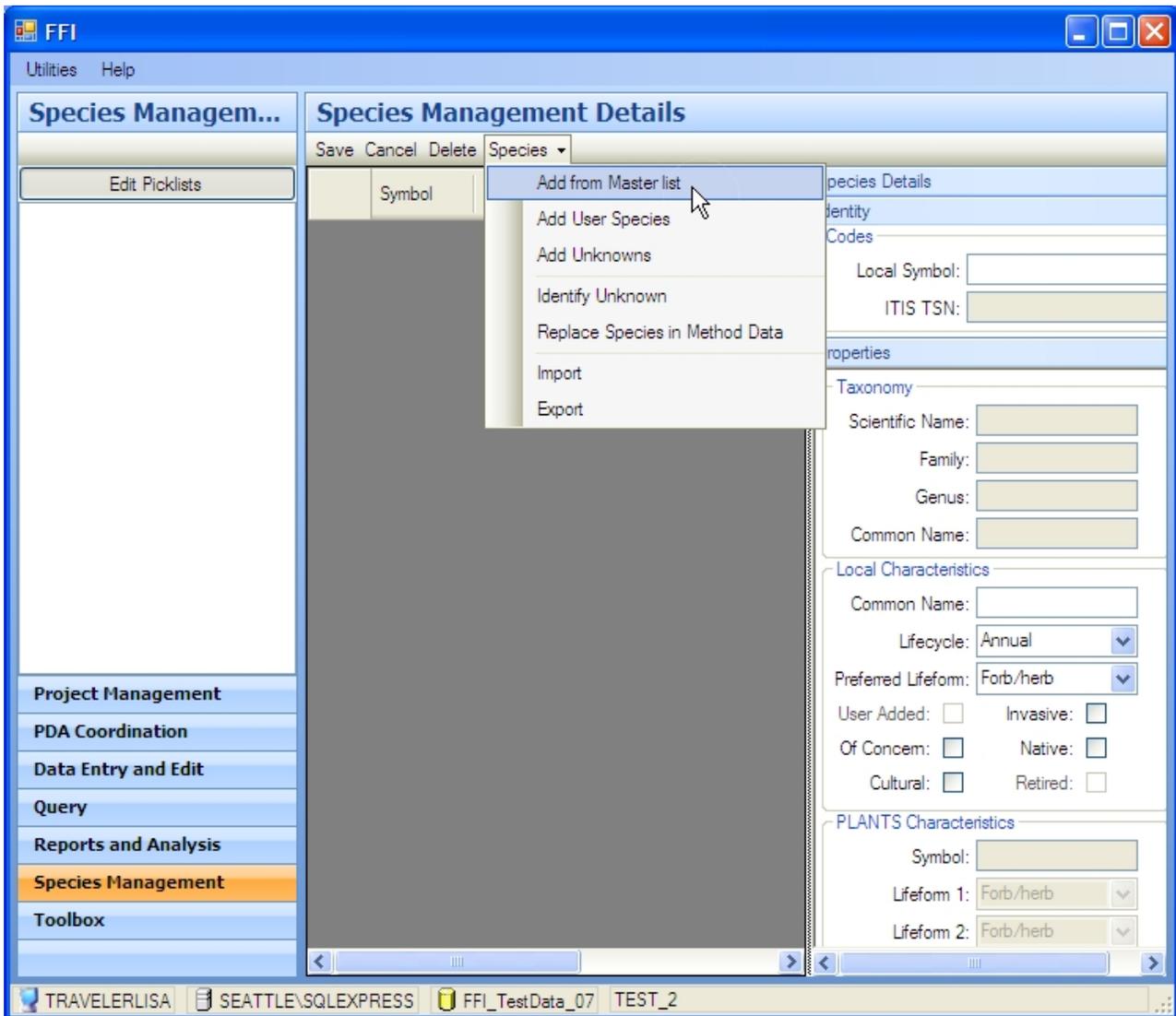


# Species Exercises

## Exercise 1: Add Species from Master (PLANTS) List

The FFI **Species Management** component incorporates the Natural Resources Conservation Service (NRCS) PLANTS database, from which you can create a local species list for an administrative unit. FFI also accommodates user-added and unknown species.

- 1-1 Open the **Species Management** window. The **Species Management Details** window opens.
- 1-2 Select **Add from Master list** in the **Species** pull-down menu.



The **Local Species Creator** form opens. You can select species either by scrolling through the complete PLANTS list or by filtering the complete list.

*NOTE: Click on any column heading to order that column alphabetically. Drag and drop column headings to change the order in which the columns appear.*

## Species Exercises

1-3 Add a species. To add species by filtering, enter your filter criteria: scientific or common name, plant symbol, or TSN. In this example, "Symphoricarpos" is used with the wildcard %. When you are ready, click **Apply Filter**. Note that "SYAL" is the PLANTS preferred name and, therefore, the **Synonym** column is blank. (The **Preferred Name** column has been scooted into view from the far right for this screenshot.)

Select the row for "SYAL" and click **Add**. Note that the row disappears from the list because it is no longer available, but it is now visible in the main species pane in the background.

Filters | (use '%' as a wildcard)

Scientific Name: symphoricarpos%

Common Name:

Symbol:

TSN:

Filter Applied

Add

Available Master Species

Symbol	SymbolKey	Synonym SymbolKey	Scientific Name	Common Name	Preferred Name
SYAC	SYAC		Symphoricarpos acutus	sharpleaf snow...	<input checked="" type="checkbox"/>
SYAL	SYAL		Symphoricarpos albus	common snow...	<input checked="" type="checkbox"/>
SYALA	SYALA		Symphoricarpos albus var. albus	common snow...	<input checked="" type="checkbox"/>
SYALL	SYALL		Symphoricarpos albus var. lae...	common snow...	<input checked="" type="checkbox"/>
SYALL2	SYALL	SYALL2	Symphoricarpos albus ssp. lae...		<input type="checkbox"/>
SYALM	SYMD	SYALM	Symphoricarpos albus var. mollis		<input type="checkbox"/>
SYALP	SYALA	SYALP	Symphoricarpos albus var. pa...		<input type="checkbox"/>
SYCH2	SYCH2		Symphoricarpos xchenaultii	Chenault coral...	<input checked="" type="checkbox"/>
SYGU	SYGU		Symphoricarpos guadalupensis	McKittrick's sn...	<input checked="" type="checkbox"/>
SYHE	SYHE		Symphoricarpos hesperius	trailing snowberry	<input checked="" type="checkbox"/>
SYLO	SYLO		Symphoricarpos longiflorus	desert snowberry	<input checked="" type="checkbox"/>

## Species Exercises

- 1-4 Add a genera record. The master list contains records for some genera. Enter "pinus%" as the search criteria for **Scientific Name** and click **Apply Filter**. Click the top of the **Scientific Name** column to sort. If a record is present for the genera, it should be at the top of the list. Select the row for "PINUS" and click **Add**.

