PADUS Metadata Schema

- Category

Field properties: Category, Category Domain, Text, 10

General category of protection mechanism associated with the protected area or public land parcel. "Fee" is the most common way real estate is owned. Conservation "Easement" creates a legally enforceable land preservation agreement between a landowner and government agency or qualified land protection organization (that is, land trust). "Other" types of protection include mixed protection, leases, agreements, or those over marine waters. "Designation" indicates management designations that overlap fee areas (for example, Wilderness Area boundary overlapping a National Forest). See Category Domain descriptions in Table 4 for available options.

- Owner Type

Field properties: Own_Type, Agency Type Domain and Crosswalk, Text, 50

General land owner description (for example, Federal, Tribal, State, Private) standardized for the United States. See Agency Type Domain descriptions in Table 5 for available options. Agency Type reflects Agency Name (assign name first), see crosswalk in Table 6. "Designation" is assigned to overlapping management areas where ownership is not applicable.

- Owner Name

Field properties: Own_Name, Agency Name Domain, Text, 70

Land owner, or effective land owner (holding agency) in the case of public land, of the unit standardized for the Nation   See "Local Owner" and Agency Name Domain descriptions in Table 7 for details. "Designation" is assigned to overlapping management areas where ownership is not applicable.

- Local Owner

Field properties: Loc_Own, Source data, Text, 250

The actual name of the land owner as provided by the data source, to complement the standardized "Owner Name" field (for example, State Fish and Wildlife is the standardized "Owner Name" but Washington Department of Fish and Wildlife is the "Local Owner"). Not standardized.

- Manager Type

Field properties: Mang_Type, Agency Type Domain and Crosswalk, Text, 50

General land manager description (for example, Federal, Tribal, State, Private) standardized for the United States. See Agency Type Domain descriptions in Table 5 for available options. Agency Type reflects Agency Name (assign name first), see crosswalk in Table 6.

- Manager Name

Field properties: Mang_Name, Agency Name Domain, Text, 70

Land manager or administrative agency standardized for the Nation   See "Local Manager" and Agency Name Domain descriptions in Table 7 for details. Managers and Owners may be the same or different.

- Local Manager

Field properties: Loc_Mang, Source data, Text, 250

The actual name of the land manager as provided by the data source, to complement the standardized "Manager Name" field (for example, State Fish and Wildlife is the standardized "Manager Name" but Washington Department of Fish and Wildlife is the "Local Manager" or USFS, US Forest Service or Forest Service found in source data files and applied to "Local Manager" are standardized to – USFS (domain code) - Forest Service (domain description) in "Manager Name".

- Designation Type

Field properties: Des_Tp, Domain, Text, 75

The primary land management description or designation type standardized for the Nation (for example, Area of Critical Environmental Concern, National Wildlife Refuge, State Park). See Designation Type domain descriptions in Table 8 for details and APPENDIX A for a crosswalk and definitions.

- Local Designation

Field properties: Loc_Ds, Source data, Text, 100

The primary land management description or designation (for example, State Park, National Wildlife Refuge) as provided by data source. Not standardized. Please ensure all "Local Designation" types in your source files are included in crosswalk (APPENDIX A) to "Designation Type". Contact PAD-US Coordinator for additions or suggested revisions. Contact the PAD-US Technical Data Manager for available translation scripts.

- Unit Name

Field properties: Unit_Nm, Standardized, Text, 250

The name of the protected area standardized to Proper Case with acronyms spelled out (for example, Big Bear National Park or Big Bear Nature Preserve, not Big Bear NP), without spelling errors, special characters, extraneous spaces, or parcel identifiers. No null values permitted – assign local manager name and local designation type plus an auto-incremented number to identify each individual area, if no other information is available. This field identifies the overall protected area name for the PAD-US Viewer (maps.usgs.gov/padus) and in UNEP-WCMC's World Database for Protected Areas (WDPA, ProtectedPlanet.net).

