

Table of Contents

Part I. INTRODUCTION	1
Part II. DETAILED VARIABLE DESCRIPTIONS	3
FEDERAL Resources	3
National Wilderness Preservation System (NWPS)	3
USDA Forest Service	4
National Park Service	6
U.S. Army Corps of Engineers	8
Bureau of Land Management	10
U. S. Fish & Wildlife Service	12
Bureau of Reclamation	14
Tennessee Valley Authority	16
National Wild and Scenic Rivers	17
Nationwide Rivers Inventory 1993	18
STATE Resources	19
Public Campgrounds	19
State Parks	20
National Resources Inventory	21
American Whitewater Affiliation Inventory of Whitewater Rivers	28
LOCAL Resources	29
Local “Enhancement” projects funded through ISTEA	29
Rail-Trails	30
Federal Lands to Parks Program recreation areas	31
Local government recreation and park agencies, recreation centers, and parks ..	32
PRIVATE Resources	33
Private Campgrounds	33
Private rural land available for outdoor recreation	35
Private forest land	37
The Nature Conservancy preserves and tracts	39
Recreation Businesses	41
Cross Country Skiing	46
Alpine Skiing	47
OTHER Resource and Socioeconomic Descriptor Variables	48
Bailey’s Ecoregions and Divisions	48
Economic Research Service (ERS) County Typologies and Rural/Urban Continuum	50
IMPLAN Resource Dependence Typology: Tourism and Forest Product Industries	53
Climatological and Geographic Data	58
U. S. Census Bureau Data	59
NORSIS Recreation Supply Indexes by Resource Type	60

Carter J. Betz
October 15, 1997

NORSIS 1997: Codebook and Documentation

Part I. INTRODUCTION

The National Outdoor Recreation Supply Information System (NORSIS) 1997 is a county-level database of outdoor recreation resources in the United States compiled for the 1998 Renewable Resources Planning Act (RPA) Assessment of Outdoor Recreation and Wilderness. It consists of 3,116 observations and 492 variables and is stored in SAS library format in this location on the hard drive of Carter Betz's computer:

c:\rpa\norsis97.sd2

A single SAS program created NORSIS from data stored in more than 30 source datasets. This program is stored in the same location with the filename:

c:\rpa\norsis97.prg

The SAS log of the norsis97.prg program is stored as:

c:\rpa\norsis97.log

The database, program, and log are also stored on the zip disk that accompanies this notebook. Further, each of the source datasets (all SAS libraries) that norsis97.prg reads from are also included on the zip disk in the subdirectory \source. [Note: most of the source data sets have permanently stored formats. These are not included on the zip disk. To access the SAS datasets without the formats, include the SAS program statement: *options nofmtterr;*]. Raw data files acquired from agencies and organizations consisted mostly of Ascii text files and Dbase *.dbf files. These were the input data sets that were used to create the SAS library source datasets. These original data are stored in the **c:\rpa\supply** subdirectory on Carter Betz's hard drive and are backed up on the "RPA Supply" zip drive disk, which is kept with the NORSIS codebook.

The 3,116 observations include independent cities and a single observation for the state of Alaska in addition to county units in the other 49 states. The breakdown is as follows:

Counties	3071
Indep. Cities	44
State of Alaska	<u>1</u>
Total	3116

Independent cities include Baltimore, St. Louis, Carson City, NV and 41 cities in Virginia. Kalawao County, Hawaii was not included in the database because it is a very small island for which none of the source datasets included data. Each county (and independent city) is identified in NORSIS by a unique 5-digit FIPS code with the variable name FIPS. FIPS codes were developed by the U.S. Bureau of Standards to serve as standard identification codes for use by the federal government and others. A list of FIPS codes is not included in this NORSIS codebook, but is available in nearly any Census Bureau product. The NORSIS database does, however, include the variable NAME which is a character variable specifying the city and state, e.g., Jefferson, CO. Another variable, SQMI, gives the square mileage of the county.

The 492 variables that comprise NORSIS are described in detail in this document. Each was derived from a source dataset and aggregated to a summary measure at the county-level. Typically, these measures are either the sum total of land or water acreage in the county or the sum total of outdoor recreation facility counts, e.g., developed campsites. A number of other variables that, technically, are not recreation resources are also included in the database. These include some socioeconomic descriptors from the U.S. Census, acres in Bailey's ecoregions and divisions, and IMPLAN economic sector information related to the tourism and forest products industries. The detailed description of each variable includes the following information:

- a. variable name and label
- b. name and description of the source dataset including:
 - * vintage (i.e., year)
 - * agency or organization and contact person from whom data were acquired
 - * SAS library filename and location
- c. complete definition of the variable, with background and description of source dataset

NORSIS variables are organized by resource ownership and presented in the following order: Federal, State, Local, and Private resources. Within each ownership, data are presented by type of resource: land, water, snow/ice. Not every ownership category has data for the three types of resources.

A list of all NORSIS variables with labels is located in the appendix to this document. The list, which is a "Contents Procedure" output from SAS, lists variables first alphabetically and then in the order in which they are stored in the SAS library. The list of variables by stored position is convenient because it allows the analyst to specify a range of variable names for analyzing a group of variables rather than spelling out each individual variable name. The detailed variable descriptions which follow discuss variables in groups with the same source datasets.

Part II. DETAILED VARIABLE DESCRIPTIONS

FEDERAL Resources

1. National Wilderness Preservation System (NWPS)

<u>Variable Name</u>	<u>Label</u>
WILDFS	'NWPS acreage: USDA-FS 1992'
WILDNPS	'NWPS acreage: USDI-NPS 1992'
WILDFWS	'NWPS acreage: USDI-FWS 1992'
WILDBLM	'NWPS acreage: USDI-BLM 1992'
WILDALL	'NWPS acreage: Total 1992'

Source Dataset

1993 RPA Update database, data updated through June 1992.

Acquired from: SRS 4901. Data compiled by former FS employee Mark Young.

Filename: **c:\rpa\norsis87\wild93.sd2**

NORSIS Variable Definitions

NWPS acreage managed by respective federal agencies per county. Variable WILDALL is sum of the first four variables, i.e., total NWPS acreage per county.

(Note: In addition to this database, we also have a database of NWPS units, which lists all Wilderness Areas by agency, state and date designated, with acreage. This database is not at the county level, however, and thus is not part of NORSIS. It was acquired from BLM Special Areas and Land Tenure Group, Rob Hellie, (202) 452-7703. Data are current as of July 3, 1995, thus it is more up-to-date than the wilderness data in NORSIS. SAS library filename is:

c:\rpa\supply\data\wildern\hellie\wildern.sd2.)

2. USDA Forest Service

a. Land Area

<u>Variable Name</u>	<u>Label</u>
FSNFACRE	'USDA-FS National Forest acres'
FSNGACRE	'USDA-FS National Grassland acres'

Source Dataset

National Forest System Land Area by county, 1995

Acquired from: John Hof, USDA-FS, Rocky Mtn. Forest & Range Expt. Station.

Filename: **c:\rpa\supply\data\usdafs\fs.sd2**

NORSIS Variable Definitions

Sum total of National Forest and National Grassland acreage per county.

2. USDA Forest Service (continued)

b. Recreation Facilities

<u>Variable Name</u>	<u>Label</u>
FSRAMP	'USDA-FS # boatramps 1987'
FSPICNIC	'USDA-FS # picnic areas 1987'
FSSWIM	'USDA-FS # devel. swimming areas 1987'
FSTRLHD	'USDA-FS # trailheads 1987'
FSROAD	'USDA-FS miles road open to public 1987'
FSCGS	'USDA-FS # of campgrounds 1987'
FSTENTS	'USDA-FS # of tentsites 1987'
FSTRLRS	'USDA-FS # of trailer sites 1987'
FSCGAC	'USDA-FS campground acres 1987'

Source Dataset

NORSIS 1987.

Acquired from: SRS-4901. Data compiled by Don English for 1989 RPA Assessment. Same data were not available from FS Washington Office Recreation Staff for the 1998 RPA Assessment, so we decided to include data available from 1987 NORSIS.

Filename: **c:\rpa\norsis87\norsmisc.sd2**

NORSIS Variable Definitions

Sum total of either the number of facilities, miles of road or campground acres per county.

3. National Park Service

a. Land Area

<u>Variable Name</u>	<u>Label</u>
NPSFED	'NPS federal acres'
NPSNFED	'NPS non-federal acres'
NPSGROSS	'NPS gross acres'
NPSNRAAC	'NPS Natl. Rec. Area acres'
NPSHISAC	'NPS Historic/Military site acres'
NPSNSAC	'NPS National Lakeshore/Seashore acres'
NPSNMAC	'NPS National Monument acres'
NPSNPAC	'NPS National Park acres'
NPSNRAC	'NPS National Rivers acres'
NPSPKYAC	'NPS Natl. Parkway acres'

Source Dataset

National Park Service, Master Deed Listing, State and County Report by State. As of 10/31/95.

Acquired from: NPS Land Resources Division. Mike Walsh. (202) 565-1091.

Filename: **c:\rpa\supply\data\nps\nps.sd2**

NORSIS Variable Definitions

NPSFED, NPSNFED, and NPSGROSS are sum total of NPS acres per county for all units of the National Park Service. NPSFED is federally-owned land. NPSNFED is all other public and private land within NPS boundaries. NPSGROSS is the sum of NPSFED and NPSNFED. Remaining variables are the per county acreages for the specific NPS categories. These category acreage variables sum to NPSGROSS.

3. National Park Service (continued)

b. Recreation Facilities

<u>Variable Name</u>	<u>Label</u>
NPSPIC	'NPS # units with picnicking'
NPSCAMP	'NPS # units with camping'
NPSHIKE	'NPS # units with hiking'
NPSMTNCL	'NPS # units with mountain climbing'
NPSHORSE	'NPS # units with horse trails'
NPSSWIM	'NPS # units with swimming'
NPSBOAT	'NPS # units with boating'
NPSRAMP	'NPS # units with boat ramps'
NPSFISH	'NPS # units with fishing'
NPSHUNT	'NPS # units with hunting'
NPSBIKE	'NPS # units with bicycle trails'
NPSSNOWM	'NPS # units with snowmobiling'
NPSXCSKI	'NPS # units with cross-country skiing'

Source Dataset

National Park Service Map and Guide, 1995.

Acquired from: NPS National Center for Recreation and Conservation. Merle Van Horne.
(202) 565-1192. Data entered into *.dbf file and converted to SAS library.

Additional data were obtained from Ken Hornback and Tom Wade, both of NPS Socio-Economic Studies Unit, Denver (303) 969-2060. Wade provided NPS Public Use Statistics for years 1979-1995 (**c:\rpa\supply\data\nps\npsuse.sd2**). Hornback provided a personal spreadsheet (included in npsinfo.sd2) which included additional information on all units such as presence and amount of user fees, year of designation, and Unit Theme. Neither Wade's nor Hornback's data were used in developing Norsis, however.

Filename: **c:\rpa\supply\data\nps\npsinfo.sd2**

NORSIS Variable Definitions

Each of the NPS recreation facility variables is simply the sum total of NPS units located in the county that possess the particular facility. Therefore this number ranges from 0 to a maximum of the number of NPS units located in the county providing they each have the facility in question.

4. U.S. Army Corps of Engineers

a. COE Reservoir Projects

<u>Variable Name</u>	<u>Label</u>
COESHORE	'COE Project total shoreline miles'
COEACRES	'COE Project total land and water acres'
COEWATER	'COE Project total water acres'
COEINTEN	'COE Project intensive use acres'
COELOWD	'COE Project low density acres'
COEVCS	'COE # Visitor Centers (staffed)'
COEVCI	'COE # Visitor Centers (info centers)'

Source Dataset

U.S. Army COE Natural Resource Management System (NRMS) Database, 1994.

Acquired from: COE Waterways Experiment Station. Environmental Laboratory. Scott Jackson.
(601) 634-2105.

Filename: **c:\rpa\supply\data\coe\coeproproj.sd2**

NORSIS Variable Definitions

A limitation of COE data on both Projects and Recreation Sites is that only the location of the Project Headquarters Office is given, not the county locations for the entire reservoir and all recreation sites. We corrected as many as possible from map inspections, but locations are still not completely accurate to the county.

COESHORE	Shoreline miles owned by COE at summer pool level
COEACRES	Total acres of land and water encompassed by boundaries of COE Project
COEWATER	Pool surface acreage at COE Project at summer pool level
COEINTEN	Acreage of all fee lands designated in Master Plan for recreation development. Includes all recreation areas, commercial lease areas, and quasi-public development.
COELOWD	Acreage of all fee lands allocated for low density use. Separate from intensive use.
COEVCS	Number of staffed information centers. Generally have an exhibit area.
COEVCI	Number of unstaffed information centers. Generally a 'self-help' system of displays and publication distribution.

4. U.S. Army Corps of Engineers (continued)

b. COE Recreation Areas

<u>Variable Name</u>	<u>Label</u>
COERECAC	'COE rec. area total land & water acres'
COERECIU	'COE rec. area total intensive use ac.'
COECAMP	'COE # INDIVIDUAL CAMPSITES'
COEPIC	'COE # individual picnic sites'
COERAMPS	'COE # boat ramps'
COESWIM	'COE # designated swim areas'
COETRAIL	'COE # trails'
COEHIKE	'COE miles of hiking trails'
COEINTER	'COE miles of interpretive trails'
COEBIKE	'COE miles of bicycle trails'
COEEQUES	'COE miles of equestrian trails'
COEORV	'COE miles of offroad vehicle trails'
COEOTHT	'COE miles of other trails'
COEPOOL	'COE # swimming pools'
COEBOAT	'COE # boat rentals'
COEPIER	'COE # fishing docks/piers'

Source Dataset

U.S. Army COE Natural Resource Management System (NRMS) Database, 1994.

Acquired from: COE Waterways Experiment Station. Environmental Laboratory. Scott Jackson. (601) 634-2105.

Filename: **c:\rpa\supply\data\coe\coearea.sd2**

NORSIS Variable Definitions

COERECAC	Total land/water acreage of COE recreation areas as stated in Master Plan
COERECIU	Number of acres in COE recreation areas developed for intensive use

Only COE managed recreation areas are included in NORSIS. This excludes areas leased to state and local governments, concessionaires, other federal agencies, etc. to avoid double-counting. The COE facility variables are self-explanatory. Each are either the number of facilities or total trail mileage located at COE recreation areas per county.