Filters | (use '%' as a wildcard)

Scientific Name:

Common Name:

Symbol:

TSN:

Filter Applied

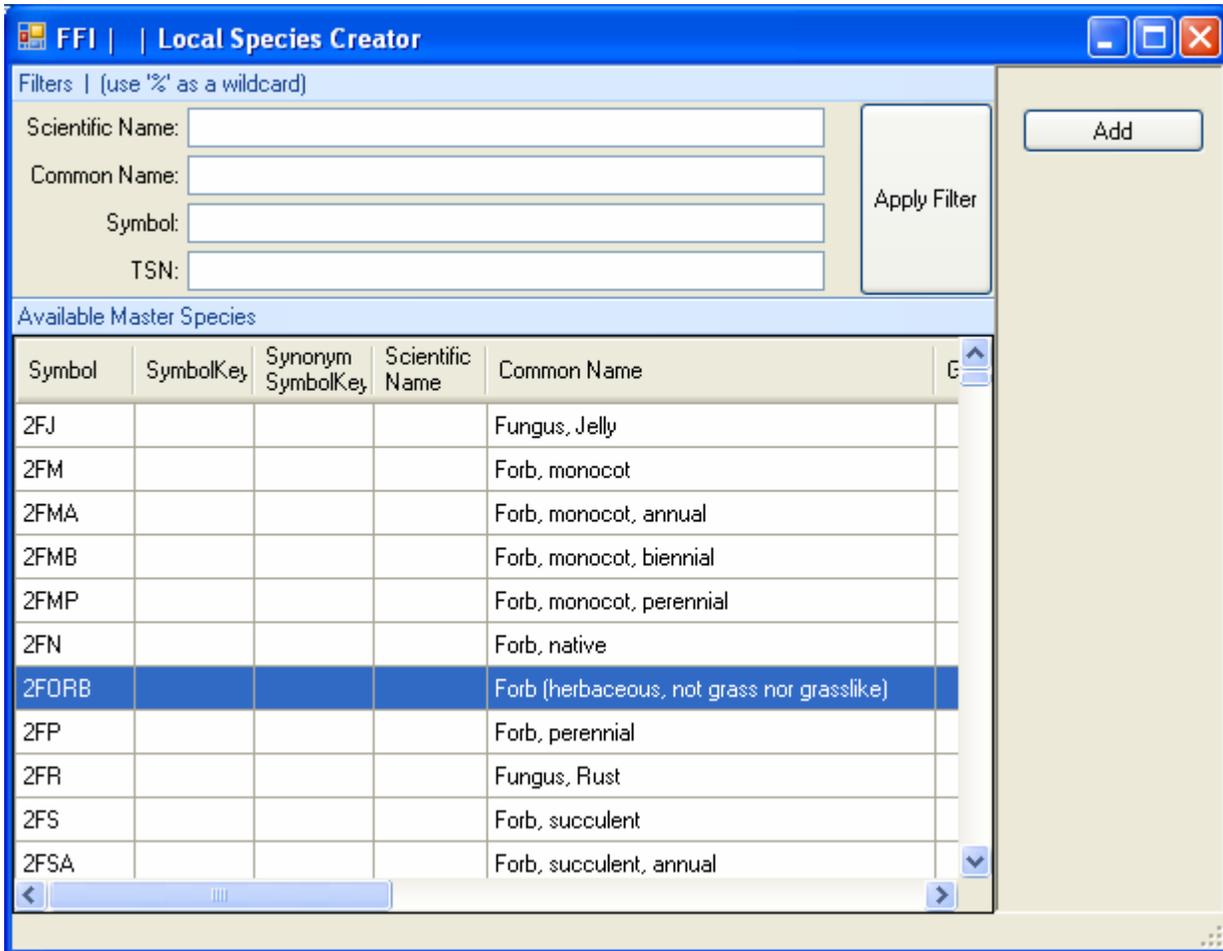
Add

Available Master Species

Symbol	SymbolKey	Synonym SymbolKey	Scientific Name	Common Name	Genus
PINUS	PINUS		Pinus	pine	Pinus
PIAT2	PIAT2		Pinus <del>x</del> attenuata		Pinus
PISO	PISO		Pinus <del>x</del> sandergeri		Pinus
PIAL	PIAL		Pinus albicaulis	whitebark pine	Pinus
PIAP	PIEN2	PIAP	Pinus apachea		Pinus
PIAR	PIAR		Pinus aristata	bristlecone pine	Pinus
PIARL	PILO	PIARL	Pinus aristata var. longaeva		Pinus
PIAR5	PIAR5		Pinus arizonica	Arizona pine	Pinus
PIARA	PIARA		Pinus arizonica var. arizonica	Arizona pine	Pinus
PIARS2	PIARS2		Pinus arizonica var. stormiae	Arizona pine	Pinus
PIAR7	PIAR7		Pinus armandii	Armand pine	Pinus

## Species Exercises

- 1-5 Add a non-genera identifier. The PLANTS database contains a series of codes, prefaced with the number 2, for non-genera groupings of species and for substrates. Ensure that the list is not filtered and sort by the **Symbol** column. All of these records will be at the top. Note the presence of records like "2BARE: Bare Ground". Highlight "2FORB" and click **Add**.



- 1-4 Experiment with filtering and sorting as you add the remaining species for this exercise:

PIPO, PSME, ARUV, VAGL, BERE, ARTR2, CEBI2, JUOC, AGSP, 2GRAM

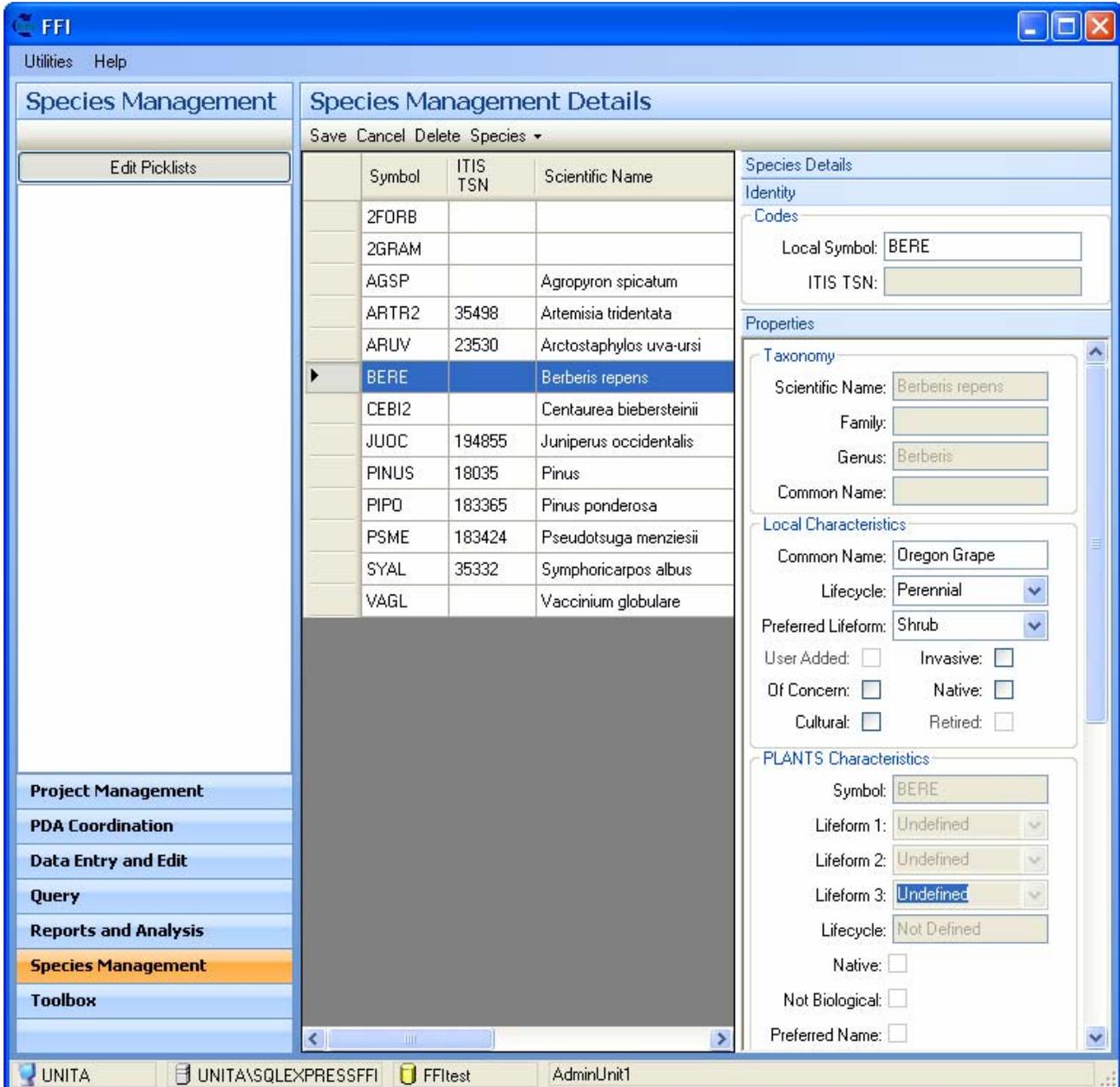
*NOTE: The PLANTS database contains approximately 90,000 records. Pick your filter criteria with care, and be prepared to wait a moment or two for the command to be executed.*

## Species Exercises

### Exercise 2: Edit Local Species

For species added from the master list, you can edit certain attributes.

- 2-1 In the Species Management window, select "BERE", the species to be edited. Note that "BERE" is not the PLANTS preferred name and, therefore, **Common Name**, **TSN**, and **Lifeform** are not populated. Enter "Oregon Grape" as the **Common Name** under **Local Characteristics**. Set the **Lifecycle** to "Perennial" and the **Preferred Lifeform** to "Shrub". Click **Save**.



The local characteristics can differ from the master list. This allows you to, for example, treat a species as a shrub that is a tree elsewhere. You may edit these local characteristics at any time (before or after data collection). Because field data point to the species list with a unique

## Species Exercises

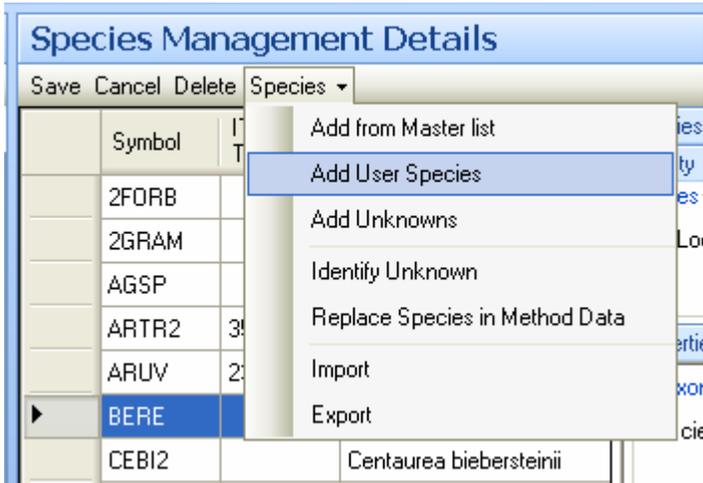
identifier, they will stay up-to-date. At analysis time, it will be important to be sure your local characteristics are populated because you may want to group or filter by them – for example, to calculate cover by lifeform, you must have the **Preferred Lifeform** populated for all the species on your transect.

## Species Exercises

### Exercise 3: Add User Species

You can easily add species that occur locally but that are not found in the PLANTS master list. Also, you may prefer to create your own identifiers that represent substrates, such as rocky soils, that represent genera, or that represent other groupings, like "fern", instead of using those provided in the master list.

3-1 Select **Add User Species** in the **Species** pull-down menu.



A new blank row is added at the end of the local list, as shown on the next page.

# Species Exercises

**Species Management**

Utilities Help

Save Cancel Delete Species ▾

Symbol	ITIS TSN	Scientific Name
2FORB		
2GRAM		
AGSP		Agropyron spicatum
ARTR2	35498	Artemisia tridentata
ARUV	23530	Arctostaphylos uva-ursi
BERE		Berberis repens
CEBI2		Centaurea biebersteinii
JUOC	194855	Juniperus occidentalis
PINUS	18035	Pinus
PIPO	183365	Pinus ponderosa
PSME	183424	Pseudotsuga menziesii
SYAL	35332	Symphoricarpos albus
VAGL		Vaccinium globulare
XXXX		

**Species Management Details**

**Species Details**

**Identity**

Codes

Local Symbol: XXXX

ITIS TSN:

**Properties**

**Taxonomy**

Scientific Name:

Family:

Genus:

Common Name:

**Local Characteristics**

Common Name:

Lifecycle:

Preferred Lifeform: Undefined

User Added:  Invasive:

Of Concern:  Native:

Cultural:  Retired:

**Auxiliary Characteristics**

Symbol: XXXX

Lifeform 1: Undefined

Lifeform 2: Undefined

Lifeform 3: Undefined

Lifecycle:

Native:

Not Biological:

Preferred Name:

Project Management

PDA Coordination

Data Entry and Edit

Query

Reports and Analysis

**Species Management**

Toolbox

UNITA UNITA\SQLEXPRESS\FFI FFItest AdminUnit1

## Species Exercises

- 3-2 Enter the **Local Symbol** "SHRUB". Set the **Common Name** to "Shrub", the **Lifecycle** to "Perennial", the **Preferred Lifeform** to "Shrub", and the **Symbol** (under **Auxiliary Characteristics**) to "SHRUB".

