



OLMSTED
CENTER
for LANDSCAPE PRESERVATION



IRISBG USER GUIDE
FOR NATIONAL PARK SERVICE PLANT
RECORDS MANAGEMENT

IRISBG USER GUIDE

NATIONAL PARK SERVICE
PLANT RECORDS MANAGEMENT

Prepared by

Aimee M. Weber, Research Associate

Olmsted Center for Landscape Preservation

National Park Service, Boston, Massachusetts, 2019

The Olmsted Center for Landscape Preservation promotes the stewardship of significant landscapes through research, planning, and sustainable preservation maintenance. The Center accomplishes its mission in collaboration with a network of partners including national parks, universities, government agencies, and private nonprofit organizations. Techniques and principles of preservation practice are made available through training and publications. The Olmsted Center perpetuates the tradition of the Olmsted firms and Frederick Law Olmsted's lifelong commitment to people, parks, and public spaces.

Olmsted Center for Landscape Preservation

15 State Street, 6th Floor

Boston, MA 02109

www.nps.gov/oclp/

TABLE OF CONTENTS

INTRODUCTION	2
Purpose, Need, and Benefits of IrisBG	2
Using IrisBG for NPS Landscapes	2
Relational Databases	3
Data Quality Control	5
GETTING STARTED	6
Software Installation and Log-in	6
Screen Layout	7
Database Organization	8
Basic Software Operation	12
STEP-BY-STEP INSTRUCTIONS	18
IrisBG Plant Records Management Process	18
Personnel Records	19
User Accounts	21
Taxon Records	23
Accession Records	34
Supporting Records	54
Definitions	59
Task Lists	63
Garden Explorer Tours	67
Reports, Maps, and Labels	70
System Maintenance	74
ADDITIONAL RESOURCES	76
APPENDIX A: ROLE TYPE ACCESS LEVELS	77
APPENDIX B: MANAGING ACCESSION ITEM STATUS	79
APPENDIX C: USING IRISBG TO SUPPORT WORK TASK	80
APPENDIX D: MANAGING GARDEN EXPLORER CONTENT	86
APPENDIX E: INITIAL IRISBG RECORD SET-UP	90

INTRODUCTION

PURPOSE, NEED, AND BENEFITS OF IRISBG

Plant records management databases like IrisBG are commonly used by botanical gardens and arboreta across the world. They provide a means to organize and maintain plant records in a standardized way that helps to preserve institutional knowledge, support daily work tasks, and share information about plants in the landscape with the public. IrisBG includes the ability to control individual access levels to data and ensures that data will be maintained as staffing changes. In contrast with paper records and maps or spreadsheets, data recorded in IrisBG can be queried using multiple variables to create a variety of reports and maps. This ability to perform complex queries with an integrated mapping feature expedites daily work, facilitates maintenance decisions, and supports future research potential. Park visitors can use the Garden Explorer website associated with the IrisBG database to navigate and identify plants in the landscape. Types of data that can be stored in IrisBG include detailed plant taxonomy, plant locations, geographic origin and parentage of plants, history of the condition and treatment of plants, propagule status, project and task lists, images, reference documents and permits (attachments and web links), contact information for nurseries and others, and custom attributes.

USING IRISBG FOR NPS LANDSCAPES

IrisBG, along with other plant records management software, is designed to keep records of individual plants existing in a landscape. These databases are most commonly used by botanical gardens and arboreta, whose missions are related to maintaining a collection of plants as a resource for research, education, and public enjoyment. The National Park Service has a similar mission of education and enjoyment, but while arboreta and botanical gardens are more focused on maintaining plants as individual specimens for research, the NPS has a broader interest in maintaining landscapes as cultural and natural resources. More specifically, landscape stewards at National Historic Sites work to preserve the conditions of the landscape during the site's historic period of significance. These differences effect what information is important for NPS to keep records of regarding plants in the landscapes.

Fortunately, IrisBG has enough flexibility in its design to allow for modified use of some components to support the unique needs related to record-keeping and preservation of NPS landscapes. The key ways that the NPS IrisBG database is set up uniquely for NPS needs include:

Recommendations from Cultural Landscape Reports are integrated into the database. In addition to recording existing conditions of the landscape, NPS landscape stewards also have an interest in understanding previous conditions of a park's landscape and which plants should be planted in specific locations to preserve the

site to its period of significance and/or as a natural resource. Although plant records management software has the ability to record plant locations, it is not designed with a specific planting plan component; the main purpose is recording details of existing plants in the landscape. NPS IrisBG collections have been set up to include planting plan recommendations by slightly altering how location information is recorded in the database. This allows IrisBG users to create maps and tables to compare data for plants in the planting plan and existing plants.

Custom attributes and drop-down lists are set up. Database settings have been customized with fields and drop-down menus appropriate for NPS landscapes. Custom fields that have been added currently include *CL Evaluation*, which identifies whether or not an accession contributes to the cultural landscape; *Invasive status*, which identifies plants considered to be invasive at the local/state level; and *Protected status*, which identifies plants considered to be rare at the local/state level. Drop-down selections for many other database fields have been customized as well, including *Accession Type*, which identifies an accession's historic status; and *Life form*, which describes the growth habit of a taxon.

Custom reporting features support NPS work tasks. Report types and templates have been set up based on common NPS work requirements. For example, inventory maps and lists with key data fields can be generated based on accession items recorded as existing in the landscape, and can be used to assist with park Condition Assessments. Reports of IrisBG task records can be generated to supplement NPS Facility Management Software System (FMSS) work order data.

User access levels are customized for NPS. To help maintain data quality control, IrisBG user access level options have been customized based on the contents of the NPS database and the different roles of NPS staff with access to IrisBG.

RELATIONAL DATABASES

A relational database is a collection of multiple data sets organized in the form of linked tables. This way of organizing complex data sets eliminates redundancy, resulting in more efficient data entry and fewer opportunities for user error. For example, after correcting a single taxonomic record, the changes will then be updated in all accession records that are referencing that record in the database. Another key benefit of relational databases is that they facilitate complex queries of large data sets.

Each **table** (also called a *relation*) in a relational database is made up of a series of **records** (or *tuples*) that have values assigned to the same **fields** (or *attributes*) (see [Figure 1](#)). All data in a row of a table is a record, which is a data set that represents a single item. Each column stores data for a particular field, which is data that describes the item in some way. Fields often have rules as to what kind of data can be stored within them as a means of data quality control, and for easier searching and querying. For example, the *Accession Year* must be a four-digit integer, and the *Life form* must be selected from a drop-down list of options.

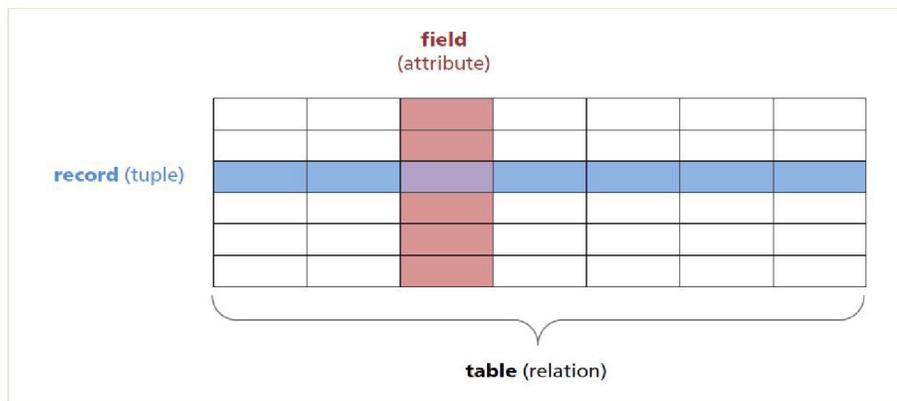


Figure 1: Relational database terminology.

Tables are linked to each other using *key* fields. A *primary key* uniquely identifies a record in a table. Keys are often arbitrarily assigned values, such as a series of numbers like a social security number, but they can also have a qualitative meaning, such as *Taxon name*. In Figure 2, the primary keys are bolded. A *foreign key* is a field in a table that matches the primary key field of another table, and links the two tables together. In Figure 2, the primary key of the Taxa table, *Taxon name*, matches the foreign key *Taxon name* in the Accessions table.

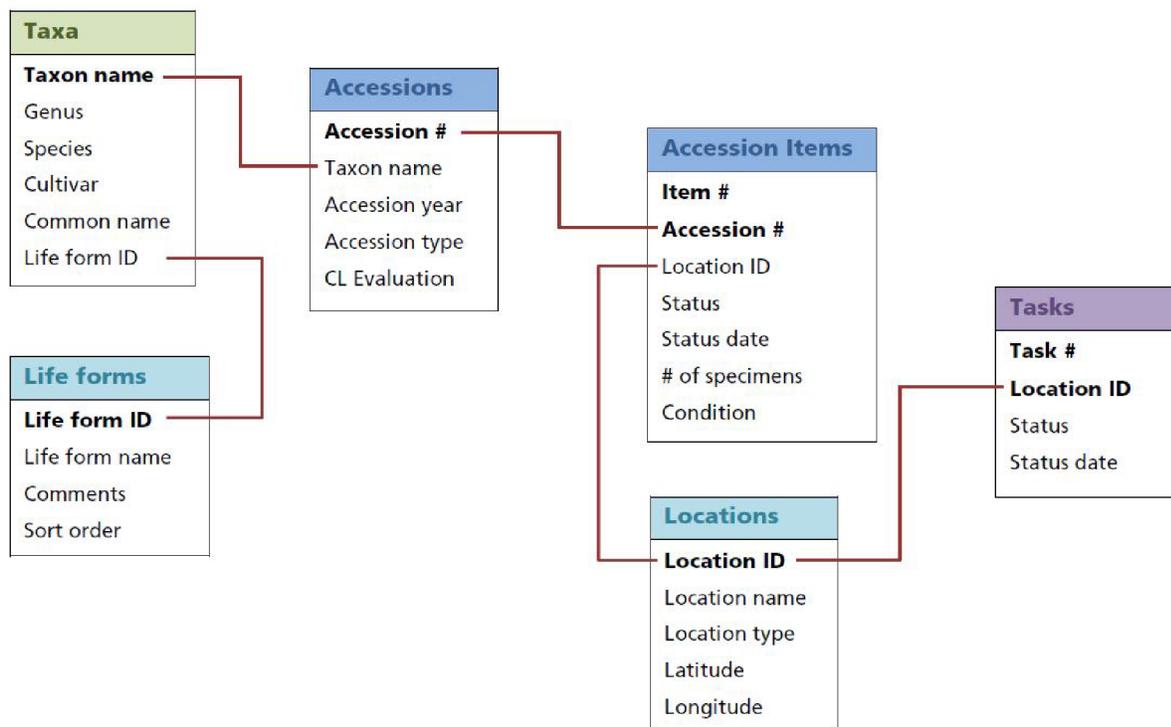


Figure 2: Diagram of relationships between tables, showing how a primary key in one table is associated with a foreign key in another table. Each box represents a table and lists the fields within the table. The bolded fields are the primary keys.

Although the design of relational databases inherently reduces data errors by eliminating redundancy, it is also important to develop data entry standards for each field, and to be aware that accuracy and consistency in data is necessary to successfully produce reports from queries.

DATA QUALITY CONTROL

A database is useless if the data stored in it is not accurate. Follow these three simple rules when using IrisBG to maintain quality control for NPS plant records.

Do not delete records. The power of a database lies in its ability to store and sort a large amount of data, and an important benefit of using IrisBG for managing plant records is its ability to store past data for future reference. In general, no record should ever be deleted from the database unless it was entered in error or represents a duplicate of an existing record. Instead, records have settings that can be updated to designate them as inactive. For example, if a plant dies, its accession record should not be deleted – its status should be updated to indicate it has died. If a person no longer works for the park, their personnel record should not be deleted, but be marked with an end date. Retaining all data will ensure a robust database in the future.

Use National Park Service standards. The IrisBG database has been customized for use by the National Park Service, and standards for data entry and management have been outlined in detail in this user guide. It is important to follow these standards to maintain data integrity over time and across different parks. This is especially true for record types that are shared by all parks using IrisBG, such as taxon records.

Do not enter questionable data. Data should only be entered to the level of detail that is relatively certain to be accurate. As a general rule, if you are unsure of an entry, enter only as much as you know, and include a note in the record's *Comments* field. For example, if a plant's species is known but the cultivar is uncertain, only identify the plant to the species level, and include a note that it may be a particular cultivar.

GETTING STARTED

SOFTWARE INSTALLATION AND LOG-IN

IrisBG can be installed on an unlimited number of computers, and it can have an unlimited number of user accounts, but there are limitations to how many users can be logged in to the software at the same time. This limitation is based on the number of user licenses the NPS has purchased. Currently the limit is three, but this number will increase as more park collections are added to the database. In the future, the number of user licenses will likely equal the number of NPS parks with collections recorded in the database.

A. INSTALL IRISBG SOFTWARE

Administrator privileges and the following two files are required to install IrisBG:

irisbg3_6_4.msi (Windows Installer Package)

Iris.DataAccess.config (XML Configuration File)

1. Log in to the computer with administrator privileges.
2. Browse to where the two IrisBG installation files are saved and double-click on the *irisbg3_6_4.msi* installer package to run the installation setup wizard. Accept the defaults for the location where IrisBG will be stored. Accept the license agreement. IrisBG will then be installed and an application icon will appear on the desktop.
3. Double-click the *IrisBG 3* application icon. A *Database connection editor* window will appear. Select *SQLServer* as the *Connection type*, and click on the *Open file...* button. Browse to where the configuration file *Iris.DataAccess.config* is located. Select *Test*, then *Save*, and then *Close*.

B. LOG IN TO IRISBG

Follow these instructions the first time you log in:

1. Open IrisBG by double-clicking on the desktop icon. A log-in window will appear. Enter the user name that was assigned to you and the password *changeme*, check the box in front of *Change password after log-on*, and then click *Ok*.
2. Enter a new password, and click *Ok*. You should now be logged on to IrisBG.

After logging in to IrisBG the first time, it is not necessary to check the box to change your password, but it is always good to change passwords from time to time.

SCREEN LAYOUT

When IrisBG is open, you will see the Menu in the upper left corner of the window, the Navigation Bar along the left side, the Tool Bar along the top, and the Status Bar along the bottom (see [Figure 3](#)).

The **MENU** includes four drop-down headings with the following functions:

- The **File** menu is used to adjust system settings and display options.
- The **Data** menu contains the same functions as the Tool Bar.
- The **Window** menu contains the same functions as the Navigation Bar.
- The **Help** menu is used to access Help documents and links to online tutorials.

The **NAVIGATION BAR** is used to access different *forms* which are organized under eight *panels*. Each form is used to perform a unique function in the database. For example, the *Taxa* form is used to view, modify, and add taxon records. The Navigation Bar also includes a button at the top that is used to switch between collections (NPS parks) if you have access to more than one collection.

The **TOOL BAR** is used to perform operations or actions relevant to the form you are working on, such as searching for records, adding new records, and printing the visible form.

The **STATUS BAR** indicates if a record has been saved, if an error has occurred, or if no data is found by your search. The numbers towards the right side indicate which record of your total search result is visible, and the initials and date to the far right indicate when the visible record was modified last and by whom.

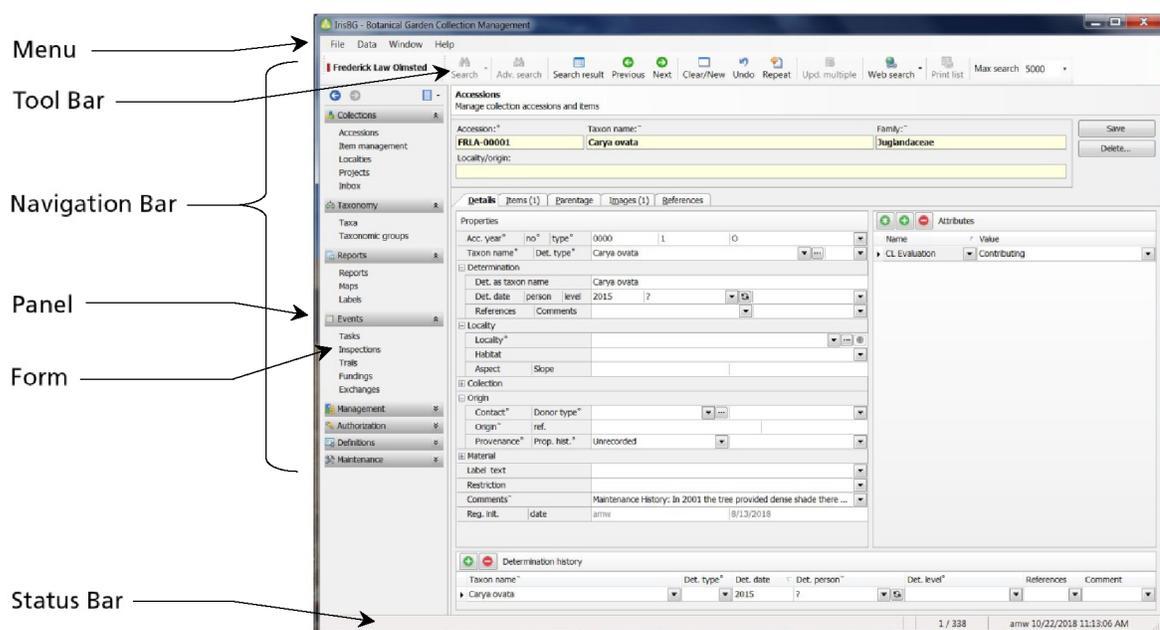


Figure 3: The IrisBG screen layout includes a Menu, Navigation Bar, Tool Bar, and Status Bar.

DATABASE ORGANIZATION

The IrisBG software installed on your computer references a single NPS database that includes a separate *collection* of records for each NPS park. Within this database structure, some records and settings can be unique to each collection, but some are used across all NPS collections. It is important to be aware of which records and settings fall into each category so as to ensure that data for other collections is not inadvertently modified in a way that makes it inaccurate. For example, taxon records are shared across all NPS collections, so these records should only include data that applies to the taxon in general located in any place in the world, not data specific to an individual plant in the landscape. Similarly, all custom drop-down lists apply to all NPS collections, so they have been set up in a way that is general enough to function for a variety of NPS landscapes. A table showing the category of each *form* (All-NPS vs. Collection-specific) can be found in [APPENDIX A](#).

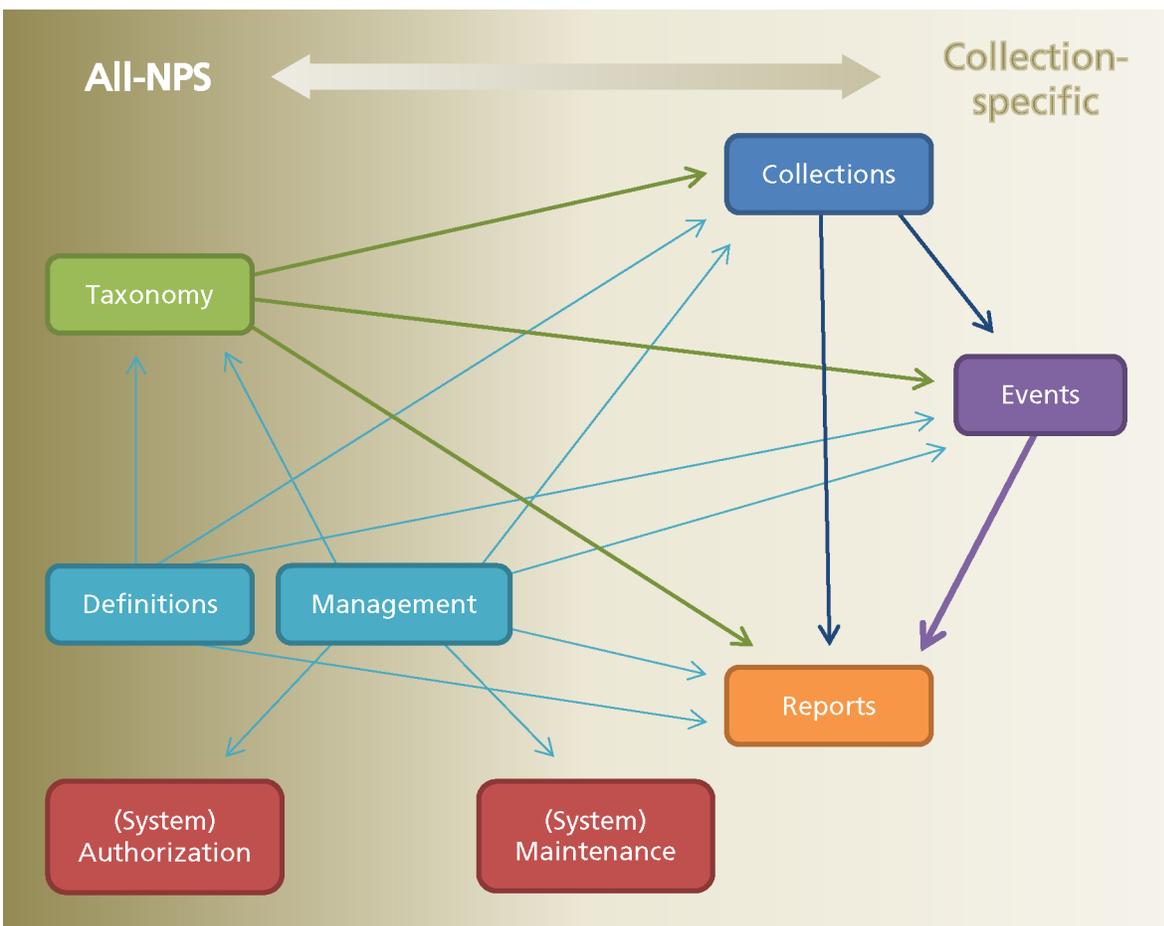


Figure 4: This diagram illustrates the relational organization of the eight panels in IrisBG. Panels that provide data to other panels are shown by an arrow pointing away from them. The location of each panel along the gradient indicates if the data in each panel applies to all NPS collections in the database or if it is specific to each collection.

The eight *panels* visible in the Navigation Bar (diagrammed in [Figure 4](#)) can be organized into three main types of functions: recording data, performing queries, and database operation. In general, records created in the *Definitions* and *Management* panels provide details and settings referenced in the other panels. *Taxonomy* records define the taxa of plants existing in the NPS parks using IrisBG, and are shared by all NPS collections. *Taxonomy* records are necessary to create *Accession* records (in the *Collections* panel), which describe the properties and history of plants that exist and have previously existed in the plant collections that make up the landscapes of the NPS parks. The *Events* panel records past and future actions related to plants in the collection. The *Reports* panel is used to query all of the records previously described with spreadsheets, maps, and labels as output. The *Authorization* and *Maintenance* panels are used to manage database operation.

The *forms* within each of the panels can be selected to perform the functions described below. Note that some of the forms are not currently being used by the NPS, and records accessed in each form are identified as shared by all parks using IrisBG (*All-NPS*) or only part of an individual park's records (*Collection-specific*).

A. RECORDING DATA

Most panels in IrisBG contain these types of forms that are used to view, modify, and add a certain type of record. These forms are grouped into panels according to the general type of record accessible in each form.

1. The **Collections** panel contains forms where collections records can be viewed, modified, and added.
 - a. The *Accessions* form (Collection-specific) is used to manage accession records and accession item records.
 - b. The *Item management* form (Collection-specific) is used to update multiple accession items at once and to create labels.
 - c. The *Localities* form (All-NPS) is used to manage records of the regions from which the accessions originate.
 - d. The *Projects* form (All-NPS) is used to manage service-wide NPS projects associated with selected accession records. This form is not currently being used.
 - e. The *Inbox* form (Collection-specific) is used to handle data transferred from external devices. This form is not currently being used.
2. The **Taxonomy** panel contains forms where taxonomic records can be viewed, modified, and added.
 - a. The *Taxa* form (All-NPS) is used to manage taxon records.
 - b. The *Taxonomic groups* form (All-NPS) is used to manage the taxonomic groups above the species level. These are predefined in the software but can be modified.
3. The **Events** panel contains forms where lists of records related to an action can be viewed, modified, and added.
 - a. The *Tasks* form (Collection-specific) is used to manage task lists. These lists can be created for any task related to the plant collection, such as a maintenance project or plant purchasing.

- b. The *Inspections* form (Collection-specific) is used to manage detailed inspection records for long-lived plants. This form is not currently being used.
 - c. The *Trails* form (Collection-specific) is used to manage tours to be uploaded to the Garden Explorer website.
 - d. The *Fundings* form (Collection-specific) is used to manage lists of records associated with particular donations or funding. This form is not currently being used.
 - e. The *Exchanges* form (Collection-specific) is used to manage accession items exchanged with other collections. This form is not currently being used.
4. The **Management** panel contains forms where groups of records referenced in other panels and containing further details regarding collections, people, and reference documents can be viewed, modified, and added.
- a. The *Institutions* form (All-NPS) is used to define the institutions (NPS) using the database.
 - b. The *Collections* form (All-NPS) is used to define the collections (NPS parks) within the institution using the database.
 - c. The *Locations* form (Collection-specific) is used to manage collection locations. This is where planting plan recommendations from CLRs are recorded.
 - d. The *Assets* form (Collection-specific) is used to manage collection assets and features that are not plant material. This is currently not available for our use.
 - e. The *Contacts* form (All-NPS) is used to manage external contacts such as nurseries and organizations.
 - f. The *Personnel* form (All-NPS) is used to manage internal contacts, primarily those who are associated with the plant records either as a source of data or as someone who has access to the database.
 - g. The *Library* form (All-NPS) is used to manage references, which can also be added as attachments or linked to if online.
 - h. The *Permits* form (All-NPS) is used to manage permits, which can also be added as attachments or linked to if online. This form is not currently being used.
5. The **Definitions** panel contains forms where drop-down lists and settings used in other panels can be viewed, modified, and added.
- a. The *Accession item status* form (All-NPS) is used to manage the status options for accession items.
 - b. The *Accession item type* form (All-NPS) is used to define accession item types. This is set by the developer and cannot be changed.

