

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

**FINAL**

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

**June 12, 2002**

## **EXECUTIVE SUMMARY**

This final 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.

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## **STATEMENT OF NEED**

The BLM needs accurate boundary maps and other resource information about the National Landscape Conservation System (NLCS). The project will also address linking NLCS boundary data to existing and future databases, 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.

## **SCOPE OF THE PROJECT**

This Project Plan deals with BLM areas within the NLCS: National Conservation Areas (NCA), National Monuments (NM), Forest Reserves, 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 Project Plan are not addressed at this time.

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

Where the merged data generated as a result of this project is the responsibility of the NLCS Headquarters staff.

## **PROCESS USED TO DEVELOP THE STANDARDS**

The FY 1999 Proposed Annual Work Plan (PAWP) Directives in the General Guidance for 1210 stated that the Washington Office (WO) and the National Applied Resource Sciences Center [NARSC - now the National Science and Technology Center (NSTC)] should prepare a Project Plan for developing and implementing national GIS boundary data standards for BLM Wilderness and Wilderness Study Areas (WSA). A team of Subject Matter Experts (SME) for Wilderness and GIS was assembled and met for a week in Denver to develop the standards (see Appendix B for a list of Core Team members). The wilderness SME's stated what they needed and the GIS experts interpreted their needs into GIS data standards. Draft standards were developed and distributed throughout the Bureau for comments. All comments were reviewed

and final guidance was developed and released under WO IM 2000-040, Final Project Plan for Wilderness and WSA GIS Boundary Mapping Standards.

In June 2000 the NLCS office was created. NLCS is responsible for the Bureau's National Conservation Areas (NCAs), National Monuments (NMs), Wilderness, Wilderness Study Areas (WSAs), Wild and Scenic Rivers (WSRs), Forest Reserves, Cooperative Management and Protection Areas (CMPAs) and National Scenic and Historic Trails. The NLCS office requested that boundary data standards be developed for all the areas under its responsibility. In December 2000 new data standards were drafted to cover all boundaries of the NLCS areas. These new draft standards were transmitted to all Field Offices for comment under WO IB 2001-120, Draft National Landscape Conservation System GIS Boundary Data Standards, dated June 8, 2001. Comments were received from around the Bureau. The NLCS national data steward, the NSTC GIS staff, along with other SME's, as well as ESRI, examined each comment. Changes in the standards were made and these final GIS data standards developed.

## **ROLES AND RESPONSIBILITIES**

The national GIS boundary data standards for the NLCS are the responsibility of the NLCS National Data Steward and the NLCS GIS Coordinator.

The responsibilities of the National Data Steward are to maintain the integrity of the content of the GIS data standards for the NLCS and ensure the NLCS GIS Coordinator keeps the national data sets current. If there are proposed changes to the national GIS boundary data standards the National Data Steward will coordinate the required updates with a team of Subject Matter Experts.

The NLCS GIS Coordinator is responsible for maintaining the National-level GIS boundary data for the NLCS. This will involve updating any data that is changed and that is covered by standards set forth in the Project Plan. This role includes coordinating with the national, state, and Field Office Data Stewards and GIS coordinators to insure that the GIS boundary data covered by these standards are current.

The role of the National Science and Technology Center (NSTC) has been one of coordinating the development of the national GIS boundary data standards for the NLCS, the original assembling of the data from the individual States into a single data set, developing the User Guide, and with the development of the spatial application. Once everything is completed, the role of NSTC will be one of an advisor with the NLCS GIS coordinator maintaining the data.

State Data Stewards and Subject Matter Experts (SME) are responsible for maintaining the state boundary data standards for the NLCS data. They are responsible for working with the GIS coordinators to ensure the NLCS has the most up-to-date data. If the originators of the data are at the Field Office, the state-level Data Steward/SME coordinate with the Field Offices to make sure the State and the NLCS GIS coordinators have the latest data.

Field Office Data Stewards and SME's are responsible for maintaining the GIS boundary data standards for the NLCS units in their area. The Field Office Data Steward/SME will work with the GIS coordinator to ensure the data is current. The Field Office Data Steward/SME will work with the State Data Steward or GIS coordinator to update any changes.

## 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

B) Resolution at which information could be gathered:

(Prioritized best to worst)

- 1) Cadastral Survey (best; when available)
- 2) Geographic Coordinate Data Base (GCDB) or Digital Orthophoto Quarter Quads (DOQQ)
- 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
- 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).

D) Definition of Inholding:

An inholding is defined as any tract of land, right, title, or interest (whether private, state, or other Federal) not included in the officially designated NLCS unit. (If at some time in the future an “inholding”

becomes a part of the NLCS unit, it is the responsibility of the Field Office managing that unit to update the GIS boundary database according to the standards set forth in this document and to forward that information to the appropriate offices.)

## NATIONAL CONSERVATION AREA THEME

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**Theme Identifier:** *NCA*

<b>Theme Description:</b>	This is a graphic display of the boundaries of the National Conservation Areas. Inholdings should be identified. This theme will include other Congressionally designated conservation areas; i.e. Cooperative Management and Protection Areas, Outstanding Natural Areas, and National Recreation Areas.
<b>Feature Class:</b>	Polygon
<b>Input Scale:</b>	Cadastral Survey, 1:24,000
<b>Metadata:</b>	Required, full Federal Geographic Data Committee (FGDC) compliant
<b>Format:</b>	ARC/INFO Interchange

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

Item Name	Input Width	Output Width	Type
NCA_CASEFILE	15	15	C
NCA_NAME	50	50	C
NCA_STATE	2	2	C

**Item Definitions:** *For NCA polygons*

<b>NCA_CASEFILE</b>	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.
<b>NCA_NAME</b>	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 "inholding".
<b>NCA_STATE</b>	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.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

## NATIONAL CONSERVATION AREA THEME (Cont.)

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**Feature Class:**        *Lines (.aat)*

Item Name	Input Width	Output Width	Type
NCA_DEF_FEATURE	30	30	C
NCA_COORD_SOURCE	20	20	C

**Item Definitions:**    *For NCA lines*

<b>NCA_DEF_FEATURE</b>	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 NCA_DEF_FEATURE would be <i>stream</i> , if following a contour line, the NCA_DEF_FEATURE would be <i>contour</i> , etc. Entries for this field should be lowercase. If the NCA_DEF_FEATURE was not used when digitizing or updating this theme this field should be blank. (See Appendix C for the official list of defining features.) This value should be in lowercase.
<b>NCA_COORD_SOURCE</b>	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 NCA_DEF_FEATURE would be <i>contour</i> and the NCA_COORD_SOURCE would be <i>24K Digital Elevation Model (DEM)</i> . If other coverage's are used then the NCA_COORD_SOURCE would be the coverage name. For example, 100K DLG or 24K DLG.
<b>Optional Items</b>	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 MONUMENT THEME

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**Theme Identifier:** *NM*

<b>Theme Description:</b>	This is a graphical display of the boundaries of National Monuments. Inholdings should be identified.
<b>Feature Class:</b>	Polygon
<b>Input Scale:</b>	Cadastral Survey, 1:24,000
<b>Metadata:</b>	Required, full Federal Geographic Data Committee (FGDC) compliant
<b>Format:</b>	ARC/INFO Interchange

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

Item Name	Input Width	Output Width	Type
NM_CASEFILE	15	15	C
NM_NAME	50	50	C
NM_STATE	2	2	C

**Item Definitions:** *For NM polygons*

<b>NM_CASEFILE</b>	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.
<b>NM_NAME</b>	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 "inholding".
<b>NM_STATE</b>	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, CA.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

## NATIONAL MONUMENT THEME (Cont.)

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### Feature Class: Line (.aat)

Item Name	Input Width	Output Width	Type
NM_DEF_FEATURE	30	30	C
NM_COORD_SOURCE	20	20	C