5. Bureau of Land Management

a. Land Areas

<u>Variable Name</u>	<u>Label</u>
BLMPDAC	'BLM public domain acres'
BLMSITES	'BLM special recreation site acres'
BLMSITED	'BLM dispersed recreation site acres'

Source Dataset

- a. Payment in Lieu of Taxes: Fiscal Year 1995. BLM Budget and Finance Team.
 -- used for variable BLMPDAC only, section of report titled "Acreage by County"
 -- data entered into *.dbf file and converted to SAS library
- b. BLM Recreation Management Information System (RMIS), Version 2.2, 1994.

Acquired from: BLM Washington Office Recreation Group, Anthony Bobo (202) 452-0333

Filenames: **c:\rpa\supply\data\blm\blmac.sd2**
c:\rpa\supply\data\blm\sitelist\sitfips.sd2

NORSIS Variable Definitions

BLMPDAC	BLM "Entitlement Land Acreage" published in PILT report. Best source of BLM public domain land by county.
BLMSITES	Acreage of all BLM recreation sites where sitetype is <u>not</u> 'dispersed use'
BLMSITED	Acreage of all BLM recreation sites where sitetype is <u>is</u> 'dispersed use'

(Note: Theoretically, every acre of BLM land should be classified as part of either a "Special Recreation Management Area" or an "Extensive Recreation Management Area". Special RMAs refer to developed sites with facilities and Extensive RMAs encompass all of the dispersed, backcountry acres. It should follow then, that BLMSITES + BLMSITED = BLMPDAC, but these data do not. County locations for the two recreation site variables is based on BLM managers' best estimates of location and thus may differ from what the BLM Budget and Finance Team published in the PILT report. In addition, several recreation sites have missing data for county location, about 8 percent.)

5. Bureau of Land Management (continued)

b. Recreation Facilities

<u>Variable Name</u>	<u>Label</u>
BLMBOAT	'BLM # boat launches'
BLMCAMP	'BLM # campgrounds'
BLMVC	'BLM # Visitor/Info/E.E. Centers'
BLMPIC	'BLM # picnic areas'
BLMWATER	'BLM # water access areas'
BLMTRAIL	'BLM # trailheads'

Source Dataset

BLM Recreation Management Information System (RMIS), Version 2.2, 1994

Acquired from: BLM Washington Office Recreation Group, Anthony Bobo (202) 452-0333

Filename: **c:\rpa\supply\data\blm\sitelist\sitefips.sd2**

NORSIS Variable Definitions

The BLM facility variables are self-explanatory. Each are the sum total of the number of facilities located at BLM recreation areas per county.

6. U. S. Fish & Wildlife Service

a. Land Areas

<u>Variable Name</u>	<u>Label</u>
FWSACRES	'FWS total refuge acres'
FWSRECAC	'FWS refuge acres open for recreation'
FWSWMDAC	'FWS Wetland Mgmt. Dist. acres'

Source Dataset

Annual Report of Lands Under Control of the U. S. Fish and Wildlife Service. As of 9/30/95.
 -- Report is published annually. Data from report were provided in a *.dbf file and converted to a SAS library.)

Acquired from: FWS Division of Realty, Rebecca D. Boutz, Computer Specialist, (703) 358-1713

Filename: **c:\rpa\supply\data\fws\fws.sd2**
c:\rpa\supply\data\fws\wmd.sd2

NORSIS Variable Definitions

FWSACRES and FWSWMDAC were taken directly from database and are sum total of Refuge and WMD acres, respectively, per county. FWSRECAC is county acreage total for only those refuges that are listed in the FWS Visitor Guide as open to public visitation.

6. U. S. Fish & Wildlife Service (continued)

b. Recreation Facilities

<u>Variable Name</u>	<u>Label</u>
FWSSPR	'FWS # refuges w/ spring wildlife viewing'
FWSSUM	'FWS # refuges w/ summer wildlife viewing'
FWSFALL	'FWS # refuges w/ fall wildlife viewing'
FWSWINT	'FWS # refuges w/ winter wildlife viewing'
FWSVC	'FWS # refuges with visitor center'
FWSDAY	'FWS # refuges with day use only'
FWSAUTO	'FWS # refuges with autotour'
FWSHIKE	'FWS # refuges with hiking trails'
FWSVIEW	'FWS # refuges with wildlife viewing sites'
FWSWILD	'FWS # refuges with wilderness areas'
FWSNONMT	'FWS # refuges with nonmotorized boating'
FWSMT	'FWS # refuges with motorized boating'
FWSHUNT	'FWS # refuges with hunting'
FWSFISH	'FWS # refuges with fishing'

Source Dataset

National Wildlife Refuges: A Visitor's Guide. Brochure of all Refuges and WMDs open to public. Entered into a *.dbf file and converted to a SAS library.

Acquired from: FWS Division of Refuges. Todd J. Logan, Refuge Program Specialist, (703) 358-1744. Also provided a directory of Refuges and their managers.

Filenames: **c:\rpa\supply\data\fws\refuge.sd2**
c:\rpa\supply\data\fws\wmdatt.sd2

NORSIS Variable Definitions

The FWS facility variables are self-explanatory. Each are the number of Refuges or WMDs possessing the specific facility or attribute per county.

7. Bureau of Reclamation

<u>Variable Name</u>	<u>Label</u>
BRLAND	'BuRec-managed land acres'
BRWATER	'BuRec-managed water acres'
BRLANDT	'BuRec land acres (all agencies)'
BRWATERT	'BuRec water acres (all agencies)'
BRBOAT	'BuRec # areas with boating'
BRRAMP	'BuRec # areas with boat ramps'
BRDCAMP	'BuRec # areas with developed campsites'
BRFISH	'BuRec # areas with fishing'
BRHUNT	'BuRec # areas with hunting'
BRVC	'BuRec # areas with a Visitor Center'
BRPIC	'BuRec # areas with picnicking'
BRPCAMP	'BuRec # areas with primitive camping'
BRSWIM	'BuRec # areas with swimming'
BRWINTER	'BuRec # areas with winter sports'
BRHIKE	'BuRec # areas with hiking trails'
BRBIKE	'BuRec # areas with bicycling'
BRNATURE	'BuRec # areas with nature trails'

Source Dataset

- a. Bureau of Reclamation, Recreation Areas on Bureau Projects, 1992.
- b. Bureau of Reclamation Recreation Areas brochure, 1992.
-- both printouts entered into *.dbf files and converted to SAS libraries

Acquired from: Bureau of Reclamation, Reclamation Service Center. Richard Crysdale, Senior Outdoor Recreation Planner, (303) 236-2722, ext. 334.

Filename: **c:\rpa\supply\data\burec\burec.sd2**

NORSIS Variable Definitions

BRLAND and BRWATER are acres of land and water available for recreation per county for recreation areas that are managed by BuRec. Only about 14 percent of the 300+ recreation areas located on BuRec lands are managed by BuRec. The rest are leased to state, local and special district governments. BRLANDT and BRWATERT are acres for all BuRec properties,

7. Bureau of Reclamation (continued)

regardless of who manages them. Therefore, do not add these two sets of variables because that would double-count BuRec-managed properties.

The remaining variables are simply the number of BuRec Recreation Areas possessing the specific facility or attribute per county.

8. Tennessee Valley Authority

<u>Variable Name</u>	<u>Label</u>
TVAACRES	'TVA recreation area acres'
TVABEACH	'TVA # improved beaches'
TVARAMP	'TVA # boatramps'
TVACAMP	'TVA # camp units'
TVAPIC	'TVA # picnic units'
TVATRAIL	'TVA # areas with hiking trails'
TVAUNDEV	'TVA undeveloped acres'

Source Dataset

- a. Development of TVA Recreation Facilities Cumulative Through September 30, 1992
- b. Acreage of TVA Lands: Areas Below and Above Full Pool Level-By Counties, Sept. 30, 1987
-- Hard-copy printouts were entered into databases and converted to SAS libraries.)

Acquired from: TVA Reservoir Land Management, Robert A. Marker, Recreation Specialist,
(423) 632-1575.

Filenames: **c:\rpa\supply\data\tva\tva.sd2**
c:\rpa\supply\data\tva\tvaland.sd2

NORSIS Variable Definitions

TVAACRES is sum total of developed recreation area acreage per county taken from Source a. above. TVAUNDEV is sum total of undeveloped TVA acreage held in fee title (not including easements), above full pool level only.

The remaining variables are simply the sum total of the number of facilities located at TVA Recreation Areas per county. Then exception is TVATRAIL, which is the number of TVA Recreation Areas possessing trails per county.

9. National Wild and Scenic Rivers

<u>Variable Name</u>	<u>Label</u>
WSRFS	'Wild & Scenic River miles: USDA-FS 1992'
WSRNPS	'Wild & Scenic River miles: USDI-NPS 1992'
WSRBLM	'Wild & Scenic River miles: USDI-BLM 1992'
WSRALL	'Wild & Scenic River miles: Total 1992'

Source Dataset

1993 RPA Update database, data updated through June 1992.

Acquired from: SRS 4901. Data compiled by former FS employee Mark Young.

Filename: **c:\rpa\norsis87\wild93.sd2**

NORSIS Variable Definitions

Wild & Scenic River mileage managed by respective federal agencies per county. Variable WSRALL is sum of the first four variables, i.e., total W&S River mileage per county. Does not include 17 miles managed by the State of Illinois, not included in NORSIS.

[Note: These data do not match the river mileage in a current database (November 1996) obtained from NPS Division of Park Planning and Special Studies, (John Haubert, 202-208-4290), hence their accuracy are questionable. The Nov. '96 report entitled "River Mileage Classifications For Components of the National Wild and Scenic Rivers System" was entered into a *.dbf file and converted to a SAS library (**c:\rpa\supply\data\river\w&s\wsrivers.sd2**). These data are broken down by state only, not county, and could not be included in Norsis.]

10. Nationwide Rivers Inventory 1993

<u>Variable Name</u>	<u>Label</u>
RIVMILES	'NRI Total river miles, outstanding value'
RIVSCENV	'NRI river miles with scenic value'
RIVRECV	'NRI river miles with recreational value'
RIVFISHV	'NRI river miles with fish value'
RIVWLV	'NRI river miles with wildlife value'
RIVHISTV	'NRI river miles with historic value'
RIVWILD	'NRI river miles with elig. class Wild'
RIVSCEN	'NRI river miles with elig. class Scenic'
RIVREC	'NRI river miles with elig. class Recr.'

Source Dataset

Nationwide Rivers Inventory 1993

Acquired from: National Park Service; National Center for Recreation and Conservation; Rivers, Trails and Greenways Assistance; Jennifer Pitt, (202) 565-1185.
 -- converted to a SAS library from three *.dbf files.

Filename: **c:\rpa\supply]\data\rivers\nri\rivers.sd2**

NORSIS Variable Definitions

The NRI is a comprehensive listing of the U.S.'s free-flowing, relatively undeveloped river segments with outstanding wild, scenic, or recreation potential. Does not include designated Wild & Scenic Rivers, only those eligible for and with potential for W&S classification.

RIVMILES is the sum total of NRI river mileage per county. RIVSCENV, RIVRECV, RIVFISHV, RIVWLV, RIVHISTV indicate the sum total of NRI river mileage with the following respective 'outstanding remarkable values': scenic, recreational, fish, wildlife, and historic. These values are not mutually exclusive so they do not sum to total river mileage, RIVMILES.

RIVWILD, RIVSCEN, and RIVREC indicate the sum total of NRI river mileage classified as eligible for wild, scenic, and recreational river status, respectively. Since a river segment may have more than one eligibility classification, these three variables are not additive to equal total river mileage, RIVMILES. Of course, none of the other variables can be greater than the county total, RIVMILES.

STATE Resources

1. Public Campgrounds

<u>Variable Name</u>	<u>Label</u>
CGPUBSIT	WOODALLS # public campground sites
CGPUBNUM	WOODALLS # public campgrounds
ABICGPUB	ABI # public campgrounds

Source Dataset

- a. Woodall's Campground Directory. 1996.
- b. American Business Information, Inc. August 1996
-- see details on ABI database in Private Campgrounds section

Acquired from: Doug McEwen, Southern Illinois University, (618) 453-4331. McEwen received a hard-copy printout of all public and private campgrounds in the Woodall's directory with their zip codes and number of campsites (not specified as tent or trailer). Entered into a *.dbf file and converted to a SAS library.

Filename: **c:\rpa\supply\data\woodall\cgpub.sd2**
c:\rpa\supply\data\abi\cg.sd2

NORSIS Variable Definitions

CGPUBSIT is sum total of public camp sites per county. CGPUBNUM is sum total of public campgrounds per county. Obviously, the number of campsites must be greater than the number of campgrounds. Doug McEwen pointed out that these data on public campgrounds are incomplete. For example, for the federal agencies, many listings include only a supervisor's or district office instead of each individual campground within that district. Not sure if a similar problem exists for state-owned campgrounds.

ABICGPUB is sum total of public campgrounds per county derived from a different data source from the first two variables. American Business Information compiles its databases from telephone yellow page and government blue page directories. It calls and confirms every listing. The listing, however, does not appear to be very complete since ABI primarily captures private businesses. Public campgrounds were pulled out of a list of all campgrounds based on the name, i.e., whether or not the name implied a public agency. Therefore, these data are of limited utility.

2. State Parks

<u>Variable Name</u>	<u>Label</u>
SPACRES	'State Park acres'
SPBOAT	'State park # with boating available'
SPDCAMP	'State park # with camping available'
SPFISH	'State park # with fishing available'
SPMARINA	'State park # with marina available'
SPPIC	'State park # with picnicking available'
SPPCAMP	'State park # w/ primitive camping avail.'
SPSNOWM	'State park # with snowmobiling available'
SPSWIM	'State park # with swimming available'
SPHIKE	'State park # with hiking available'
SPXCSKI	'State park # with x-c skiing available'

Source Dataset

State Park Database compiled from State DNR literature and brochures.

Acquired from: SRS 4901. Data compiled by John Hayes, UGA graduate student, summer 1995.

