NPSPECIES

NPSPECIES USER MANUAL

Integrated Resource Management Applications Portal

(https://irma.nps.gov)

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Amendment History

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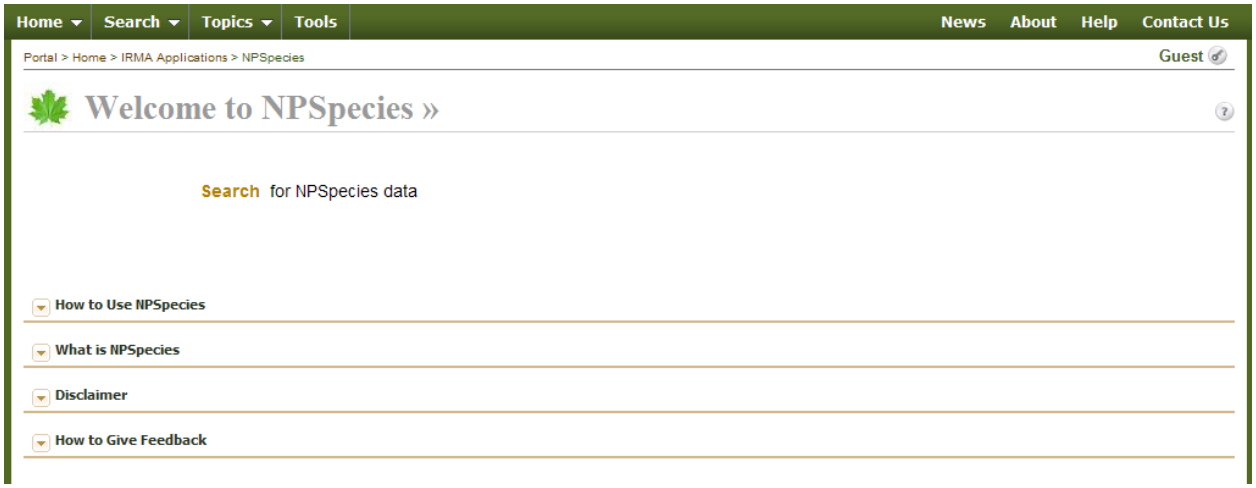
3.0.0.1	Initial Draft	Loar	04/01/2011
3.0.0.2	final draft	Loar	04/25/2011
3.0.0.3	Updated section 2 NPSpecies Basics	Loar per Kozlowski	06/13/2011
3.1.0.1	Updated title page and header, and FAQs	Loar	08/31/2011
3.1.0.2	Updated header in section 3	Loar	09/18/2011

Table of Contents

1 Introduction

This document is the comprehensive guide to all of the functionality for the NPSpecies Application. It will be regularly updated as new functionality is added or changed. The glossary, data dictionary, and frequently asked questions may be found in the appendices of this document.

NPSpecies can be accessed from the Integrated Resource Management Applications (IRMA) Portal at https://irma.nps.gov/App/Species/Welcome. This Welcome page provides basic descriptive information about the application, including navigation and a roadmap of future development.



2 NPSpecies Basics

National Park Service Natural Resource Challenge established in 1999 required a baseline inventory of all vertebrates and vascular plants in all national parks with significant natural resources. The database to house the park-species lists was to be NPSpecies. The first web-based NPSpecies application went into production in January 2000. NPSpecies began a complete redesign in 2007 and this next generation of NPSpecies replaced the original version in April 2011.

2.1 What is NPSpecies?

NPSpecies is the National Park Service's web-based application for documenting the occurrence and status of species in our national parks. Species information such as abundance, breeding status, nativity and management concerns (e.g., invasive, globally or regionally rare, state-listed species) are also included in this application.

Although NPSpecies is designed to manage species information for all taxa and all parks in the National Park System the initial focus of the NPS Inventory and Monitoring Program was to populate NPSpecies with vertebrate and vascular plant data from a select group of 270 parks with significant natural resources. Today NPSpecies has species lists for over 300 parks and there are many species lists for groups other than vertebrates and vascular plants.

2.2 What is the scope of NPSpecies?

NPSpecies consists of these three core elements: 1) Park-Species Lists, 2) status of those species in the park, and 3) a quality assurance certification process. These three core elements are the focus of this manual.

2.2.1 Park-Species Lists

Park-Species lists consist of one or more taxa that MAY be present in a park for a taxonomic group (i.e. fish species list, bird species list, etc).The presence of taxa is stored using the occurrence park status field. Park Status fields are explained in the next section. Although not all taxa on a park-species list actually occur in the park, the park-species lists are not intended to include an exhaustive list of all taxa that do not or have not existed in the park. Those chosen to be included on a park-species list that do not occur in the park are those that were entered in error based on a falsely identified species, are in close proximity of the park, or have been historically documented in the park.

There are three types of park-species lists managed in NPSpecies: 1) working park-species lists, 2) sandbox or temporary species lists, and 3) certified park-species lists. The working park-species lists are the ones that are actively being modified and improved upon, but have not necessarily been reviewed for errors. The sandbox or temporary species lists are those that are used for data entry training purposes or used to load data into the NPSpecies system in batch to be merged with the working species lists. And finally the certified park-species lists, which are park-species lists that have been reviewed and checked for errors. See the Quality Assurance Certification process section below for details.

