­­­­NPS Metadata Template (2024)­­­

Purpose and Introduction

Metadata is key component of a data package, as it helps others to understand your data and assess whe­ther it’s a good fit for a particular purpose. This template can help organize all the bits of information that must come together to create metadata inside of your data package. Overall guidance on metadata and data packages can be found on the Data Publication Best Practices SharePoint.

Data Package Title

(Include **what, where,** and **when**. E.g. “Monthly Water Quality Data from Horsetooth Reservoir, Colorado: 2010-2019”)

|  |
| --- |
| White-tailed Deer Monitoring Data for the National Park Service Heartland Inventory and Monitoring Network: 2005 - 2023 |

Metadata Filename

(Similar to Data Package Title, should be informative. Be sure it ends in **\_metadata** to comply with data package specifications. This will become the file name of your .xml. Example: RMNP\_Mammals\_2020\_metadata)

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| HtlnDeer\_metadata |

Data Files, Names, and Descriptions

(List your data files, give them an informative name and description. Descriptions should be unique and about 10 words long)

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| **Data File**  **(e.g. SEUG\_crustClassData.csv)** | **Informative Name**  **(e.g. SEUG LTVM Biocrust Data)** | **Description**  **(e.g. Biological soil crust development class data)** |
| tlu\_DeerCloudValues.csv | HTLN Deer cloud cover values | Look up table for cloud cover start and ending values |
| HtlnDeerDataPackageOutput.csv | HTLN Deer monitoring data | Majority of the deer data including deer and weather/moon values |
| HtlnDeerLocations.csv | HTLN Deer locations table | The vehicle locations of where the deer group was seen. The DeerID attribute will link this table to the main output table |
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Taxonomic Information

(List the data file(s) with your taxonomic information, including the scientific name field within that data file. We suggest using [DarwinCore](https://dwc.tdwg.org/terms) for column names, such as “scientificName”. If your data package does not have taxonomic data, skip this step.)

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| **Data File**  **(e.g. qry\_Export\_AA\_VegetationDetails.csv)** | **Scientific Name Column**  **(e.g. scientificName)** |
| Single species project | *Odocoileus virginianus* |

Geographic Information

(List the data file(s) that contain geographic information. Please ensure your geographic information is in **decimal degrees**. If your coordinates are in UTMs, the the [convert\_utm\_to\_ll()](https://nationalparkservice.github.io/QCkit/reference/convert_utm_to_ll.html) function in [QCkit](https://nationalparkservice.github.io/QCkit/) can help. If your data package does not have geographic information, you can skip this step.)

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| **Data File**  **(e.g. qry\_Export\_AA\_points.csv)** | **Decimal Latitude Column**  **(e.g. decimalLatitude)** | **Decimal Longitude Column**  **(e.g. decimalLongitude)** | **Site Name Column** **(e.g. Point\_ID)** |
| HtlnDeerLocations.csv | X\_DD | Y\_DD | DeerID |

**Coordinate System**

UTM NAD83 (2011) Zone 15 North

Content Units

(These are the park units where data were collected. If the data package includes data from more than one park, they can all be listed. For instance, if data were collected in all network park units, each unit should be listed separately rather than by the network code.)

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| ARPO, PERI, WICR |

Producing Units

(This is the unit(s) responsible for generating the data package. It may be a single park (ROMO) or a network (ROMN). It may be identical to the units listed in the previous step, overlapping, or entirely different.)

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| HTLN |

Data Collection Status

Ongoing  Complete

Timeframe

|  |  |
| --- | --- |
| **Begin Date** | **End Date (leave empty for ongoing)** |
| 2005 |  |

Abstract

(Include what, why, where, when, and how.)