- c. The *Authors* form (All-NPS) is used to manage authors referenced in taxonomy records. These are predefined in the software but can be modified and added to.
- d. The *Code list types* form (All-NPS) is used to define code list types. These are predefined in the software for fields marked with the ° symbol (which require a drop-down selection) but can also be added for custom attributes.
- e. The *Code lists* form (All-NPS) is used to manage code lists (drop-down lists) for a variety of attributes. Most of these are predefined in the software but can be modified and added to.
- f. The *Countries* form (All-NPS) is used to manage the list of countries and abbreviations referenced in the database.
- g. The *Custom attributes* form (All-NPS) is used to manage user-defined custom attributes.
- h. The *Custom templates* form (All-NPS) is used to manage custom template files used for reports and labels.
- i. The *Journals* form (All-NPS) is used to define journals referenced in the library records.
- j. The *Label types* form (All-NPS) is used to define fields and template files used for each label type. These are predefined in the software but can be modified and added to.
- k. The *Location types* form (All-NPS) is used to define location types referenced in location records and manage their symbolization on maps.
- l. The *Map providers* form (All-NPS) is used to manage base maps. Common maps such as Google and Bing are predefined in the software and custom maps can be added.
- m. The *Regions* form (All-NPS) is used to manage the list of country subdivisions and abbreviations referenced in the database.
- n. The *Report types* form (All-NPS) is used to define fields and template files used for each report type. These are predefined in the software but can be modified and added to.
- o. The *Restriction types* form (All-NPS) is used to manage restriction types. These are referenced to determine which records will be published to Garden Explorer.
- p. The *Taxonomic ranks* form (All-NPS) is used to manage taxonomic ranks referenced in the Taxonomic groups form. These are predefined in the software but can be modified and added to.
- q. The *Web links* form (All-NPS) is used to define links available in the taxon *Web search* function in the Tool Bar.

B. PERFORMING QUERIES

These forms are used to generate output of selected database records based on specified criteria.

1. The **Reports** panel contains forms that can be used to generate output based on queries.

- a. The *Reports* form (Collection-specific) is used to create reports in the form of spreadsheets for print or export.
- b. The *Maps* form (Collection-specific) is used to create maps with plant locations along with associated spreadsheets for print or export.
- c. The *Labels* form (Collection-specific) is used to create labels for print or export.

C. SYSTEM OPERATION

Database system functions are accessed using these forms.

1. The **Authorization** panel contains forms where individual user access to the database is controlled.
 - a. The *User accounts* form (All-NPS) is used to manage IrisBG user accounts. A user account is required for log-in and use of IrisBG, and a *personnel* record and *role types* must be set up before creating a user account for an individual.
 - b. The *Role types* form (All-NPS) is used to manage access levels for IrisBG users.
2. The **Maintenance** panel contains forms where database system operations are performed.
 - a. The *System tasks* form (Collection-specific) is used to run tasks for system and database maintenance, such as updating data and transferring data to Garden Explorer.
 - b. The *Configurations* form (All-NPS) is used to manage local system configurations. This form should only be used by an IT specialist.
 - c. The *Import data* form (Collection-specific) is used to import large amounts of data from external sources. This is typically only used for the initial set-up of records.

BASIC SOFTWARE OPERATION

A. TOOL BAR DISPLAY

When IrisBG is first opened after being installed, the Tool Bar buttons are small icons without labels by default, but it is possible to change them to be displayed as larger icons with labels. When first learning IrisBG, the larger buttons are recommended. To change this setting:

1. From the *File* menu, select *Options...*
2. An *Options* window will appear. Select *True* for the *Large toolbar* setting, then click the *Ok* button.

B. FORM LAYOUT

Each form will have a slightly different layout suitable for its function. In general, data is entered in white fields with the field name either to the left or above as a column heading if the data is part of an item list. Some forms have pale yellow fields which are not for data entry; they are used to display important record data and sometimes they can be used for searching.

C. SEARCHING FOR RECORDS

Several buttons in the Tool Bar can be used to search for records in a form. Only some of the forms allow the search function (*Accessions, Item management, Localities, Taxa, Taxonomic groups, Tasks, Trails, Contacts, Personnel, and Library*).

View a list of all records in a form:

1. Open the form you will be searching in by clicking on it in the Navigation Bar.
2. Click the *Clear/New* button to start a new search. This clears the display to allow you to enter in search values; it does not delete records.
3. Click the *Search* button.

Basic searching:

1. Open the form you will be searching in by clicking on it in the Navigation Bar.
2. Click the *Clear/New* button to start a new search. This clears the display to allow you to enter in search values; it does not delete records.
3. Enter values in the field(s) that you are searching for and then click the *Search* button. A list will appear with the results of your search.

Note that when using the *Accessions* form, the *Search* button has a drop-down selection that allows a search to either return a list of accession records or a list of item records.

Advanced searching: The advanced search function allows you to search multiple fields based on values that are ranges, lists, not equal to an entered value, or blank fields.

1. To begin an advanced search, click the *Clear/New* button.
2. Click the *Adv. search* button. The *Advanced search* query builder window will appear.
3. Check the boxes next to the fields you wish to search, select the *Operator* from the drop-down list, and enter the associated *Values* if needed.
4. Once all of the search criteria are entered, click the *Search* button and a list will appear with the results.

Viewing search results: The display of search results can be modified.

To modify which fields are displayed and their display order, select *Grid columns...* from the *Data* menu.

To sort by a field, click on the field heading.

To change the display order of a field, click and drag the field heading to a different location.

To select a record, click anywhere on the record's row.

To view the record details, double-click anywhere on the record's row.

When a record in a search result is selected or viewed, its order in the search result list is displayed in the Status Bar towards the right of the window. For example, 25/377 means that it is the 25th record in the list of 377 records in your search result, based on how you have sorted them.

Browsing search results: To browse through the records in your search result with the detailed display open, use the *Previous* and *Next* buttons. The yellow *No more data* message will appear in the Status Bar once you reach either end of the list.

Returning to the search result list: To return to your search result list, click the *Search result* button. Click the button again to return to the previously viewed record.

Searchable field icons: Only some fields are searchable. They are identified with symbols:

- The ° symbol indicates that the search will return records with an exact match.
- The ~ symbol indicates that the search will return records starting with or containing the text being searched for.

Search shortcuts:

If you are searching for a specific accession record and you know the number, type the number into the pale yellow *Accession* field and press *Enter*.

If you are searching for a taxon record, enter the first letter or the first few letters of the genus in the pale yellow *Taxon name* field and press *Enter* to return a list of options. The more detailed you are, the more specific your list will be. You can also enter a few letters of the genus, a space, and then a few letters of the species.

D. SAVING

Most forms have a *Save* button in the top right corner of the display.

Save a record: Click the *Save* button after adding data for a new record or after making any changes to a record that you would like to save.

Errors: If all required fields are entered correctly, a green *Save is completed* message will appear in the Status Bar. If not, a red *Incorrect or missing values* message will appear, and red icons will indicate which fields need to be modified. Hover over the red icons with your cursor to see text briefly describing the errors.

Navigation: If you navigate away from a form that has been modified without saving, a *Save changes?* window will appear. Follow the prompt to continue. Note that if you click *Ok*, you will still need to click the *Save* button to save your changes.

E. DELETING

Some forms have a *Delete...* or an *Expire...* button below the *Save* button. It is very unlikely that you will need to use these buttons, and some IrisBG users will not have the ability to delete records in the interest of preventing unintended loss of data. Use of the *Delete...* or the *Expire...* button CANNOT be undone. Use it

only to remove erroneous or duplicate records. If you make a mistake during data entry, you should be able to simply correct your error and save the record.

Delete an incorrect or duplicate record: Open the record and click the *Delete...* button. A window will open asking you to confirm the deletion. Click the *Ok* button.

The *Taxonomy* forms have an *Expire...* button instead of a *Delete...* button. For more information, see the [STEP-BY-STEP INSTRUCTIONS for TAXON RECORDS](#).

F. ADDING AND MODIFYING DATA

Add a new record: Open the relevant form, and click *Clear/New*. Enter data as needed and then click the *Save* button when finished.

Copy an existing record to use as a starting point for a new record: Open the record to be copied and click the *Repeat* button. Modify fields as needed and then click the *Save* button.

Update an existing record: Open the record to be modified, modify fields as needed, and then click the *Save* button.

Undo changes: Click the *Undo* button. All changes made since the last save will be undone.

G. PRINTING AND EXPORTING THE VISIBLE SCREEN

Print the visible window: To print an image of the IrisBG window currently displayed, select *Print window...* from the *File* menu and either print or save to a pdf.

Print or export a visible list: Forms containing a list have a *Print list* button available in the Tool Bar. This button displays a preview window showing the list currently visible in the open form, which can be printed or exported to a variety of file types.

Print or export a report, map, or labels: In the *Reports* panel, the *View...* button can be used to view (and then print or save) a report, map or set of labels, and the *Export...* button can be used to directly export them. These operations are described in more detail in the [STEP-BY-STEP INSTRUCTIONS for REPORTS, MAPS, AND LABELS](#).

H. FIELD-SPECIFIC ICON BUTTONS

These are all associated with specific fields, and are located to the right of the field's entry box.

- The [...] button opens a new window where you can search for records to select.
- The  button opens a new window displaying a map that shows the location being referenced.
- The  button searches the IPNI database for taxon author citation.
- The  button opens an internet browser window displaying the web link listed.
- The  button opens a window to initiate the *Replace* function for that field, which replaces all occurrences of existing values with the new value entered. This CANNOT be undone.

I. NAVIGATING THE MAP WINDOW

Change the base map: Select the base map to be displayed from the *Map type* drop-down menu. A custom base map (named *[park code] base map*) has been set up for your park and will provide the most detailed context for locating plants.

Zoom in and out: Scroll the mouse wheel, use the zoom slider in the Status Bar, or press the **+** or **-** keys to zoom in and out.

Pan the map: Hold the mouse left button down and move the mouse pointer to pan, or press the arrow keys for minor movement and the *Page Up*, *Page Down*, *Home* or *End* keys for major movement.

Center all markers in the window: Click the *Zoom centre* button to display all markers and center them in the window.

View marker information: Place the mouse pointer over a marker to view the location code and the recommended taxa for that location.

Move a marker: (only in editable maps) Place the mouse pointer over the marker, hold the mouse left button down, and move the mouse pointer.

Open a marker's record: (only in the *Maps* form) Place the mouse pointer over the marker and click the mouse left button.

Change the label display: Click the *Label mode* button and select one of the drop-down options to change the label display. A dynamic label is displayed when the mouse pointer is placed on a marker. Permanent labels are always visible, and must be used to print or save a map with labels. Click the *Reposition labels* button to reduce the overlap of permanent labels.

Print or export a map: Click the *Print map* button to print or save an image of the map window. Click the *Save map and data* button to save an image file of the map contents and a simple accompanying spreadsheet listing the accessions, locations, or localities included on the map.

Clear the map cache: If the base map is not displaying properly, click the *Clear map cache* button to reload the base map. If this does not work, contact the IrisBG administrator at OCLP.

J. MODIFYING ITEM LISTS

There are several buttons available in item lists that are used to add and delete items to the list, along with some additional specialized buttons for some forms. These buttons are found at the top of the list. To save any changes made to item lists, you must click the *Save* button. Once saved, changes CANNOT be undone. An error message and red icons will be returned for items that cannot be modified or deleted because they are being referenced elsewhere in the database.

Select an item: When an item in an item list is selected, a black icon appears to the left of the item and any drop-down menus in the item record become active.

Add an item: The *Add item* (green ) button is available in most forms with item lists. This button will add an item at the same hierarchical level as the currently-selected item.

Delete an item: The *Delete item* (red ) button is available in most forms with item lists. This button will delete the selected item. When deleting an item, a window will open asking you to confirm the deletion.

Add a subitem: Also found in some forms is the *Add subitem* (green ) button, which adds an item within a hierarchy. Be sure to select the item that the new subitem will belong to before adding the subitem.

Change display of item hierarchies: The *Expand all* and *Collapse all* buttons are found in forms that allow hierarchies (subitems and/or history items).

Modify a history item: The *Add history* (gray ) and *Reject history* (green ) buttons are found in the *Accession Items* tab. These function the same way as the *Add item* and *Delete item* button, respectively.

Modify a synonym type: These buttons are found in the *Taxa* form. The *Add homotypic synonym* (green ) button, the *Alter to heterotypic synonym* (green ) button, and the *Transfer synonym* (blue ) button are described in the [STEP-BY-STEP INSTRUCTIONS for TAXON RECORDS](#).

Modify item order in list: These buttons are found in forms in the *Events* panel. The *Move entry down* () button and the *Move entry up* () button move the position of the selected item in the list.

K. SHORTCUTS

Clear a field with a drop-down menu: Press *Ctrl* and *Delete* together when the field is selected.

Quickly find a selection in a long drop-down menu: In fields with drop-downs, if you know the value you will be entering, type in the first few characters and a list of possible values will appear.

Navigate between tabs: Press *Alt* and the underlined letter in the tab name in any form with tabs to open that tab.

Navigate between fields: Use the arrow keys, *Tab* (forward), and *Shift* plus *Tab* (reverse). Press *Enter* or *Tab* to register an entered value in a field. These shortcuts do not work in every case.

Select multiple consecutive items in a list: Click on the first record, hold down *Shift*, and then click on the last record.

Select multiple non-consecutive items in a list: Hold down *Ctrl* and click on each item.

Enter today's date: Press */* and then press *Enter* or *Tab* when in a field with date formatting.

STEP-BY-STEP INSTRUCTIONS

IRISBG PLANT RECORDS MANAGEMENT PROCESS

The following sections will guide you through the process of adding and updating different kinds of records (taxa, accessions, locations, contacts, personnel, library references, localities, definitions, task lists, tours), exporting data in various forms (reports, maps and labels), and managing the system operations (user accounts, system maintenance) in IrisBG.

A *user account* must first be set up for each user to log in to IrisBG, and identifies their level of access to view or modify records in each form.

Accession records are the primary type of record in the database, and all other records play a supporting role by describing the accessions in more detail or by referencing which accessions relate to an event. An *accession* is an item or group of items that has been acquired as part of a collection; plant accession records describe plants that currently exist or have previously existed in the collection of plants that make up the landscape of the park. A living plant collection can include propagules in the nursery and seed stores as well. Every time a plant is acquired or propagated by the park, an accession record should be created for it. Information on the accession items are recorded in the accession record (including the location of each), and the status of the items in the accession are updated over their lifecycle when they are inventoried, moved, removed or when they die.

Before creating an accession record, however, a *taxon record* describing the details of the accession taxonomy must first be created. Taxon records are shared across all NPS parks, and only include details that apply to all possible specimens that are identified as that taxon, not just the individuals in a particular landscape.

The *locations records* have been set up to identify the locations in the landscape where particular taxa are recommended to be planted, based on research culminating in Cultural Landscape Reports. These location records are referenced by accession records to identify where the accession items exist in the landscape. The location records have been created to provide a convenient reference to key information from the CLR and to provide ease and consistency in selecting plant location coordinates when creating accession records. By using location records, a report of all accession items with the same location can be easily run to review the history of plantings; this could not be done if location coordinates were chosen manually for each accession, since they would all be slightly different and would not be linked in the database. For this reason, location records should generally not be modified, although more can be added for special conditions.

Several other types of records that provide supporting information referenced by accession records can be set up in the *Management* panel: contacts, personnel, and library references. These records are shared across all NPS

parks. *Contact records* contain contact information for external sources of accessions, such as nurseries, garden clubs, botanical gardens, or individuals. *Personnel records* contain contact and log-in information for individuals associated with the plant records either as a source of data or as someone who has access to the database. *Library records* store citation data, web links, and attachments for references. If accessions were wild-collected, *Locality records* (in the *Collections* panel) define where they were collected from.

Some additional supporting records can be added in the *Definitions* panel. These records are shared by all NPS parks, and most contain important NPS-specific settings for drop-down menus that should not be altered, but some forms are open for modification.

Event records provide ways to group other records (accessions, items, taxa, locations) according to specific tasks or actions. Event records are collection-specific, so each NPS park maintains its own event records. *Task lists* are useful for organizing projects. They can be used both as way to keep records of specific actions performed in association with specific accession items, and simply as to-do lists integrated with the database to aid in planning. Once task lists are set up, reports, maps, and labels can be easily generated for them, and once tasks are completed, item records can be easily batch-updated to reflect the changes. *Tours* can be set up to identify routes and content for themed tours to be published on the Garden Explorer website. Tour routes are based on accession items or location records.

Along with the ability to efficiently record complex datasets, a key benefit of a relational database like IrisBG is its ability to perform complex queries that can be exported in various formats. Queries can be generated using the three forms in the *Reports* panel to create *reports* (spreadsheets) *maps* (labeled map images with associated spreadsheets) and *labels* (taxonomic and accession data arranged in garden label layouts ready for production). In other words, data that has been recorded in the database can be used to generate output based on search criteria. These reports can be queried based on accession, taxon, and event data.

Finally, some IrisBG system maintenance functions can be managed in the *System tasks* form.

PERSONNEL RECORDS

Personnel records contain basic information about NPS staff associated with the plant records in IrisBG. A personnel record is required to add a user account, which is required for IrisBG log-in. A personnel record is also required for an individual to be referenced in some fields (accession determination person, accession item status person, task list owner, trail/tour owner). These records are shared across all parks using IrisBG. Only individuals with role types of Landscape Manager or Administrator can modify personnel records. The *Personnel* form is not visible to individuals with the Landscape Assistant role type. Personnel records should not be deleted unless an error was made that cannot be corrected.

A. ADD A PERSONNEL RECORD

1. Open the *Personnel* form in the *Management* panel.

2. Click the *Clear/new* button to clear the form on the right.
3. Enter the *Initials* of the person. This is a key field that acts as an ID for the person in the database. Since this field is a unique ID among all NPS personnel included in the database, it is best to include the middle initial(s) if the person has one.

If the person's initials already belong to a personnel record in the database, an error will appear when attempting to save the record. In this case, add a *1* after the initials (or a *2* if that ID is already taken, and so on).
4. In the *Logon user* field, enter the person's first initial followed by their last name. This will be their user log-in name for IrisBG.

If the user name is already taken, an error will appear when attempting to save the record. In this case, add a *1* after the last name (or a *2* if that ID is already taken, and so on).
5. Enter the person's *Last name* and *First name*.
6. Enter the person's job title in *Position*.
7. Select *National Park Service* from the *Institution/dep.* drop-down menu for NPS staff.
8. In the *Room/location field*, enter the park(s) or regional office that the NPS staff member is affiliated with, using the four-letter code(s).
9. Enter the person's *Work E-mail*.
10. Enter *Active from* and *to* dates (mm/dd/yyyy) if applicable and known to reflect their time employed by NPS at the park listed in their record.

If nothing is entered, today's date will be entered for the *from* date, and the *to* date will be indefinite (*).

An individual's personnel record must be active (based on these settings) for successful log-in to IrisBG.
11. Do not include any *Home* contact information.
12. Add relevant information regarding the person's association with NPS in the *Comments* field (including past related positions).
13. Click the *Save* button.

To modify a personnel record, select the record from the list, modify fields as needed (*Initials* and *Logon user* cannot be modified), and then click the *Save* button.

B. DELETE A PERSONNEL RECORD

A personnel record should not be deleted unless an error was made during entry that cannot be corrected (for example, incorrect *Initials* or *Logon user*). Deleting a record CANNOT be undone. An error will result if attempting to delete a personnel record that is referenced in a user account record.

Personnel records that are no longer active should NOT be deleted, as they provide important information referenced by the plant records. Instead, enter the *Active to* date in the record.

1. In the *Personnel* form, select the record to be deleted.
2. Click the *Delete...* button. A window will open asking you to confirm the deletion. Click the *Ok* button.

USER ACCOUNTS

User accounts define IrisBG user access levels based on the *Role types* selected for NPS plant collections in the database. A user account must be set up for an individual to log in to IrisBG. To set up a user account, the role types must first be set up, and a *Personnel* record must be added for the user. These records are shared across all parks using IrisBG. Only individuals with role types of Landscape Manager or Administrator can modify user accounts. Only individuals with the Administrator role type can modify role types, although these should not be altered without consensus from all parks using IrisBG. These forms are not visible to individuals with the Landscape Assistant role type. User accounts should not be deleted when no longer in use, but should be set to a passive status instead.

A. ROLE TYPES

Five *Role types* (located in the *Authorization* panel) have been created to enable different levels of user access to IrisBG based on an individual's position or relationship with the NPS and whether they have been trained in how to use the software. Within each role type, an *Access level* is assigned to every form (*System module*) in IrisBG. The access level options are:

- *None*: the form is not visible
- *View*: the form is visible but data cannot be modified
- *Update*: data accessed in the form can be modified but records CANNOT be deleted
- *Delete*: data accessed in the form can be modified and records CAN be deleted
- *Admin*: data accessed in the form can be modified, records can be deleted, and some forms have additional administrator privileges

The five *Role types* are defined as follows:

- *Administrator*: full *Admin* access
- *Landscape Manager* (NPS supervisory-level staff): *Admin* access for most modules
- *Landscape Associate* (other NPS staff and interns): *View* access with limited *Update* access
- *Landscape Assistant* (volunteers and youth): restricted *View* access
- *Pre-Training* (NPS staff without IrisBG training): *View* access

A table showing *Access levels* for each NPS *Role type* by *form* can be found in [APPENDIX A](#). Individuals who will be assigned Landscape Manager or Landscape Associate role types should be fully trained in applicable modules of IrisBG before they are given these access levels. Prior to training, they should be assigned the

Pre-Training role type (note that this provides more access than the Landscape Assistant role type, and should not be assigned to volunteers or youth). Individuals who will be provided accounts with the Landscape Assistant role type do not need formal training, but they may need instruction on basic software navigation and creating reports and maps.

Landscape Managers have Admin access for forms that will be typically used and View access for a number of forms containing service-wide database settings. The goal of these restrictions is to aid in data quality control by preventing unwanted modifications to settings during regular use of IrisBG. Note that Landscape Managers do have the ability to change their *Role type* to *Administrator* to use the view-only forms, but this should only be done temporarily, and if changes affect all parks using IrisBG then all parks should be consulted. To change your role type, click the small [] button to the left of your name in the *User accounts* form to view your collection access, select the appropriate **Role** from the drop-down menu, and click the *Save* button. Close IrisBG and log in again to register the changes.

B. ADD A USER ACCOUNT

A user account is required for IrisBG log-in.

1. Open the *User accounts* form in the *Authorization* panel.
2. To add a new user account, click on the **Add item** (green) button.
3. In the new item line that appears, select the personnel name from the *User name [initials]* drop-down menu.
4. Select <change> from the **Password** drop-down menu.
5. Click the *Save* button.
6. To identify the role type and collection that the user will have access to, make sure the correct user account is selected and click on the **Add subitem** (green).
7. In the new subitem line that appears, select the **Collection** from the drop-down that the user will have access to.
8. Select the **Role** from the drop-down menu to assign the user's access level for that collection (see [Section A](#) for more information on role types).
9. Enter **Valid from** and/or **Valid to** dates using the format *mm/dd/yyyy* to limit access to a time range. If not entered, access will be available after saving and will continue indefinitely.
10. To add another collection, repeat [Step 6](#) through [Step 9](#).
11. Click the *Save* button when finished.

C. MODIFY USER ACCESS SETTINGS

1. Click the small [] button to the left of the account *User name* in the list of user accounts to view the role type assigned to each collection.

2. Modify fields as needed based on instructions in [Section B](#), and then click the *Save* button.

If the person with the modified user account is logged in to IrisBG when changes are made to their user account settings, they will need to close IrisBG and then log in again for the changes to register.

User accounts that are no longer active should NOT be deleted, as they provide a record of who has had access to the IrisBG database. Instead, enter the last day of access in the *Valid to* field for each collection in the record. After that date, the user account *Status* will be listed as *Passive*.

D. RESET A USER PASSWORD

1. In the *User accounts* form, select *<changeme>* from the *Password* drop-down menu for the user account of the person who needs to reset their password.
2. Click the *Save* button.
3. The next time the user logs in to IrisBG, they should enter *changeme* for their *Password*, check the box in front of *Change password after log-on*, and enter a new password.

TAXON RECORDS

Taxon records are managed in the *Taxa* form. These records describe the taxa present in NPS plant collections recorded in IrisBG. A taxon record for a new accession must be recorded in the database before the accession record can be added. Taxon records provide most of the content for the Garden Explorer websites (see [APPENDIX D](#) for more information on managing data for Garden Explorer). Taxonomy classifications above the species level are managed in the *Taxonomic groups* form. Because taxonomy records are shared across all NPS parks using IrisBG, it is best to consult with the other parks before modifying the records. Always confirm that the taxon record does not already exist in the database before attempting to add a new record. Only individuals assigned the Landscape Manager or the Administrator role type can modify records in the *Taxa* and *Taxonomic groups* forms, but these forms are visible to all users.

A. ADD A TAXON RECORD

Each taxon record has one *accepted* name as its designated taxon name, and may have multiple *synonyms* defined in it as well.

1. Open the *Taxa* form in the *Taxonomy* panel.
2. Click the *Clear/new* button.

Alternatively, if you would like to copy an existing record to use as a starting point for a new record, open the record you are copying and click the *Repeat* button. Modify fields by following the steps below.

Use the *Web search* button in the Tool Bar to find a variety of taxonomy-related online databases that can be searched to help confirm the accuracy of the data in a taxon record. Upon selecting one of the

Web search options, the taxon name will be automatically searched in the website selected and the results will be opened in an internet browser window. The fields that each search is useful for are listed in parentheses after the name.

In the **Names** tab:

3. Select the *Genus/monomial* from the drop-down menu. Only the genus is required to register a taxon record, but the record should be as specific as possible while maintaining accuracy.

If the genus is not in the drop-down menu, follow the instructions in [Section F](#) to add it to *Taxonomic groups*.

4. Enter the *Species* if known (all lower-case).
5. Enter any more specific taxonomic classifications in the *Infra-1*, *Infra-2*, and *Cultivar* fields:

Use the *Infra-1* and *Infra-2* fields to enter the subspecies, variety, subvariety, form, and/or grex.

Select the infra type(s) and enter the associated *Name*(s) (all lower-case).

Use the *Cultivar* field to enter the cultivar name (capitalized and enclosed in single quotes).

6. Click the **Web search** button and select the first three searches (*GBIF*, *Catalogue of Life*, and *The Plant List*) and compare the results to confirm that the taxon name you have entered is the accepted name, not a synonym.

It is likely that hybrids with cultivar names will not return any results from this search. It is also possible that the name is spelled incorrectly. Try using the **Web search** button to search *Wikipedia*, *Google*, or *NGA* (the National Gardening Association) for taxa with cultivar names to confirm the correct spelling.