Park-Species lists contain both current and historical scientific names used to describe a taxon, additionally they may contain taxa above the taxonomic rank of species; therefore a park-species list may include taxa other than species. Although a park-species list may include taxa above the species taxonomic rank, the certified species lists are filtered to only include organisms at or below the taxonomic rank of species in reports. The selection of which organism name to use is up to each park. See the section below called “How were data entered?” to discover how Park-Species lists have been created.

2.2.2 Park Status

For each taxon on a park-species list there are a set of fields used to define the status of that taxon in the park. Park Status fields include Occurrence, Abundance, Residency, Cultivation, and Nativity. These are described in detail within the data dictionary section of this manual. These park status values are determined one of two ways: 1) the expertise of a taxa expert, or 2) based on documented evidence including observations, vouchers (whole or part of organism taken from the field), or references (documents or data sets).

2.2.3 Quality Assurance Certification Process

A quality assurance (QA) process is a review process in place to catch logical inconsistencies within NPSpecies.

This is the basic quality assurance certification process:

1. A taxa expert reviews the park-species list and each species’ park status fields for accuracy.
2. Either the taxa expert or POC runs the species list through a standard series of checks for logical inconsistencies. Only after these checks pass the next step may begin.
3. The POC submits a certification submission form to the Natural Resource Program Center (NRPC) data manager. The content of this form is used to create a certification record that lists the park status fields being certified, the date of the certification, and who participated in the review process. If a certification is a result of a new field inventory, park boundary change, or natural disaster, that information is also recorded.
4. A snapshot of the species list is then saved as a record of the data at the time of the certification.
5. Finally the species list is evaluated for its merits to become publically accessible.

This QA Certification process only applies to vertebrates and vascular plants at this time. However, there is a need to also evaluate species lists for other taxonomic groups.

The information that results from the certification process is based upon the premise that the information about species is current, complete and accurate to the best knowledge of the reviewers at the time of the review. Because NPSpecies is a dynamic database which will continue to be populated into the future, it is necessary to

document when, and which data have been reviewed for completeness and accuracy so that users can qualify the use of the data for scientific, management and interpretive purposes.

In order to maintain information in such a dynamic system, data need to be entered and reviewed on an intermittent or periodic basis for completeness, quality and accuracy. At minimum, the initial certification will be completed after the first formal review of the park-species list. During this first certification a review is completed by taxonomic grouping of species on a parks' list and their associated park status values. The need for subsequent certifications will vary depending on changes to park boundaries, man-made or natural events affecting biodiversity, and the extent of data added or edited after the time of the previous certification.

During this initial QA Certification process it became clear that no amount of QA can replace the reality that the Natural Resource Challenge did not provide enough funding to produce the same level of data quality across all parks. In many cases parks simply did not receive enough funding to conduct field inventories or hire taxonomic experts needed to produce current, complete, and accurate species lists. You will see data gaps and errors. Please help us identify these data gaps and errors by contacting us by email at irma@nps.gov.

2.3 Who manages NPSpecies data?

NPSpecies Points of Contact (POCs) steward the data within NPSpecies. They may not enter the data themselves, however they do police who does data entry. POCs also coordinate the review of the data.

You will see data gaps and errors. Please help us identify these data gaps and errors by contacting us by email at irma@nps.gov.

2.4 How were data entered?

Data within NPSpecies were entered various ways over the years. Some data were entered as a result of data mining books, reports, and data sets from historical records from the parks. Other data were entered as a result of targeted field inventories for particular groups of species.

As a result many species lists include historical taxonomy used at the time of the publication or specimen collection. During the review process these historical names, considered taxonomic synonyms, are associated with species names used at the park locale, referred to as the Park Accepted Name.

Status information for each park was then entered for Park Accepted Names only, to avoid replicate status information under multiple taxonomic synonym names. In some cases species were optionally linked to evidence (observations, vouchers, and/or references). These evidence categories serve to verify and validate the existence of species in individual park units.

2.5 Why do some fields have Not Applicable (NA)?

Many fields in NPSpecies are dependent on the values of other fields. Additionally, some park status fields were designed for a particular taxonomic group, for example Residency is for animals only, and therefore plants will have a Residency value of Not Applicable (NA). For more detailed information on these dependencies please review the NPSpecies Data Dictionary in Appendix B of this manual. Where possible always look for the park status values associated with the Park Accepted Name.

2.6 What are the supporting applications used with NPSpecies?

NPSpecies depends upon several other independent applications and they are:

1. Unit – stores all unit names and their relationships. Units include national park system parks, networks, regions, programs, and offices.
2. Taxonomy – stores all scientific and common names in addition to relationships between names.
3. Template and Reporting – generates all data viewed in tables and supports the download mechanism for the data displayed in those tables.
4. Voucher – stores the metadata associated with a voucher specimen.

5. Observation – stores the metadata associated with an observation.
6. Reference – stores the metadata and digital file associated with a document or data set.
7. Match List – stores species lists from partner agencies and within the park service and simple metadata associated with those species for the purpose of displaying with park-species lists.
8. Identity Management – stores minimal information about users and their permission to all applications on the IRMA Portal.

For more information about these applications see their user manuals.