The screenshot shows the FFI Species Management Details window. The window title is "FFI" and it has a menu bar with "Utilities" and "Help". The main area is divided into two panes: "Species Management" on the left and "Species Management Details" on the right. The "Species Management" pane has a button "Edit Picklists" and a list of species. The "Species Management Details" pane has a table of species and a detailed form for the selected species.

Symbol	ITIS TSN	Scientific Name
2FORB		
2GRAM		
AGSP		Agropyron spicatum
ARTR2	35498	Artemisia tridentata
ARUV	23530	Arctostaphylos uva-ursi
BERE		Berberis repens
CEBI2		Centaurea biebersteinii
JUOC	194855	Juniperus occidentalis
PINUS	18035	Pinus
PIPO	183365	Pinus ponderosa
PSME	183424	Pseudotsuga menziesii
SHRUB		
SYAL	35332	Symphoricarpos albus
VAGL		Vaccinium globulare

The "Species Management Details" pane shows the following form fields:

- Species Details**
  - Identity**
    - Local Symbol: SHRUB
    - ITIS TSN:
  - Properties**
    - Taxonomy**
      - Scientific Name:
      - Family:
      - Genus:
      - Common Name:
    - Local Characteristics**
      - Common Name: Shrub
      - Lifecycle: Perennial
      - Preferred Lifeform: Shrub
      - User Added:
      - Invasive:
      - Of Concern:
      - Native:
      - Cultural:
      - Retired:
    - Auxiliary Characteristics**
      - Symbol: SHRUB
      - Lifeform 1: Undefined
      - Lifeform 2: Undefined
      - Lifeform 3: Undefined
      - Lifecycle:
      - Native:
      - Not Biological:
      - Preferred Name:

- 3-3 Click **Save**.

The screenshot shows a close-up of the "Species Management Details" window. The window title is "Species Management Details" and it has a menu bar with "Save", "Cancel", "Delete", and "Species". The "Save" button is highlighted.

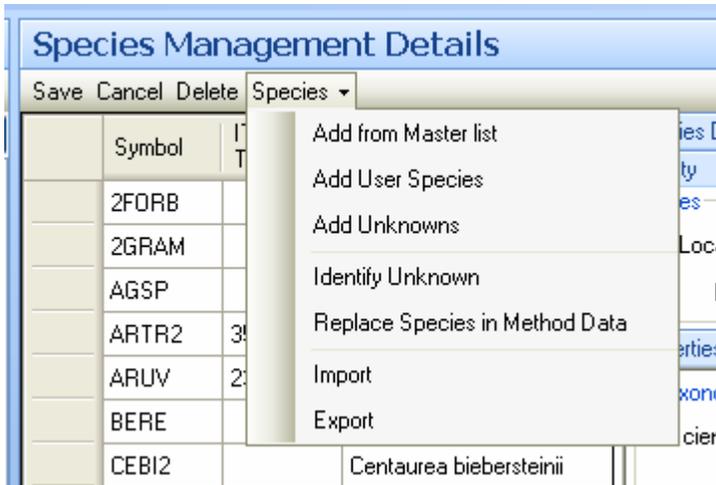
## Species Exercises

### Exercise 4: Add Unknowns

An unknown is a placeholder that can be used to represent a species that you did not expect to encounter or cannot identify, and that is therefore not included in your species list. FFI lets you easily create and then replace unknowns.

If you will be using PDAs in the field, having a good stock of unknowns is important because you cannot create them on the PDA.

4-1 In the **Species Management** window, select **Add Unknowns** in the **Species** pull-down menu.



4-2 In the **Add Unknowns** pop-up window, enter 1 for the **First number** and 1 for the **Count**.



4-3 Click **OK**. (If you accidentally add too many, click **Cancel** on the main species form.)



# Species Exercises

Your local species list should now look like this:

**Species Management**

Save Cancel Delete Species ▾

Symbol	ITIS TSN	Scientific Name
2FORB		
2GRAM		
AGSP		Agropyron spicatum
ARTR2	35498	Artemisia tridentata
ARUV	23530	Arctostaphylos uva-ursi
BERE		Berberis repens
CEBI2		Centaurea biebersteinii
JUOC	194855	Juniperus occidentalis
PINUS	18035	Pinus
PIPO	183365	Pinus ponderosa
PSME	183424	Pseudotsuga menziesii
SHRUB		
SYAL	35332	Symphoricarpos albus
UNK_001		
VAGL		Vaccinium globulare

**Species Management Details**

**Species Details**

**Identity**

Codes

Local Symbol: UNK\_001

ITIS TSN:

**Properties**

**Taxonomy**

Scientific Name:

Family:

Genus:

Common Name:

**Local Characteristics**

Common Name:

Lifecycle:

Preferred Lifeform: Undefined

User Added:  Invasive:

Of Concern:  Native:

Cultural:  Retired:

**Auxiliary Characteristics**

Symbol: UNK\_001

Lifeform 1: Undefined

Lifeform 2: Undefined

Lifeform 3: Undefined

Lifecycle:

Native:

Not Biological:

Preferred Name:

## Species Exercises

### Exercise 5: Create Picklists

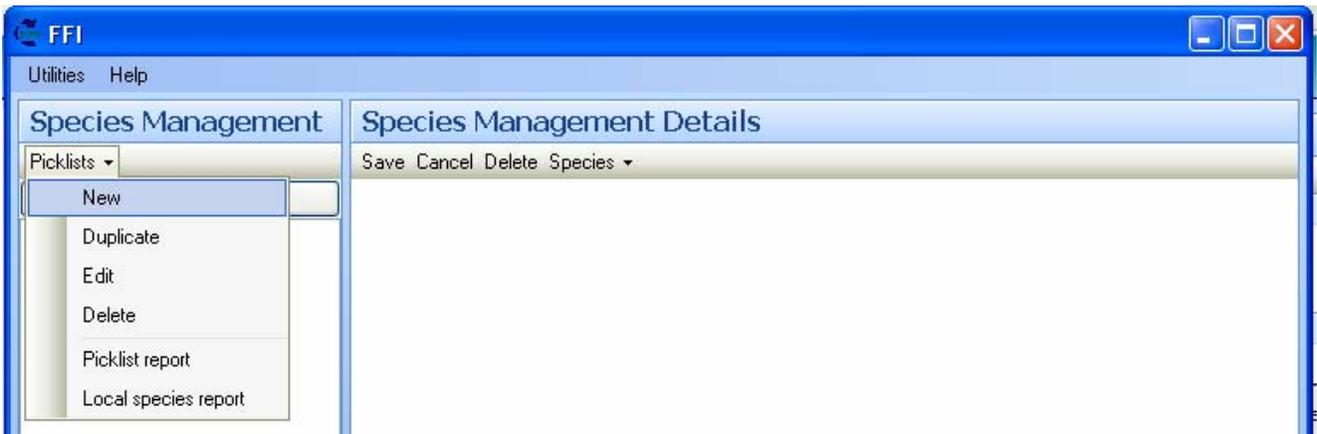
A picklist is a subset of the local species list that represents species specifically known to inhabit a project unit. You can develop picklists for specific sample events that you can download onto a PDA or print and use in the field. FFI lets you easily create, manipulate, and delete picklists.