If you find that the entered taxon name is a synonym, not the accepted name, do not save the new taxon record. Instead, first enter the taxon record for the synonym's associated *accepted* taxon name, and then follow the instructions in [Section C](#) to add a synonym.

If the correctness of the taxon name is uncertain, mark the taxon record as *Provisional* at the top of the *Details* tab.

7. Click the blue  button to the right of the *LSID* (Life Science Identifier) field to search for author citation information. This button searches the taxon name in the IPNI database that is integrated in the software. Double-click on a record to select it. The window will close and the *LSID*, *Author*, and *Publication* fields will be automatically populated.

Use the information found in the first three searches (*GBIF*, *Catalogue of Life*, and *The Plant List*) to determine which record to select. Alternatively, a general rule of thumb for selecting an author citation is to choose the oldest publication year with the most recent version number.

Taxon names without a species will not return any results from this search. In this case, leave the fields blank.

8. To add common names to the taxon record:
 - a. Click on the **Add name** (green) button in the *Common names* section of the *Names* tab.
 - b. In the new item line, select *English* as the **Type** and enter the **Name** using all lower case except for proper nouns included in the name. Generally, do not include cultivar names in hybrid common names; instead, include the type or class of the taxon (for example, *hybrid musk rose* or *tall bearded iris*).
 - c. Multiple common names can be added using the **Add name** (green) button. Enter *1* in the **Rank** field for the most widely used common name, enter *2* for the next, and so on.

Common names can be found by searching many of the **Web search** sites.

To delete a common name (if it is a duplicate or was added in error), select the common name and click the **Delete name** (red -) button. The changes will be saved the next time you *Save* the taxon record.

In the **Details** tab:

9. If accessions of this taxon should *never* be published on *any* park's Garden Explorer website, select *Do not publish* in the **Restriction** field. Accession items can also be restricted from web publication only for *your* park's website through settings in the accession records and location records. See [Section A of APPENDIX D](#) for more information on managing publication restrictions in Garden Explorer.
10. Use the **Web search** button to search the *USDA PLANTS* database (reference the Growth Habit entry) to aid in selecting the best choice for **Life form** for the taxon. This field is used to describe the general growth form of the taxon. A choice of seven categories have been derived from USDA Growth Habit categories and Federal Geographic Data Committee (FGDC) General Growth Form categories, and adapted to include types of organisms that will be included in plant records. Combined categories are included to accommodate taxa that can have multiple growth forms. The seven categories are described below:
 - **herbaceous**: plant without above-ground woody tissue
 - **shrub**: multi-stemmed woody plant that typically grows less than 5 m high at maturity
 - **tree**: single-stemmed woody plant that typically grows more than 5 m high at maturity
 - **herbaceous/vine**: herbaceous plant that also has a climbing growth pattern
 - **shrub/vine**: shrub that also has a climbing growth pattern
 - **shrub/herbaceous**: plant that may grow as a shrub or an herbaceous plant
 - **tree/shrub**: plant that may grow as a large shrub or a small tree

If more than one life form is listed, select one of the combined categories. For vines, select whether it is herbaceous or a shrub (woody-stemmed).

Note that the herbaceous category includes flowering forbs, ferns, succulents, grasses, and aquatic plants. The FGDC has a more detailed list of 23 Growth Form subcategories for herbs, shrubs, and trees; similar more detailed categories could potentially be added in the future.

11. The **Hardiness** field is used to enter the minimum USDA Hardiness zone for the taxon. This information can be found by using the **Web search** button (try searching *NGA*, *Missouri BG Plant Finder*, *Dave's Garden*, and/or *Plants for a Future*). Select the lowest number if a range is provided.
12. The **IUCN Red List** field is used to indicate the degree to which a species is threatened. This information can be found by using the **Web search** button and selecting the *IUCN Red List* website.

If the search returns no result, choose *Not evaluated*.

13. Use the **Web search** button to search the *USDA PLANTS* database for information for the *Regional red list (Regional red)* and the *Regional black list (black list)* fields. Because taxon records are shared by all parks using IrisBG, the regional red and black list fields refer to *national* designations for Endangered species (red list), Threatened species (red list), and Noxious Weeds (black list). This information will be found in the Legal Status tab of the USDA plant profile.

Only select *Threatened*, *Endangered*, or *Noxious Weed* in the *Regional red* and *black list* fields if the taxon is listed as such for the *United States*. Otherwise, select *Unlisted*.

If states are listed on the USDA plant profile with invasive or protected designations, these can be entered in the **Comments** field for reference (optional). If entering state information, include the year referenced for the designation (for example, *On MA 2006 invasive/prohibited plant list*). This information can also be entered later in custom attributes (*Invasive status* and *Protected status*) in accession records (also optional).

14. (optional) Enter recommendations for propagating the taxon in the **Propagation** field. This information should be applicable to a plant of the taxon at any park.

Propagation recommendations may be found by using the **Web search** button to search websites labeled as *use/care: NGA*, *Missouri BG Plant Finder*, *Dave's Garden*, and/or *Plants for a Future*.

15. (optional) Enter recommendations for cultivating the taxon in the **Cultivation** field. This information should be applicable to a plant of the taxon at any park.

Cultivation recommendations may be found by using the **Web search** button to search websites labeled as *use/care: NGA*, *Missouri BG Plant Finder*, *Dave's Garden*, and/or *Plants for a Future*.

In the **Parentage** tab:

16. For hybrids, enter the breeder/hybridizer's last name in the **Breeder** field and the year the hybrid was introduced in the **Breeder date** field to the right. Search the *NGA* and *Dave's Garden* using the **Web search** button to find this information.

If the taxon is not listed in those databases, try searching *Google* or simply leave the *Breeder* fields blank.

In the **Images** tab:

Only add NPS-owned images to the database.

Only add an image to the database once. All accession images are linked to and visible in their associated taxon records as well, so if the image is of a specific accession item, add the image to the accession record instead of the taxon record. Images added to *Events* records (task lists and tours) are not linked or visible anywhere else in the database.

Keep in mind that all images uploaded to *any* park's accession records will be linked and visible to *all* parks in the taxon records. Additionally, the software allows *any* user with a minimum of *Update* access to the *Taxa* form to delete or modify *all* image files in taxon records (even those added as part of another park's accession records). **DO NOT** modify or delete image files that are potentially associated with other parks' accessions. If the image is part of an accession record, the alpha code for the park that the accession record belongs to should be referenced in the *Origin* field in the *Images* tab.

Images only need to be uploaded to taxon records if the images linked from accession records are not sufficient for publication on the Garden Explorer website. Relatively close shots are ideal for publication, since the website will be used by visitors to identify plants, and all parks' websites will display the same images for each taxon. Garden Explorer image publication settings are primarily managed in the taxon records. See [Section C of APPENDIX D](#) for more information on managing images for Garden Explorer.

Click on the image thumbnail to display its details below and a larger preview of the image.

17. To add an image to the taxon record (optional):

The **Max. resolution** field should be set to *MegaPix 3*. This will limit the image files to a size that is manageable for storage and appropriate for web display on the Garden Explorer websites.

- a. Click the **Add image file(s)** (green ) button, browse to the image and select it, and then click the **Open** button. Image metadata will be automatically added to the *Properties* field and the *Date* field.
- b. Enter a **Rank** for the image. This field indicates whether the image will be displayed on the Garden Explorer website and its sorting order: enter *1* for the default image to display, enter *2* through *9* to indicate the sorting order of additional images to display, and enter *10* or higher to restrict the image from being published online. Images with ranks *1* through *9* should be suitable for display on all parks' websites (see [Section C of APPENDIX D](#) for more information on managing images for Garden Explorer).
- c. To credit the photographer or provider of the image, enter their name in the **Provider** field.
- d. Add any notes about the image in the **Comments** field.

To delete an image (only if added in error), select the image's thumbnail and click the **Delete image** (red ) button. The changes will be saved the next time you *Save* the taxon record.

In the References tab:

Note that the *Referred by* section on the left provides links to all accessions that reference the taxon record.

18. To reference a library record in the taxon record (optional):

A library record for the document must first be added in the *Library* form (see [Section C](#) of the [SUPPORTING RECORDS](#) instructions).

- a. Click the **Add library item** (green ) button.
- b. Select the library record from the **Author(s)** drop-down menu. The *Year* and *Title* fields will be automatically populated.
- c. Add page numbers to reference in the **Pages** field (for example, *10, 34-38*) and add **Comments** if needed.

To delete a library reference (only if added in error), select the reference and click the **Delete library item** (red ) button. The changes will be saved the next time you *Save* the taxon record.

19. To add a web reference to the taxon record (optional):

For now, only add links to the USDA Plant Guide pdf or the USDA Plant Fact Sheet pdf for publication on the Garden Explorer websites (found by using the **Web search** button to search the *USDA PLANTS* database – the links are found in the *General* tab).

- a. Click the **Add web page** (green ) button.
- b. Enter the name of the website or linked document in the **Description** field or select a commonly-used name from the drop-down menu if appropriate.
- c. Copy and paste the **URL** of the web page.
- d. Add **Comments** if needed.
- e. Add a **Rank** for the web reference. This field indicates whether the link will be displayed on the Garden Explorer website and its sorting order: enter *1* through *9* to indicate the sorting order of web references to display, and enter *10* or higher to restrict a web reference from being published online. Web references with ranks *1* through *9* should be suitable for display on all parks' websites (see [Section B](#) of [APPENDIX D](#) for more information on managing taxon records for Garden Explorer).

To delete a web reference (only if added in error), select the reference and click the **Delete web page** (red ) button. The changes will be saved the next time you *Save* the taxon record.

Leave all other fields in the taxon record blank until NPS standards have been determined.

20. Click the Save button.

B. MODIFY A TAXON RECORD

To modify a taxon record, open the record, modify fields as needed based on the instructions in [Section A](#), and then click the *Save* button. See instructions in [Section C](#) and [Section D](#) for adding and modifying synonyms. See instructions in [Section E](#) for converting a taxon record to a synonym.

It is not necessary to consult other parks if adding data to a record or correcting minor errors.

However, before deleting data or modifying existing data beyond minor errors, other parks should be consulted (this includes changing the *Rank* of images or web references).

C. ADD A SYNONYM

If a taxon in the database has a synonym that would be useful to be able to search or reference (for example, if it is used in historic documents or past records), follow these instructions to add a synonym to the appropriate record.

Synonym taxon names are added within the taxon record for the associated *accepted* name, so a taxon record for the accepted name must first be added to the database before adding a synonym.

1. Determine the accepted name for the synonym if you have not done so already. This can be done by using the *Web search* button to search the *GBIF*, *Catalogue of Life*, and *The Plant List* websites.
2. Search for the accepted name in the *Taxa* form and open the taxon record for the accepted name.

If the accepted name is not in the database, first add a taxon record for the accepted taxon name by following the instructions in [Section A](#).

3. Determine whether the synonym is homotypic or heterotypic by using the *Web search* button to search the *GBIF* (click on the record for the accepted name and the synonyms will be listed on the left side of the page).
 - A *homotypic synonym* (indicated by \equiv) has the same type (specimen) and the same taxonomic rank as the accepted taxon. For example, the Linnaean name *Pinus abies* L. has the same type as *Picea abies* (L.) H. Karst. When *Picea* is taken to be the correct genus for this species, *Pinus abies* is a homotypic synonym of *Picea abies*.
 - A *heterotypic synonym* (indicated by \neq) has a different type than the accepted taxon. For example, some botanists split the common dandelion into many quite restricted species. The name of each such species has its own type. When the common dandelion is regarded as including all those small species, the names of all those species are heterotypic synonyms of *Taraxacum officinale* F. H. Wigg.
4. Add the synonym in the *Names* tab:

If the synonym is *homotypic*, click the *Add homotypic synonym* (green \equiv) button.

If the synonym is *heterotypic* or the type of synonym is unknown, click the **Add accepted name or synonym** (green) button. Select *Heterotypic synonym* or *Synonym* (if unknown type) in the *Name status* field.

5. Select the *Genus/monomial* from the drop-down menu. If the genus is not in the drop-down menu, follow the instructions in [Section F](#) to add it to *Taxonomic groups*.
6. Enter the *Species* and more detailed taxonomy in *Infra-1*, *Infra-2*, and *Cultivar* if known.
7. Click the blue **p** button to the right of the *LSID* (Life Science Identifier) field to search for author citation information. This button searches the taxon name in the IPNI database that is integrated in the software. Double-click on a record to select it. The window will close and the *LSID*, *Author*, and *Publication* fields will be automatically populated.

Use the information found in the *GBIF* to determine which record to select. Alternatively, a general rule of thumb for selecting an author citation is to choose the oldest publication year with the most recent version number.

8. Click the *Save* button.

D. MODIFY A SYNONYM

Synonyms may need to be modified or deleted if they are found to be incorrect. This may include changing the synonym type (*Name status*), converting the synonym to an accepted name, or moving the synonym to a different taxon record. It is best to consult other parks using IrisBG before modifying, moving, or deleting a synonym.

Convert a synonym to a heterotypic synonym:

1. Open the taxon record containing the synonym to be modified and select the synonym from the *Scientific names* list.

If the heterotypic synonym was entered incorrectly as an unspecified *Synonym*, select *Heterotypic synonym* from the *Name status* drop-down menu.

If a heterotypic synonym was entered incorrectly as a *Homotypic synonym*, click the **Alter to heterotypic synonym** (green) button.

2. Click the *Save* button.

Convert a synonym to a homotypic synonym: If a *Homotypic synonym* was entered incorrectly as a *Heterotypic synonym* or an unspecified *Synonym*, it cannot be converted to a homotypic synonym by simply changing the *Name status* (an error will result); a new homotypic synonym must be added and the old incorrect synonym deleted.

1. Open the taxon record containing the synonym to be modified. Select the *Accepted* name from the *Scientific names* list if it is not already selected.
2. Click the **Add homotypic synonym** (green) button.

3. Follow [Step 5](#) through [Step 8](#) in [Section C](#) to add the name properties and save the new synonym.
4. Select the original heterotypic or unspecified synonym and click the **Delete name** (red –) button. A window will open asking you to confirm the deletion. Click the **Ok** button, and then click the **Save** button.

Transfer a taxon name to another taxon record: If a synonym was entered in the wrong taxon record or if an accepted name was entered as a synonym, the **Transfer synonym** (blue i) button can be used to move the synonym to another taxon record. Accession record links are *not* transferred with the synonym; they remain linked to the original taxon record.

1. Open the taxon record containing the synonym to be modified and select the synonym from the *Scientific names* list.
2. Click the **Transfer synonym** (blue i) button. A dialog box will appear.

To move the selected synonym to be listed as a synonym in another taxon record, select the **Use as Synonym for an existing taxon** option. Select the associated taxon from the **Transfer to taxon** drop-down menu.

If the selected synonym is actually an accepted name, and one of its synonyms is incorrectly entered in the database as an accepted name, select the **Use as Accepted name for an existing taxon** option. Select the associated synonym from the **Transfer to taxon** drop-down menu.

If the selected synonym is actually an accepted name with no associated synonyms entered in the database, select the **Create new taxon** option.

3. Click the **Ok** button. The synonym will be transferred along with data entered in the *Name properties* section of the *Names tab*.

A transferred synonym will be designated as an unspecified *Synonym*. Update the synonym *Name status* to homotypic or heterotypic by following the *Convert a synonym...* instructions in this section.

A synonym transferred to an existing taxon record will retain the data in the record it was transferred to. Confirm that the data is accurate and update the record as needed based on instructions in [Section A](#).

For synonyms transferred to create a new taxon record, complete data entry for the new record by following instructions in [Section A](#).

Delete a duplicate taxon name: If a synonym is listed more than one time in the taxon records (either within a single record or among different records) or if an accepted name is also incorrectly listed as a synonym, delete the incorrect synonym.

1. Open the taxon record containing the synonym to be deleted and select the synonym from the *Scientific names* list.

2. Click the **Delete name** (red –) button. A window will open asking you to confirm the deletion. Click the **Ok** button, and then click the **Save** button.

E. EXPIRE A TAXON RECORD

Expiring a taxon record using the *Expire...* button is similar to deleting a record, but the operation includes a requirement to transfer taxon records with associated accessions to a different taxon. This should only be done if there is an error in a record that needs to be corrected (such as a duplicate misspelled record or a taxon listed as accepted that is in fact a synonym). It is best to consult other parks using IrisBG before expiring a taxon.

Delete a record NOT IN USE: A taxon record can be deleted if it is *known* to have been entered in error (for example, if it is an incorrectly-spelled duplicate of another taxon record) and it is not being referenced by any accession records at any park.

Keep in mind that a taxon record may have been entered into IrisBG as a general reference (for example, a historic variety originally planted at a park but not explicitly linked to an accession record yet). When in doubt, DO NOT delete a record, since another park likely added it for a reason.

1. Open the taxon record and click the **Expire...** button. A dialog box will appear, and a green heading at the top of the dialog box should read: *The taxon is NOT IN USE.*
2. Select the **Delete** option and click the **Ok** button.

Delete a duplicate taxon record IN USE: Each taxon name should only be included once in the database. If a duplicate taxon record exists for a taxon (with incorrect spelling) or if a taxon is included as both a synonym and an accepted name, the incorrect taxon name should be deleted.

1. Review the duplicate records and make sure that the record to be retained (with the correct taxon name spelling) is accurate and contains all relevant data from the record(s) that will be deleted. It may be easiest to create a *Taxa* report to compare the records (see the *Exporting Reports, Maps, and Labels* section). If there is any confusion, consult other parks using IrisBG.
2. Open the taxon record with the incorrect taxon name spelling and click the **Expire...** button. A dialog box will appear, and a yellow heading at the top of the dialog box should read: *The taxon is IN USE. Existing references must be transferred.*
3. Select the **Delete** option, select the correct taxon record from the **Transfer to new taxon** drop-down menu, and then click the **Ok** button. Any accession records that previously referenced the incorrect taxon record will now reference the selected correct taxon record.

Convert a taxon record to a synonym: If it is determined that the accepted name recorded for a taxon in IrisBG is in fact a synonym, the record should be converted to a synonym and its linked accessions should be converted to the correct taxon record.

1. Determine the accepted name for the synonym if you have not done so already. This can be done by using the **Web search** button to search the *GBIF*, *Catalogue of Life*, and *The Plant List* websites.

2. Search for the accepted name in the *Taxa* form and confirm that it is complete and accurate.
If the accepted name is not in the database, first add a taxon record for the accepted taxon name by following the instructions in [Section A](#).
3. Open the taxon record to be converted to a synonym and click the ***Expire...*** button.
If the taxon record *is not* being referenced by an accession record, a dialog box will appear with a green heading at the top that reads: *The taxon is NOT IN USE*.
If the taxon record *is* being referenced by an accession record, a dialog box will appear with a yellow heading at the top that reads: *The taxon is IN USE. Existing references must be transferred*.
4. Select the taxon record with the associated *Accepted* taxon name from the ***Transfer to new taxon*** drop-down menu, select the ***Treat as synonym*** option, and then click the ***Ok*** button. The associated accepted record will then be displayed with the newly-transferred unspecified synonym.
5. Determine whether the synonym is homotypic or heterotypic by using the ***Web search*** button to search the *GBIF* (click on the record for the accepted name and the synonyms will be listed on the left side of the page). For more information on synonym types, see [Step 3 in Section C](#).
6. Follow the instructions in [Section D](#) to convert the synonym to homotypic or heterotypic.
If the original taxon record had synonyms associated with it, they will also be transferred to the record with the associated accepted name, and may need to be modified as well.

F. ADD A GENUS TO TAXONOMIC GROUPS

Taxonomic classification data above the species level is pre-loaded in IrisBG based on recent scientific consensus. Older classifications may not be included, but can be added for the purpose of adding synonyms to taxon records, and updates to taxonomic groups may be needed over time as accepted classifications change.

Existing taxonomic groups should NOT be modified or expired without consulting all parks using IrisBG.

1. Click the ***Web Search*** button and use the *Browse genera in The Plant List database* link to confirm which family the genus belongs to (the family is listed in parentheses after the genus).
2. Open the ***Taxonomic groups*** form in the *Taxonomy* panel.
3. In the *Hierarchical* tab, select *Family* from the ***Hide ranks above*** drop-down menu and select the family that the genus will be added to.
If the family is not listed, it must be first added as a taxonomic group, along with the other main higher ranks (order and class) it belongs to. To add a taxonomic group above the genus rank, follow same process described in this section.
4. Click the ***Add group with lower rank*** (green) button.

5. In the *Properties* section on the right, select *Genus* from the **Rank** drop-down menu and enter the name of the genus (capitalized) in the **Name** field.
6. Search the genus in the GBIF database (<https://www.gbif.org/species/6>). Be sure to select the genus in the Plantae kingdom.
7. Click the blue **p** button to the right of the **LSID** (Life Science Identifier) field to search for author citation information. This button searches the taxon name in the IPNI database that is integrated in the software. Double-click on a record to select it. The window will close and the **LSID**, **Author**, and **Publication** fields will be automatically populated.

Use the information found in the *GBIF* to determine which record to select. Alternatively, a general rule of thumb for selecting an author citation is to choose the oldest publication year with the most recent version number.

8. If the genus is listed as a synonym in the GBIF database, select either *Deprecated* or *Unknown* from the **Status** drop-down menu.
9. If any synonyms are listed in the GBIF database for an accepted genus name, they can be added to the **Synonym group(s)** field.
10. Click the **Save** button.

ACCESSION RECORDS

Accession records are managed primarily in the *Accessions* form, but can also be updated in the *Item management* form. These records describe plants that currently exist or have previously existed in the landscape of the park or its nursery or seed collection. A single accession record can include multiple specimens, which can exist in multiple locations. All specimens within a single accession record must share all data in the **Details** and **Parentage** tabs. This includes the *Accession year*, *Accession number*, *Accession type*, *Taxon name*, *Determination date and person*, *CL evaluation*, *Invasive status*, *Protected status*, *Provenance*, *Contact*, and *Parental accessions*. Details on the different locations of specimens (*items*) within an accession record and their status are recorded in the **Items** tab. An accession record should not be deleted when the accession has died or is no longer part of the park's collection; instead, its status should be updated to reflect changes.

Accession records for a park's plant collection can only be viewed or modified by individuals who have been assigned access to that collection in their user account. They can be modified by individuals with the Landscape Associate, Landscape Manager, or Administrator role type, but the *Item management* form can only be used by individuals assigned the Landscape Manager or Administrator role type. The *Accessions* form is visible to all role types, but the *Item management* form is not visible to individuals with the Landscape Assistant role type.

A. ADD AN ACCESSION RECORD

New accession records should be created when a park adds new plant material to its collection. This may be when purchased plants are planted in the landscape, when new propagules are prepared, when volunteers sprout in the landscape, or when seeds are added to the seed collection.

Note that if infill is planted in an area regularly, the new infill planting can be included in the existing accession item record at that location if the taxon is the same. This eliminates the need to update multiple accession item records representing a single mass of plants that have accumulated over time and are difficult to distinguish from one another. If the infill is a different taxon than the existing item(s), adding a new accession record is recommended. See [APPENDIX B](#) for guidance on managing accession item status.

1. Open the *Accessions* form in the *Collections* panel.
2. Click the *Clear/new* button.

Alternatively, if you would like to copy an existing record to use as a starting point for a new record, open the record you are copying and click the *Repeat* button. Modify fields as needed following the steps below.

In the **Details** tab:

3. Enter the year that the accession was acquired by the park in the *Accession year (Acc. year)* field. This is not necessarily the same as the planting year. For example, if the accession is a propagule derived from a cutting, the accession year is when the cutting is taken and the planting year is when the mature propagule is planted in the landscape.

For a new accession, the accession year is likely this year.

If entering an old accession where the accession year is unknown, enter *0000*.

4. The *Accession number (Acc. no)* field to the right of the accession year field can be left blank. This will be the unique identifying number for the accession record, and IrisBG will automatically assign the next sequential number to the new record.

After the record is saved, the full accession number will be displayed in the pale yellow *Accession* field at the top of the form. If the full accession number is *LONG-00042*, the accession is in the Longfellow House collection and the accession number is *42*.

5. The *Accession type (Acc. type)* field indicates the historic status of the accession, how similar a new planting is to the original planting, and if the plant is a volunteer. The *Accession type* options are defined as follows:

- **Original planting:** planting existing during the park's period of significance
- **Original wild plant:** volunteer/wild plant existing during the park's period of significance
- **Replacement planting, Propagule:** same taxon as the original planting at that location, and a propagule of an original planting at the park

- **Replacement planting, Same taxon:** same taxon as the original planting at that location
- **Replacement planting, Substitute taxon:** substitute taxon for the original planting at that location, but still a very similar taxon suitable to represent the original (often a different variety or cultivar)
- **Replacement planting:** same taxon as an original planting (or a suitable substitute variety/cultivar) in the same *general* location (specific original location is unknown)
- **Non-original planting:** planting that did not exist during the park's period of significance and is not a replacement for an original planting
- **Volunteer/wild plant:** volunteer/wild plant that did not exist during the period of significance
- **Unknown:** historic status of the planting is not known

Any replacement of the original planting qualifies as a *Replacement*; for example, it can be the fourth time a replacement has been planted in that location.

If the accession is currently being propagated in the nursery or stored as seeds, do not enter an accession type in the record until items have been planted in the landscape.

6. Select the taxon in the **Taxon name** field by typing it, selecting from the drop-down menu, or clicking on the [...] button to use the search functions to select it in a new window. Choose the most specific taxon name possible while maintaining accuracy.

If the taxon name is not yet entered in the database, follow the steps in [Section A](#) or [Section C](#) of the [TAXON RECORDS](#) instructions to add a new taxon record or synonym.

7. (optional) Select a *Determination type (Det. type)* from the drop-down menu if the taxon name chosen for the accession is questionable and needs to be reviewed.
8. (optional) Enter the name of the person who identified the accession's taxonomy in the *Determination person (Det. person)* field using the format [Last name], [First name].

If the field is left blank, a ? will be automatically entered when saving.

9. Enter the date that the accession's taxonomy was identified in the *Determination date (Det. date)* field using the format *mm/dd/yyyy*, *mm/yyyy*, or *yyyy*.

For a new accession, you can likely use today's date, which will be automatically entered when saving the record if the field is left blank.

10. (optional) Select the *Determination level (Det. level)* from the drop-down menu if known.
11. Select the source of the accession in the **Contact** field. This might be a nursery or a garden organization.

If the accession was propagated on site, leave this field blank.

If the contact is not found in the drop-down menu, follow the steps in [Section B](#) of the [SUPPORTING RECORDS](#) instructions to add a contact record.

