Sharing Data with Symbiota

Symbiota is an open source software project dedicated to providing web tools that allow biologists to curate quality datasets of the world's flora and fauna.

New in Specify 6.5.05, data in Specify can be shared with Symbiota through an automated tool once the following steps are complete.

1. Setup Symbiota using Specify Preferences
2. Create a Data Mapping
3. Build the Cache
4. Create a new Symbiota Connector

1. Setup Symbiota using Specify Preferences

Open the System Preferences:

- For Mac: Choose *Specify > Preferences > Symbiota* .
- For Windows and Linux: Choose *Edit > Preferences > Symbiota*.
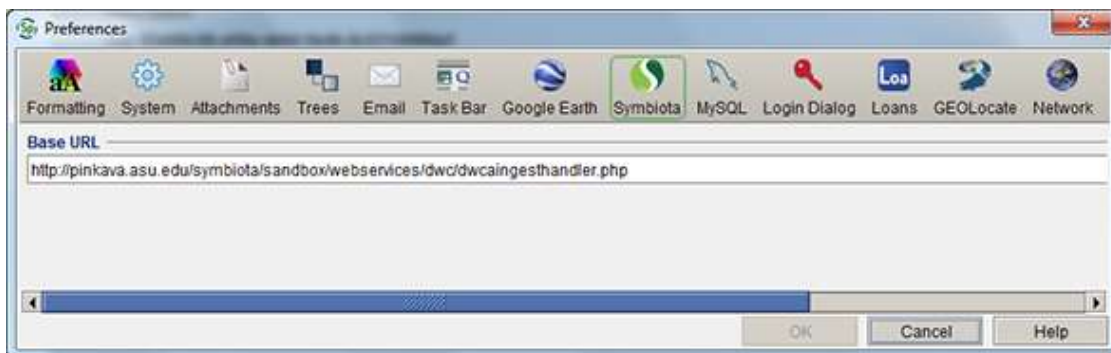
Type or Copy/Paste the base URL for your Symbiota project (this must be provided by Symbiota) into the *Base URL* text box.

Next, add the Symbiota tool to the Task Bar:

- For Mac: Choose *Specify > Preferences > Task Bar*.
- For Windows and Linux: Choose *Edit > Preferences > Task Bar*.
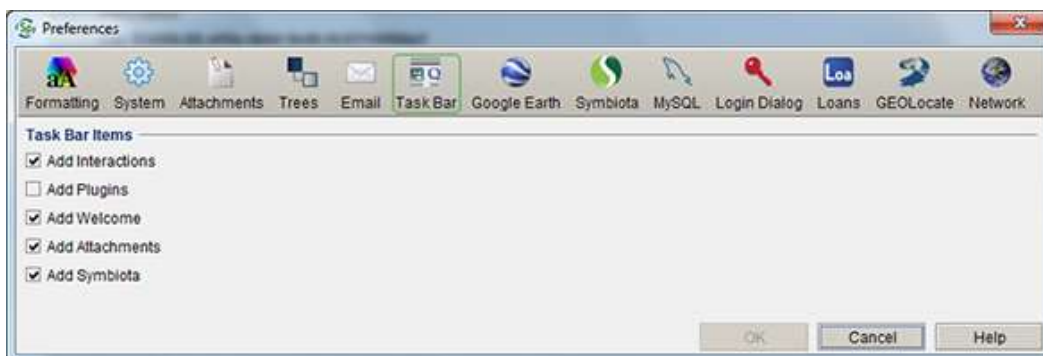
Check the *Add Symbiota* checkbox. The Symbiota button should now appear in your Specify Task Bar.

2. Create a Data Mapping

Next, define the relationships between the fields in Specify and the predefined fields in Symbiota by creating what is referred to as a 'mapping'.
This is accomplished using the Schema Mapping tool.

Note: Symbiota uses a subset of the Darwin Core schema. If a schema mapping based on the fields in Darwin Core already exists, you may choose to use that mapping rather than create a new one and proceed to step 4, Create a Symbiota Connector.

Schema refers to the many tables and fields that systematize the many dimensions and relationships of the data within biological collections. When preparing data in Specify to be published in Symbiota, it is necessary to use a predefined schema to ensure all necessary data fields are included in the data export. Specify includes a schema for use when publishing data to Symbiota.

Note: If you already have a Darwin Core mapping set up for publishing your data, you can reuse this existing mapping and skip this step.

Open the Schema Mapping tool by choosing *System > Schema Mapper*.

