

**USGS-NPS Vegetation Mapping Program
Final Project Product Guidelines, for Online Presentation and Retrieval**

December 2008



PARK PROJECT CHECKLIST FOR FINAL PRODUCTS

The following data files must be included in a final vegetation map data set.

- **Technical Report**
- **Plots Database**
- **Plots and AA Field Photos**
- **Digital Aerial Photo Data, Flight Index, Graphic & Metadata**
- **Vegetation Plots (point data) Spatial Data, Graphic & Metadata**
- **Vegetation Map (polygon data) Spatial Data & Metadata**
- **Park Boundary Spatial Data & Metadata**
- **Thematic Accuracy Assessment Points Spatial Data, Graphic & Metadata**
- **Accuracy Assessment Contingency Table**
- **Final Vegetation Map Graphic using NPS Map Standards**

INTRODUCTION

The attached guidelines are designed to standardize and thus facilitate the rapid turn-around of Vegetation Inventory Program (VIP) final products and get them online as quickly and efficiently as possible.

They reflect the USGS-NPS decade-long experience on best practices of how to group and parse the VIP digital products for the current online environment maintained at the USGS Center for Biological Informatics in Denver, CO.

While it is recognized that there will always be exceptions that will have to be dealt with on a case by case basis, the USGS-NPS management team has discovered that adherence to this model of data organization and formatting of final products accelerates the turn-around for project data web posting and as such, makes the data available to NPS staff, natural resource scientists, federal agencies and the public in a timely manner.

We understand the degree of effort that is required to generate a high-quality, standardized vegetation map under the USGS-NPS Vegetation Inventory Program. We recommend you allow sufficient time and effort to produce final products adhering to the specified formats in this document for consistency and rapid availability of the data.

To develop final reports for vegetation mapping projects, investigators should consult with project key officials and follow the appropriate NPS guidelines. The final report will address vegetation classification and description, vegetation mapping, and accuracy assessment. It will include a full description of project methods, results and a summary discussion. If the report will be published within the NPS NRTR series or another technical report series, additional standards and guidelines may be applicable.

After the report, maps, databases, and other digital products have been reviewed and accepted as final by the project key official, they will be reviewed by the USGS/NPS National Vegetation Inventory Program (NVIP) and placed on the website. In order to facilitate this effort, please follow the file format and naming convention guidelines provided below. Many projects were initiated prior to the issuance of these guidelines by NVIP. In those cases, investigators should consult with park, network, and/or NVIP staff to determine how best to meet the new guidelines.

Any questions, or request for clarification should be addressed to Ms Theresa Singh, VIP data content manager (tsingh@usgs.gov) at USGS CBI.

PARK PROJECT OUTLINE FOR FINAL PRODUCTS

- I. Aerial Photography
 - a. Orthophoto Mosaic Graphic
 - b. Spatial Orthophoto Data (.exe)
 - c. Flight Line Index
- II. Vegetation Information - {one link}
 - a. Vegetation Report, containing the following items:
 - Photo Interpretation Key
 - Vegetation Descriptions
 - Vegetation Key
 - Photos of Map Classes
 - Accuracy Assessment Methods and Results
- III. Field Data
 - a. Field Plots Points Graphic
 - b. Spatial Field Plots Data (.exe)
 - c. Plots Database (MDB)
 - d. MS Excel format of Physical Descriptive Data for Plots
 - e. MS Excel format of Species List Data for Plots
 - f. Field Photos collected during PLOTS and AA (.zip or .exe)
- IV. Geospatial Vegetation Information
 - a. Vegetation Graphic
 - b. Spatial Veg Data (.exe)
 - c. Spatial Boundary Data (.exe)
- V. Accuracy Assessment Information
 - a. AA Points Graphic
 - b. Spatial AA Data (.exe)
 - c. MS Excel Contingency Table
- VI. Project Metadata
 - a. Aerial Orthophoto
 - b. Field Plots
 - c. Spatial Veg Data
 - d. Boundary
 - e. Accuracy Assessment
 - f. Others - as appropriate
- VII. Other Helpful Information for File Creation
- VIII. File Naming Standards