2.7 Data Use and Liability Disclaimer

NPSpecies provides information on the presence and status of species in our national parks. Although the data have been reviewed using the best information available at the time of disclosure, these species lists are not exhaustive (e.g., the absence of a species from a list does not necessarily mean the species is absent from a park). Varying degrees of effort spent surveying species or mining historical reference information may have resulted in data gaps. Also, please be aware that taxonomy for species changes over time and information may be listed under a different species name.

The National Park Service shall not be held liable for improper or incorrect use of the data described or contained herein. These data are not legal documents and are not intended to be used as such. The information contained in NPSpecies is dynamic and may change over time. It is the responsibility of the data user to use the data appropriately and in a manner consistent with data's limitations.

The National Park Service gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of the information in NPSpecies. It is strongly recommended that these data be acquired directly from an NPS server or source and not indirectly through non-National Park Service sources.

3 Generating Reports in NPSpecies

The NPSpecies Search page is made of two main sections: 1) search parameters and 2) search results. The search parameters define what search is being performed, including any user defined parameters to further refine the search. The search results section is where the results are displayed.

The Search Results panel displays the report content based on the type of Search and Layout selected in the Species Search. Each layout has a basic structure, including a section for the Search Criteria Definition and the Search Results. Search Criteria Definition displays the search parameters chosen to filter the record set. The Search Results section displays title, subtitle, date report was created, disclaimer, download options, and a table with the report results. Both title and subtitle are editable. To view the header information or sorting options click on the arrow next to the sections "Notifications", "Report Header", and "Multiple Column Sorting Options".

3.1 What are the available reports?

3.1.1 Certified Park-Species Lists

Certified Species List search only finds Park Accepted Names in a Unit for the latest certified species list where at least Park Accepted Status and Occurrence fields have been certified. Records are further filtered to those with an Occurrence value of Present in Park or Probably Present only. Certified workbenches are those whose data were frozen after the certification took place. Lists will be based on data taken as a snapshot at the time of the certification. Taxonomic category options for this species list include only Mammals, Birds, Fish, Reptiles, Amphibians, and Vascular Plants.

3.2 How do I generate a Park-Species List?

1. Click on "Search" in breadcrumb at upper left corner of page.

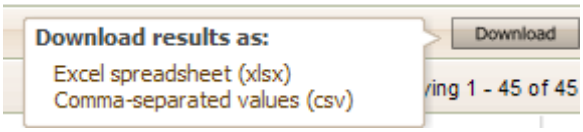
2. Select a Search Type (i.e. Species List), Search, Layout and other search criteria.
3. Click Search button.

3.3 How do I run another report?

Once you have run a report and you are ready to run another one select the Expand Panel to Revise Search Definition at the top of the page. You do not need to click the internet browser's back button. Revise your search criteria and click the 'Search' button again.

3.4 How do I download a Park-Species List?

1. First you must execute a search and return results. See 'How do I generate a Park-Species List' as an example.
2. To access the download options click on the 'Download' button icon in the upper right corner of the results table.
3. To download the results click on one of the download options in the list that displays to save results to a file.
4. Select open or save to save this file on your computer.

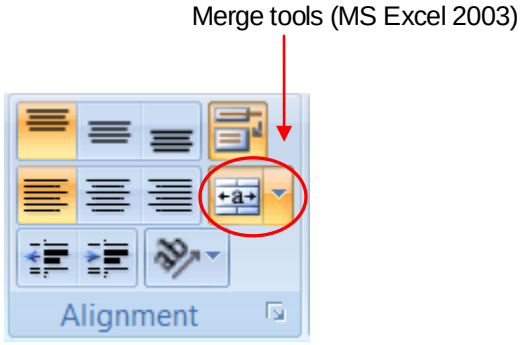


3.5 How do I print a Park-Species List?

To print a Park-Species List you must first download the list into MS Excel or similar application and then print using MS Excel. It is advisable to format the file prior to printing to meet your needs, such as setting up the page orientation, adjusting column widths, wrapping disclaimer text. For more help using MS Excel, please refer to the Microsoft website.

3.5.1 How do I wrap the disclaimer text?

1. Once the downloaded file is in MS Excel, determine the width of your printed page (i.e. set up your page orientation first; see below Columns B-J).
2. Highlight those columns and merge the cells (Home, Alignment, Merge Across)
3. Adjust the height of the disclaimer's row
4. Adjust the alignment of the disclaimer (i.e. select cell, Format cells…,Alignment tab Horizontal – Left(Indent))

