

## Acadia National Park, Field Plots Metadata

### Identification\_Information:

#### Citation:

##### Citation\_Information:

Originator: U.S. Geological Survey, Upper Midwest Environmental Sciences Center, 2630 Fanta Reed Road, La Crosse, Wisconsin 54603

Publication\_Date: 200310

Title: Vegetation Field Plot Spatial Database for the Acadia National Park Vegetation Mapping Program

Edition: Final

Geospatial\_Data\_Presentation\_Form: map

##### Series\_Information:

Series\_Name: USGS-NPS Vegetation Mapping Program

Issue\_Identification: Acadia NP Vegetation Mapping Project

##### Publication\_Information:

Publication\_Place: Denver, Colorado

Publisher: U.S. Geological Survey, Center for Biological Informatics

Other\_Citation\_Details: The spatial database and both dBASE IV exports of the PLOTS database were prepared by the U.S. Geological Survey Upper Midwest Environmental Sciences Center for the USGS-NPS Vegetation Mapping Program. The Nature Conservancy, NatureServe, and Maine Natural Areas Program provided ecological and vegetation classification content.

Online\_Linkage: <http://biology.usgs.gov/npsveg/acad/index.html>

### Description:

**Abstract:** The U.S. Geological Survey Upper Midwest Environmental Sciences Center (UMESC) has produced a vegetation spatial database coverage (vegetation map) for the Acadia National Park Vegetation Mapping Project, USGS-NPS Vegetation Mapping Program (VMP). In support of mapping and classifying the vegetation, vegetation sample plots were collected and analyzed, identifying 53 National Vegetation Classification System natural/semi-natural associations (vegetation communities). Local botanists, via contract with The Nature Conservancy, collected 179 vegetation plot samples at Acadia National Park (NP) during the 1997-1999 field seasons. Maine Natural Areas Program performed ordination analysis using the field plot data and other existing vegetation data of the area. Vegetation communities of Acadia NP are defined and described at the local and global scale. All 179 vegetation plot samples are represented in the Vegetation Field Plot Spatial Database with selected data fields from the Project's PLOTS database.

**Purpose:** The Vegetation Field Plot Spatial Database provides spatially referenced locations of vegetation plot samples that were collected to support the vegetation classification for the Acadia National Park Vegetation Mapping Project, USGS-NPS Vegetation Mapping Program (see Cross Reference at the end of this section for more information on the vegetation map, Project, and the VMP). This metadata report supports not only the Vegetation Field Plot Spatial Database coverage, but also exported database sets (dBASE IV) from the Project's PLOTS database of physical descriptions and species listing for each vegetation sample, and an overview of sampling methods and analysis. For more documentation on the analysis methods and results, including the ordination process, see the Project's technical report.

**Supplemental\_Information:** The Vegetation Field Plot Spatial Database is a geo-spatial point coverage. Item information within the spatial point coverage includes: ArcInfo default items, plot number, classified community name (NVCS association), provisional community name (synonym name of association), NatureServe's Community Element Global code (CEGL), date of field collection, X-Y (Easting-Northing) coordinates projected in Universal Transverse Mercator, Zone 19 with datum in North American Datum of 1983, U.S. Geological Survey 7.5-minute quadrangle names, and a comment field describing general location. --- The dBASE IV spreadsheet representing physical descriptions (exported from the Project's PLOTS database) contains all items of the physical field data collected for each sample. In addition to those listed in the spatial database, the spreadsheet provides air photo, sublocation, quad code, X-Y coordinates, surveyors, plot shape, ground photo info, representation, environmental factors (elevation, slope, aspect, topology), topographic position, surficial geology, hydrology (Cowardin wetland, regime), environmental and landscape comments, various soil features,

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numerous plant physiognomic features, disturbance comments, and other comments. --- The dBASE IV spreadsheet representing species listing (exported from the Project's PLOTS database) contains a listing of all plant species recorded for each sample. The spreadsheet provides plot code, plot species counter, plant symbol, scientific name, common name, family, specimen number, used plants, source, within plot, stratum sort, stratum, diagnostic, range cover, real cover, other measures, dbh, update, and user. --- Complete data for all vegetation samples are preserved on hard copy data sheets, and digitally within the Project's PLOTS database. --- The spatial database is available, both in ArcInfo Export (.e00) and Shapefile formats, on the Project's CD-ROM.

Time\_Period\_of\_Content:

Time\_Period\_Information:

Single\_Date/Time:

Calendar\_Date: 200310

Currentness\_Reference: publication date

Status:

Progress: Complete

Maintenance\_and\_Update\_Frequency: None planned

Spatial\_Domain:

Description\_of\_Geographic\_Extent: Acadia National Park and environs

Bounding\_Coordinates:

West\_Bounding\_Coordinate: -68.65646733

East\_Bounding\_Coordinate: -68.04867344

North\_Bounding\_Coordinate: 44.42537942

South\_Bounding\_Coordinate: 44.01346029

Keywords:

Theme:

Theme\_Keyword\_Thesaurus: None

Theme\_Keyword: Digital Spatial Database

Theme\_Keyword: Vegetation

Theme\_Keyword: Vegetation Map

Theme\_Keyword: National Vegetation Classification Standard

Theme\_Keyword: National Vegetation Classification System

Theme\_Keyword: U.S. National Vegetation Classification

Theme\_Keyword: International Vegetation Classification

Theme\_Keyword: NVCS

Theme\_Keyword: USNVC

Theme\_Keyword: National Park

Theme\_Keyword: GPS

Theme\_Keyword: GIS

Theme\_Keyword: Field Data

Theme\_Keyword: Vegetation Field Plot

Theme\_Keyword: Vegetation Sample

Theme\_Keyword: PLOTS Database System

Theme\_Keyword: Physical Description

Place:

Place\_Keyword\_Thesaurus: None

Place\_Keyword: Acadia National Park

Place\_Keyword: Bar Harbor

Place\_Keyword: Mount Desert Island

Place\_Keyword: Schoodic Peninsula

Place\_Keyword: Isle au Haut

Place\_Keyword: Hancock County

Place\_Keyword: Maine

Place\_Keyword: USA

Taxonomy:

Keywords/Taxon:

Taxonomic\_Keyword\_Thesaurus: None

Taxonomic\_Keywords: National Vegetation Classification Standard

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Taxonomic\_Keywords: National Vegetation Classification System

Taxonomic\_Keywords: U.S. National Vegetation Classification

Taxonomic\_Keywords: International Vegetation Classification

Taxonomic\_Keywords: Plant Community

Taxonomic\_Keywords: Association

Taxonomic\_Keywords: Alliance

Taxonomic\_Keywords: NVCS

Taxonomic\_Keywords: USNVC

Taxonomic\_System:

Classification\_System/Authority:

Classification\_System\_Citation:

Citation\_Information:

Originator: US Department of Agriculture, Natural Resources Conservation Service

Publication\_Date: 199612

Title: The PLANTS Database (1996)

Geospatial\_Data\_Presentation\_Form: database

Series\_Information:

Series\_Name: The Plants Database

Issue\_Identification: December 1996

Publication\_Information:

Publication\_Place: National Plant Data Center, Baton Rouge, Louisiana

Publisher: USDA, NRCS

Other\_Citation\_Details: The Plants Database as of December 1996. USDA Natural Resources Conservation Service. Web address: <http://plants.usda.gov/>. Version used in the PLOTS Database System (1997).

Online\_Linkage: <http://plants.usda.gov/>

Classification\_System\_Modifications: This is the version of The PLANTS Database that is used in the The Nature Conservancy's PLOTS Database System (Version 1.1, 1997).