12. Enter whether the new accession has wild origins or is from a garden in the **Provenance** field. If unknown, select *Unrecorded*.
13. If *none* of the items in the accession should be published on the Garden Explorer website, select *Do not publish* in the **Restriction** field. Individual accession items can also be restricted from web publication in the *Items* tab, and taxon records and specific location records can be restricted from web publication as well. See [Section A of APPENDIX D](#) for more information on managing publication restrictions in Garden Explorer.
14. Click the **Add all attributes** (green) button at the top of the *Attributes* section to the right of the form to add all custom attributes (*CL evaluation*, *Invasive status*, and *Protected status*).
15. The **CL evaluation** (Cultural Landscape evaluation) field indicates whether or not the plants in the accession contribute to the cultural landscape based on the period of significance. The *CL evaluation* options are defined as follows:
 - **Contributing (C)**: vegetation that was present during the period of significance (or is a replacement of the same taxon planted in a known historic location), retains its historic character, and is associated with the historic significance of the cultural landscape
 - **Non-contributing, Compatible (NC)**: vegetation that is not contributing to the cultural landscape as previously defined, but that approximates the size, form, texture, and/or seasonal character of original plantings in the same general location, including bloom time and color, fruit, and/or fall foliage
 - **Non-contributing, Incompatible (NI)**: vegetation that is not contributing to the cultural landscape as previously defined, and that detracts from the historic character of the landscape particularly in relation to composition, design, color, and texture
 - **Undetermined (U)**: vegetation for which physical or historical documentation is insufficient or inconclusive, or if further research is required to make an evaluation

Non-contributing, Compatible vegetation is often a new taxon substituted for a historic variety. It may also be a new planting used to screen views that detract from the overall character of the landscape, such as adjacent development.

Generally, *Non-contributing, Incompatible* plantings should be removed from the landscape.

This data may be found directly in a Cultural Landscape Inventory or a Cultural Landscape Report for the park, or a value can be derived based on accession details and the planting recommendations found in the location records.

If the accession is currently being propagated in the nursery or stored as seeds, do not enter a CL evaluation in the record until items have been planted in the landscape.

16. (optional) The **Invasive status** field identifies local or state invasive species designations for accessions. Because taxon records are shared by all parks using IrisBG and their data must apply to all

geographic locations, the *Invasive status* custom attribute allows state and local taxon information to be stored in accession records.

Note that state noxious weed designations may be referenced in the *Comments* field in the *Details* tab of taxon records as narrative text (see [Step 13](#) in [Section A](#) of the [TAXON RECORDS](#) instructions), but the *Invasive status* attribute improves querying and reporting capabilities by limiting the values that can be entered (*Invasive*, *Not invasive*, or *Unknown*).

The National Invasive Species Council defines an *invasive species* as a species that is (1) not native to the ecosystem under consideration and (2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

Each park can develop its own method for determining which accessions are invasive, since states and localities have varied classification systems. A good resource to start with is the USDA Noxious Weed listings by state (<https://plants.usda.gov/java/noxComposite>); each state's page also has links to additional resources at the bottom after the Noxious Weed list.

17. (optional) The *Protected status* field identifies local or state threatened and endangered species designations for accessions. Because taxon records are shared by all parks using IrisBG and their data must apply to all geographic locations, the *Protected status* custom attribute allows state and local taxon information to be stored in accession records.

Note that state threatened and endangered designations may be referenced in the *Comments* field in the *Details* tab of taxon records as narrative text (see [Step 13](#) in [Section A](#) of the [TAXON RECORDS](#) instructions), but the *Protected status* attribute improves querying and reporting capabilities by limiting the values that can be entered (*Endangered*, *Rare*, *Special Concern*, *Threatened*, or *Unlisted/Undetermined*). The drop-down values for this attribute are based on designations used by states where parks currently using IrisBG are located (MA and CA).

Each park can develop its own method for determining which accessions are protected, since states and localities have varied classification systems. A good resource to start with is the USDA Threatened & Endangered listings by state (<https://plants.usda.gov/java/threat>).

18. (optional) The *Comments* field is used to store any important information not included previously that applies to all plants in the accession and that cannot be entered in any other fields. This is typically narrative or descriptive text.

In general, notes should not be removed from the *Comments* field unless the data is represented elsewhere in the database.

Include dates in comments if relevant to clarify information for those referencing it in the future.

In the **Parentage** tab:

19. If the new accession is a propagule of an existing accession or accessions in the collection, the parental accession(s) can be linked in the *Parentage* tab.

- a. Click the [...] button in the *Parent-1* and/or *Parent-2* fields to open a search window.
- b. Find and open the accession record for the parent, and then click the *Select and close* button. The parent's accession number and taxon will be entered in the record.
- c. Select the *sex* of the parent from the drop-down menu. If left blank, *Female* will be entered after saving.
- d. Check the *certain* box if it is certain that the selected accession is the parent.

Note that the *Progenies* section of the *Parentage* tab provides links to all child accessions based on parental accession data that has been entered in the database.

20. Click the *Save* button.
21. Complete the following section (B) to add item details to the accession record.

B. ADD ITEMS TO AN ACCESSION RECORD

In order to add a location to an accession record and details about the condition of the specimens included in it, you must add an item record in the *Items* tab of the accession record. Multiple item records can be added to an accession record, and are listed on the left side of the *Items* tab. When an item in the list is selected, the record details are displayed in the *Item properties* section on the right. A single item record can represent multiple specimens if they are in the same general location. This is common for groundcovers and for shrubs that have grown together to form a mass where the individual plants are difficult to distinguish.

When adding an item record, keep in mind that it is essentially a record of the item's status at a certain point in time (generally, whether it is alive or dead and where it can be found), so all details in the record should reflect the item's condition at the time specified. The past conditions of an item can be added later if useful (see [Section K](#) for more information on adding item history), and its status should be updated periodically during its lifetime (see [Section G](#) and [Section J](#) for more information on updating item status, as well as [APPENDIX B](#)).

1. If not already open, open the accession record that you would like to add items to.

In the *Items* tab:

2. To add a new item, click the *Add item* (green) button.
3. Enter *1* in the *Item number (Item no)* field (in the *Items* section on the left) if it is the first item being recorded. This is a unique identifying number within the accession number. As you add more items, continue numbering them in sequential order (*2, 3, 4*, etc.).

After the record is saved, the full item number (including the accession number) will be displayed in the pale yellow *Item no.* field in the *Item properties* section on the right. If the full item number is *LONG-00042.001*, the item is in the Longfellow House collection, the accession number is *42*, and the item number is *1*.

4. Select *Planting* for the *Type* field.

5. **Location** field values reference location records (managed in the *Locations* form in the *Management* panel), which may be general location areas or specific plant locations in the landscape based on planting plans for the park (see [Section A](#) of the [SUPPORTING RECORDS](#) instructions for more information on location records).

- a. Select the item location from the **Location** drop-down menu. To help select the correct location, the columns in the drop-down can be sorted by clicking on the headings.

If the accession item is currently being propagated in the nursery, select *Nursery*.

If the accession item is currently being stored as seeds, select *Storage*.

For most other new accession items, it is best to select a *specific plant location* (usually assigned a numbered location code) based on planting plans. It is okay if the coordinates of this location are not exactly where the new accession item is planted; location records link accession items to the planting plan and also to other accession items that have been planted in the same location at different times, so it is more important to link these records than to enter the exact coordinates of the accession. Keep in mind that a single location may represent multiple specimens for masses of shrubs or clusters of herbaceous plants.

If unsure which location to select, navigate to the *Locations* form to browse for the taxon name of the new accession (listed in the *Name* field), or create a *Locations map* in the *Maps* form (see [Section B](#) of the [REPORTS, MAPS, AND LABELS](#) instructions).

- b. To confirm that the correct location was selected, click outside of the *Location* field to register the selection (the *Location code* and *Location name* should appear in the *Item properties* section on the right), and then click the button to the right of the *Location code* field to view a map of the location. Close the map window to continue entering item details.

If a *specific plant location* was selected, the *Location name* displayed in the *Item properties* section on the right will be the taxon recommended in the park's planting plan for that location (with the number of specimens recommended in parentheses if more than 1), and should be the same or similar to the accession's *Taxon name*.

Some existing accession items may only have a *general location area* selected (a general location area record has *Area* as its *Type*, and its *Code* is a name, not a number). These items either do not have known specific locations, or they are distributed throughout the area selected and it is not practical or useful to define each location.

Some existing accession items may have a *general location area* selected and also coordinates defined in the *Coord. lat./x* and *Coord. long./y* fields. These items were most likely planted before the latest planting plans for the park were established and are recommended for removal, so they do not have a location record that they are associated with, but the coordinates allow them to be located in the landscape.

6. Enter the number of specimens included in the item record into the *Number of specimens (No. sp.)* field. This does not need to be a number. For example, if it is an unknown number of groundcover plants, enter *unknown*; if it is a mass of three shrubs, enter *mass of 3*; and if an approximate number of specimens is known, enter something like *about 20*.

If the accession is a set of propagules in the nursery with the same parentage, consider dividing the propagules into separate item records if tracking the conditions and outcomes of individual propagules (using status updates) is useful, or if it is likely that the individuals will later be planted in different locations in the landscape.

7. The item *Status* indicates the general status of an accession item (whether it is living or has died) at a certain time (entered in the *Status date* field in [Step 8](#)), along with more detailed status designations. See [APPENDIX B](#) for guidance on when to use each status option.

For a new accession item, select the *current* status; choose one of the following:

- ***In Seed Store*** if the material is seeds being stored
- ***Propagation Prepared*** if the material is any kind of newly-prepared propagule, such as a cutting or sown potted seeds
- ***Planted*** if purchased or donated material (not propagated on site) was recently planted in the landscape
- ***Moved*** if the material is *part* of a divided accession item that has been planted in a new location, necessitating the addition of a new accession item
- ***Volunteer Sprouted*** if the material is a recently-sprouted volunteer in the landscape that will be maintained as part of the plant collection

If entering an item for an old accession, select:

- ***Inventoried*** if it still exists in the landscape
- ***Not Found, Dead, Removed, Given Away, or Stolen*** if it no longer exists in the landscape
- ***In Seed Store*** if the material is seeds being stored
- ***Questionable*** if it is not clear if the item is alive or dead
- ***Unknown*** if the status is not known at this time

It will be necessary to update the status of accession items periodically when they are inventoried or when significant changes occur (when propagules mature and are planted; when infill is planted; when items grow into a mass; when they are divided, moved, or removed; or when they die). Follow the instructions in [Section G](#) or [Section J](#) to update the status of accession items.

8. Enter the date of the item status in the *Status date (Date)* field using the format *mm/dd/yyyy, mm/yyyy, or yyyy*. For example, if the status is *Planted*, enter the date that the item was planted.

If left field blank, today's date will be automatically entered when saving.

If unsure of the status date when adding an old accession item, try to at least estimate the year, and add a note in the item *Comments* field (at the bottom of the *Item properties* section on the right) regarding the estimate.

9. (optional) If the new accession item is part of the seed collection or is a propagule being stored in the nursery, and the item already has a container number or a more specific location identification code within the *Storage* or *Nursery* location (such as a room, section, or shelf code), enter the ID in the *Storage number (Storage no.)* field in the *Item properties* section on the right.
10. (optional) If the new accession item has been created as a result of dividing an existing accession item, select the original accession item from the *Item reference (Item ref.)* drop-down menu.
11. Select the general condition of the item from the drop-down menu of the *Condition* field in the *Items properties* section on the right (*Excellent, Good, Fair, or Poor*).
12. In the *Status person (Person)* field, select the person tied to the item status from the drop-down menu. This may be the person who was responsible for planting or removing the accession item, or the person who inventoried it.

If adding an old accession item, select the person who documented the item's status in the past.

If the person is not found in the drop-down menu, follow the steps in [Section A](#) of the [PERSONNEL RECORDS](#) instructions to add a personnel record.

If left blank, your name will be automatically entered when saving.

13. If the accession item has a status of *Propagation Prepared*, an extra group of *Propagation* fields are available in the *Item properties* section on the right. Use these fields to record propagation details.
 - a. Enter the type of propagule in the *Propagule* field (for example, *stem cutting* or *seed*).
 - b. (optional) Add information in the *Treatment, Environment, Medium, and/or Container* fields if desired.
14. (optional) Add measurements (in meters) such as height in the *Measurements* fields in the *Item properties* section on the right.
15. If the item should *not* be published on the Garden Explorer website, select *Do not publish* in the *Restriction* field. The entire accession can also be restricted from web publication in the *Details* tab, and taxon records and specific location records can be restricted from web publication as well. See [Section A](#) of [APPENDIX D](#) for more information on managing publication restrictions in Garden Explorer.
16. (optional) Enter any notes specific to the item status in the item *Comments* field in the *Item properties* section on the right.
17. Click the *Save* button.

When a new accession item is added to the IrisBG database, add a simple label to the plant or seed store marked with its full accession number. For some plants in the landscape this may be impractical or undesirable for aesthetic reasons, but it is especially helpful for tracking propagules and seed stores to ensure that correct parentage data is maintained.

To delete an accession item (only if added in error), select the item record in the *Items* list and then click the **Delete item** (red –) button. Click the **Save** button to save the changes. If an accession item has died or is no longer part of the park's collection, follow the instructions in [Section G](#) or [Section J](#) to update the item status instead of deleting the accession item record.

C. ADD IMAGES AND REFERENCES TO AN ACCESSION RECORD

Images and library references can be attached to an accession record, and can be linked to individual items within the record as well.

1. If not already open, open the accession record that you would like to add images or references to.

In the **Images** tab:

Only add NPS-owned images to the database.

Only add an image to the database once. All accession images are linked to and visible in their associated taxon records as well, so if the image is of a specific accession item, add the image to the accession record instead of the taxon record. Images added to *Events* records (task lists and tours) are not linked or visible anywhere else in the database.

Keep in mind that all images uploaded to *any* park's accession records will be linked and visible to *all* parks in the taxon records.

If adding images for publication on the Garden Explorer website, relatively close shots are ideal for publication, since the website will be used by visitors to identify plants, and all parks' websites will display the same images for each taxon (see [Section C](#) of [APPENDIX D](#) for more information on managing images for Garden Explorer).

Click on the image thumbnail to display its details below and a larger preview of the image.

2. To add an image to the accession record (optional):

The **Max. resolution** field should be set to *MegaPix 3*. This will limit the image files to a size that is manageable for storage and appropriate for web display on the Garden Explorer websites.

- a. Click the **Add image file(s)** (green) button, browse to the image and select it, and then click the **Open** button. Image metadata will be automatically added to the *Properties* field and the *Date* field.
- b. Enter a **Rank** for the image. This field indicates whether the image will be displayed on the Garden Explorer website and its sorting order: enter *1* for the default image to display, enter *2* through *9* to indicate the sorting order of additional images to display, and enter *10* or higher to

restrict the image from being published online. Images with ranks 1 through 9 should be suitable for display on all parks' websites (see [Section C](#) of [APPENDIX D](#) for more information on managing images for Garden Explorer).

Note that Garden Explorer image publication settings will ultimately be managed in the taxon records, but the rank can be initially entered in the accession record as well.

- c. If the image represents a single item in the accession, select the item from the drop-down menu in the **Item** field.
- d. Enter the four-letter alpha code for your park in the **Origin** field.

When other parks view your park's images in the associated taxon records, this field will signal to them that the image is part of your collection and should not be deleted.

- e. To credit the photographer or provider of the image, enter their name in the **Provider** field.
- f. Add any notes about the image in the **Comments** field.
- g. Click the **Save** button.

To delete an image (only if added in error), select the image's thumbnail and click the **Delete image** (red –) button. A window will open asking you to confirm the deletion. Click the **Ok** button, and then click the **Save** button.

In the **References** tab:

3. To reference a library record in the accession record (optional):
A library record for the document must first be added in the **Library** form (see [Section C](#) of the [SUPPORTING RECORDS](#) instructions).
 - a. Click the **Add library item** (green) button.
 - b. Select the library record from the **Author(s)** drop-down menu or search for it by clicking the [...] button. The *Year*, *Title*, and *Type* fields will be automatically populated.
 - c. Add page numbers to reference in the **Pages** field (for example, 10, 34-38) and add **Comments** if needed.
 - d. If the reference applies to a single item in the accession, select the item from the drop-down menu in the **Item** field.
 - e. Click the **Save** button.

To delete a library reference (only if added in error), select the reference and click the **Delete library item** (red –) button. Click the **Save** button to save the changes.

Note that the **Events** section of the **References** tab provides a list of all task list entries and tour entries that directly reference the accession or items within the accession, including details such as entry status. Links to the referenced task lists and tours are also included (click the [...] button).

D. MODIFY AN ACCESSION RECORD

In general, modifications in the *Details* and *Parentage* tabs should only be made to correct errors or to add data to empty fields. Information should not be deleted from the accession *Comments* field, but should instead be appended with the date referenced if applicable. Follow the instructions in [Section F](#) to correct the taxon of an accession. For other modifications to the *Details* and *Parentage* tabs, open the record, reference the instructions in [Section A](#) as needed, and click the *Save* button when finished making changes.

In general, do not delete an accession item unless it was entered in error. If the item dies, is removed, or is no longer in the collection, follow the instructions in [Section G](#) or [Section J](#) to update the item status (also follow these instructions if an accession item is inventoried or moved, when a propagule matures and is planted, when infill is planted, or when items grow into a mass). In some cases, it may be necessary to separate an item into two or more items; if so, follow the instructions in [Section H](#). Rarely, an item will need to be transferred to a new accession record; if this is the case, follow the instructions in [Section I](#). Follow the instructions in [Section K](#) to add item history (information on item status in the past). For modifications in the *Items* tab other than those listed above, select the item or item history record to be modified from the *Items* list on the left, follow the instructions in [Section B](#) as needed to modify item properties, and click the *Save* button when finished.

Note that changes to the *Location* field, the *Status* field, or the *Date* field in an item record will result in a new item status being automatically generated, since those changes imply that an item was moved, inventoried, or its status has changed.

To modify data in the *Images* and *References* tabs, open the record, modify fields as needed based on the instructions in [Section C](#), and then click the *Save* button.

E. DELETE AN ACCESSION RECORD

An accession record should not be deleted unless it is a duplicate or was added in error. Deleting a record CANNOT be undone.

If an accession has died or is no longer part of the park's collection, follow the instructions in [Section G](#) or [Section J](#) to update the item status instead of deleting the accession record.

1. In the *Accessions* form, open the record to be deleted.
2. Click the *Delete...* button. A window will appear asking if you are sure you want to delete the record. Click the *Ok* button.

F. UPDATE THE TAXON NAME OF AN ACCESSION

If an accession was found to have been assigned an incorrect taxon name, the taxon name should be updated along with other determination details.

1. Confirm that a taxon record with the correct taxon name for the accession is entered in the database. If not, see [Section A](#) of the [TAXON RECORDS](#) instructions to add the taxon record.
2. Open the accession record to be updated.

In the **Details** tab:

3. Select the new taxon in the **Taxon name** field at the top of the tab by typing it, selecting from the drop-down menu, or clicking on the [...] button to use the search functions to select it in a new window.

Note that new updates to determination should be entered in the *Determination* section near the top of the *Details* tab. The *Determination history* section at the bottom of the tab will list all taxon names that the accession has been identified as, and can be modified as well, but only previous determinations should be entered in the *Determination history* section, since entries in that section will not update the current taxon name and determination details of the accession.

4. Enter the date that the accession's new taxonomy was identified in the *Determination date (Det. date)* field using the format *mm/dd/yyyy*, *mm/yyyy*, or *yyyy*.

If the field is left blank, today's date will be automatically entered when saving the record.

5. Enter the name of the person who identified the accession's new taxonomy in the *Determination person (Det. person)* field using the format *[Last name]*, *[First name]*.

If the field is left blank, a ? will be automatically entered when saving.

6. Select the new *Determination level (Det. level)* from the drop-down menu.
7. (optional) If references were used to help identify the accession, enter them in the **References** field.
 - a. Click on the drop-down () button and then click in the field that appears. Enter the reference as *Author. Year. Title.* and press **Enter**. Continue entering additional references in this way.
 - b. Click the **Ok** button before navigating out of the *References* field to register the additions.
8. (optional) Add any notes about the determination in the **Comments** field in the *Determination* section.
9. Click the **Save** button. The original taxon name will remain in the *Determination history* list at the bottom of the tab, and the new taxon name will be added to the top of the list.

G. UPDATE ITEM STATUS

In general, an accession item's **Status** indicates whether an item exists as a part of the park's living plant collection or not at a certain date. More specifically, the twenty-five item status options are used to track significant changes in the condition and location of an accession item over time. Item status should be updated when seed stores are planted, when a propagule matures and is planted, when an item is inventoried, when it is moved or divided, when infill is planted, when items grow into a mass, and when an item dies, is removed, or is no longer in the collection. It is best to update an item's status relatively soon after it changes. See [APPENDIX B](#) for guidance on how to update item records under specific circumstances. See [Section J](#) for information on updating multiple item records as a batch. As the status of an item is

updated over the course of its life, the previous status records are saved and visible as item history by clicking on the small the small [] button to the left of the item record. Previous statuses of items can be added by following the instructions in [Section K](#).

In the **Items** tab:

It is important to modify at least the three fields described in [Step 1](#) through [Step 3](#) (*Status*, *Date*, and *Location*) as needed to reflect the new status before saving changes. When any of these fields are modified and the changes are saved, a new item status will be automatically generated.

If this happens in error, make sure that the latest status for the item is correct, and then delete the historic incorrect status(es): Select the item history record in the *Items* list and then click the **Delete item** (red –) button. A window will open asking you to confirm the deletion. Click the **Ok** button, and then click the **Save** button.

1. Select the new item status from the drop-down menu in the *Status* field for the item being updated.

See [APPENDIX B](#) for guidance on when to use each status option.

Each status option is assigned one of the following status types, which each has an associated color: *Existing* (green), *Procedure* (blue), *Unknown* (yellow), or *NotExisting* (red). When selecting the item status, a circle the color of the status type is shown to the right of each option in the drop-down menu, and once selected, a circle the color of the status type will be displayed to the left of the item number in the item list. Only items with the current status type of *Existing* will be published on the Garden Explorer website (see [APPENDIX D](#) for more information on managing data for Garden Explorer).

2. Modify the *Status date (Date)* field using the format *mm/dd/yyyy*, *mm/yyyy*, or *yyyy* to reflect when the new status began.

If left field blank, today's date will be automatically entered when saving.

3. Select a new *Location* if applicable. See [Step 5](#) of [Section B](#) for tips on selecting the correct location.
4. If the number of specimens has changed since the last status, modify the entry in the *Number of specimens (No. sp.)* field to reflect the number existing at the time of the new status.
5. If the storage number has changed or is no longer relevant to the new status (for example, if the item was planted in the landscape), modify or delete the value in the *Storage number (Storage no.)* field as needed.
6. If an item is divided into multiple records or if records are combined as a result of a status update, select the associated item record from the *Item reference (Item ref.)* drop-down menu.
7. Update the *Condition* field in the *Items properties* section on the right to reflect the condition of the item at the time of the new status (*excellent*, *good*, *fair*, or *poor*).

8. In the *Status person (Person)* field, select the person tied to the item status from the drop-down menu. This may be the person who was responsible for changes to the accession item, or the person who inventoried it.

If the person is not found in the drop-down menu, follow the steps in [Section A](#) of the [PERSONNEL RECORDS](#) instructions to add a personnel record.

If left blank, your name will be automatically entered when saving.

9. If the new status is a propagation status, a group of *Propagation* fields are available in the *Item properties* section on the right. Update these fields to reflect the new item status if needed.
 - a. Enter the type of propagule in the *Propagule* field (for example, *stem cutting* or *seed*).
 - b. (optional) Add information in the *Treatment*, *Environment*, *Medium*, and/or *Container* fields if desired.
10. (optional) Add or update measurements (in meters) such as height in the *Measurements* fields in the *Item properties* section on the right to reflect the condition of the item at the time of the new status.
11. (optional) Enter any notes specific to the new item status in the item *Comments* field in the *Item properties* section on the right.

Entries in this *Comments* field are meant to apply to the item at the time of the status, so comments remaining from the previous status can be deleted when updating item status if the comments are no longer relevant for the new status.
12. Review all item properties and confirm that the entries reflect the condition of the item at the time of the new status. If not, modify or delete entries as needed.
13. Click the *Save* button.

Click the small [] button to the left of the updated item in the *Items* list to view the previous status, which is now part of the item history.

H. DIVIDE AN ITEM RECORD

In some cases, it may be necessary to separate an item record into multiple items, such as when seeds in an accession are sown in multiple containers. This can be done by copying the item data into multiple new item records and adjusting the *Number of specimens* listed in each record. When dividing an item record, it is important to also duplicate the item history records associated with it so that the correct historic data remains associated with all items.

This is a different process than updating an item to the *Status* of *Divided*, which should be done when a planting in the landscape is divided and replanted. Instead, dividing an item *record* is a function of record-keeping, not landscape maintenance.

1. If not already open, open the accession record to be modified.

In the **Items** tab:

2. To add a new item, click the **Add item** (green) button. Add as many items as needed.
3. Copy all data from the original item to the new item(s), and enter the correct **Number of specimens** for both the original and new item(s).
4. Add item history to the new item record(s) to match the original if it has past statuses recorded.
 - a. To add an item history line, select the item that the history belongs to by clicking anywhere on its row. Click the **Add history** (gray) button, and a new history line will appear.
 - b. Copy all data from the original item history line to the new item history line(s) in the new item record, and enter the correct **Number of specimens** for both the original and new item history line(s).
5. Click the **Save** button. The items should be identical at this point except for the **Number of specimens** values, which should equal the original value when added (for each status date).

Now that the item record has been divided, the status of each item can be updated to reflect multiple statuses and conditions in different locations.

I. TRANSFER AN ITEM RECORD TO A NEW ACCESSION

Sometimes when an item is planted in the landscape or divided and planted in multiple locations in the landscape, an item or items will acquire new *Accession type* and *CL evaluation* values that no longer match the values of other items in their accession record. In these circumstances, the item(s) must be transferred to a new accession record. This can be done by creating a new accession record for each new variation of *Accession type* and *CL evaluation* values, copying all other data from the original accession record, and deleting the copied item data from the original accession record. When transferring an item record to a new accession, it is important to also transfer the item history records, parentage data, images, and references associated with the item so that the correct data remains associated with all items.

