



National Park Service
U.S. Department of the Interior

Natural Resource Stewardship and Science

GRSM Standard Operating Procedure: File Naming

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Version History		
Version	Update Date	Changes
20160719	20160719	Revised draft to appropriate format

Purpose

The purpose of this Standard Operating Procedure (SOP) is to establish and maintain a well-documented file naming convention for electronic files accessible to all GRSM RMS staff.

Scope

This document provides guidance for the naming of all digital files and folders used by GRSM RMS staff. Naming electronic file records consistently, logically and in a predictable way will allow similar records to be quickly distinguished from one another. This facilitates the storage and retrieval of records, enabling users to browse directories and file names more effectively and efficiently. A file name shall be unambiguous. A record shall be distinguishable from files with similar subjects as well as different versions of the same file. Following a consistent naming protocol is the most important standard.

Procedures

Basic file naming standards:

- File names must be unique, complete, and interpretable outside of the file structure
- Do not use spaces or special characters (e.g., *!&%\$) within file or folder names
- Embed the version date at the end of the file name. Date shall be in **yyyymmdd** format at the end of the file name preceded by an underscore (e.g., FileName_yyyymmdd.pdf)
- Use underscore as delimiters instead of blank spaces or periods
- Use 50 characters or less (**Note: long file and path names of more than 120 characters may not allow backup onto DVD's or external hard drives**).
- When applicable, standard geographic location acronyms and abbreviations shall be used. Avoid uncommon acronyms, abbreviations or codes
- Filename must start with Alpha, not numeric characters (GIS does not recognize files that start with numeric)
- Avoid using uppercase characters except to concatenate words together or to distinguish program/place acronyms

Each branch develops its own naming scheme for the subject portion of the file name. It should be succinct, descriptive, unique, and distinguishable from other files on similar subject matter.

Database or Tabular Files

When naming database or tabular files at the project and program level, the standard shall follow:

Topic_ParkAcronym_Date, the park acronym is optional for internal files, but mandatory for files made available to the public.

Examples:

BearManagement_20141103.accdb	Microsoft Access database of bear management data from 2014
GlobalMalaise_20111118.xlsx	Microsoft Excel worksheet containing global malaise data from 2011
LTVegMon_20141022.accdb	Microsoft Access database containing long-term vegetation monitoring data from 2014

Reports and References

When naming reports and references the standard shall follow: **Author_Title/Topic_Date**

Examples:

Hazen_NaturalHeritageParkVisitors_200903.pdf	PDF journal article about valuing natural heritage in the USA by Helen Hazen published March 2009.
Prather_SuccessionCadesCove_1967.docx	Microsoft Word Document v2010 of Old Field Succession in Cades Cove for Great Smoky Mountains National Park by Irvine D. Prather,

	issued 1967.
Griffin_SelfFertilisationArabidopsis_201404.pdf	PDF journal article describing self-fertilization of the <i>Arabidopsis lyrata</i> by Griffin et al., published April 2014.

Digital Images

When naming digital images, the standard shall follow: **Topic/Subject Place Date**

If multiple photos are taken for one event or location, a sequential number can be placed at the end of each photo image.

Examples:

VolunteerPlanting_GRSM_20111022_1.jpg	JPEG image format - Volunteer Planting Event at Great Smoky Mountains National Park on October 22, 2011 – Photo 1
VolunteerPlanting_GRSM_20111022_2.jpg	JPEG image format - Volunteer Planting Event at Great Smoky Mountains National Park on October 22, 2011 – Photo 2
VolunteerPlanting_GRSM_20111022_3.jpg	JPEG image format - Volunteer Planting Event at Great Smoky Mountains National Park on October 22, 2011 – Photo 3
Smith_CyprAca_TWCR_20140429.jpg	JPEG image format - Photo taken by Stuart Smith of a <i>Cypripedium acaule</i> at Twin Creeks on April 29, 2014.

Field Data Sheets or Data Dictionaries

When naming field data sheets or data dictionaries, the standard shall follow:

ProjectName_Date(yyymmdd)_(Time if applicable for multiple events per day-24 hour clock)

Examples:

RFKTemp_GRSM_20130922_1100.pdf	Portable document format file of field data sheet regarding a field data sheet of a temperature study of the Roaring Fork stream in Great Smoky Mountains National Park conducted on September 22, 2013 at 11:00am.
RFKTemp_GRSM_20130922_1115.pdf	Portable document format file of field data sheet regarding a field data sheet of a temperature study of the Roaring Fork stream in Great Smoky Mountains National Park conducted on September 22, 2013 at 11:15am.
RFKTemp_GRSM_20130922.ddf	Trimble data dictionary file of data collected for a temperature study of the Roaring Fork stream in Great Smoky Mountains National Park conducted on September 22, 2013.

