

# **NATIONAL LANDSCAPE CONSERVATION SYSTEM GIS BOUNDARY DATA STANDARDS**

**Developed by:  
National Landscape  
Conservation System Office  
and  
National Science  
and Technology Center**



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**EXECUTIVE SUMMARY**

This Project Plan will improve National Landscape Conservation System (NLCS) related Geographic Information System (GIS) data quality and public access, develop national standards for mapping National Conservation Areas (NCA), National Monuments (NM), wilderness, Wilderness Study Areas (WSA), Wild and Scenic Rivers (WSR), and National Scenic and Historic Trail boundaries in GIS, and establish a time line for individual states to develop state-wide GIS coverage and for all the data to be merged at a national level.

In addition, this Plan will ensure the completion of Federal Geographic Data Committee (FGDC) compliant metadata for all GIS layers created for the NLCS in a consistent and timely manner.

The GIS data produced and generated as a result of this Project Plan will lay the groundwork for development of scientifically-based resource management applications for all NLCS units with accessibility of the data through the Internet/Intranet. The model for national standards and data sets for NLCS boundaries will also assist with eventual merging and overlaying of other data bases and themes for other program areas within the agency.

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

**Table of Contents**

	<u>Page</u>
Statement of Need .....	5
Scope of the Project .....	5
Roles and Responsibilities .....	6
Objectives for Improving NLCS-Related GIS Data Quality.....	7
Objective #1 - Develop Separate Standardized Data	
Sets for All NLCS Unit Boundaries .....	7
Parameters For All Data Sets .....	7
Data Set and Standards for National Conservation Area Boundaries .....	9
Data Set and Standards for National Monument Boundaries .....	11
Data Set and Standards for Wilderness Boundaries .....	13
Data Set and Standards for Wilderness Study Area (WSA) Boundaries .....	15
Data Set and Standards for National Wild and Scenic Rivers... .	18
Data Set and Standards for National Scenic Trails .....	22
Data Set and Standards for National Historic Trails .....	25
Data Set and Standards for National Reserves .....	28
Objective #2 - Develop a Spatial Application for the NLCS .....	30

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**Table of Contents (cont.)**

Appendices

Appendix A - User Desk Guide

Appendix B - Defining Features of NLCS Unit Boundaries

Appendix C - Example of a National Conservation Area Boundary Using the Described Standard

Appendix D - Example of a National Monument Boundary Using the Described Standard

Appendix E - Example of a Wilderness Boundary Using the Described Standard

Appendix F - Example of a Wilderness Study Area Boundary Using the Described Standard

Appendix G - Example of a National Wild and Scenic River Boundary Using the Described Standard

Appendix H - Example of a National Scenic Trail Boundary Using the Described Standard

Appendix I - Example of a National Historic Trail Boundary Using the Described Standard

Appendix J - Example of a National Reserve Boundary Using the Described Standard

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

## **STATEMENT OF NEED**

The BLM needs accurate boundary maps and other resource information about the NLCS. The project will also address linking NLCS boundary data to existing and future data bases, and accessibility of the data through a Intranet/Internet based Spatial Application for the NLCS.

Most of the current NLCS units have their boundaries mapped in a Geographical Information System (GIS) in one form or another. At the current time, the Bureau lacks coordinated GIS standards that consistently maps or depicts the boundaries or other spatial standards and features of these areas.

In order to adequately respond to an anticipated increase in demand for GIS information and improve the consistency and quality of GIS data prepared by the Bureau, the Washington Office (WO) NLCS and GIS staffs have embarked upon this project.

This Project Plan addresses two goals:

- 1) GIS data definitions and standards for all NLCS unit boundaries and related spatial elements.
- 2) Time frames for the completion of standardized NLCS boundaries and associated metadata by every State and Field Office and the merging of State data by NSTC; and the provision of bureau-wide data to USGS.

## **SCOPE OF THE PROJECT**

This Project Plan deals with BLM areas within the NLCS: National Conservation Areas (NCA), National Monuments (NM), wilderness, Wilderness Study Areas (WSA), Wild and Scenic Rivers (WSR), and National Scenic and Historic Trails.

Direct linkages to other databases and necessary changes needed to make them compatible with the data sets developed from the guidance in this plan are not addressed in this Plan.

The standards set forth by this Plan will apply to existing GIS boundary data as well.

Where the merged data generated as a result of this project is ultimately stored and updated is beyond the scope of this project.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**ROLE AND RESPONSIBILITIES**

This Plan is applicable to GIS personnel at every level of the BLM involved in creating or editing NLCS GIS boundary layers. Key contacts for this project include N:CS Wilderness Specialist Dave Porter, NLCS GIS Specialist Holly Hampton, State Office GIS Managers/Leads, and Mary Beth Stulz at the National Science and Technology Center (NSTC).

The role of the NLCS WO-171 GIS Specialist Holly Hampton includes coordination and support of the development of GIS boundaries with key State Office leads and is available to answer technical GIS and metadata questions. In those cases where Field Level personnel have GIS capabilities, Field Office GIS technicians can work directly with the NLCS GIS contact(s). Any issues related to hardware, software and training needs should be addressed to the GIS contact.

State GIS Leads are responsible for implementing GIS project plans. They are in a direct GIS support role to the Field Offices and are encouraged to assist field personnel in achieving and maintaining the standards set forth in this Plan.

GIS personnel in the field assume responsibility for identifying GIS hardware, software and training needs and reporting to the NLCS GIS contact in those offices that have a fully functional GIS setup. Data and database construction at the state and field levels will be by those personnel proficient at operating GISs. The state and field level GIS personnel have a responsibility to assist in the coordination and work on multi-disciplinary projects pertaining to GIS.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**OBJECTIVES FOR IMPROVING NLCS-RELATED GIS DATA QUALITY**

- 1) Develop separate standardized data sets for all NLCS boundaries.
- 2) Develop a Spatial Application for NLCS units.

**Objective #1**

**Develop Separate Standardized Data Sets for All NLCS Unit Boundaries**

**I. Parameters For All Data Sets**

A) Types of resources needed:

- 1) Use standard and best available Bureau hardware and software platforms.
- 2) Provide adequate training for affected personnel.
- 3) Use ARC/INFO/ArcView

B) Resolution at which information could be gathered:

(Prioritized best to worst)

- 1) Cadastral Survey (best; when available)
- 2) Digital Orthophoto Quarter Quads (DOQQ) or Geographic Coordinate Data Base (GCDB)
- 3) Global Positioning System (GPS) data collected and post-processed to accuracy of +/- 3m.
- 4) Digital Line Graph (DLG) at 1:24,000
- 5) Digital Raster Graphics (DRG) at 1:24,000
- 6) Digital Line Graph (DLG) at 1:100,000

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

- 7) Digital Raster Graph (DRG) at 1:100,000
- 8) Other

C) User Desk Guide

Provided as a part of this Project Plan to assist with personnel training and to help assure consistency in application, is a User Desk Guide (See Appendix A).

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**IV. Data Set and Standards for National Conservation Area Boundaries**

**NATIONAL CONSERVATION AREA THEME**

**Theme Definition:** This is a graphical display of the boundaries of National Conservation Areas. Inholdings should be identified.

**Theme Identifier:** NCA

**Feature Class:** Polygon, line

**Input Scale:** Cadastral Survey, 1:24,000

**Metadata:** Required, full Federal Geographic Data Committee (FGDC) compliant

**Format:** ARC/INFO Interchange

**Feature Class:** Polygon (.PAT) (Polygon Attribute Table)

<b>Item Name</b>	<b>Input Width</b>	<b>Output Width</b>	<b>Type</b>
casefile	15	15	C
name	40	40	C
state	2	2	C

**Item Definitions:**

**casefile** This value refers to the serialized case file number for each National Conservation Area. This field should be in uppercase. For example, CACA035582. Inholding polygons should not be given a casefile number.

**name** This value refers to the official name of the National Conservation Area. It may contain spaces, plus a combination of upper and lowercase alpha characters. For example, King Range National Conservation Area. Inholding polygons should be labeled A<sub>inholding</sub>.

**state** This value refers to the administrative State for the National Conservation Area. This field should be the two digit uppercase code for the State. For example, CA.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**NATIONAL CONSERVATION AREA THEME (cont.)**

Optional items      Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

Feature Class: Line (.AAT) (Arc Attribute Table)

Item Name	Input Width	Output Width	Type
def_feature	30	30	C
coord_source	20	20	C

Item Definitions:

**def\_feature**      This value refers to the natural, manmade, or mapping feature that represents the NCA boundary. This value is recorded on each arc. This field is used when coincident lines are part of the NCA boundary. For example, if a portion of the NCA boundary follows a stream, the def\_feature would be *stream*, if following a contour line, the def\_feature would be *contour*, etc. Entries for this field should be lowercase. If the def\_feature was not used when digitizing or updating this theme this field should be blank. (See Appendix B for the official list of defining features.) This value should be in lowercase.

**coord\_source**      This value refers to the actual source of the defining feature. It is the digital map source of the original arc that makes up the NCA boundary. For example, if a portion of the boundary is a contour line the def\_feature would be *contour* and the coord\_source would be *24K Digital Elevation Model (DEM)*. If other coverages are used then the coord\_source would be the coverage name, for example, 100K DLG or 24K DLG. (Refer to complete list of coverages under Objective #1.)

Optional items      Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

Refer to Appendix C for an example on how to use this standard.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**III. Data Set and Standards for National Monument Boundaries**

**NATIONAL MONUMENT THEME**

**Theme Definition:** This is a graphical display of the boundaries of National Monuments. Inholdings should be identified.