Taxonomic\_Procedures: Vegetation field sampling data were entered into a modified version of The PLOTS Database (The Nature Conservancy 1997) at the Maine Natural Areas Program, which (after checking the data for accuracy) was used to produce plot vegetation summaries and associated environmental information. To analyze vegetation patterns and classify types, we used Detrended Correspondence Analysis (DCA), Two-Way Indicator Species Analysis (TWINSPAN), and Indicator Species Analysis (ISA) within PC-ORD. An ordination technique, DCA arranges samples along derived axes according to compositional similarity. A divisive polythetic technique, TWINSPAN classifies samples and species, using a similar algorithm to that for DCA. The ISA identifies indicator species for user-defined groups of samples (in this case vegetation types) by calculating an indicator value based on a species' abundance and frequency in each of several defined groups, then using a Monte Carlo test to determine those that are significantly allied with one group as opposed to randomly distributed. Further references for all techniques can be found in the PC-ORD documentation (McCune and Mefford 1999). Whereas vegetation types were being developed and refined from the sample data, reference to the NVCS (Anderson et al. 1998) had to be maintained. The required consultations with TNC regional ecologists to (1) determine if an existing NVCS type fit the Acadia type; (2) if no existing NVCS type matched, whether it made sense to refine an existing type or to create a new type; and (3) if a new type was indicated, to name and describe that type.

Taxonomic\_Classification:

Taxon\_Rank\_Name: Kingdom

Taxon\_Rank\_Value: Plantae

Access\_Constraints: None

Use\_Constraints: 1) Those using the database should understand the data and determine for themselves the fitness of the data prior to use. 2) For publication and dissemination, citations or credit should be given to the U.S. Geological Survey Center for Biological Informatics, the National Park Service, the U.S. Geological Survey Upper Midwest Environmental Sciences Center, The Nature Conservancy, NatureServe, and Maine Natural Areas Program. GIS software.

Point\_of\_Contact:

Contact\_Information:

Contact\_Organization\_Primary:

Contact\_Organization: USGS BRD Center for Biological Informatics

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Contact\_Person: USGS-NPS Vegetation Mapping Program Coordinator

Contact\_Address:

Address\_Type: mailing and physical address

Address: Denver Federal Center, Building 810, Room 8000, MS 302

City: Denver

State\_or\_Province: Colorado

Postal\_Code: 80225

Contact\_Voice\_Telephone: (303) 202-4220

Contact\_Facsimile\_Telephone: 303-202-4219

Contact\_Electronic\_Mail\_Address: gs-b-npsveg@usgs.gov

Browse\_Graphic:

Browse\_Graphic\_File\_Name: <http://biology.usgs.gov/npsveg/acad/images/acadplots.pdf>

Browse\_Graphic\_File\_Description: Locations of vegetation plot samples; low resolution for web browsing.

Browse\_Graphic\_File\_Type: PDF

Data\_Set\_Credit: The USGS Upper Midwest Environmental Sciences Center, The Nature Conservancy, NatureServe, and Maine Natural Areas Program.

Native\_Data\_Set\_Environment: UNIX-ARC/INFO

Cross\_Reference:

Citation\_Information:

Originator: U.S. Geological Survey, Upper Midwest Environmental Sciences Center

Publication\_Date: 200310

Title: Acadia National Park Vegetation Mapping Project

Geospatial\_Data\_Presentation\_Form: report

Series\_Information:

Series\_Name: USGS-NPS Vegetation Mapping Program

Issue\_Identification: Acadia NP Vegetation Mapping Project

Publication\_Information:

Publication\_Place: Denver, Colorado

Publisher: U.S. Geological Survey, Center for Biological Informatics

Other\_Citation\_Details: The Acadia National Park Vegetation Mapping Project is a product of the USGS-NPS Vegetation Mapping Program (VMP), which is managed by the U.S. Geological Survey (USGS) Center for Biological Informatics (for more information on VMP, see larger work citation below). The mapping project is one of few listed as pilot, with purpose to test and explore protocols in mapping and classifying vegetation for the VMP. --- The project began with a planning meeting March 1997 at Acadia National Park (NP). Spring photography was collected May 1997, the baseline data for subsequent field efforts and mapping. Vegetation samples were collected over 3 field seasons (1997-1999), with the majority collected during the first 2 years. Photointerpretation and subsequent digital automation transpired during 1998 & 1999, with supporting fieldwork during the 1997 & 1998 field seasons. The first draft of the vegetation map was completed and distributed January 2000. Vegetation data analyses for vegetation classification development were performed during 1999 & 2000. Local vegetation community descriptions were completed 2001. Accuracy assessment field data was collected during the 1999 field season. The data was applied to the vegetation map with concluding results spring 2003. --- The USGS Upper Midwest Environmental Sciences Center (UMESC) provided project coordination and compiled all project data for distribution. The UMESC produced all spatial database sets: vegetation map, observation points, vegetation sample plots, accuracy assessment sites, and various other supporting coverages. The UMESC also performed the accuracy assessment of the vegetation spatial database coverage, prepared final project documentation discussing methods and results, and provided metadata reports. The Nature Conservancy, NatureServe, and Maine Natural Areas Program provided ecological and vegetation support, vegetation field sampling (plot samples and accuracy assessment), data entry, vegetation analysis, methods and results documentation, and vegetation classification development (including vegetation community descriptions) based on the Federal Geographic Data Committee's National Vegetation Classification Standard with floristic level types defined by NatureServe's International Vegetation Classification (association and alliance classes of the National Vegetation Classification System). Acadia NP provided staff to assist in field efforts including GPS navigation and collection, lodging, boat transportation, and knowledge of the local area. --- The Project provides a technical report with details regarding methods and results. Metadata documents are provided for the vegetation spatial database coverage (vegetation map), field

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reconnaissance observations, vegetation field plots (samples), accuracy assessment, aerial photography, and project boundaries.

Online\_Linkage: <http://biology.usgs.gov/npsveg/acad/>

Larger\_Work\_Citation:

Citation\_Information:

Originator: U.S. Geological Survey, Center for Biological Information

Publication\_Date: 200304

Title: USGS-NPS Vegetation Mapping Program (May 2003)

Geospatial\_Data\_Presentation\_Form: online

Series\_Information:

Series\_Name: USGS-NPS Vegetation Mapping Program

Issue\_Identification: Overview

Publication\_Information:

Publication\_Place: Denver, Colorado

Publisher: U.S. Geological Survey, Center for Biological Informatics

Other\_Citation\_Details: Overview of USGS - NPS Vegetation Mapping Program (taken from

<http://biology.usgs.gov/npsveg/about.html>, May 2003): The USGS-NPS Vegetation Mapping Program is a cooperative effort by the U.S. Geological Survey (USGS) and the National Park Service (NPS) to classify, describe, and map vegetation communities in more than 270 national park units across the United States.

This landmark program is both the first to provide national-scale descriptions of vegetation for a federal agency and the first to create national vegetation standards for its data products. Its goal is to meet specific information needs identified by the National Park Service. --- The vegetation mapping program is an important part of the NPS Inventory and Monitoring Program, a long-term effort to develop baseline data for all national park units that have a natural resource component. It is managed by the USGS Center for Biological Informatics, a unique information center designed to help scientists, land managers, the public, and others locate and apply biological information. --- Program activities are based on peer-reviewed, objective science. Comprehensive vegetation information is provided at national and regional levels, while also serving local management needs of individual parks. Stringent quality control procedures ensure that products are accurate and consistent for initial inventory purposes and replicable for monitoring purposes.

The spatially enabled digital products produced by the program are available on the World Wide Web. --- Program scientists have developed data collection procedures for classification, mapping, accuracy assessment, and use of existing data. Program products meet Federal Geographic Data Committee standards for vegetation classification and metadata, and national standards for spatial accuracy and data transfer.