Filename: **c:\rpa\supply\data\stateprk\stateprk.sd2**

NORSIS Variable Definitions

SPACRES is the sum total of state park acres per county. All other variables indicate the number of state parks that possess the facility or attribute per county. Many of the state park brochures indicated the number of campsites and trail miles at each park, however a large percentage did not and only indicated whether or not a park had camping or hiking. Therefore, the continuous responses had to be collapsed to a 0/1 availability measure.

3. National Resources Inventory

<u>Variable Name</u>	<u>Label</u>
** Land Ownership**	
NRITOTAL	'NRI total county acres'
NRIPRIV	'NRI private acres'
NRIMUNI	'NRI municipal acres'
NRICOUN	'NRI county-owned acres'
NRISTATE	'NRI state acres'
NRIFEDL	'NRI federal acres'
NRIIND	'NRI Indian/tribal acres'
NRIWATER	'NRI water acres'
** Land cover/use**	
NRICROP	'NRI cropland acres'
NRIPAST	'NRI pasture acres'
NRIRANGE	'NRI range acres'
NRIFOR	'NRI forest acres'
NRIMISC	'NRI miscellan. acres'
NRIURBAN	'NRI urban and built-up acres'
NRILRGUR	'NRI large urban acres'
NRISMLUR	'NRI small urban acres'
NRITRANS	'NRI rural roads & RR acres'
NRIH2OLG	'NRI large lakes & streams'
NRIH2OSM	'NRI small lakes & streams'
** Special land cover/uses**	
NRIRECLN	'NRI primary use: recreation land-based'
NRIWILD	'NRI primary use: reserved-wildlife'
NRIRECL2	'NRI secondary use: recreation land-based'
NRIWILD2	'NRI secondary use: reserved-wildlife'
NRIWETL	'NRI wetland acres'

3. National Resources Inventory (continued)

** Forest land ownerships**

NRIFLPRI	'NRI acres private forest land'
NRIFLMUN	'NRI acres municipal forest land'
NRIFLCTY	'NRI acres county forest land'
NRIFLSTA	'NRI acres state forest land'
NRIFLIND	'NRI acres Indian forest land'

** Wildlife land ownerships**

NRIWLPRI	'NRI acres private wildlife land'
NRIWLMUN	'NRI acres municipal wildlife land'
NRIWLCTY	'NRI acres county wildlife land'
NRIWLSTA	'NRI acres state wildlife land'
NRIWLIND	'NRI acres Indian wildlife land'
NRIWLWAT	'NRI acres water wildlife-reserved'

** Recreation land ownerships**

NRIRLPRI	'NRI acres private recreation land'
NRIRLMUN	'NRI acres municipal recreation land'
NRIRLCTY	'NRI acres county recreation land'
NRIRLSTA	'NRI acres state recreation land'
NRIRLIND	'NRI acres Indian recreation land'

** Water**

NRIRECWA	'NRI primary use: recreation water-based'
NRIRECW2	'NRI secondary use:recreation water-based'
NRIH2O1	'NRI water body 2-40 acres'
NRIH2O2	'NRI water body < 2 acres'
NRIH2O3	'NRI perennial stream < 66 ft. wide'
NRIH2O4	'NRI perennial stream 66-660 ft. wide'
NRIH2O5	'NRI perennial stream > 1/8 mile wide'
NRIH2O6	'NRI water body >= 40 ac. -lake'
NRIH2O7	'NRI water body >= 40 ac. -reservoir'
NRIH2O8	'NRI water body >= 40 ac. -bay or gulf'
NRIH2O9	'NRI water body >= 40 ac. -estuary'

3. National Resources Inventory (continued)

<u>Variable Name</u>	<u>Label</u>
** Conservation Reserve Program;	
NRICRP	'NRI CRP acres'
NRICRPWT	'NRI CRP wetland acres'
NRICRPWL	'NRI CRP acres permanent wildlife habitat'

Source Dataset

1992 National Resources Inventory, USDA-NRCS.

Acquired from: USDA Natural Resources Conservation Service, Fort Worth Federal Center, (817) 334-5559. Data are on 4 CDs, by region.

--Selected pertinent variables and converted to a single SAS library

Filename: **c:\rpa\supply\data\nri\us.sd2**

NORSIS Variable Definitions

The NRI has land use and cover data for all nonfederal lands in the U.S., except Alaska. All variables are expressed in acres per county. Important: Because of the sampling methods, NRI data at the county level is not very reliable. Considerable estimation error may be present for some counties. Error declines as the level of aggregation increases, i.e., state, region, and national. Following is a summary of the measurement for each group of variables.

a. Ownership

NRITOTAL Total acres in the county. Should match the variable SQMI (Census square mileage) very closely when divided by 640.

NRIPRIV, NRIMUNI, NRICOUN, NRISTATE, NRIFEDL, NRIIND, NRIWATER are sum total of acres per county under the respective ownerships: private, municipal, county (government), state, federal, Indian/tribal, and water. Water is considered 'not owned' and is exclusive of the other ownership categories. NRITOTAL is the sum of the six ownership categories plus water.

3. National Resources Inventory (continued)

NORSIS Variable Definitions (continued)

b. Land cover/use

Land cover is the vegetation or other kind of material that covers the land surface. Land use is the purpose of human activity on the land; it is usually but not always related to the land cover. There are 8 categories of broad land cover/use: cropland, pastureland, rangeland, forest land, miscellaneous/minor land cover/uses, Urban and built-up, rural transportation, and water. Total county acres, NRITOTAL, is the sum of the following 10 variables--urban and water are split into 'large' and 'small'--plus federal land (NRIFEDL):

NRICROP	'NRI cropland acres'
NRIPAST	'NRI pasture acres'
NRIRANGE	'NRI range acres'
NRIFOR	'NRI forest acres'
NRIMISC	'NRI miscellan. acres'
NRILRGUR	'NRI large urban acres (areas > 10 ac.)'
NRISMLUR	'NRI small urban acres (areas <= 10 ac.)'
NRITRANS	'NRI rural roads & RR acres'
NRIH2OLG	'NRI large lakes & streams' (streams >= 660' wide and water bodies >= 40 ac.)
NRIH2OSM	'NRI small lakes & streams' (streams < 660' wide and water bodies < 40 ac.)

c. Special land cover/uses

Land use is defined by the NRI as the 'specific kind of activity that takes place on the land identified by the primary and secondary use'. The seven major categories of land use are: agriculture, business/commercial, recreation, residential, reserved, transportation, and waste. Wetlands is not a land use per se, but rather a special land cover important for recreation. The following five variables were selected as important to the RPA Assessment:

NRIRECLN	'NRI primary use: recreation land-based'
NRIWILD	'NRI primary use: reserved-wildlife'
NRIRECL2	'NRI secondary use: recreation land-based'
NRIWILD2	'NRI secondary use: reserved-wildlife'
NRIWETL	'NRI wetland acres'

3. National Resources Inventory (continued)

NORSIS Variable Definitions (continued)

d. Forest land ownerships

Total nonfederal forest land in the county, NRIFOR, is the sum of the following five variables describing forest land ownership¹:

NRIFLPRI	'NRI acres private forest land'
NRIFLMUN	'NRI acres municipal forest land'
NRIFLCTY	'NRI acres county forest land'
NRIFLSTA	'NRI acres state forest land'
NRIFLIND	'NRI acres Indian forest land'

e. Wildlife land ownerships

Total nonfederal wildlife-reserved land in the county, NRIWILD, is the sum of the following six variables describing ownership of wildlife-reserved lands:

NRIWLPRI	'NRI acres private wildlife land'
NRIWLMUN	'NRI acres municipal wildlife land'
NRIWLCTY	'NRI acres county wildlife land'
NRIWLSTA	'NRI acres state wildlife land'
NRIWLIND	'NRI acres Indian wildlife land'
NRIWLWAT	'NRI acres water wildlife-reserved'

f. Recreation land ownerships

Total nonfederal primary use recreation land in the county, NRIRECLN, is the sum of the following five variables describing ownership of recreation lands²:

NRIRLPRI	'NRI acres private recreation land'
NRIRLMUN	'NRI acres municipal recreation land'

¹The sum of forest ownerships does not exactly equal NRIFOR, but both round to 394.4 million acres. The difference is 20,800 acres of forest land classified as 'water' under ownership class. This variable was not significant enough to include in NORSIS.

²The sum of recreation land ownerships does not exactly equal NRIRECLN because 239,600 acres of recreation land were classified as "Water-unspecified". This variable was not significant enough to include in NORSIS.

3. National Resources Inventory (continued)

NORSIS Variable Definitions (continued)

NRIRLCTY	'NRI acres county recreation land'
NRIRLSTA	'NRI acres state recreation land'
NRIRLIND	'NRI acres Indian recreation land'

g. Water

NRIRECWA and NRIRECW2 are sum total of county acres devoted to water-based recreation, primary and secondary uses, respectively. If desired, the sum of primary use recreation land and water, NRIRECLN and NRIRECWA, would produce a county total of resources devoted primarily to recreation.

NRIRECWA	'NRI primary use: recreation water-based'
NRIRECW2	'NRI secondary use:recreation water-based'

The variables NRIH2O1-NRIH2O9 represent 9 different categories of water resources, 6 for water bodies and 3 for streams. The sum of these 9 classes equals the total county water resources, NRIWATER³. Further, NRIH2O1-NRIH2O4 sum to equal NRIH2OSM, 'small' streams and water bodies. NRIH2O5-NRIH2O9 sum to equal NRIH2OLG, 'large' streams and water bodies.

NRIH2O1	'NRI water body 2-40 acres'
NRIH2O2	'NRI water body < 2 acres'
NRIH2O3	'NRI perennial stream < 66 ft. wide'
NRIH2O4	'NRI perennial stream 66-660 ft. wide'
NRIH2O5	'NRI perennial stream > 1/8 mile wide'
NRIH2O6	'NRI water body >= 40 ac. -lake'
NRIH2O7	'NRI water body >= 40 ac. -reservoir'
NRIH2O8	'NRI water body >= 40 ac. -bay or gulf'
NRIH2O9	'NRI water body >= 40 ac. -estuary'

³The 9 classifications for water resources do not sum exactly to total county water acres, NRIWATER, because of a slight discrepancy in about two dozen counties. Still, both round to 48.8 million water acres in the 49 states (the 9 categories are 68,100 acres less than NRIWATER).

3. National Resources Inventory (continued)

NORSIS Variable Definitions (continued)

h. Conservation Reserve Program

These three variables represent acreage enrolled in the Conservation Reserve Program as of 1993; respectively, total acres, acres located in wetlands, and acres in permanent wildlife habitat.

NRICRP	'NRI CRP acres'
NRICRPWT	'NRI CRP wetland acres'
NRICRPWL	'NRI CRP acres permanent wildlife habitat'

4. American Whitewater Affiliation Inventory of Whitewater Rivers

<u>Variable Name</u>	<u>Label</u>
AWAMILES	'AWA total whitewater river miles'
AWACL1_3	'AWA Class I-III river miles'
AWAOTH	'AWA variety of Classes river miles'
AWACL4_6	'AWA Class IV-VI river miles'

Source Dataset

American Whitewater Affiliation, Nationwide Whitewater Inventory. 1996.

Acquired from: Downloaded from AWA's World Wide Web home page: www.awa.org, "River Pages Project". Converted ascii text files to a SAS library.

Filename: **c:\rpa\supply\data\rivers\awa\awa.sd2**

NORSIS Variable Definitions

Each of the four variables represents the sum total of whitewater river mileage per county. AWAMILES is total mileage and is equal to the sum of AWACL1_3, AWAOTH, and AWACL4_6.

The source database is comprised of 2,297 river segments, each of which has a Class rating based on the International Scale of River Difficulty ranging from Class I (easiest) to Class VI (Extreme). River segments, however, are not usually assigned a single class rating. Instead, they tend to be assigned a range, e.g., Class I-III. Therefore, the NORSIS variable AWACL1_3 represents all river segments with ratings between Classes I and III. Likewise for AWACL4_6, for Classes IV through VI. AWAOTH represents all other river segments whose ratings varied across the full range of Classes and therefore could not be assigned to either the easier classes (I-III) or more difficult classes (IV-VI). For example, a segment might have a Class rating of I-VI or II-V. Such segments were assigned to AWAOTH.

LOCAL Resources

1. Local “Enhancement” projects funded through ISTEA: Trails and other pedestrian/bicycle facilities

<u>Variable Name</u>	<u>Label</u>
ISTEART	'ISTEA # rail-trail projects'
ISTEAGW	'ISTEA # greenway trails'
ISTEAON	'ISTEA # on road bicycle facilities'
ISTEASW	'ISTEA # sidewalk projects'
ISTEABT	'ISTEA # bicycle/transit facilities'
ISTEADL	'ISTEA total dollars spent'

Source Dataset

ISTEA Enhancement Funding Database. As of February 1996.

Acquired from: Rails-to-Trails Conservancy, Bob Patten, (202) 797-5400.

Filename: **c:\rpa\supply\data\rtc\rtproj.sd2**

NORSIS Variable Definitions

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 is the federal transportation bill which provided matching funds to state and local governments for transportation ‘enhancements’. A number of these are of interest and important to outdoor recreation. The variables ISTEART through ISTEABT are the sum total of the number of projects funded by ISTEA per county. ISTEADL represents the total dollars spent per county, on both rail-trail and bicycle/pedestrian projects as represented by the first five variables.

2. Rail-Trails (abandoned rail lines converted to trails for recreation/transportation)

<u>Variable Name</u>	<u>Label</u>
RTMILES	'RTC total open rail-trail miles'
RTPROJ	'RTC total project rail-trail miles'
RTWALK	'RTC rail-trail miles for walking'
RTHORSE	'RTC rail-trail miles for horseback use'
RTBIKE	'RTC rail-trail miles for bicycling'
RTSNOWM	'RTC rail-trail miles for snowmobiling'
RTXCSKI	'RTC rail-trail miles for x-c skiing'
RTSKATE	'RTC rail-trail miles for skating'
RTMTBIKE	'RTC rail-trail miles for mtn. biking'
RTFISH	'RTC rail-trail miles for fishing'

Source Dataset

RTC Rail-Trail Database. As of August 1996.