**Theme Identifier:** MONUMENT

**Feature Class:** Polygon, line

**Input Scale:** Cadastral Survey, 1:24,000

**Metadata:** Required, full Federal Geographic Data Committee (FGDC) compliant

**Format:** ARC/INFO Interchange

**Feature Class:** Polygon (.PAT) (Polygon Attribute Table)

<b>Item Name</b>	<b>Input Width</b>	<b>Output Width</b>	<b>Type</b>
casefile	15	15	C
name	40	40	C
state	2	2	C

**Item Definitions:**

**casefile** This value refers to the serialized case file number for each National Monument. This field should be in uppercase. For example, OR035582. Inholding polygons should not be given a casefile number.

**name** This value refers to the official name of the National Monument. It may contain spaces, plus a combination of upper and lowercase alpha characters. For example, Cascade-Siskiyou National Monument. Inholding polygons should be labeled Ainholding@.

**state** This value refers to the administrative State for the National Monument. This field should be the two digit uppercase code for the State. For example, OR.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**NATIONAL MONUMENT THEME (cont.)**

Optional items      Other optional items may be added for individual office needs, but they MUST follow (come after) the national standard field.

Feature Class: Line (.AAT) (Arc Attribute Table)

Item Name	Input Width	Output Width	Type
def_feature	30	30	C
coord_source	20	20	C

**Item Definitions:**

**def\_feature**      This value refers to the natural, manmade, or mapping feature that represents the National Monument boundary. This value is recorded on each arc. This field is used when coincident lines are part of the National Monument boundary. For example, if a portion of the National Monument boundary follows a stream, the def\_feature would be *stream*, if following a contour line, the def\_feature would be *contour*, etc. Entries for this field should be lowercase. If the def\_feature was not used when digitizing or updating this theme this field should be blank. (See Appendix B for the official list of defining features.) This value should be in lowercase.

**coord\_source**      This value refers to the actual source of the defining feature. It is the digital map source of the original arc that makes up the National Monument boundary. For example, if a portion of the boundary is a contour line the def\_feature would be *contour* and the coord\_source would be *24K Digital Elevation Model (DEM)*. If other coverages are used then the coord\_source would be the coverage name, for example, 100K DLG or 24K DLG. (Refer to complete list of coverages under Objective #1.)

Optional items      Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

Refer to Appendix D for an example on how to use this standard.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**II. Data Set and Standards for Wilderness Boundaries**

**WILDERNESS THEME**

**Theme Definition:** This is a graphical display of the boundaries of Congressionally designated wilderness areas. Inholdings should be identified.

**Theme Identifier:** WLD

**Feature Class:** Polygon, line

**Input Scale:** Cadastral Survey, 1:24,000

**Metadata:** Required, full Federal Geographic Data Committee (FGDC) compliant

**Format:** ARC/INFO Interchange

**Feature Class:** Polygon (.PAT) (Polygon Attribute Table)

<b>Item Name</b>	<b>Input Width</b>	<b>Output Width</b>	<b>Type</b>
casefile	15	15	C
name	40	40	C
state	2	2	C

**Item Definitions:**

**casefile** This value refers to the serialized case file number for each wilderness area. This field should be in uppercase. For example, CACA035582. Inholding polygons should not be given a casefile number.

**name** This value refers to the official name of the wilderness. It may contain spaces, plus a combination of upper and lowercase alpha characters. For example, Big Maria Mountains Wilderness. Inholding polygons should be labeled Ainholding@.

**state** This value refers to the administrative State for the wilderness. This field should be the two digit uppercase code for the State. For example, CA.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**WILDERNESS THEME (cont.)**

Optional items      Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

Feature Class: Line (.AAT) (Arc Attribute Table)

Item Name	Input Width	Output Width	Type
def_feature	30	30	C
coord_source	20	20	C

**Item Definitions:**

**def\_feature**      This value refers to the natural, manmade, or mapping feature that represents the wilderness boundary. This value is recorded on each arc. This field is used when coincident lines are part of the wilderness boundary. For example, if a portion of the wilderness boundary follows a stream, the def\_feature would be *stream*, if following a contour line, the def\_feature would be *contour*, etc. Entries for this field should be lowercase. If the def\_feature was not used when digitizing or updating this theme this field should be blank. (See Appendix B for the official list of defining features.) This value should be in lowercase.

**coord\_source**      This value refers to the actual source of the defining feature. It is the digital map source of the original arc that makes up the wilderness boundary. For example, if a portion of the boundary is a contour line the def\_feature would be *contour* and the coord\_source would be *24K Digital Elevation Model (DEM)*. If other coverages are used then the coord\_source would be the coverage name, for example, 100K DLG or 24K DLG. (Refer to complete list of coverages under Objective #1.)

Optional items      Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

See Appendix E for an example on how to use this standard.

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

**III. Data Set and Standards for Wilderness Study Area (WSA) Boundaries**

**WILDERNESS STUDY AREA (WSA) THEME**

**Theme Definition:** This is a graphical display of the boundaries of Wilderness Study Areas. Inholdings should be identified.

**Theme Identifier:** WSA

**Feature Class:** Polygon, line, region

**Input Scale:** 1:24,000, 1:100,000

**Metadata:** Required, full FGDC compliant

**Format:** ARC/INFO Interchange

**Feature Class:** Polygon (.PAT)

Item Name	Input Width	Output Width	Type
wsa number	20	20	C
suitability	1	1	I

**Item Definitions:**

**wsa number** This value refers to either the number assigned as a result of the inventory, or other documents, such as the enabling legislation or planning documents. The input for this field is a combination of alpha numeric characters in combination of upper or lowercase. For example, NV-010-347AB. Inholding polygons should not be given a WSA number.

**suitability** This is a coded value that indicates the BLM recommendation on wilderness suitability. Inholdings are not considered in the suitability determination and should be labeled 0. 0=N/A (not applicable) 1=suitable 2=non-suitable 3=no recommendation.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**WILDERNESS STUDY AREA (WSA) THEME (cont.)**

Feature Class: Region Subclass WSA (.PATWSA)

<b>Item Name</b>	<b>Input Width</b>	<b>Output Width</b>	<b>Type</b>
wsa number	20	20	C
name	40	40	C
state	2	2	C

**Item Definitions:**

wsa number: This value refers to either the number assigned as a result of the wilderness inventory, or other documents, such as the enabling legislation or planning documents. The input for this field is a combination of alpha numeric characters in combination of upper or lowercase. For example, NV-010-347AB. Inholding polygons should not be given a WSA number.

name This value refers to the official name of the WSA. It may contain spaces, plus a combination of upper and lowercase alpha characters. For example, Bright Star WSA. Inholding polygons should be labeled Ainholding@.

state This value refers to the administrative State for the WSA. This field should be the two digit uppercase code for the State. For example, NV.

Optional items Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

**WILDERNESS STUDY AREA (WSA) THEME (cont.)**

Feature Class: Line (.AAT)

Item Name	Input Width	Output Width	Type
def_feature	30	30	C
coord_source	20	20	C

Item Definitions:

**def\_feature** This value refers to the natural, manmade, or mapping feature that represents the WSA boundary. This value is recorded on each arc. This field is used when coincident lines are part of the WSA boundary. For example, if a portion of the WSA boundary follows a stream, the def\_feature would be *stream*, if following a contour line, the def\_feature would be *contour*, etc. Entries for this field should be lowercase. If the def\_feature was not used when digitizing or updating this theme this field should be blank. (See Appendix B for a list of defining features.)  
This value should be in lowercase.

**coord\_source** This value refers to the actual source of the defining feature. It is the digital map source of the original arc that makes up the WSA boundary. For example, if a portion of the boundary is a contour line the def\_feature would be *contour* and the coord\_source would be *24K DEM*. If other coverages are used then the coord\_source would be the coverage name, for example 100K DLG or 24K DLG. (Refer to complete list of coverages under Objective #1.)

**Optional items** Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

See Appendix F for an example on how to use this standard.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**V. Data Set and Standards for National Wild and Scenic River System**

There are two themes for the National Wild and Scenic River System because there are two types of measures for wild and scenic rivers --- acres and miles. The theme WSRP is for the polygons and WSRL is for the linear features.

**A. NATIONAL WILD AND SCENIC RIVER POLYGON**

**Theme Definition:** This is a graphical display of the boundaries of National Wild and Scenic Rivers. The lines that make up the polygons also have a description. This is different from the wild and scenic river linear theme. Inholdings should be identified.

**Theme Identifier:** WSRP

**Feature Class:** Polygon, line

**Input Scale:** Cadastral Survey, 1:24,000

**Metadata:** Required, full Federal Geographic Data Committee (FGDC) compliant

**Format:** ARC/INFO Interchange

**Feature Class:** Polygon (.PAT) (Polygon Attribute Table)

<b>Item Name</b>	<b>Input Width</b>	<b>Output Width</b>	<b>Type</b>
casefile	15	15	C
name	40	40	C
state	2	2	C

**Item Definitions:**

**casefile** This value refers to the serialized case file number for each National Wild and Scenic River. This field should be in uppercase. For example, NM035582. Inholding polygons should not be given a casefile number.

**name** This value refers to the official name of the National Wild and Scenic River. It

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**NATIONAL WILD AND SCENIC RIVER THEME (cont.)**

may contain spaces, plus a combination of upper and lowercase alpha characters. For example, Rio Grande Wild River. Inholding polygons should be labeled Ainholding@.

state            This value refers to the administrative State for the National Wild and Scenic River. This field should be the two digit uppercase code for the state. For example, NM.