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| Because of their impacts on vegetation, disease transmission, visitor health, and vehicle-deer collisions, park  managers at Arkansas Post National Memorial, Pea Ridge National Military Park, and Wilson’s Creek National  Battlefield identified white-tailed deer as a vital sign for monitoring (DeBacker et al. 2005). Monitoring white-tailed  deer populations better positions park management to take action to mitigate concerns involving deer.  The overall goals of HTLN white-tailed deer monitoring  are to 1) document annual changes in the number of white-tailed deer, changes could signal presence of illegal  deer harvest, disease, or other acute factors of concern for park management; 2) document long-term trends  in the number of white-tailed deer to help park management determine if measures need to be taken to maintain  herd health, minimize vegetation damage within a park, or alleviate visitor health concerns; and 3) annually map  locations of white-tailed deer observed to assist park management in assessing the influences of management  actions on deer usage of an area, habitat type, etc. |

Methods

(Describes the data creation methods. Includes enough detail for future users to correctly use the data. Be specific about the study design and field and lab methods for collecting and processing the data. Protocol can be cited. It may also be appropriate to cite the datasets that were ingested to generate the data package, software (e.g. R), packages (e.g. dplyr, ggplot2) or custom scripts.)

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| Permanent sampling routes, selected from existing all-weather roads within a park, are used to survey deer. Due to the nature and purpose of most parks, and for safety reasons, it is not recommended to drive off road to complete surveys. Once arriving at the park, park maps are used to familiarize each observer with the park, and determine starting point, direction, and order in which sections will be surveyed.  Each day the project manager splits the observation team into a pair of deer observers, a data recorder, and a driver. The data recorder is responsible for ensuring all data fields listed on the data dictionary of the GNSS unit are filled in and the location of each deer or deer group is recorded. The data recorder also fills out a paper copy of all data observations. Deer observers are responsible for locating deer and accurately taking distance measures from the survey vehicle to the deer or deer group. Observers are also responsible for measuring the angle of the deer or deer group from the survey vehicle and identifying the habitat type the deer or group is in. One observer, generally the project leader, takes all weather measurements. For safety reasons the driver should just drive and not be involved with the collection and recording of data.  Each member of the sampling team is responsible for keeping track of their equipment, and the data recorder has the additional responsibility of tending to the data sheets. Before leaving the field each night, all equipment must be accounted for, and data sheets must be checked for completeness and passed on to the project manager. The project manager is responsible for the safekeeping and organization of the data sheets and ensuring data entry. The data recorder is responsible for downloading all data from the GNSS unit. At the end of each year’s sampling, a trip report including weather conditions, logistical problems, any subsequent departure from the protocol, etc. should be written by the project manager.  Spotlight surveys will be used to obtain counts of white-tailed deer at each HTLN park unit. Surveys are conducted from a survey vehicle moving no more than 16 km/hr (10 mph) using two 1,000,000 candlepower or greater spotlights. All deer seen along the survey route are counted and their locations are recorded using GNSS technologies.  Deer counts are made by two observers, one seated on the left and one on the right side of the vehicle. Distances from the stopped survey vehicle to all deer are determined with a rangefinder. Deer are usually observed in groups, in which case distance is taken to the center-most deer in the group. To map locations of deer, the direction and angle of all deer or deer groups from the survey vehicle are recorded as well.  From pilot data and subsequent surveys, it was observed that the highest number of deer counted each night generally occurred within the first two hours following official sunset. However, on occasion, the maximum number of deer counted occurred in the second or third repeated count. Therefore, two repeated counts commencing one hour after official sunset will be used to count deer numbers during the first and third weekly replicate to accommodate time needed to estimate the visible area. Three repeated counts commencing one hour after official sunset will be used to count deer numbers during the second and fourth weekly replicates. Jester and Dillard (2001) and Shult and Armstrong (1983) recommend starting surveys forty-five minutes to one hour after official sunset to maximize deer observed.  Determining the visible area is critical for adjusting counts. Measurements of the visible area are taken on the first and third weekly replicate after the repeated counts are completed using a range finder to record the perpendicular distances from the survey vehicle to a point beyond which deer would not be visible. Measurements are taken every 0.16 km (0.1 miles) along the survey route. The starting point of the second round of measurements is 0.08 km (0.05 miles) from the starting point of the first round. The location of each perpendicular measure is marked using GNSS technologies. In an attempt to get a more robust picture of how much area is being surveyed along the route, the location of the survey vehicle should be adjusted slightly if objects are encountered that block the true area observed during a survey. For example, if the view of an open field is blocked by a single cedar tree in the ditch next to the survey vehicle, move the vehicle forward or backward to see the field. Following procedures in SOP 7 “Data Summary and Analysis,” perpendicular distances are plotted on a map, a polygon is created, and the visible area is determined.  Annual visible areas, by definition, should include all deer observations. Deer may be observed at distances beyond the estimated visible area, however, indicating that either the visible area was underestimated at these points, or that the polygons were too coarse to take into account the fine scale differences in actual visibility. Conducting two rounds of visibility estimates compared to one yields a finer scale estimate of visible area without adding significantly to the data collection and processing efforts. |