Acquired from: Rails-to-Trails Conservancy, Hugh Morris, (202) 797-5400.

Filename: **c:\rpa\supply\data\rtc\rtctrail.sd2**

NORSIS Variable Definitions

The rail-trail database compiled by the Rails-to-Trails Conservancy is comprised of 1,591 separate trail segments throughout the U.S. The variable RTMILES is the sum total of open rail-trail miles per county. RTPROJ is the sum total of project (i.e., not yet open) rail-trail miles. The remaining variables are the sum total of rail-trail miles per county that allow or are suitable for each of the indicated recreational uses. Since a given trail segment may allow multiple uses, the activity mileages do not sum to the total county rail-trail miles.

3. Federal Lands to Parks Program recreation areas

<u>Variable Name</u>	<u>Label</u>
FLPACRES	'FLP # acres completely transferred'
FLPPEND	'FLP # acres pending transfer'
FLPSTATE	'FLP # acres transferred to states'
FLPLOCAL	'FLP # acres transferred to local govts.'

Source Dataset

Federal Lands to Parks Program (FLPP) database. As of September 1996.

Acquired from: National Park Service, National Center for Recreation and Conservation, Wendy Ormont, (202) 343-3759.

Filename: **c:\rpa\supply\data\nps\flp\flp.sd2**

NORSIS Variable Definitions

FLPP is the federal program managed by the NPS that transfers surplus federal lands, primarily military property, to state and local governments for recreational purposes. FLPACRES is the sum total of acres per county that have been transferred through the program since its inception in 1949. FLPSTATE is sum total of acres transferred to state government agencies per county and FLPLOCAL is the sum total of acres transferred to local government agencies per county. They sum to equal FLPACRES. FLPPEND represents the sum total of acres per county that have not completed the transfer process but are one of the following: a) deeded over to recipient, b) approved transfer, c) application approved, or d) a park or recreation agency has expressed interest in the property. Hence, these represent properties that are still pending transfer through FLPP.

4. Local government recreation and park agencies, recreation centers, and parks

<u>Variable Name</u>	<u>Label</u>
ABIPKREC	'ABI # recreation centers'
ABIPKDP1	'ABI # parks & rec dept w/ <5 employees'
ABIPKDP2	'ABI # parks & rec dept w/ 5-19 employees'
ABIPKDP3	'ABI # parks & rec dept w/ 20+ employees'
ABIPKLOC	'ABI # local, county or regional parks'
ABIPKSTA	'ABI # state parks'

Source Dataset

American Business Information, Inc. August 1996
 -- see details on ABI database in Private Campgrounds section

Acquired from: American Business Information, Inc. Marketing Research, Megan Anderson,
 (402) 593-4532.

Filename: **c:\rpa\supply\data\abi\parks.sd2**

NORSIS Variable Definitions

These six variables were derived from ABI data based on Standard Industrial Classification (SIC) code 799951, "Parks". Upon examination of the names of the records, we determined that this category included listings of recreation and park departments or agencies, recreation center buildings, and parks at the local, regional and state level. Therefore, these variables are the sum total of the number of agencies, recreation centers, or parks per county.

Recreation departments were divided into three variables--ABIPKDP1, ABIPKDP2, and ABIPKDP3--depending on their number of employees. Employee size is a good indicator of the size and scope of a department. Together they sum to give the total number of recreation and park departments per county. The sum of these departments for the entire U.S. is in the same ballpark (approximately 4,000 agencies) as the numbers in the National Recreation and Park Association (NRPA) Administrators' List and NRPA's 1993 Salary and Benefits Study.. Hence, the ABI coverage of recreation and park agencies seems to be comprehensive.

ABIPKREC, ABIPKLOC and ABIPKSTA are probably not comprehensive since the ABI database only captures yellow and blue page telephone directory listings. Further, errors or omissions were possible due to the method of classifying on the basis of name.

PRIVATE Resources

1. Private Campgrounds

a. Woodall's Campground Directory

<u>Variable Name</u>	<u>Label</u>
CGPRISIT	WOODALLS # private campground sites
CGPRINUM	WOODALLS # private campgrounds

Source Dataset

Woodall's Campground Directory. 1996.

Acquired from: Doug McEwen, Southern Illinois University, (618) 453-4331. McEwen received a hard-copy printout of all public and private campgrounds in the Woodall's directory with their zip codes and number of campsites (not specified as tent or trailer). Entered into a *.dbf file and converted to a SAS library.

Filename: **c:\rpa\supply\data\woodall\cgpriv.sd2**

NORSIS Variable Definitions

CGPRISIT is sum total of private camp sites per county. CGPRINUM is sum total of private campgrounds per county. Obviously, the number of campsites must be greater than the number of campgrounds. Private campgrounds must meet certain standards to be listed in Woodall's Directory, therefore, this database cannot be considered comprehensive. However, it is believed that it provides the best coverage of established firms whose primary business is operating a campground.

1. Private Campgrounds (continued)

b. American Business Information, Inc. Campground Database

<u>Variable Name</u>	<u>Label</u>
ABICGPRI	'ABI # private campgrounds (not RV)'
ABICGRV	'ABI # RV campgrounds only'
ABICG_5	'ABI # campgrounds with <5 employees'
ABICG5_	'ABI # campgrounds with >=5 employees'
ABICGLOW	'ABI # campgrounds with < \$500k sales'
ABICGHI	'ABI # campgrounds with \$500k+ sales'

Source Dataset

American Business Information, Inc. Campground Database, SIC Codes 703301 and 703302.
August 1996.

Acquired from: American Business Information, Inc. Marketing Research, Megan Anderson,
(402) 593-4532

Filename: **c:\rpa\supply\data\abi\cg.sd2**

NORSIS Variable Definitions

ABICGPRI and ABICGRV are the sum total per county of private campgrounds (not RV) and RV campgrounds, respectively. Sum these two to get the total number of all private campgrounds. RV campgrounds were identified in the ABI database by virtue of the business name. It is likely that many (if not most) of the campgrounds represented by ABICGPRI also allow RV camping, although there is no information available to confirm that.

ABICG_5 and ABICG5_ break down all private campgrounds (non-RV and RV) into two classes based on employee size. ABICG_5 are the smallest campgrounds with less than 5 employees, while ABICG5_ are the larger campgrounds with 5 or more employees.

Similarly, ABICGLOW and ABICGHI break down all private campgrounds (non-RV and RV) into two classes based on annual sales. ABICGLOW are those campgrounds with less than \$500 thousand in annual sales, while ABICGHI are campgrounds with half a million dollars or more in annual sales.

2. Private rural land available for outdoor recreation

<u>Variable Name</u>	<u>Label</u>
NPLONLY	'NPLOS acres reserved: family & friends'
NPLLEAS	'NPLOS acres leased to inds. or groups'
NPLOPEN	'NPLOS acres open to general public'
NPLCLOS	'NPLOS acres closed to public access'
NPLNDES	'NPLOS acres not designated'

Source Dataset

1995 National Private Landowner Study (NPLOS)

Acquired from: SRS 4901 and Department of Agricultural and Applied Economics, UGA

Filename: **c:\rpa\supply\data\nplos\nplos95.sd2**

NORSIS Variable Definitions

NPLOS was a mail questionnaire survey of rural, private individual and corporate landowners. Approximately 750 counties were sampled throughout the coterminous U.S. A total of 220 counties were excluded from sampling consideration because they were either considered 'urban' or 'public lands' counties. Exclusion was based on these criteria:

- 1) **Urban--** population density greater than or equal to 500 persons per square mile. Also, counties with a density between 300 and 500 were excluded if a relatively small amount of rural, nonpublic land was present (less than 140,000 acres in the eastern U.S. and less than 250,000 acres in the western U.S.).
- 2) **Public lands--** counties having 70 percent or more of their land in federal public ownership.

The first four NPLOS variables-- NPLONLY, NPLLEAS, NPLOPEN, NPLCLOS--represent varying degrees of access to private lands for outdoor recreation. The fifth variable, NPLNDES, is an estimate of county private lands that are not designated for one of the four levels of recreational access. The four levels of access are:

- a) NPLONLY-- acres of land open only to family and friends for outdoor recreation
- b) NPLLEAS-- acres of land leased to individuals or groups for outdoor recreation

2. Private rural land available for outdoor recreation (continued)

- c) NPLOPEN-- acres of land open to the general public for outdoor recreation
- d) NPLCLOS-- acres of land closed to public access for outdoor recreation

Estimates for these five variables were derived for 2,846 U.S. counties. An additional 45 counties that were classified as 'public lands' counties and excluded from sampling were later assigned estimates based on the amount of rural, nonfederal land and the Bailey's ecoregion division in which they were located. Urban counties were judged to have none or very little rural, private land available for outdoor recreation and were thus assigned 0 acres for each of the five variables. The five NPLOS variables sum to roughly (not exactly) equal the variable NRIPRIV, sum total of private land in the county.

3. Private forest land

<u>Variable Name</u>	<u>Label</u>
TBACRES	'Birch: acres of private forest land'
TBOWNERS	'Birch: # private ownership units'
TBINDA	'Birch: indiv. owned acres of priv forest'
TBPARTA	'Birch: partn. owned acres of priv forest'
TBCORPA	'Birch: corp. owned acres of priv forest'
TBOTH A	'Birch: other owned acres of priv forest'
TBINDU	'Birch: indiv. owned units of priv forest'
TBPARTU	'Birch: partn. owned units of priv forest'
TBCORPU	'Birch: corp. owned units of priv forest'
TBOTHU	'Birch: other owned units of priv forest'
TBSPORT	'Birch: acres of sport or recreation club'
TBREC	'Birch: acres of woodland used for rec.'
TBPOSTED	'Birch: acres of woodland posted'
TBCONTR	'Birch: acres posted to control access'
TBRECOWN	'Birch: acres of ownership for rec.'
TBREC BEN	'Birch: acres of recreation benefit'
TBRECEXP	'Birch: acres of expected rec. benefit'

Source Dataset

Private Forest Land Owners of the United States, 1994.

Note: See also Resource Bulletin NE-134, T.W. Birch, same title, descriptive tables and text based on these data

Acquired from: Tom Birch, USDA-FS Northeastern Forest Experiment Station, (610) 975-4075.

Filename: **c:\rpa\supply\data\birch\birch.sd2**

NORSIS Variable Definitions

The Birch Private Forest Lands Study sent questionnaires to 23,334 owners of 28,194 forest plots in the U.S. A total of 11,742 ownerships of 15,697 plots responded. In addition to studying forest land ownership, the study also describes ownership objectives, expected benefits, harvest experience and intentions, and management planning. Variables were selected for NORSIS that both describe patterns of forest ownership and describe forest land used for outdoor recreation.

3. Private forest land (continued)

TBACRES	Sum total of private forest land acres in the county
TBOWNERS	Sum total of private forest ownership units in the county

For the entire U.S., the Birch study estimates there are 393.4 million acres of private forest land and 9.91 million ownership units. Similar to the NRI, the Birch data may have considerable **estimation error** at the county level. The following 8 variables are the acreage and number of ownership units, respectively, by county:

TBINDA	Acres of private forest owned by <u>individuals</u>
TBPARTA	Acres of private forest owned by <u>partnerships</u>
TBCORPA	Acres of private forest owned by <u>corporations</u>
TBOTH A	Acres of private forest owned by <u>other</u>
TBINDU	Number of private forest units owned by <u>individuals</u>
TBPARTU	Number of private forest units owned by <u>partnerships</u>
TBCORPU	Number of private forest units owned by <u>corporations</u>
TBOTHU	Number of private forest units owned by <u>other</u>

TBINDA, TBPARTA, TBCORPA, and TBOTH A sum to equal TBACRES (not exact because acres are rounded to nearest integer). TBINDU, TBPARTU, TBCORPU, and TBOTHU sum to equal TBOWNERS (not exact because units are rounded to nearest integer).

The remaining variables are related to outdoor recreation on private forest land:

TBSPORT	Acres of private forest land owned by sport or recreation clubs
TBREC	Acres of private forest woodland used for recreational purposes
TBPOSTED	Acres of private forest woodland that are posted
TBCONTR	Acres of private forest woodland posted to control or prohibit access
TBRECOWN	Acres of private forest woodland owned primarily for recreation
TBREC BEN	Acres of private forest woodland where recreation was a primary benefit during the last 10 years
TBRECEXP	Acres of private forest woodland where recreation is an expected benefit over the next 10 year

4. The Nature Conservancy preserves and tracts

<u>Variable Name</u>	<u>Label</u>
TNCACRES	'TNC total tract acres'
TNCPUB	'TNC acres with public access'
TNCREST	'TNC acres with restricted/unknown p.a.'
TNCPROT	'TNC acres with protected status'
TNCSEMI	'TNC acres with semi-prot./unknown status'
TNCUNPR	'TNC acres with unprotected status'
TNCPRES	'TNC acres in established preserves'
TNCMANG	'TNC acres managed by TNC'
TNCOTH	'TNC acres managed by other agencies'

Source Dataset

The Nature Conservancy: Managed Area Basic Record (MABR) Database and TRACTS Database. January 1997.

Acquired from: The Nature Conservancy, Christen Comstock or Adrienne Burk, (703) 841-5300

Filename: **c:\rpa\supply\data\tnc\tnc.sd2**

NORSIS Variable Definitions

The Nature Conservancy organizes data on its properties into “Managed Area Basic Records”. These are created for the purpose of “identifying and characterizing natural areas of land under distinct protective or potentially protective management. A Managed Area (MA) is usually under some formal or legal level of protection and may be managed in accordance with some unified set of stewardship plans.” Each MA is comprised of tracts. The tracts that make up an MA may be owned by TNC alone, by a single landowner, or by multiple landowners. Not all tracts in an MA are fully protected, rather they may be candidates for protection.

The purpose of including these properties in NORSIS is to recognize natural areas, especially those which grant public access presumably for outdoor recreation. The following variables are descriptive statistics of TNC Tracts, which have been identified as distinct and part of an MA. The data refer to all tracts, regardless of ownership, although TNCMANG does identify tract acreage of those properties managed by TNC.