1. Click *Create New Mapping* located on the sidebar.

2. Choose *SymbiotaDWC(1.0)* from the schema list.

3. Check the default mapping file and edit/add schema concepts and conditions.
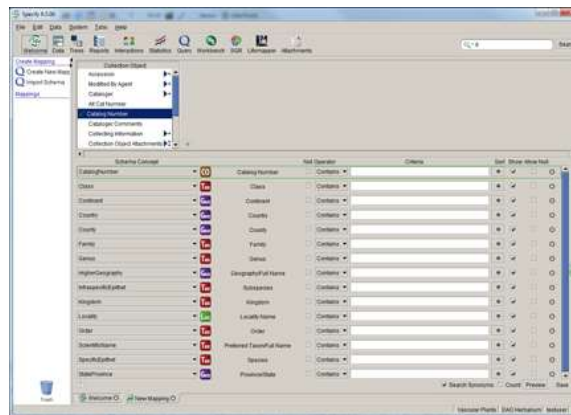
Remap a term by simply clicking the list box (⬍) and selecting a new schema concept from the list. Only unmapped schema concepts are available from the list.

Add a term by selecting a field from the Specify list and clicking the ✚ button. The Schema Concept will be defined as 'Not Mapped'. Choose a schema Concept from the drop down list to map the new field.

Note: it is not necessary to include attachment fields or a field for GUID in mappings, both of these are automatically included in mapping files.

Delete a term by selecting it from the list and clicking the ✖ *(remove field)* button.

Query Expressions can be used to narrow the results. These function similarly to the Query Builder. For additional help creating/editing query expressions please refer to the Query Builder help page.

Add Conditions to Eliminate Duplicate Records

Symbiota requires that all uploaded records be unique. Due to the one-to-many relationships contained in Specify databases it may be necessary to add certain conditional fields to the schema to ensure this e.g. adding the Determination Current field and setting it to *Yes* will eliminate multiple determinations. One can also select a table to take advantage of the formatted and aggregated value for that table e.g. selecting the Collectors table will add all collectors on a single line. Fields can also be added to eliminate certain records from the resulting index.

Note: uncheck the *Show* checkbox to hide the schema concept in the exported data cache.

Mapping Checklist

4. Before saving the schema map for Symbiota check the following list against your mapping. If any of the following items are not correct the data upload to Symbiota will fail.

● When a new field is added to the mapping but not mapped to an existing Schema Concept, the checkbox for *Show* MUST be unchecked.

● Fields may only be used once within a single mapping.

3. Build the Cache

The first time the data cache is built for a schema mapping intended for use with the Symbiota tool, it must be completed in the Data Exporter, a separate application that ships with Specify. Subsequent updates to the cache can be built from within the Symbiota tool in Specify. Before opening the Data Exporter, you will need to close the Specify application.

The Data Exporter application is located in the bin directory within the Specify application directory, which stores the executable files for Specify. Double click Data Exporter (or select it from Start/Program Files/Specify on Windows) to launch the tool. Users are required to login using their Specify Username and Password.

The Data Exporter application opens as a three-column table with action buttons.
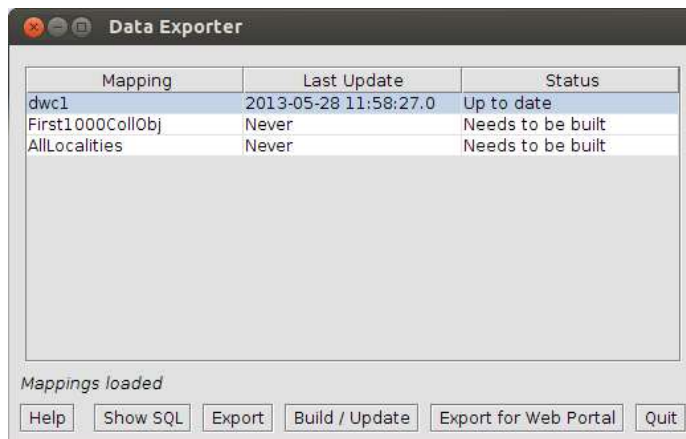
Data Exporter

1. Choose the appropriate Mapping from the list.
2. Click the *Build/Update* button to build the data cache.
   Note: In order to build the cache the first time, the MySQL admin (root) username and password are required.
4. Click the *Quit* button to exit the Data Exporter.

4. Create a new Symbiota Connector

A Symbiota connector is the the 'pipeline' Specify uses to send data to Symbiota.

1. Open the Specify application
2. Click the (Symbiota) button on the Task Bar.
3. Click *NewConnector* on the Side Bar.
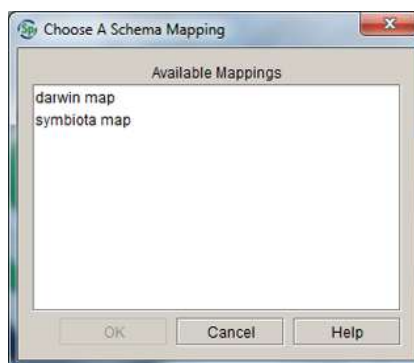
Saved mappings that include the required fields for Symbiota will appear in the dialog. Select a Symbiota Schema Mapping from the list and click the *OK* button.

> **Note:** Schema Mappings may only be used for one Symbiota Connector. If you require a new Symbiota Connector, you must first create a new Schema Mapping.