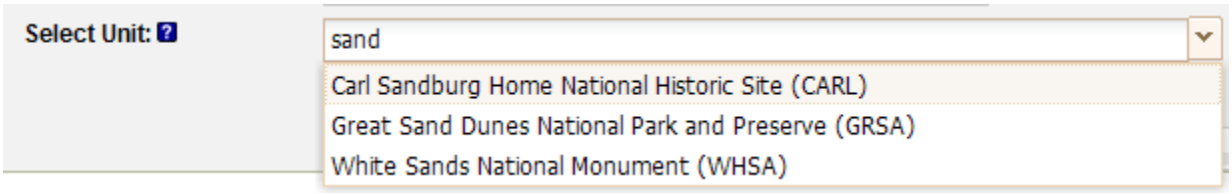


	A	B	C	D	E	F	G	H	I	J
1	**Title**	Certified Species List for Mammals in Abraham Lincoln Birthplace National Historical Park								
2	**Date Created**	April 21, 2011								
3	**Date Certified**	Mammal = February 27, 2007								
4	**Disclaimer**	This list includes all the species that have been documented within the park. Absence of a species from the list does not necessarily indicate its absence from the park, since it is possible that formal census techniques targeting rare, unique, cryptic or seasonally present species were not used. Species on the list are recorded using park-accepted scientific names that have been quality-checked and certified by subject-matter experts. The Occurrence field has also been reviewed and certified by experts. Common names are based on the park's preferred common names list if available, or else from the Integrated Taxonomic Information System (ITIS).								
5										
6	**Category**	**Order**	**Family**	**Scientific Name**	**Common Name**	**Occurrence**	**Abundance**	**Residency**	**Nativity**	**Cultivation**
7	Mammal	Artiodactyla	Cervidae	*Odocoileus virginianus*	white-tailed deer	Present in Park	Common	Breeder	Native	NA
8	Mammal	Carnivora	Canidae	*Canis latrans*	coyote	Present in Park	Common	Breeder	Unknown	NA
9	Mammal	Carnivora	Canidae	*Urocyon cinereoargenteus*	common gray fox	Probably Present	NA	NA	Native	NA
10	Mammal	Carnivora	Canidae	*Vulpes vulpes*	red fox	Present in Park	Rare	Breeder	Unknown	NA

4 Search Tips and Tricks

4.1 Single Unit Selector

The single unit selector (simple drop down menu) allows you to choose a single unit to be included in a set of search criteria. You may start typing a Unit Name or Code and the drop down list will be filtered to those that match.



5 Table Results Tips and Tricks

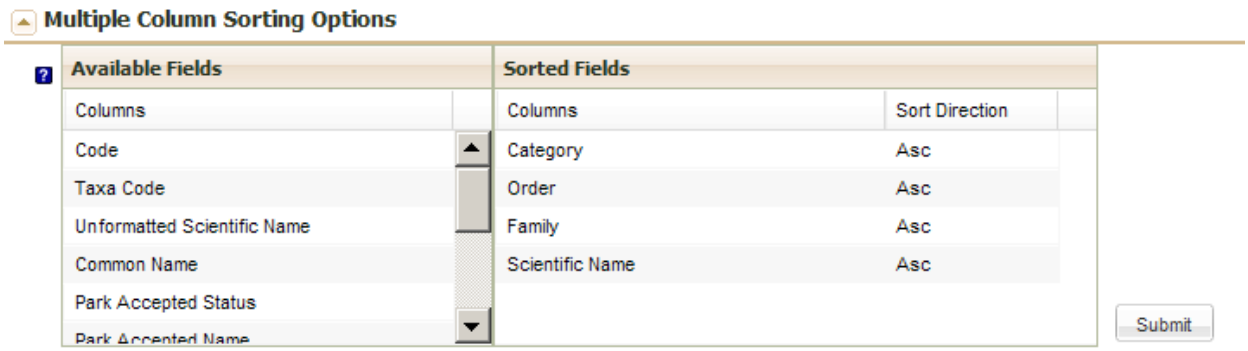
5.1 Multiple Column Sorting Tool

When entering the results page, by default Species Lists are sorted ascending by Category, Order, Family and then Scientific Name. The list of units where a particular species occurs is sorted ascending on Unit Name by default.

In the Multicolumn Sorting tool the Available Fields box displays the columns available in the Layout selected. To select fields to sort, drag from the Available Fields box to the Sorted Fields box. To remove items from the Sorted Fields box, drag unneeded columns back to the Available Fields box.

The order in which fields display in the Sorted Fields box determines the sort order of the fields selected. To change the order in which columns are sorted click and drag column labels up or down to change the sort order. To change the sort direction, double click on the Sort Direction column and select a new sort direction (i.e. Ascending or Descending) in the dropdown menu that appears.

When this Multiple Column Sorting tool is present on a results page the single column sorting options in the results grid are disabled and this tool must be used for all sorting.



5.1.1 How do I sort by only one column?

Follow these directions when you want to sort by only one column.

1. First, drag fields from the Sorted Fields box to the Available Fields box that you do not want sorted.
2. Next, find the column you want sorted in the list of columns under Available Fields.
3. Then, drag the column to be sorted from the Available Fields box to the Sorted Fields box if it is not already there.
4. To change the Sort Direction, double click on Sort Direction column and choose either Ascending or Descending from the dropdown menu that appears.
5. Click the Submit button to see the changes reflected in the results grid.