Metadata

When naming metadata not attached to spatial files, the standard shall follow the same name as the data file: Files should be submitted as either .html or .xml documents and should be located at the same file directory level of the data. Metadata file names are automatically named by GIS software for spatial data.

Examples:

LTVegMon_20141022.xml <i>Metadata file for: LTVegMon_20141022.accdb</i>	Extensible markup language metadata file for Microsoft Access database containing long-term vegetation monitoring data from 2014
RFKTemp_GRSM_20130922_1115.xml <i>Metadata file for: RFKTemp_GRSM_20130922_1115.doc</i>	Extensible markup language metadata file for temperature study of the Roaring Fork stream in Great Smoky Mountains National Park conducted on September 22, 2013 at 11:15am.

Spatial Files

When naming spatial files that are project-specific and only located within a project folder, naming convention shall follow: **Topic_PlaceOrAreaName_Date**

Examples:

SheepFirePerimeter_SEKI_20111002.shp	ESRI shapefile depicting the perimeter of the Sheep Fire at Sequoia & Kings Canyon National Parks on October 2, 2011.
VegetationSurvey10k_AHME_2011.gdb	ESRI file geodatabase of a 1:10,000 vegetation survey at Ash Meadows Wildlife Refuge during 2011.
BatSurveys_DEVA_20111022.axf	ArcPad file of Bat surveys at Death Valley National Park conducted on October 22, 2011.

Enterprise GIS data

GIS data that is placed in an enterprise Geodatabase (SDE or SQL), or a web-based data-discovery portal (Portal for ArcGIS, ArcGIS Online) are subject to service-wide naming conventions due to that fact that many parks share one database or web map platform. To encourage greater consistency within the National Park Service for dataset names, the NPS GIS Council has adopted a layer naming convention. The use of this convention will facilitate future regional and national Enterprise GIS efforts and support better data management and organization within the NPS. Although the convention is not required, it is encouraged for everyday use and regular data management activities with all agency data. It is not recommended, however, for transferring data from one site to another where different layer naming standards have already been established.

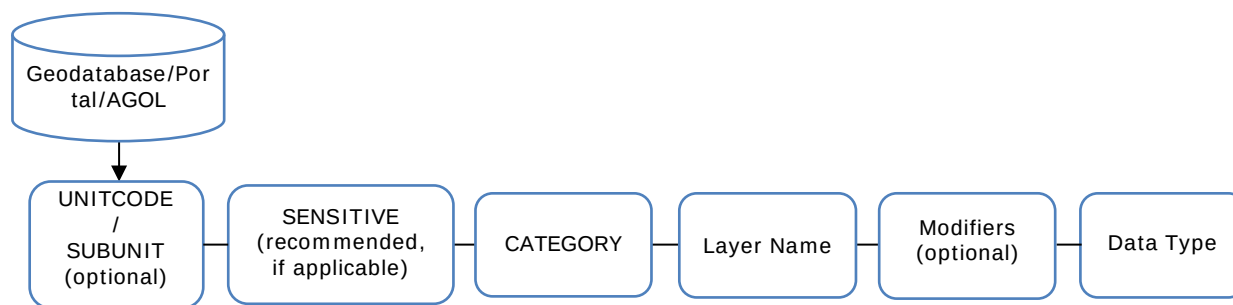


Figure 1. Enterprise GIS naming convention diagram.

UNITCODE_SUBUNIT_SENSITIVE_CATEGORY_LayerNameModifiers_datatype

Where:

- **UNITCODE** is the four letter code for a park, office, or program; or three letter code for a region.

- **SUBUNIT** is a sub-unit code or other designator for part of a park.
- **CATEGORY** is taken from the Appendix 1 and is capitalized.
- **Layer Name** is the primary dataset name in title case.
- **Modifiers** (LocationTimeResolutionSource) are other information describing the dataset. They are used only if needed to distinguish among multiple layers that would otherwise have the same name.
 - o **Location** describes the area of coverage, in title case.
 - o **Time** distinguishes multiple historic layers, usually by year in numeric form; but if more precision is required, then other numeric formats can be used, such as YYYYMMDD or a range of dates.
 - o **Resolution** distinguishes multiple source scales, usually by numeric scale denominator for vector ("k" for thousands or kilo) or cell size for raster ("m" for meters or "ft" for feet.)
 - o **Source** distinguishes multiple source providers, capitalized or in title case. This may be an organization (e.g., USGS) or a standard database (e.g., NWI).
- **Data Type** is a two- or three-letter abbreviation for point (pt), line (ln), polygon (py), raster (ra), annotation (an), non-feature-attribute table (tbl), or relationship class (rc), in lower case.