1. If not already open, open the accession record with the item record(s) to be transferred to a new accession record.

In the **Items** tab:

2. If the item(s) being transferred have past status history, expand the item history by clicking on the small [] button in front of each item to be transferred.
3. Create screen shots showing data for each item being transferred, including all past status details.
 - a. Select the item or item history record to be captured by clicking anywhere on its row.
 - b. With the *Item properties* displayed, select **Print window...** from the **File** menu and either print or save to a pdf.

These screen shots will be referenced when copying data into the new accession record.

4. Click the **Repeat** button to copy data from the original accession record. A new accession record will be generated, but only data in the *Details* tab and the latest recorded status of items in the *Items* tab will be copied. The Status Bar will read *Data has been copied* and the tabs will have yellow dots.

In the **Details** tab:

5. Correct the **Accession type** and/or **CL evaluation** values to represent the item(s) being transferred. See [Step 5](#) and [Step 14](#) in [Section A](#) for more details on selecting values for these fields.
6. Modify the contents of the **Comments** field so that it only contains notes referencing the item(s) being transferred.

In the **Items** tab:

7. Delete any items that do not belong in the new accession: Select the item to be deleted by clicking anywhere on its row in the *Items* section on the left, and then click the **Delete item** (red –) button.
8. Enter *1* in the **Item number (Item no)** field (in the *Items* section on the left) for the first item in the list, and continue numbering all other items in the list in sequential order (*2, 3, 4*, etc.).
9. Refer to the screen shots previously created to enter all data missing from the copied item records, including all historic item status records.

To add an item history line, select the item that the history belongs to by clicking anywhere on its row. Click the **Add history** (gray) button, and a new history line will appear.

10. Click the **Save** button.
11. Open the original accession record.

In the **Parentage** tab:

12. If parentage data is included, create a screen shot by selecting **Print window...** from the **File** menu.
13. Open the new accession record. Refer to the screen shot to enter all data from the original record.
14. Click the **Save** button.

If *Progenies* are listed in the original record, search for the child accession(s). If possible, add the new accession record as an additional *Parent*, and include a note in the **Comments** field that the parent could be either accession

15. Open the original accession record.

In the **Images** tab:

If any images directly reference (in the *Item* field) the item(s) being transferred, they should also be moved to the new accession record.

16. Select the image to be transferred by clicking on the thumbnail and create a screen shot by selecting **Print window...** from the **File** menu. Confirm the location of the image file on the park's server so that it can be added to the new record.

If the location of an image file is unknown, click the *Save image to file* (disk icon) button at the top of the tab and save the image.

17. Open the new accession record. Click the *Add image file(s)* (green) button, browse to the image and select it, and then click the *Open* button. Image metadata will be automatically added to the *Properties* field and the *Date* field.
18. Select the item being transferred from the drop-down menu in the *Item* field.
19. Refer to the screen shot to enter all other data from the original record.
20. Click the *Save* button.
21. Open the old accession record. Delete the transferred image(s) by selecting the image's thumbnail and clicking the *Delete image* (red -) button. A window will open asking you to confirm the deletion. Click the *Ok* button, and then click the *Save* button.

In the **References** tab:

If any library items directly reference (in the *Item* field) the item(s) being transferred, they should also be moved to the new accession record.

22. Create a screen shot by selecting *Print window...* from the *File* menu.
23. Open the new accession record. Click the *Add library item* (green) button.
24. Refer to the screen shot and select the library record from the *Author(s)* drop-down menu or search for it by clicking the [...] button. The *Year*, *Title*, and *Type* fields will be automatically populated.
25. Select the item being transferred from the drop-down menu in the *Item* field.
26. Refer to the screen shot to enter all other data from the original record.
27. Click the *Save* button.
28. Open the original accession record. Delete the transferred library item(s) by selecting the reference and clicking the *Delete library item* (red -) button. Click the *Save* button to save the changes.

If any of the event entries in the *Events* section of the *References* tab directly reference (in the *Item* field) the item(s) being transferred, the event list should be updated to include the new accession item record instead.

29. Select the event entry to be updated by clicking anywhere on its row. Click the [...] button in the *Event kind* field to open a new window showing the event list.
30. The entry for the original accession item should be selected in the event list window. Click the [...] button in the *Code/Name* field for that item and search for the new accession item record to replace it. After selecting the new accession item record, click the *Select and close* button. The new accession item record should now be listed in the event list.

31. Click the *Save* button and then close the event list window.

In the **Items** tab:

32. Now that all of the item data has been transferred, delete the transferred item(s) from the original accession record by selecting the item record in the *Items* list and then clicking the *Delete item* (red –) button. A window will open asking you to confirm the deletion. Click the *Ok* button, and then click the *Save* button.

An error will result if the items being deleted are still directly referenced by any images or library items in the accession record.

J. BATCH-UPDATE ITEM STATUS

Most item records will need to be updated individually by following the instructions in [Section G](#), but in some cases, it may be possible to update the status of multiple item records as a batch in the *Update items* tab of the *Item management* form. Only individuals assigned the Landscape Manager or Administrator role type can update records using the *Item management* form. These updates CANNOT be undone.

The benefit of batch-updating item status is that it saves time when many items need to be updated to the same status, especially if those items are already aggregated in a task list. The drawback of batch-updating item status is that limited details that can be entered with the updates. Only the *Location*, *Status*, *Status date (Date)*, *Status person (Person)*, *Comments*, and *Label type (Lbl. Type)* fields can be updated using the *Item management* form. For many item status updates, it will be necessary to also update the entries in the *Number of specimens (No. sp.)*, *Storage number (Storage no.)*, *Item reference (Item ref.)*, *Condition*, or other fields. Because of this, it may only make sense to batch-update in limited circumstances (or to batch-update and then go through the item records individually to add more detail to the updates). See [APPENDIX B](#) for guidance on managing item status.

To batch-update item status using the *Item management* form, first use the search functions and the pale yellow search fields at the top of the form to create a list of items in the *Item search result* section, and then enter the new values to be updated in the white fields at the top of the *Update items* tab.

1. Open the *Item management* form in the *Collections* panel.
2. To search for items to update, first click the *Clear/New* button to clear the form, select *Planting* for the *Item type*, and then select additional search criteria. See [Section C](#) of [BASIC SOFTWARE OPERATION](#) in [GETTING STARTED](#) for tips on using the search functions.

To perform a simple search, enter at least one search criterion in the other pale yellow search fields and click the *Search* button. Search shortcuts can be used in the search fields.

To perform an advanced search, click the *Adv. search* button, enter your search criteria in the window that opens, and then click the *Search* button.

3. A list will appear in the *Item search result* section. As a default, only the items in the list with a *Status type* of *Existing*, *Procedure*, or *Unknown* will be checked (in the *Checked* field on the left). Only the

checked items will be updated, so review the list and check or uncheck the items as needed before updating.

In the **Update items** tab:

4. Enter the updated values in the white fields as needed. The *Status date (Date)* and *Status person (Person)* values must be entered to complete the item status update. Leave fields empty if they are not being updated.
5. Click the **Update** button. A window will open asking for confirmation that you are ready to proceed with the update. Click the **Ok** button. The items will be updated and the updates will be displayed in the *Item search result* list.

K. ADD ITEM HISTORY

To record an accession item's previous status after a more recent status has already been entered, a history line can be added to the item's record. For example, if an item's planting date was not known when the record was added to the database but the information has now been found, it can be added to the item's history.

1. If not already open, open the accession record to be modified.

In the **Items** tab:

2. Select the item that the history line will be added to by clicking anywhere on its row. Click the **Add history** (gray) button, and a new history line will appear.

The three fields described in [Step 3](#) through [Step 5](#) (*Status*, *Date*, and *Location*) must be added to the new history line before changes can be saved.

3. Add the *Status date (Date)* using the format *mm/dd/yyyy*, *mm/yyyy*, or *yyyy* to reflect when the past status began.
4. In the *Status* field, select the past item status at the time of the *Status date*.

See [APPENDIX B](#) for guidance on when to use each status option.
5. Select the *Location* at the time of the past status. See [Step 5](#) of [Section B](#) for tips on selecting the correct location.
6. If the number of specimens was different at the time of the past status, modify the entry in the *Number of specimens (No. sp.)* field to reflect the number existing at that time.
7. If the item had a container number or a more specific location identification code within the *Storage* or *Nursery* location (such as a room, section, or shelf code) at the time of the past status, enter the ID in the *Storage number (Storage no.)* field in the *Item properties* section on the right.
8. If known, select the *Condition* of the item at the time of the past status (*excellent*, *good*, *fair*, or *poor*).

9. In the *Status person (Person)* field, select the person tied to the past item status from the drop-down menu. This may be the person who was responsible for changes to the accession item, or the person who inventoried it.

If the person is not found in the drop-down menu, follow the steps in [Section A](#) of the **PERSONNEL RECORDS** instructions to add a personnel record.

If left blank, your name will be automatically entered when saving.

10. If the past status is a propagation status, a group of *Propagation* fields are available in the *Item properties* section on the right.
 - a. Enter the type of propagule in the *Propagule* field (for example, *stem cutting* or *seed*).
 - b. (optional) Add information in the *Treatment*, *Environment*, *Medium*, and/or *Container* fields if known.
11. (optional) If known, add measurements (in meters) such as height in the *Measurements* fields in the *Item properties* section on the right to reflect the condition of the item at the time of the past status.
12. (optional) Enter any notes specific to the past item status in the item *Comments* field in the *Item properties* section on the right.
13. Review all item properties and confirm that the entries reflect the condition of the item at the time of the past status. If not, modify or delete entries as needed.
14. Click the *Save* button.

To delete a history line added in error: Select the item history record in the *Items* list and then click the **Delete item** (red –) button. A window will open asking you to confirm the deletion. Click the **Ok** button, and then click the **Save** button.

SUPPORTING RECORDS

There are several kinds of records that provide supporting information referenced by accession records. These include records found in the *Management* panel (**Locations**, **Contacts**, and **Library** references), and in the *Collections* panel (**Localities**). These records are shared across all NPS parks. Individuals with the Landscape Manager or Administrator role type can modify and delete all four types of supporting records. Individuals with the Landscape Associate role type can modify contacts and library references, and can view locations and localities. Individuals with the Landscape Assistant role type can only view library references and locations.

A. ADD A LOCATION RECORD

Location records based on the Cultural Landscape Reports (CLR) for your park have already been set up in the database in the **Locations** form. Location records identify the taxa that are recommended to be planted at particular locations, and are referenced by accession records to identify where the accession items exist in the landscape. These location records have been created to provide a convenient reference to key

information from the CLR and to provide ease and consistency in selecting plant location coordinates when creating accession records. Since plant location records create important links in the database between accession records over time, they should NOT be modified or deleted, although new location records can be added for use in tours featuring views of the landscape.

1. Open the *Locations* form in the *Management* panel.

Locations are organized in a tree hierarchy that can be expanded or collapsed by using the small [] and [-] buttons to the left of the *Code* fields or by clicking the *Expand all* or *Collapse all* buttons at the top of the form. Location records for *specific plant locations* (assigned a numbered location *Code* and a location *Type* of *Tree*, *Shrub*, *Vine*, *Herbaceous Plant*, or *Plant*) are grouped within *general location areas* (assigned a name or text-based location *Code* and a location *Type* of *Area*).

2. To add a new location, click the *Add item* (green) button or the *Add subitem* (green) button.

The new row for the location record will be added within the tree hierarchy based on which row is selected at the time (the selected row will have a to the left of the *Code* field).

If creating a set of new locations for a tour featuring views in the landscape, first create a “location” at the highest tree level with a location *Type* of *Tour*, the title of the tour for the *Name*, and no coordinates. Then add the locations for the tour entries as subitems of the *Tour* location record and with the location *Type* of *View*.

3. Enter an appropriate *Name* for the location record and a short version of the name in the location *Code* field.

For location records of *specific plant locations*, the *Name* field is used to identify the taxa (and quantities) recommended to be planted at that location, based on the CLR, and the *Code* is a unique numbered ID typically taken from the CLR or a plant inventory.

4. Select the location *Type*:

- For specific plant locations, select *Tree*, *Shrub*, *Vine*, *Herbaceous Plant*, or *Plant*.
- For general location areas grouping plants in the landscape, select *Area*.
- For a location record grouping a set of tour locations, select *Tour*.
- For a location record designating a viewpoint for a tour, select *View*.

5. Click the button on the right side of the *Coord. long./y* field to open a map in a new window and select the location coordinates. In the map window, click and drag the red () marker to the correct location, and then click the *Select and close* button. See [Section I of BASIC SOFTWARE OPERATION in GETTING STARTED](#) for more guidance on navigating the map window.

Coordinates (in decimal degrees) can also be manually entered in the *Coord. lat./x* and *Coord. long./y* fields.

6. (optional) Enter any notes related to the location in the *Comments* field.

For existing location records, the *Comments* field contains details about landscape recommendations based on the CLR.

7. The **Publish** field setting determines which locations are published on the Garden Explorer website.
 - **Full** indicates that the location will be visible on the website.
 - **Partial** indicates that the location will not be shown on the general maps and lists that can be searched on the website, but will be included if part of a tour.
 - **No** indicates that the location will not be published on the website.

Generally, use *Full* for plant locations, use *Partial* for tour locations, and use *No* for Nursery and Storage areas.

Only location records in the uppermost level within the tree hierarchy need to be assigned a publish setting, and the same setting will be attributed to all records under it in the hierarchy. Restriction settings for accession and taxon records will also affect what is published; see [APPENDIX D](#) for more information on publishing data to the Garden Explorer website.

8. The **Active** field will be automatically set to *Yes* when saving. A location must be *active* to be visible on maps in IrisBG and to be published on the Garden Explorer website.
9. Click the **Save** button.

To delete a location (only if added in error), select the location and then click the **Delete item** (red –) button. Click the **Save** button to save the changes.

B. ADD A CONTACT RECORD

Contact records contain information on external contacts such as nurseries, garden clubs, botanical gardens, universities, or individuals. These records can be referenced in the *Details* tab of accession records to provide origin information, and in task lists.

1. Open the **Contacts** form in the *Management* panel.
2. Click the **Clear/new** button.
3. Enter the name of the organization in the **Name** field, and short version of the name in the **Code** field. If a second line of the name is needed for the address, enter it in **Name-2**.
4. If known, enter the address of the contact in **Address** (first line), **Address-2** (second line), **Postal code/locality** (city, state code, zip code), and **Country** (if not in the U.S.).
5. Select the **Donor type** of the contact from the drop-down menu.
6. If applicable, enter the name of the primary contact person in **Ref. person** and enter the name of the secondary contact person in **Ref. person-2**.
7. If known, enter the **Phone** number and **Fax** number.

8. If known, enter the contact's primary email address in **Email** and enter the secondary email address in **Email-2**.
9. Copy and paste the contact's website URL in the **Web site** field. Click the button to open the link in a browser and confirm that it is correct.
10. (optional) Enter any notes related to the contact in the **Comments** field.
11. Click the **Save** button.

A contact record can only be deleted if it is not being referenced by another record. To delete a contact (if it is a duplicate or added in error), open the contact record and then click the **Delete...** button. A dialog box will appear with a heading that indicates if the record is in use by another record.

If the record is **NOT IN USE**, click the **Ok** button to delete it.

If the record is **IN USE**, select the correct contact from the **Transfer to contact** drop-down menu, and then click the **Ok** button. Any accession records or task lists that previously referenced the incorrect contact record will now reference the selected correct contact record.

C. ADD A LIBRARY RECORD

Library records store citation data, web links, and attachments for references. These records can be referenced in the **References** tab of accession records and taxon records.

1. Open the **Library** form in the **Management** panel.
2. Click the **Clear/new** button.
3. Enter the **Author(s)** in the format: *LastName1, FirstName1, FirstName2 LastName2, and FirstName3 LastName3*.
4. Enter the publication **Year**.
5. Enter the primary title of the reference in the **Title** field, such as an article title, a chapter title, or a report title. If the reference is a whole book, enter the book title in the **Book Title** field instead.
6. Select the reference **Type** from the drop-down menu.
7. If the reference is a journal article, enter the journal information in the **Journal** fields:
 - a. Select the **Journal** from the drop-down menu. If the journal is not listed, see **Section B** of the **DEFINITIONS** instructions to add a journal record.
 - b. In the **Volume** field, enter the volume number and issue number (if applicable) in the format: *Volume#, no. Issue#* (for example, *12, no. 3*).
 - c. Enter the page range of the article in the **Pages** field (for example, *25-36*).
8. If the reference is a book or book chapter, enter the book information in the **Book** fields:
 - a. Enter the book **Title**.

plant was collected in Massachusetts). However it is best to enter as much detail as possible to the record.

4. Select *Subdiv. 1* from the drop-down menu. For the U.S., these are states.
5. Select *Subdiv. 2* from the drop-down menu. For the U.S., these are counties.
6. Enter the city of collection in the *Locality* field.
7. Enter the approximate altitude range of the locality in the *Alt. from* and *to* fields. Select *feet* or *meters* for the *unit*.
8. Click the  button on the right side of the *Dec. deg. long.* field to open a map in a new window and select the coordinates where the accession was collected. In the map window, click and drag the marker to the correct location, and then click the *Select and close* button. See [Section I of BASIC SOFTWARE OPERATION](#) in [GETTING STARTED](#) for more guidance on navigating the map window.

Coordinates can also be manually entered in the *Org. coord* fields, with the datum identified in the *Datum* and *Format* fields. If nothing is entered in the *Datum* or *Format* fields, *WGS84* and *D* will be automatically selected when saving (this is the projection used for IrisBG maps, and is commonly used by GPS units collecting decimal degrees coordinates).

Only localities with coordinates will be visible on maps.

9. (optional) Enter the Precision and Trueness of the coordinates.
10. (optional) Enter the Source of the coordinate data.
11. (optional) Enter any external references in the *External ref.* field and any notes related to the locality in the *Comments* field.
12. Click the *Save* button.

A locality record can only be deleted if it is not being referenced by another record. To delete a locality (if it is a duplicate or added in error), open the locality record and then click the *Delete...* button. A dialog box will appear with a heading that indicates if the record is in use by another record.

If the record is *NOT IN USE*, click the *Ok* button to delete it.

If the record is *IN USE*, select the correct locality from the *Transfer to locality* drop-down menu, and then click the *Ok* button. Any accession records that previously referenced the incorrect locality record will now reference the selected correct locality record.

DEFINITIONS

Forms in the *Definitions* panel contain important database settings shared by all parks using IrisBG. It is *strongly* recommended that these settings remain unchanged, but they are capable of being modified by individuals with the Administrator role type. Before making modifications, the changes should be discussed with all parks using

IrisBG, and considerations should be made for how setting changes may compromise existing records. One exception to this is the *Journals* form (see [Section B](#)), which individuals with the Landscape Manger role type can add to without consent from others. Additionally, *Custom templates* (see [Section A](#)), *Label types* (see [Section C](#)), and *Report types* (see [Section D](#)) can be added if they are approved by and generally useful to all parks using IrisBG. All other forms in the *Definitions* panel are briefly described in [Section A](#) of [DATABASE ORGANIZATION](#) in [GETTING STARTED](#).

A. ADD A CUSTOM TEMPLATE

Report types and label types can be set up to merge data exported from the database with formatted template documents. Some of these templates were included with the software, but more templates can also be added in the *Custom templates* form.

1. Create the template document (typically in Microsoft Word using Mail Merge fields) based on the report type or label type that will be referencing it.

To view examples of templates for reports and labels, click the [...] (*Show file*) button on the right side of the *Template file* field for any of the custom templates already included in the database.

2. Open the *Custom templates* form in the *Definitions* panel.
3. Click the *Add item* (green) button, and a new item line will appear.
4. Click the [] (*Add/replace file*) button on the right side of the *Template file* field in the new line. A *Select file* window will open. Browse to where your template file is saved, select the file, and click the *Open* button.
5. In the *Comments* field, enter which report type or label type the template is intended to be used for.
6. Click the *Save* button.

To replace a template file with an updated version, click the [] (*Add/replace file*) button on the right side of the *Template file* field, browse to the new file, click the *Open* button, and then click the *Save* button.

To remove a template file from the database (only if it was added in error and is not in use by any report type or label type), select the item line of the template file and then click the *Delete item* (red –) button. A window will open asking you to confirm the deletion. Click the *Ok* button, and then click the *Save* button.

To view a template file, click the [...] (*Show file*) button on the right side of the *Template file* field.

B. ADD A JOURNAL

Before adding a reference to a journal article in the *Library* form, basic information about the journal must first be added in the *Journals* form.

1. Open the *Journals* form in the *Definitions* panel.

2. Click the **Add item** (green) button, and a new item line will appear.
3. Enter the commonly used abbreviation for the journal in the **Abbr.** field, enter the full name of the journal in the **Name** field, enter the **ISSN** for the journal, and enter the URL for the journal's website in the **Web site** field.

To find the abbreviation and ISSN for a journal, try searching *journalseek.net* or other online databases containing journal information. Note that journals often have different ISSNs for print and digital versions.

To open the URL entered in the *Web site* field, click the **button** on the right side of the field.

1. Click the **Save** button.

C. ADD A LABEL TYPE

Label types define basic standardized formatting and content for garden labels created in the *Labels* form. Because Microsoft Word documents (.doc or .docx files) are a common format for garden label production, label types typically include a reference to a formatted Word document *Template file*. The following are instructions for adding this kind of label type to the database.

1. Open the **Label types** form in the *Definitions* panel.
2. Click the **Add item** (green) button, and a new item line will appear.
3. Select the **Base label** from the drop-down menu, which will determine which fields are available for use in the label type. The base label default *Name*, *Description*, and *Data file* will be automatically entered.

Select the *Item01* type for a standard garden label, or select *Item04* for a garden label with QR Codes included.

The contents of the *Data file* field references a file installed with the software that defines the format that the label data will be exported in (a Microsoft Excel file) if a *Template file* is not referenced in the label type. This field should not be modified.

4. Modify the **Name** and **Description** of the label type as needed to describe the labels. Enter a **Label code** based on the label type *Name*.
5. Click the drop-down () button in the **Fields** field. A window will appear with a list of available fields on the right side and a space to add selected fields on the left side. Use the **Add field to selected** (), **Delete field from selected** (), **Move field upwards** (), and **Move field downwards** () buttons to create a list and sequence for the fields to be exported in the spreadsheet. Click the **Ok** button to register the changes.
6. Click the **Save** button.
7. Create a template document (typically in Microsoft Word using Mail Merge fields) based on the label type's selected fields.

To view examples of label templates, open the *Custom templates* form and click the [...] (*Show file*) button on the right side of the *Template file* field for any of the custom label templates already included in the database.

8. Follow the instructions in **Section A** to add the template document to the database in the *Custom templates* form, and then copy the full contents of the *Template file* field (the template file name with the file extension) from the new custom template.
9. Open the *Label types* form and paste the copied file name in the *Template file* field for the new label type.
10. Click the *Save* button.

Do not delete a label type unless it was added in error or is determined by all parks to be no longer in use. Alternatively, the *Active* box for the label type can be unchecked to keep it in the database but remove it as an option in the *Labels* form. If it is decided that the label type should be deleted, select the item line of the label type and then click the *Delete item* (red –) button. A window will open asking you to confirm the deletion. Click the *Ok* button, and then click the *Save* button.

D. ADD A REPORT TYPE

Report types define basic standardized formatting and content for reports created in the *Reports* form. The default export format of a report is usually a Microsoft Excel file (.xlsx), but can also be a Word document (.docx) if a *Template file* is added.

1. Open the *Report types* form in the *Definitions* panel.
2. Open the category that the new report type will be added to by clicking the small [] button beside it. Click the *Add item* (green +) button, and a new item line will appear.

Different *Base report* options are available depending on the report type category selected.

3. Select the *Base report* from the drop-down menu, which will determine which fields are available for use in the report type. The base report default *Name*, *Description*, and *Data file* will be automatically entered.

The contents of the *Data file* field references a file installed with the software that defines the format that the report data will be exported in (usually a Microsoft Excel file). This field should not be modified.

4. Modify the *Name* and *Description* of the report type as needed to describe the report. Enter a *Report code* based on the report type *Name*.
5. Click the drop-down (v) button in the *Fields* field. A window will appear with a list of available fields on the right side and a space to add selected fields on the left side. Use the *Add field to selected* (+), *Delete field from selected* (-), *Move field upwards* (↑), and *Move field downwards* (↓) buttons to

create a list and sequence for the fields to be exported in the spreadsheet. Click the **Ok** button to register the changes.

6. Click the **Save** button.

The previous steps will result in a report type with output in the format of the *Data file*. To create a report type that results with a formatted Microsoft Word document as the report output, a template document must be created and added to the database. Continue with the following steps to add a report template to the database.

7. Create a template document (typically in Microsoft Word using Mail Merge fields) based on the report type's selected fields.

To view examples of report templates, open the **Custom templates** form and click the [...] (*Show file*) button on the right side of the *Template file* field for any of the custom report templates already included in the database.

8. Follow the instructions in [Section A](#) to add the template document to the database in the **Custom templates** form, and then copy the full contents of the *Template file* field (the template file name with the file extension) from the new custom template.
9. Open the **Report types** form and paste the copied file name in the *Template file* field for the new report type.
10. Click the **Save** button.

Do not delete a report type unless it was added in error or is determined by all parks to be no longer in use. Alternatively, the **Active** box for the report type can be unchecked to keep it in the database but remove it as an option in the *Reports* form. If it is decided that the report type should be deleted, select the item line of the report type and then click the **Delete item** (red –) button. A window will open asking you to confirm the deletion. Click the **Ok** button, and then click the **Save** button.

TASK LISTS

Forms in the *Events* panel provide ways to group other records (accessions, items, taxa, locations) according to specific tasks or actions. Event records are collection-specific, so each NPS park maintains its own event records. **Task lists** are a type of event record useful for organizing projects. An unlimited number of entries can be added to a task list, and the entries are typically references to records in the database. Task lists can be used both as way to keep records of specific actions performed in association with specific accession items, and simply as to-do lists integrated with the database to aid in planning. Once task lists are set up, accession records will reference the tasks and reports, maps, and labels can be easily generated for them. Accession item status can be easily batch-updated to reflect the changes to accessions after tasks are completed.

Task lists can be created and modified by individuals with the Landscape Associate, Landscape Manager, or Administrator role type, and are visible to all role types with access to the park's collection. Task lists should not

be a data-entry burden; only use them if they are a helpful tool for managing the plant collection and their records. See [APPENDIX C](#) for suggestions on when and how task lists can be integrated into common landscape projects.