### Item Definitions: For NM lines

<b>NM_DEF_FEATURE</b>	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 NM_DEF_FEATURE would be <i>stream</i> , if following a contour line, the NM_DEF_FEATURE would be <i>contour</i> , etc. Entries for this field should be lowercase. If the NM_DEF_FEATURE was not used when digitizing or updating this theme this field should be blank. (See Appendix C for the official list of defining features.) This value should be in lowercase.
<b>NM_COORD_SOURCE</b>	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 NM_DEF_FEATURE would be <i>contour</i> and the NM_COORD_SOURCE would be <i>24K Digital Elevation Model (DEM)</i> . If other coverage's are used then the NM_COORD_SOURCE would be the coverage name. For example, 100K DLG or 24K DLG.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

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

## WILDERNESS THEME

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**Theme Identifier:** *WLD*

<b>Theme Description:</b>	This is a graphical display of the boundaries of Congressionally designated wilderness areas. Inholdings should be identified.
<b>Feature Class:</b>	Polygon
<b>Input Scale:</b>	Cadastral Survey, 1:24,000
<b>Metadata:</b>	Required, full Federal Geographic Data Committee (FGDC) compliant
<b>Format:</b>	ARC/INFO Interchange

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

Item Name	Input Width	Output Width	Type
<b>WLD_CASEFILE</b>	15	15	C
<b>WLD_NAME</b>	50	50	C
<b>WLD_STATE</b>	2	2	C

**Item Definitions:** *For WLD polygons*

<b>WLD_CASEFILE</b>	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.
<b>WLD_NAME</b>	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 "inholding".
<b>WLD_STATE</b>	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.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

## WILDERNESS THEME (Cont.)

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*Feature Class: Line (.aat)*

Item Name	Input Width	Output Width	Type
WLD_DEF_FEATURE	30	30	C
WLD_COORD_SOURCE	20	20	C

*Item Definitions: For WLD lines*

<b>WLD_DEF_FEATURE</b>	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 WLD_DEF_FEATURE would be <i>stream</i> , if following a contour line, the WLD_DEF_FEATURE would be <i>contour</i> , etc. Entries for this field should be lowercase. If the WLD_DEF_FEATURE was not used when digitizing or updating this theme this field should be blank. (See Appendix C for the official list of defining features.) This value should be in lowercase.
<b>WLD_COORD_SOURCE</b>	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 WLD_DEF_FEATURE would be <i>contour</i> and the WLD_COORD_SOURCE would be <i>24K Digital Elevation Model (DEM)</i> . If other coverage's are used then the WLD_COORD_SOURCE would be the coverage name. For example, 100K DLG or 24K DLG.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

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

## WILDERNESS STUDY AREA (WSA) THEME

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**Theme Identifier:** *WSA*

<b>Theme Description:</b>	This is a graphical display of the boundaries of Wilderness Study Areas. Inholdings should be identified.
<b>Feature Class:</b>	Polygon, region
<b>Input Scale:</b>	Cadastral Survey, 1:24,000
<b>Metadata:</b>	Required, full Federal Geographic Data Committee (FGDC) compliant
<b>Format:</b>	ARC/INFO Interchange

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

Item Name	Input Width	Output Width	Type
<b>WSA_NUMBER</b>	20	20	C
<b>WSA_SUITABILITY</b>	1	1	I

**Item Definitions:** *For WSA polygons*

<b>WSA_NUMBER</b>	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 alphanumeric characters in combination of upper or lowercase. For example, NV-010-347AB. Inholding polygons should not be given a WSA number.
<b>WSA_SUITABILITY</b>	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.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

## WILDERNESS STUDY AREA (WSA) THEME (Cont.)

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*Feature Class: Region Subclass WSA (.patWSA)*

Item Name	Input Width	Output Width	Type
WSA_NUMBER	20	20	C
WSA_NAME	50	50	C
WSA_STATE	2	2	C

*Item Definitions: For PATWSA region subclass*

<b>WSA_NUMBER</b>	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 alphanumeric characters in combination of upper or lowercase. For example, NV-010-347AB. Inholding polygons should not be given a WSA number.
<b>WSA_NAME</b>	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 "inholding".
<b>WSA_STATE</b>	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.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

## WILDERNESS STUDY AREA (WSA) THEME (Cont.)

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*Feature Class: Line (.aat)*

Item Name	Input Width	Output Width	Type
WSA_DEF_FEATURE	30	30	C
WSA_COORD_SOURCE	20	20	C

*Item Definitions: For WSA lines*

<b>WSA_DEF_FEATURE</b>	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 WSA_DEF_FEATURE would be <i>stream</i> , if following a contour line, the WSA_DEF_FEATURE would be <i>contour</i> , etc. Entries for this field should be lowercase. If the WSA_DEF_FEATURE was not used when digitizing or updating this theme this field should be blank. (See Appendix C for the official list of defining features.) This value should be in lowercase.
<b>WSA_COORD_SOURCE</b>	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 WLD_DEF_FEATURE would be <i>contour</i> and the WLD_COORD_SOURCE would be <i>24K Digital Elevation Model (DEM)</i> . If other coverage's are used then the WLD_COORD_SOURCE would be the coverage name. For example, 100K DLG or 24K DLG.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

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

## NATIONAL WILD & SCENIC RIVERS THEME

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**Theme Identifiers:** *WSRP* (polygons)  
*WSRL* (lines)

<b>Theme Description:</b>	<p>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.</p> <p>The WSRP theme is a graphical display of the boundaries of National Wild and Scenic Rivers. The lines that make up the polygons also have a description.</p> <p>The WSRL theme is a graphical display of the linear features of National Wild and Scenic Rivers. This theme should be represented as the centerline of the river that is designated. It can only be a single line that represents the river.</p>
<b>Feature Class:</b>	Polygon, line
<b>Input Scale:</b>	Cadastral Survey, 1:24,000
<b>Metadata:</b>	Required, full Federal Geographic Data Committee (FGDC) compliant
<b>Format:</b>	ARC/INFO Interchange

## NATIONAL WILD & SCENIC RIVERS THEME (Cont.)

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*Feature Class: WSRP Polygon (.pat)*

<b>Item Name</b>	<b>Input Width</b>	<b>Output Width</b>	<b>Type</b>
<b>WSRP_CASEFILE</b>	15	15	C
<b>WSRP_NAME</b>	50	50	C
<b>WSRP_STATE</b>	2	2	C
<b>WSRP_WILD</b>	1	1	I
<b>WSRP_SCENIC</b>	1	1	I
<b>WSRP_REC</b>	1	1	I
<b>WSRP_STUDY</b>	1	1	I

## NATIONAL WILD & SCENIC RIVERS THEME (Cont.)

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### *Item Definitions: For WSRP polygons*

<b>WSRP_CASEFILE</b>	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.
<b>WSRP_NAME</b>	This value refers to the official name of the National Wild and Scenic River. It may contain spaces, plus a combination of upper and lowercase alpha characters. For example, Rio Grande Wild River. Inholding polygons should be labeled "inholding".
<b>WSRP_STATE</b>	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.
<b>WSRP_WILD</b>	This refers to the <i>wild</i> class as defined in the Wild and Scenic Rivers Act of 1968. This is a coded field. 0 = Not designated as wild, 1 = designated as wild.
<b>WSRP_SCENIC</b>	This refers to the <i>scenic</i> class as defined in the Wild and Scenic Rivers Act of 1968. This is a coded field. 0 = Not designated as scenic, 1 = designated as scenic.
<b>WSRP_REC</b>	This refers to the <i>recreational</i> class as defined in the Wild and Scenic Rivers Act of 1968. This is a coded field. 0 = Not designated as recreational, 1 = designated as recreational.
<b>WSRP_STUDY</b>	This refers to the <i>study</i> class as defined in the Wild and Scenic Rivers Act of 1968. This is a coded field. 0 = Not designated as study, 1 = designated as study.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

## NATIONAL WILD & SCENIC RIVERS THEME (Cont.)

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### Feature Class: *WSRP Line (.aat)*