Creators

**(These are the people who will show up as authors in the dataset citation.** These are the individuals who have provided intellectual or other significant contributions to the creation of this dataset, much like the authors of a research paper. Valid EML requires at least one person with a **creator** role.)

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| --- | --- | --- | --- | --- | --- | --- |
| **First Name** | **Middle Initial** | **Last Name** | **Organization** | **Email address** | **ORCID ID (optional)** | **Role in project** |
| David | G | Peitz | NPS HTLN | david\_peitz@nps.gov |  | Creator |
| Jennifer | L | Haack-Gaynor | NPS HTLN | Jennifer\_Haack@nps.gov | 0000-0003-4497-5128 | Creator |
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Other personnel names and roles

(Who should a data user contact with questions about these data? You **must** enter a person or organization name to serve as the **contact** for this dataset. If this is the same person as the creator, list that person twice. You may also list other personnel who participated in the project (such as field crew, lab tech, data entry etc.) Persons serving more than one role are listed on separate lines. Other roles (e.g. Field Technician) will be listed as associated parties to the data. Their specific role (e.g. “Field Tech” will also be listed in metadata))

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| --- | --- | --- | --- | --- | --- | --- |
| **First Name** | **Middle Initial** | **Last Name** | **Organization** | **e-mail address** | **ORCID ID (optional)** | **Role in project** |
| David | G | Peitz | NPS HTLN | David\_Peitz@nps.gov |  | Contact |
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Dissemination Level

(Select a Dissemination Level based on the CUI status of your dataset. This is a required step. You can choose from one of five dissemination codes. Watch out for the spaces!)

PUBLIC *(Does NOT contain CUI.)*

FED ONLY *(Contains CUI. Only federal employees should have access.)*

FED CON *(Contains CUI. Only federal employees and federal contractors should have access.)*

NOCON *(Contains CUI. Federal, state, local, or tribal employees may have access, but contractors cannot.)*

DL ONLY *(Contains CUI. Should only be available to a named list of individuals.)*

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| **DL ONLY Names** |
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More information about these codes can be found at: <https://www.archives.gov/cui/registry/limited-dissemination>).

Intellectual Rights Statement

(The EMLeditor tool can assist in modifying the intellectual rights statement that is embedded in metadata. Government works shared with the public are usually public, i.e. public domain, or CC0, and anything with CUI should be set to ‘restricted’.)

Public *(Does not contain CUI. The intellectual rights will read: “This work is in the public domain. There is no copyright or license.”)*

CC0 *(Does not contain CUI. The intellectual rights will read: “The person who associated a work with this deed has dedicated the work to the public domain by waiving all of his or her rights to the work worldwide under copyright law, including all related and neighboring rights, to the extent allowed by law. You can copy, modify, distribute and perform the work, even for commercial purposes, all without asking permission.”)*

Restricted (*Contains CUI.*)

Keywords

(List keywords below and separate with commas. Using keywords from a controlled vocabulary (CV) will improve the future discovery and reuse of your data. The LTER CV is a good source for keywords. Access the LTER CV [here](http://vocab.lternet.edu/vocab/vocab/index.php). Also, please determine one or two keywords that best describe your park, station, and/or project (e.g., Trout Lake Station, NTL LTER).)