I. Aerial Photography

- a. Graphic File: The pdf file name is the *parkname* and the type of geospatial data being shown, such as Orthophoto. Example: grteortho.pdf. Example: <http://biology.usgs.gov/npsveg/grte/images/grteortho.pdf>
- b. Spatial Data (.exe): This is a shapefile of the land cover (aerial) imagery data used in this project. All geospatial data must be in UTM NAD 83. In most cases this is a CIR mosaic or an orthophoto. Example: <http://biology.usgs.gov/npsveg/ftp/vegmapping/grte/grteortho.exe>.
- c. Aerial Photo Flightline Index – Photos.pdf. A PDF file of a flightline index linking the flightline numbers to the aerial photos and listing the aerial photos by numbers. Not all of the aerial photos are shown, just every other one on each flightline. Example: <http://biology.usgs.gov/npsveg/zion/photos.pdf>.
- d. Graphic File: This is a PDF file for each aerial photograph, using a unique photo number on each photo. Example: 2-3.pdf, 6-11.pdf, 18-20.pdf, and 23-36.pdf. Examples: <http://biology.usgs.gov/npsveg/zion/aerials/2-3.pdf>, <http://biology.usgs.gov/npsveg/zion/aerials/6-11.pdf>, <http://biology.usgs.gov/npsveg/acad/aerials/18-20.pdf> and <http://biology.usgs.gov/npsveg/acad/aerials/23-36.pdf>.

II. Vegetation Information

- a. Vegetation Report – ONE REPORT: Create a PDF full report (*parknamerpt.pdf*).
 - Example: <http://biology.usgs.gov/npsveg/zion/zionrpt.pdf>.
 - Report MUST contain: Vegetation Description, Vegetation Key, Map Class Descriptions, Photos of Map Classes, Photo-interpretation Key, Accuracy Assessment Methods and Results.

III. Field Data

- a. Graphic File: The pdf file name is the *parkname* and the type of geospatial data being shown, such as Plot locations. Example: zionplots.pdf. Example: <http://biology.usgs.gov/npsveg/zion/images/zionplots.pdf>.
- b. Spatial PLOTS Data: The executable files should contain the geospatial shapefile of the PLOTS data. All data must be in UTM NAD83. Example: <http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/zionplot.exe>.
- c. Microsoft Access PLOTS Database: Field Data for Plots, Accuracy Assessment, Physical Descriptive and Species Listing Data - *parknamedata.mdb*. This is a Microsoft Access Database of the park field data, such as accuracy assessment, accuracy assessment species, observation points, plots, plot-species, geology classes, locations, jurisdictions and any other park field data. Example: <http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/ziondata.mdb>.
- d. Physical Descriptive Data for Plots - The plots file is extracted from the *parknamedata.mdb* database. The file name is plots.xls. Example: <http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/plots.xls>.
- e. Species Listing Data for Plots - The sp_cov file is extracted from the *parknamedata.mdb* database. The file name is sp_cov.xls. Example: http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/sp_cov.xls.
- f. Field Photographs collected during PLOTS and AA: Contained within the PLOTS database are references to field photos collected as part of the project. We would like a .zip or .exe file called “field_photos”. The files within the .zip or .exe usually contain jpeg, gif, or pdf format. Please do not exceed 2GB on each file. If so than create more than one .zip or .exe file and call it field_photos1.zip or .exe, field_photos2.zip or.exe and etc.

IV. Geospatial Vegetation Information

- a. Final Map Graphics: Map layouts need to follow NPS standards. For NPS standard map templates, see: <http://imgis.nps.gov/templates.html>. These are graphic files (.pdf). The pdf file name is the *parkname*. We would like a low resolution for viewing and a high resolution PDF

for reprinting maps. Examples: <http://biology.usgs.gov/npsveg/zion/images/zionveg.pdf>,
http://biology.usgs.gov/npsveg/zion/images/zionmap_large.pdf.