4. The Nature Conservancy preserves and tracts (continued)

TNCACRES	Sum total of TNC tract acres per county identified as an MA
TNCPUB	TNC tract acres that allow public access
TNCREST	TNC tract acres with restricted or unknown public access
TNCPROT	TNC tract acres with full protected status
TNCSEMI	TNC tract acres with semi-protected or unknown status
TNCUNPR	TNC tract acres with unprotected status
TNCPRES	TNC tract acres in established preserves (may be TNC, state heritage programs or other formal preserves)
TNCMANG	TNC tract acres managed by TNC
TNCOTH	TNC tract acres managed by other agencies

5. Recreation Businesses

<u>Variable Name</u>	<u>Label</u>
** Tourist Attractions;	
ABITAMUS	'ABI # museums'
ABITANR	'ABI # natural res. tourist attractions'
ABITAAM	'ABI # amusement /entertnmt tourist attr.'
ABITAHIS	'ABI # historic /cultural tourist attr.'
ABITAGOV	'ABI # government /civic tourist attr.'
ABITAOTH	'ABI # other unclassified tourist attr.' ;
** Other recreation businesses;	
ABIHUNT	'ABI # hunting & fishing preserves'
ABIMAR1	'ABI # marinas with <5 employees'
ABIMAR2	'ABI # marinas with 5-9 employees'
ABIMAR3	'ABI # marinas with 10+ employees'
ABITRAV	'ABI # travel agents offering cruises'
ABITOUR1	'ABI # tour operators with <5 employees'
ABITOUR2	'ABI # tour operators with 5-9 employees'
ABITOUR3	'ABI # tour operators with 10+ employees'
ABISKITR	'ABI # skiing tour operators'
ABIEXPED	'ABI # expedition outfitters'
ABIBICYC	'ABI # bicycle tour operators'
ABISKI	'ABI # skiing centers /resorts'
ABIFISH	'ABI # fish camps'
ABIDUDE	'ABI # dude ranches'
ABICAMPS	'ABI # organized camps'
ABIGLFPU	'ABI # public golf courses'
ABIGLFPR	'ABI # private golf courses'
ABIAMUSE	'ABI # amusement places'
ABIRECCT	'ABI # misc. recreation centers'
ABITENPR	'ABI # private tennis courts'
ABISWMPR	'ABI # private swimming pools'
ABIFLPR	'ABI # private fishing lakes'
ABIHUNTC	'ABI # hunt and fish clubs'
ABIARCH	'ABI # archery ranges'
ABIBASEB	'ABI # baseball batting ranges'
ABIBIKER	'ABI # bicycle rental firms'
ABIBOATR	'ABI # boat rental firms'

5. Recreation Businesses (continued)

ABIBOATI	'ABI # boating instruction firms'
ABICANOE	'ABI # canoe trip outfitters'
ABICANOR	'ABI # canoe rental firms'
ABIFAIR	'ABI # fairgrounds'
ABIDIVE	'ABI # diving instruction programs'
ABIPIERS	'ABI # fishing piers'
ABIFLPU	'ABI # public fishing lakes'
ABIFISHP	'ABI # fishing parties'
ABIGOLFM	'ABI # miniature golf firms'
ABIGOLFR	'ABI # golf practice ranges'
ABIGUIDE	'ABI # guides services'
ABIHIST	'ABI # historical places'
ABIPIC	'ABI # picnic grounds'
ABIPLAY	'ABI # playgrounds'
ABIRIDE	'ABI # riding academies'
ABIGUNRG	'ABI # rifle and pistol ranges'
ABISAILI	'ABI # sail instruction firms'
ABISIGHT	'ABI # sightseeing tours'
ABISKIEQ	'ABI # ski equipment rental firms'
ABISTABL	'ABI # stables'
ABISWMPU	'ABI # public swimming pools'
ABITENPU	'ABI # public tennis courts'
ABITRAP	'ABI # trap and skeet ranges'
ABIWATEQ	'ABI # water equipment rental firms'
ABIPOND	'ABI # fishing lakes and ponds'
ABIRRAFT	'ABI # raft trip firms'
ABISCUBA	'ABI # scuba diving tours'
ABIHUNTT	'ABI # hunting trip guides'

Source Dataset

American Business Information, Inc. Marketing Research Database of recreation businesses based on SIC codes.

Acquired from: American Business Information, Inc. Marketing Research, Megan Anderson, (402) 593-4532

5. Recreation Businesses (continued)

Filenames: The six variables under the heading “Tourist Attractions” are located in the source dataset **c:\rpa\supply\data\abi\touratt.sd2**.

Each of the other variables is stored in its own SAS library, based on its SIC code. A list of variable names, SAS library names, and SIC codes follows. All are stored in the subdirectory, **c:\rpa\supply\data\abi**.

NORSIS Variable Definitions

<u>Variable</u>	<u>SAS library</u>	<u>Recreation Business</u>	<u>SIC Code</u>
ABIHUNT	huntpres	Hunting & Fishing Preserves	097101
ABIMAR1,2,3	marinas	Marinas	449306
ABITRAV	cruises	Cruises	472406
ABITOUR1,2,3	tours	Tours-Operators & Promoters	472501
ABISKITR	skitours	Skiing Tours	472502
ABIEXPED	exped	Expeditions-Outfitted	472503
ABIBICYC	bicycle	Bike Tours	472507
ABISKI	skictrs	Skiing Centers/Resorts	701110
ABIFISH	fishcamp	Fishing Camps	703201
ABIDUDE	dudernch	Dude Ranches	703202
ABICAMPS	camps	Camps	703203
ABIGLFPU	golfpub	Golf Courses-Public	799201
ABIGLFPR	golfpriv	Golf Courses-Private	799706
ABIAMUSE	amuse	Amusement Places	799601
ABIRECCT	recctr	Recreation Centers (private)	799701
ABITENPR	tennpriv	Tennis Courts-Private	799703
ABISWMPR	swimpriv	Swimming Pools-Private	799704
ABIFLPR	fishlake	Fishing Lakes-Private	799709
ABIHUNTC	huntclub	Hunt & Fish Clubs	799716
ABIARCH	archery	Archery Ranges	799903
ABIBASEB	baseball	Baseball Batting Ranges	799908
ABIBIKER	bikerent	Bicycle Rentals	799909
ABIBOATR	boatrent	Boats-Rental & Charter	799913
ABIBOATI	boatinst	Boating Instruction	799914
ABICANOE	canoetrp	Canoe Trip Outfitters	799917

5. Recreation Businesses (continued)

ABICANOR	canoernt	Canoes-Rental & Charter	799918
ABIFAIR	fairgrnd	Fairgrounds	799923
ABIDIVE	diving	Diving Instruction	799924
ABIPIERS	fishpier	Fishing Piers	799925
ABIFLPU	fishlake	Fishing Lakes-Public	799926
ABIFISHP	fishpart	Fishing Parties	799928
ABIGOLFM	golfini	Golf Courses-Miniature	799929
ABIGOLFR	golfrnge	Golf Practice Ranges	799931
ABIGUIDE	guide	Guide Service	799934
ABIHIST	histplac	Historical Places	799940
ABIPIC	picnic	Picnic Grounds	799954
ABIPLAY	playgrnd	Playgrounds	799956
ABIRIDE	rideacad	Riding Academies	799957
ABIGUNRG	gunrange	Rifle & Pistol Ranges	799960
ABISAILI	sailinst	Sailing Instruction	799961
ABISIGHT	sightsee	Sightseeing Tours	799963
ABISKIEQ	skiequip	Skiing Equipment-Rental	799964
ABISTABL	stables	Stables	799968
ABISWMPU	swimpub	Swimming Pools-Public	799969
ABITENPU	tennpub	Tennis Courts-Public	799971
ABITRAP	traprang	Trap & Skeet Ranges	799975
ABIWATEQ	watereqp	Water Equipment-Rental	799980
ABIPOND	fishpond	Fishing Lakes & Ponds	799983
ABIRRAFT	rafttrip	Raft Trips	799986
ABISCUBA	scuba	Scuba Diving Tours	799987
ABIHUNTT	hunttrip	Hunting Trips	799992

Each of the ABI variables is simply the sum total of the number of recreation business firms per county. Note: ABI assigns the fifth and sixth digit to the standard 4-digit SIC code. For example, there are over 90 entries under SIC code 7999, "Miscellaneous Recreation and Amusement Services". The U.S. Department of Commerce groups these businesses all together under 7999, but ABI assigns a code (the 5th and 6th digits) which specifies the recreation business.

There are six variables listed under the heading of tourist attractions (SIC 799972). ABITAMUS is the sum total of museums per county identified on the basis of the business/agency name. The other five variables are created categories of tourist attractions:

5. Recreation Businesses (continued)

ABITANR	Natural resource-based attractions
ABITAAM	Amusement/entertainment/sports attractions
ABITAHIS	Historic/cultural attractions
ABITAGOV	Government/civic attractions
ABITAOTH	Other unclassified attractions

Further details on tourist attraction classifications:

Natural resource-based: Includes anything related to natural resources like nature preserves, wildlife sanctuaries, forests, parks, etc. Also include tours or guide services, such as sightseeing tours, boat rides, fishing boats, etc. that depend on natural resources. Also zoos, aquariums, nature centers or any business that is directly dependent on nature or the outdoors.

Amusement/Entertainment/Sports: The largest category, it includes all the visitor attractions, primarily commercial in nature, that are not resource-based, historical/cultural, or civic/public (like memorials and monuments). Also includes shopping, outlet malls and the like.

Historic/Cultural/Arts/Festivals: Includes anything that has to do with history, heritage, culture, the arts, fairs, festivals, etc. Most items that are not resource-based or designed for entertainment value will probably belong here so long as they are not government, civic, memorial, etc. attractions.

Government/Civic/Monuments/Memorials: Includes anything that is publicly owned or provided by government. An exception is a state park which belongs in category 1. A local or city park, however, belongs here. Also includes organizations like Chambers of Commerce or Merchants Associations.

Other: Any other attraction that does not fit into one of the four categories above.

6. Cross Country Skiing

<u>Variable Name</u>	<u>Label</u>
CCSFIRMS	'CCSAA # Cross country skiing firms'
CCSFRMPU	'CCSAA # public cross country ski centers'
CCSBACKC	'CCSAA # c-c ski firms with b/c skiing'
CCSGRMIL	'CCSAA # c-c ski area groomed trail miles'

Source Dataset

Cross Country Ski Areas Association Database. September 1996.

Acquired from: Cross Country Ski Areas Association (CCSAA); Winchester, NH;
Chris Frado, (603) 239-4341

Filename: **c:\rpa\supply\data\ski\xcski.sd2**

NORSIS Variable Definitions

The CCSAA defines cross country skiing firms or centers as having four essential components: a) professional ski school and staff, b) ski shops with rental equipment, c) groomed and marked trails, d) base lodge with amenities.

CCSFIRMS is the sum total of skiing firms or centers per county. CCSFRMPU is the number of public skiing centers per county based on the name of the center in CCSAA's database, e.g. one provided by a county recreation and parks department. CCSBACKC is the number of firms with backcountry skiing and CCSGRMIL is the sum total of groomed trail mileage per county. These last two variables are only provided for CCSAA members or about half of the approximately 500 ski centers in the database.

7. Alpine Skiing

<u>Variable Name</u>	<u>Label</u>
DSKIFIRM	'ISS # downhill skiing areas'
DSKIACRE	'ISS Skiable acreage'
DSKIVERT	'ISS Average vertical drop at ski areas'
DSKIELEV	'ISS Average top elevation @ highest lift'
DSKIVTF	'ISS Total vertical transfer feet (mm)'
DSKILC	'ISS Lift capacity per hour'
DSKIDR	'ISS # destination resorts'
DSKIRR	'ISS # regional resorts'
DSKILR	'ISS # local resorts (incl day & weekend)'
DSKIPRIV	'ISS # privately owned ski resorts'
DSKIPUB	'ISS # publicly owned ski resorts'

Source Dataset

The White Book Industry Edition, Ski Area Statistics, 1997.

Acquired from: Inter-Ski Services, Inc.; Washington, DC; Bob Enzel, (202) 342-0886

Filename: **c:\rpa\supply\data\ski\skistats.sd2**

NORSIS Variable Definitions

DSKIFIRM	Sum total of the number of downhill skiing areas per county
DSKIACRE	Sum total of 'Skiable acreage' (not total) per county
DSKIVERT	Average vertical drop at ski areas per county
DSKIELEV	Average top elevation @ highest lift per county
DSKIVTF	Total vertical transfer feet (millions) per county
DSKILC	Lift capacity per hour per county
DSKIDR	Number of destination resorts per county--has slopes and facilities that attract skiers from great distances for major vacations
DSKIRR	Number of regional resorts per county--has slopes and facilities that attract skiers from the region for a resort vacation
DSKILR	Number of local resorts per county--has slopes that generally attract local skiers on vacation and those who want to ski at a nearby resort
DSKIPRIV	Number of privately owned ski resorts per county
DSKIPUB	Number of publicly owned ski resorts

OTHER Resource and Socioeconomic Descriptor Variables

1. Bailey's Ecoregions and Divisions

<u>Variable Name</u>	<u>Label</u>
BLY212	'Bailey 212: Laurentian Mix Forest'
BLY221	'Bailey 221: E Broadleaf For- Continental'
BLY222	'Bailey 222: E Broadleaf For- Oceanic'
BLY231	'Bailey 231: Southeastern Mixed Forest'
BLY232	'Bailey 232: Outer Coastal Plain Forest'
BLY234	'Bailey 234: Lower Miss. Riverine Forest'
BLY242	'Bailey 242: Pacific Lowland Mixed For.'
BLY251	'Bailey 251: Prairie Parkland (Temperate)'
BLY255	'Bailey 255: Prairie Parkland (Subtrop.)'
BLY261	'Bailey 261: CA Coastal Chapparal For.'
BLY262	'Bailey 262: CA Dry Steppe'
BLY263	'Bailey 263: CA Coastal Steppe, etc.'
BLY311	'Bailey 311: Great Plains Steppe'
BLY313	'Bailey 313: CO Plateau Semi-Desert'
BLY315	'Bailey 315: SW Plateau & Plains'
BLY321	'Bailey 321: Chihuahuan Semi-Desert'
BLY322	'Bailey 322: American Semi-Desert'
BLY331	'Bailey 331: Great Plains-Palouse'
BLY332	'Bailey 332: Great Plains Steppe'
BLY333	'Bailey 333: N. Rocky Mtn. Forest'
BLY334	'Bailey 334: Black Hills Coniferous'
BLY341	'Bailey 341: Intermountain S.D. & Desert'
BLY342	'Bailey 342: Intermountain SemiDesert'
BLY411	'Bailey 411: Everglades'
BLYD210	'Bailey: Warm Continental Div.'
BLYD220	'Bailey: Hot Continental Div.'
BLYD230	'Bailey: Subtropical Div.'
BLYD240	'Bailey: Marine Div.'
BLYD250	'Bailey: Prairie Div.'
BLYD260	'Bailey: Mediterranean Div.'
BLYD310	'Bailey: Tropical/ Subtrop. Steppe Div.'
BLYD320	'Bailey: Tropical/ Subtrop. Desert Div.'
BLYD330	'Bailey: Temperate Steppe Div.'
BLYD340	'Bailey: Temperate Desert Div.'
BLYD410	'Bailey: Savanna Div.'
BLYMTNS	'Bailey: Acres of mountains'

1. Bailey's Ecoregions and Divisions (continued)

Source Dataset

Bailey's Ecoregion Database: Acreage by County, 1994.