Additional Information

- UNITECODE is required
- CATEGORY, Layer Name, and DataType are always required in the name.
- Modifiers such as Location, Time, Resolution, and Source are used only if needed to distinguish among similar layers.
- SUBUNIT are used if needed to distinguish among data layers from different areas.
- If a dataset contains only sensitive data then the capitalized term, "SENSITIVE" will be placed immediately before the CATEGORY and after any UNITCODE/SUBUNIT, separated with underscores. Layers that contain both sensitive and non-sensitive data must have a field that defines which features are sensitive and which are not and will include the capitalized term, "SENSITIVEFL" (FL for feature level) in the same position within the name. Both terms are optional (though recommended) if the layers containing sensitive data are stored apart from non-sensitive data in separate geodatabases.

Annotation

Annotation not tied to other layers (or feature linked) will be stored in a feature dataset as "CARTO_Annotation." Each feature class under that feature dataset will have the feature type "an". Annotation that is tied to specific layers (such as road labels) will be stored in the relevant category with the "an" suffix

Example: CARTO_Annotation (feature dataset)
 CARTO_Annotation100k_an (feature class)
 CARTO_Annotation24k_an (feature class)
 TRANS_RoadsAnnotation12K_an (feature class)

Relationship Classes

Relationship classes will follow a similar format: CATEGORY_Sourcetable_Destinationtable_rc

Where:

- CATEGORY is the prefix for the geometry layer
- Sourcetable is the source table name with its associated data type suffixed
- Destinationtable is the destination table name with its associated data type suffixed

Example:

FACILITY_BuildingLinktbl_Buildingpy_rc

In the example above, the geometry layer involved in the relationship class (Building) is in the FACILITY category. The source table is the standalone table, "BuildingLink", and so receives the "tbl" suffix. The destination table is the feature table for the polygon feature class "Building", and so receives the "py" suffix. In other cases, the source table may be associated with a feature class, while the destination table is not. There is no underscore separating the table name from the feature type (tbl, py, pt, etc.) to keep the names as short as possible. Note that relationship classes apply only to layers stored in a geodatabase.

Roles and Responsibilities

Role	Responsibility
GIS Specialist	Ensure that park staff adheres to the file naming guidelines.
Data Manager	Ensure that park staff adheres to the file naming guidelines.
GRSM Staff	Branch or program leader is responsible for RMS files posted to these servers and that conventions laid out in this document and appendices are observed.

Contact Information

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Acronyms and Definitions

FGDC- Federal Geographic Data Committee

References

Dicus, G. H. And L.K. Garrett. 2007. Upper Columbia Basin Network Data Management Plan Version 1.0, Natural Resource Report NPS/UCBN/NRR—2007/020. National Park Service, Moscow, Idaho.

National Park Service. 2008. [Data management guidelines for inventory and monitoring networks](#). Natural Resources Report NPS/NRPC/NRR-- 2008/035. National Park Service, Fort Collins, Colorado.

National Park Service. Standard Operating Procedures for Electronic File Naming Guidelines and Standards v. 1.2. 20111011

US Fish and Wildlife Service. Standard Operating Procedures for Document Management. 20090625

Appendix 1. Enterprise GIS categories as used in naming convention.