Optional items        Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

Feature Class: Line (.AAT) (Arc Attribute Table)

Item Name	Input Width	Output Width	Type
def_feature	30	30	C
coord_source	20	20	C

**Item Definitions:**

def\_feature        This value refers to the natural, manmade, or mapping feature that represents the National Wild and Scenic River (WSR) boundary. This value is recorded on each arc. This field is used when coincident lines are part of the WSR boundary. For example, if following a contour line, the def\_feature would be *contour*, etc. Entries for this field should be lowercase. If the def\_feature was not used when digitizing or updating this theme this field should be blank. (See Appendix B for the official list of defining features.) This value should be in lowercase.

coord\_source      This value refers to the actual source of the defining feature. It is the digital map source of the original arc that makes up the WSR boundary. For example, if a portion of the boundary is a contour line the def\_feature would be *contour* and the coord\_source would be *24K Digital Elevation Model (DEM)*. If other coverages

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**NATIONAL WILD AND SCENIC RIVER THEME (cont.)**

are used then the coord\_source would be the coverage name, for example, 100K  
DLG or 24K DLG. (Refer to complete list of coverages under Objective #1.)

Optional items      Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

**B. NATIONAL WILD AND SCENIC RIVER LINES**

**Theme Definition:** This is a graphical display of the linear features of National Wild and Scenic Rivers. This theme should be represented as the center line of the river that is designated. It can only be a single line that represents the river.

**Theme Identifier:** WSRL

**Feature Class:** Line

**Input Scale:** Cadastral Survey, 1:24,000, except Alaska

**Metadata:** Required, full Federal Geographic Data Committee (FGDC) compliant

**Format:** ARC/INFO Interchange

**Feature Class:** Line (.AAT) (Arc Attribute Table)

<b>Item Name</b>	<b>Input Width</b>	<b>Output Width</b>	<b>Type</b>
name	40	40	C
class	1	1	N
state	2	2	C
def_feature	30	30	C
coord_source	20	20	C

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

## NATIONAL WILD AND SCENIC RIVER THEME (cont.)

### Item Definitions:

name	This value refers to the official name of the Wild and Scenic River. It may contain spaces, plus a combination of upper and lowercase alpha characters. For example, Twelve Mile Creek.
Class	This refers to the three classes that the Wild and Scenic Rivers Act of 1968 refers to. This will be a coded field. 1 = wild, 2 = scenic, and 3 = recreational.
state	This value refers to the administrative State for the Wild and Scenic River. This field should be the two digit uppercase code for the State. For example, OR.
def_feature	This value refers to the natural, manmade, or mapping feature that represents the Wild and Scenic River. This value is recorded on each arc. This field is used when coincident lines are part of the Wild and Scenic River. For example, if a portion of the trail follows a contour line, the def_feature would be <i>contour</i> , etc. Entries for this field should be lowercase. If the def_feature was not used when digitizing or updating this theme this field should be blank. (See Appendix B for the official list of defining features.) This value should be in lowercase.
coord_source	This value refers to the actual source of the defining feature. It is the digital map source of the original arc that makes up the Wild and Scenic River. For example, if a portion of the trail is a contour line the def_feature would be <i>contour</i> and the coord_source would be <i>24K Digital Elevation Model (DEM)</i> . If other coverages are used then the coord_source would be the coverage name, for example, 100K DLG or 24K DLG. (Refer to complete list of coverages under Objective #1.)
Optional items	Other optional items may be added for individual office needs, but they <u>must</u> follow (come after) the national standard field.

Refer to Appendix G for an example on how to use this standard.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**VII. Data Set and Standards for National Scenic Trails**

**NATIONAL SCENIC TRAIL THEME**

**Theme Definition:** This is a graphical display of the route of a National Scenic Trail. The point data pertain to high potential sites, which are defined as points depicting a portion of the trail with significant context.

**Theme Identifier:** NST (Lines and Polygons), NSTP (Point)

**Feature Class:** Line, Point, Polygon

**Input Scale:** Cadastral Survey, 1:24,000

**Metadata:** Required, full Federal Geographic Data Committee (FGDC) compliant

**Format:** ARC/INFO Interchange

**Feature Class:** Line (.AAT) (Arc Attribute Table)

<b>Item Name</b>	<b>Input Width</b>	<b>Output Width</b>	<b>Type</b>
name	40	40	C
state	2	2	C
def_feature	30	30	C
coord_source	20	20	C

**Item Definitions:**

**name** This value refers to the official name of the National Scenic Trail. It may contain spaces, plus a combination of upper and lowercase alpha characters. For example, Pacific Crest National Scenic Trail.

**state** This value refers to the administrative State for the National Scenic Trail. This field should be the two digit uppercase code for the State. For example, CA.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**NATIONAL SCENIC TRAILS THEME (cont.)**

**def\_feature** This value refers to the natural, manmade, or mapping feature that represents the National Scenic Trail. This value is recorded on each arc. This field is used when coincident lines are part of the National Scenic Trail. For example, if a portion of the trail follows a stream, the def\_feature would be *stream*, if following a contour line, the def\_feature would be *contour*, etc. Entries for this field should be lowercase. If the def\_feature was not used when digitizing or updating this theme this field should be blank. (See Appendix B for the official list of defining features.) This value should be in lowercase.

**coord\_source** This value refers to the actual source of the defining feature. It is the digital map source of the original arc that makes up the National Scenic Trail. For example, if a portion of the trail is a contour line the def\_feature would be *contour* and the coord\_source would be *24K Digital Elevation Model (DEM)*. If other coverages are used then the coord\_source would be the coverage name, for example, 100K DLG or 24K DLG. (Refer to complete list of coverages under Objective #1.)

**Optional items** Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

**Feature Class:** Point (.PAT) (Point Attribute Table)

<b>Item Name</b>	<b>Input Width</b>	<b>Output Width</b>	<b>Type</b>
name	40	40	C
state	2	2	C
site_code	1	1	N

**Item Definitions:**

**name** This value refers to the official name of the National Scenic Trail. It may contain spaces, plus a combination of upper and lowercase alpha characters. For example, Pacific Crest.

**state** This value refers to the administrative State for the National Scenic Trail. This

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**NATIONAL SCENIC TRAIL THEME (cont.)**

field should be the two digit uppercase code for the State. For example, CA.

site\_code      The Site\_Code column contains a code, which represents the type of site. 1 = Crossings/Fords, 2 = Campgrounds/Springs, 3 = Historic Structures, 4 = Natural Landmarks, 5 = Ruts/Swales, 6 = Graves/Burials, 7 = Inscriptions, 8 = Mountain Passed, 9 = Other.

Optional items      Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

Feature Class:      Polygon (.PAT) (Polygon Attribute Table)

Item Name	Input Width	Output Width	Type
name	40	40	C
state	2	2	C

**Item Definitions:**

name              Name contains descriptive text (i.e. common names).

state              This value refers to the administrative State for the National Historic Trail. This field should be the two digit uppercase code for the State. For example, MT.

Optional items      Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

See Appendix H for an example on how to use this standard.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**VI. Data Set and Standards for National Historic Trails**

**NATIONAL HISTORIC TRAIL THEME**

**Theme Definition:** This is a graphical display of the route of a National Historic Trail. The point data pertain to high potential sites, which are defined as points depicting a portion of the trail with significant historical context. High potential sites were identified by trail experts and historians.

**Theme Identifier:** NHT (Lines and Polygons), NHTP (Points)

**Feature Class:** Line, Point, Polygon

**Input Scale:** Cadastral Survey, 1:24,000

**Metadata:** Required, full Federal Geographic Data Committee (FGDC) compliant

**Format:** ARC/INFO Interchange

**Feature Class:** Line (.AAT) (Arc Attribute Table)

<b>Item Name</b>	<b>Input Width</b>	<b>Output Width</b>	<b>Type</b>
name	40	40	C
state	2	2	C
def_feature	30	30	C
coord_source	20	20	C

**Item Definitions:**

**name** This value refers to the official name of the National Historic Trail. It may contain spaces, plus a combination of upper and lowercase alpha characters. For example, Lewis and Clark Historic Trail..

**state** This value refers to the administrative State for the National Historic Trail. This field should be the two digit uppercase code for the State. For example, MT.

**def\_feature** This value refers to the natural, manmade, or mapping feature that represents the National Historic Trail. This value is recorded on each arc. This

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**NATIONAL HISTORIC TRAIL THEME (cont.)**

Field is used when coincident lines are part of the National Historic Trail. For example, if a portion of the trail follows a stream, the def\_feature would be *stream*, if following a contour line, the def\_feature would be *contour*, etc. Entries for this field should be lowercase. If the def\_feature was not used when digitizing or updating this theme this field should be blank. (See Appendix B for the official list of defining features.) This value should be in lowercase.

coord\_source This value refers to the actual source of the defining feature. It is the digital map source of the original arc that makes up the National Historic Trail. For example, if a portion of the trail is a contour line the def\_feature would be *contour* and the coord\_source would be *24K Digital Elevation Model (DEM)*. If other coverages are used then the coord\_source would be the coverage name, for example, 100K DLG or 24K DLG. (Refer to complete list of coverages under Objective #1.)

Optional items Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

Feature Class: Point (.PAT) (Point Attribute Table)

Item Name	Input Width	Output Width	Type
name	40	40	C
state	2	2	C
site_code	1	1	N

**Item Definitions:**

name Name contains descriptive text (i.e. common names) for high potential sites.

state This value refers to the administrative State for the National Historic Trail. This field should be the two digit uppercase code for the State. For example, MT.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**NATIONAL HISTORIC TRAIL THEME (cont.)**

site\_code      The Site\_Code column contains a code, which represents the type of site. 1 = Crossings/Fords, 2 = Campgrounds/Springs, 3 = Historic Structures, 4 = Natural Landmarks, 5 = Ruts/Swales, 6 = Graves/Burials, 7 = Inscriptions, 8 = Mountain Pass, 9 = Other.

Optional items      Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

Feature Class:      Polygon (.PAT) (Polygon Attribute Table)

Item Name	Input Width	Output Width	Type
name	40	40	C
state	2	2	C

**Item Definitions:**

name              Name contains descriptive text (i.e. common names).

state              This value refers to the administrative State for the National Historic Trail. This field should be the two digit uppercase code for the State. For example, MT.