Acquired from: John Hof, USDA-FS Rocky Mountain Forest and Range Experiment Station,
(970) 498-1859.

Filename: **c:\rpa\supply\data\bailey\bailey.sd2**

NORSIS Variable Definitions

Each U.S. county is characterized by one or more 'ecoregions' (3-digit) according to Robert Bailey's Ecosystem Classification database. The variables BLY212 through BLY410 are the 24 different ecoregions in the 48 contiguous States. Most counties are located within a single ecoregion. In that case, the acreage for the corresponding ecoregion variable should approximately equal the total county acreage. The other 23 variables will have values of 0. If two or more ecoregions lie within a county then there will be positive values for the two or more corresponding ecoregion variables.

BLYD210 through BLYD410 are the ecoregion Division variables (2-digit) which are one step up the hierarchy from the ecoregions. For example, Bailey Division 230 is the sum of ecoregions 231, 232, and 234. RPA Assessment analyses will report at the Division level rather than Ecoregion since there are 11 Divisions compared to 24 Ecoregions. Two of the Divisions (410 and 260), however, are comprised of only a few counties, so 410 is collapsed into 230 and 260 is collapsed into 240. Therefore, there are 9 Divisions for RPA reporting purposes.

BLYMTNS is the sum total of mountainous acres in the county, therefore BLYMTNS>0 indicates the presence of mountains.

2. Economic Research Service (ERS) County Typologies and Rural/Urban Continuum

<u>Variable Name</u>	<u>Label</u>
BEALE93	'ERS Metro/Nonmetro status (Beale 1993)'
BUTLER83	'ERS Metro/Nonmetro status (Butler 1983)'
METRO	'ERS 1 if metro county, 0 if nonmetro'
FM	'ERS typology: farming dependent'
MI	'ERS typology: mining dependent'
MF	'ERS typology: manufacturing dependent'
GV	'ERS typology: government dependent'
TS	'ERS typology: services dependent'
NS	'ERS typology: nonspecialized'
RT	'ERS county type: retirement destination'
FL	'ERS county type: federal lands'
CM	'ERS county type: commuting'
PV	'ERS county type: persistent poverty'
TP	'ERS county type: transfers dependent'

Source Dataset

ERS County Typologies, 1989.

ERS Rural/Urban Continuum Code. Butler: 1983, Beale: 1993.

Acquired from: USDA-ERS World Wide Web Homepage: <http://www.econ.ag.gov>. Rural Economy Division.

Filename: **c:\rpa\demog\data\erstypo.sd2**

NORSIS Variable Definitions

Note--The following is copied verbatim from ERS Documentation. Some minor details are omitted here; if necessary, refer to file c:\rpa\demog\docu\typo89.doc.

1989 ERS County Typology Codes

The 1989 classification system of nonmetro counties, known as the ERS typology, is designed to provide policy-relevant information about diverse rural conditions to policymakers, public officials, and researchers. The classification is based on 2,276 U.S. counties (including Alaska and Hawaii) designated as nonmetro as of 1993. The typology includes six mutually exclusive

2. ERS County Typologies and Rural/Urban Continuum (continued)

economic types: five types (farming, mining, manufacturing, government and services) reflect dependence on particular economic specializations; a sixth type, termed nonspecialized, contains those counties not classified as having any of the five economic specializations. The classification scheme also identifies five overlapping rural policy-relevant types: retirement-destination, Federal lands, persistent poverty, commuting and transfers-dependent. For additional information or technical advice, please contact:

Peggy Ross Cook, Senior Sociologist
Office of the Director/RED/ERS/USDA
1301 New York Avenue, NW
Washington, D.C. 20005-4788
(202) 219-0095

1989 County economic type definitions (coded 0/1, 8 indicates a metropolitan county):

Farming-dependent - Farming contributed a weighted annual average of 20 percent or more labor and proprietor income over the three years from 1987 to 1989.

Mining-dependent - Mining contributed a weighted annual average of 15 percent or more labor and proprietor income over the three years from 1987 to 1989.

Manufacturing-dependent - Manufacturing contributed a weighted annual average of 30 percent or more labor and proprietor income over the three years from 1987 to 1989.

Government-dependent - Government activities contributed a weighted annual average of 25 percent or more labor and proprietor income over the three years from 1987 to 1989.

Services-dependent - Service activities contributed a weighted annual average of 50 percent or more labor and proprietor income over the three years from 1987 to 1989.

Nonspecialized - Counties not classified as a specialized economic type over the three years from 1987 to 1989.

Policy Types:

Retirement destination - The population aged 60 years and over in 1990 increased by 15 percent or more from 1980-90 through in-movement of people.

Federal lands - Federally-owned lands made up 30 percent or more of a county's land area in the year 1987.

2. ERS County Typologies and Rural/Urban Continuum (continued)

Commuting - Workers aged 16 years and over commuting to jobs outside their county of residence were 40 percent or more of all the county's workers in 1990.

Persistent poverty - Persons with poverty-level income in the preceeding year were 20 percent or more of total population in each of four years, 1960, 1970, 1980, and 1990.

Transfers-dependent - Income from transfer payments (Federal, state, and local) contributed a weighted annual average of 25 percent or more of total personal income over the three years from 1987 to 1989.

Removal of overlaps for economic types: Counties that qualified as farming, mining, or manufacturing types AND also qualified as government and/or services counties were assigned to the farming, mining, or manufacturing types, respectively. Other overlaps such as farming-manufacturing, mining-manufacturing, farming-mining or government-services were assigned to the type with the largest percentage point difference above the cutting point divided by the standard deviation.

Rural/Urban Continuum: Devised by ERS Sociologist Margaret Butler in 1983 to categorize U.S. counties on a scale from most urban to most rural. Codes 0 to 3 identify metropolitan counties and codes 4 to 9 nonmetropolitan. Butler's codes were based on 1980 Census Data. ERS Demographer Calvin Beale used the same continuum on 1990 Census data.

CODE

METROPOLITAN COUNTIES (0-3)

- 0 Central counties of metropolitan areas of 1 million population or more
- 1 Fringe counties of metropolitan areas of 1 million population or more
- 2 Counties in metropolitan areas of 250,000 - 1,000,000 population
- 3 Counties in metropolitan areas of less than 250,000 population

NONMETROPOLITAN COUNTIES (4-9)

- 4 Urban population of 20,000 or more, adjacent to a metropolitan area
- 5 Urban population of 20,000 or more, not adjacent to a metropolitan area
- 6 Urban population of 2,500-19,999, adjacent to a metropolitan area
- 7 Urban population of 2,500-19,999, not adjacent to a metropolitan area
- 8 Completely rural (no places with a population of 2,500 or more) adjacent to a metropolitan area
- 9 Completely rural (no places with a population of 2,500 or more) not adjacent to a metropolitan area

3. IMPLAN Resource Dependence Typology: Tourism and Forest Product Industries

<u>Variable Name</u>	<u>Label</u>
RD0EMPC	'RD Other: employee compensation'
RD0IBT	'RD Other: indirect business taxes'
RD0PROPR	'RD Other: proprietor income'
RD0OPROP	'RD Other: other property income'
RD0TIO	'RD Other: total industrial output'
RD0JOBS	'RD Other: number of jobs'
RD1EMPC	'RD Timber: employee compensation'
RD1IBT	'RD Timber: indirect business taxes'
RD1PROPR	'RD Timber: proprietor income'
RD1OPROP	'RD Timber: other property income'
RD1TIO	'RD Timber: total industrial output'
RD1JOBS	'RD Timber: number of jobs'
RD2EMPC	'RD Logging: employee compensation'
RD2IBT	'RD Logging: indirect business taxes'
RD2PROPR	'RD Logging: proprietor income'
RD2OPROP	'RD Logging: other property income'
RD2TIO	'RD Logging: total industrial output'
RD2JOBS	'RD Logging: number of jobs'
RD3EMPC	'RD Primary wood: employee compensation'
RD3IBT	'RD Primary wood: indirect business taxes'
RD3PROPR	'RD Primary wood: proprietor income'
RD3OPROP	'RD Primary wood: other property income'
RD3TIO	'RD Primary wood: total industrial output'
RD3JOBS	'RD Primary wood: number of jobs'
RD4EMPC	'RD Second. wood: employee compensation'
RD4IBT	'RD Second. wood: indirect business taxes'
RD4PROPR	'RD Second. wood: proprietor income'
RD4OPROP	'RD Second. wood: other property income'
RD4TIO	'RD Second. wood: total industrial output'
RD4JOBS	'RD Second. wood: number of jobs'
RD5EMPC	'RD Eat/drink est.: employee compensation'
RD5IBT	'RD Eat/drink est.: indirect business tax'
RD5PROPR	'RD Eat/drink est.: proprietor income'
RD5OPROP	'RD Eat/drink est.: other property income'
RD5TIO	'RD Eat/drink est.:total industrial output'
RD5JOBS	'RD Eat/drink est.: number of jobs'
RD6EMPC	'RD Hotels: employee compensation'
RD6IBT	'RD Hotels: indirect business taxes'

3. IMPLAN Resource Dependence Typology (continued)

<u>Variable Name</u>	<u>Label</u>
RD6PROPR	'RD Hotels: proprietor income'
RD6OPROP	'RD Hotels: other property income'
RD6TIO	'RD Hotels: total industrial output'
RD6JOBS	'RD Hotels: number of jobs'
RD7EMPC	'RD Retail: employee compensation'
RD7IBT	'RD Retail: indirect business taxes'
RD7PROPR	'RD Retail: proprietor income'
RD7OPROP	'RD Retail: other property income'
RD7TIO	'RD Retail: total industrial output'
RD7JOBS	'RD Retail: number of jobs'
RD8EMPC	'RD Tourism serv.: employee compensation'
RD8IBT	'RD Tourism serv.: indirect business tax'
RD8PROPR	'RD Tourism serv.: proprietor income'
RD8OPROP	'RD Tourism serv.: other property income'
RD8TIO	'RD Tourism serv: total industrial output'
RD8JOBS	'RD Tourism serv.: number of jobs'
RD9EMPC	'RD Support serv.: employee compensation'
RD9IBT	'RD Support serv.: indirect business tax'
RD9PROPR	'RD Support serv.: proprietor income'
RD9OPROP	'RD Support serv.: other property income'
RD9TIO	'RD Support serv: total industrial output'
RD9JOBS	'RD Support serv.: number of jobs'
RD10EMPC	'RD Real Estate: employee compensation'
RD10IBT	'RD Real Estate: indirect business taxes'
RD10PROPR	'RD Real Estate: proprietor income'
RD10OPRO	'RD Real Estate: other property income'
RD10TIO	'RD Real Estate: total industrial output'
RD10JOBS	'RD Real Estate: number of jobs'
RD11EMPC	'RD Construction: employee compensation'
RD11IBT	'RD Construction: indirect business taxes'
RD11PROPR	'RD Construction: proprietor income'
RD11OPRO	'RD Construction: other property income'
RD11TIO	'RD Construction: total industrial output'
RD11JOBS	'RD Construction: number of jobs'

3. IMPLAN Resource Dependence Typology (continued)

Source Dataset

IMPLAN Resource Dependence Typology Dataset, 1992 data.

Acquired from: SRS 4901, Don English.

Filename: **c:\rpa\supply\data\implan\implan.sd2**

NORSIS Variable Definitions

SRS 4901 Resource Economist Don English constructed this database to indicate the resource dependence of each county's economy on the tourism and forest product industries. Six different variables describe each of 12 different economic resource dependence 'types' for a total of 72 variables. The six variables are each expressed in millions of dollars with the exception of the number of jobs:

- 1) employee compensation
- 2) indirect business tax
- 3) proprietor income
- 4) other property income
- 5) total industrial output
- 6) number of jobs

The 12 economic types are described below. An example of the naming convention for the variables is RD4PROPR. RD4 represents resource dependence for the fourth sector and PROPR represents proprietor income. Each variable is not defined here; the variable labels above are sufficient to indicate the definition.