A. CREATE A NEW TASK LIST

1. Open the *Tasks* form in the *Events* panel.
2. Click the *Clear/new* button.
3. The *Task number (No)* field can be left blank. This will be the unique identifying number for the task list, and IrisBG will automatically assign the next sequential number to the new list after saving.
4. The *Status* field can be left blank and *Open* will be automatically selected when saving. This indicates that the task has not been completed yet.
5. The *Status date (date)* field can be left blank and today's date will be automatically entered when saving.
6. Select the task list *Type* from the drop-down menu. This field is used to categorize all task lists to help with list organization and searching. There are currently four types of task lists:
 - *Future Accessions* are lists of plants that need to be purchased or propagated.
 - *Landscape Maintenance Projects* are lists related to any project maintaining the plants in the landscape, such as pruning or pest management.
 - *Records Management* are lists of records that need to be reviewed or updated.
 - *Recommended Care* are lists of notes on the care of specific plants.
7. Select the *Entry kind* from the drop-down menu. Each task list can only contain one kind of entry. If *Taxon*, *Accession*, *Item*, or *Location* is selected, only that kind of record can be added as an entry to the list. If *Note* is selected, entries are not selected from records; any text can be used to name each entry.

Entries of *Accession* and *Item* task lists will be visible and linked in the *References* tab of their accession record. These task list entry kinds should be chosen if it is desirable to have a record of the task linked in the accession records.
8. Enter a name briefly describing the task list in the *Name* field.
9. Enter a more detailed description of the task list in the *Description* field.

If the task is associated with a Work Order documented in FMSS, include the Work Order ID in this field. It may also be useful to include the FMSS Asset ID(s) associated with the task.
10. Select the *Priority* of the task list. If left blank, *0: None* will be automatically selected when saving.
11. The *Owner* field can be left blank and your name will be automatically selected when saving.
12. (optional) Enter the start date and end date for the task in the *Date start* and *end* fields.

13. (optional) Select an external contact associated with the task from the *Contact* field drop-down menu.

If the contact is not found in the drop-down menu, follow the steps in [Section B](#) of the [SUPPORTING RECORDS](#) instructions to add a contact record.

14. (optional) Enter the *Expected cost (Exp. cost)* and/or the *Actual cost (Act. cost)* of the task.
15. (optional) Enter any additional notes in the *Comments* field.
16. Click the *Save* button.

B. ADD ENTRIES TO A TASK LIST

Each row in the list below the main definition fields of the task list is a task *Entry*. New task list entries are added in the top (blank) row of the list of entries.

1. In the *Tasks* form, open the task list to be modified.
2. In the top (blank) row of entries, click the [...] button on the right side of the *Code/Name* field to search for a record or multiple records to add to the list. With the record(s) selected, click the *Select and close* button. The record(s) will be added to the task list below the top (blank) row, and record details will be referenced in the *Info-1* and *Info-2* fields.

The *Shift* and *Ctrl* buttons can be used to select multiple records from the search results to add to the task list at the same time.

3. Repeat [Step 2](#) to add as many records as needed to the task list.
4. (optional) Add *Comments* to entries as needed.
5. (optional) To add an image to an entry, click on the drop-down () button on the right side of the *Image* field, right-click in the space that says *No image data*, and select *Load*. Browse to where the image is located and click the *Open* button. The image should appear in the field, and the *Image* icon will now be colored for that entry.

A task list entry image can be cut or copied and pasted into another entry by right-clicking in the image space (as done when uploading the image) and selecting the appropriate option.

Only one image can be stored per entry.

6. The entry *Status* field can be left blank and *Open* will be automatically selected when saving. This indicates that the task has not been completed for that entry yet.
7. Click the *Save* button.

More entries can be added to a task list at any time.

To change the sort order of entries, use *Move entry up* () and *Move entry down* () buttons.

To view the record of an entry in a new window, click the [...] button on the right side of the *Code/Name* field.

To delete an entry (only if added in error), select the entry in the task list and then click the *Delete item* (red –) button. Click the *Save* button to save the changes. Do not delete an entry when the task is completed for that entry; instead, update the entry *Status* to *Completed* (See [Section C](#) for more information on managing task lists).

C. UPDATE TASK STATUS

Task lists and their entries typically have a *Status* of *Open* when created. Task status should be updated to *Completed* as the task is finished. Status can be updated for individual entries or for the entire task list.

Updating *task status* will not affect *accession item status* for task entries. If a completed task results in a change in accession item status for entries, the accession records must be updated by following the steps in [Section G](#) or [Section J](#) of the [ACCESSION RECORDS](#) instructions. See [Section C](#) of [APPENDIX C](#) for an overview of the process of updating accession records after a task is completed.

Update the status of an entry: When the task is completed for an entry on the list, select *Completed* for the entry *Status* (found in the entry's row), and then click the *Save* button. The entry *Status date* will be automatically updated to today's date.

Update the status of an entire task list: When the task is completed for the entire list and additional entries will not be added to the list, select *Completed* for the task list *Status* (at the top of the form), and then click the *Save* button. All records in the list will be updated to a *Completed* status.

If an entry's *Status* is set to *Excluded*, it will not be updated to *Completed* when the entire list is updated.

Comments, *Images*, and other task data can be added or modified at any time; follow the field guidelines in [Section A](#) and [Section B](#) and then click the *Save* button.

D. MAP TASK LIST ENTRIES

To quickly map the locations of task list entries, click the button in the top left corner of the *Tasks* form, and the map will open in a new window. Entries with a status of *Excluded* will not appear on the map.

See [Section I](#) of [BASIC SOFTWARE OPERATION](#) in [GETTING STARTED](#) for guidance on navigating the map window and printing or saving the map.

Maps, reports, and labels based on a task list can also be created in the *Reports* panel by selecting *Event* criteria in the query builder (see the [REPORTS, MAPS, AND LABELS](#) instructions). See [APPENDIX C](#) for suggestions on how to use task lists with reports and maps for common landscape projects.

E. DELETE A TASK LIST

In most cases, a task list should not be deleted unless it was added in error. Once a task list is marked as *Completed*, it should be retained in the database as a record of work; accession item task entries are visible in

the *References* tab of accession records only if the task list still exists in the database. Deleting a task list CANNOT be undone.

If a task list has been completed, follow the instructions in [Section C](#) to update the status of the task list instead of deleting it.

1. In the *Tasks* form, open the task list to be deleted.
2. Click the *Delete...* button. A window will appear asking if you are sure you want to delete the task list. Click the *Ok* button.

GARDEN EXPLORER TOURS

The *Trails* form of the *Events* panel is used to identify routes and content for themed tours to be published on the Garden Explorer website. The *Trails* form is collection-specific, so each NPS park maintains its own Garden Explorer tours. Tour routes are based on accession items or location records. Tours can be created and modified by individuals with the Landscape Associate, Landscape Manager, or Administrator role type, and are visible to all role types with access to the park's collection. See [APPENDIX D](#) for tour ideas and for more information on managing data for Garden Explorer.

Before creating a tour for the first time, it may be helpful to view examples of tours created by other IrisBG users on <https://www.gardenexplorer.org/>.

A. CREATE A NEW TOUR

1. Open the *Trails* form in the *Events* panel.
2. Click the *Clear/new* button.
3. The *Trail number (No)* field can be left blank. This will be the unique identifying number for the tour, and IrisBG will automatically assign the next sequential number to the new tour after saving.
4. The *Status* field can be left blank and *Open* will be automatically selected when saving. This indicates that the tour set-up has not been completed yet.
5. The *Status date (date)* field can be left blank and today's date will be automatically entered when saving.
6. Enter a title for the tour in the *Name* field. This will be published on the Garden Explorer website.
7. Enter a more detailed description of the tour in the *Description* field. This will be published on the Garden Explorer website.
8. Enter a *Rank* for the tour. This field indicates whether the tour will be published on the Garden Explorer website and its sorting order: enter 1 through 9 to indicate the sorting order of tours that will be published, and enter 10 or higher to restrict the tour from being published online.

The tour will not be published until its *Status* is set to **Completed** and the updated data is transferred to the website in the *System tasks* form.

9. The **Owner** field can be left blank and your name will be automatically selected when saving.
10. (optional) Enter the start date and end date for the tour in the **Date start** and **end** fields.

Note that these settings will not affect the publication status of the tour, but are simply notes for reference.

11. To add an image that will be displayed in the tour description online, click on the drop-down () button on the right side of the **Image/logo** field, right-click in the space that says *Right click to add image*, and select **Load**. Browse to where the image is located and click the **Open** button. The image should appear in the field, and the image icon will now be colored.
12. To display lines on the tour map connecting sequential tour entry locations, select *Yes* in the **Show route** field. To only display markers for tour entry locations, select *No*.

Once tour entries are added, the two different options can be previewed on a map by clicking the button in the top left corner of the *Trails* form.

13. (optional) Enter any additional notes in the **Comments** field.
14. Click the **Save** button.

B. ADD ENTRIES TO A TOUR

Each row in the list below the main definition fields of the tour is an **Entry**. New tour entries are added in the top (blank) row of the list of entries.

1. In the *Trails* form, open the tour to be modified.
2. In the top (blank) row of entries, select the **Entry kind** from the drop-down menu:
 - **Item** tour entries will link to taxon record data and images on the website. These are best for featuring specific plants in the landscape.
 - **Location** tour entries will only display data entered in the entry row of the *Trails* form. These are best for featuring views or areas in the landscape.

For more suggestions on when to use items or locations for a tour, see [APPENDIX D](#).

3. Click the [...] button on the right side of the **Code/Name** field to search for a record or multiple records to add to the tour. With the record(s) selected, click the **Select and close** button. The record(s) will be added to the tour entry list below the top (blank) row, and record details will be referenced in the **Info-1** and **Info-2** fields.

The **Shift** and **Ctrl** buttons can be used to select multiple records from the search results to add to the tour at the same time.

4. Repeat [Step 2](#) and [Step 3](#) to add as many records as needed to the tour.
5. (optional) To add text (that will be published on the website) describing an entry in the context of the tour, enter it in the *Comments* field of the entry.
6. (optional) To add an image to be published with the entry listing on the website, click on the drop-down () button on the right side of the *Image* field in the entry row, right-click in the space that says *Right click to add image*, and select **Load**. Browse to where the image is located and click the **Open** button. The image should appear in the field, and the *Image* icon will now be colored for that entry.

A tour entry image can be cut or copied and pasted into another entry by right-clicking in the image space (as done when uploading the image) and selecting the appropriate option.

Only one image can be stored per entry.

If no image is added, the default taxon image will be displayed with *Item* entry listings on the website, and no image will be displayed with *Location* entry listings on the website.
7. The entry *Status* field can be left blank and *Open* will be automatically selected when saving. This indicates that the tour entry setup has not been completed yet.
8. Click the **Save** button.

More entries can be added to a tour at any time.

To change the sort order of entries, use *Move entry up* () and *Move entry down* () buttons. The sort order will determine the order that the entries are published on the website.

To view the record of an entry in a new window, click the [...] button on the right side of the *Code/Name* field.

To delete an entry, select the entry in the task list and then click the **Delete item** (red –) button. Click the **Save** button to save the changes.

C. PREPARE A TOUR FOR PUBLICATION

Once all data has been entered for your tour, some settings must be reviewed to publish the tour. See [APPENDIX D](#) for more information on publishing data to the Garden Explorer website.

1. Open the tour in the *Trails* form.
2. Confirm that the correct entries and images have been added, and check for spelling and grammar errors in all text fields to be published.
3. Click the button in the top left corner of the *Trails* form to preview the map and route display.
4. Select *Completed* for the tour *Status* (at the top of the form), and then click the **Save** button. All records in the list will be updated to a *Completed* status.

If an entry's *Status* is set to *Excluded*, it will not be updated to *Completed* when the entire list is updated, and will not be published on the website.

5. If not done so already, enter a number from 1 to 9 in the **Rank** field to designate the sort-order of the tour. Consider what other tours are being published.
6. Click the *Save* button.
7. Confirm that there are no restrictions (**Restriction** field set to *Do not publish*) placed on any location, accession, or taxon records associated with the tour entries. Restricted data will not be published.
8. Follow the steps in [Section A](#) of the **SYSTEM MAINTENANCE** instructions to transfer the new database updates to the web server.

D. DELETE A TOUR

A tour should only be deleted if it was added in error. Even very old tours may be useful to have record of in the future, and take up very little storage space in the database. Deleting a tour CANNOT be undone.

To remove a tour from the Garden Explorer website, it is not necessary to delete it. Simply open the tour in the *Trails* form, enter a **Rank** of 10 or greater, and click the *Save* button. When the website data is updated in the *Systems tasks* form, the tour will no longer be visible on the website.

1. In the *Trails* form, open the tour to be deleted.
2. Click the *Delete...* button. A window will appear asking if you are sure you want to delete the tour. Click the *Ok* button.

REPORTS, MAPS, AND LABELS

Complex queries can be generated using the three forms in the *Reports* panel to create **Reports** (spreadsheets or formatted documents), **Maps** (labeled map images with associated spreadsheets), and **Labels** (taxonomic and accession data arranged in garden label layouts ready for production). In other words, data that has been recorded in the database can be used to generate output based on search criteria. These reports, maps, and labels can be queried based on accession, taxon, and event data. All IrisBG users can access the *Reports*, *Maps*, and *Labels* forms.

A variety of report types, map types, and label types are available to choose from on the left side of the forms.

All NPS parks using IrisBG will have the same types of reports, maps, and labels available.

In all three forms, click the *Clear* button to clear all entries in the query builder, and click the *Refresh* button to return the form to its defaults.

A. CREATE A REPORT

Formatted documents and detailed spreadsheets are the output generated in the *Reports* form. Report results can be formatted and modified in Microsoft Word and Excel after they are created.

1. Open the *Reports* form in the *Reports* panel.
2. Select a report type from the list on the left side of the form based on what output is needed. A query builder for the report type will appear on the right side of the form.

See [APPENDIX C](#) for suggestions on when and how to integrate key report types into common landscape tasks.

See [Section D](#) of the [DEFINITIONS](#) instructions for information on adding more report types to the database.

3. To add a condition in the query builder, check the *Use* box for the field, select an *Operator* from the drop-down list, and enter the associated *Value* if needed. To sort the report based on the field, enter *1* for its *Sort#* to designate it as the first field to sort by, enter a *2* for the second field, and so on. Select the *Sort order* for the field. Add as many conditions to the query as needed.

If a field is pre-selected for a report type, it may be a useful field to consider as a condition for your query.

Frequently-used query criteria can be saved in the *Saved filters* list at the top of the query builder. Select a filter from the drop-down menu to use it as a starting point for a query. Follow the instructions in [Section D](#) to add a new filter to the list of *Saved filters*.

4. Complete the report either by directly exporting it in a spreadsheet format (using the *Export...* button) or by viewing it and then saving it (using the *View...* button).

Click the *Export...* button to directly export the results to a spreadsheet. A *Save As* window will appear. Browse to where the file should be saved, select the file type, name the file, and click the *Save* button.

Click the *View...* button and the document or spreadsheet will open. Modify as needed and save.

B. CREATE A MAP

Maps of accessions, location records, and locality records can be created based on complex queries in the *Maps* form. The resulting output can be saved as an image file with a simple accompanying spreadsheet identifying the markers included on the map.

1. Open the *Maps* form in the *Reports* panel.
2. Select a map type from the list on the left side of the form based on what output is needed. A query builder for the map type will appear on the right side of the form.

Global maps display locality locations, and *Local maps* display locations in the park's landscape.

See [APPENDIX C](#) for suggestions on when and how to integrate maps into common landscape tasks.

3. To add a condition in the query builder, check the *Use* box for the field, select an *Operator* from the drop-down list, and enter the associated *Value* if needed. Add as many conditions to the query as needed.

If a field is pre-selected for a map type, it may be a useful field to consider as a condition for your query.

Frequently-used query criteria can be saved in the *Saved filters* list at the top of the query builder. Select a filter from the drop-down menu to use it as a starting point for a query. Follow the instructions in [Section D](#) to add a new filter to the list of *Saved filters*.

4. Click the *View...* button and the map will open in a new window.
5. To add labels to the map markers, click the *Label mode* button and select a permanent label type. The *Permanent – short text* label mode will display the location code, and the *Permanent – full text* label mode will display the location code and the recommended taxa.
6. Click the *Zoom centre* button to quickly display all markers centered in the window. Zoom and pan as needed to frame the map image that will be saved. It may be necessary to create several maps in order to read the labels. Click the *Reposition labels* button as many times as needed to reduce the overlap of the labels.

A marker's associated record can be viewed by clicking on the marker. See [Section I of BASIC SOFTWARE OPERATION in GETTING STARTED](#) for more detailed information on navigating the map window.

7. Click the *Save map and data* button to save an image file of the map contents and a simple accompanying spreadsheet listing the accessions, locations, or localities (depending on the map type selected) included on the map. A *Save As* window will appear. Browse to where the files should be saved, name the files, and click the *Save* button.

To quickly print the map window without saving it, click the *Print map* button in the map window.

If a more detailed spreadsheet or document is needed to accompany the map, follow the instructions in [Section A](#) using the same query conditions used for the map to create a report.

C. CREATE LABELS

Documents containing taxonomic and accession data formatted for garden labels can be created in the *Labels* form. Label results can also be formatted and modified in Microsoft Word after they are created in IrisBG, and then used for garden label production.

1. Open the *Labels* form in the *Reports* panel.
2. Select a label type from the list on the left side of the form based on what output is needed. A query builder for the label type will appear on the right side of the form.

QR Code links must first be added to taxon records before QR Code labels can be created. See [Section A](#) of the **SYSTEM MAINTENANCE** instructions for information on managing QR Codes.

See [Section C](#) of the **DEFINITIONS** instructions for information on adding more label types to the database.

3. To add a condition in the query builder, check the *Use* box for the field, select an *Operator* from the drop-down list, and enter the associated *Value* if needed. To sort the labels based on the field, enter *1* for its *Sort#* to designate it as the first field to sort by, enter a *2* for the second field, and so on. Select the *Sort order* for the field. Add as many conditions to the query as needed.

If a field is pre-selected for a label type, it may be a useful field to consider as a condition for your query.

Frequently-used query criteria can be saved in the *Saved filters* list at the top of the query builder. Select a filter from the drop-down menu to use it as a starting point for a query. Follow the instructions in [Section D](#) to add a new filter to the list of *Saved filters*.

4. Click the *View...* button and the label document will open. Confirm that the data and QR Codes are correct. Modify the labels as needed and save.

To save the unformatted label data as a spreadsheet, click the *Export...* button instead. A *Save As* window will appear. Browse to where the file should be saved, select the file type, name the file, and click the *Save* button.

D. SAVE A CUSTOM FILTER

Frequently-used query criteria can be saved and accessed in the *Saved filters* field above the query builder in all three forms. Public filters are available for anyone to use, and private filters are only available to the person who created them (the filter *Owner*). A filter can only be modified or deleted by the filter *Owner* or by a user with Administrator access.

1. Follow [Step 1](#) through [Step 3](#) in [Section A](#), [Section B](#), or [Section C](#) to set up the query conditions to be saved.

To save a modified version of an existing filter, select the filter to be modified from the *Saved filters* drop-down menu, and then click the [...] (*Save and manage filter*) button to the right of the *Saved filters* field. In the window that opens, click the *Copy* button. Click the *Save* button, and then click the *Close* button. Modify the conditions in the query builder as needed.

2. Click the [...] (*Save and manage filter*) button to the right of the *Saved filters* field to save the new query filter. Enter a name for the filter in the *Name* field and a brief description in the *Description* field. In the *Sharing* field, select whether the filter will be available to any IrisBG user at any park (*Public*), or to only you (*Private*).

To avoid confusion from an overabundance of public filters, only make a filter public if it is not specific to your park, and if it is potentially useful to all parks.

3. Click the **Save** button, and then click the **Close** button.

To modify an existing filter, select the filter from the *Saved filters* drop-down menu, modify the query conditions if needed, and then click the [...] (*Save and manage filter*) button. Modify the filter property fields in the window that opens if needed, click the **Save** button, and then click the **Close** button.

To delete an existing filter, select the filter from the *Saved filters* drop-down menu and then click the [...] (*Save and manage filter*) button. Click the **Delete** button, and then click the **Close** button.

SYSTEM MAINTENANCE

The *System tasks* form in the *Maintenance* panel can only be accessed by individuals with the Landscape Manager or Administrator role type.

A. TRANSFER DATA TO THE GARDEN EXPLORER WEBSITE

For data to appear on the Garden Explorer website, it must be uploaded from the IrisBG database by running the *Transfer to Web Explorer* task in the *System tasks* form. This task must be run for initial data upload to the website and to update website data as needed. Review tour settings (in the *Trails* form) and confirm that *Restriction* settings for all sensitive data are set to *Do not publish* before transferring data. See [APPENDIX D](#) for more information on preparing the database for Garden Explorer.

To transfer all applicable data, select the *Transfer to Web Explorer* task from the list on the left side of the form and then click the **Run** button.

Image and *QR Code* updates can be turned on and off in the *Selection criteria* section. The default settings will NOT update images and QR Codes.

Avoid using the **Cancel** button to stop the task; it will result in an incomplete update and may cause problems with the data.

B. UPDATE SYSTEM DATA

It is not necessary to use the *Update data* functions in the *System tasks* form unless data has been added to the database from an external source through the *Inbox* form (*Collections* panel) or the *Import data* form (*Maintenance* panel). The NPS is not currently set up to import data from handheld devices through the *Inbox* form, and the *Import data* form is only accessible by individuals with the Administrator role type and only used for initial collection record set up.

To update the database after data has been uploaded from an external source, run the following tasks in the sequence indicated:

1. **Update tax. groups** when the name of an existing taxonomic group has been changed.
2. **Update taxa** when the name of an existing taxonomic group has been changed.
3. **Update localities** when the name of a country has been changed.

4. *Update accession objects* when the collection code or accession number format has been changed.
5. *Update accession items* when the collection code, locations map definition or accession number formats have been changed.
6. *Update locations* when the map definition for locations has been changed.
7. *Update contacts* when data has been loaded from an external source.
8. *Update library* when data has been loaded from an external source.

To run an *Update data* task, select the task from the list on the left side of the form, enter selection criteria to only run the task for a select group of records (do not make changes to the selection criteria to run the task for the entire collection), and then click the **Run** button.

Avoid using the *Cancel* button to stop a task; it will result in an incomplete update and may cause problems with the data.

ADDITIONAL RESOURCES

The **Help** menu in IrisBG (select *Contents...*, *Search...*, or *Getting started...*) has information on data entry requirements and functions, and may be useful for troubleshooting errors.

The *IrisBG* website (<https://www.irisbg.com>) has a wide range of general information on the software, including **video tutorials** (https://www.irisbg.com/p_screencasts.aspx or linked in the *Help* menu in IrisBG) with links to more on their YouTube channel.

The IrisBG developers host a **Question & Answer Webinar** on the first Thursday of every month at 10:00 am EST where you can ask questions about using the software. Follow the link from their home page for more information and to sign up. Past webinars are archived on their YouTube channel and may have answers to your questions as well.

APPENDIX A: ROLE TYPE ACCESS LEVELS

The *Access levels* for each NPS *Role type by form* are shown in the table below. Also included is whether records in each form are visible and shared by all NPS parks using IrisBG (All NPS), or can only be viewed or modified by the park (Collection specific). The *Administrator* role type has full *Admin* access.

The following are descriptions of the *Access level* options:

- **None:** the form is not visible
- **View:** the form is visible but data cannot be modified
- **Update:** data accessed in the form can be modified but records CANNOT be deleted
- **Delete:** data accessed in the form can be modified and records CAN be deleted
- **Admin:** data accessed in the form can be modified, records can be deleted, and some forms have additional administrator privileges

Panel	Form	All NPS	Collection specific	Landscape Manager (NPS supervisory-level staff)	Landscape Associate (other NPS staff and interns)	Landscape Assistant (volunteers and youth)	Pre-Training (NPS staff without IrisBG training)
Collections							
	Accessions		X	Admin	Update	View	View
	Item management		X	Admin	View	None	View
	Localities	X		Admin	View	None	View
	Projects	X		None	None	None	None
	Inbox		X	None	None	None	None
Taxonomy							
	Taxa	X		Admin	View	View	View
	Taxonomic groups	X		Admin	View	View	View
Reports							
	Reports		X	View	View	View	View
	Maps		X	View	View	View	View
	Labels		X	View	View	View	View
Events							
	Tasks		X	Admin	Update	View	View
	Inspections		X	None	None	None	None
	Trails		X	Admin	Update	View	View
	Fundings		X	None	None	None	None
	Exchanges		X	None	None	None	None
Management							
	Institutions	X		View	View	View	View
	Collections	X		View	View	View	View
	Locations		X	Admin	View	View	View
	Assets		X	None	None	None	None
	Contacts	X		Admin	Update	None	View
	Personnel	X		Admin	View	None	View
	Library	X		Admin	Update	View	View
	Permits	X		None	None	None	None

Panel	Form	All NPS	Collection specific	Landscape Manager (NPS supervisory-level staff)	Landscape Associate (other NPS staff and interns)	Landscape Assistant (volunteers and youth)	Pre-Training (NPS staff without IrisBG training)
Authorization							
	User accounts	X		Admin	View	None	View
	Role types	X		View	View	None	View
Definitions							
	Acc. Item status	X		View	View	View	View
	Acc. Item types	X		View	View	View	View
	Authors	X		View	View	View	View
	Code list types	X		View	View	None	View
	Code lists	X		View	View	View	View
	Countries	X		View	View	None	View
	Custom attributes	X		View	View	View	View
	Custom templates	X		View	View	View	View
	Journals	X		Admin	View	View	View
	Label types	X		View	View	View	View
	Location types	X		View	View	View	View
	Map providers	X		View	View	None	View
	Regions	X		View	View	None	View
	Report types	X		View	View	View	View
	Restriction types	X		View	View	None	View
	Taxonomic ranks	X		View	View	View	View
	Web links	X		View	View	None	View
Maintenance							
	System tasks		X	Admin	None	None	None
	Configurations	X		View	None	None	None
	Import data		X	None	None	None	None

APPENDIX B: MANAGING ACCESSION ITEM STATUS

An accession item record (found in the *Items* tab of the *Accessions* form) is essentially a record of the item's status at a certain point in time (generally, whether it is alive or dead and where it can be found), so all details in the record should reflect the item's condition at the time specified. An important part of managing plant records in IrisBG is updating the status of accession items as their condition changes. The following table provides general guidance on when to use each *Item status* option. Follow the [STEP-BY-STEP INSTRUCTIONS for ACCESSION RECORDS](#) to add and update accession item records.