Item Name	Input Width	Output Width	Type
<b>WSRP_DEF_FEATURE</b>	30	30	C
<b>WSRP_COORD_SOURCE</b>	20	20	C

### Item Definitions: For *WSRP lines*

<b>WSRP_DEF_FEATURE</b>	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 <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 C for the official list of defining features.) This value should be in lowercase.
<b>WSRP_COORD_SOURCE</b>	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 WSRP boundary. For example, if a portion of the boundary is a contour line the WSRP_DEF_FEATURE would be <i>contour</i> and the coord_source would be <i>24K Digital Elevation Model (DEM)</i> . If other coverage's are used then the WSRP_COORD_SOURCE would be the coverage name. For example, 100K DLG or 24K DLG.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

## NATIONAL WILD & SCENIC RIVERS THEME (Cont.)

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**Feature Class:**        *WSRL Lines (.aat)*

Item Name	Input Width	Output Width	Type
WSRL_DEF_FEATURE	30	30	C
WSRL_COORD_SOURCE	1	1	I
WSRP_CASEFILE	20	20	C
WSRL_NAME	50	50	15
WSRL_STATE	50	50	C
WSRL_WILD	2	2	C
WSRL_SCENIC	1	1	I
WSRL_REC	1	1	I
WSRL_STUDY	1	1	I

**Item Definitions:**    *For WSRL lines*

<b>WSRL_DEF_FEATURE</b>	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 WSRL_DEF_FEATURE would be <i>contour</i> , etc. Entries for this field should be lowercase. If the WSRL_DEF_FEATURE was not used when digitizing or updating this theme this field should be blank. (See Appendix C for the official list of defining features.) This value should be in lowercase.
<b>WSRL_COORD_SOURCE</b>	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 WSRL_DEF_FEATURE would be <i>contour</i> and the WSRL_COORD_SOURCE would be <i>24K Digital Elevation Model (DEM)</i> . If other coverages are used then the WSRL_COORD_SOURCE would be the coverage name. For example, 100K DLG or 24K DLG.
<b>WSRP_CASEFILE</b>	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.
<b>WSRL_NAME</b>	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.
<b>WSRL_STATE</b>	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.
<b>WSRL_WILD</b>	This refers to the <i>wild</i> class as defined in the Wild and Scenic Rivers Act of 1968. This is a coded field. 0 = Not designated as wild, 1 = designated as wild.
<b>WSRL_SCENIC</b>	This refers to the <i>scenic</i> class as defined in the Wild and Scenic Rivers Act of 1968. This is a coded field. 0 = Not designated as scenic, 1 = designated as scenic.
<b>WSRL_REC</b>	This refers to the <i>recreational</i> class as defined in the Wild and Scenic Rivers Act of 1968. This is a coded field. 0 = Not designated as recreational, 1 = designated as recreational.

Item definitions for WSRL lines are continued on the next page.

## NATIONAL WILD & SCENIC RIVERS THEME (Cont.)

---

<b>WSRL_STUDY</b>	This refers to the <i>study</i> class as defined in the Wild and Scenic Rivers Act of 1968. This is a coded field. 0 = Not designated as study, 1 = designated as study.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

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

## NATIONAL SCENIC TRAIL THEME

---

**Theme Identifier:** *NST* (Lines)

<b>Theme Description:</b>	This is a graphical display of the centerline of a designated National Scenic Trail. This will be displayed as a single line.
<b>Feature Class:</b>	Line
<b>Input Scale:</b>	Varies, based upon the best available data. Input scale should be adequate for use with a 1:24,000 scale map.
<b>Metadata:</b>	Required, full Federal Geographic Data Committee (FGDC) compliant
<b>Format:</b>	ARC/INFO Interchange

## NATIONAL SCENIC TRAIL THEME (Cont.)

### Feature Class: NST Lines (.aat)

Item Name	Input Width	Output Width	Type
NST_DEF_FEATURE	30	30	C
NST_COORD_SOURCE	20	20	C
NST_NAME	50	50	C
NST_STATE	2	2	C
NST_OFFICE	6	6	C

### Item Definitions: For NST lines

<b>NST_DEF_FEATURE</b>	This value refers to a single-track trail tread 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 an interstate, the NST_DEF_FEATURE would be <i>interstate</i> , if following a two-track, the NST_DEF_FEATURE would be <i>two-track</i> , etc. Entries for this field should be lowercase. If the NST_DEF_FEATURE was not used when digitizing or updating this theme, this field should be blank. Values should be in lowercase.
<b>NST_COORD_SOURCE</b>	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 two-track, the NST_DEF_FEATURE would be <i>two-track</i> and the NST_COORD_SOURCE would be <i>24K Travel Management Inventory</i> . If other coverage's are used, then the NST_COORD_SOURCE should be the coverage name. For example, 100K DLG or 24K DLG.
<b>NST_NAME</b>	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.
<b>NST_STATE</b>	This value refers to the administrative State for National Scenic Trail. This field should be the two digit uppercase code for the State. For example, CA.

Item definitions for NST lines are continued on the next page.

## NATIONAL SCENIC TRAIL THEME (Cont.)

---

<b>NST_OFFICE</b>	This value refers to the administrative BLM Field Office code. For example, CA 066.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard fields and any interagency standard fields.

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

## NATIONAL HISTORIC TRAIL THEME

---

*Theme Identifier:*            *NHT* (Lines)

<b>Theme Description:</b>	This is a graphical display of the route of a <u>designated</u> National Historic Trail whether or not it is visible. This includes the main route, cut-offs, and variants that are officially designated. This will be displayed as a single line or multiple lines.
<b>Feature Class:</b>	Line
<b>Input Scale:</b>	Varies, based upon the best available data. Input scale should be adequate for use with a 1:24,000 scale map.
<b>Metadata:</b>	Required, full Federal Geographic Data Committee (FGDC) compliant
<b>Format:</b>	ARC/INFO Interchange

## NATIONAL HISTORIC TRAIL THEME (Cont.)

---

**Feature Class:**        *NHT Lines (.aat)*

Item Name	Input Width	Output Width	Type
NHT_DEF_FEATURE	30	30	C
NHT_COORD_SOURCE	20	20	C
NHT_NAME	50	50	C
NHT_STATE	2	2	C
NHT_OFFICE	6	6	C

**Item Definitions:**    *For NHT lines*

<b>NHT_DEF_FEATURE</b>	This value refers to the designated trail route that represents the National Historic Trail. This value is recorded on each arc. This field is used when coincident lines are part of the National Historic Trail. For example, if a portion of the trail follows an interstate, the NHT_DEF_FEATURE would be <i>interstate</i> , if following a county road, the NHT_DEF_FEATURE would be <i>county road</i> , if a portion of the trail follows a two-track, the NHT_DEF_FEATURE would be <i>two-track</i> , etc. Entries for this field should be lowercase. If the NHT_DEF_FEATURE was not used when digitizing or updating this theme this field should be blank. This value should be in lowercase.
<b>NHT_COORD_SOURCE</b>	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 two-track, the NHT_DEF_FEATURE would be <i>two-track</i> and the NHT_COORD_SOURCE would be <i>24K Travel Management Inventory</i> . If other coverage's are used then the NHT_COORD_SOURCE would be the coverage name. For example, 100K DLG or 24K DLG.
<b>NHT_NAME</b>	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, California National Historic Trail.
<b>NHT_STATE</b>	This value refers to the administrative State for National Historic Trail. This field should be the two digit uppercase code for the State. For example, CA.

Item definitions for NHT lines are continued on the next page.

## NATIONAL HISTORIC TRAIL THEME (Cont.)

---

<b>NST_OFFICE</b>	This value refers to the administrative BLM Field Office code. For example, CA 066.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard fields and any interagency standard fields.