The Local Name field, from the data source, can be calculated into this field and standardized. The goal is for wide acceptance of standard naming conventions by data stewards, eventually with direct links to the USGS Geographic Names Information System (GNIS) that manages official names. This field is currently in a state of transition to meet all standards.

- Local Name

Field properties: Loc_Nm, Source data, Text, 250

The name of the protected area as provided by the data source not standardized as in "Unit Name". As a result, this field may include designation descriptions or not, different formats (for instance, UPPER CASE), spelling errors, area identifiers unique to parcels within a protected area; however, it matches source data files for reference by data stewards as needed.

- State Name

Field properties: State_Nm, Domain, Text, 50

Name of state or territory spelled out in Proper Case (see domain codes and descriptions in Table 9). Protected area polygons that cross state boundaries are cut at the state line with "State Name "attributed accordingly. Census is the authoritative source of state line boundaries for PAD-US. See "Census Boundary and Annexation Survey Shapefiles and Maps" website for best available state boundaries: http://www.census.gov/geo/partnerships/bas/bas_download.html. Nationally aggregated state boundaries (TIGER/Line Shapefiles) are also available (previous year) for national data stewards seeking a boundary standard. See: http://www.census.gov/geo/maps-data/data/tiger-line.html for current data. GAP intersected 2014 Census TIGER/Line state boundaries, as a common standard, into source files in PAD-US 1.4. This process introduces boundary slivers where discrepancies occur. No other alterations of source line work are permitted, unless edits are approved by data stewards to prevent reoccurrence in source data files.

- Aggregator Source

Field properties: Agg_Src, Standardized, Text, 150

A data aggregator submits data in the PAD-US schema (for example, state data stewards) according to standards. Attribute as: Organization name, expected PAD-US publication version and feature class, aggregated database or file name, year (if not already included in name) referenced for data aggregation. Format as: "organization name_PADUSX_XFeatureClass_filenameYearPublished" (for example, GAP_PADUS1_4Fee_NPS_Tracts, NCED_PADUS1_4Easements_UnrestrictedEasements_October2015, TNC_PADUS1_4Fee_SecuredAreas2008). Use acronym if organization name is widely recognized (for example, BLM) or write out and include acronym (for example, Washington State Parks and Recreation Commission (SPRC). If only one feature class resides in the aggregator's geodatabase, reference the geodatabase name; otherwise, reference the geodatabase and file name.

- GIS Source

Field properties: GIS_Src, Standardized, Text, 200

The original source of GIS spatial and attribute information the aggregator obtained (for example, WYG&F_whmas08.shp, BLM_SMA_20090914.gdb/SurfaceManagementAgency/BLM_MON) for each record. Format geodatabase references as "Name of organization_name of geodatabase/name of feature dataset if present/name of feature class." Preferably, this should reference the authoritative data provided by the land manger with a date stamp. Files names should match original source data to assist future updates. If original GIS source reference is not available, cite the aggregated data source or aggregator.

- GIS Source Date

Field properties: Src_Date, Standardized, Text, 15

The publication date (yyyy/mm/dd) or access date (for infrequently updated files) of GIS data obtained by the aggregator. If month or day is unknown, use 00. The date represents best available data to support decision making at the time of aggregation. If GIS Source date is unknown, the publication date of an aggregated dataset may be attributed.

- GIS Acres

Field properties: GIS_Acres, Calculated, Long

Acres calculated using a Python conversion of the Shape.Area field. (!Shape.Area@acres!).