Optional items      Other optional items may be added for individual office needs, but they MUST follow (come after) the national standard field.

See Appendix I for an example on how to use this standard.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**VIII. Data Set and Standards for National Reserves**

**NATIONAL RESERVE THEME**

Theme Definition: This is a graphical display of the boundaries of National Reserves.  
Inholdings should be identified.

Theme Identifier: RESERVE

Feature Class: Polygon, line

Input Scale: Cadastral Survey, 1:24,000

Metadata: Required, full Federal Geographic Data Committee (FGDC) compliant

Format: ARC/INFO Interchange

Feature Class: Polygon (.PAT) (Polygon Attribute Table)

Item Name	Input Width	Output Width	Type
casefile	15	15	C
name	40	40	C
state	2	2	C

**Item Definitions:**

casefile      This value refers to the serialized case file number for each National Reserve. This field should be in uppercase. For example, CACA035582. Inholding polygons should not be given a casefile number.

name            This value refers to the official name of the National Reserve. It may contain spaces, plus a combination of upper and lowercase alpha characters. For example, Headwaters Forest Reserve. Inholdings polygons should be labeled Ainholding@.

state            This value refers to the administrative State for the National Reserve. This field should be the two digit uppercase code for the State. For example, CA.

Optional        Other optional items may be added for individual office needs, but they must

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**NATIONAL RESERVE THEME (cont.)**

items follow (come after) the national standard field.

Feature Class: Line (.AAT) (Arc Attribute Table)

Item Name	Input Width	Output Width	Type
def_feature	30	30	C
coord_source	20	20	C

**Item Definitions:**

**def\_feature** This value refers to the natural, manmade, or mapping feature that represents the National Reserve boundary. This value is recorded on each arc. This field is used when coincident lines are part of the National Reserve boundary. For example, if a portion of the Reserve boundary follows a stream, the def\_feature would be *stream*, if following a contour line, the def\_feature would be *contour*, etc. Entries for this field should be lowercase. If the def\_feature was not used when digitizing or updating this theme this field should be blank. (See Appendix B for the official list of defining features.) This value should be in lowercase.

**coord\_source** This value refers to the actual source of the defining feature. It is the digital map source of the original arc that makes up the National Reserve boundary. For example, if a portion of the Reserve boundary is a contour line the def\_feature would be *contour* and the coord\_source would be *24K Digital Elevation Model (DEM)*. If other coverages are used then the coord\_source would be the coverage name, for example, 100K DLG or 24K DLG. (Refer to complete list of coverages under Objective #1.)

**Optional items** Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

See Appendix J for an example on how to use this standard.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

## **Objective #2**

### **Develop a Spatial Application for the NLCS**

#### I. Background

In recent years, with the movement of GIS onto the Personal Computer (PC) desktop, BLM resource specialists now have the ability to visualize and display information in new ways that reveal relationship, patterns, and trends. This has created challenges for the GIS manager. There is more and more demand on the GIS manager's time to produce products, conduct analyses, place data into a digital format, and develop and/or connect spatial data to tabular data for the resource specialist. BLM needs to develop GIS applications for the resource specialist to allow them to become more independent from the GIS manager. The BLM resource specialist needs a point and click GIS to produce standard products for their particular resource.

#### II. Conceptual View of the Spatial Application for All NLCS Units

The basic idea for the Spatial Application for all NLCS Units is to provide a standard look and feel to ArcView. When an individual starts the application, various things will happen automatically. Different backdrops will be displayed depending upon how many NLCS units are to be viewed. For example, when looking at an individual WSA the 24K DRG's (digital raster graphic or scanned topographic map) will be displayed seamlessly, but when looking at all of a State's WSA's, 24K DRG's will not be displayed. This is because 24K DRG's are too detailed to be displayed at a State level. Some basic queries, analyses, and output products that are similar throughout the BLM, should be created to run with a click of a button or from a pull-down menu.

#### III. Spatial Application for NLCS Audiences

There are three basic audiences for the Spatial Application for All NLCS Units, the local level, the state level, and the national level. Each of these audiences have different requirements of the application. Some of these basic requirements have already been developed. Further refinement of these requirements will be needed once Headquarters approves the development of the application.

## NATIONAL LANDSCAPE CONSERVATION SYSTEM GIS BOUNDARY DATA STANDARDS

### A. Local Spatial Requirements

The local spatial requirements are those mainly used to display an individual NLCS unit, or a small group of closely related areas. More detailed information is needed for this local level. Recommended data layers include 24K DRG, land status, and NLCS unit boundaries, roads and trails, public land survey system data, and other layers as appropriate for the project or issue. The spatial application at this level should also allow the user to display any local data desired without the user having to know the physical location of the data. Local analysis could include calculation of acres by NLCS unit and by land status and the provision of various reports.

### B. State Level Spatial Requirements

At the State level, the application should display the NLCS unit boundaries, state and county boundaries, land status (including other agency designations), cities or towns, roads, and streams. Optional themes should be on the ArcView Table of Contents but not displayed, including field office and Congressional boundaries, township and range grid, latitude and longitude grid, and meridian.

### C. National Level Spatial Requirements

At the National level, the application should display the NLCS units, and state boundaries, US highways (Interstates), state capitols and major cities, major water bodies, Federal or BLM land, and latitude and longitude grid.

### D. Requirements for all Levels

- 1) Output. Create standard output products at various paper sizes. Allow the ability to plot large maps on the plotter at all levels of the organization, including the Headquarters Office. Have standard collar information and a standard disclaimer of map development and accuracy displayed on all maps.
- 2) Queries. Provide the capability to query NLCS units by township and range, Congressional District, Field Office, latitude and longitude, by

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

State, and by NLCS unit. NLCS unit queries should be by name or number. These should be run from a pull- down menu

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX A**

**User Desk Guide**

(The User Desk Guide, for use in reformatting existing NLCS GIS themes to the National data standard using ARC/INFO, is available as a separate document accompanying the Project Plan or available on the BLM Intranet at: <http://www.blm.gov/gis/narsc/apps.html> .)

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX B**

**DEFINING FEATURES OF NLCS UNIT BOUNDARIES**

The list of defining features (listed in descending order of desirability):

1. Natural features (e.g. live streams; sharp, well-defined ridges; or, well-defined shorelines of lakes, etc.).
2. Semipermanent human features (e.g. roads, trails, dams, power lines and pipelines, edge of right-of-way, or bridges, etc.).
3. Previously surveyed lines or legally determined lines (e.g. section and township lines; section subdivision lines; metes and bounds property lines; county or State boundaries; or, National Park or Indian Reservation boundaries, etc.).
4. Point-to-point (a straight line from one locateable point to another).
5. A series of bearings and distances between locateable points (metes and bounds).
6. Along a contour.
7. Utilizing parallels of latitude and meridians or plane coordinate systems.
8. Along an area of surface disturbance.

An example from California:

Below is a sample listing of defining features used in the California Desert Wilderness data set:

1600ft contour,2400ft contour,2800ft contour,3200ft contour,800ft contour,  
aqueduct,arb ext,canal row,contour,drainage thd,edge of wash,hwy,indian reservation,  
levee,mineral survey,national park,none,oblique,ownership est,pipeline,  
pipeline row,plss,railroad,ridge,rim of canyon,road,road est,row,spur,stream,  
survey,toe of slope,track49,tract,trail,transmission line,transmission line est,  
transmission line row,transmission line row edge,transmission line row edge est,  
transmission/pipe line,wash,wash edge,wash thd

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

## APPENDIX C

### Example of a National Conservation Area Boundary Using the Described Standard

Page 1 of 2

Shown are the polygon (.pat) and the lines (.aat) for a NCA.

**Arc: items nv\_nca.pat**

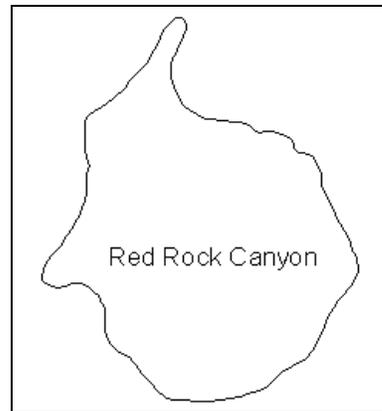
COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	NV_NCA#	4	5	B	-		-
21	NV_NCA-ID	4	5	B	-		-
25	CASEFILE	15	15	C	-		-
40	NAME	40	40	C	-		-
80	STATE	2	2	C	-		-

**Arc: list nv\_nca.pat**

```

1
AREA          = -8913367.90031
PERIMETER     = 13050.63044
NV_NCA#       = 1
NV_NCA-ID    = 0
CASEFILE      =
NAME          =
STATE         =

2
AREA          = 8913367.90031
PERIMETER     = 13050.63044
NV_NCA#       = 2
NV_NCA-ID    = 1
CASEFILE      = NV000001
NAME          = Red Rock Canyon
STATE         = NV
  
```



Example of a NCA

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

## APPENDIX C (cont.)

Page 2 of 2

**Arc: items nv\_nca.aat**

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4 5	B	-		-	-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	NV_NCA#	4	5	B	-		-
29	NV_NCA-ID	4	5	B	-		-
33	DEF_FEATURE	30	30	C	-		-
63	COORD_SOURCE	20	20	C	-		-

The fields def\_feature and coord\_source were not used when the Red Rocks Canyon NCA was digitized.