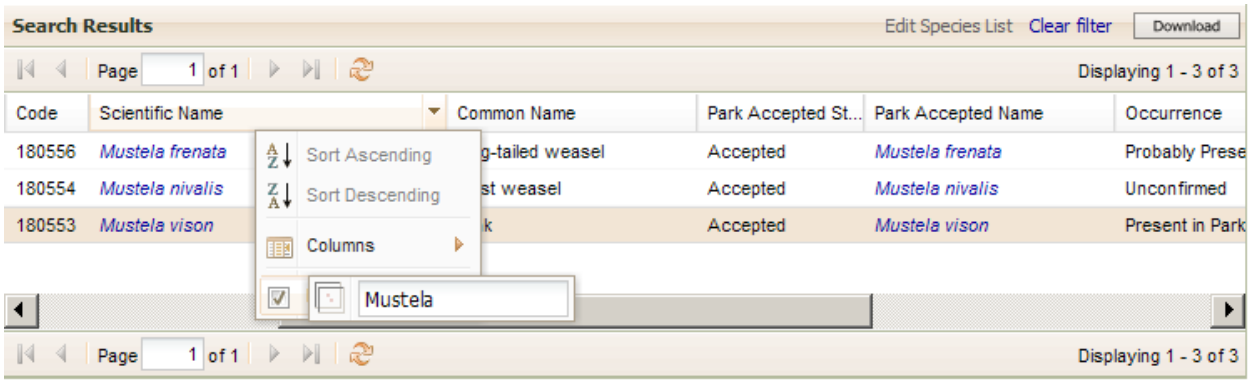
5.1.2 How do I sort by more than one column?

Follow these directions when you want to sort by more than one column at once.

1. First decide which columns you want to sort by and in which order.
2. Next, drag the first column to sort by from the Available Fields box to the Sorted Fields box.
3. Then, if necessary change the Sort Direction by double clicking in that cell to activate a dropdown of choices (i.e. Ascending or Descending).
4. Repeat the steps above till you have listed all the columns you would like to sort by.
5. Click the Submit button to see the changes reflected in the results grid.

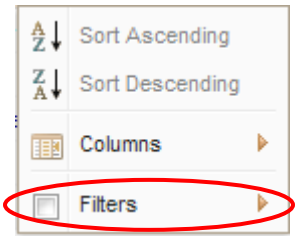
5.2 Grid Filtering

Grid filtering allows the table results to be further refined or filtered based on values specified. This type of refined filtering is only available for Species Lists at this time.



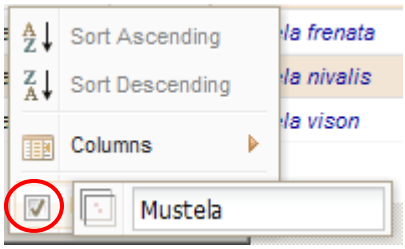
5.2.1 To activate a grid filter:

1. Hover over the column header of interest
2. Left click on the down arrow that appears to the right of the column label
3. If grid filtering is available for the selected column an option of Filters will be available in the menu
4. Click the arrow to the right of the Filters option
5. Then checkmark or fill in the values to filter the table results



5.2.2 To turn off a single column grid filter:

1. Hover over the column header of interest
2. Left click on the down arrow that appears to the right of the column label
3. Uncheck the box to the left of the Filters option.



5.2.3 To turn off all grid filters

Click the Clear Filters link in the table. If the Clear Filters link is disabled, then no grid filters are currently activated.

6 Appendix A – Glossary

Certified Species List
A Certified Species List includes Park Accepted Names at the taxonomic rank of species and below (i.e. species, subspecies, varieties, forma, and hybrids) that have been quality-checked and certified by subject-matter experts.

Grouping
A grouping of taxa. Categories may come from the classification source that provided a taxon (i.e. USDA Plants Categories) or they may be added by a separate organization (i.e. NPSpecies Categories). An example of an NPSpecies Category is "Birds".

Park Accepted Names
Scientific names vetted by a park through a certification process and that appear on Park-Species Lists. Park Accepted Names can occur at species or infraspecies (e.g., subspecies, varieties, forma, hybrids) level, and a park can include multiple subspecies or varieties of a species on their species list. Evidence and scientific names based on other classification systems (e.g., synonyms) are cross-walked to these Park Accepted Names. In NPSpecies 1.0, Park Accepted Names were referred to as the park's Local List names, locally accepted names, or "Organisms".

Park Accepted Status
Current Park Accepted Status for the scientific name that is species or below on the park-species list. Options are Accepted, Not Accepted, Unknown, and Not Applicable (NA). This term was formerly known as Local List in NPSpecies 1.0.

Park Status Fields
Fields of Occurrence, Abundance, Residency, Nativity, and Cultivation that house information on the status of species in parks.

POC
Point of Contact designated by each park, network, and region to be the single "gatekeeper" and coordinator for data entered into NPSpecies. POCs for each park are designated in writing by the park superintendent through Inventory & Monitoring (I&M) network Board of Directors and other mechanisms. In the majority of cases, the I&M Data Manager for an I&M Network is the POC for all parks in the network, although some large parks have designated their own POC.

Rank
An indicator of position within a taxonomic hierarchy. Common ranks in order from highest to lowest include kingdom, division or phylum, class, order, family, genus, and species. Other ranks exist between these ranks and below species, but are less commonly used.

Taxa/Taxon
A taxonomic group or entity. Each record in the Taxonomy application is considered a taxon. Taxa is the plural of taxon.

Taxonomic Hierarchy
A listing showing the placement of a taxon and its parentage in descending order by rank, typically all the way to kingdom for biological nomenclature.

Taxonomy
Taxonomy is the science and practice of classification, arranging taxa in hierarchies by ranks following a parent-child relationship.