AIR	Air resources, air quality
BIRD	Birds, and related data
BND	Most boundaries, including park, wilderness, judicial districts, wildlife refuges, land use, parcels, tracts, planning layers including management zones, project boundaries, local zoning, rights-of-way, overflight zones
CARTO	Data used to assist with cartographic display, such as offshore and inland masks, annotation (geographic names), etc.
CLIM	Rainfall, temperature, solar radiation
CULT	Cultural resources, including archaeology, cultural landscapes and contributing features, historic structures (LCS), ethnographic features, fences, etc.
ECO	Ecoregions, ecosystems, plots and transects (e.g. for general I&M or cross-type monitoring)
FACILITY	Non-transportation facilities, including buildings, signs, utilities, campgrounds, mooring buoys, navigational aids, fences, abandoned mine lands (AML), energy facilities and transmission lines, culverts
FIRE	Fire history, fuels, fire intensity, fire severity, fire management zones, lightning strikes, fire hazards
FISH	Fish, and related data
GEOL	Geology, including hazards, lithology, structure, faults, landforms, glaciations, beaches, caves, lava flows
HERP	Amphibians, reptiles, and related data
HYDRO	Hydrography, including streams, water bodies, coastlines, levees, waterfalls, glaciers, water quality, aquifers, flood zones, wells, anchialine pools, wetlands, tsunami zones, watershed divides
IMG	Raster images, including indexes to locate satellite imagery and air photos, orthos, DRGs,
INVERT	Invertebrates, and related data
LAW	Law enforcement, including incidents, marijuana sites, etc.
MAMMAL	Mammals, plots for mammals, and related data
OTHER	Data layers that don't fit elsewhere in the structure. Use only as a last resort
PALEO	Paleontological data
PHOTO	Geo-tagged photographs [it is not recommended you store photographs in geodatabase]
SOCIO	Socioeconomic data, including contemporary cultural themes such as towns, census data, populations, and demographics. It is not intended to include traditional or sensitive NPS cultural resources data, which is located in its own geodatabase
SOIL	Soils, and related data
SURVEY	Monumentation (control points), BLM GCDB, USGS PLSS, ground photo points, photo control

TOPO	Topography, including DEMs, DSMs, TINs, terrain data sets, contours, bathymetry, , slope, aspect, lidar-derived surfaces (including first returns), hillshades
TRANS	Transportation, including roads, trails, railroads, other transit features, center lines, road edges, bridges, parking areas, overflight routes
VEG	Vegetation, specific plants, noxious weeds
VIEW	Viewsheds

Appendix 2- Example Enterprise GIS names

GRSM_BIRD_CondorNests_pt
GRSM_BIRD_LandBird_pt
GRSM_BIRD_SeaBird_pt
GRSM_BIRD_SpottedOwlHabitat_py
GRSM_BIRD_SpottedOwlNests_pt
GRSM_BND_AirTourManagement_py
GRSM_BND_Counties_py
GRSM_BND_FutureWilderness_py
GRSM_BND_CountyLandUseZoning2000_py
GRSM_BND_ParkManagementUnits_py
GRSM_BND_HistoricParkBoundary_py
GRSM_BND_HistoricWilderness_py
GRSM_BND_LegislatedWilderness_py
GRSM_BND_ParkBoundary_py
GRSM_BND_ParkTracts_py
GRSM_BND_States_py
GRSM_BND_WildernessLineage_In
GRSM_CARTO_Annotation24k_an
GRSM_CARTO_GeographicNamesUSGS_an
GRSM_CARTO_OceanMask_py
GRSM_CLIM_Rainfall_pt
GRSM_CLIM_Snowfall_pt
GRSM_CLIM_Temperatures_pt
GRSM_CLIM_TemperatureMean_py
GRSM_CULT_Archaeology_In
GRSM_CULT_Archaeology_pt
GRSM_CULT_Archaeology_py
GRSM_CULT_CulturalLandscapes_py
GRSM_CULT_CulturalLink_tbl
GRSM_CULT_CulturalResourceSurveys_In
GRSM_CULT_CulturalResourceSurveys_pt
GRSM_CULT_CulturalResourceSurveys_py
GRSM_CULT_EthnographicResources_In
GRSM_CULT_EthnographicResources_pt
GRSM_CULT_EthnographicResources_py
GRSM_CULT_HistoricBuildings_pt
GRSM_CULT_HistoricBuildings_py
GRSM_CULT_HistoricDistricts_py
GRSM_CULT_HistoricObjects_In