**Arc: list nv\_nca.aat**

	1						
FNODE#	=		2				
TNODE#	=		1				
LPOLY#	=		2				
RPOLY#	=		1				
LENGTH	=				71.72532		
NV_NCA#	=		1				
NV_NCA-ID	=		2				
DEF_FEATURE	=						
COORD_SOURCE	=						
	2						
FNODE#	=		1				
TNODE#	=		2				
LPOLY#	=		2				
RPOLY#	=		1				
LENGTH	=				12978.90512		
NV_NCA#	=		2				
NV_NCA-ID	=		1				
DEF_FEATURE	=						
COORD_SOURCE	=						

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX D

Page 1 of 3

Example of a National Monument Boundary  
Using the Described Standard

Shown are the polygon (.pat) and the lines (.aat) for a National Monument.

Arc: items ut\_monument.pat

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	UT_MONUMENT#	4	5	B	-		-
21	UT_MONUMENT-ID	4	5	B	-		-
25	CASEFILE	15	15	C	-		-
40	NAME	40	40	C	-		-
80	STATE	2	2	C	-		-

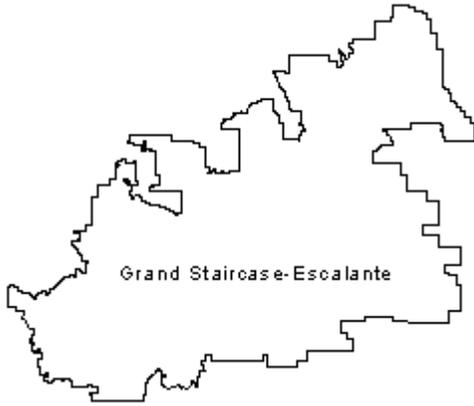
Arc: list ut\_monument.pat

```
1
AREA = -7609735272.02961
PERIMETER = 833427.99054
UT_MONUMENT# = 1
UT_MONUMENT-ID = 0
CASEFILE =
NAME =
STATE =

2
AREA = 7609735272.02961
PERIMETER = 833427.99054
UT_MONUMENT# = 2
UT_MONUMENT-ID = 27
CASEFILE = UT000001
NAME = Grand Staircase-Escalante
STATE = UT
```

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX D (cont.)**



National  
Monument  
Boundary polygon  
example.

**Arc: items ut\_monument.aat**

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	UT_MONUMENT#	4	5	B	-		-
29	UT_MONUMENT-ID	4	5	B	-		-
33	DEF_FEATURE	30	30	C	-		-
63	COORD_SOURCE	20	20	C	-		-

**Arc: list ut\_monument.aat**

	1						
FNODE#	=	1					
TNODE#	=	2					
LPOLY#	=	1					
RPOLY#	=	2					
LENGTH	=		400.72053				
UT_MONUMENT#	=	1					
UT_MONUMENT-ID	=	5					
DEF_FEATURE	=						
COORD_SOURCE	=	GCDB					
	2						
FNODE#	=	2					
TNODE#	=	3					
LPOLY#	=	1					
RPOLY#	=	2					
LENGTH	=		400.71266				
UT_MONUMENT#	=	2					
UT_MONUMENT-ID	=	7					
DEF_FEATURE	=						

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX D (cont.)

```
COORD_SOURCE          = GCDB
3
FNODE#                = 3
TNODE#                = 4
LPOLY#                = 1
RPOLY#                = 2
LENGTH                = 400.72296
UT_MONUMENT#         = 3
UT_MONUMENT-ID       = 9
DEF_FEATURE           =
COORD_SOURCE          = GCDB
4
FNODE#                = 4
TNODE#                = 6
LPOLY#                = 1
RPOLY#                = 2
LENGTH                = 400.62288
UT_MONUMENT#         = 4
UT_MONUMENT-ID       = 12
DEF_FEATURE           =
COORD_SOURCE          = GCDB
5
FNODE#                = 7
TNODE#                = 5
LPOLY#                = 1
Continue? N
```

There are 1755 arcs for this polygon coverage. Only a few are shown above.

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX E

Page 1 of 4

Example of a Wilderness Boundary  
Using the Described Standard

Shown are the .PAT and the .AAT for the item wld\_example.pat.

ITEMS WLD\_EXAMPLE.PAT

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N. DEC	ALTERNATE NAME	INDEXED?
1	AREA	4	12	F	3		-
5	PERI METER	4	12	F	3		-
9	WLD_EXAMPLE#	4	5	B	-		-
13	WLD_EXAMPLE-I D	4	5	B	-		-
17	CASEFI LE	15	15	C	-		-
32	NAME	40	40	C	-		-
72	STATE	2	2	C	-		-

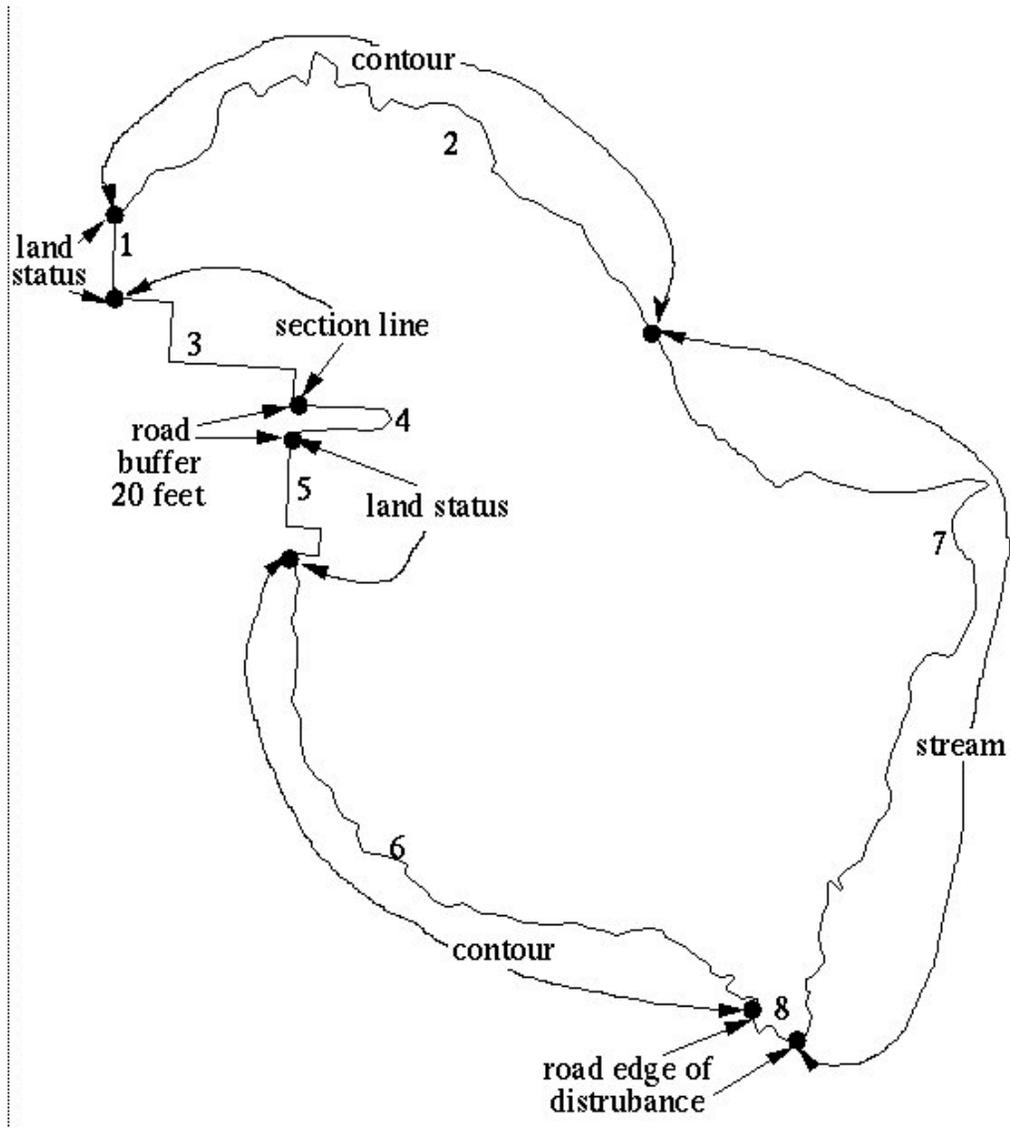
ITEMS WLD\_EXAMPLE.AAT

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N. DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	4	12	F	3		-
21	WLD_EXAMPLE#	4	5	B	-		-
25	WLD_EXAMPLE-I D	4	5	B	-		-
29	DEF_FEATURE	30	30	C	-		-
59	COORD_SOURCE	20	20	C	-		-

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX E (cont.)

Figure 1. Map of the Wilderness Example



NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

**APPENDIX E (cont.)**

Page 3 of 4

For the wilderness map, wld\_example, shown above, this is what the .PAT and the .AAT would look like:

**LIST WLD\_EXAMPLE.PAT**

```
1
AREA                = 0.000
PERIMETER           = 0.000
WLD_EXAMPLE#        = 1
WLD_EXAMPLE-ID      = 1
CASEFILE            = CO010046
NAME                = Wilderness Example
STATE               = CO
```

**LIST WLD\_EXAMPLE.AAT**

An abbreviated version of the WLD\_EXAMPLE.ATT. Missing in this listing is the FNODE#, TNODE#, LPOLY#, RPOLY#, and the LENGTH. These were removed just to save some space.

```
1
WLD_EXAMPLE#        = 1
WLD_EXAMPLE-ID      = 0
DEF_FEATURE         = land status
COORD_SOURCE        = wr_owp (1990)
2
WLD_EXAMPLE#        = 2
WLD_EXAMPLE-ID      = 0
DEF_FEATURE         = contour
COORD_SOURCE        = 24K DEM
3
WLD_EXAMPLE#        = 3
WLD_EXAMPLE-ID      = 0
DEF_FEATURE         = section lines
COORD_SOURCE        = wr_lap (1990)
4
WLD_EXAMPLE#        = 4
WLD_EXAMPLE-ID      = 0
DEF_FEATURE         = road buffer 20 feet
COORD_SOURCE        = wr_trl (1990)
5
WLD_EXAMPLE#        = 5
WLD_EXAMPLE-ID      = 0
DEF_FEATURE         = land status
COORD_SOURCE        = wr_owp (1990)
```

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX E (cont.)