Standards include a minimum mapping unit of 0.5 hectares and classification accuracy of 80% for each map class. Nature Serve, an important partner in the USGS-NPS Vegetation Mapping program, is the caretaker of the National Vegetation Classification System, which is used by the program to classify vegetation communities. --- A report of project methods and results is provided at completion of individual projects.

Project results include a rich set of data and information for each park project, as follows: --- Spatial Data:

Aerial photography, Map classification, Map classification description and key, Spatial database of vegetation communities, Hardcopy maps of vegetation communities, Metadata for spatial databases, Complete accuracy assessment of spatial data, Vegetation Information. --- Vegetation classification:

Dichotomous field key of vegetation classes, Formal description for each vegetation class, Ground photos of vegetation classes, Field data in database format.

Online\_Linkage: <http://biology.usgs.gov/npsveg/>

Cross\_Reference:

Citation\_Information:

Originator: U.S. Geological Survey, Upper Midwest Environmental Sciences Center, 2630 Fanta Reed Road, La Crosse, Wisconsin 54603

Publication\_Date: 200310

Title: Vegetation Spatial Database Coverage for ACAD

Edition: Final

Geospatial\_Data\_Presentation\_Form: map

Series\_Information:

Series\_Name: USGS-NPS Vegetation Mapping Program

Issue\_Identification: Acadia NP Vegetation Mapping Project

Publication\_Information:

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Publication\_Place: Denver, Colorado

Publisher: U.S. Geological Survey, Center for Biological Informatics

Other\_Citation\_Details: The Vegetation Spatial Database Coverage is of Acadia National Park and extended environs, providing 99,693 hectares (246,347 acres) of map data. Of this coverage, 52,872 hectares (130,650 acres) is non-vegetated ocean, bay, and estuary (53% of coverage). Acadia National Park comprises 19,276 hectares (47,633 acres) of the total data coverage area (19%, 40% not counting ocean and estuary data). Over 7,120 polygons make up the coverage, each with map class description and, for vegetation classes, physiognomic feature information. The spatial database provides crosswalk information to all National Vegetation Classification System (NVCS) floristic and physiognomic levels, and to other established classification systems (NatureServe's U.S. Terrestrial Ecological System Classification, Maine Natural Community Classification, and the U.S. Geological Survey Land Use and Land Cover Classification). This mapping project has identified 53 NVCS associations (vegetation communities) at Acadia National Park through analyses of vegetation sample data. These associations are represented in the map coverage with 33 map classes. With all vegetation types, land use classes, and park specific categories combined, 57 map classes define the ground features within the project area (58 classes including the class for no map data). Each polygon within the spatial database map is identified with one of these map classes. In addition, physiognomic modifiers are added to map classes representing vegetation to describe the vegetation structure within a polygon (density, pattern, and height). The spatial database was produced from the interpretation of spring 1997 1:15,840-scale color infrared aerial photographs. The standard minimum mapping unit (MMU) applied is 0.5 hectares (1.25 acres). The interpreted data were transferred and automated using base maps produced from USGS digital orthophoto quadrangles. The finished spatial database is a single seamless coverage, projected in Universal Transverse Mercator, Zone 19, with datum in North American Datum of 1983. The estimated overall thematic accuracy for vegetation map classes is 80%.

Online\_Linkage: <http://biology.usgs.gov/npsveg/acad/>

### Data\_Quality\_Information:

#### Attribute\_Accuracy:

Attribute\_Accuracy\_Report: The various attributes within the spatial database were reviewed and checked for consistency with their original sources (digital data, data sheets), using a combination of manual and digital means.

Logical\_Consistency\_Report: All point features are unique with their own site attribute and X-Y (Easting-Northing) coordinates. There are no duplicate points.

Completeness\_Report: All 179 vegetation plot samples are included in the spatial point coverage. X-Y coordinates are projected in Universal Transverse Mercator, Zone 19, with datum in North American Datum of 1983.

#### Positional\_Accuracy:

##### Horizontal\_Positional\_Accuracy:

Horizontal\_Positional\_Accuracy\_Report: X-Y coordinates of field data locations were collected using a Rockwell Precision Lightweight GPS Receiver (PLGR). Most points were successfully collected with positional accuracies ranging from +/- 6 to +/- 10 meters.

### Lineage:

#### Methodology:

Methodology\_Type: Field

Methodology\_Identifier:

Methodology\_Keyword\_Thesaurus: None

Methodology\_Keyword: Vegetation Sample

Methodology\_Keyword: Vegetation Plot

Methodology\_Keyword: Vegetation Analysis

Methodology\_Keyword: Vegetation Classification

Methodology\_Keyword: PLOTS Database System

Methodology\_Description: Field Methods for Vegetation Mapping: modified and adapted to unique circumstances presented with the Acadia NP Vegetation Mapping Project. See Process Steps for details.

#### Methodology\_Citation:

##### Citation\_Information:

Originator: The Nature Conservancy and the Environmental Systems Research Institute

Publication\_Date: 199412

Title: NBS/NPS Vegetation Mapping Program: Field Methods for Vegetation Mapping (1994b)

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Edition: Final Draft

Geospatial\_Data\_Presentation\_Form: document

Series\_Information:

Series\_Name: USGS-NPS Vegetation Mapping Program

Issue\_Identification: Program Documents and Standards

Publication\_Information:

Publication\_Place: Denver, Colorado

Publisher: U.S. Geological Survey, Center for Biological Informatics

Other\_Citation\_Details: The Nature Conservancy and the Environmental Systems Research Institute. 1994b. NBS/NPS Vegetation Mapping Program: Field Methods for Vegetation Mapping. Prepared for the U.S. Department of the Interior, National Biological Survey and National Park Service. -- Section 5 contains the procedures for vegetation field plot sampling, Methodology modified to match unique characteristics and challenges.

Online\_Linkage: <http://biology.usgs.gov/npsveg/fieldmethodsrrpt.pdf>

Source\_Information:

Source\_Citation:

Citation\_Information:

Originator: Aero-Metric, Inc.

Publication\_Date: 199705

Title: Aerial Photographs of Acadia National Park

Geospatial\_Data\_Presentation\_Form: aerial photos

Series\_Information:

Series\_Name: USGS-NPS Vegetation Mapping Program

Issue\_Identification: Acadia NP Vegetation Mapping Project

Publication\_Information:

Publication\_Place: Sheboygan, Wisconsin

Publisher: Aero-Metric, Inc.

Other\_Citation\_Details: Aerial photographs of Acadia National Park and environs were collected as baseline imagery data to produce the vegetation spatial database coverage for the Acadia National Park Vegetation Mapping Project, USGS-NPS Vegetation Mapping Program. --- Participants of the mapping project's initial scoping meeting (March 1997) agreed to acquire aerial photography of Acadia National Park and extended environs during spring 1997 so that fieldwork and mapping could get underway during the following summer and fall seasons. Aero-Metric, Inc. of Sheboygan, Wisconsin executed the aerial photography mission via contract with the U.S. Army Corp of Engineers (Project Number 1970520), a joint initiative with the U.S. Geological Survey Upper Midwest Environmental Sciences Center (UMESC) of La Crosse, Wisconsin. --- All park fee and easement lands and extended environs were successfully photographed May 27 and 28, 1997 using color infrared dia-positive transparent film (9 x 9 inch size). The photos were collected with an above ground level of 7,920 feet with a lens focal length of 6 inches, resulting in a photo scale of 1:15,840 (negative scale of 1 inch = 1,320 feet, or 4 inches = 1 mile). A 30% side lap (between each flight line) and 60% forward lap (along each flight line) collection standard insured full coverage and stereo viewing. 1179 photos were collected across 28 initial flight lines covering the entire project area. An additional 37 photos across 4 flight lines were re-flown over the mountainous areas of Mount Desert Island to adjust the photo scale of the high mountain terrain. In all, 1216 photos were collected. Two sets of contact prints were made from the original photo transparency film (one set for the field sampling process, and one set for the mapping process).