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| Monitoring; Deer; White-tailed deer; Odocoileus virginianus; Heartland Network; HTLN; ARPO; Arkansas Post National Memorial; PERI; Pea Ridge National Military Park; WICR; Wilson’s Creek National Battlefield; National Park Service; NPS; Wildlife. long-term monitoring, mammal |

Data Table(s)

(Provide a Table Name, Table Description, and description of each column in your data table):

* **Column Name**: This name must be exactly as it appears in the dataset. Please avoid special characters (like & or \), dashes and spaces. Underscores are permissible. Do not begin a column name with a number.
* **Description**: Please give a specific definition of the column name. This can be lengthy.
* **Class:** Column class. Valid options are **numeric**, **categorical**, **character**, and **date**.
* **Unit:** Identify units for all numeric variables. Please avoid special characters and describe units in this pattern: e.g., microSiemenPerCentimeter, microgramPerLiter, absorptionPerMolePerCentimeter
* **Date Time Format**: Please tell us exactly how the date and time is formatted: e.g. mm/dd/yyyy hh:mm:ss plus the time zone and whether or not daylight savings was observed. ISO 8601 date format of YYYY-MM-DD or YYYY-MM-DD hh:mm:ss is preferred.
* **Missing Value Code**: If a code for ‘no data’ is used, please specify: e.g., -99999
* **Missing Value Code Explanation**: Definition of missing value code.