Page 4 of 4

6  
WLD\_EXAMPLE# = 6  
WLD\_EXAMPLE-ID = 0  
DEF\_FEATURE = contour  
COORD\_SOURCE = 24K DEM  
7  
WLD\_EXAMPLE# = 7  
WLD\_EXAMPLE-ID = 0  
DEF\_FEATURE = stream  
COORD\_SOURCE = wr\_stl (1990)  
8  
WLD\_EXAMPLE# = 8  
WLD\_EXAMPLE-ID = 0  
DEF\_FEATURE =road edge of disturbance  
COORD\_SOURCE =DOQQ

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

## APPENDIX F

Page 1 of 5

### Example of a Wilderness Study Area Boundary Using the Described Standard

Shown are the polygon (PAT), WSA region (PATWSA), and the lines (AAT) would look like for WSA boundaries.

#### Polygon Example

##### ITEMS WSA\_EXAMPLE.PAT

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	WSA_EXAMPLE#	4	5	B	-		-
21	WSA_EXAMPLE-ID	4	5	B	-		-
25	WSA_NUMBER	20	20	C	-		-
45	SUITABILITY	1	1	I	-		-

##### LIST WSA\_EXAMPLE.PAT

```

1
AREA                =      -0.01801
PERIMETER           =      1.27373
WSA_EXAMPLE#        =      1
WSA_EXAMPLE-ID      =      0
WSA_NUMBER          =
SUITABILITY         = 0

2
AREA                =      0.00064
PERIMETER           =      0.22935
WSA_EXAMPLE#        =      2
WSA_EXAMPLE-ID      =     64
WSA_NUMBER          = NV010-132
SUITABILITY         = 2

3
AREA                =      0.01305
PERIMETER           =      0.74714
WSA_EXAMPLE#        =      3
WSA_EXAMPLE-ID      =     65
WSA_NUMBER          = NV010-132
SUITABILITY         = 1

4
AREA                =      0.00041
PERIMETER           =      0.12525
WSA_EXAMPLE#        =      4
WSA_EXAMPLE-ID      =     72

```

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

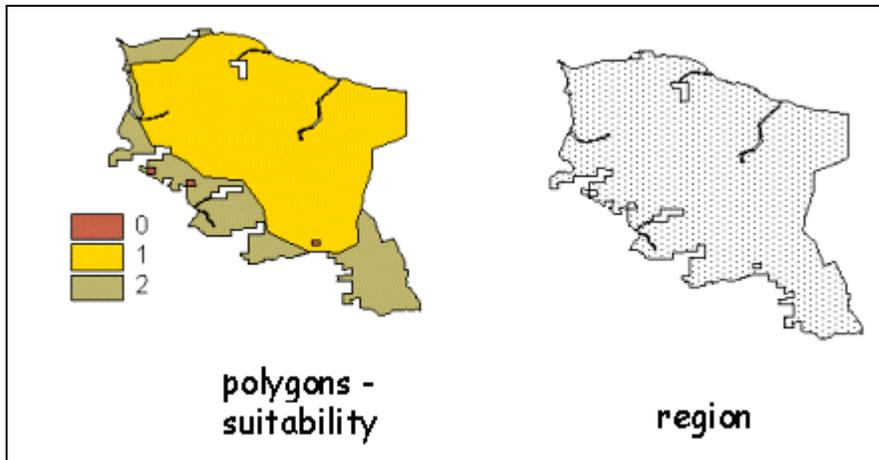
APPENDIX F (cont.)

WSA_NUMBER	=	NV010-132
SUITABILITY	=	2
5		
AREA	=	0.00205
PERIMETER	=	0.50241
WSA_EXAMPLE#	=	5
WSA_EXAMPLE-ID	=	76
WSA_NUMBER	=	NV010-132
SUITABILITY	=	2
6		
AREA	=	0.00002
PERIMETER	=	0.01786
WSA_EXAMPLE#	=	6
WSA_EXAMPLE-ID	=	78
WSA_NUMBER	=	
SUITABILITY	=	0
7		
AREA	=	0.00002
PERIMETER	=	0.01722
WSA_EXAMPLE#	=	7
WSA_EXAMPLE-ID	=	81
WSA_NUMBER	=	
SUITABILITY	=	0
8		
AREA	=	0.00180
PERIMETER	=	0.25459
WSA_EXAMPLE#	=	8
WSA_EXAMPLE-ID	=	89
WSA_NUMBER	=	NV010-132
SUITABILITY	=	2
9		
AREA	=	0.00002
PERIMETER	=	0.01666
WSA_EXAMPLE#	=	9
WSA_EXAMPLE-ID	=	94
WSA_NUMBER	=	
SUITABILITY	=	0

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX F (cont.)**

Figure 2. Maps of the WSA Example.



**Region Example**

**ITEMS WSA\_EXAMPLE.PATWSA**

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	WSA#	4	5	B	-		-
21	WSA-ID	4	5	B	-		-
25	WSA_NUMBER	20	20	C	-		-
45	NAME	40	40	C	-		-
85	STATE	2	2	C	-		-

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX F (cont.)**

**LIST WSA\_EXAMPLE.PATWSA**

```

1
AREA                =      17852601.63347
PERIMETER           =      28411.59011
WSA#                =      1
WSA-ID              =      1
WSA_NUMBER          = NV-010-950
NAME                = WSA EXAMPLE
STATE               = NV
  
```

**Lines Example**

**ITEMS WSA\_EXAMPLE.AAT**

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	WSA_EXAMPLE#	4	5	B	-		-
29	WSA_EXAMPLE-ID	4	5	B	-		-
33	DEF_FEATURE	30	30	C	-		-
63	COORD_SOURCE	20	20	C	-		-

**LIST WSA\_EXAMPLE.AAT**

```

1
FNODE#              = 2
TNODE#              = 3
LPOLY#              = 1
RPOLY#              = 3
LENGTH              =      0.00038
WSA_EXAMPLE#        = 1
WSA_EXAMPLE-ID      = 11
DEF_FEATURE          =
COORD_SOURCE        =
2
FNODE#              = 2
TNODE#              = 1
LPOLY#              = 3
RPOLY#              = 1
LENGTH              =      0.13896
WSA_EXAMPLE#        = 2
WSA_EXAMPLE-ID      = 1
  
```

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX F (cont.)

DEF_FEATURE	=	
COORD_SOURCE	=	
3		
FNODE#	=	1
TNODE#	=	4
LPOLY#	=	3
RPOLY#	=	2
LENGTH	=	0.09108
WSA_EXAMPLE#	=	3
WSA_EXAMPLE-ID	=	2
DEF_FEATURE	=	
COORD_SOURCE	=	
4		
FNODE#	=	1
TNODE#	=	4
LPOLY#	=	2
RPOLY#	=	1
LENGTH	=	0.13827
WSA_EXAMPLE#	=	4
WSA_EXAMPLE-ID	=	7
DEF_FEATURE	=	
COORD_SOURCE	=	
5		
FNODE#	=	4
TNODE#	=	5
LPOLY#	=	3

Continue? N

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

## APPENDIX G

Page 1 of 4

### Example of a National Wild and Scenic River System Using the Described Standard

Shown are the polygons (.pat) and the lines (.aat) themes for the Wild & Scenic River System.

#### A. Polygon Theme or WSRP

##### Arc: items or\_wsrp.pat

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N. DEC	ALTERNATE NAME	INDEXED?
1	AREA	4	12	F	3		-
5	PERI METER	4	12	F	3		-
9	OR_WSRP#	4	5	B	-		-
13	OR_WSRP-ID	4	5	B	-		-
17	CASEFILE	15	15	C	-		-
32	NAME	40	40	C	-		-
72	STATE	2	2	C	-		-

##### Arc: list or\_wsrp.pat

```

1
AREA = -8788002.000
PERI METER = 24613.055
OR_WSRP# = 1
OR_WSRP-ID = 0
CASEFILE =
NAME =
STATE =

2
AREA = 8450229.000
PERI METER = 27038.777
OR_WSRP# = 2
OR_WSRP-ID = 0
CASEFILE = OR000001
NAME = Twelve Mile Creek
STATE = OR

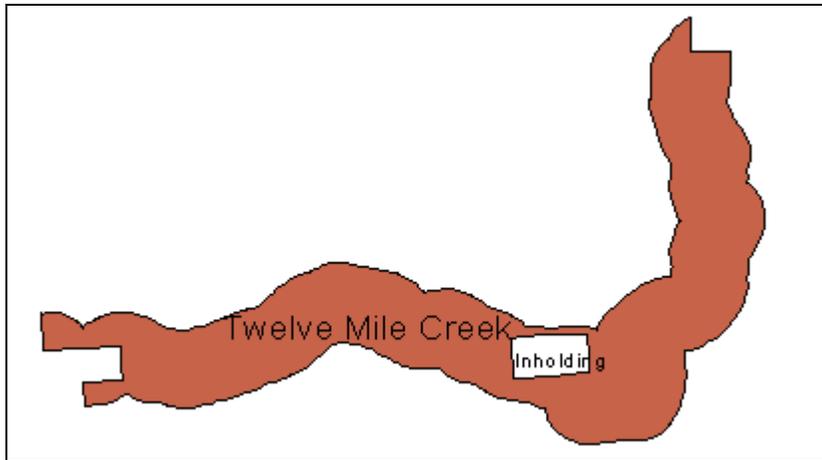
3
AREA = 337773.625
PERI METER = 2425.725
OR_WSRP# = 3
OR_WSRP-ID = 0
CASEFILE =
NAME = Inhol di ng
STATE = OR

```

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX G (cont.)**

Example of the polygon theme for the Wild and Scenic River System.