Source\_Scale\_Denominator: 15840

Type\_of\_Source\_Media: photographic print

Source\_Time\_Period\_of\_Content:

Time\_Period\_Information:

Multiple\_Dates/Times:

Single\_Date/Time:

Calendar\_Date: 19970527

Single\_Date/Time:

Calendar\_Date: 19970528

Source\_Currentness\_Reference: ground condition

Source\_Citation\_Abbreviation: ACAD Spring 1997 CIR Aerial Photographs

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Source\_Contribution: Aerial images used for field navigation during AA field data collection.

Source\_Information:

Source\_Citation:

Citation\_Information:

Originator: U.S. Geological Survey, Upper Midwest Environmental Sciences Center, 2630 Fanta Reed Road, La Crosse, Wisconsin 54603

Publication\_Date: 200310

Title: Vegetation Spatial Database Coverage for the Acadia National Park Vegetation Mapping Project

Edition: Final

Geospatial\_Data\_Presentation\_Form: map

Series\_Information:

Series\_Name: USGS-NPS Vegetation Mapping Program

Issue\_Identification: Acadia NP Vegetation Mapping Project

Publication\_Information:

Publication\_Place: Denver, Colorado

Publisher: U.S. Geological Survey, Center for Biological Informatics

Other\_Citation\_Details: The spatial database was prepared by the USGS Upper Midwest Environmental Sciences Center for the USGS-NPS Vegetation Mapping Program. The Nature Conservancy, NatureServe, and Maine Natural Areas Program provided ecological and vegetation classification support.

Online\_Linkage: <http://biology.usgs.gov/npsveg/acad/>

Type\_of\_Source\_Media: Digital database file

Source\_Time\_Period\_of\_Content:

Time\_Period\_Information:

Single\_Date/Time:

Calendar\_Date: 200310

Source\_Currentness\_Reference: publication date

Source\_Citation\_Abbreviation: ACAD FINAL Vegetation Map (UMESC 2003)

Source\_Contribution: Recipient of final vegetation classification output.

Source\_Information:

Source\_Citation:

Citation\_Information:

Originator: NatureServe

Publication\_Date: 2003

Title: International Vegetation Classification (2003)

Geospatial\_Data\_Presentation\_Form: Database

Publication\_Information:

Publication\_Place: Arlington, Virginia

Publisher: NatureServe

Other\_Citation\_Details: NatureServe. 2003. International Ecological Classification Standard: International Vegetation Classification. Central Databases, NatureServe, Arlington, Virginia, USA

Online\_Linkage: <http://www.natureserve.org/>

Type\_of\_Source\_Media: online

Source\_Time\_Period\_of\_Content:

Time\_Period\_Information:

Single\_Date/Time:

Calendar\_Date: 2003

Source\_Currentness\_Reference: publication date

Source\_Citation\_Abbreviation: NVCS Floristic Classes (NatureServe 2003)

Source\_Contribution: Vegetation associations used for final classification; 2003 version.

Source\_Information:

Source\_Citation:

Citation\_Information:

Originator: Anderson, M., P. Bourgeron, M. T. Bryer, R. Crawford, L. Engelking, D. Faber-Langendoen, M. Gallyoun, K. Goodin, D. H. Grossman, S. Landaal, K. Metzler, K. D. Patterson, M. Pyne, M. Reid, L.

Sneddon, and A. S. Weakley

Publication\_Date: 1998

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Title: International classification of ecological communities: terrestrial vegetation of the United States.  
Volume II. The National Vegetation Classification System: list of types  
Geospatial\_Data\_Presentation\_Form: document  
Publication\_Information:  
Publication\_Place: Arlington, Virginia, USA  
Publisher: The Nature Conservancy  
Other\_Citation\_Details: U.S. National Vegetation Classification listing of physiognomic and floristic classes.  
Type\_of\_Source\_Media: online  
Source\_Time\_Period\_of\_Content:  
Time\_Period\_Information:  
Single\_Date/Time:  
Calendar\_Date: 1998  
Source\_Currentness\_Reference: publication date  
Source\_Citation\_Abbreviation: U.S. National Vegetation Classification (TNC 1998)  
Source\_Contribution: Vegetation associations used for earlier stages of classification development.  
Source\_Information:  
Source\_Citation:  
Citation\_Information:  
Originator: The Nature Conservancy  
Publication\_Date: 1997  
Title: PLOTS Database System (1997)  
Edition: Version 1.1  
Geospatial\_Data\_Presentation\_Form: database  
Publication\_Information:  
Publication\_Place: Arlington, Virginia  
Publisher: The Nature Conservancy  
Other\_Citation\_Details: Plant species taxonomy extracted from the December 1996 version of The PLANTS Database (USDA).  
Type\_of\_Source\_Media: computer program  
Source\_Time\_Period\_of\_Content:  
Time\_Period\_Information:  
Single\_Date/Time:  
Calendar\_Date: 1997  
Source\_Currentness\_Reference: publication date  
Source\_Citation\_Abbreviation: PLOTS (1997)  
Source\_Contribution: Computer software program used for vegetation data entry and subsequent export for vegetation analysis.  
Source\_Information:  
Source\_Citation:  
Citation\_Information:  
Originator: U.S. Geological Survey, Upper Midwest Environmental Sciences Center, 2630 Fanta Reed Road, La Crosse, Wisconsin 54603  
Publication\_Date: 200310  
Title: Vegetation Field Plot Spatial Database for the Acadia National Park Vegetation Mapping Program  
Edition: Final  
Geospatial\_Data\_Presentation\_Form: map  
Series\_Information:  
Series\_Name: USGS-NPS Vegetation Mapping Program  
Issue\_Identification: Acadia NP Vegetation Mapping Project  
Publication\_Information:  
Publication\_Place: Denver, Colorado  
Publisher: U.S. Geological Survey, Center for Biological Informatics  
Other\_Citation\_Details: The spatial database and both dBASE IV exports of the PLOTS database were prepared by the U.S. Geological Survey Upper Midwest Environmental Sciences Center for the USGS-NPS Vegetation Mapping Program. The Nature Conservancy, NatureServe, and Maine Natural Areas Program provided ecological and vegetation classification content.