Table 1: Type and context for each *Item status* option, and general guidance on when to use each option.

Code	Status	Type	Context	Use this status when...
SS	In Seed Store	Existing	Dormant	dormant plant material is placed in storage
PP	Propagation Prepared	Procedure	Propagation	a propagation is prepared in a nursery setting
PS	Propagation Success	Existing	Propagation	a mature propagule is ready to plant in the landscape
PF	Propagation Failure	NotExisting	Propagation	a propagation in a nursery setting does not succeed
PL	Planted	Existing	Landscape	an item is planted in the landscape
VS	Volunteer Sprouted	Existing	Landscape	a volunteer sprouted that will be maintained as part of the collection
IN	Inventoried	Existing	Landscape	an item in the landscape is inventoried
PI	Planted Infill	Existing	Landscape	a new planting is added to an existing item in the landscape as infill
DI	Divided	Existing	Landscape	an item is divided and replanted in the landscape
MO	Moved	Existing	Landscape	an item is moved to a different location in the landscape
MA	Massed	Unknown	Landscape	an item is no longer distinguishable from an adjacent item
QU	Questionable	Unknown	Landscape	it is not clear if an item in the landscape is alive or dead
UN	Unknown	Unknown	Landscape	the status is not known
NF	Not Found	NotExisting	Any	an item cannot be found
DE	Dead	NotExisting	Landscape	an item dies for unknown reasons
DN	Dead: Natural Cause	NotExisting	Landscape	an item dies of a natural cause
DH	Dead: Horticultural Cause	NotExisting	Landscape	an item dies of a horticultural cause
DA	Dead: Accident	NotExisting	Landscape	an item dies as the result of an accident
DV	Dead: Vandalism	NotExisting	Landscape	an item dies as the result of vandalism
RE	Removed	NotExisting	Landscape	an item is removed from the landscape for unknown reasons
RI	Removed: Incompatible as CR	NotExisting	Landscape	an item is removed because it is incompatible with the cultural landscape
RN	Removed: Not Thriving	NotExisting	Landscape	an item is removed from the landscape because it is not thriving
RH	Removed: Hazard	NotExisting	Landscape	an item is removed from the landscape because it is a hazard
GA	Given Away	NotExisting	Any	an item is given away
ST	Stolen	NotExisting	Any	an item is stolen

APPENDIX C: USING IRISBG TO SUPPORT WORK TASKS

IRISBG includes tools that are useful for project planning, execution, and documentation, which are found primarily in the *Tasks*, *Reports*, and *Maps* forms. This appendix provides guidance on how to integrate these tools into work tasks commonly required to maintain NPS cultural landscapes.

A. CONDUCT A PLANT INVENTORY

Even when accession records are updated regularly as changes are made to the landscape, it is possible that errors were made in data entry or some plants have died without the knowledge of park staff. For this reason, a full inventory of plants in the landscape is recommended at least every five years when the Comprehensive Condition Assessment is conducted for the park, but ideally a full inventory is taken annually. Smaller-scale project-based inventories may be useful throughout the year as well, such as an inventory of all roses or an inventory of all plants in a particular area. When planning the timing of the inventory, consider when plants are in bloom, which may assist with their identification.

1. Create a list of plant location data to use for taking inventory.
 - a. Follow the [STEP-BY-STEP INSTRUCTIONS](#) in [Section A](#) of [REPORTS, MAPS, AND LABELS](#) to create a list of all existing plants in the landscape that are recorded in IRISBG: Select the *Accession items* report type called *Inventory Sheet* and select the *Plant Inventory* filter. Adjust the query builder settings as needed, but make sure the *Item location code* field has a *Sort#* of 1 and a *Sort order* of *Ascending*, and *Item status type* is *Not equal to NotExisting*. Click the *View...* button to create a Microsoft Word document containing accession and location data useful for conducting a plant inventory.

If taking an inventory of all plants in the landscape, it may be helpful to create separate inventory documents for different areas to break up the work into more manageable sections and to prevent the report from failing because of too much data. To create an inventory report of a specific area, select *Use* for the *Item location code* field in the query builder, select *Starts with* for the *Operator*, and select the area name for the *Value*. In the header section of the resulting document, enter the *Area* of the landscape where the inventory items are located.

Inventory reports can be further customized for smaller inventories. For example, adjust the *Item location type* field in the query builder to only include trees and shrubs, or use the *Genus* field to only include accessions with a specific genus in the inventory. In the header section of the resulting document, include this information in the *Area* description (for example, *Formal Garden Roses*).

Plant Inventory 7/4/2019		Area: Hollow	Inventoried by:
Location Recommended taxa (quantity)	Accession item number Taxon name • Common names Status • Number of specimens Status date • Condition	Current Conditions:	
12-30 Taxus cuspidata	FRLA-00037.001 <i>Taxus cuspidata</i> • Japanese yew Inventoried • 1 2015 •	Current Conditions:	
12-300 Crataegus mollis	FRLA-00004.001 <i>Crataegus mollis</i> • downy hawthorn Inventoried • 1 2015 • Good	Current Conditions:	
12-301 Liriodendron tulipifera	FRLA-00005.001 <i>Liriodendron tulipifera</i> • tulip tree Inventoried • 1 2015 •	Current Conditions:	
12-302 Quercus rubra	FRLA-00006.001 <i>Quercus rubra</i> • red oak Inventoried • 1 2015 •	Current Conditions:	
12-303 Cotoneaster horizontalis (6)	FRLA-00011.002 <i>Cotoneaster horizontalis</i> • rock cotoneaster Inventoried • mass of 6 2015 • Fair	Current Conditions:	
12-304 Cotoneaster horizontalis	FRLA-00011.003 <i>Cotoneaster horizontalis</i> • rock cotoneaster Inventoried • 1 2015 • Poor	Current Conditions:	
12-305 Cotoneaster horizontalis		Current Conditions:	
12-306 Diervilla lonicera (26)	FRLA-00012.001 <i>Diervilla lonicera</i> • dwarf bush honeysuckle Inventoried • mass of 26 2015 •	Current Conditions:	
12-307 Euonymus fortunei var. radicans (48)	FRLA-00014.001 <i>Euonymus fortunei</i> var. <i>radicans</i> • wintercreeper Planted Infill • unknown 2015-07 •	Current Conditions:	

6 of 17

Figure 5: Example of one sheet of a completed inventory document prior to taking inventory. Note that location 12-305 has been added to the original accession item inventory report, since there is no accession item recorded as existing in that location.

1. Follow the [STEP-BY-STEP INSTRUCTIONS](#) in [Section A](#) of [REPORTS, MAPS, AND LABELS](#) to create a detailed spreadsheet of data for existing accessions: Select the *Accession items* report type called **Detailed item data** and select the **Plant inventory** filter (the *Item location code* field should have a *Sort#* of 1 and a *Sort order* of *Ascending*, and *Item status type* should be *Not equal* to *NotExisting*). Click the *View...* button to create a Microsoft Excel document containing detailed accession item data sorted by the *Item location code*. Each row represents a different accession item, and each column represents a database field.
2. Follow the [STEP-BY-STEP INSTRUCTIONS](#) in [Section A](#) of [REPORTS, MAPS, AND LABELS](#) to create a spreadsheet of data for all location records: Select the *Management* report type called **Locations** and click the *View...* button to create the Microsoft Excel document.
3. Prepare the detailed accession item spreadsheet for ranking.
 - a. Reference the location record spreadsheet created in [Step 2](#) and insert a row for each missing location in the accession item spreadsheet created in [Step 1](#). Copy and paste the *ItemLocationCode* cell and the *ItemLocationName* cell for each missing location from the location spreadsheet to the accession item spreadsheet.

Both spreadsheets should already be sorted by location in the same way; they will be sorted as the records are sorted in *Locations* form of IrisBG with the tree hierarchy, not alphanumerically. This should make it easy to see which locations are missing from the accession item spreadsheet.

If a location has an *ItemLocationName* (this is the field that represents the recommended taxa for a location) with more than one taxon, each taxon should have a separate row. Add a row for each *ItemLocationName* taxon that does not have an associated accession item record and copy and paste the *ItemLocationCode* cell and the *ItemLocationName* cell to the new row.

- b. Add a column with the heading **Replace** and add a column with the heading **Needs work**.
4. Use the **Replace** column to rank each row (accession item) based on the priority level for its replacement. The following is an example of how numbers can be used to assign these ranks (numbers are recommended since they can be easily sorted), with 1 as the highest priority for replacement.
 - a. Sort all records in the spreadsheet by the accession item number (**ItemAccNoFull**) column. For all rows with no accession item number, enter 1 in the **Replace** column. These rows represent locations that have no existing planting.
 - b. Sort all records by the **ItemCondition** column. For all rows with an *ItemCondition* of **Poor**, enter 2 in the **Replace** column. These rows represent locations with plantings in poor condition.

- c. Sort all records by the cultural landscape evaluation (*AtrA_CL_evaluation*) column. For all rows with an *AtrA_CL_evaluation* value of *NI* (Non-contributing, Incompatible), enter 3 in the **Replace** column. These rows represent locations with plantings that are not compatible with the planting plan based on the park's period of significance.

These ranking decisions are just examples; each park should determine the best way to prioritize vegetation replacement.

5. The **Needs work** column can be used to enter either numerical values prioritizing maintenance work needed for accession items or notes describing the type of work needed: Sort all records by the **ItemCondition** field and enter a value in the **Needs work** field for all accession items with a **ItemCondition** of *Fair*; all other accession items are either in good condition or need replacement.
6. Data from the **Replace** and **Needs work** fields can be summarized as needed and used as a reference for the Condition Assessment.

C. PLAN AND MANAGE A PROJECT

The following provides an overview of the process of using IrisBG to help plan, execute, and document a project.

1. Follow the **STEP-BY-STEP INSTRUCTIONS** in **Section A** and **Section B** of **TASK LISTS** to create a list of accession items, locations, or taxa that are included in your project. For example, create a list of taxa that need to be purchased, a list of locations that are missing plants, or a list of accession items that need to be pruned.

A task list can be created for a single project (such as *Mulch Lilac Beds*) or as a common ongoing category of work with entries completed over the course of a year (such as *Plants to Propagate 2019*).

If the task list is tied to a specific FMSS Work Order, include the Work Order ID in the *Description* field so it can be searched for reference.

2. Create and print a list of task entries and a map for reference in the field.
 - a. Follow the **STEP-BY-STEP INSTRUCTIONS** in **Section A** of **REPORTS, MAPS, AND LABELS** to create a list of the task entries: Select the *Events* report type called **Item Tasks Checklist, Location Tasks Checklist, or Taxon Tasks Checklist** depending on the type of entries in the task list. In the query builder, select *Use* for the **Task no** (Task number) field, select *Equal* for the **Operator**, and enter the task number for the **Value** (you may need to look this up in the *Tasks* form first). To only include *Open* task entries in the list, select *Use* for the **Status** field in the query builder, select *Equal* for the **Operator**, and select *Open* for the **Value**. Click the **View...** button to create a Microsoft Word document containing task entry data and spaces to enter a completion date and notes for each entry. Modify the document header if needed and print the document to update in the field as entries are completed.

APPENDIX D: MANAGING GARDEN EXPLORER CONTENT

The Garden Explorer website component of IrisBG provides the public with access to non-sensitive data about NPS living plant collections, including images and locations mapped to allow visitors to identify plants in the landscape. Each park has its own Garden Explorer website, and is responsible for keeping the website up-to-date by transferring data from the IrisBG database to their website through the *System tasks* form periodically as the database is updated. Data displayed on the Garden Explorer websites is largely derived from taxon records, and because taxon records are shared by all parks, the data published on the Garden Explorer websites for all parks will be the same for each taxon record. For this reason, parks will need to work together to manage the content published on the Garden Explorer websites. The following are guidelines for managing database records related to the Garden Explorer website.

A. PUBLISHING RESTRICTIONS

Determine if there are any locations, accession items, or taxa that should not be published on the website and update settings in IrisBG accordingly (see the [STEP-BY-STEP INSTRUCTIONS](#) for more details on how to change these settings in each form). Data will not actually be published online until it is uploaded manually to the website through the *System tasks* form, but the following settings should be prepared before upload.

1. Accession records or individual items within the accession can be set to *Do not publish* in the **Restriction** field. Only accession items with a **Status type** of *Existing* will appear in Garden Explorer; all others will not (*NotExisting*, *Unknown*, and *Procedure*).
2. Taxon records can also be set to *Do not publish* in the taxon record's **Restriction** field, but keep in mind that these records are shared by all parks, so confirm these settings with other parks using IrisBG.
3. Location records must be marked as *Active* to be published on Garden Explorer. The **Publish** field in the location records can be set to either *Full*, *Partial*, or *No* to further restrict publication.

Generally, **Publish** needs to be set to *Full* for a location to be visible on the website. Only the uppermost level within the hierarchy of location records (for example, *East Lawn*) needs to be set, and all records under it in the hierarchy will also be published. If specific items or taxa are set to *Do not publish* but are in a location area set to *Full Publish*, they will **not** appear on the website. Locations are currently set to *Full Publish* for all areas except the *Nursery* and *Storage* areas.

If a location record's **Publish** field is set to *Partial* it will not be shown on the maps and in lists on Garden Explorer, but will be included if part of a trail/tour. The *Partial* setting should only be used for location records added specifically for tours, not for plant locations.

B. MANAGING TAXON RECORDS FOR GARDEN EXPLORER

Taxon records are the main source of content on the Garden Explorer websites, and this content is shared by all parks using IrisBG. Because there is not currently one individual responsible for managing all taxon records and ensuring that they are consistent, each park is responsible for maintaining taxon records used by their park's collection. Since multiple parks' collections reference some of the same taxon records, standards have been established for data fields to minimize inconsistencies. The taxon fields visible in Garden Explorer can be changed over time by working with the individual responsible for configuring the websites, but the visible fields should be the same for all park's websites. As new taxon fields added to the websites, it is best to first develop NPS standards for them so that the content will be consistent.

Taxon data that currently have NPS standards and can be made visible in Garden Explorer includes the taxon name, common name(s), family, life form, hardiness zone, images, and web references. The taxon *Description* field can be used to enter a narrative description of the taxon to be published on the Garden Explorer websites, and other more specific custom taxon attributes can be developed as done by the Smithsonian Gardens (bloom characteristics, foliage characteristics, average height, pest resistance, fall color, ethnobotanical uses). Standards for web references can be further developed (also note that a *Web reference* must have a **Rank** of 1 through 9 to be visible on Garden Explorer). Image management is the most complex aspect of managing taxon records for Garden Explorer, and is outlined in [Section C](#).

C. IMAGE MANAGEMENT

Images of the plants in the collection are a key part of the Garden Explorer websites, as they allow visitors to identify the plants in the landscape. The *Rank* settings in the IrisBG taxon records determine which images in the database are published on the website. Because taxon records are shared by all parks, the images published on the Garden Explorer websites for all parks will be the same for each taxon record, so parks will need to work together to determine which images will be published. This may be complicated since taxon records include images pulled from all parks' accession records. The following are some general guidelines for managing images in IrisBG (see the [STEP-BY-STEP INSTRUCTIONS](#) for details on how to add and modify images in taxon and accession records):

Only add NPS-owned images to the database.

If adding images for publication on the Garden Explorer website, relatively close shots are ideal for publication, since the website will be used by visitors to identify plants, and all parks' websites will display the same images for each taxon. Each taxon that will be visible on your park's Garden Explorer website (this includes the taxa of all existing accession items without publication restrictions) should have at least one image suitable for publication on the website. If you do not have images for all taxa at your park, plan a time to photograph them. The best time is when the plant is in bloom, but you may also want to include images of fall color. Images not appropriate for website publication can also be added to the database; they should be given a **Rank** of 10 or higher.

Only add an image to the database once. All accession images are linked to and visible in their associated taxon records as well, so if the image is of a specific accession item, add the image to the

accession record instead of the taxon record. Images only need to be uploaded to taxon records if the images in the taxon record linked from accession records are not sufficient for publication on the Garden Explorer website. Images added to *Events* records (task lists and tours) are not linked or visible anywhere else in the database.

Keep in mind that all images uploaded to *any* park's accession records will be linked and visible to *all* parks in the taxon records. Additionally, the software allows *any* user with a minimum of *Update* access to the *Taxa* form to delete or modify *all* image files in taxon records (even those added as part of another park's accession records). DO NOT modify or delete image files that are potentially associated with other parks' accessions. If the image is part of an accession record, the alpha code for the park that the accession record belongs to should be referenced in the *Origin* field in the *Images* tab.

The image **Rank** field is used to manage which images are published on the Garden Explorer websites and in what order. Image *Rank* can be initially set in accession records for accession images, but it should ultimately be managed in the taxon records. This is because taxon records include images from all parks' collections, so all images in the database representing that taxon can easily be browsed and modified in taxon records. Because there is not currently one individual responsible for managing all taxon records and ensuring that they are consistent, each park can simply review the taxon records used by their collection and update the *Rank* values as needed to ensure that the best images are displayed for the websites. The following are guidelines for setting taxon image *Ranks* for Garden Explorer (see the [TAXON RECORDS STEP-BY-STEP INSTRUCTIONS](#) for details on how to update *Rank* settings).

If an image already has a *Rank* of **10** or higher, DO NOT change the *Rank* for that image, since the park does not want the image published.

If an image does not already have a *Rank* setting and is associated with a different park's accession record, confirm that the image is suitable for publication before adding a *Rank* of **1** through **9** to the image. Use your best judgement if adding a *Rank* to an image not associated with an accession record.

For each taxon, images that already have a *Rank* of **1** through **9** can be assumed to be generally suitable for publication (and possibly non-ranked images not associated with accession records). Use your best judgement to select the nine best images and assign them a *Rank* of **1** through **9**. The image with a *Rank* of **1** should be a high-quality close up ideally showing the plants bloom or unique characteristics; this will be the default image displayed on the websites. Images with a *Rank* of **2** through **9** will be displayed on the websites in the order of their rank; these can show the taxon at a range of scales, forms, and during different seasons. Set the *Rank* of all other images in the taxon record to **10** or higher.

D. THEMED TOURS

New tours for your park's Garden Explorer website can be designed and set up at any time by following the [GARDEN EXPLORER TOURS STEP-BY-STEP INSTRUCTIONS](#). To manage which tours are visible on the website, update all related database settings and then transfer the updated data to the website in the *System tasks* form in IrisBG. The following settings are required for a tour to be successfully published on the website:

- The tour and its entries must have a *Status* of *Completed*.
- The tour must have a *Rank* of 1 through 9.
- Entries must be linked to map coordinates to appear on the map.
- There must not be restrictions (*Restriction* field set to *Do not publish*) placed on any location, accession, or taxon records associated with the tour entries.

To keep the tour in the database but remove it from the website, simply change the *Rank* to 10 or higher and update the website data in the *System tasks* form.

When creating a new tour, keep in mind that it is essentially a sequence of points based on locations or accession items. Accession item tours will link to taxon record data and images on the website; these are best for featuring specific plants in the landscape. Location tours will only display data entered in the entry row of the *Trails* form; these are best for featuring views or areas in the landscape. An image and unique text can also be attached to each tour point for publication on the website. Common themes for accession item tours include seasonal plants in bloom, fall color, fragrant plants, and highlights of a genus or area of the landscape. Consider working with the interpretation staff at your park to design tours highlighting or incorporating the history of the landscape. This could include a location tour based on historic photographs of the landscape along the locations that each was taken from, a location tour discussing the design intentions by area, or an accession item tour highlighting the historic plants still existing in the landscape.

APPENDIX E: INITIAL IRISBG RECORD SET-UP

This appendix provides guidance on the initial steps required to implement IrisBG at a National Park. It reviews the types of materials that may be useful as source data for IrisBG plant records, guidelines for creating a custom base map, and the workflow recommended for entering the initial records in the IrisBG database.

OVERVIEW OF THE IMPLEMENTATION PROCESS

Preliminary Assessment: Before deciding to implement IrisBG, your park should conduct a preliminary assessment of costs and benefits. In general, IrisBG is best suited for landscapes that are primarily managed as cultural resources rather than natural resources, and that have relatively formal or curated planting plans. This is because IrisBG stores plant data based on specific taxonomy, so it would likely be cumbersome and cost-prohibitive to inventory and record data on every taxon of plant in a woodland area managed as a natural resource, for example. If your park has a landscape managed as a cultural resource with over 300 specific plant locations identified in the planting plans (a plant location may be an individual tree, an individual or mass of shrubs with the same taxonomy, or a mass of herbaceous plants with the same taxonomy), it may be a good fit for implementing IrisBG. The Olmsted Center for Landscape Preservation can provide current cost information for IrisBG software and answer questions to help decide if IrisBG should be implemented at your park.

Initial Database Set-up: After your park has decided to implement IrisBG, purchased the software and necessary equipment, hired staff to perform the initial record set-up and train staff, and gathered plant-related records as outlined in the [DATA SOURCES](#) section, the initial database set-up can begin. It is recommended that a custom base map be created prior to IrisBG record input to provide landscape context within the site such as paths and planting beds. The [CUSTOM BASE MAP SET-UP](#) section provides guidelines on how to create the base map in ArcGIS and set up the map to be accessible through the IrisBG software. The taxon records (based on planting plans and existing plants), location records (based on planting plans) and accession records (based on existing plants) can then be entered in IrisBG (see the [IRISBG RECORD SET-UP](#) section for guidance).

Staff Training: Some initial IrisBG software training will be required for park staff. Training can begin either before or after the initial records are entered in the database, and should include hands-on practice.

Database Maintenance: Accession records in IrisBG should be updated as plant conditions change and as plants are propagated, planted, moved, removed, or die (see [APPENDIX B](#) for more information on updating accession item status). If done regularly, this will require minimal effort and will result in improved reporting and project-planning capabilities. If the Garden Explorer website is implemented, it will require minimal maintenance as well (see [APPENDIX D](#)). Historic accession records can be added to IrisBG as a way to preserve the data digitally and make it easily searchable for reference. This can be an ongoing process as time and resources allow.

DATA SOURCES

The first step to setting up plant records in IrisBG is to gather and organize all source data that may be useful. This data may be in the form of reports, plans, spreadsheets, tables, lists, and other documents. The goal is to gather two main kinds of data:

- Taxonomy, locations, and planting dates for *existing plants* in the landscape
- Taxonomy and locations of *plants existing during the park's period of significance*

Other data can also be gathered and organized if available, such as plant source data (nursery contact, propagule parent data, etc.), data on conditions and maintenance work performed on the plants, and digital photographs of the plants in the park's landscape. Examples of types of records that are the most useful include:

- Cultural Landscape Report and/or Planting Plans
- Cultural Landscapes Inventory or other plant inventories
- Maps or plans showing planting locations with dates
- Lists, tables, or spreadsheets documenting plants installed (with locations and dates)
- Invoices from plant purchases
- Tree inspection reports

Gather any CAD or GIS files that can be used to expedite the base map creation process (the Olmsted Center for Landscape Preservation may be able to help determine if these exist), and/or image files of the site or landscape plan that can be georeferenced in GIS.

CUSTOM BASE MAP SET-UP

Before adding location records to IrisBG, it is helpful to set up a custom base map. The base map provides more detail at the site level than map providers like Google Maps can provide, and makes locating plants correctly in the landscape much easier. The base map is created in ArcGIS and then set up as a web map service at the Denver Data Center for access through IrisBG software. This section outlines drawing standards and guidelines on the set-up process.

A. CREATE THE BASE MAP IN ARCGIS

Overview: The custom base map must first be created in a format that can be displayed in Iris BG. Overall, the base map should:

- Be composed of vector layers created in ArcGIS (no raster data)
- Be limited to the layers described in [Table 2](#)
- Be easy to interpret
- Only show what is within the park boundary
- Not show any plant locations or canopies – this information is stored in the IrisBG database

Examples of all existing park base maps can be viewed in IrisBG in any map window.

Coordinate System: Set the data frame's coordinate system to the Projected Coordinate System *WGS 1984 Web Mercator (auxiliary sphere) EPSG:3857*.

Layers: The layer settings described in [Table 2](#) are recommended for use in the base map, in order from bottom layer to top layer. Replace *PARK* in the layer name with the park's alpha code, and only use the layers that apply. The colors for the buildings layer and the small-scale features (ssf) layers can be modified to coordinate with the site.

Table 2: Recommended layer settings for the custom base map.

Layer Name	Layer Description	Symbology Description	CMYK	Outline Width	Minimum Zoom Scale
PARK_IrisBG_bnd_py_	park boundary	pale green filled polygon	7,3,20,0	0.5	1:100,000
PARK_IrisBG_turf_py_	turfgrass	light green filled polygon	20,12,34,0	0.5	1:10,000
PARK_IrisBG_water_py_	water features	light blue filled polygon	20,8,4,0	0.5	1:10,000
PARK_IrisBG_circ_py_	paths, parking	beige filled polygon	15,20,28,0	0.5	1:10,000
PARK_IrisBG_circ_trail_ln_	trails	beige filled line	15,20,28,0	2.0	1:10,000
PARK_IrisBG_circ_curb_ln_	curbs	light brown line	30,43,49,0	1.0	1:500
PARK_IrisBG_circ_step_ln_	steps	dark gray-brown line	49,58,62,0	0.5	1:500
PARK_IrisBG_bldg_py_	buildings	brown filled polygon (with dark brown outline)	46,65,73,0 (46,65,73,16)	1.0	1:10,000
PARK_IrisBG_ssf_py_	signs, benches, masonry walls	red-brown filled polygon	20,46,60,0	0.5	1:1,000
PARK_IrisBG_ssf_rock_py_	large rocks	light gray-brown filled polygon	25,33,36,0	0.5	1:1,000
PARK_IrisBG_ssf_ln_	fencing	gray line	0,0,0,49	2.0	1:1,000

Full Extent: Zoom and pan to display a view of the map that contains the entire park and some of the surrounding area, and then set the **Full Extent** of the data frame based on the *Current Visible Extent*.

B. ADD METADATA

Metadata is required for any shared NPS data. Enter the following in the **Map Document Properties...** window (under the **File** menu):

Title: [park alpha code] IrisBG Base Map

Summary: [park name] Landscape Base Map for IrisBG

Description: This map contains layers representing some of the landscape features of [park name] in [park location]. The features are based primarily on [data sources]. All feature locations are approximate, and have been created for use as a base map in IrisBG plant records management software. The data are maintained by the Olmsted Center for Landscape Preservation.