3. IMPLAN Resource Dependence Typology (continued)

Economic Sectors:

```

*****
*** RESOURCE DEPENDENCE TYPOLOGY :      ***
*** 0 = OTHER
**** 1 = TIMBER PRODUCTION
**** 2 = LOGGING AND RELATED SERVICES
**** 3 = PRIMARY WOOD PROCESSORS
**** 4 = SECONDARY WOOD PROCESSORS
**** 5 = EAT/DRINK ESTABLISHMENTS
**** 6 = HOTELS AND ACCOMODATIONS
**** 7 = RELATED RETAIL
**** 8 = TOURISM SERVICES
**** 9 = SUPPORT SERVICES
**** 10 = REAL ESTATE
**** 11 = CONSTRUCTION, RESIDENTIAL
*****

```

More detailed IMPLAN sector definitions (with IMPLAN Sector Number) for each of these general resource dependence sectors are:

0. Other

-- all other sectors not included in the 11 resource dependence types

1. Timber Production

-- forestry products (24)
 -- agricultural, forestry, fishery services (26)

2. Logging and Related Services

-- Logging Camps and Logging Contractors (133)

3. Primary Wood Processors

-- Sawmills and Planing Mills, General (134)
 -- Hardwood Dimension and Flooring Mills (135)
 -- Special Product Sawmills, not easily classified (136)
 -- Millwork (137)

3. IMPLAN Resource Dependence Typology (continued)
 - Wood Kitchen Cabinets (138)
 - Veneer and Plywood (139)
 - Structural Wood Members, not easily classified (140)
4. Secondary Wood Processors
 - variety of building, household, furniture, paper and other wood products (141-173)
5. Eating and Drinking Establishments
 - Eating and Drinking (454)
6. Hotels and Accommodations
 - Hotels and Lodging Places (463)
7. Related Retail
 - Miscellaneous Retail (455)
8. Tourism Services
 - Theatrical Producers, Bands, etc. (484)
 - Bowling Alleys and Pool Halls (485)
 - Commercial Sports except Racing (486)
 - Racing and Track Operation (487)
 - Amusement and Recreation Services, not easily classified (488)
 - Membership Sports and Recreation Clubs (489)
9. Support Services
 - Food Stores (450)
 - Automotive Dealers and Service Stations (451)
 - Automobile Rental and Leasing (477)
10. Real Estate
 - Real Estate (462)
11. Construction, Residential
 - New Residential Structures (48)
 - Maintenance and Repair, Residential (55)

4. Climatological and Geographic Data

<u>Variable Name</u>	<u>Label</u>
SNOWFALL	'NORSIS87 average annual snowfall'
BEACHMI	'NORSIS87 Miles publicly accessible beach'
COASTAL	'NORSIS87 1 if coastal county'
LAT	'NORSIS87 latitude of county centroid'
LONG	'NORSIS87 longitude of county centroid'
AVGTEMP	'NORSIS87 average temperature'
AVPRECIP	'NORSIS87 average annual precipitation'

Source Dataset

1987 NORSIS, compiled for the 1989 RPA Assessment.

Acquired from: SRS 4901. Compiled in mid-1980s by Don English.

Filename: **c:\rpa\norsis87\norsmisc.sd2**

NORSIS Variable Definitions

LAT and LONG, the latitude and longitude of the county centroid are unchanged from the 1987 NORSIS and do not need to be updated. The same is true for COASTAL, the binary variable indicating whether or not a county is coastal. The three climatological variables--SNOWFALL, AVGTEMP, and AVPRECIP--do need to be updated for the 1997 NORSIS. Data should be available from NOAA's National Climatological Data Center (NCDC) web page. Other variables of interest from that source may be added. Precise definitions of the temperature and precipitation variables should exist on that web page too.

5. U. S. Census Bureau Data

<u>Variable Name</u>	<u>Label</u>
POP80	'Population 1980'
POP90	'Population 1990'
POP95EST	'Population 1995 (estimate)'
POPDEN80	'Persons per square mile 1980'
POPDEN90	'Persons per square mile 1990'
FARMAC92	'Land in farms (acres) 1992'
PCTFARM	'Percent of total county area in farms'
PCI93	'Per capita income 1993 (BEA)'
MEDAGE90	'Median age 1990'

Source Dataset

USA Counties 1996. U.S. Census Bureau, CD-ROM.

Acquired from: U.S. Census Bureau. Customer Services, (301) 457-4100.

Filename: **c:\rpa\demog\censtats.sd2**

NORSIS Variable Definitions

Variable labels are self-explanatory. All data from USA Counties 1996 CD. CD has hundreds of variables on variety of subjects; these were selected as most probable to be used in demand and participation modeling.

NORSIS Recreation Supply Indexes by Resource Type

<u>Variable Name</u>	<u>Label</u>
FURB1	Supply index: Local Facilities
FURB2	Supply index: Open Space
FLAND1	Supply index: Great Outdoors
FLAND2	Supply index: Wildlife Land
FLAND3	Supply index: State & Private Forests
FLAND4	Supply index: Western Land
FLAND5	Supply index: Camping Areas
FLAND6	Supply index: Other Federal Land
FWATR1	Supply index: Large Water Bodies
FWATR2	Supply index: Whitewater
FWATR3	Supply index: Flatwater
FWATR4	Supply index: Lowland Rivers
FSNOW1	Supply index: Developed Winter
FSNOW2	Supply index: Undeveloped Winter

Source Dataset

Indexes created by SRS-4901 Resource Economist Don English from selected NORSIS data.

Acquired from: Don English, USDA Forest Service, SRS-4901.

Filename: **c:\rpa\supply\data\index\factr0.dat**

NORSIS Variable Definitions

Following is the technical documentation provided by Don English describing the indexes and how they were constructed. This also appears as a technical appendix in the 1998 RPA Assessment book.

Development of the Supply Indexes for Recreation

PREVIOUS RESEARCH

Site specific studies of recreation demand

Knetsch et al. (1976) created a substitution index for a set of lakes in California. Their index was created by summing the ratio of the logarithm of lake acres to travel distance from the individual's home to the substitute lake. However, summation for was done only over the lakes whose ratios were greater than the one under study.

Wetzstein and Green (1978) examined recreation demand for wilderness and wilderness study areas in California. For one regressor in their zonal TCM, they constructed several substitute wilderness recreation opportunity proxies based on principal component indices of wilderness ares attractiveness, and one based on wilderness area size alone. Their opportunity proxy, AI_i , for an origin i was calculated as:

$$AI_i = \sum_{\substack{j=1 \\ j \neq k}}^J (A_j/d_{ij}) / (A_k/d_{ik})$$

where A_j is a principal components attractiveness index for wilderness j , d_{ij} is the distance from origin i to wilderness j , and k is the site under consideration. In their models, the proxies all preformed well, including the opportunity proxy based on wilderness acreage alone. Wetzstein and Green concluded that acreage can account for most of the attractiveness of a wilderness area.

Mullen and Menz (1985) constructed a general index of resource availability for fishing in the Adirondacks for each of three types of fishing resources: coldwater lakes, other lakes, and streams. Their accessibility index value for any fish resource type, AI_i , for any origin i was:

$$AI_i = \sum_{k=1}^n A_k/P_{ik}$$

where A_k is surface water acres of the fish resource type for site k , and P_{ik} is the round-trip travel cost from origin i to site k . Travel costs were defined as 10 cents per mile plus travel time valued at 35% of the wage rate. They found that aggregate seasonal days of participation was related to the 'own' accessibility index for each type of fishing.

Rosenthal (1987), and Hof and Rosenthal (1987) used a substitute index to predict trips to 11 reservoirs in Kansas and Missouri. Their index was based on a principal component analysis of the matrix of distances separating each origin from each of the 35 substitute reservoirs within a 200-mile distance. Components with eigenvalues greater than one were retained for inclusion in the demand equation. Results indicated these components were significant predictors of recreation demand.

Regional/national assessments of recreation

Hof and Kaiser (1983) developed recreation participation projections based on 1977 national survey data for participation. Their independent variables included demographics, and unspecified 'supply availability' variables. While it is not possible to determine what the supply variables were, nor how they were derived from resource counts, their results show that participation projections are tied to resource availability.

Walsh, et al. (1992) developed participation models for fish and wildlife recreation. Probability of participation was predicted as a function of demographic, price, and resource availability variables. In this study, two resource availability variables were used: (a) millions of acres of fishable water per capita in the individuals home state; (b) millions of acres of forest, range, and pasture land, both public and private, per capita in the individual's home state.

Bergstrom and Cordell (1991) used an index of substitute opportunities for each of 12 different recreation resource categories. Begin with a resource index (RI) for a county, which equals the weighted sum of the ratios of several component resources to county population, where weights were provided by an expert panel, and the weighted sum is indexed to the 95th percentile of observed sums over all counties. The index of substitutes for any resource within a county is the average of the index for the other 11 resource categories. Their final substitute opportunity index is:

$$OI_i = \frac{\sum_j RI_j (1 - (\frac{d_{ij}}{d_{MAX}}))}{\sum_j (1 - (\frac{d_{ij}}{d_{max}}))}$$

where RI_j is the resource index for county j , d_{ij} is the distance between counties i and j , d_{MAX} is the maximum distance individuals are willing to travel to use the resource category, and the index for j is over counties that are not more than d_{MAX} from county i .

Based on these research efforts, we developed a set of availability measures for recreation-related resources. These measures describe the availability of resources, relative to the distribution of both the resources themselves and the population that makes use of them.

DATA and ANALYSIS

From a candidate set of over 200 individual recreation resource variables, we selected 51 from which to develop our indices (Table 1). These were selected primarily based on resources included in developing supply measures for the research cited above. Variables were classified according to whether they were related to developed facilities, or land, water, or winter recreation resource bases.

Factor analyses were used to simplify the resource base structure. First, factor analyses (principal components analysis with varimax rotation) were performed on each subgroup of variables. Following convention, factors with eigenvalues greater than one were retained. There were a total of fourteen factors, including two for each developed and winter resources, six for dispersed land, and four for water resources. Factors were also determined for the full set of 51 variables. The two sets of factors were nearly identical, in number of factors, in percent of variation explained by the factors, and on loadings of variables onto the factors. The results of the first analysis were easier to report, and thus were used to develop the availability measure. Tables 2 through 5 report

the results of the factor analyses for each of the four subgroups of resource variables. Table 6 provides an interpretation for the types of recreation resources identified in each of the 14 factors.

Factor scores (mean=0, s.d.= 1) were calculated for each factor for each county. These scores summarize the relative availability of resources for that factor within that county. However, the resources within a county do not fully describe the set of recreation resources available to residents of that county. All of the research cited above used a much wider geographic range than a single county to describe supply availability measures, and most included some weight that declined with increasing distance. Following Rosenthal (1987) we selected a 200-mile cutoff as a market area for each county. Recreation resources further away than that were considered too distant to be important in determining recreation opportunities. In addition, both Bergstrom and Cordell (1991) and Walsh et al. (1992) note the importance of accounting for population pressures on the resources.

Our availability measure started with the summed distance-weighted factor score over the set of counties within 200 miles. To account for population pressures, the summed factor score was divided by the population (in millions) within the same set of counties. The supply availability is:

$$SA_{ik} = \frac{\sum_{j=1}^N F_{jk} d_{ij}^{\alpha}}{\sum_{j=1}^N POP_j d_{ij}^{\alpha}}$$

SA_{ik} = supply availability measure for county i and resource factor k;

F_{jk} = factor score for county j and resource factor k;

POP_j = population in thousands for county j;

d_{ij} = distance separating counties i and j ;

α = distance decay parameter;

N indexes counties with centroids < 201 mi. of county i .

Availability measures were calculated using several different parameters for α , including values of 2.0, 1.0, 0.5, and 0.0. It was not clear what the most appropriate parameter would be. Gravity model literature provides examples of each of these four. A number of previous recreation studies have used 1.0 when dealing with distances (Knetsch, et al., Wetzstein and Green, Bergstrom and Cordell). Rosenthal used a linear decay ($\alpha=1.0$), but converted distance to cost by multiplying by \$.10. On the other hand, Walsh, et al., used a zero weight for all resources and population within the state. It was decided to select the parameter empirically from among this candidate set.

For each parameter value, the appropriate set of supply availability measures were used in logit regression models explaining recreation participation for specific activities including developed camping, picnicking, canoeing, swimming, and skiing. Demographic variables including age, income, race, gender, and residence made up the other explanatory variables. In each case, the best model fit occurred when using zero as the distance decay parameter. As a result the supply measure for any county accounts equally for all resources and population within 200 miles of the county centroid.

Literature Cited

- Bergstrom, J.C., & Cordell, H.K. (1991) An analysis of the demand for and value of outdoor recreation in the United States. *Journal of Leisure Research*, 23, 67-86.
- Bureau of Outdoor Recreation (1973). *Outdoor recreation - a legacy for America*. Appendix A: an economic analysis. Washington, DC: U.S. Government Printing Office.
- California Department of Parks and Recreation (1989). *SCORP planning in review: a compendium and analysis of current statewide comprehensive outdoor recreation planning documents*. Sacramento, CA.
- Caulkins, Peter P., Bishop, Richard C., & Bouwes, Nicolaas W. (1986). The travel cost model for lake recreation: a comparison of two methods for incorporating site quality and substitution effects. *American Journal of Agricultural Economics*, 68, 291-297.
- Cordell, H.K., Bergstrom, J.C., Hartmann, L.A., & English, D.B.K. (1990). *An analysis outdoor recreation and wilderness situation in the United States: 1989-2040*. (Gen. Tech. Rept. RM-189). Fort Collins, CO: USDA Forest Service, Rocky Mountain Forest and Range Experiment Station.
- Fletcher, J.J., Adamowicz, W.L., & Graham-Tomasi, T. (1990). The travel cost model of recreation demand: theoretical and empirical issues. *Leisure Sciences*, 12, 119-147.
- Hof, J.G., and H.F.Kaiser. (1983). Long-Term Outdoor Recreation Participation Projections for Public Land Management Agencies. *Journal of Leisure Research*, 15, 1-14.
- Hof, J.G. and Rosenthal, D.H. (1987). Valuing the opportunity cost of travel time in recreation demand models: an application to aggregate data. *Journal of Leisure Research*, 19, 174-188.
- Harrington, W. (1987). *Measuring Recreation Supply*. Washington, DC: Resources for the Future.
- Knetsch, J.L., Brown, R.E., & Hansen, W.J. (1976). Estimating expected use and value of recreation sites. In C. Gearing, W. Swart, & T. Var (Eds.), *Planning for tourism development: quantitative approaches* (pp. 103-115). New York: Praeger Publishers.
- Mullen, J.K., and Menz, F.C. (1985). The effect of acidification damages on the economic value of the Adirondack fishery. *American Journal of Agricultural Economics*, 67, 112-119.
- Outdoor Recreation Resources Review Commission (1962). *Economic studies of outdoor recreation* (ORRRC Report 24). Washington, DC: U.S. Government Printing Office.
- Rosenthal, D.W. (1987). The necessity for substitute price in recreation demand analysis. *American Journal of Agricultural Economics*, 69, 828-837.
- Walsh, R.G., K.H. John, J.R. McKean, and J.G. Hof. (1992). Effect of Price on Forecasts of Participation in Fish and Wildlife Recreation: An Aggregate Demand Model. *Journal of Leisure Research*, 24:140-156.
- Wetzstein, M.E., & Green, R.D. (1978). Use of principal component attractiveness indexes in recreation demand functions. *Western Journal of Agricultural Economics*, 62, 11-21.
- Wilman, E.A., Pauls, R.J. (1987). Sensitivity of consumers' surplus estimates to variation in the parameters of the travel cost model. *Canadian Journal of Agricultural Economics*, 35, 197-212.