- b. Spatial Vegetation Data: The executable files should contain the following: The shapefile or geodatabase of the vegetation polygon and associated attribute data. All data must be in UTM NAD83.

Example: <http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/zion.exe>.

- c. Spatial Boundary Data (.exe) - Shapefile of the park boundary used for this project: Example: <http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/zionbdy.exe>.

V. Accuracy Assessment (AA) Information

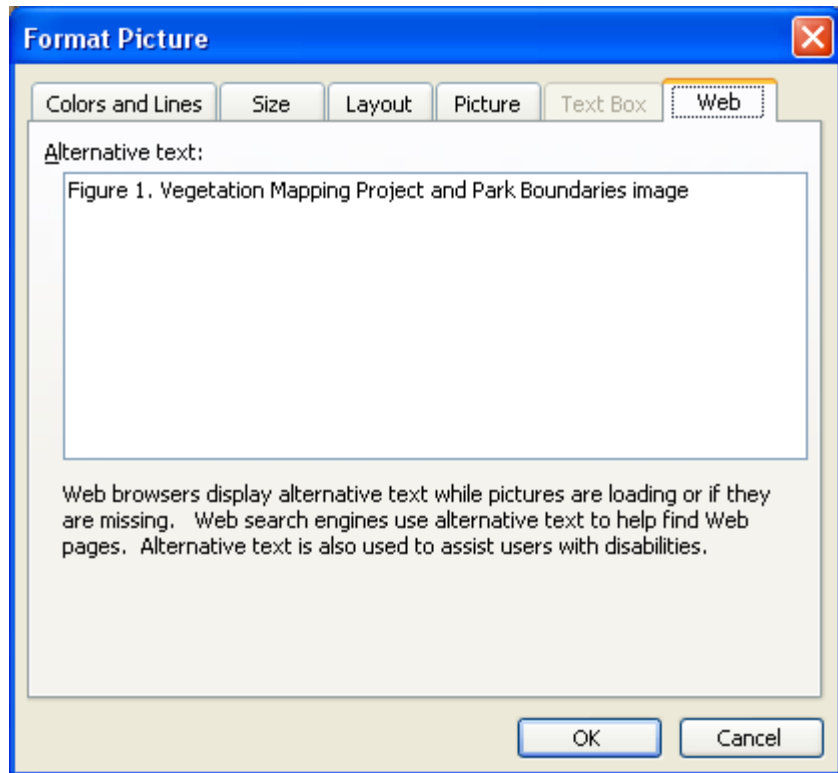
- a. Graphic files (.pdf). The pdf file name is the *parknameaa*. Example: *zionaa.pdf*,
<http://biology.usgs.gov/npsveg/zion/images/zionaa.pdf>.
- b. Spatial AA Data: The executable file which contains the shapefile or geodatabase of the Accuracy Assessment geospatial data. All data must be in NAD83. Example:
<http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/zionaa.exe>.
- c. Accuracy Assessment Contingency Table_– This accuracy assessment matrix (*aa_matrix.xls*) should include the code description below the matrix. Example:
http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/aa_matrix.xls.

VI. Project Metadata

- a. Aerial PhotoMosaic Metadata – *metaparknameortho.txt*. Metadata for aerial orthophoto mosaic (Text format only). Example:
<http://biology.usgs.gov/npsveg/ftp/vegmapping/grte/metagrteortho.txt>.
- b. Field Plots Metadata – *metaparknamefield.txt* – Metadata for the Plots Microsoft Access Database. Example: <http://biology.usgs.gov/npsveg/zion/metazionfield.html>.
- c. Geospatial Metadata - *metaparknamespatial.txt* – Metadata for Geospatial Vegetation Information (Text format only). Example:
<http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/metazionspatial.txt>.
- d. Park Boundary Metadata - *metaparknamebdy.txt* – Metadata for Park Boundary (Text format only). Example: <http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/metazionbdy.txt>.
- e. AA Metadata - *metaparknameaa.txt* – Metadata for Accuracy Assessment Information (Text format only). Example: <http://biology.usgs.gov/npsveg/ftp/vegmapping/zion/metazionaa.txt>.
- f. Other metadata, as appropriate

VII. Other Helpful Information for File Creation

- a. **CONVERT WORD DOCUMENT (.DOC) TO PDF:**
 - The following are some guidelines in order to convert .doc to pdf file:
 - All images and figures must be tagged.
 - o Right click on image or figure and scroll down and click on Format Picture. Within Format Picture menu box click on the tab called Web, this is where to type in the description of the image or figure.