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

## NATIONAL RESERVE THEME

---

**Theme Identifier:** NR (Polygons)

<b>Theme Description:</b>	This is a graphical display of the boundaries of National Reserves. Inholdings should be identified.
<b>Feature Class:</b>	Polygon
<b>Input Scale:</b>	Cadastral Survey, 1:24,000
<b>Metadata:</b>	Required, full Federal Geographic Data Committee (FGDC) compliant
<b>Format:</b>	ARC/INFO Interchange

**Feature Class:** NR Polygons (.pat)

Item Name	Input Width	Output Width	Type
NR_CASEFILE	15	15	C
NR_NAME	50	50	C
NR_STATE	2	2	C

**Item Definitions:** For NR polygons

<b>NR_CASEFILE</b>	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.
<b>NR_NAME</b>	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 "inholding".
<b>NR_STATE</b>	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.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

## NATIONAL RESERVE THEME (Cont.)

---

*Feature Class: Line (.aat)*

Item Name	Input Width	Output Width	Type
NR_DEF_FEATURE	30	30	C
NR_COORD_SOURCE	20	20	C

*Item Definitions: For FR lines*

<b>NR_DEF_FEATURE</b>	This value refers to the natural, manmade, or mapping feature that represents the Forest Reserve. This value is recorded on each arc. This field is used when coincident lines are part of the National Reserve. For example, if a portion of the National Reserve boundary follows a stream, the NR_DEF_FEATURE would be <i>stream</i> , if following a contour line, the NR_DEF_FEATURE would be <i>contour</i> , etc. Entries for this field should be lowercase. If the NR_DEF_FEATURE was not used when digitizing or updating this theme this field should be blank. (See Appendix C for the official list of defining features.) This value should be in lowercase.
<b>NR_COORD_SOURCE</b>	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 boundary is a contour line the NR_DEF_FEATURE would be <i>contour</i> and the NR_COORD_SOURCE would be <i>24K Digital Elevation Model (DEM)</i> . If other coverage's are used then the NR_COORD_SOURCE would be the coverage name. For example, 100K DLG or 24K DLG.
<b>Optional Items</b>	Other optional items may be added for individual office needs, but they must follow (come after) the national standard field.

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

# 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.

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

**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>.)

---

**APPENDIX B****Project Core Team****Core Team Members**

<b>Name</b>	<b>Office</b>	<b>Position</b>
Dave Porter	WO-240	WO Wilderness Staff
Mary Beth Stulz	NSTC	NSTC GIS Specialist
Steve Smith	NV SO	State Wilderness Coordinator
Sandy Lamoreux	NV SO	GIS Staff
Ken Mahoney	AZ SO	State Wilderness Coordinator
Dave Wilson	AZ SO	Mapping Sciences
Paul Brink	CA SO	State Wilderness Coordinator
Jim Scrivner	CA SO	California GIS Manager

**APPENDIX C****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 locatable point to another).
5. A series of bearings and distances between locatable 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

## APPENDIX D

## 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.

### A. Polygon Feature Class

#### Arc: items nca.pat

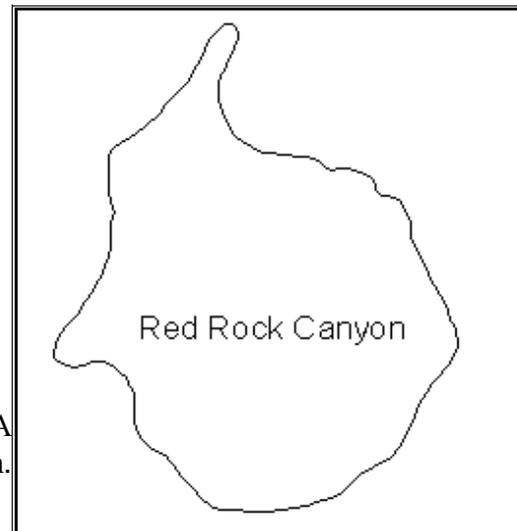
COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		—
9	PERIMETER	8	18	F	5		—
17	NCA#	4	5	B	—		—
21	NCA_ID	4	5	B	—		—
25	NCA_CASEFILE	15	15	C	—		—
40	NCA_NAME	50	50	C	—		—
90	NCA_STATE	2	2	C	—		—

For NCAs, this is what the .pat table would look like:

#### Arc: list nca.pat

```

AREA          = 1
              = 8913367.90031
PERIMETER     = 13050.63044
NCA#          = 1
NCA_ID        = 0
NCA_CASEFILE  =
NCA_NAME      =
NCA_STATE     = 2
              = 8913367.90031
PERIMETER     = 13050.63044
NCA#          = 2
NCA_ID        = 1
NCA_CASEFILE  = NV000001
NCA_NAME      = Red Rock Canyon
NCA_STATE     = NV
  
```



Example of a NCA  
polygon.

## APPENDIX D (Cont.)

Example of a National Conservation Area  
Boundary Using the Described Standard

Page 2 of 2

**Arc: items 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	NCA#	4	5	B	—		—
29	NCA_ID	4	5	B	—		—
33	NCA_DEF_FEATURE	30	30	C	—		—
63	NCA_COORD_SOURCE	20	20	C	—		—

For NCAs, this is what the .aat table would look like: (*The fields NCA\_DEF\_FEATURE and NCA\_COORD\_SOURCE were **NOT** used when the Red Rocks Canyon NCA was digitized.*)

**Arc: list nca.aat**

FNODE#	=	1	2
TNODE#	=	1	1
LPOLY#	=	2	2
RPOLY#	=	1	1
LENGTH	=	71.72532	
NCA#	=	1	1
NCA_ID	=	2	2
NCA_DEF_FEATURE	=		
NCA_COORD_SOURCE	=		
FNODE#	=	1	1
TNODE#	=	2	2
LPOLY#	=	2	2
RPOLY#	=	1	1
LENGTH	=	12978.90512	
NCA#	=	2	2
NCA_ID	=	1	1
NCA_DEF_FEATURE	=		
NCA_COORD_SOURCE	=		

## APPENDIX E

## Example of a National Monument Boundary Using the Described Standard

Page 1 of 2

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

### A. Polygon Feature Class

#### Arc: items 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	MONUMENT#	4	5	B	—		—
21	MONUMENT_ID	4	5	B	—		—
25	NM_CASEFILE	15	15	C	—		—
40	NM_NAME	50	50	C	—		—
90	NM_STATE	2	2	C	—		—

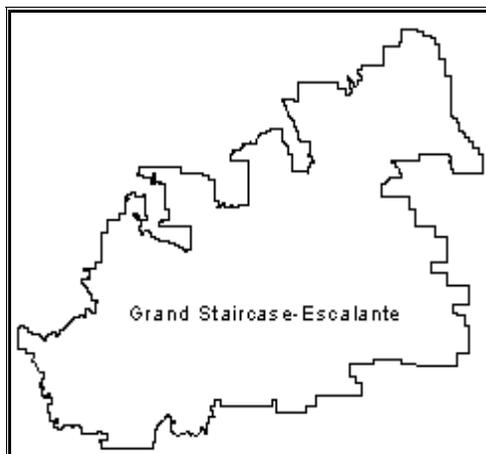
For Nation Monuments, this is what the .pat table would look like:

#### Arc: list monument.pat

```

1
AREA                =  _7609735272.02961
PERIMETER           =  833427.99054
MONUMENT#           =  1
MONUMENT_ID         =  0
NM_CASEFILE         =
NM_NAME             =
NM_STATE            =
2
AREA                =  7609735272.02961
PERIMETER           =  833427.99054
MONUMENT#           =  2
MONUMENT_ID         =  27
NM_CASEFILE         =  UT000001
NM_NAME             =  Grand staircase_Escalante
NM_STATE            =  UT

```



National  
Monument  
Boundary  
polygon  
example.