**Table name:** HtlnDeerDataPackage.csv

**Table description:** The HTLN deer and weather data for monitoring in three parks

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| **Column name** | **Description** | **Class** | **Unit** | **Date Time Format** | **Missing Value Code** | **Missing Value Code Explanation** |
| ParkName | The name of park | categorical |  |  |  |  |
| ParkCode | 4-character park code | categorical |  |  |  |  |
| PeriodID | Unique identifier for the data collection period, based on the park code, project code, and start date of the sampling period | categorical |  |  |  |  |
| EventID | Sampling event ID code. Time part at end should be in 24hr time. | categorical |  |  |  |  |
| SurveyNo | Survey number - The survey day that is being sampled - in the early years will be 1-3, in later years will be 1-6. Each survey day is a different number. | categorical |  |  |  |  |
| Round | What number round it is for a survey. Generally A-C (1=A, 2=B, 3=C). In the early years may be D1, D2, D3, N1, N2,N3 or DayA, DayB, NightC etc | categorical |  |  |  |  |
| DeerDate | Date (MMDDYYYY) of sampling. | date |  | mm/dd/yyyy |  |  |
| StartTIme | Start time for survey |  | 24-hr | hh:mm |  |  |
| BeginningTemp | Temperature in Celsius at start of survey round. | numeric |  | Degrees C | -9999 | No value collected |
| BeginningHumidity | Humidity value at start of survey round. | numeric |  | percent | -9999 | No value collected |
| BeginningWind | Wind speed at the start of survey round. meters/second; if no wind then value = 0 | numeric |  | meters/second | -9999 | No value collected |
| BeginningWindDirection | Wind direction at start of survey round. Degrees; if no wind direction then use value -9999 | numeric |  | degrees |  |  |
| BeginningPrecipitation | Precipitation at the start of the survey round. Range: 0 - 5 (0, No Rain; 1, Mist or Fog; 2, Light Drizzle; 3, Light rain; 4, Heavy rain difficult to hear; 5, snow) | categorical |  |  |  |  |
| EndTIme | End time of survey |  | 24-hr | hh:mm |  |  |
| EndingTemp | Temperature in Celsius at end of survey round. | numeric |  | Degrees C | -9999 | No value collected |
| EndingHumidity | Humidity value at end of survey round. | numeric |  | Perce nt | -9999 | No value collected |
| EndingWInd | Wind speed at the end of survey round. meters/second; if no wind then value = 0 | numeric |  | meters/second | -9999 | No value collected |
| EndingWindDirection | Wind direction at end of survey round. Degrees; if no wind direction then use value -9999 | numeric |  | degrees |  |  |
| EndingPrecipitation | Precipitation at the end of the survey round. Range: 0 - 5 (0, No Rain; 1, Mist or Fog; 2, Light Drizzle; 3, Light rain; 4, Heavy rain difficult to hear; 5, snow) | categorical |  |  |  |  |
| MoonIllumination | Moon illumination for night of survey. Range: 0 - 100 percent | numeric |  | percent |  |  |
| DeerTotal | The total number of deer sampled per event (EventID) | numeric |  |  |  |  |
| BeginningCloud | Cloud cover value at start of survey round. Limit to range: 0 to 7 | categorical |  |  |  |  |
| EndingCloud | Cloud cover value at end of survey round. Limit to range: 0 to 7 | categorical |  |  |  |  |
| VisibleArea\_sqkm | Calculated Visible Area (square kilometers), range >0.00 <= 5.00 sqkm | numeric |  | Square Kilometer |  |  |
| DeerID | An unique ID given to each deer group observation through all years, all parks. Used in the spatial data to link fields. | categorical |  |  |  |  |
| Year | The year the survey took place in. | categorical |  |  |  |  |
| Group | Record sequentially, unique # identifying each deer or group observed during a count. A group can range from 1 to infinity. For each observation loop of the tour road the group numbers start over at 1 | categorical |  |  |  |  |
| Side\_of\_ve | The side of the vehicle that the deer group was located. | categorical |  |  |  |  |
| Distance\_m | The distance (in meters) from the vehicle to the deer group. | numeric |  | meters |  |  |
| Angle | The angle the deer group was from the vehicle. Can be between 0 to 90, use a land measure compass. (In 2005 all angles were 90 since perpendicular from vehicle) | numeric |  |  |  |  |
| Quadrant\_C | Quadrant compass which identifies what quadrant the deer angle was located in. | categorical |  |  | -9999 | In 2005 methods were slightly different so no quadrant value was collected. All measurements were taken from a 90 degree angle from the vehicle |
| Deer\_Numbe | The number of deer in each group. | numeric |  |  |  |  |
| VegType | What type of vegetation habitat the deer group was located in. | categorical |  |  |  |  |
| Comment | Field notes during time of location collection | character |  |  |  |  |
| GPS\_Date | The date the deer group was collected with a GNSS unit | date |  | mm/dd/yyyy |  |  |
| GPS\_Time | The time the deer group was collected with a GNSS unit |  | 12-hr time | hh:mm:ss am/pm |  |  |
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(Copy this table to document more than one data table.)

**Table name: tlu\_DeerCloudValues.csv**

**Table description:** The lookup table for starting and ending cloud values.

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| **Column name** | **Description** | **Class** | **Unit** | **Date Time Format** | **Missing Value Code** | **Missing Value Code Explanation** |
| CloudValue | Cloud cover code values |  |  |  |  |  |
| Explanation | What the cloud code means |  | Percent of total |  |  |  |
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Categorical Variables (Catvars)

(Describes categorical variables of a data table (if any columns are classified as categorical in table attributes).)

* **Attribute Name**: Column name
* **Code**: Categorical variable
* **Definition :** Definition of categorical variable

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| **Attribute** | **Code** | **Definition** |
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Data Release Report (DRR)

(Indicate whether there is an associated DRR with your data package.)

No  Yes, it already exists  Yes, plan to generate one with the Data Strike Team

(If you have a DRR and there is an existing reference for it on DataStore, fill out the table below. Otherwise, you can skip this step.)

|  |  |
| --- | --- |
| **DRR Title** | **DRR Reference Number (from DataStore)** |
|  |  |

Additional notes and comments

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