- The header (times new roman, font size 10, with a line under the park name) must contain:
 - USGS-NPS Vegetation Mapping Program
 - Parks Full Name
- The footer (times new roman, font size 10, with a line under the number) must contain:
 - 12 or F-26
- NO hyperlinks in tables of content, tables toc and figure toc.
- NO blank pages, but exceptions will be made if you are writing for a technical series.
- Check the properties by clicking on File and scrolling down to Properties and clicking on Summary tag and checking the title of the file.
- Make sure the Markup tool is turned off.
- NOTE: If the .doc doesn't convert to pdf file than the .doc file must be broken apart into sections in order to convert to a pdf file. This is because the .doc file is too big to convert to a pdf file. Then put the pdf file back together as one file.
- The following are some guidelines after the pdf file has been created:
 - Be sure that the tags are included in the pdf file.
 - Create bookmarks.
 - In file menu under document properties check to make sure that the bookmark panel and page are chosen in the SHOW box.
 - The tag properties under the tag window should have a language of ENGLIS US.
 - FULL CHECK: click the Advance menu and click the Accessibility and Full Check. In the Full Check Window: click Create comments in document and turn off Create Accessibility Report, than turn off Tab order is consistent with the structure order and Reliable character encoding is provided, than click Start Checking.
- b. **GENERATING .EXE FILES**
 - Depending on the WinZip version:
 - o For the Full Advance Version: Create the zip file than under file name Actions, scroll down to Make .EXE File and click on it to create an .EXE file.

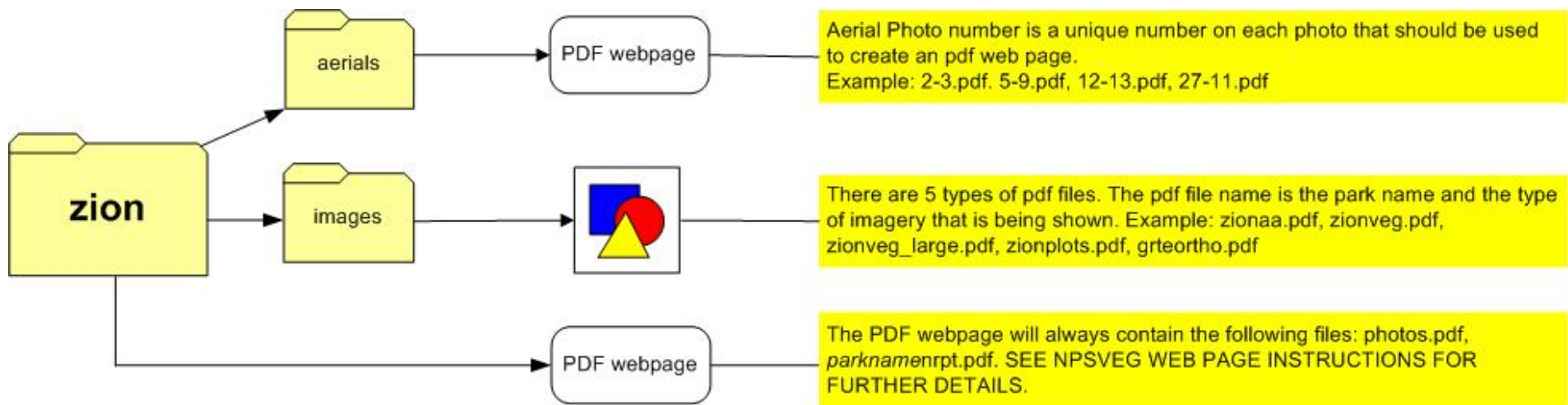
- o For a Limited Version: Create the zip file, close the zip file and go to file of where it located and right click on the file and scroll down to WinZip and than scroll down to Create Self-Extractor (.EXE) and click on it to create an .EXE file.
- o If unable to do either one of these process as described above than create a ZIP file only.