**Arc: ITEMS OR\_WSRP.AAT**

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N. DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	4	12	F	3		-
21	DEF_FEATURE	30	30	C	-		-
51	COORD_SOURCE	20	20	C	-		-
71	STREAM_NAM	20	20	C	-		-
91	LABEL	20	20	C	-		-
111	ACRES	8	15	F	0		-

**Arc: LIST OR\_WSRP.AAT**

	1		
FNODE#	=	1	
TNODE#	=	1	
LPOLY#	=	3	
RPOLY#	=	2	
LENGTH	=	2425.725	
DEF_FEATURE	=	Land Status	
COORD_SOURCE	=	rmp_own. shape	
STREAM_NAM	=	Twelve Mile Creek	
LABEL	=	Twelve Mile Creek	
ACRES	=	2088	
	2		
FNODE#	=	2	

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

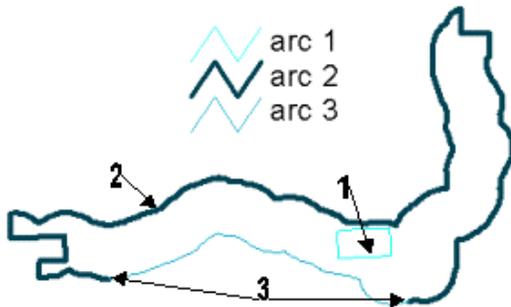
**APPENDIX G (cont.)**

```
TNODE#           =      3
LPOLY#           =      1
RPOLY#           =      2
LENGTH           = 19536.621
```

```
DEF_FEATURE      = quarter mile buffer of stream
COORD_SOURCE    = USGS DLG
STREAM_NAM      = Twelve Mile Creek
LABEL           = Twelve Mile Creek
ACRES           =      2088
```

3

```
FNODE#           =      3
TNODE#           =      2
LPOLY#           =      1
RPOLY#           =      2
LENGTH           = 5076.433
DEF_FEATURE      = quarter mile buffer of stream
COORD_SOURCE    = USGS DLG
STREAM_NAM      = Twelve Mile Creek
LABEL           = Twelve Mile Creek
ACRES           =      2088
```



Example of the lines that make up the polygons for the Wild and Scenic River theme.

**B. Line Theme or WSRL**

**Arc: items or\_wsrl.aat**

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N. DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX G (cont.)**

17	LENGTH	4	12	F	3	-
21	OR_WSRL#	4	5	B	-	-
25	OR_WSRL-ID	4	5	B	-	-
29	NAME	40	40	C	-	-
69	CLASS	1	1	N	0	-
70	STATE	2	2	C	-	-
72	DEF_FEATURE	30	30	C	-	-
102	COORD_SOURCE	20	20	C	-	-

**Arc: LIST OR\_WSRL.AAT**

```

1
FNODE#           =      6
TNODE#           =      7
LPOLY#           =      0
RPOLY#           =      0
LENGTH           = 4522.146
OR_WSRL#         =      1
OR_WSRL-ID       =      2
NAME             = Twelve Mile Creek
CLASS            =      1
STATE            = OR
DEF_FEATURE      = Stream
COORD_SOURCE     = 24K QUAD

2
FNODE#           =     11
TNODE#           =     12
LPOLY#           =      0
RPOLY#           =      0
LENGTH           = 4337.149
OR_WSRL#         =      2
OR_WSRL-ID       =      2
NAME             = Twelve Mile Creek
Continue?
CLASS            =      1
STATE            = OR
DEF_FEATURE      = Stream
COORD_SOURCE     = 24K QUAD

```



Example of the WSRL theme. Notice that there is a gap in the stream segment. This is because the stream as it flows through private land is not designated wild and scenic.

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX H**

**Example of a National Scenic Trail  
Using the Described Standard**

Shown is a made up (fake) example of a Scenic Trail.

**Arc: ITEMS NST.AAT**

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N. DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	4	12	F	3		-
21	NST#	4	5	B	-		-
25	NST-ID	4	5	B	-		-
29	NAME	40	40	C	-		-
69	STATE	2	2	C	-		-
71	DEF_FEATURE	30	30	C	-		-
101	COORD_SOURCE	20	20	C	-		-

**Arc: LIST NST.AAT**

	1	
FNODE#	=	810
TNODE#	=	815
LPOLY#	=	214
RPOLY#	=	235
LENGTH	=	33233.574
NST#	=	1
NST-ID	=	6
NAME	=	Make Believe Scenic Trail
STATE	=	CO
DEF_FEATURE	=	Fake Line
COORD_SOURCE	=	
	2	
FNODE#	=	830
TNODE#	=	832
LPOLY#	=	214
RPOLY#	=	235
LENGTH	=	11836.780
NST#	=	2
NST-ID	=	7
NAME	=	Make Believe Scenic Trail
STATE	=	CO
DEF_FEATURE	=	Fake Line
COORD_SOURCE	=	
	3	
FNODE#	=	832
TNODE#	=	837
LPOLY#	=	214
RPOLY#	=	235
LENGTH	=	33143.867
NST#	=	3
NST-ID	=	8

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX H (cont.)**

NAME		= Make Believe Scenic Trail
STATE		= CO
DEF_FEATURE		= Fake Line
COORD_SOURCE		=
		4
FNODE#		= 847
TNODE#		= 854
LPOLY#		= 214
RPOLY#		= 235
LENGTH		= 15389.317
NST#		= 4
NST-ID		= 9
NAME		= Make Believe Scenic Trail
STATE		= CO
DEF_FEATURE		= Fake Line
COORD_SOURCE		=
	5	
FNODE#		= 870
TNODE#		= 871
LPOLY#		= 214
RPOLY#		= 235
LENGTH		= 2056.269
NST#		= 5
NST-ID		= 11
NAME		= Make Believe Scenic Trail
STATE		= CO
DEF_FEATURE		= Fake Line
COORD_SOURCE		=
	6	
FNODE#		= 859
TNODE#		= 875
LPOLY#		= 214
RPOLY#		= 235
LENGTH		= 8636.849
Continue?		
NST#		= 6
NST-ID		= 10
NAME		= Make Believe Scenic Trail
STATE		= CO
DEF_FEATURE		= Fake Line
COORD_SOURCE		=

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX H (cont.)



A made-up  
example of a  
scenic trail.

**The Point Coverage**

```
Arc: list nstpoint.pat
1
AREA = 0.000
PERIMETER = 0.000
NSTPOINT# = 1
NSTPOINT-ID = 1
ID = 0
NAME = Joes Mail Stop
STATE = CO
SITE_CODE = 3
2
AREA = 0.000
PERIMETER = 0.000
NSTPOINT# = 2
NSTPOINT-ID = 2
ID = 0
NAME = Billy the Kid Hideout
STATE = CO
SITE_CODE = 3
3
AREA = 0.000
PERIMETER = 0.000
NSTPOINT# = 3
NSTPOINT-ID = 3
ID = 0
NAME = Pa Kettle
STATE = CO
SITE_CODE = 6
```

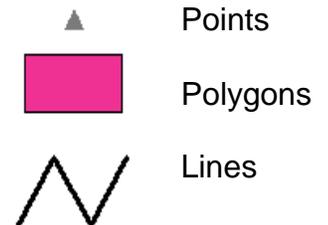
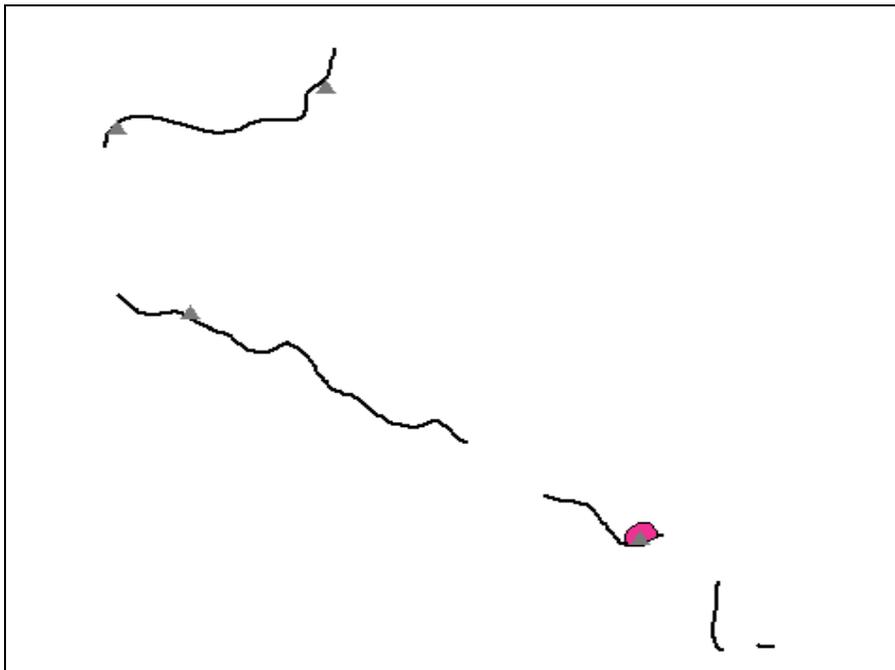
NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX H (cont.)

```
      4
AREA          =          0.000
PERIMETER     =          0.000
NSTPOINT#     =          4
NSTPOINT-ID   =          4
ID            =          0
NAME          = The Big Ones
STATE         = CO
SITE_CODE     = 2
```

The Polygon Coverage

```
Arc: list nstpoly.pat
      1
AREA          = -6982885.000
PERIMETER     = 10073.960
NSTPOLY#      = 1
NSTPOLY-ID    = 0
NAME          =
STATE         =
      2
AREA          = 6982885.000
PERIMETER     = 10073.960
NSTPOLY#      = 2
NSTPOLY-ID    = 0
NAME          = Pa Kettles Home and Burial
STATE         = CO
Arc:
```



**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX I**

**Example of a National Historic Trail  
Using the Described Standard**

Show is a made up (fake) example of a National Historic trail.