Workbench = Species List
Workspace to relate a park-species list, park accepted status, and links to evidence for one taxonomic category and one unit. A workbench may refer to data already certified; data the park is actively editing (e.g. work in progress); data that has been imported using a batch process (e.g. uploading desktop Access files to be merged with work-in-progress data); or data that is to be used as "sandbox" data for a training session or other temporary purpose.

7 Appendix B - Data Dictionary

7.1 Quick Reference to NPSpecies Park Status Fields

OCCURRENCE	
Present in Park	Extremely high confidence in park; Current, verifiable evidence exists; Extant
Probably Present	Very high confidence in park; Verifiable evidence may exist, but not current; Park within range; Appropriate habitat exists; Adjacent to park
Unconfirmed	Very low to high confidence in park; Verifiable evidence may exist, but not current or insufficient
Encroaching	Extremely low confidence in park; Adjacent to park; Verifiable evidence may exist, but not current
Historic	Extremely low confidence in park; Verifiable evidence exists but not current
False Report	Extremely low confidence in park; Evidence exists, but cannot be sufficiently verified
NA	Not applicable
ABUNDANCE – ANIMALS	
Abundant	Seen daily in appropriate habitat/season; Large numbers
Common	Seen daily in appropriate habitat/season; Not in large numbers
Uncommon	Seen monthly in appropriate habitat/season; Locally common
Rare	Seen only a few times each year
Occasional	Seen every few years, but not every year
Unknown	Unknown
NA	Not applicable
ABUNDANCE – PLANTS	
Abundant	Large numbers; Habitats covering large portion of park
Common	Large numbers; Habitats not covering large portion of park
Uncommon	Few to moderate numbers; Sporadic; Habitats uncommon in park
Rare	Few individuals; Habitats rare
Unknown	Unknown
NA	Not applicable
RESIDENCY – ANIMALS ONLY	
Breeder	Reproduces
Resident	Non-breeder; Two months/year
Migratory	Non-breeder; Migratory; Less than two months/year
Vagrant	Park outside normal range
Unknown	Unknown
NA	Not applicable
NATIVITY	
Native	Native; includes endemic or indigenous
Non-Native	Non-native
Unknown	Unknown

NA	Not applicable
CULTIVATION – NON-NATIVE ONLY	
Cultivated	Cultivated in the park
Persistent	Persistent from a cultivation in the park
Not Cultivated	Not cultivated in the park
Unknown	Unknown
NA	Not applicable

7.2 Full Data Dictionary

7.2.1 Park-Species List

This table covers all fields contained in the Certified Species List report.

Label	Definition	Comments
Park Status Fields	Information commonly associated with species status including Occurrence, Abundance, Residency, Nativity and Cultivation.	The possible values for each of the Park Status Fields are mutually exclusive. Therefore, every name on a park's lists should have a value for each of the Park Status fields. Additionally, the Park Status fields are intended to be kept as current as reasonably possible and apply to the current boundary of the park unit. It is recognized that the value of one or more Park Status fields for an organism may not be known with certainty at any given point in time. Additionally, the values that are assigned at any given point in time may vary by the individual that assigned them and their knowledge, and the availability and currency of evidence in NPSpecies, and elsewhere, at the time of the assignment. Consequently, "Unknown" and/or "NA" are valid values for each park status field. The NPSpecies QA procedures accommodate this uncertainty and variability in developing current, complete and accurate species park status.
Grouping	A grouping of taxa. Categories may come from the classification source that provided a taxon (i.e. USDA Plants Categories) or they may be added by a separate organization (i.e. NPSpecies Categories). An example of an NPSpecies Category is "Birds".	
Order	The taxonomic Order of the scientific name on the park-species list	When the TSN (Taxonomic Serial Number) is positive, then the Order is according to ITIS (Integrated Taxonomic Information System). When the TSN is negative, then the Order is based on another taxonomic source.
Family	The taxonomic Family of the scientific name on the park-species list.	When the TSN (Taxonomic Serial Number) is positive, then the Family is according to ITIS (Integrated Taxonomic Information System). When the TSN is negative, then the Family is based on another taxonomic source.
Scientific Name	The species or lower scientific name currently accepted by the park on the park-species list.	Unformatted scientific name are without the HTML italic tags.
Common Name	The common name used by the species or lower on the park-species list.	The first three local preferred common names are used first and if they do not exist, then the first three common names from ITIS or another outside source are used.
Occurrence	The current status of each species in each park.	Applicable only to scientific names with Park Accepted Status of "Accepted". Possible values reflect a combination of confidence, and availability and currency of verifiable evidence in NPSpecies.
Present in Park	Species' occurrence in park is documented and assumed to be extant.	Extremely high confidence that the species is currently in the park. A current, verifiable reference, voucher or