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**Acadia National Park**

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Online\_Linkage: <http://biology.usgs.gov/npsveg/acad/>  
Type\_of\_Source\_Media: Digital database file  
Source\_Time\_Period\_of\_Content:  
Time\_Period\_Information:  
Single\_Date/Time:  
Calendar\_Date: 200310  
Source\_Currentness\_Reference: publication date  
Source\_Citation\_Abbreviation: ACAD Vegetation Field Plot Spatial Database  
Source\_Contribution: Geo-spatial product showing locations of vegetation field sampling locations.  
Source\_Information:  
Source\_Citation:  
Citation\_Information:  
Originator: Kuchler, A.W. 1956. Notes on the vegetation of southeastern Mount Desert Island, Maine. The University of Kansas Science Bulletin 37:335-345.  
Publication\_Date: 1956  
Title: Vegetation of Acadia National Park (Kuchler 1956)  
Geospatial\_Data\_Presentation\_Form: report  
Publication\_Information:  
Publication\_Place: Lawrence, Kansas  
Publisher: The University of Kansas Science Bulletin  
Other\_Citation\_Details: Kuchler, A.W. 1956. Notes on the vegetation of southeastern Mount Desert Island, Maine. The University of Kansas Science Bulletin 37:335-345.  
Type\_of\_Source\_Media: paper  
Source\_Time\_Period\_of\_Content:  
Time\_Period\_Information:  
Single\_Date/Time:  
Calendar\_Date: 1956  
Source\_Currentness\_Reference: publication date  
Source\_Citation\_Abbreviation: ACAD Vegetation (Kuchler 1956)  
Source\_Contribution: Historic vegetation report and map used to generate initial list of vegetation types.  
Source\_Information:  
Source\_Citation:  
Citation\_Information:  
Originator: Acadia National Park, PO Box 177, Bar Harbor, Maine 04609  
Publication\_Date: 1947  
Title: Acadia NP Gradsect Data Sets  
Geospatial\_Data\_Presentation\_Form: map  
Other\_Citation\_Details: Five geo-spatial data layers (1947 fire, soil type, elevation, slope, and geology) used for gradient directed transect sampling (gradsect) analysis for vegetation sampling design. Various geo-spatial layers were provided by Acadia National Park.  
Type\_of\_Source\_Media: database file  
Source\_Time\_Period\_of\_Content:  
Time\_Period\_Information:  
Single\_Date/Time:  
Calendar\_Date: 1947  
Source\_Currentness\_Reference: publication date  
Source\_Citation\_Abbreviation: ACAD Gradsect Data  
Source\_Contribution: A selection of geo-spatial environmental data sets used to build the gradsect analysis BPU map.  
Source\_Information:  
Source\_Citation:  
Citation\_Information:  
Originator: The Nature Conservancy and the Environmental Systems Research Institute  
Publication\_Date: 199412  
Title: NBS/NPS Vegetation Mapping Program: Field Methods for Vegetation Mapping (1994b)  
Edition: Final Draft

**USGS-NPS Vegetation Mapping Program**  
**Acadia National Park**

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Geospatial\_Data\_Presentation\_Form: document

Series\_Information:

Series\_Name: USGS-NPS Vegetation Mapping Program

Issue\_Identification: Program Documents and Standards

Publication\_Information:

Publication\_Place: Denver, Colorado

Publisher: U.S. Geological Survey, Center for Biological Informatics

Other\_Citation\_Details: The Nature Conservancy and the Environmental Systems Research Institute. 1994b.

NBS/NPS Vegetation Mapping Program: Field Methods for Vegetation Mapping. Prepared for the U.S.

Department of the Interior, National Biological Survey and National Park Service. -- Section 5 contains the procedures for vegetation field plot sampling, Methodology modified to match unique characteristics and challenges.

Online\_Linkage: <http://biology.usgs.gov/npsveg/fieldmethodsrt.pdf>

Type\_of\_Source\_Media: online

Source\_Time\_Period\_of\_Content:

Time\_Period\_Information:

Single\_Date/Time:

Calendar\_Date: 199412

Source\_Currentness\_Reference: publication date

Source\_Citation\_Abbreviation: Field Methods for Vegetation Mapping (1994b)

Source\_Contribution: Standard documentation with procedures for vegetation field plot sampling.

Source\_Information:

Source\_Citation:

Citation\_Information:

Originator: McCune, B., and M. J. Mefford

Publication\_Date: 1997

Title: PC-ORD. Multivariate Analysis of Ecological Data

Edition: Version 3.0

Geospatial\_Data\_Presentation\_Form: software

Publication\_Information:

Publication\_Place: Gleneden Beach, Oregon

Publisher: MJM Software Design

Other\_Citation\_Details: McCune, B., and M. J. Mefford. 1997. PC-ORD. Multivariate Analysis of Ecological Data, Version 3.0. MjM Software Design, Gleneden Beach, Oregon. -- Used for the analysis of ecological data.

Type\_of\_Source\_Media: computer program

Source\_Time\_Period\_of\_Content:

Time\_Period\_Information:

Single\_Date/Time:

Calendar\_Date: 1997

Source\_Currentness\_Reference: publication date

Source\_Citation\_Abbreviation: PC-ORD

Source\_Contribution: Computer software program used for the analysis of vegetation sample data.

Process\_Step:

Process\_Description: INTRODUCTION: --- A number of steps were involved to classify the vegetation at Acadia National Park (NP): 1) a draft classification list as a starting point for classification work, 2) a gradsect approach to examine environmental gradients to help select areas for field efforts, 3) collection of field data and subsequent analysis for vegetation community identification, and 4) development of vegetation community descriptions based on the National Vegetation Classification System (NVCS). A spatial database was produced with the locations of all vegetation samples collected for this Project.

Process\_Date: 1997-2003

Process\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Kevin Hop

Contact\_Organization: U.S. Geological Survey, Upper Midwest Environmental Sciences Center

**USGS-NPS Vegetation Mapping Program**  
**Acadia National Park**

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Country: USA

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Process\_Step:

Process\_Description: DRAFT CLASSIFICATION: --- A draft list of 56 community types was developed by ecologists from The Nature Conservancy, Maine Natural Areas Program (MNAP), and Acadia NP based on 1) existing community records for Mount Desert Island (MDI) available at MNAP, 2) an analysis of the 1956 Kuchler vegetation map and descriptions, and 3) additional information and personal knowledge.

Environmental, topographic, and geologic information was used to develop a list of 23 landforms, which were then cross-referenced to each draft community type. Stratified by 2 additional factors, coastal-inland, and 1947 fire vs. no fire, this list of landforms provided a conceptual model for the gradient directed transect sampling (gradsect, TNC et al. 1994b) analysis.

Source\_Used\_Citation\_Abbreviation: ACAD Vegetation (Kuchler 1956)

Process\_Date: 1997

Process\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Jim Drake

Contact\_Organization: NatureServe Resources Office

Contact\_Position: Project Manager

Contact\_Address:

Address\_Type: mailing and physical address

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Contact\_Facsimile\_Telephone: (612) 331-0070

Contact\_Electronic\_Mail\_Address: jim\_drake@natureserve.org

Process\_Step:

Process\_Description: GRADSECT ANALYSIS: --- The gradsect (gradient directed transect sampling) analysis took place at the UMESC on June 9-11, 1997. Gradsect analysis, a GIS technique, uses geo-spatial data layers for a particular area, in this case MDI, to determine areas of greater and lesser biophysical diversity. Areas of higher physical diversity should be areas of higher vegetation diversity, and that focusing limited field time for sampling on these areas increases efficiency when one is trying to sample as many vegetation types as possible. --- 20 available data layers were reviewed for the gradsect. 5 of these were selected to use as variables for the analysis. Each variable was divided into a number of classes. Because of computational and display limitations, the number of classes was minimized for each variable without losing too much information. The 5 data layers used are: 1947 fire, soil type, elevation, slope, and geology. Each cell of the GIS-generated grid (cell size = 70 meters) was assessed for each variable, resulting in 224 unique combinations, here called biophysical units (BPU). Focal diversity (F) of each cell was calculated as the number of BPUs within a radius of 5 cells around

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it; values ranged up to 23. Areas of high physical diversity are thus areas with high F values. --- A gradsect map of areas with F = 15 was plotted and used to identify approximately 20 areas of the Park on MDI as areas of high F. The BPU information was then used with accompanying maps to determine which BPUs were not included within the selected areas, identifying conditions that should be sampled to assure representative coverage. These included saltmarsh, exposed bedrock on medium to high hills, and near-coastal areas.