GRSM_CULT_HistoricObjects_pt
GRSM_CULT_HistoricObjects_py
GRSM_CULT_HistoricStructures_In
GRSM_CULT_HistoricStructures_pt
GRSM_CULT_HistoricStructures_py
GRSM_CULT_OtherCulturalResources_In
GRSM_CULT_OtherCulturalResources_pt
GRSM_CULT_OtherCulturalResources_py
GRSM_ECO_Plots_pt
GRSM_ECO_Transects_In
GRSM_FACILITY_AbandonedMineLands_pt
GRSM_FACILITY_BackcountryCampsites_pt
GRSM_FACILITY_Building_pt
GRSM_FACILITY_Building_py
GRSM_FACILITY_BuildingLink_tbl
GRSM_FACILITY_Campgrounds_py
GRSM_FACILITY_Campsites_pt
GRSM_FACILITY_Culverts_In
GRSM_FACILITY_OilDrillingSite_pt
GRSM_FACILITY_Powerlines_In
GRSM_FACILITY_Powerstation_py
GRSM_FACILITY_Sewers_In
GRSM_FACILITY_Signs_pt
GRSM_FACILITY_Waterlines_In
GRSM_FIRE_DailyFirePerimeter_py
GRSM_FIRE_EffectsMonitoring_py
GRSM_FIRE_FireManagementUnits_py
GRSM_FIRE_History_pt
GRSM_FIRE_History_py
GRSM_FIRE_ManagementUnits_py
GRSM_FIRE_PrescribedBurnUnits_py
GRSM_GEOL_Bedrock24k_py
GRSM_GEOL_Surficial24k_py
GRSM_GEOL_Surficial100k_py
GRSM_GEOL_Landform_py
GRSM_GEOL_Landform_In
GRSM_HERP_Amphibians_pt
GRSM_HERP_Reptiles_pt
GRSM_HYDRO_CoastalFeatures_pt
GRSM_HYDRO_DoubleBankRivers_py
GRSM_HYDRO_Glaciers_py

GRSM_HYDRO_Lagoons_py
GRSM_HYDRO_Lakes_py
GRSM_HYDRO_Levees_In
GRSM_HYDRO_SeaLevel_In
GRSM_HYDRO_StreamsNHD_In
GRSM_HYDRO_TsunamiZones_py
GRSM_HYDRO_Watersheds_py
GRSM_HYDRO_WetlandsNPS2005_py
GRSM_HYDRO_WetlandsNWI_In
GRSM_HYDRO_WetlandsNWI_pt
GRSM_HYDRO_WetlandsNWI_py
GRSM_IMG_DRG24kIndex_py
GRSM_IMG_DRG24k_ra
GRSM_IMG_NAIP2009_ra
GRSM_IMG_OrthoSeamlines2005NPS_py
GRSM_IMG_Orthos2005NPS_ra
GRSM_LAW_Incidents_pt
GRSM_LAW_MarijuanaGardens_py
GRSM_LAW_MarijuanaGardenFeatures_In
GRSM_LAW_MarijuanaGardenFeatures_pt
GRSM_MAMMAL_FisherReleases_pt
GRSM_MAMMAL_FisherTracking_In
GRSM_MAMMAL_WildlifeObservations_pt
GRSM_PALEO_Localities_py
GRSM_PALEO_Sites_pt
GRSM_SOIL_Soils100k_py
GRSM_SOIL_Soils24k_py
GRSM_SURVEY_Monumentation_pt
GRSM_SURVEY_PublicLandSurveySystemGCDB_In
GRSM_SURVEY_PublicLandSurveySystemGCDB_py
GRSM_TOPO_Aspect10m_ra
GRSM_TOPO_Aspect1m_ra
GRSM_TOPO_Bathymetry
GRSM_TOPO_DEM10m_ra
GRSM_TOPO_DEM1m_ra
GRSM_TOPO_DEM_IFSAR5m_ra
GRSM_TOPO_DSM_LiDAR1m_ra
GRSM_TOPO_LiDAR_pt
GRSM_TOPO_Hillshade10m_ra
GRSM_TOPO_ShadedRelief10m_ra
GRSM_TOPO_ShadedRelief1m_ra

GRSM_TOPO_SlopeDegree10m_ra
GRSM_TOPO_SlopeDegree1m_ra
GRSM_TOPO_SlopeGrade1m_ra
GRSM_TOPO_Subbasins_py
GRSM_TRANS_Bridges_pt
GRSM_TRANS_Parking_py
GRSM_TRANS_ProposedTrails_In
GRSM_TRANS_RemovedRoads_In
GRSM_TRANS_Roads_an
GRSM_TRANS_Roads_In
GRSM_TRANS_Roads_py
GRSM_TRANS_Trails_an
GRSM_TRANS_Trails_In
GRSM_VEG_Pathogens_pt
GRSM_VEG_RarePlants_pt
GRSM_VEG_RarePlants_py
GRSM_VEG_Vegetation_py
GRSM_VEG>Weeds_pt
GRSM_VEG>Weeds_py
GRSM_VEG>WeedTreatments_py