## APPENDIX E (Cont.)

Example of a National Monument Boundary  
Using the Described Standard

Page 2 of 2

**Arc: items 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	MONUMENT#	4	5	B	—		—
29	MONUMENT_ID	4	5	B	—		—
33	NM_DEF_FEATURE	30	30	C	—		—
63	NM_COORD_SOURCE	20	20	C	—		—

For National Monuments, this is what the .aat table would look like:

**Arc: list monument.aat**

```

1
FNODE#           = 1
TNODE#           = 2
LPOLY#           = 1
RPOLY#           = 2
LENGTH           = 400.72053
MONUMENT#        = 1
MONUMENT_ID      = 5
NM_DEF_FEATURE   =
NM_COORD_SOURCE  = GCDB
2
FNODE#           = 2
TNODE#           = 3
LPOLY#           = 1
RPOLY#           = 2
LENGTH           = 400.71266
MONUMENT#        = 2
MONUMENT_ID      = 7
NM_DEF_FEATURE   =
NM_COORD_SOURCE  = GCDB
3
FNODE#           = 3
Continue?        =
TNODE#           = 4
LPOLY#           = 1
RPOLY#           = 2
LENGTH           = 400.72296
MONUMENT#        = 3
MONUMENT_ID      = 9
NM_DEF_FEATURE   =
NM_COORD_SOURCE  = GCDB
4
FNODE#           = 4
TNODE#           = 6
LPOLY#           = 1
RPOLY#           = 2
LENGTH           = 400.62288
MONUMENT#        = 4
MONUMENT_ID      = 12
NM_DEF_FEATURE   =
NM_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

```

Example of a Wilderness Boundary  
Using the Described Standard

## APPENDIX F

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

### A. Polygon Feature Class

#### Arc: items wld\_example.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	WLD_EXAMPLE#	4	5	B	—		—
13	WLD_EXAMPLE_ID	4	5	B	—		—
17	WLD_CASEFILE	15	15	C	—		—
32	WLD_NAME	50	50	C	—		—
82	WLD_STATE	2	2	C	—		—

#### Arc: 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_ID	4	5	B	—		—
29	WLD_DEF_FEATURE	30	30	C	—		—
59	WLD_COORD_SOURCE	20	20	C	—		—

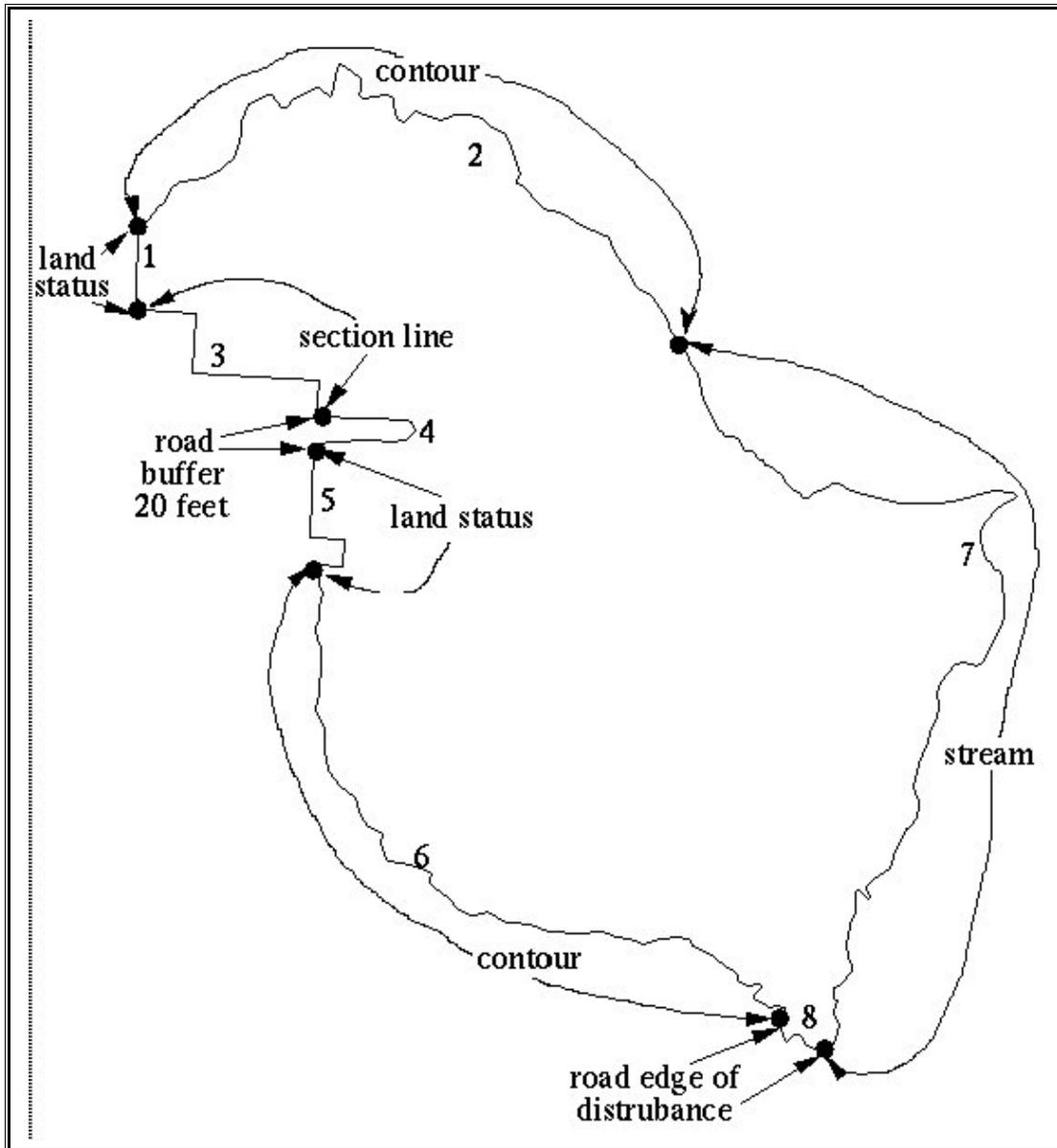


Figure 1. Map of the Wilderness Example

For Wilderness, this is what the .pat and the .aat tables would look like:

**Arc: list wld\_example.pat**

```

1
AREA           =          0.000
PERIMETER      =          0.000
WLD_EXAMPLE#   =          1
WLD_EXAMPLE_ID =          1
WLD_CASEFILE   = CO010046
WLD_NAME       = wilderness Example
WLD_STATE      = CO

```

**Arc: list wld\_example.aat**

```

1
WLD_EXAMPLE#   =          1
WLD_EXAMPLE_ID =          0
WLD_DEF_FEATURE = land status
WLD_COORD_SOURCE = wr_owp (1990)
2
WLD_EXAMPLE#   =          2
WLD_EXAMPLE_ID =          0
WLD_DEF_FEATURE = contour
WLD_COORD_SOURCE = 24K DEM
3
WLD_EXAMPLE#   =          3
WLD_EXAMPLE_ID =          0
WLD_DEF_FEATURE = section lines
WLD_COORD_SOURCE = wr_lap (1990)
4
WLD_EXAMPLE#   =          4
WLD_EXAMPLE_ID =          0
WLD_DEF_FEATURE = road buffer
WLD_COORD_SOURCE = wr_tr1 (1990)
                    20 feet
5
WLD_EXAMPLE#   =          5
WLD_EXAMPLE_ID =          0
WLD_DEF_FEATURE = land status
WLD_COORD_SOURCE = wr_owp (1990)
6
WLD_EXAMPLE#   =          6
WLD_EXAMPLE_ID =          0
WLD_DEF_FEATURE = contour
WLD_COORD_SOURCE = 24K DEM
7
WLD_EXAMPLE#   =          7
WLD_EXAMPLE_ID =          0
WLD_DEF_FEATURE = stream
WLD_COORD_SOURCE = wr_st1 (1990)
8
WLD_EXAMPLE#   =          8
WLD_EXAMPLE_ID =          0
WLD_DEF_FEATURE = road edge of
WLD_COORD_SOURCE = DOQQ
                    disturbance

```

An abbreviated version of  
the wld\_example.aat.

Missing in this listing is the  
FNODE#, TNODE#,  
LPOLY#, RPOLY#, and  
the LENGTH. These were  
removed to save some  
space for display purposes.