Source\_Used\_Citation\_Abbreviation: ACAD Gradsect Data

Process\_Date: 1997

Process\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Jim Drake

Contact\_Organization: NatureServe Resources Office

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Process\_Step:

Process\_Description: FIELD METHODS: --- Field reconnaissance was conducted during summer 1997 to refine the working vegetation classification, check the gradsect-identified areas, determine where to sample, and review the sampling protocol with the field ecologists. 179 areas were sampled: 63 in 1997, 107 in 1998, and 9 in 1999 (during the accuracy assessment field season). --- Methods derived from the USGS-NPS Vegetation Mapping Program's (VMP) Field Methods for Vegetation Mapping manual (TNC et al. 1994b) were used. For Acadia NP, the plot sampling design was modified to make sampling congruent with other natural community sampling efforts in Maine while still compatible with VMP standards. The major difference is that rather than 1 large plot for a sample, 4 smaller subplots were used, with nested subplots within those for the different vegetation layers. --- The initial step for a sample was locating the center of the sampling area. This is the point at which the GPS reading was taken and from which the subplots radiate. X-Y coordinates of each plot were collected with projection in Universal Transverse Mercator (UTM), Zone 19, with datum in North American Datum of 1983 (NAD83) using a Rockwell Precision Lightweight GPS Receiver (PLGR) unit. --- Data collection within the plots was similar to that specified in the VMP field methods manual. The layers used were: 1) Tree (woody stems = 10 centimeters dbh), 2) Sapling / tall shrub (woody stems < 10 centimeters dbh and > 3 meters tall), 3) Shrub (all woody plants 1 - 3 meters tall), 4) Herb (all vascular plants < 1 meter tall (segregating woody plants from herbs), and 5) Bryoid (bryophytes and lichens on the ground). --- For the tree layer, all diameters (dbh) were recorded by species, allowing calculation of basal area values. Relative dominance (RD) was calculated for each species as the percentage of the total basal area made up of that species. Percent cover of each species was derived as the relative dominance of a species times the total cover of the canopy. --- For communities not dominated by trees, the layout was the same, with the largest subplot corresponding to the tallest layer. Additional specifications were that, where possible, the outer edges of the subplots be at least 30 meters from the edge of the community polygon. For communities where the shape does not allow placing the 4 subplots in the cardinal directions, they may be placed in a line with each other. --- Within each layer below the tree layer, cover class midpoint was recorded in each subplot for each species. Using a 7-point cover scale that is similar to (but not exactly the same as) the Braun-Blanquet scale, but omitting sociability, the cover classes and midpoints used were: (< 2%, 1), (2 - 5%, 3), (6 - 12%, 9), (13 - 24%, 19), (25 - 49%, 37), (50 - 74%, 63), (75 - 100%, 87). Cover midpoints for subplots were then averaged for the plot as a whole. For tree, sapling, and shrub layers, 4 values were averaged, and for herb and bryoid layers, 16 values; zeros are included for subplots where the species was absent. The species' average could be used as a cover value on other scales, e.g., it could be entered as the nearest class midpoint on the VMP field methods manual's twelve-point scale. ---

Environmental data were collected in the vicinity of the overall plot center (the GPS point), following the methods given in the VMP field methods manual. Data were entered into a modified version of The Nature

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Conservancy's PLOTS Database System (TNC 1997) at the Maine Natural Areas Program, which (after checking the data for accuracy) was used to produce plot vegetation summaries and associated environmental information. Along with the 179 samples collected specifically for this project were 38 additional samples collected in 1995 as part of the Maine Ecological Reserves inventory for 216 complete plots.

Source\_Used\_Citation\_Abbreviation: PLOTS (1997)

Process\_Date: 1997-1999

Process\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Jim Drake

Contact\_Organization: NatureServe Resources Office

Contact\_Position: Project Manager

Contact\_Address:

Address\_Type: mailing and physical address

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Contact\_Electronic\_Mail\_Address: jim\_drake@natureserve.org

Process\_Step:

Process\_Description: VEGETATION DATA ANALYSIS: --- Percent cover data for each plot was exported from the database as matrices (species by samples) for multivariate analysis in PC-ORD 4.0 (McCune and Mefford 1999). To analyze vegetation patterns and delineate types, Detrended Correspondence Analysis (DCA), Two-Way Indicator Species Analysis (TWINSPAN), and Indicator Species Analysis (ISA) within PC-ORD was used. References for all techniques can be found in the PC-ORD documentation (McCune and Mefford 1999). --- Different matrices were used for different subsets of the data, such as all upland forests and woodlands, all non-forested non-tidal wetlands, all tidal wetlands, etc. Progressive analyses, looking at a larger matrix for general patterns and then deriving submatrices for more detailed analyses, allowed the identification of larger and smaller groups of community types. For each samples-by-species matrix, a secondary matrix (samples by associated variables) contained additional information for interpreting the ordinations. --- The vegetation types derived might not necessarily perfectly matched those that TWINSPAN would have produce from the data at hand. Instead, ordination and classification results were used to identify important gradients or factors in the data, which were then used to develop diagnostics for different vegetation types. --- While vegetation types were being developed and refined from the sample data, reference to the NVCS (Anderson et al. 1998) had to be maintained. Required consultations with TNC regional ecologists were necessary to 1) determine if an existing NVCS type fit the type determined at the Park, 2) if no existing NVCS type matched, whether it made sense to refine an existing type or to create a new type, and 3) if a new type was indicated, to name and describe that type. As a result, 53 NVCS natural/semi-natural associations (vegetation communities) were identified and described at Acadia NP with this analysis. These vegetation communities have been refined to reflect current version of vegetation associations (NatureServe 2003). The vegetation communities are represented in the Project's vegetation spatial database coverage (vegetation map).

Source\_Used\_Citation\_Abbreviation: NVCS Floristic Classes (NatureServe 2003)

Source\_Used\_Citation\_Abbreviation: U.S. National Vegetation Classification (TNC 1998)

Source\_Used\_Citation\_Abbreviation: PLOTS (1997)

Source\_Used\_Citation\_Abbreviation: PC-ORD

Process\_Date: 2000

Process\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Jim Drake

Contact\_Organization: NatureServe Resources Office

Contact\_Position: Project Manager

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**USGS-NPS Vegetation Mapping Program**  
**Acadia National Park**

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Contact\_Electronic\_Mail\_Address: jim\_drake@naturereserve.org

Process\_Step:

Process\_Description: SPATIAL DATABASE & DBASE IV EXPORTS: --- The Vegetation Field Plot Spatial Database coverage shows the locations of all 179 vegetation plot samples. Vegetation plot samples with their corresponding X-Y coordinates and selected physical description information were exported from the Project's PLOTS database. The exported file was tailored for importing into ArcView GIS (Version 3.3) as an Event Theme using the UTM (Zone 19) NAD83 X-Y coordinates, and then converted to a Shapefile coverage. The Shapefile coverage was converted to an ArcInfo coverage using the Shapearc command in ArcInfo (Version 8.0.2). ArcInfo was used to produce the final ArcInfo Export (.e00) file. --- The Physical Descriptions dBASE IV spreadsheet contains all items of physical descriptions for each vegetation plot sample that is in the Project's PLOTS database. The physical descriptions were exported from the database's Plots Table. The Species List dBASE IV spreadsheet contains all items of species listing for each vegetation plot sample that is in the Project's PLOTS database. The species list was exported from the database's Plots-Species Table.