- Source Protected Area ID

Field properties: Source_PAID, Source data, Text, 100

A unique identifier assigned and maintained by data stewards that identifies the overall protected area by name. PLEASE DO NOT SUBMIT SOURCE_PAID UNLESS IT IS MEETS PAD-US STANDARDS. The "Designation Name" (that is, standardized site or protected area name) is the same for all parcels/records with the same "Source_PAID." Protected areas that cross state boundaries are cut at the state boundary and attributed with the same "Source_PAID" and same "Designation Name" but may have different unique identifiers at the parcel level. This ID identifies distinct protected areas to ensure data are locally, nationally, and globally interoperable. This field in not fully attributed in PAD-US as data stewards transition systems toward implementation.

o   Unique ID guidance:

Unique IDs are crucial for PAD-US Data Management. Steward created IDs may not be as elegant as tax parcel IDs, but are likely more reliable over time. They facilitate attribute transfers between PAD-US updates (for example, "GAP Status Code" or "Public Access") and data sharing agreements. The World Conservation Monitoring System (WCMC) assigns codes (WDPA code) for all protected areas submitted by GAP on behalf of the US for the World Database for Protected Areas (WDPA). Stewards may maintain "WDPA Code" if available (contact PAD-US Technical Manager) or create and maintain codes, within the field property standard, as needed for their internal data systems. For example:

a) If you have a single level database (that is, no parcels/units), number all polygons with a unique ID that auto-increments as you add holdings to your inventory

b) If you have a two or more level database (that is, overall area/holdings -> units), create numbers for each of these (Source UID and Source PAID) in any order desired.

1.   DESIRED attributes

These attributes are transferred from previous PAD-US versions, reviewed or assigned to new protected areas.

•   Public Access

Field properties: Access, Domain, Text, 20

General level of public access permitted in the protected area. Open – no special requirements for public access to the property (may include regular hours available); Restricted – requires a special permit from the owner for access, a registration permit on public land or has highly variable times when open to use; Closed – no public access allowed (land bank property, special ecological study areas, military bases, etc. Unknown – no available information.   See domain descriptions in Table 10.

Stewards maintaining PAD-US attributes or state check-out databases are encouraged to review or update "Public Access" assignments or, at minimum, transfer previously assigned domains between updates (see "Public Access Source" below). GAP applies categorical assignments in the absence of other information (that is, where "Public Access" = Unknown or "Public Access Source" = GAP – Default) following the crosswalk by Designation Type in Table 11.

• Public Access Source

Field properties: Access_Src, Text, 150

This field documents the method of "Access" domain assignment. If locally assigned or reviewed by data stewards, "Access Source" references the organization (often the "Aggregator Source") and the year (for example, WDFW_2015, Florida Natural Areas Inventory_2012, USFS_2014 or NCED_2015). When Access is "Unknown," categorical assignments are made by Designation Type (See Table 11) and Access Source = "GAP - Default".

• GAP Status Code

Field properties: GAP_Sts, Domain, Text, 95

The GAP Status Code is a measure of management intent to conserve biodiversity as defined fully below (short domain descriptions in Table 12). This measure, a necessary analysis input utilized by USGS GAP to achieve its mission, facilitates biodiversity assessments (i.e. GAP Status Code 1 and 2) for the nation. GAP Status Code 3 may also be useful for multiple use management assessments across the landscape.

While locally assigned or reviewed GAP Codes (and IUCN Categories) are transferred between PAD-US updates, a categorical assignment based upon "Designation Type" is assigned (Table 2) by GAP when no other information is available. GAP is collaborating with the NOAA Marine Protected Areas (MPA) Center to update a similar crosswalk for MPAs specifically (Table 3). Default GAP Codes reflect the lowest conservation value applicable for categorical assignment by designation type at the national scale.

GAP seeks partners to apply or review conservation measures, contact the PAD-US Coordinator for more information. State, agency, or other filters developed in collaboration with GAP are encouraged. GAP will assign measures categorically when resources or partners are unavailable to provide more information. Full definitions are available below, see APPENDIX B for GAP Status Code assumptions, criteria and standard methods for Unit level assignments:

GAP Status Code Definitions

Status 1: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a natural state within which disturbance events (of natural type, frequency, intensity, and legacy) are allowed to proceed without interference or are mimicked through management.