Shown are the polygon (.pat), WSA region (.patwsa), and the line (.aat) for a WSA.

### A. Polygon Feature Class

Arc: 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	WSA_SUITABILITY	1	1	I	-	-	-

For WSAs, this is what the .pat table would look like:

Arc: list wsa_example.pat			
1	AREA	=	-0.01801
	PERIMETER	=	1.27373
	WSA_EXAMPLE#	=	1
	WSA_EXAMPLE-ID	=	0
	WSA_NUMBER	=	
	WSA_SUITABILITY	=	0
2	AREA	=	0.00064
	PERIMETER	=	0.22935
	WSA_EXAMPLE#	=	2
	WSA_EXAMPLE-ID	=	64
	WSA_NUMBER	=	NV010-132
	WSA_SUITABILITY	=	0
		=	2
3	AREA	=	0.01305
	PERIMETER	=	0.74714
	WSA_EXAMPLE#	=	3
	WSA_EXAMPLE-ID	=	65
	WSA_NUMBER	=	NV010-132
	WSA_SUITABILITY	=	1
4	AREA	=	0.00041
	PERIMETER	=	0.12525
	WSA_EXAMPLE#	=	4
	WSA_EXAMPLE-ID	=	72
	WSA_NUMBER	=	NV010-132
	WSA_SUITABILITY	=	2
5	AREA	=	0.00205
	PERIMETER	=	0.50241
	WSA_EXAMPLE#	=	5
	WSA_EXAMPLE-ID	=	76
	WSA_NUMBER	=	NV010-132
	WSA_SUITABILITY	=	2

Continued on Column 2...

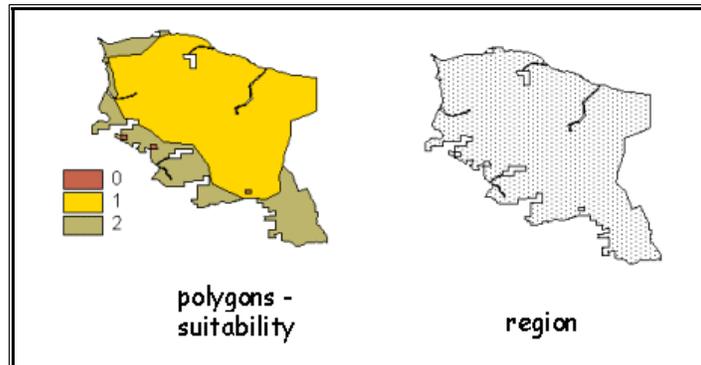
Column 2			
6	AREA	=	0.00002
	PERIMETER	=	0.01786
	WSA_EXAMPLE#	=	6
	WSA_EXAMPLE-ID	=	78
	WSA_NUMBER	=	
	WSA_SUITABILITY	=	0
7	AREA	=	0.00002
	PERIMETER	=	0.01722
	WSA_EXAMPLE#	=	7
	WSA_EXAMPLE-ID	=	81
	WSA_NUMBER	=	
	WSA_SUITABILITY	=	0
8	AREA	=	0.00180
	PERIMETER	=	0.25459
	WSA_EXAMPLE#	=	8
	WSA_EXAMPLE-ID	=	89
	WSA_NUMBER	=	NV010-132
	WSA_SUITABILITY	=	2
9	AREA	=	0.00002
	PERIMETER	=	0.01666
	WSA_EXAMPLE#	=	9
	WSA_EXAMPLE-ID	=	94
	WSA_NUMBER	=	
	WSA_SUITABILITY	=	0

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

**APPENDIX G (Cont.)**

Page 2 of 3

Figure 2.  
Maps of the WSA  
Example.



### B. Region Feature Class

#### Arc: 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	WSA_NAME	50	50	C	-	-	
95	WSA_STATE	2	2	C	-	-	

For WSAs, this is what the .patwsa table would look like:

#### Arc: list wsa\_example.patwsa

```

1
AREA                =          17852601.63347
PERIMETER           =          28411.59011
WSA#                 =           1
WSA-ID              =           1
WSA_NUMBER          = NV-010-950
WSA_NAME            = WSA EXAMPLE
WSA_STATE           = NV

```

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

**APPENDIX G (Cont.)**

**Arc: 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	WSA_DEF_FEATURE	30	30	C	-		-
63	WSA_COORD_SOURCE	20	20	C	-		-

For WSAs, this is what the .aat table would look like:

**Arc: list wsa\_example.aat**

```

1
FNODE#      =      2
TNODE#      =      3
LPOLY#      =      1
RPOLY#      =      3
LENGTH      =      0.00038
WSA_EXAMPLE# =      1
WSA_EXAMPLE-ID=    11
WSA_DEF_FEATURE =
WSA_COORD_SOURCE =
2
FNODE#      =      2
TNODE#      =      1
LPOLY#      =      3
RPOLY#      =      1
LENGTH      =      0.13896
WSA_EXAMPLE# =      2
WSA_EXAMPLE-ID=      1
WSA_DEF_FEATURE =
WSA_COORD_SOURCE =
3
FNODE#      =      1
TNODE#      =      4
LPOLY#      =      3
RPOLY#      =      2
LENGTH      =      0.09108
WSA_EXAMPLE# =      3
WSA_EXAMPLE-ID=      2
WSA_DEF_FEATURE =
WSA_COORD_SOURCE =

Continued on Column 2.....
    
```

**Column 2**

```

4
FNODE#      =      1
TNODE#      =      4
LPOLY#      =      2
RPOLY#      =      1
LENGTH      =      0.13827
WSA_EXAMPLE# =      4
WSA_EXAMPLE-ID =      7
WSA_DEF_FEATURE =
WSA_COORD_SOURCE =
5
FNODE#      =      4
TNODE#      =      5
LPOLY#      =      3

Continue? N
    
```

## Example of a National Wild and Scenic Rivers Boundary Using the Described Standard

### APPENDIX H

Page 1 of 3

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

#### A. Polygon feature class

##### Arc: items wsrp.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	WSRP#	4	5	B	-		-
13	WSRP-ID	4	5	B	-		-
17	WSRP_CASEFILE	15	15	C	-		-
32	WSRP_NAME	50	50	C	-		-
82	WSRP_STATE	2	2	C	-		-
84	WSRP_WILD	1	1	I	-		-
85	WSRP_SCENIC	1	1	I	-		-
87	WSRP_REC	1	1	I	-		-
89	WSRP_STUDY	1	1	I	-		-

For Wild and Scenic Rivers (WSRP), this is what the .pat table would look like:

##### Arc: list wsrp.pat

```

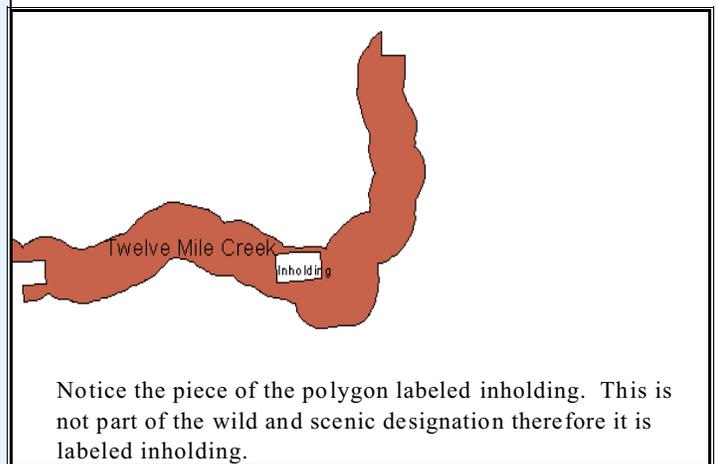
1
AREA                = -8788002.000
PERIMETER           = 24613.055
WSRP#               = 1
WSRP-ID             = 0
WSRP_CASEFILE      =
WSRP_NAME           =
WSRP_STATE          =
WSRP_WILD           =
WSRP_SCENIC         =
WSRP_REC            =
WSRP_STUDY          =

2
AREA                = 8450229.000
PERIMETER           = 27038.777
WSRP#               = 2
WSRP-ID             = 0
WSRP_CASEFILE      = OR000001
WSRP_NAME           = Twelve Mile Creek
WSRP_STATE          = OR
WSRP_WILD           = 1
WSRP_SCENIC         = 0
WSRP_REC            = 0
WSRP_STUDY          = 0

3
AREA                = 337773.625
PERIMETER           = 2425.725
WSRP#               = 3
WSRP-ID             = 0
WSRP_CASEFILE      =
WSRP_NAME           = Inholding
WSRP_STATE          = OR
WSRP_WILD           = 0
WSRP_SCENIC         = 0
WSRP_REC            = 0
WSRP_STUDY          = 0

```

Example of the polygon's for the Wild and Scenic River System.