		observation is included in NPSpecies.
Probably Present	Park is within species' range and contains appropriate habitat. Documented occurrences of the species in the adjoining region of the park give reason to suspect that it probably occurs within the park. The degree of probability may vary within this category, including species that range from common to rare.	Very high confidence that the organism is currently in the park. Verifiable evidence may exist in NPSpecies, but is not considered current enough to elevate the status to Present in Park. Efforts should be made to obtain current, verifiable evidence in NPSpecies to elevate the Occurrence to “Present in Park”. If reasonable efforts to obtain current, verifiable evidence are unsuccessful, then the Occurrence should be changed to Unconfirmed, Historic, Encroaching or False Report as applicable.
Unconfirmed	Included for the park based on weak ("unconfirmed record") or no evidence, giving minimal indication of the species' occurrence in the park.	Any confidence from very low to high that the organism is currently in the park. Verifiable evidence may exist in NPSpecies, but it is not considered sufficient enough to elevate the status to “Probably Present”, nor current enough to elevate the status to “Present in Park”. Efforts should be made to obtain current, verifiable evidence in NPSpecies to elevate the Occurrence to “Present in Park”. If reasonable efforts to obtain current, verifiable evidence are unsuccessful, then the Occurrence should be changed to Historic, Encroaching or False Report as applicable.
Encroaching	The species is not documented in the park, but is documented as being adjacent to the park and has potential to occur in the park.	Extremely low confidence that the organism is currently in the park, but extremely high confidence that the organism is currently adjacent to the park. Verifiable evidence may exist in NPSpecies documenting the occurrence in the park, but it is not current. Potential invasive organisms are good candidates for this Occurrence designation, either before they enter a park or after they have been eliminated from a park.
Historic	Species' historical occurrence in the park is documented, but recent investigations indicate that the species is now probably absent.	Extremely low confidence that the organism is currently in the park. Verifiable evidence exists in NPSpecies, but is not current. Extinct, extirpated or eliminated species are candidates for a Historic Occurrence designation.
False Report	Species previously reported to occur within the park, but current evidence indicates that the report was based on a misidentification, a taxonomic concept no longer accepted, or some other similar problem of interpretation.	Extremely low confidence that the organism is currently in the park. Evidence exists in NPSpecies, but it cannot be sufficiently verified.
NA	Not Applicable - Occurrence does not apply to the scientific name for the park.	The NA value prevents null values from appearing in NPSpecies and applies to two primary situations: An outdated scientific name that is not used in the locale of park for an organism, but is in NPSpecies for a park because of inclusion of vouchers, observations or references that use name. Note that outdated names are reconciled in NPSpecies with the Park Classification system. Vouchers, observations or references that use name have not been identified at species level or lower, but are included in NPSpecies with name of a higher taxonomic rank than species level. Names of these higher level taxonomic ranks will disappear from NPSpecies if evidence of the respective name are identified to species level or lower, and are changed appropriately in NPSpecies

-	Field is under review.	
Abundance	The current abundance of each organism in each park.	Applicable only to scientific names with a Park Accepted Status of "Accepted" and an Occurrence of "Present in Park". Values attempt to balance abundance with suitable habitat, and temporal/behavioral considerations. In practice, entered value should apply (although there are numerous exceptions) to abundance in the most suitable habitat of organism, and at time that organism is engaged in its principle behavior in (e.g. breeding, migrating, hibernating, etc.), or most important behavior to, park. A future generation of NPSpecies will address the coding of Abundance (and associated Residency) to separate out temporal and behavioral aspects. Data Source field for Abundance is available to provide a citation that specifically addresses Abundance in more detail.
Abundant	Animals: May be seen daily, in suitable habitat and season, and counted in relatively large numbers. Plants: Large number of individuals; wide ecological amplitude or occurring in habitats covering a large portion of the park.	
Common	Animals: May be seen daily, in suitable habitat and season, but not in large numbers. Plants: Large numbers of individuals predictably occurring in commonly encountered habitats but not those covering a large portion of the park.	
Uncommon	Animals: Likely to be seen monthly in appropriate season/habitat. May be locally common. Plants: Few to moderate numbers of individuals; occurring either sporadically in commonly encountered habitats or in uncommon habitats.	
Rare	Animals: Present, but usually seen only a few times each year. Plants: Few individuals usually restricted to small areas of rare habitat.	
Occasional	Animals: Occurs in the park at least once every few years, but not necessarily every year. Plants: Not applicable.	
Unknown	Abundance unknown.	
NA	Not Applicable – Abundance does not apply to the scientific name in the park.	All names on a park's list that do not have an Occurrence of "Present in Park" should have a Residency of "NA".
-	Field is under review.	
Residency	Current residency classification for each ANIMAL species in each park.	Applicable only to ANIMALS with a Park Accepted Status of "Accepted" and an Occurrence of "Present in Park". Values attempt to balance temporal and behavioral considerations. In practice, entered value should apply (although there are numerous exceptions) to residency of organism at the time that organism is engaged in its principle behavior (e.g. breeding, migrating, hibernating, etc.) in, or most important