**Arc: ITEMS NHT.AAT**

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N. DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	4	12	F	3		-
21	NHT#	4	5	B	-		-
25	NHT-ID	4	5	B	-		-
29	NAME	40	40	C	-		-
69	STATE	2	2	C	-		-
71	DEF_FEATURE	30	30	C	-		-
101	COORD_SOURCE	20	20	C	-		-

**Arc: LIST NHT.AAT**

	1		
FNODE#	=	2	
TNODE#	=	1	
LPOLY#	=	1	
RPOLY#	=	1	
LENGTH	=	117559.250	
NHT#	=	1	
NHT-ID	=	2	
NAME	=	Make Believe Historic Trail	
STATE	=	CO	
DEF_FEATURE	=	Fake line	
COORD_SOURCE	=		
	2		
FNODE#	=	7	
TNODE#	=	5	
LPOLY#	=	1	
RPOLY#	=	1	
LENGTH	=	1606.132	
NHT#	=	2	
NHT-ID	=	2	
NAME	=	Make Believe Historic Trail	
STATE	=	CO	
Continue?	=		
DEF_FEATURE	=	Fake line	
COORD_SOURCE	=		
	3		
FNODE#	=	2	
TNODE#	=	3	
LPOLY#	=	1	
RPOLY#	=	1	
LENGTH	=	28501.973	

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

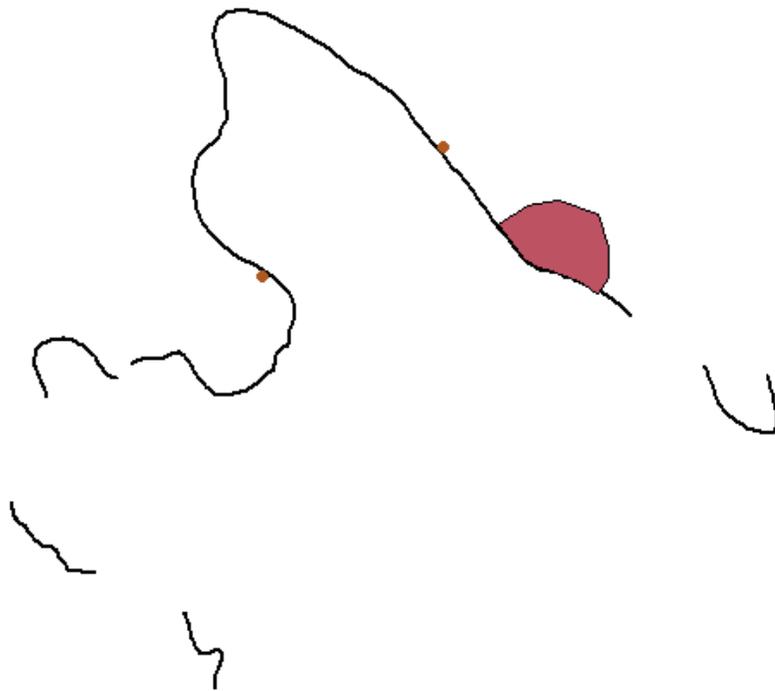
**APPENDIX I (cont.)**

NHT#	=	3
NHT-ID	=	1
NAME	=	Make Believe Historic Trail
STATE	=	CO
DEF_FEATURE	=	Fake Line
COORD_SOURCE	=	
4		
FNODE#	=	5
TNODE#	=	8
LPOLY#	=	1
RPOLY#	=	1
LENGTH	=	17870.559
NHT#	=	4
NHT-ID	=	2
Continue?		
NAME	=	Make Believe Historic Trail
STATE	=	CO
DEF_FEATURE	=	Fake Line
COORD_SOURCE	=	
5		
FNODE#	=	4
TNODE#	=	6
LPOLY#	=	1
RPOLY#	=	1
LENGTH	=	21384.684
NHT#	=	5
NHT-ID	=	74
NAME	=	Make Believe Historic Trail
STATE	=	CO
DEF_FEATURE	=	Fake Line
COORD_SOURCE	=	
6		
FNODE#	=	9
TNODE#	=	10
LPOLY#	=	1
RPOLY#	=	1
LENGTH	=	15525.977
NHT#	=	6
NHT-ID	=	3
NAME	=	Make Believe Historic Trail
STATE	=	CO
DEF_FEATURE	=	Fake Line
COORD_SOURCE	=	
7		
FNODE#	=	11
TNODE#	=	12
LPOLY#	=	1
RPOLY#	=	1
LENGTH	=	13886.670
NHT#	=	7
NHT-ID	=	4
NAME	=	Make Believe Historic Trail
STATE	=	CO
DEF_FEATURE	=	Fake Line
COORD_SOURCE	=	

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX I (cont.)

Page 3 of 4



Example of a made up National Historic Trail.

-  Polygons
-  Points
-  Lines

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX I (cont.)

Point coverage

Arc: LIST NHTPOINT.PAT

```
      1
AREA                =          0.000
PERIMETER           =          0.000
NHTPOINT#           =          1
NHTPOINT-ID         =          1
ID                  =          0
NAME                 = Joe Blows Home Site
STATE               = CO
SITE_CODE           = 3

      2
AREA                =          0.000
PERIMETER           =          0.000
NHTPOINT#           =          2
NHTPOINT-ID         =          2
ID                  =          0
NAME                 = Westminster School

STATE               = CO
SITE_CODE           = 3
Arc:
```

Arc: list nhtpoly.pat

```
      1
AREA                = *****
PERIMETER           =    41445.691
NHTPOLY#            =          1
NHTPOLY-ID          =          0
NAME                 =
STATE               =

      2
AREA                = *****
PERIMETER           =    41445.691
NHTPOLY#            =          2
NHTPOLY-ID          =          0
NAME                 = Arvada Cemetery
STATE               = CO
Arc:
```

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX J**

**Example of a National Forest Preserve Boundary  
Using the Described Standard**

Shown is a made up (fake) example of a National Preserve Boundary.

**Arc: ITEMS RESERVE.PAT**

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	4	12	F	3		-
5	PERIMETER	4	12	F	3		-
9	RESERVE#	4	5	B	-		-
13	RESERVE-ID	4	5	B	-		-
17	CASEFILE	15	15	C	-		-
32	NAME	40	40	C	-		-
72	STATE	2	2	C	-		-

**Arc: LIST RESERVE.PAT**

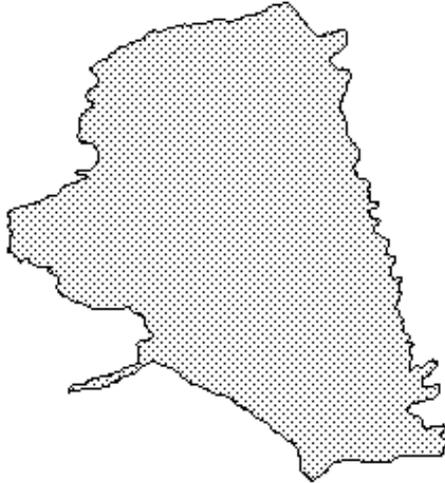
```

1
AREA                = *****
PERI METER          = 319108.500
RESERVE#            = 1
RESERVE-ID          = 0
CASEFILE            =
NAME                =
STATE               =

2
AREA                = *****
PERI METER          = 319108.500
RESERVE#            = 2
RESERVE-ID          = 1
CASEFILE            = BLM00001
NAME                = Example of a National Reserve
STATE               = CA
  
```

**NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS**

**APPENDIX J (cont.)**



Example of a  
National Forest  
Preserve.

**Arc: ITEMS RESERVE.AAT**

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N. DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	4	12	F	3		-
21	RESERVE#	4	5	B	-		-
25	RESERVE-ID	4	5	B	-		-
29	SOURCE	1	1	I	-		-
30	DEF_FEATURE	30	30	C	-		-
60	COORD_SOURCE	20	20	C	-		-

**Arc: LIST RESERVE.AAT**

	1		
FNODE#	=	2	
TNODE#	=	1	
LPOLY#	=	1	
RPOLY#	=	2	
LENGTH	=	58850.949	
RESERVE#	=	1	
RESERVE-ID	=	4520	
SOURCE	=	2	
DEF_FEATURE	=	made up line	
COORD_SOURCE	=		
	2		
FNODE#	=	3	
TNODE#	=	2	
LPOLY#	=	1	
RPOLY#	=	2	
LENGTH	=	64493.438	

NATIONAL LANDSCAPE CONSERVATION SYSTEM  
GIS BOUNDARY DATA STANDARDS

APPENDIX J (cont.)

RESERVE#	=	2	
RESERVE-ID	=	4739	SOURCE = 2
DEF_FEATURE	=	made up line	
COORD_SOURCE	=		
Continue?			
3			
FNODE#	=	1	
TNODE#	=	4	
LPOLY#	=	1	
RPOLY#	=	2	
LENGTH	=	92413.398	
RESERVE#	=	3	
RESERVE-ID	=	4377	
SOURCE	=	2	
DEF_FEATURE	=	made up line	
COORD_SOURCE	=		
4			
FNODE#	=	4	
TNODE#	=	3	
LPOLY#	=	1	
RPOLY#	=	2	
LENGTH	=	103350.695	
RESERVE#	=	4	
RESERVE-ID	=	4827	
SOURCE	=	2	
DEF_FEATURE	=	made up line	
COORD_SOURCE	=		