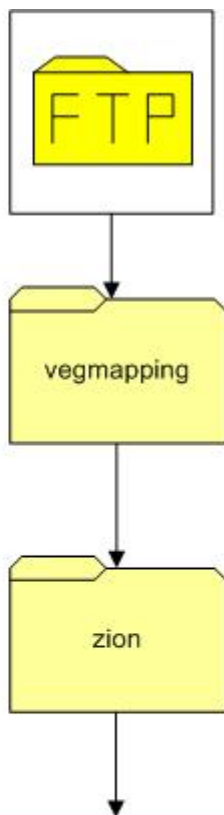
c. **DELIVERING A GEODATABASE -VERSUS -SHAPEFILES**

- The Vegetation Inventory Program would prefer that all spatial data (e.g. PLOTS point data, AA point data, Vegetation polygons, photographs) are delivered in one GEODATABASE with the appropriate relationships retained.
- For a good example of a geodatabase, please download and review the Northern Colorado Plateau Network’s geodatabase structure in Natural Bridges NM. Example: <http://biology.usgs.gov/npsveg/nabr/index.html>
- Personal Geodatabases or File Geodatabases are recommended.
- Only one Geodatabases is needed, containing all the spatial data.

VIII: FILE NAMING STANDARDS:

- NO capital letters used in naming each file.
- The following is a list of standard naming conventions:
 - Aerial Photography
 - o *parknameortho.pdf*
 - o *parknameortho.exe*
 - o *photos.pdf*
 - o *1-02.pdf* or *11-13.pdf* or *4-5.pdf* depending on the unique photo number.
 - Vegetation Information
 - o *parknamerpt.pdf*
 - o *class_matrix.xls* (OPTIONAL)
 - Field Data
 - o *parknameplots.pdf*
 - o *parknameplot.exe*
 - o *parknamedata.mdb*
 - o *plots.xls*
 - o *sp_cov.xls*
 - o *field_photos.exe* or *.zip* – containing photos referenced in the PLOTS DB.
 - Geospatial Vegetation Information
 - o *parknameveg.pdf*
 - o *parknameveg_large.pdf*
 - o *parkname.exe*
 - o *parknamebdy.exe*
 - Accuracy Assessment Information
 - o *parknameaa.pdf*
 - o *parknameaa.exe*
 - o *aa_matrix.xls*
 - Project Metadata
 - o *metaparknameortho.txt*
 - o *metaparknamefield.txt*
 - o *metaparknamespatial.txt*
 - o *metaparknamebdy.txt*
 - o *metaparknameaa.txt*





The webpages consist of the following files: aa_matrix.xls, field_photos.exe, plots.xls, sp_cov.xls, *parknamedata.mdb* (complete dataset), *metaparknameortho.txt*, *metaparknameaa.txt*, *metaparknamefield.txt*, *metaparknamespatial.txt*, *metaparknamebdy.txt*, *parknameortho.exe*, *parkname.exe*, *parknameaaexe*, *parknameplot.exe*, *parknamebdy.exe*. The following are EXAMPLES: *ziondata.mdb*, *metagrteortho.pdf*, *metazionaa.txt*, *metazionfield.txt*, *metazionspatial.txt*, *metazionbdy.txt*, *grteortho.exe*, *zion.exe*, *zionaa.exe*, *zionplot.exe*, *zionbdy.exe*. OPTIONAL: *class_matrix.xls*. SEE NPSVEG WEB PAGE INSTRUCTIONS FOR FURTHER DETAILS.