		behavior to, park. A future generation of NPSpecies will address the coding of Residency (and associated Abundance) to separate out temporal and behavioral aspects. The Data Source field for Residency is available to provide a citation that specifically addresses Residency in more detail.
Breeder	Population reproduces in the park.	
Resident	A significant population is maintained in the park for more than two months each year, but it is not known to breed there.	
Migratory	Migratory species that occurs in park approximately two months or less each year and does not breed there.	
Vagrant	Park is outside of the species' usual range.	
Unknown	Residency status in park is unknown.	
NA	Not Applicable – Residency does not apply to the scientific name in the park.	All names on a park's list that do not have an Occurrence of "Present in Park" should have a Residency of "NA".
-	Field is under review.	
Nativity	Nativity classification for each organism for each park.	Applicable only to scientific names with Park Accepted Status of "Accepted". If Occurrence of an organism is not "Present in Park", then nativity represents nativity if organism were eventually confirmed in park.
Native	The organism is native, or would be native, to the park (either endemic or indigenous).	
Non-Native	The organism is not native, or would not be native, to the park (neither endemic nor indigenous).	Cultivated organisms as defined under the Cultivation field are also considered non-native.
Unknown	Nativity is unknown relative to the park.	
NA	Not Applicable	Applies to names that do not represent organism names for the locale of the park.
-	Field is under review.	
Cultivation	Cultivation classification for each non-native organism in each park.	Applicable only to scientific names with a Park Accepted Status of "Accepted", an Occurrence of "Present in Park" or "Probably Present" and a Nativity of "Non-Native". Cultivation is intended to distinguish between non-native organisms that were introduced as part of a park's mission, and non-native organisms that occur in park naturally. Cultivation was not intended to apply to organisms that are cultivated for landscape purposes and have not persisted into natural environment, for example, plants in gardens or terrariums, or animals in enclosures. In general, it was not intended that NPSpecies to include controlled, "domestic" organisms.
Cultivated	A non-native species that is currently cultivated in the park.	
Persistent	A non-native species that persists in the park (either reproducing or non-reproducing) from a previous cultivation in the park.	

Not Cultivated	A non-native species that is not currently cultivated in the park.	
Unknown	A non-native species for which the cultivation in the park is currently unknown.	
NA	Not Applicable – Cultivation does not apply to the non-native scientific name in the park.	All names on a park's list that do not have an Occurrence of "Present in Park" or "Probably Present" and a Nativity of "Non-native" should have a Cultivation of "NA".
-	Field is under review.	

8 Appendix C – Frequently Asked Questions

Frequently Asked Questions (FAQ) list common questions and answers that will help you use NPSpecies.

8.1 How do I obtain a Certified Species List?

1. From https://irma.nps.gov/App/Species/Welcome, click on "Search" in center of the screen
2. Select Search Type = Species List
3. Select Search = Certified Species List
4. Select Layout = Park Status View, for example
5. Select a Park Unit
6. Select a Taxonomic Category (may include "All")
7. Click Search

8.2 How do I download a Certified Species List?

1. In the results table click on Download button.
2. Select Excel spreadsheet (xlsx) or Comma-separated values (csv)
3. Select open or save to save the file on your computer

8.3 What is a Certified Species List?

A certified species list is snapshot of the species lists at the time of the latest certification where both the Park Accepted Status and Occurrence fields were certified. It is comprised of park-accepted scientific names with information on the current status of those species in the park, including occurrence, abundance, residency, nativity, and cultivation. The term 'species' is used loosely and means scientific names that are at the taxonomic rank of species and below. Park-accepted scientific names are those scientific names that the park recognizes at the time of certification.

8.4 What is the certification process?

This is the basic quality assurance certification process:

1. A taxa expert reviews the species list for accuracy.
2. The species list is run through a series of checks for logical inconsistencies. Only after these checks pass the next step may begin.
3. The POC submits a certification submission form to the Natural Resource Program Center (NRPC) data manager. The content of this form is used to create a certification record that lists the park status fields being certified, the date of the certification, and who participated in the review process. If a certification is as a result of a new field inventory, park boundary change, or natural disaster, that information is also recorded.
4. The species list is then copied as a record of the data at the time of the certification.
5. Finally the species list is evaluated for its merits to become publically accessible.

This QA Certification process only applies to vertebrates and vascular plants at this time. However, there is a need to also evaluate species lists for other taxonomic categories. The information that results from the certification process is based upon the premise that the information is current, complete and accurate to the best knowledge of the reviewers at the time of the review. Because NPSpecies is a dynamic database which will continue to be populated into the future, it is necessary to document when, and which data have been reviewed for completeness and accuracy so that users can qualify the use of the data for scientific, management and interpretive purposes.

In order to maintain information in such a dynamic system, data need to be entered and reviewed on an intermittent or periodic basis. At minimum, a certification will be completed after the first formal review of park species list. Review is done by taxonomic category and includes a review of the park status values recorded for

each species on the list. The need for subsequent reviews and certification will vary depending on changes to park boundaries, man-made or natural events affecting biodiversity, and the extent of data added or edited after the time of the previous review.

8.5 How do I cite NPSpecies data?

Format/style of examples is adopted from:

The Chicago Manual of Style; 15th edition. 2003. The University of Chicago Press, Chicago and London p.753-54. 17.358 Scientific Databases

In sciences especially, it has become customary to cite databases as follows. List, at a minimum, in this order: name of database, URL, a descriptive phrase or record locator (such as a data marker or accession number) indicating the part of database being cited or explaining nature of reference, and finally an access date. In bibliographies or reference lists, list under name of database.

- Certified Species List: NPSpecies - The National Park Service Biodiversity Database. IRMA Portal version. https://irma.nps.gov/App/Species/Search (certified species list - park status view; accessed November 24, 2011).