Status 2: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a primarily natural state, but which may receive uses or management practices that degrade the quality of existing natural communities, including suppression of natural disturbance.

Status 3: An area having permanent protection from conversion of natural land cover for the majority of the area, but subject to extractive uses of either a broad, low-intensity type (for example, logging, OHV recreation) or localized intense type (for example, mining). It also confers protection to federally listed endangered and threatened species throughout the area.

Status 4: There are no known public or private institutional mandates or legally recognized easements or deed restrictions held by the managing entity to prevent conversion of natural habitat types to anthropogenic habitat types. The area generally allows conversion to unnatural land cover throughout or management intent is unknown.

Table 2. Categorical GAP Status Code or IUCN Category domain assignments by Designation Type.

See "PADUS1_4_Standard_TablesFINAL/DesTp_GAP_IUCN"

Table 3. Categorical GAP Status Code or IUCN Category domain assignments by Designation Type for Marine Protected Areas (MPA).

See "PADUS1_4_Standard_TablesFINAL/MPA_GAP_IUCN"

•   GAP Status Code Source

Field properties: GAPCdSrc, Standardized, Text, 150

Documents the organization(s) that applied the Gap Status Code to the polygon and the general methods used for assignment as follows: "GAP - Default" is assigned when categorical assignments of status by Designation Type (Table 2 or Table 3) are made, without more detailed review or inquiry. "GAP" is assigned when standard methods (APPENDIX B) are assigned. "GAP - other organization"' (for example, GAP – NPS, GAP – TNC, GAP – WDFW) applies when GAP Status is assigned or reviewed in

collaboration with GAP. Where GAP has not reviewed status assigned by another organization the organizaiton name or abbreviation is referenced in this field (e.g. TNC).

- GAP Status Code Date

Field properties: GAPCdDt, Standardized, Text, 4

The most current Year (yyyy) GAP Status Code was assigned to the polygon.

- IUCN Category

Field properties: IUCN_Cat, Domain, Text, 70

International Union for the Conservation of Nature (IUCN) management categories assigned to protected areas for inclusion in the UNEP- World Conservation Monitoring Center's (WCMC) World Database for Protected Areas (WDPA) to track global progress toward Convention for Biological Diversity Target 11 (https://www.cbd.int/sp/targets/rationale/target-11/). IUCN Category also provides a common reference to share data with the Commission for Environmental Cooperation (CEC) for the North American Terrestrial Protected Areas Database (PAD): http://cec.org/tools-and-resources/north-american-environmental-atlas. IUCN defines a protected area as, "A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values". While IUCN Categories in PAD-US have previously been applied categorically; local assignments or review conducted in cooperation with GAP is preferred.

GAP Status Code 1 and 2 lands meet this definition of protection (i.e. primary management intent for biodiversity protection) and are assigned IUCN Categories. See Table 2 and Table 3 for categorical assignments by Designation Type GAP assigns to terrestrial protected areas when no other information is available. Contact the PAD-US Coordinator to conduct Unit Level (i.e. protected area by name) assignments. See the IUCN website for "Guidance for Applying Protected Area Management Categories":
http://www.iucn.org/about/work/programmes/gpap_home/gpap_capacity2/gpap_pub/gpap_catpub/?13959/Guidelines-for-applying-protected-area-management-categories .

PAD-US contains IUCN Categories assigned to MPAs following Table 3 as best available information at the time of publication. Significant updates are in progress; contact the NOAA MPA Center for guidance related to MPAs: mimi.diorio@noaa.gov.   For additional information see: "Guidance for Applying IUCN Protected Area Management Categories for Marine Protected Areas"
(https://www.iucn.org/about/work/programmes/gpap_home/gpap_capacity2/gpap_bpg/?11131/Guidelines-for-Applying-the-IUCN-Protected-Area-Management-Categories-to-Marine-Protected-Areas) .