TABLE 1-- Resource variables used to
develop availability measure

Developed facilities:

ABIPARKD = ABI # parks & rec depts
 ABITOUR = ABI # tour operators + sightseeing tour OPERATORS
 ABIPLAY2 = ABI # playgrounds + ABI # recreation centers
 ABISWIM2 = ABI # private + public swimming pools
 ABITEN2 = ABI # private + public tennis courts
 ABICAMPS = ABI # organized camps
 ABITATT2 = ABI # tourist attr. + ABI # historical places
 ABIAMUSE = ABI # amusement places
 ABIFAIR = ABI # fairgrounds
 ABIPKLOC = ABI # local, county or regional parks
 ABIGOLF2 = ABI # private + public golf courses
 ISTEAGW = # ISTEAG funded greenway trails
 nriurban = estimate of acres of urban and built up land
 pop95 = estimated county population in 1995

Dispersed Land resources:

ABIGUIDE = ABI # guides services
 ABIHUNT2 = ABI # hunting/Fishing preserves + clubs + lodges
 ABICGPRI = ABI # private campgrounds
 BLMPDAC = BLM public domain acres
 BLYMTNS = Bailey: Acres of mountains
 PVTAGAC = NRI cropland + pasture + range acres
 FSACRE = USDA-FS Forest + Grassland acres
 FWSRECAC = FWS refuge acres open for recreation
 CGPRISIT = WOODALLS # private campground sites
 CGPUBSIT = WOODALLS # public campground sites
 NPSFED = NPS federal acres
 NRIFOR = NRI forest acres
 OFEDAC = BuRec-managed ac + TVA undev + rec ac + COE ac
 RTMILES = RTC total rail-trail miles
 SPACRES = State Park acres
 TBACRES = Birch: acres of private forest land
 TNC PUB = TNC acres with public access
 WILDALL = NWPS acreage: Total 1993

Water resources:

ABIMARIN = ABI # MARINAS
 ABICANO2 = ABI # canoe outfitters + rental firms+ raft trip firms
 ABIDIVE2 = ABI # diving instruct/tours + snorkel outfitters
 ABIGUIDE = ABI # guides services
 ABIFISH2 = ABI # fish camps + pvt/public fish lakes,piers,ponds
 AWAMILES = AWA total whitewater river miles
 WSRALL = Wild & Scenic River miles: Total 1993
 FLATWATR = NRI water 2-40,<2 ac, >= 40 ac(lake)or(reserv.)
 RUNWATER = NRI stream<66' wide + 66-660' wide + >=1/8 mi wide

BAYEST = NRI water body \geq 40 ac.:bay, gulf,estuary
NRIWETL = NRI wetland acres
RIVMILES = NRI Total river miles, outstanding value

Winter resources:

CCSFIRM2 = CCSAA # XCski firms+ public XC centers
DSKIACRE = ISS Skiable acreage
SNOWLAND = SNOWDUM*(NPSFED+FSACRE+FWSRECAC + BLMPDAC + SPACRES)
SNOWAG = SNOWDUM *(NRICROP + NRIPAST + NRIRANGE)
SNOWTRAL = SNOWDUM* (ISTEAGW + RTMILES)
snowmtn = snowdum * blymnts
snowfor = snowdum * nrifor

Table 2-- Factor analysis results for developed
facility resource variables

Rotated Factor Pattern

	FACTOR1	FACTOR2
ABIPARKD	0.78348	0.34733
ABITOUR	0.79911	0.02688
ABIPLAY2	0.76275	-0.09027
ABISWIM2	0.47702	0.35815
ABITEN2	0.85166	0.19872
ABITATT2	0.59037	0.14739
ABIAMUSE	0.84200	0.27505
NRIURBAN	0.85792	0.36646
ABIFAIR	-0.03609	0.53713
ABIPKLOC	0.79856	-0.02349
ABIGOLF2	0.73754	0.45099
ABIRIDE2	0.82177	0.25654
ABICAMPS	0.72176	0.20167
ISTEAGW	0.26502	0.65921
RTMILES	0.10811	0.61188
POP95EST	0.92897	0.17609
Eigenvalue	8.6630	1.2096
Proportion	0.5414	0.0756
Cumulative	0.5414	0.6170

Standardized Scoring Coefficients

ABIPARKD	0.07245	0.09355
ABITOUR	0.14429	-0.15154
ABIPLAY2	0.16265	-0.23210
ABISWIM2	0.01257	0.16761
ABITEN2	0.11721	-0.03322
ABITATT2	0.07918	-0.01575
ABIAMUSE	0.09898	0.02644
NRIURBAN	0.08232	0.09197
ABIFAIR	-0.12227	0.41295
ABIPKLOC	0.15502	-0.18943
ABIGOLF2	0.04153	0.18163
ABIRIDE2	0.09916	0.01682
ABICAMPS	0.09218	-0.00306
ISTEAGW	-0.09197	0.44030
RTMILES	-0.11126	0.43833
POP95EST	0.13659	-0.06692

Table 3-- Factor analysis for dispersed land resources

Rotated Factor Pattern						
	FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6
ABIGUIDE	0.69387	0.06383	0.03094	-0.11547	0.20904	0.01791
ABIHUNT2	-0.02583	-0.12042	0.02065	0.04476	0.66575	-0.06207
BLMPDAC	0.22400	0.35854	-0.08774	0.63178	-0.07190	0.05632
BLYMTNS	0.75395	-0.08408	0.32435	0.31528	-0.18111	0.01650
PVTAGAC	0.17464	-0.07249	-0.21052	0.71599	0.10036	0.08917
FSACRE	0.82423	-0.08289	0.19196	0.26581	-0.15997	0.00113
FWSRECAC	0.11168	0.79561	-0.04116	0.11837	0.07803	0.02476
CGPUBSIT	0.19124	0.09194	0.09336	0.06592	0.39075	0.53580
NPSFED	0.51199	0.25144	-0.19142	0.08965	0.22927	0.08012
CGPRISIT	0.20923	0.33828	0.19958	0.05165	0.53095	0.11375
OFEDAC	-0.06587	-0.02769	0.01520	0.02756	-0.13161	0.86902
RTMILES	0.09157	0.00747	0.60926	-0.09560	0.28169	0.04423
SPACRES	-0.17867	0.07899	0.45362	0.47252	0.19152	-0.14772
TNCPUB	-0.02535	0.78126	0.07438	-0.00627	-0.07051	-0.01589
WILDALL	0.83294	0.11911	0.02344	0.04276	0.07821	0.01583
NRIFOR	0.16635	0.01474	0.76119	-0.13586	-0.11259	0.07429
	1	2	3	4	5	6
Eigenvalue	3.4488	1.6364	1.4620	1.1066	1.0389	1.0003
Proportion	0.2155	0.1023	0.0914	0.0692	0.0649	0.0625
Cumulative	0.2155	0.3178	0.4092	0.4784	0.5433	0.6058

Standardized Scoring Coefficients

	FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6
ABIGUIDE	0.29084	-0.00258	-0.08611	-0.22731	0.15385	-0.03497
ABIHUNT2	-0.03091	-0.15573	-0.04027	0.04481	0.59818	-0.10023
BLMPDAC	-0.02729	0.16628	-0.04192	0.44247	-0.11717	0.01907
BLYMTNS	0.22342	-0.10410	0.18713	0.16293	-0.20803	-0.02329
PVTAGAC	-0.03351	-0.14865	-0.14135	0.55498	0.09044	0.05396
FSACRE	0.27679	-0.10435	0.07581	0.10063	-0.17743	-0.03939
FWSRECAC	-0.01247	0.50224	-0.03751	-0.01057	-0.02375	-0.01645
CGPUBSIT	0.01111	-0.01512	0.00640	-0.00351	0.27880	0.45311
NPSFED	0.19358	0.10347	-0.21731	-0.06104	0.16822	0.02354
CGPRISIT	0.01506	0.14844	0.07792	-0.02981	0.39340	0.04166
OFEDAC	-0.07526	-0.03139	0.01844	0.01893	-0.17275	0.81852
RTMILES	-0.02885	-0.01739	0.40740	-0.06327	0.18530	0.00851
SPACRES	-0.21155	-0.00201	0.37328	0.44588	0.12320	-0.16277
TNCPUB	-0.05324	0.53136	0.07053	-0.07729	-0.15364	-0.03469
WILDALL	0.32209	0.02523	-0.08530	-0.12391	0.02704	-0.04092
NRIFOR	0.00024	0.03222	0.54449	-0.09404	-0.17801	0.05815

Table 4-- Factor analysis for water resources

Rotated Factor Pattern				
	FACTOR1	FACTOR2	FACTOR3	FACTOR4
ABIMARIN	0.74656	-0.05863	0.05108	0.18041
ABICANO2	0.07246	0.20150	0.52140	-0.41963
ABIDIVE2	0.69021	0.04161	-0.00785	-0.20920
ABIFISH2	0.86595	0.04663	0.10110	0.06997
ABIGUIDE	0.51047	0.46629	0.00283	-0.16555
AWAMILES	-0.03068	0.80615	0.15799	0.11970
WSRALL	-0.00754	0.72185	-0.10717	0.04406
FLATWATR	0.02287	0.00993	0.81184	-0.01377
RUNWATER	0.02606	0.22533	0.06960	0.72816
BAYEST	0.51182	-0.07771	0.04892	0.40394
NRIWETL	0.09796	0.08031	0.72509	0.43026
RIVMILES	0.03474	0.74067	0.16327	0.04424
	1	2	3	4
Eigenvalue	2.6977	1.9415	1.3617	1.0933
Proportion	0.2248	0.1618	0.1135	0.0911
Cumulative	0.2248	0.3866	0.5001	0.5912

Standardized Scoring Coefficients				
	FACTOR1	FACTOR2	FACTOR3	FACTOR4
ABIMARIN	0.32189	-0.07185	-0.02194	0.11061
ABICANO2	0.01674	0.06249	0.37407	-0.42650
ABIDIVE2	0.32031	0.00443	-0.03574	-0.22632
ABIFISH2	0.37475	-0.02304	0.00372	-0.00222
ABIGUIDE	0.22027	0.22691	-0.06613	-0.19576
AWAMILES	-0.06213	0.39411	0.01510	0.05926
WSRALL	-0.02693	0.38140	-0.15542	0.01849
FLATWATR	-0.04139	-0.08219	0.56432	-0.08552
RUNWATER	-0.04576	0.07720	-0.04159	0.62093
BAYEST	0.20419	-0.08171	-0.02607	0.32173
NRIWETL	-0.03196	-0.05804	0.45234	0.30372
RIVMILES	-0.02610	0.36047	0.02826	-0.00858

Table 5-- Factor analysis for
Winter resources

Rotated Factor Pattern

	FACTOR1	FACTOR2
SNOWLAND	0.06488	0.87484
SNOWAG	0.03094	0.70461
CCSFIRM2	0.75089	0.11071
DSKIACRE	0.54590	0.11394
SNOWTRAL	0.75433	-0.02830
SNOWMTN	0.32477	0.80521
SNOWFOR	0.68840	0.21025
Eigenvalue	2.6069	1.3889
Proportion	0.3724	0.1984
Cumulative	0.3724	0.5708

Standardized Scoring Coefficients

	FACTOR1	FACTOR2
SNOWLAND	-0.11161	0.47605
SNOWAG	-0.10155	0.38700
CCSFIRM2	0.39210	-0.06463
DSKIACRE	0.27943	-0.02836
SNOWTRAL	0.41736	-0.14259
SNOWMTN	0.04225	0.39360
SNOWFOR	0.34118	0.00128

Table 6-- Interpretation of retained factors.

<u>FACTOR</u>	<u>INTERPRETATION</u>
FURB1	Developed, local use facilities, closely tied to population growth. Associated with local park and recreation departments.
FURB2	Fairgrounds, greenways, rail-trails.
FLAND1	Great outdoors resources. Mountains, wilderness, Forest Service and National Park Service lands, and outfitter and guide services.
FLAND2	Lands set aside for habitat and wildlife: primarily owned by Fish and Wildlife Service and The Nature Conservancy.
FLAND3	State parks and privately owned forest lands.
FLAND4	Western agricultural lands, mostly Bureau of Land Management and private agricultural acres.
FLAND5	Camping areas (public and private), and hunting/fishing opportunities.
FLAND6	Other Federal recreation lands (mostly TVA, COE, BuRec), and public camping opportunities.
FWATR1	Coastal and large water body resources: marinas, fishing, other boating opportunities.
FWATR2	Wild, scenic, and whitewater river opportunities.
FWATR3	Flatwater and wetlands areas.
FWATR4	Lowland river resources, especially rivers near wetlands or coasts.
FSNOW1	Developed winter (i.e., ski) opportunities, and forest lands.
FSNOW2	Undeveloped agricultural and public recreation lands in mountains.

Table 7. Diagnostics for supply measures.

FACTOR	Mean	Std Dev	Min.	Max.	% >0
FURB1	-3.299	6.121	-38.7	6.0	28.1
FURB2	-2.898	8.369	-57.9	42.3	35.8
FLAND1	-0.538	15.731	-43.3	151.0	13.8
FLAND2	-1.937	5.767	-45.3	53.7	48.2
FLAND3	-5.332	16.623	-118.5	96.0	42.3
FLAND4	3.523	19.906	-19.9	163.9	29.6
FLAND5	-2.395	6.519	-48.4	19.6	35.1
FLAND6	0.490	7.704	-19.4	110.3	40.2
FWATR1	-2.928	6.370	-47.5	18.0	28.2
FWATR2	-1.306	12.200	-41.8	104.0	24.4
FWATR3	-1.018	10.434	-37.7	98.2	31.1
FWATR4	-0.768	7.480	-32.6	89.1	34.9
FSNOW1	-3.219	10.996	-64.0	103.2	27.3
FSNOW2	1.987	21.654	-22.4	149.7	18.0