Source\_Used\_Citation\_Abbreviation: PLOTS (1997)

Process\_Date: 2003

Source\_Produced\_Citation\_Abbreviation: ACAD Vegetation Field Plot Spatial Database

Process\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Kevin Hop

Contact\_Organization: U.S. Geological Survey, Upper Midwest Environmental Sciences Center

Contact\_Position: Principal Investigator

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Contact\_Electronic\_Mail\_Address: kevin\_hop@usgs.gov

Spatial\_Data\_Organization\_Information:

Indirect\_Spatial\_Reference: Acadia National Park, the first national park to be established east of the Mississippi, is located on the coast of Maine primarily in Hancock County (with outlying areas in adjacent Knox County) and is situated on a large portion of Mount Desert Island as well as some adjacent mainland and island tracts, including the Schoodic Peninsula and Isle au Haut. The Park encompasses almost 48,000 acres of granite-domed mountains, woodlands, lakes and ponds, and ocean shoreline with nearby towns and villages including Bar Harbor, Northwest Harbor, Southwest Harbor, Seal Harbor, Bass Harbor, and Isle au Haut.

Direct\_Spatial\_Reference\_Method: Point

Point\_and\_Vector\_Object\_Information:

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SDTS\_Terms\_Description:  
SDTS\_Point\_and\_Vector\_Object\_Type: Point

Spatial\_Reference\_Information:

Horizontal\_Coordinate\_System\_Definition:

Planar:

Grid\_Coordinate\_System:

Grid\_Coordinate\_System\_Name: Universal Transverse Mercator

Universal\_Transverse\_Mercator:

UTM\_Zone\_Number: 19

Transverse\_Mercator:

Scale\_Factor\_at\_Central\_Meridian: 0.9996

Longitude\_of\_Central\_Meridian: -69

Latitude\_of\_Projection\_Origin: 0

False\_Easting: 500000

False\_Northing: 0

Planar\_Coordinate\_Information:

Planar\_Coordinate\_Encoding\_Method: coordinate pair

Coordinate\_Representation:

Abscissa\_Resolution: 1

Ordinate\_Resolution: 1

Planar\_Distance\_Units: meters

Geodetic\_Model:

Horizontal\_Datum\_Name: North American Datum of 1983

Ellipsoid\_Name: Geodetic Reference System 80

Semi-major\_Axis: 6378137

Denominator\_of\_Flattening\_Ratio: 298.257

Entity\_and\_Attribute\_Information:

Overview\_Description:

Entity\_and\_Attribute\_Overview: Items within the spatial database attribute table in addition to the ArcInfo default items include: 1) ACAD\_PLOT - vegetation plot number, 2) PLOT\_CLASS - classified community name (NVCS association), 3) PLOT\_PROV - provisional community name, 4) PLOT\_C EGL - Community Element Global code (Elcode link to NVCS association), 5) PLOT\_DATE - Date field data was collected (mm/dd/yy), 6) X\_EASTING - Easting coordinate projected in UTM, Zone 19, with datum in NAD83, 7) Y\_NORTHING - Northing coordinate projected in UTM, Zone 19, with datum in NAD83, 8) AIR\_PHOTO - aerial photograph that ground sample is located, QUAD\_24K - USGS 7.5-minute quadrangle (1:24,000-scale) names that ground sample is located, and 9) LOCATION - general description in relation to common ground features.

Entity\_and\_Attribute\_Detail\_Citation: Standard floristic Association names and Community Global Element codes (PLOT\_CLASS, PROV\_CLASS, & C EGL\_CODE): NatureServe International Vegetation Classification: NatureServe. 2003. International Ecological Classification Standard: International Vegetation Classification. Central Databases, NatureServe, Arlington, Virginia, USA.

Entity\_and\_Attribute\_Detail\_Citation: Aerial photographs (AIR\_PHOTO): Color infrared aerial photographs collected for the Acadia NP Vegetation Mapping Project, covering the entire Park and extended environs. 9 x 9 inch dia-positive transparency photographs plus contact prints at a scale of 1:15,840 (paper contact prints of the photos were during for the fieldwork).

Entity\_and\_Attribute\_Detail\_Citation: USGS 7.5-minute quadrangle names (QUAD\_24K): USGS 7.5-minute and 3.75-minute Quadrangle Boundary Coverage of Acadia National Park and Environs. 2003. U.S. Geological Survey Upper Midwest Environmental Sciences Center, La Crosse, Wisconsin. Note: coverage modified from original source to produce coverage specifically for the Acadia NP Vegetation Mapping Project.

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006324

Entity\_Type\_Definition: Pinus strobus - Tsuga canadensis - Picea rubens Forest (Eastern Hemlock - White Pine - Red Spruce)

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**Acadia National Park**

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Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006253

Entity\_Type\_Definition: Pinus strobus - Pinus resinosa / Cornus canadensis Forest (Red Pine - White Pine Forest)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006151

Entity\_Type\_Definition: Picea rubens - Picea glauca Forest (Maritime Spruce - Fir Forest)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006252

Entity\_Type\_Definition: Acer saccharum - Betula alleghaniensis - Fagus grandifolia / Viburnum lantanoides Forest (Northern Hardwood Forest)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006506

Entity\_Type\_Definition: Quercus rubra - Acer rubrum - Betula spp. - Pinus strobus Forest (Successional Oak - Pine Forest)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006220

Entity\_Type\_Definition: Acer rubrum - Fraxinus spp. / Nemopanthus mucronatus - Vaccinium corymbosum Forest (Northern Hardwood Seepage Swamp)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006267

Entity\_Type\_Definition: Picea rubens - Betula alleghaniensis / Dryopteris campyloptera Forest (Red Spruce - Hardwoods Forest)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006505

Entity\_Type\_Definition: Picea rubens - Abies balsamea - Betula spp. - Acer rubrum Forest (Successional Spruce - Fir Forest)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006293

Entity\_Type\_Definition: Pinus strobus - Quercus (rubra, velutina) - Fagus grandifolia Forest (White Pine - Oak Forest)

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**Acadia National Park**

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Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006129

Entity\_Type\_Definition: *Tsuga canadensis* - (*Betula alleghaniensis*) - *Picea rubens* / *Cornus canadensis* Forest  
(Hemlock - Hardwood Forest)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL005005

Entity\_Type\_Definition: *Acer saccharum* - *Pinus strobus* / *Acer pensylvanicum* Forest (Sugar Maple - White  
Pine Forest)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006198

Entity\_Type\_Definition: *Picea rubens* - *Acer rubrum* / *Nemopanthus mucronatus* Forest (Red Maple - Conifer  
Acidic Swamp)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006041

Entity\_Type\_Definition: *Pinus banksiana* / *Kalmia angustifolia* - *Vaccinium* spp. Woodland (Jack Pine Heath  
Barren)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL005046

Entity\_Type\_Definition: *Pinus rigida* / *Vaccinium* spp. - *Gaylussacia baccata* Woodland (Pitch Pine / Blueberry  
spp. - Huckleberry Woodland)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006116

Entity\_Type\_Definition: *Pinus rigida* / *Photinia melanocarpa* / *Deschampsia flexuosa* - *Schizachyrium*  
*scoparium* Woodland (Pitch Pine Rocky Summit)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006154

Entity\_Type\_Definition: *Pinus rigida* / *Corema conradii* Woodland (Coastal Pitch Pine Outcrop Woodland)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006411

Entity\_Type\_Definition: *Thuja occidentalis* / *Gaylussacia baccata* - *Vaccinium angustifolium* Woodland (White-  
cedar Woodland)

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**Acadia National Park**

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Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006508

Entity\_Type\_Definition: Thuja occidentalis - Fraxinus pennsylvanica / Acer pensylvanicum Woodland (Cedar Seepage Slope)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006053

Entity\_Type\_Definition: Picea rubens / Vaccinium angustifolium - Sibbaldiopsis tridentata Woodland (Spruce - Fir Rocky Summit)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006250

Entity\_Type\_Definition: Picea rubens / Ribes glandulosum Woodland (Red Spruce Talus Slope Woodland)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006292

Entity\_Type\_Definition: Picea mariana / Kalmia angustifolia Woodland (Black Spruce / Heath Rocky Woodland)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006507