Note: IUCN Categories are not hierarchical. Primary management intent for all management categories is for the protection of biodiversity.

IUCN Category definitions:

o   Category Ia: Strict Nature Reserves are strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use, and impacts are strictly controlled and limited to ensure preservation of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.

o   Category Ib: Wilderness Areas are protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

o   Category II: National Park protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.

o   Category III: Natural Monument or Feature protected areas are set aside to protect a specific natural monument, which can be a land form, sea mount, submarine caverns, geological feature such as caves, or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.

o   Category IV: Habitat/species management protected areas aim to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of this category.

o   Category V: Protected landscape/seascape protected areas occur where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural, and scenic value.

o   Category VI: Protected area with sustainable use of natural resources are generally large, with much of the area in a more-or-less natural condition and where a proportion is under sustainable natural resource management, and where such exploitation is seen as one of the main aims of the area.

The PAD-US IUCN Category domain identifies GAP Status Code 3 areas as "Other Conservation Areas (OCAs)" to complement IUCN Categorized lands for delivery to the CEC for the North American Terrestrial PAD. This category is subject to change as guidance (previously unavailable) is in development by the IUCN World Commission for Protected Areas (WCPA) "other effective area-based conservation measures (OECMs) Task Force.

- IUCN Category Source

Field properties: IUCNCtSrc, Standardized, Text, 150

Documents the organization(s) that applied the IUCN Category to the polygon and the general methods used for assignment as follows: "GAP - Default" is applied when categorical assignments by Designation Type (Table 2 or Table 3) are made, without more detailed review or inquiry. "GAP - other organization"' (for example, GAP – NPS, GAP – TNC, GAP – WDFW) applies when IUCN Category is assigned or reviewed in collaboration with GAP. If GAP has not yet reviewed status assigned by another organization their name or abbreviation is referenced in this field (e.g. TNC).

- IUCN Category Date

Field properties: IUCNCtDt, Standardized, Text, 4

The most current Year (yyyy) IUCN Category was assigned to the polygon.

- WDPA Code

Field properties: WDPA_Cd, Standardized, Long Integer

A Unique Identifier (UID) assigned by the UNEP-World Conservation Monitoring Center (WCMC) to protected areas (by name) submitted for inclusion in the World Database for Protected Areas (WDPA). WDPA Code is managed by GAP, in cooperation with WCMC, prior to PAD-US submissions. Stewards are encouraged to maintain WDPA Code in source data, contact the PAD-US Technical Data Manager for more information.

- Date of Establishment

Field properties: Date_Est, Standardized, Text, 4

The Year (yyyy) the protected area was originally designated, decreed, or otherwise established. Date is assigned by name, regardless of overlaps in topology or event status (for example, Yellowstone National Park: 1872, Frank Church-River of No Return Wilderness Area: 1980).

- Comments

Field properties: Comments, Source data, Text, 255

Comments from original data sources, aggregators or GAP.

- Easement Holder

Field properties: EsmtHldr, Standardized, Text, 250

The name of the organization managing or holding the easement standardized to Proper Case with all acronyms spelled out (for example, The Nature Conservancy (TNC)). This is a required attribute for easement data (defined as "Category" = "Easement") delivered in PAD-US updates for submission to the National Conservation Easement Database (NCED) by GAP (workflow delays exist). Please identify new easements by attributing "Aggregator Source" with your organization's name. Do not assign "Source PAID" as NCED manages all UIDs for easements.

- Easement Holder Type

Field properties: EHoldTyp, Owner Type Domain, Text, 50

General description (for example, Federal, Tribal, State, Private) of the easement holder. Follows "Owner Type" domain codes and descriptions. This is a required attribute for the National Conservation Easement Database (NCED). See Agency Type Domain descriptions in Table 5 for available options. Agency Type reflects Agency Name (assign name first), see crosswalk in Table 6.