## Example of a National Wild and Scenic Rivers Boundary Using the Described Standard

### APPENDIX H (Cont.)

#### Arc: items 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	WSRP_DEF_FEATURE	30	30	C	-		-
51	WSRP_COORD_SOURCE	20	20	C	-		-
71	STREAM_NAM	20	20	C	-		-
91	LABEL	20	20	C	-		-
111	ACRES	8	15	F	0		-

For Wild and Scenic Rivers (WSRP), this is what the .aat table would look like:

#### Arc: list wsrp.aat

```

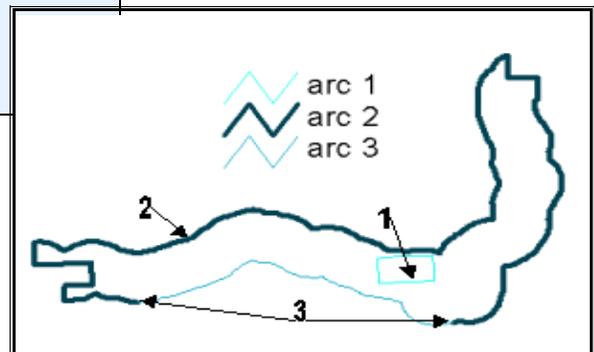
1
FNODE#           = 1
TNODE#           = 1
LPOLY#           = 3
RPOLY#           = 2
LENGTH           = 2425.725
WSRP_DEF_FEATURE = Land Status
WSRP_COORD_SOURCE = rmp_own.shape
STREAM_NAM       = Twelve Mile Creek
LABEL            = Twelve Mile Creek
ACRES            = 2088

2
FNODE#           = 2
TNODE#           = 3
LPOLY#           = 1
RPOLY#           = 2
LENGTH           = 19536.621
WSRP_DEF_FEATURE = quarter mile buffer of stream
WSRP_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
WSRP_DEF_FEATURE = quarter mile buffer of stream
WSRP_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.



## APPENDIX H (Cont.)

Example of a National Wild and Scenic Rivers  
Boundary Using the Described Standard

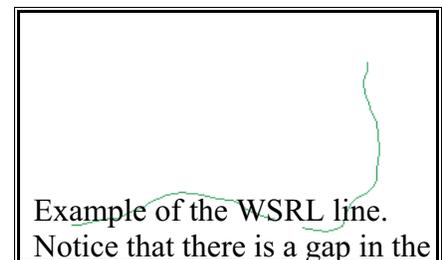
Page 3 of 3

## B. Lines feature class or WSRL

Arc: items 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	-		-
17	LENGTH	4	12	F	3		-
21	WSRL#	4	5	B	-		-
25	WSRL-ID	4	5	B	-		-
29	WSRL_DEF_FEATURE	30	30	C	-		-
59	WSRL_COORD_SOURCE	20	20	C	-		-
79	WSRL_NAME	50	50	C	-		-
129	WSRL_STATE	2	2	C	0		-
131	WSRL_WILD	1	1	I	-		-
132	WSRL_SCENIC	1	1	I	-		-
133	WSRL_REC	1	1	I	-		-

For Wild and Scenic Rivers (WSRL), this is what the .aat table would look like:

Arc: list wsrl.aat		
1		
FNODE#	=	6
TNODE#	=	7
LPOLY#	=	0
RPOLY#	=	0
LENGTH	=	4522.146
WSRL#	=	1
WSRL-ID	=	2
WSRL_DEF_FEATURE	=	Stream
WSRL_COORD_SOURCE	=	24K QUAD
WSRL_NAME	=	Twelve Mile Creek
WSRL_STATE	=	OR
WSRL_WILD	=	1
WSRL_SCENIC	=	0
WSRL_REC	=	0
WSRL_STATE	=	0
WSRL_STUDY	=	0
2		
FNODE#	=	11
TNODE#	=	12
LPOLY#	=	0
RPOLY#	=	0
LENGTH	=	4337.149
WSRL#	=	2
WSRL-ID	=	2
WSRL_DEF_FEATURE	=	Stream
WSRL_COORD_SOURCE	=	24K QUAD
WSRL_NAME	=	Twelve Mile Creek
WSRL_STATE	=	OR
WSRL_WILD	=	1
WSRL_SCENIC	=	0
WSRL_REC	=	0
WSRL_STATE	=	0
WSRL_STUDY	=	0



Example of the WSRL line.  
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.

## Example of a National Scenic Trail Boundary Using the Described Standard

### APPENDIX I

Page 1 of 2

Shown is an example of a National Scenic Trail with lines.

#### A. Line feature class

Arc: items nst_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	NST#	4	5	B	-		-
25	NST-ID	4	5	B	-		-
29	NST_DEF_FEATURE	30	30	C	-		-
59	NST_COORD_SOURCE	20	20	C	-		-
79	NST_NAME	40	40	C	-		-
119	NST_STATE	2	2	C	-		-
121	NST_OFFICE	6	6	C	-		-

For a National Scenic Trail, this is what the .aat table would look like:

Arc: list nst_example.aat		
1		
FNODE#	=	10
TNODE#	=	11
LPOLY#	=	0
RPOLY#	=	0
LENGTH	=	4960
NST_EXAMPLE#	=	1
NST_EXAMPLE-ID	=	398
NST_DEF_FEATURE	=	
NST_COORD_SOURCE	=	GPS
NST_NAME	=	Pacific Crest
NST_STATE	=	CA
NST_OFFICE	=	CA 066
2		
FNODE#	=	12
TNODE#	=	9
LPOLY#	=	0
RPOLY#	=	0
LENGTH	=	2296
NST_EXAMPLE#	=	2
NST_EXAMPLE-ID	=	399
NST_DEF_FEATURE	=	
NST_COORD_SOURCE	=	GPS
NST_NAME	=	Pacific Crest
NST_STATE	=	CA
NST_OFFICE	=	CA 066
3		
FNODE#	=	13
TNODE#	=	14
LPOLY#	=	0
RPOLY#	=	0
LENGTH	=	12262
NST_EXAMPLE#	=	3
NST_EXAMPLE-ID	=	400
NST_DEF_FEATURE	=	
NST_COORD_SOURCE	=	GPS
NST_NAME	=	Pacific Crest
NST_STATE	=	CA
NST_OFFICE	=	CA 066

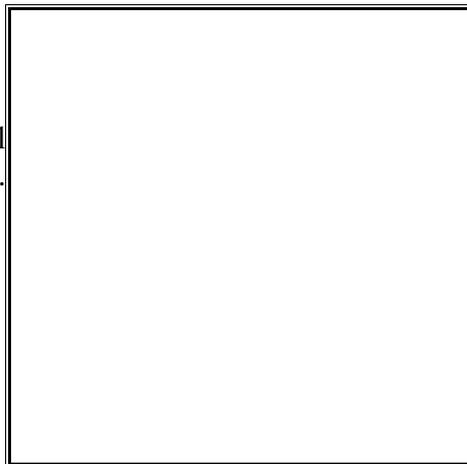
## APPENDIX I (Cont.)

## Example of a National Scenic Trail Boundary Using the Described Standard

Page 2 of 2

	4		
FNODE#		=	15
TNODE#		=	12
LPOLY#		=	0
RPOLY#		=	0
LENGTH		=	2624
NST_EXAMPLE#		=	4
NST_EXAMPLE-ID		=	401
NST_DEF_FEATURE		=	
NST_COORD_SOURCE		=	GPS
NST_NAME		=	Pacific Crest
NST_STATE		=	CA
NST_OFFICE		=	CA 066
	5		
FNODE#		=	16
TNODE#		=	15
LPOLY#		=	0
RPOLY#		=	0
LENGTH		=	787
NST_EXAMPLE#		=	5
NST_EXAMPLE-ID		=	401
NST_DEF_FEATURE		=	
NST_COORD_SOURCE		=	GPS
NST_NAME		=	Pacific Crest
NST_STATE		=	CA
NST_OFFICE		=	CA 066
	6		
FNODE#		=	14
TNODE#		=	17
LPOLY#		=	0
RPOLY#		=	0
LENGTH		=	5802
NST_EXAMPLE#		=	6
NST_EXAMPLE-ID		=	401
NST_DEF_FEATURE		=	
NST_COORD_SOURCE		=	GPS
NST_NAME		=	Pacific Crest
NST_STATE		=	CA
NST_OFFICE		=	CA 066

Example of a National  
Scenic Trail line.



## Example of a National Historic Trail Boundary Using the Described Standard

### APPENDIX J

Page 1 of 2

Shown is an example of a National Historic Trail with lines.

#### A. Line feature

##### Arc: items nht\_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	NHT_EXAMPLE#	4	5	B	-		-
25	NHT_EXAMPLE-ID	4	5	B	-		-
29	NHT_DEF_FEATURE	30	30	C	-		-
59	NHT_COORD_SOURCE	20	20	C	-		-
79	NHT_NAME	40	40	C	-		-
119	NHT_STATE	2	2	C	-		-

For a National Historic Trail, this is what the .aat table would look like:

##### Arc: list nht\_example.aat