Author: NPS Olmsted Center for Landscape Preservation

Credits: [email address of contact]

Tags: IrisBG, [park alpha code], [park name]

C. CREATE A MAP PACKAGE

Once the map is complete and the metadata added, a map package must be created and sent to the web map service host to set up the map to be viewable in IrisBG and on the public Garden Explorer website. The web map service must be located on a public-facing server, and is currently hosted on a server managed by the NPS Resource Information Services Division (RISD) in Denver.

1. **Remove** all layers from the data frame that will not be included in the base map and confirm that all layer settings and metadata are correct and that the layers are in the correct order. Only vector layers included in [Table 2](#) should be included in the map document. The base map will be displayed in IrisBG as it is seen in the map document.
2. Under the **File** menu, select **Share As** and then **Map Package...**
3. Select **Save package to file** and browse to where the file will be saved.
4. Click on **Item Description** in the left panel. Most fields will be auto-filled based on the metadata you have entered in *Map Document Properties*.
5. **Copy** and **Paste** the following terms of use in the **Access and Use Constraints** field:

The National Park Service shall not be held liable for improper or incorrect use of the data described and/or contained herein. These data and related graphics (i.e. GIF or JPG format files) are not legal documents and are not intended to be used as such. The information contained in these data is dynamic and may change over time. The data are not better than the original sources from which they were derived. It is the responsibility of the data user to use the data appropriately and consistent within the limitations of geospatial data in general and these data in particular. The related graphics are intended to aid the data user in acquiring relevant data; it is not appropriate to use the related graphics as data. The National Park Service gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data. It is strongly recommended that these data are directly acquired from an NPS server and not indirectly through other sources which may have changed the data in some way. Although these data have been processed successfully on computer systems at the National Park Service, no warranty expressed or implied is made regarding the utility of the data on other systems for general or scientific purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data.

6. Click the **Analyze** button in the top right corner of the window. Address any errors or warnings that result. If there are none, click the **Share** button in the top right corner of the window to save the Map Package. This file can be emailed to the individual who will set up the web map service.

D. SET UP THE MAP PROVIDER IN IRISBG

After the web map service has been created, it must be set up as a **Map provider** in IrisBG. This can only be done by an individual with the Administrator role type.

1. Open the **Map providers** form in the *Definitions* panel.

2. With the *Custom maps* heading selected, click the **Add item** (green) button, and a new item line will appear.
3. Enter *[PARK] base map* in the **Name** field, substituting your park alpha code for *[PARK]* (for example, *FRLA base map*).
4. Enter the location of the web map service (the URL provided by the service host) in the **Service url** field. Reference the URLs for the existing custom base maps to help determine the correct formatting. For example, the FRLA URL is currently *https://mapservices.nps.gov/arcgis/services/IrisBG/FRLA_IrisBG_basemap/MapServer/WMSServer? .*
5. In the **Layer** field, list the layers of the web map service that should be displayed on the map in IrisBG. Use the layer numbers defined in the web map service (0 is the top layer) and separate each with a comma (for example, *0,1,2,3,4,5,6,7,8*).
6. In the **Zoom** field, enter the minimum and maximum zoom levels that should be displayed on the map in IrisBG. Use the format *[minimum]//[maximum]* (for example, *17/23*).

Zoom levels (or *scale levels* in ArcGIS) are defined by an integer value and are based on the tiling scheme being used by the web map service, which is likely the default that is used by Google and Bing maps. It may take some trial and error to determine the best minimum and maximum levels to use; a good starting point for the default scheme is *15/23*.
7. In the **Bounds** field, enter coordinates in decimal degrees to define the full extent of the map viewable in IrisBG. This frames the park properly when the map window opens. **Copy** and **paste** the coordinates that define the *Full Extent* of the map in ArcGIS, and use the format *[north limit];[west limit]//[south limit];[east limit]* (for example, *42.325746166;-71.135211943/42.322320934;-71.129140*).
8. Select *png* from the **Tile format** drop-down menu.
9. Select *GoogleMap* from the **Base provider** drop-down menu.
10. Click the **Save** button. The custom base map should now be viewable in IrisBG.

Do NOT delete or change the settings for any other map providers, as these are used by all IrisBG users.

To make changes to the map provider settings for your park's custom base map, edit the fields as needed and then click the **Save** button.

E. SET THE CUSTOM BASE MAP AS THE DEFAULT

Now that the custom base map has been set up as a map provider, it can be set as the default base map displayed for your park's collection. This must be done by an individual with the Administrator role type.

1. Open the **Collections** form in the **Management** panel.
2. Find the collection card for your park and click on the [...] button to the right of the **Locations map** field.

3. Find the locations map card for your park. If not already set, select *D* from the *Coord. format* drop-down menu and *WGS84* from the *Datum* drop-down menu.
4. Select your park's custom base map from the *Map type* drop-down menu.
5. If needed, modify the *Center lat./x* and *Center long./y* values to center the base map properly in the map viewing window.
6. If needed, modify the *Default zoom* so that it is the highest zoom level where the entire park is still visible in the window. This number should not be lower than the custom base map's minimum zoom level defined in the *Map provider* form.
7. Select *No* from the *Use azimuth/distance* drop-down menu.
8. Change the *Item marker* and *Location marker* to match the other park's maps.
9. Click the *Save* button and then close the window.

Do NOT delete or change the settings for any other park's collection or locations map. To make changes to the location map settings for your park's collection, edit the fields as previously described and then click the *Save* button.

IRISBG RECORD SET-UP

Now that material containing data relevant to plant records has been gathered and the base map has been created, the following workflow is recommended for setting up IrisBG records. The individual responsible for the record set-up must be fully trained in IrisBG. NPS standards have been established and documented in this user guide, which includes [STEP-BY-STEP INSTRUCTIONS](#) that should be followed to maintain quality control across parks sharing the IrisBG database. Additional guidelines can also be found in the other appendices of this document.

The types of records fundamental to the implementation of IrisBG are taxon records, location records, and accession records. These records contain most of the data describing the plants in the landscape and must be set up before the other database functions can be used.

A. DEFINE COLLECTION SETTINGS

Prior to entering records in IrisBG, basic settings for your park's collection must be defined so that data formatting is standardized for all parks using IrisBG. These settings can only be modified by an individual with the Administrator role type.

1. Open the *Collections* form in the *Management* panel. Only modify the following settings for your park's collection.

Each collection has a series of fields that can be used to define database settings. Some of the settings were added by the developer when your park's collection was added to IrisBG, and some cannot be changed.

2. The **Collection ID** is a unique identification number for the collection that cannot be changed.
3. The **Institution code** should be set to *NPS*.
4. The **Collection code** should be your park's four-letter alpha code.
5. Enter the full name of your park in the **Collection name** field (for example, *Frederick Law Olmsted National Historic Site*).
6. The **Collection type** should be set to *Living*, and **Item types** should only include *Planting*.
7. Select *Global series auto* from the **Accession number type (Acc. no type)** drop-down menu.
8. For the **Accession number format (Acc. no format)** setting, enter `[{collcode}-
{accno:00000}].[{itemno:000}]`. It is important that this is entered correctly, as it is a code that tells the database how to format the accession numbers. It may be easier to copy and paste the text from another collection.
9. Select *No* from the **Conserved accession number (Conserved acc. no)** drop-down menu.
10. Select *Yes* from the **Unique item number (Unique item no)** drop-down menu.
11. Select *Meter* from the **Measurement unit** drop-down menu.
12. Select a **Color** to represent your park.
13. Follow instructions in [Section E](#) of the **CUSTOM BASE MAP SET-UP** guidelines in this appendix to define the default base map settings to be used for your park's collection.
14. All other fields can remain blank. Click the **Save** button.

Do NOT delete or change the settings for any other park's collection. To make changes to the settings for your park's collection, edit the fields as previously described and then click the **Save** button.

B. ENTER INITIAL TAXON RECORDS

Taxon records are shared by all parks using IrisBG and must be input before accession records. Each taxon record contains data that applies to all possible specimens of the taxon at any location in the world. Only individuals assigned the Landscape Manager or the Administrator role type can add or modify taxon records, and only individuals with the Administrator role type can use the *Import data* form to import a spreadsheet of records. It will be necessary to reference the **TAXON RECORDS** section of the **STEP-BY-STEP INSTRUCTIONS** for detailed guidance on setting up the taxon records.

For the initial record set up, it is best to include all taxa that will be referenced in both the accession records and the location records. Keep in mind that many of the taxa referenced in your records may already have taxon records representing them that were previously entered in the IrisBG database by other parks, so those taxa will not need new taxon records set up. The initial taxon records for your park can be entered by using one of the following two methods:

Enter detailed records individually as needed. This method may be better if it is likely that most of the taxa referenced in your records already have taxon records representing them in the IrisBG database, or if it is easier to organize and manage data-entry when taxon records are entered as needed at the same time that accession records and location records are entered. For this method, simply follow the [STEP-BY-STEP INSTRUCTIONS](#) for [TAXON RECORDS](#).

Import a simple spreadsheet and then add detail manually. This method can be used if your data is in the format of long plant lists that can be easily combined into a single spreadsheet containing the scientific name and the common name(s) for each taxon. The properly-formatted spreadsheet is imported into IrisBG, and then the new taxon records must be checked for spelling and duplicates, and more detailed data must be manually added to each record.

1. Download and install the *IrisBG Microsoft Excel Add-in*, which can be found at https://www.irisbg.com/p_officeaddin.aspx. This will add an IrisBG tool tab in Excel that contains buttons for assisting with the formatting required before import.
2. Combine all plant lists into a master spreadsheet in Excel. Taxa should be in a single sheet with one column containing the full scientific name (with heading *TaxonName*) and one column containing the common name (with heading *TaxonCommonName*). Additional data describing the taxa can be added in [Step 5](#).

Each column represents a field in the IrisBG database, and the column heading must match exactly the code name that the database uses for each field for the import to be successful. The *IrisBG Data Import Template* spreadsheet, which can be provided by the Olmsted Center for Landscape Preservation, contains field name codes (column headings) and data coding guidelines.

3. Format the master spreadsheet for IrisBG import.
 - a. Sort the spreadsheet by taxon name and delete duplicate rows.
 - b. Select all taxon name cells and click the *Split Taxon Name* button in the *IrisBG* toolbar. A dialogue box will appear asking if you would like to remove empty columns; click the *Yes* button. A new sheet should open named *Taxa* with all parts of the taxon names split into the following columns: *Genus*, *Species*, *InfraType1*, *InfraName1*, *InfraType2*, *InfraName2*, and *Cultivar*.
 - c. Copy the *TaxonCommonName* column (including the heading) from the original sheet to the new *Taxa* sheet.
 - d. In the new *Taxa* sheet, confirm that the *Split Taxon Name* function divided the taxon names properly. Move taxon name components into the correct columns as needed.

It is possible that a column not listed in [Step b](#) will be created by the *Split Taxon Name* function. If so, move any data from that column to the correct column, and then delete the extra column that was created in error.

- e. Correct capitalization and punctuation for all fields to conform to nomenclature standards outlined in [Section A](#) of the [TAXON RECORDS STEP-BY-STEP INSTRUCTIONS](#).

To ensure correct capitalization for all fields, select all cells in a column and then click the **Change Case** button in the *IrisBG* toolbar. Select the appropriate text case type and then click the **Ok** button.

To ensure correct quotation mark formatting, select all cells in the *Cultivar* column and then click the **Quote cells** button in the *IrisBG* toolbar.

- f. Delete the *Taxonname* column.

- g. Enter *TaxonCommonNameType* as the heading of a new column. Enter *en* in the column for all taxon rows. This field is required to import the common name; it tells the database that the common names are English.

- h. Save the spreadsheet. All other taxon fields will be entered in *IrisBG* after import (see [Step 5](#)).

- i. Click the **Ready for import** button in the *IrisBG* toolbar. A dialogue box will appear; click the **Yes** button to continue. Another dialogue box should appear saying that the new spreadsheet was successfully created; click the **Ok** button. The new spreadsheet file can be found in the same folder as the original.

- j. (optional) The **Divide Sheet** button in the *IrisBG* toolbar can be used to divide the spreadsheet into multiple sheets, which can then be imported separately and may make the data import processing more manageable for your system.

4. Import the formatted spreadsheet into *IrisBG*.

- a. Log in to *IrisBG* with a user account set to Administrator role type. Open the **Import data** form in the *Maintenance* panel.
- b. Click the **Open file** button. Navigate to and select the new spreadsheet file that was just created, which will include (*Import Ready*) in the file name. Click the **Open** button. A dialogue box will appear asking to confirm the import; click the **Ok** button. It may take a few minutes to process the data.
- c. Once the data is processed, the *Import results* will display the overall import *Job status* and the import *Status* for each row in the spreadsheet.

The *Job status* will be listed as *Ready* if the data was processed successfully. A row's *Action* is *Add* if it is formatted correctly and is ready for import. A row's *Action* is *None* if the taxon already has a record in the database; it will not be included in the import. Click the **Accept** button to import the records.

If errors are found, the *Job status* will be listed as *Error* with a red dot in front of it.

Details on the errors are listed by row number in the *Information* field. To complete the

import, the errors must first be corrected in the spreadsheet and then the import must be attempted again.

5. Check the new taxon records for accuracy and add more detailed data.
 - a. Open the *Taxa* form in the *Taxonomy* panel.
 - b. Click the *Clear/New* button, and then click the *Search* button to display a list of all taxon records.
 - c. Look through the list of *Taxon names* for duplicate taxon records that have been imported as a result of incorrect spellings. Delete the newly-imported version of the duplicate (since it is not yet linked to any other records) and correct the spelling in the older record if needed. The *Web search* button in the *Taxa* form may be helpful for determining the correct spelling.
 - d. After all duplicate records are deleted, click the *Clear/New* button, and then click the *Advanced search (Adv. search)* button. Set the *Registration date* and *Registration initials* search criteria so that the results will include all newly-imported taxon records. Click the *Search* button to display a list of the results.
 - e. For all records in the search result list, follow [Section A](#) of the [TAXON RECORDS STEP-BY-STEP INSTRUCTIONS](#) to determine if the new taxon names are accepted names or synonyms, and to add more detailed data to the records.

C. ENTER LOCATION RECORDS

Location records identify the locations in the landscape where particular taxa are recommended to be planted based on planting plans representing the park's period of significance. A custom base map for the park should be completed and viewable in IrisBG prior to setting up location records (see the [CUSTOM BASE MAP SET-UP](#) section of this appendix). Individuals assigned the Landscape Manager or Administrator role type can add or modify location records. It will be necessary to reference [Section A](#) of the [SUPPORTING RECORDS STEP-BY-STEP INSTRUCTIONS](#) for detailed guidance on setting up the location records.

Add location records using a tree hierarchy where main areas of the landscape are first defined, then sub-areas within the main areas if needed, and then specific plant locations within those areas.

Area location records: If areas of the landscape have already been classified in a Cultural Landscape Report or Cultural Landscape Inventory, use the same areas as location record areas in IrisBG for consistency. Select the *Area* location *Type* for all area and sub-area location records, and select each location on the map near the center of the area. To make searching for locations easier, use full words as area location *Codes* (for example, *East Lawn* instead of *EL*). In addition to the main areas designated in the planting plans, also include a main area location record named *Nursery* and a main area location record named *Storage*; these do not need coordinates identified and should have a *Publish* setting of *No*.

Specific plant location records: Each specific plant location record may represent a single plant or a mass of plants of the same taxon. Typically, a *Tree* location record represents a single tree, an *Herbaceous plant*

location record represents a mass of plants, and a *Shrub* or *Vine* location record may represent a single plant or a mass of plants. If a mass of plants is recommended at a location, include the number of plants recommended in parentheses after the taxon in the *Name* field (for example, *Syringa vulgaris (mass)* or *Astilbe 'Amethyst' (7)*). A single location record may also be used to represent multiple specific taxa (typically only *Herbaceous plant* locations will include multiple taxa) or a general type of planting (such as *screen planting*), but all plants included in a location record should be the same *Type*. If your park has records of any plant inventories that include plant location identification numbers, these numbers can be used as the location *Codes* for specific plant location records. If not, a common method for numbering NPS plant inventories is in the format #-#-#, where the first number represents the main area it is located in, the second number identifies the plant as a tree, shrub/vine, or herbaceous plant (1, 2, and 3, respectively), and the third number is the next available sequential number starting with 1 for that plant type in that area. For example, 4-1-12 is the location *Code* assigned to the 12th tree location identified in area 4.

D. ENTER INITIAL ACCESSION RECORDS

Accession records describe plants that currently exist or have previously existed in the collection of plants that make up the landscape (including seed stores and propagules in a nursery area). Individuals assigned the Landscape Associate, Landscape Manager, or Administrator role type can add or modify accession records, and only individuals with the Administrator role type can use the *Import data* form to import a spreadsheet of records. It will be necessary to reference the **ACCESSION RECORDS** section of the **STEP-BY-STEP INSTRUCTIONS** for detailed guidance on setting up the accession records.

The most important accession records to have in the database are records for the plants currently existing in the landscape, and the most important types of data to enter for these plants are their taxonomy, locations, and planting dates. If data on the existing plants has many sources, it will be necessary to first organize it so that data for each plant can be easily accessed. It may have been a few years since the last full plant inventory was conducted, and records on every plant may not be up-to-date, so a good rule-of-thumb is to add an accession item record for the most recent *known* plant(s) to have existed in each location identified in the location records. Each accession item must have a *Status* and a *Status date* when entered in the database (such as *Inventoried 06/2019* or *Planted 05/2007*), which should be the most recent *known* status of the accession item.

After the accession records for the most recent known conditions are entered, it is recommended that a full inventory is taken and the accession records updated accordingly (see **Section E**); alternatively, a full inventory can be taken prior to the initial accession record input, and all initial records entered with a *Status* of *Inventoried* and the same *Status date* (month of inventory). When planning the timing of the inventory, consider when plants are in bloom, which may assist with their identification.

The initial accession records for your park can be entered by using one of the following two methods:

Enter records individually. This method may be better if a Cultural Landscape Report or Cultural Landscape Inventory was recently completed for your park, but data on individual plants is not available in spreadsheet format or lists that can easily be converted to a spreadsheet. For this method, develop an

organized process to ensure that accession records are added for all existing plants (it may be helpful to export a *Locations* report in IrisBG to use as a checklist), and follow the [STEP-BY-STEP INSTRUCTIONS for ACCESSION RECORDS](#).

Import a spreadsheet. This method can be used if your data is in spreadsheet format or lists that can easily be converted to a spreadsheet. It may also be preferred if the data comes from many sources and a spreadsheet would be helpful for organization purposes to reduce error. For this method, a spreadsheet of accession item data must be generated, formatted so that the data will be recognized by IrisBG, and then imported into IrisBG.

1. Download and install the *IrisBG Microsoft Excel Add-in*, which can be found at https://www.irisbg.com/p_officeaddin.aspx. This will add an IrisBG tool tab in Excel that contains buttons for assisting with the formatting required before import.
2. Combine all accession item data into a master spreadsheet in Excel so that each row represents an accession item record. If creating a new spreadsheet, it may be helpful to start with a list of all the location records (export a *Locations* report in IrisBG) to ensure that all plant locations are included in the spreadsheet of data.
3. Format the master spreadsheet for IrisBG import.

Each column represents a field in the IrisBG database, and the column heading must match exactly the code name that the database uses for each field for the import to be successful. The *IrisBG Data Import Template* spreadsheet, which can be provided by the Olmsted Center for Landscape Preservation, contains field name codes (column headings) and data coding guidelines.

- a. Either use a copy of the template spreadsheet or add column headings from the template (also listed in [Table 3](#)) to your master spreadsheet.
- b. Follow the guidelines in [Table 3](#) and in [Section A](#) and [Section B](#) of the [STEP-BY-STEP INSTRUCTIONS for ACCESSION RECORDS](#) to determine the data that should be entered in each new column. Enter or transfer data for each accession item row to the appropriate columns and reformat the data as needed. Leave the *AccNo* and *ItemNo* columns blank. Use the *Comments* fields to enter any narrative information and data that does not conform to the other field entry requirements.

Note that coded data must *exactly* match the code list options and the formatting must follow requirements listed in [Table 3](#). All coded entry options for coded fields can be viewed in IrisBG in the *Definitions* panel (*Code lists*, *Acc. item status*, *Acc. item types*, and *Restriction types* forms) or in the associated form for the supporting record (*Taxa*, *Contacts*, *Locations*, or *Personnel*).

Table 3: Coding required to import accession record data using a spreadsheet. The *Field Name Code* is the column heading required for each field. All fields listed under *Required data* must be included in the spreadsheet when importing accession item data, and data must be entered in every row for those fields. Some codes reference supporting records that must be entered in IrisBG prior to accession data import: *Taxon name* (in the *Taxa* form), *Contact code* (in the *Contacts* form), *Location code* (in the *Locations* form), and *Item status person initials* (in the *Personnel* form).

Field Name Code	Field Name (Description)	Entry Requirements	Entry Examples (Code Meaning)
Required data			
AccNo	Accession number (unique ID number)	integer	164
ItemNo	Item number (ID number)	integer	2
TaxonName	Taxon name	as entered in IrisBG	Iris ensata 'Chidori'
AccYear	Accession year	four numbers	2006 -or- 0000
ProvenanceCode	Provenance code	must be in code list	G (Garden)
ItemTypeCode	Accession item type code	must be in code list	P (Planting)
ItemLocation	Location code	as entered in IrisBG	3-2-64 -or- East Lawn
ItemStatusCode	Item status code	must be in code list	IN (Inventoried)
ItemStatusDate	Item status date	date	06/2019 -or- 2004
Recommended data			
AccTypeCode	Accession type code	must be in code list	O (Original planting)
AtrA CL evaluation	CL evaluation code	must be in code list	C (Contributing)
ItemSpecCount	Number of specimens (...included in the accession item)	n/a	3 -or- unknown
ItemStatusPerson	Item status person initials	as entered in IrisBG	amw (Aimee Weber)
DetDate	Determination date (when accession taxon was identified)	date	2013 -or- 05/14/2019
Optional data			
ContactCode	Contact code (source of accession)	as entered in IrisBG	HORTICO (Hortico Nurseries)
Comment	Comments (...that apply to all items in the accession record)	n/a	Planted before 1993.
ItemCondition	Condition (...of item)	must be in code list	Good
ItemComment	Comments (...that apply to the accession item)	n/a	Pest damage.
AccRestrictCode	Restriction code (applies to all items in the accession)	must be in code list	SHIELD (do not publish)
ItemRestrictCode	Restriction code (applies to the accession item)	must be in code list	SHEILD (do not publish)
DetType	Determination type code	must be in code list	?
DetPerson	Determination person	n/a	Weber, Aimee
DetLevelCode	Determination level code	must be in code list	5
AtrA Invasive status	Invasive status	must be in code list	I (Invasive)
AtrA Protected status	Protected status	must be in code list	T (Threatened)
StorageNo	Storage number (...for dormant items in storage)	n/a	Box 12
Propagule	Propagule type	n/a	stem cutting -or- seed

c. After all data is correctly formatted in the spreadsheet, sort the records and add the accession numbers and item numbers.

1. Select all data and *Sort* by *TaxonName*, then by *AccYear*, then by *AtrA_CL_evaluation*, then by *AccTypeCode*, and then by *ItemLocation*. Rows with the same taxon name, accession year, accession type, and CL evaluation will all have the same accession number value (*AccNo*).

If the *AccYear* is unknown or uncertain, consider separating the item records into different accessions if it is possible that they were planted in different years.

2. Add *AccNo* values. Start with *1* for the first row and continue entering consecutive numbers for the following rows (but enter the same number if it is the same accession).
 3. If there is only one item record (one row) in an accession, enter *1* for *ItemNo*. If there are multiple item records in an accession (multiple rows with the same accession number), the *ItemNo* value should be *1* for the first item within the accession, *2* for the second item in the accession, and so on (start at *1* for each new accession).
 - d. Delete any data remaining in non-formatted columns that will not be imported and save the spreadsheet.
 - e. Click the **Ready for import** button in the *IrisBG* toolbar. A dialogue box will appear; click the **Yes** button to continue. Another dialogue box should appear saying that the new spreadsheet was successfully created; click the **Ok** button. The new spreadsheet file can be found in the same folder as the original.
 - f. (optional) The **Divide Sheet** button in the *IrisBG* toolbar can be used to divide the spreadsheet into multiple sheets, which can then be imported separately and may make the data import processing more manageable for your system.
4. Import the formatted spreadsheet into *IrisBG*.
 - a. Log in to *IrisBG* with a user account set to Administrator role type. Open the **Import data** form in the *Maintenance* panel.
 - b. Click the **Open file** button. Navigate to and select the new spreadsheet file that was just created, which will include (*Import Ready*) in the file name. Click the **Open** button. A dialogue box will appear asking to confirm the import; click the **Ok** button. It may take a few minutes to process the data.
 - c. Once the data is processed, the *Import results* will display the overall import *Job status* and the import *Status* for each row in the spreadsheet.

The *Job status* will be listed as *Ready* if the data was processed successfully. A row's *Action* is *Add* if it is formatted correctly and is ready for import. A row's *Action* is *None* if the record is already in the database; it will not be included in the import. Click the **Accept** button to import the records.

If errors are found, the *Job status* will be listed as *Error* with a red dot in front of it. Details on the errors are listed by row number in the *Information* field and marked with red error markers in the list of records. To complete the import, the errors must first be corrected in the spreadsheet and then the import must be attempted again.
 5. After the initial import, data can be transferred from the *Comments* fields and additional data can be added to accession records in *IrisBG* as needed.

E. UPDATE ACCESSIONS TO CURRENT CONDITIONS

Although the newly-added accession records in IrisBG contain data representing recent landscape conditions, the data may have been derived from documents and have not yet been verified as still existing in the landscape. Additional plants may also have been installed, and it is possible that some accessions are missing from the database. The best way to ensure that records are up-to-date is through a complete inventory of the collection. The database will be most useful for reporting and project-planning if this is completed soon after the initial record set-up; however, it may be necessary to plan a full inventory for a time of the year when plants are in bloom and more easily identified, or to inventory different plants seasonally. See [Section A of APPENDIX C](#) for guidelines on how to use IrisBG to assist with conducting a plant inventory and updating accession records after the inventory is complete. Consider using the inventory process as an opportunity for park staff to get hands-on IrisBG training.