Add information for the Symbiota Connector in the next dialog:
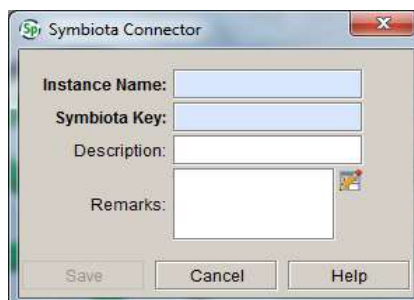
1. Type an **Instance Name** (this is a required field). This can be a unique name and does not need to match a project in Symbiota.
2. Type the **Symbiota Key** for the project (this is also a required field). This key is provided to your project by Symbiota. A connector can not be established without this key.
3. Add **Description** and **Remarks** as desired (these are not required fields).
4. Click the *Save* button.

Once a connector has been created it will appear in the Symbiota Connector section of the side bar. Click on a Connector in the side bar to view information about the Connector including the status of the associated data cache in the Workspace.

Updating Symbiota Connectors

Click on a Connector in the side bar to view information about the connector, including the status of the associated data cache in the Workspace.
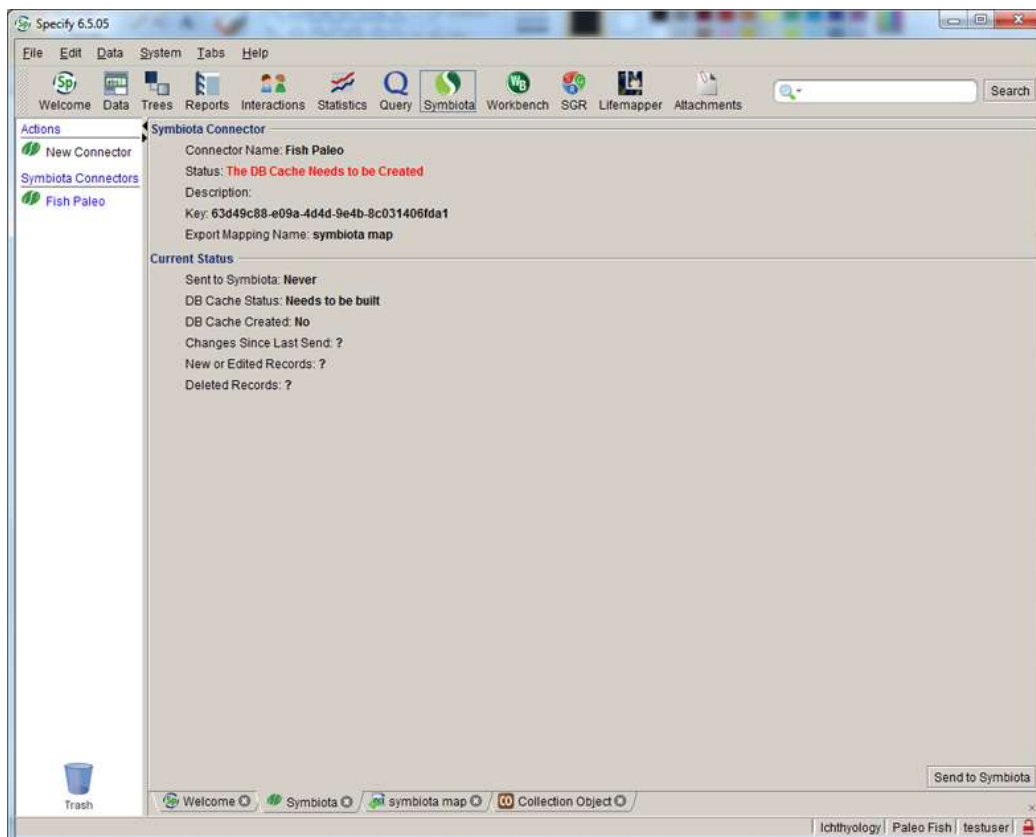
The **Status** field displays the status of the data cache.

Note: When new data is entered while the Symbiota tool is open in a tab you must click on the connector to refresh the status.

Status Message	Action Required
The DB Cache Needs to be Created	Build the Cache using the Data Exporter Tool

The DB Cache Needs to be Rebuilt	Rebuild the Cache using the Data Exporter Tool
Data to Send to Symbiota	Click the *Send to Symbiota* button
Up to Date	No Action Required

Edit/Delete the Symbiota Connector

Right-button-Click on the Symbiota Connector name in the side bar to edit the associated Name, Key, Description or Remarks.

Drag a Connector and Drop it onto the trash can to delete it.

Send/Upload Data

- Click *Send to Symbiota* button to send the updated data cache to Symbiota. The first time a data cache is sent to Symbiota the entire data set will be sent, thereafter only new or modified records will be sent to Symbiota.

Note: Clicking the *Send to Symbiota* button when the Status Message is **Up to Date** will display a prompt with the option of sending the entire data cache to Symbiota.

Note: Caches with a large amount of data may take a few minutes to transfer.