```

1
FNODE#           = 1
TNODE#           = 2
LPOLY#           = 0
RPOLY#           = 0
LENGTH           = 9490.855
NHT_EXAMPLE#     = 1
NHT_EXAMPLE-ID   = 1
NHT_DEF_FEATURE  =
NHT_COORD_SOURCE = GPS
NHT_NAME         = California
NHT_STATE        = CA
NHT_OFFICE       = CA 066

2
FNODE#           = 8
TNODE#           = 9
LPOLY#           = 0
RPOLY#           = 0
LENGTH           = 302.914
NHT_EXAMPLE#     = 2
NHT_EXAMPLE-ID   = 2
NHT_DEF_FEATURE  =
NHT_COORD_SOURCE = GPS
NHT_NAME         = California
NHT_STATE        = CA
NHT_OFFICE       = CA 066

3
FNODE#           = 13
TNODE#           = 14
LPOLY#           = 0
RPOLY#           = 0
LENGTH           = 12262
NST_EXAMPLE#     = 3
NST_EXAMPLE-ID   = 400
NST_DEF_FEATURE  =
NST_COORD_SOURCE = GPS
NST_NAME         = Mormon Pioneer
NST_STATE        = CA
NST_OFFICE       = CA 066

```

	4		
FNODE#		=	15
TNODE#		=	12
LPOLY#		=	0
RPOLY#		=	0
LENGTH		=	2624
NST_EXAMPLE#		=	4
NST_EXAMPLE-ID		=	401
NST_DEF_FEATURE		=	
NST_COORD_SOURCE		=	GPS
NST_NAME		=	California
NST_STATE		=	CA
NST_OFFICE		=	CA 066
	5		
FNODE#		=	16
TNODE#		=	15
LPOLY#		=	0
RPOLY#		=	0
LENGTH		=	787
NST_EXAMPLE#		=	5
NST_EXAMPLE-ID		=	402
NST_DEF_FEATURE		=	
NST_COORD_SOURCE		=	GPS
NST_NAME		=	California
NST_STATE		=	CA
NST_OFFICE		=	CA 066
	6		
FNODE#		=	14
TNODE#		=	17
LPOLY#		=	0
RPOLY#		=	0
LENGTH		=	5802
NST_EXAMPLE#		=	6
NST_EXAMPLE-ID		=	403
NST_DEF_FEATURE		=	
NST_COORD_SOURCE		=	GPS
NST_NAME		=	California
NST_STATE		=	CA
NST_OFFICE		=	CA 066

**Example of a  
National  
Historic Trail  
line.**



## Example of a National Reserve Boundary Using the Described Standard

### APPENDIX K

Page 1 of 2

Shown is an example of a National Reserve with polygons.

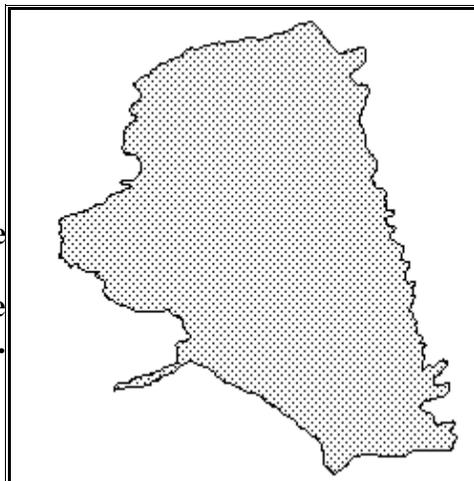
#### A. Polygon Feature Class

Arc: items nr_example.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	NR_EXAMPLE#	4	5	B	-		-
13	NR_EXAMPLE-ID	4	5	B	-		-
17	NR_CASEFILE	15	15	C	-		-
32	NR_NAME	50	50	C	-		-
82	NR_STATE	2	2	C	-		-

For a National Reserve, this is what the .pat table would look like:

Arc: list nr_example.pat	
1	
AREA	= *****
PERIMETER	= 319108.500
NR_EXAMPLE#	= 1
NR_EXAMPLE-ID	= 0
NR_CASEFILE	=
NR_NAME	=
NR_STATE	=
2	
AREA	= *****
PERIMETER	= 319108.500
NR_EXAMPLE#	= 2
NR_EXAMPLE-ID	= 1
NR_CASEFILE	= BLM00001
NR_NAME	= Headwaters Forest Reserve

A sample  
National  
Reserve  
polygon.



## APPENDIX K (Cont.)

Example of a National Reserve Boundary  
Using the Described Standard

Page 2 of 2

**Arc: items nr\_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	NR_EXAMPLE#	4	5	B	-		-
21	NR_EXAMPLE-ID	4	5	B	-		-
25	NR_DEF_FEATURE	30	30	C	-		-
55	NR_COORD_SOURCE	20	20	C	-		-

For a National Reserve, this is what the .aat would look like:

**Arc: list nr\_example.aat**

```

1
FNODE#           = 2
TNODE#           = 1
LPOLY#           = 1
RPOLY#           = 2
NR_EXAMPLE#      = 1
NR_EXAMPLE-ID    = 4520
NR_DEF_FEATURE   = made up line
NR_COORD_SOURCE  =
2
FNODE#           = 3
TNODE#           = 2
LPOLY#           = 1
RPOLY#           = 2
NR_EXAMPLE#      = 2
NR_EXAMPLE-ID    = 4739
NR_DEF_FEATURE   = made up line
NR_COORD_SOURCE  =
3
FNODE#           = 1
TNODE#           = 4
LPOLY#           = 1
RPOLY#           = 2
NR_EXAMPLE#      = 3
NR_EXAMPLE-ID    = 4377
NR_DEF_FEATURE   = made up line
NR_COORD_SOURCE  =
4
FNODE#           = 4
TNODE#           = 3
LPOLY#           = 1
RPOLY#           = 2
NR_EXAMPLE#      = 4
NR_EXAMPLE-ID    = 4827
NR_DEF_FEATURE   = made up line
NR_COORD_SOURCE  =

```