- 5-1 To reach the picklist functions, click the **Edit Picklists** toggle in the **Species Management** window. The **Picklists** pull-down menu becomes available.



(The screen looks a little odd the first time you do this because both panes go blank. After you create your picklists, they will display here.)

- 5-2 Select **New** in the **Picklists** pull-down menu.



- 5-3 The **Picklist** properties form opens. Name the new picklist "Trees". Click **Save & Close**.

The screenshot shows the "Picklist properties" form. It has the following fields and buttons:

Name:	Trees
Description:	
UV 1:	
UV 2:	
UV 3:	

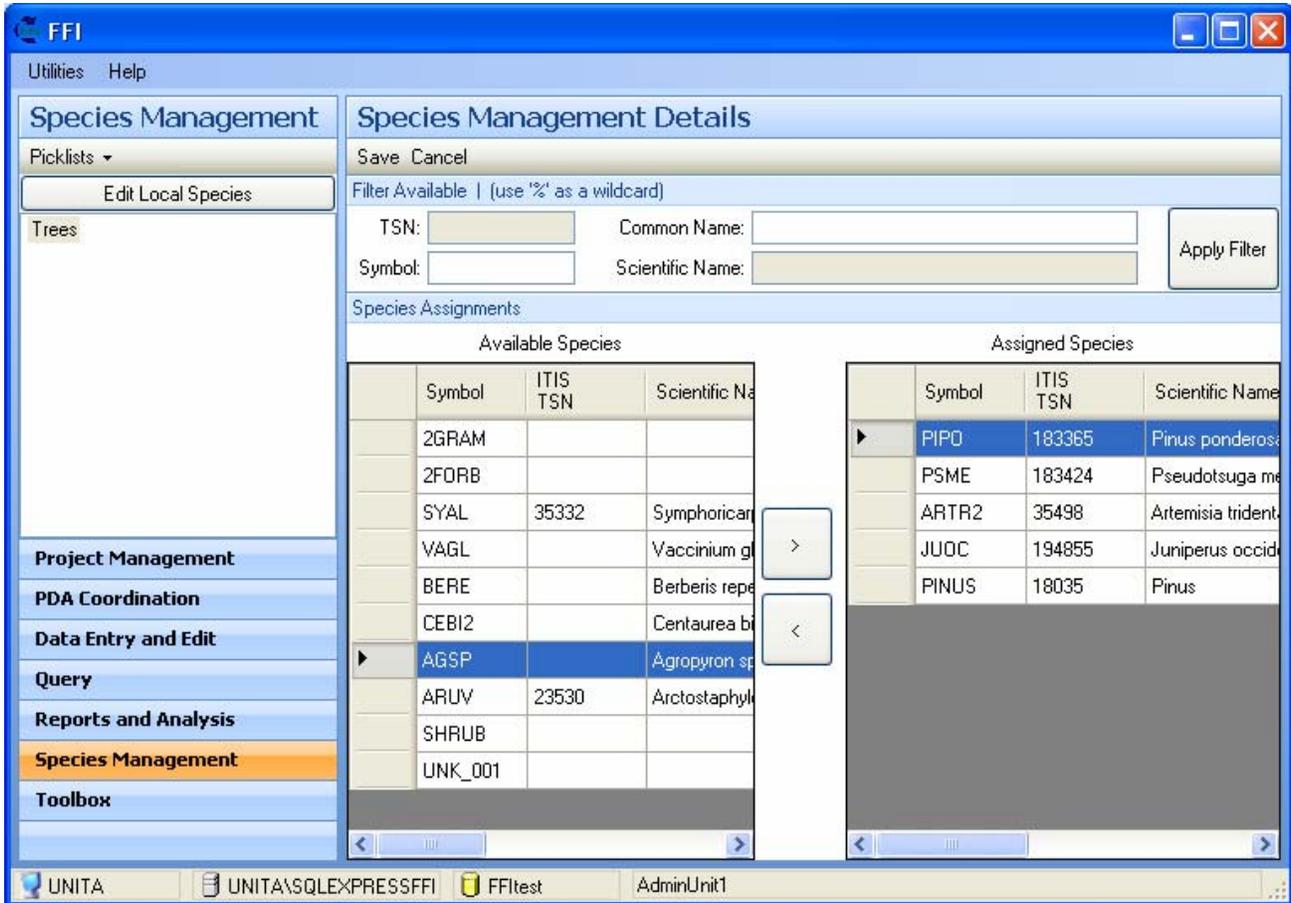
Buttons: Save & Close, Cancel

## Species Exercises

5-4 The panes now display your new picklist and lists of available and assigned species. Highlight the species PIPO, PSME, ARTR2, JUOC, and PINUS on the left one at a time and



click the button to move them to the right. Click **Save**.



Complete the remaining two exercises after you have done the data entry exercises.

## Species Exercises

### Exercise 6: Identifying an Unknown

When you are able to identify an unknown species, you can easily update it from the correct species in the master list. Because the field data point to this species in the local list with a unique identifier, they will stay up-to-date after you make the identification.

6-1 In the **Species Management Details** window, highlight "UNK\_001".

6-2 Select **Identify Unknown** in the **Species** pull-down menu.

The screenshot shows the FFI Species Management Details window. The main window is titled "Species Management Details" and has a menu bar with "Save", "Cancel", "Delete", and "Species". The "Species" dropdown menu is open, showing options: "Add from Master list", "Add User Species", "Add Unknowns", "Identify Unknown" (highlighted), "Replace Species in Method Data", "Import", and "Export".