Entity\_Type\_Definition: Thuja occidentalis - Abies balsamea / Ledum groenlandicum / Carex trisperma Woodland (Northern White-cedar Wooded Fen)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006098

Entity\_Type\_Definition: Picea mariana / (Vaccinium corymbosum, Gaylussacia baccata) / Sphagnum sp. Woodland (Black Spruce Woodland Bog)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006303

Entity\_Type\_Definition: Populus (tremuloides, grandidentata) - Betula (populifolia, papyrifera) Woodland (Early Successional Woodland/Forest)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006134

Entity\_Type\_Definition: Quercus rubra - (Quercus prinus) / Vaccinium spp. / Deschampsia flexuosa Woodland (Central Appalachian High-Elevation Red Oak Woodland, Northern Variant)

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**Acadia National Park**

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Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006320

Entity\_Type\_Definition: *Betula alleghaniensis* - *Quercus rubra* / *Polypodium virginianum* Woodland (Red Oak  
Talus Slope Woodland)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006395

Entity\_Type\_Definition: *Acer rubrum* / *Alnus incana* - *Ilex verticillata* / *Osmunda regalis* Woodland (Red Maple  
Swamp Woodland)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006062

Entity\_Type\_Definition: *Alnus incana* - *Cornus sericea* / *Clematis virginiana* Shrubland (Alluvial Alder Thicket)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006158

Entity\_Type\_Definition: *Alnus incana* ssp. *rugosa* - *Nemopanthus mucronatus* / *Sphagnum* spp. Shrubland  
(Northern Peatland Shrub Swamp)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006512

Entity\_Type\_Definition: *Myrica gale* - *Spiraea alba* - *Chamaedaphne calyculata* Shrubland (Sweetgale Mixed  
Shrub Swamp)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006510

Entity\_Type\_Definition: *Morella pensylvanica* - *Empetrum nigrum* Dwarf-shrubland (Crowberry - Bayberry  
Maritime Shrubland)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006225

Entity\_Type\_Definition: *Kalmia angustifolia* - *Chamaedaphne calyculata* - (*Picea mariana*) / *Cladina* spp.  
Dwarf-shrubland (Northern Dwarf-shrub Bog)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006513

Entity\_Type\_Definition: *Chamaedaphne calyculata* / *Eriophorum virginicum* / *Sphagnum rubellum* Dwarf-  
shrubland (Leatherleaf Acidic Fen)

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Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006248

Entity\_Type\_Definition: Empetrum nigrum - Gaylussacia dumosa - Rubus chamaemorus / Sphagnum spp.  
Dwarf-shrubland (Maritime Crowberry Bog)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL005094

Entity\_Type\_Definition: Vaccinium angustifolium - Sorbus americana / Sibbaldiopsis tridentata Dwarf-  
shrubland (Blueberry Granite Barrens)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006274

Entity\_Type\_Definition: Ammophila breviligulata - Lathyrus japonicus Herbaceous Vegetation (Northern  
Beachgrass Dune)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL005101

Entity\_Type\_Definition: (Pinus strobus, Quercus rubra) / Danthonia spicata Acid Bedrock Wooded Herbaceous  
Vegetation (White Pine - Oak Acid Bedrock Glade)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006260

Entity\_Type\_Definition: Trichophorum caespitosum - Gaylussacia dumosa / Sphagnum (fuscum, rubellum,  
magellanicum) Herbaceous Vegetation (Maritime Peatland Sedge Lawn)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006412

Entity\_Type\_Definition: Carex stricta - Carex vesicaria Seasonally Flooded Herbaceous Vegetation (Eastern  
Tussock Sedge Meadow)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006519

Entity\_Type\_Definition: Calamagrostis canadensis - Scirpus spp. - Dulichium arundinaceum Herbaceous  
Vegetation (Seasonally Flooded Mixed Graminoid Meadow)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006346

Entity\_Type\_Definition: Eriocaulon aquaticum - Lobelia dortmanna Herbaceous Vegetation (Seven-angle  
Pipewort - Dortmann's Cardinal-flower Herbaceous Vegetation)

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Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: CEG006345

Entity\_Type\_Definition: *Juncus militaris* Herbaceous Vegetation (Bayonet Rush Herbaceous Vegetation)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: CEG006153

Entity\_Type\_Definition: *Typha* (*angustifolia*, *latifolia*) - (*Schoenoplectus* spp.) Eastern Herbaceous Vegetation  
(Eastern Cattail Marsh)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: CEG006275

Entity\_Type\_Definition: *Schoenoplectus* (*tabernaemontani*, *acutus*) Eastern Herbaceous Vegetation (Bulrush  
Deepwater Marsh)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: CEG006521

Entity\_Type\_Definition: *Carex* (*lasiocarpa*, *utriculata*, *canescens*) Herbaceous Vegetation (Slender Sedge Fen)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: CEG004201

Entity\_Type\_Definition: *Typha angustifolia* - *Hibiscus moscheutos* Herbaceous Vegetation (Brackish Tidal  
Marsh, Cattail Variant)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: CEG006006

Entity\_Type\_Definition: *Spartina patens* - *Distichlis spicata* - (*Juncus gerardii*) Herbaceous Vegetation (Spartina  
High Salt Marsh)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: CEG006524

Entity\_Type\_Definition: *Carex* (*oligosperma*, *exilis*) - *Chamaedaphne calyculata* Shrub Herbaceous Vegetation  
(Few-seeded Sedge - Leatherleaf Fen)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: CEG006196

Entity\_Type\_Definition: *Vallisneria americana* - *Potamogeton perfoliatus* Herbaceous Vegetation (Open Water  
Marsh with Mixed Submergents/Emergents)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International  
Vegetation Classification (2003)

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Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL002386

Entity\_Type\_Definition: Nuphar lutea ssp. advena - Nymphaea odorata Herbaceous Vegetation (Water Lily Aquatic Wetland)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006534

Entity\_Type\_Definition: Polypodium (virginianum, appalachianum) / Lichen spp. Nonvascular Vegetation (Northern Lichen Talus Barrens)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006529

Entity\_Type\_Definition: Solidago sempervirens - (Rhodiola rosea) - Juniperus horizontalis Sparse Vegetation (Northern Maritime Rocky Headlands)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International Vegetation Classification (2003)

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: C EGL006106

Entity\_Type\_Definition: Cakile edentula ssp. edentula - Mertensia maritima Sparse Vegetation (Sea-rocket - Oysterleaf Sparse Vegetation)

Entity\_Type\_Definition\_Source: NVCS association (vegetation community); NatureServe International Vegetation Classification (2003)

Distribution\_Information:

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Resource\_Description: Spatial database point coverage showing locations of vegetation samples that were used for vegetation classification development for the Acadia National Park Vegetation Mapping Project.

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Digital\_Form:

Digital\_Transfer\_Information:

Format\_Name: HTML

Digital\_Transfer\_Option:

Online\_Option:

Computer\_Contact\_Information:

Network\_Address:

Network\_Resource\_Name: <http://biology.usgs.gov/npsveg/acad/index.html>

Access\_Instructions: Internet Access

Fees: None

Metadata\_Reference\_Information:

Metadata\_Date: 20031031

Metadata\_Review\_Date: 20100511

Metadata\_Contact:

Contact\_Information:

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Metadata\_Standard\_Name: FGDC Biological Data Profile of the Content Standard for Digital Geospatial Metadata

Metadata\_Standard\_Version: FGDC-STD-001.1-1999

Metadata\_Extensions:

Online\_Linkage: [http://www.nbii.gov/portal/server.pt/community/fgdc\\_metadata/255](http://www.nbii.gov/portal/server.pt/community/fgdc_metadata/255)