 plots, 56 are in the Talladega Division and 75 in the Oakmulgee Division. A report was produced in 2001.

Tombigbee National Forest (Mississippi) – An inventory for plant communities was conducted in the National Forests of northern Mississippi in 2002. There were 9 plots collected in this forest and 17 NVC associations are currently attributed to it. A report is being produced in 2004.

Tuskegee National Forest (Alabama) – An inventory for plant communities was conducted in the National Forests of Alabama (exclusive of the Conecuh) in 2000. There were 7 plots collected in this forest and 35 NVC associations are currently attributed to it. A report was produced in 2001.

Uwharrie National Forest (North Carolina) – An early reconnaissance survey effort in 1994-1995 resulted in numerous plant communities being attributed to this forest. In addition, other data from the region has also been integrated into the U.S. National Vegetation Classification. There are 34 NVC associations currently attributed to it. This forest was included in a “Carolina Piedmont” report produced in 1999 and a final report is being produced in 2004.

William B. Bankhead National Forest (Alabama) – An inventory for plant communities was conducted in the National Forests of Alabama (exclusive of the Conecuh) in 1999. There were 51 plots collected in this forest and 48 NVC associations are currently attributed to it. A report was produced in 2000.

CONCLUSIONS

The overall result of this research (and compatible data collection and integration from other Federal, State, and private conservation lands) has been a robust and field-based set of Alliances and Associations for the forests of Region 8, which are being provided to the Service as a set of paper reports (which are also available from <http://www.natureserve.org/publications/library.jsp#techrpts> as .pdf [Adobe] digital documents) on the vegetation of each of these forests. The plots are referenced to the Alliance and Association levels of the US NVC as well as partially to a new “meso-scale” ecological unit developed by NatureServe, the “Ecological System”. The data about the alliances and Associations is also available from the “NatureServe Explorer” at <http://www.natureserve.org/explorer/>.

There remain numerous opportunities for refinement of the classification, either through the collection of additional field data, or through the analysis of existing datasets. Some forests on which these activities would be particularly fruitful include the Bienville National Forest (Mississippi), the Caddo and Lyndon B. Johnson National Grasslands (Texas), the Caribbean National Forest (Puerto Rico), the Homochitto National Forest (Mississippi), the Kisatchie National Forest (Louisiana) and the Sumter National Forest (South Carolina). In some cases these are forests that were the subject of early reconnaissance efforts, but from which no detailed plot data has been collected, or forests with abundant plot data that has not been thoroughly analyzed.

We are proud of the work that has resulted from this collaboration and look forward to a continuation of work related to the continued development and review of the NVC and its implementation on the lands managed by the USDA Forest Service, which are more than ever critical to the conservation of our nation’s biodiversity.

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