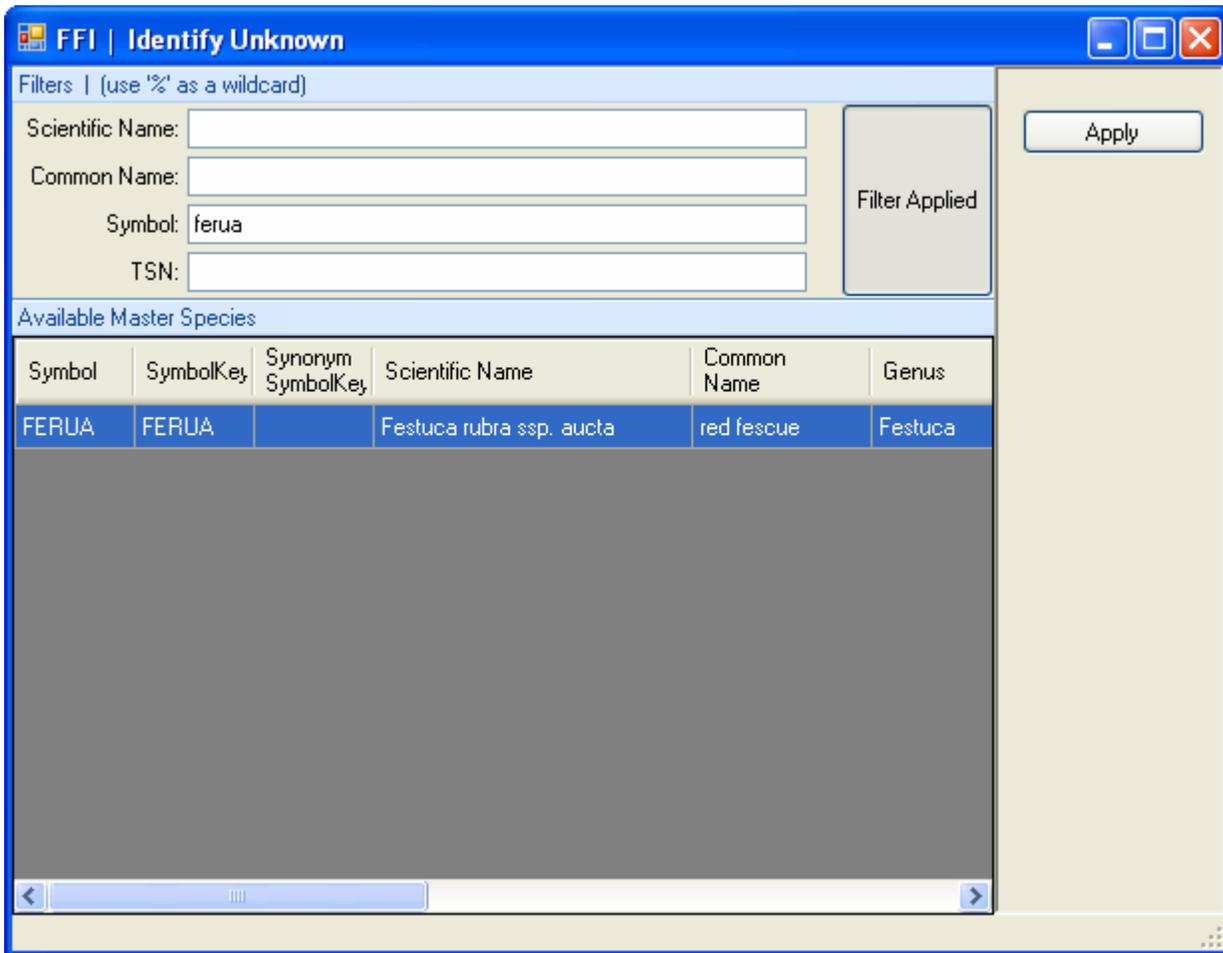
The main table displays a list of species with columns for Symbol, ID, Name, and other details. The row for "UNK\_001" is highlighted. Other rows include BERE (Berberis repens), ARTR2 (Artemisia tridentata), CEBI2 (Centaurea biebersteinii), JUOC (Juniperus occidentalis), AGSP (Agropyron spicatum), ARUV (Arctostaphylos uva-ursi), PINUS (Pinus), and SHRUB.

The right-hand pane shows the "Species Details" section, which includes "Identity" (Local Symbol: UNK\_001, ITIS TSN:), "Properties" (Taxonomy: Scientific Name, Family, Genus, Common Name), "Local Characteristics" (Common Name, Lifecycle, Preferred Lifeform: Undefined), and "Auxiliary Characteristics" (Symbol: UNK\_001, Lifeform 1: Undefined, Lifeform 2: Undefined, Lifeform 3: Undefined, Lifecycle, Native, Not Biological, Preferred Name).

The bottom of the window shows the Windows taskbar with the following open applications: UNITA, UNITA\SQLEXPRESS\FI, FFItest, and AdminUnit1.

## Species Exercises

- 6-3 The **Identify Unknown** window opens. Enter "ferua" as the **Symbol** under **Filters**. Click **Apply Filter**. (Be careful not to hit **Apply** until the next step.)
- 6-4 Locate and highlight the row for "FERUA". Click **Apply**.



The screenshot shows the 'FFI | Identify Unknown' window. The 'Filters' section at the top has four input fields: 'Scientific Name', 'Common Name', 'Symbol' (containing 'ferua'), and 'TSN'. To the right of these fields is a 'Filter Applied' button. Further right is a larger 'Apply' button. Below the filters is a section titled 'Available Master Species' containing a table with the following data:

Symbol	SymbolKey	Synonym SymbolKey	Scientific Name	Common Name	Genus
FERUA	FERUA		Festuca rubra ssp. aucta	red fescue	Festuca

The table has a scrollbar at the bottom, and the first row is highlighted in blue.

## Species Exercises

The unknown is replaced with the correct species. Note that the **Species Details** data in the right-hand pane is updated to reflect the correct species.

The screenshot shows the FFI Species Management application. The main window is titled "Species Management" and contains a table of species, a left-hand navigation pane, and a right-hand "Species Details" pane.

**Species Management Table:**

Symbol	ITIS TSN	Scientific Name
2GRAM		
2FORB		
PIPO	183365	Pinus ponderosa
PSME	183424	Pseudotsuga menziesii
SYAL	35332	Symphoricarpos albus
VAGL		Vaccinium globulare
BERE		Berberis repens
ARTR2	35498	Artemisia tridentata
CEBI2		Centaurea biebersteinii
JUOC	194855	Juniperus occidentalis
AGSP		Agropyron spicatum
ARUV	23530	Arctostaphylos uva-ursi
PINUS	18035	Pinus
SHRUB		
FERUA		

**Species Details Pane:**

- Identity:** Local Symbol: FERUA, ITIS TSN: 40798
- Taxonomy:** Scientific Name: Festuca rubra ssp. a, Family: Poaceae, Genus: Festuca, Common Name: red fescue
- Local Characteristics:** Common Name: red fescue, Lifecycle: Perennial, Preferred Lifeform: Graminoid
- PLANTS Characteristics:** Symbol: FERUA, Lifeform 1: Graminoid, Lifeform 2: Undefined, Lifeform 3: Undefined, Lifecycle: Perennial, Native: , Preferred Name:

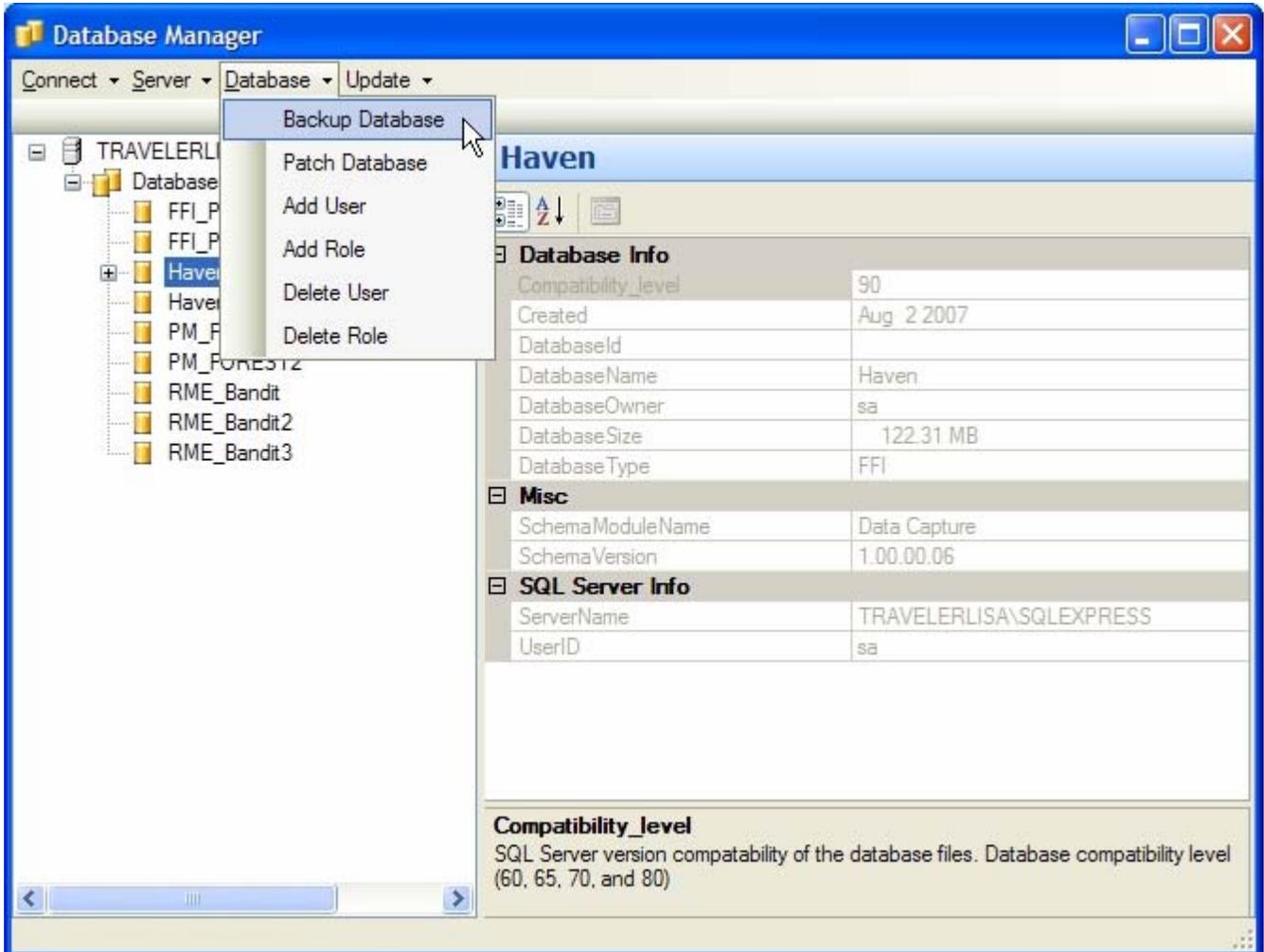
If you are unable to find the species you are looking for in the **Identify Unknown** window, either it is not in the 2007 version of the PLANTS database, or it is already in your species list. If it is in your species list but has never been used, you can delete it before making the identification. If it is in your list and has been used, you will need to **Replace a Species in Method Data** to resolve the situation as described in the next exercise.

## Species Exercises

### Exercise 7: Replace a Species in Method Data

If you collect data for a species in the field but later determine that the species was incorrectly identified, you can replace it with the correct species from your local species list. This is an involved and risky process and should be avoided. Unlike the **Identify Unknown** tool, this tool makes a global replacement on the species' unique identifier in the database and it is **possible to hopelessly alter your data**. If you are dealing with an unknown or with a user species, try to use the **Identify an Unknown** tool instead. Otherwise, make sure your database is backed up before you begin.

7-1 Open up the **FFI Database Administration** tool and backup your database.



## Species Exercises

7-2 Add "MARE11" from the master list, as in exercise 1. Click **Save**.

FFI | Local Species Creator

Filters | (use '%' as a wildcard)

Scientific Name:

Common Name:

Symbol:

TSN:

Filter Applied

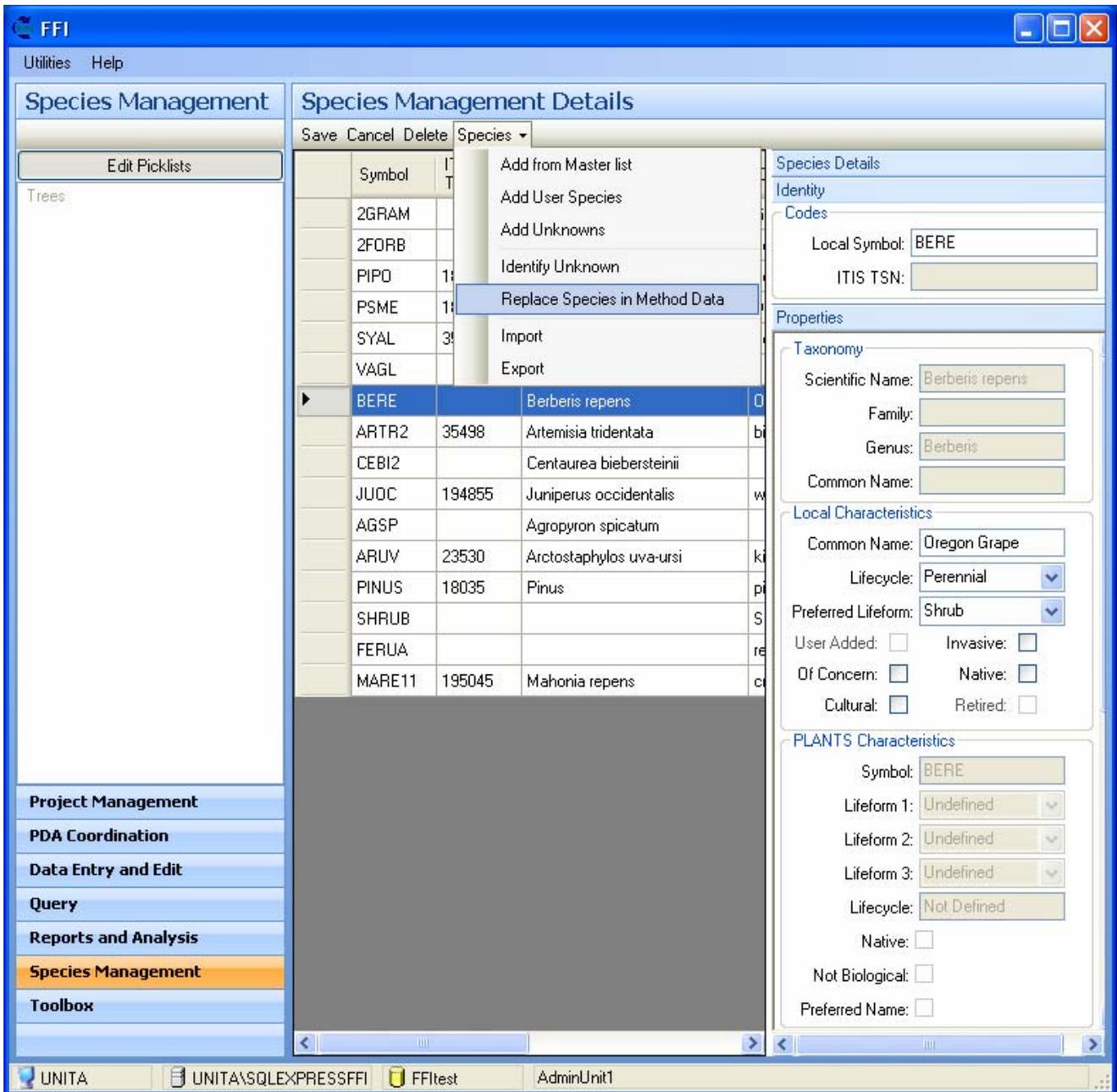
Add

Available Master Species

Symbol	SymbolKey	Synonym SymbolKey	Scientific Name	Common Name	Genus
MARE11	MARE11		Mahonia repens	creeping barberry	Mahonia

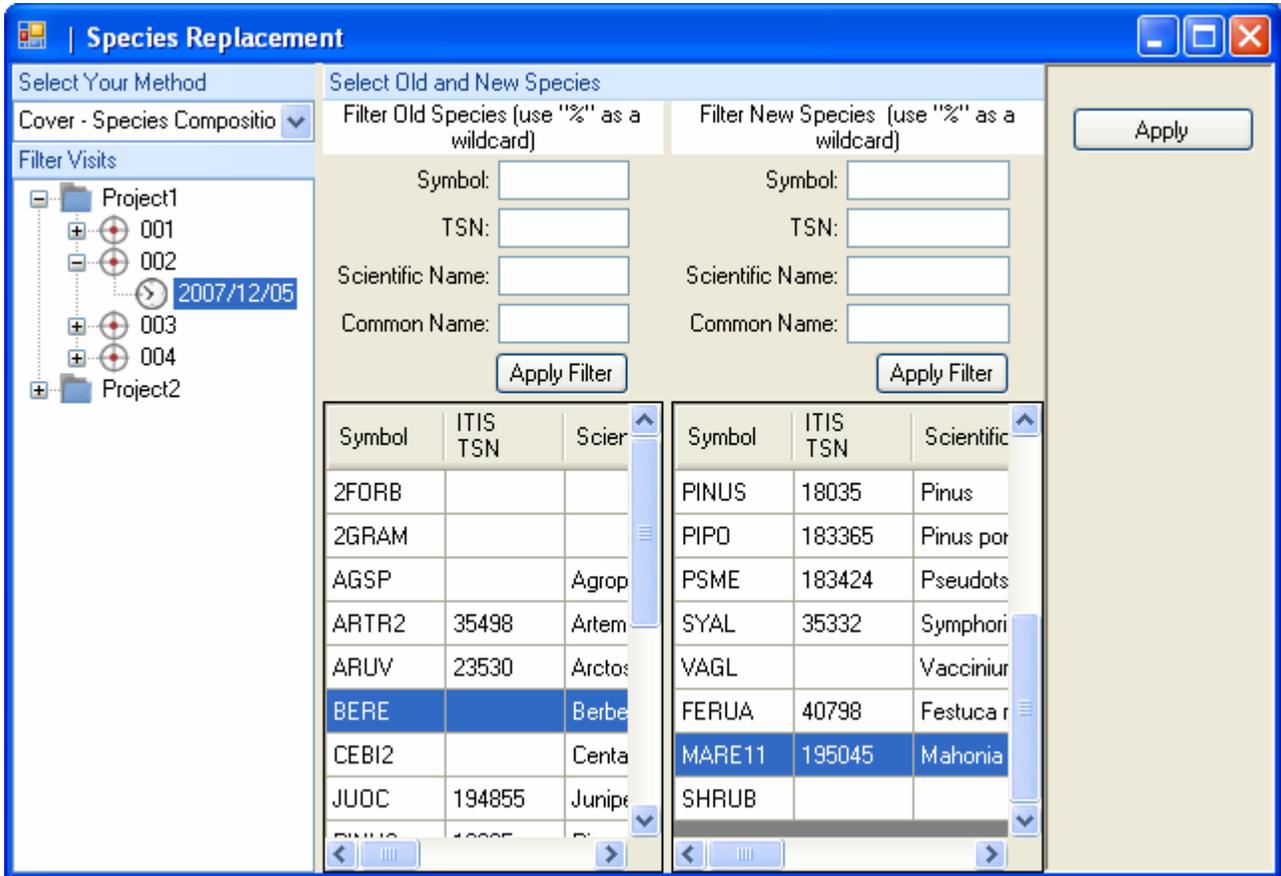
# Species Exercises

7-3 Select **Replace Species in Method Data** from the **Species** pull-down menu.



## Species Exercises

- 7-4 The **Species Replacement** window opens. In the **Select Your Method** pull-down list, select the **Cover – Species Composition** method.
- 7-5 In the **Filter Visits** tree view, expand **Project1**, macro **plot 002**, and select the **12/5/2007** sample event.



*NOTE: If you select the project unit, all sample events within that unit will be changed. If you select the macro plot, all sample events in that plot will be updated. To update several, but not all, sample events within a macro plot, you will need to update each sample event individually.*

Be very careful here. If you select the entire project unit when you only want a certain macro plot or sample event, you will change data you didn't mean to change, and you might not notice until months later.

## Species Exercises

- 7-6 By scrolling or filtering, select the species to be replaced, "BERE", on the left, and the correct species, "MARE11", on the right. Click **Apply**. If the tool finds matching data and was able to make the global replacement, a dialog will report success.



If FFI failed to find any data for the criteria you specified, you will see this dialog instead:



*NOTE: This means that no species replacement was made. If you see this, double-check the sample event in **Data Entry and Edit** or in **Query** to determine what your criteria should be.*

- 7-7 Review your data in Query Builder or in the data input form to confirm the results. If the replacement is not what you intended, recover your database from the backup.