

FFI IMPORT EXPORT OVERVIEW

Import/Export utility

The FFI Import/Export utility uses .xml files to move data between FFI and FFI-lite databases. When an export file is created it includes all macroplot data, data associated with the protocols, local species list, user species list, pick lists, and fuel constant sets. When creating an export file a copy of the data are stored in the .xml file - data are not removed from the database.

Data import, especially using the *Append* option in FFI, can take a few minutes to hours depending on the amount of data. For example, appending two or three sample events with a few protocols assigned in FFI can take about 5 to 10 minutes. *Replacing* data takes less time in FFI and all importing in FFI-Lite takes less time than in FFI. Some users have tried to use Microsoft Task Manager to monitor the *DataCapture* process and check if the import is working but be aware the CPU usage for *DataCapture* will drop to zero for extended times and then increase right as the import process ends. The FFI progress bar that is displayed during import will stop if another application on the computer is selected; however, the import process is still working. The progress bar will disappear when the import is complete.

NOTE: It is always wise to create a backup of your master database before and after doing any data import.

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Use Cases for import/export

The FFI import/export utility is designed for two functions:

- Facilitate electronic data collection in the field by moving sample and method attributes between a master database and database on a field computer.
- Aggregate administrative units, project units, and/or macro plots into a comprehensive database.

What data can be appended or replaced using import/export utility?

Only sample and method attributes in **Data Entry and Edit** and the sample event *Date* and *Team* fields in **Project Management** can be appended or replaced. If changes are needed for other **Project Management** data fields they should be made on the master computer.

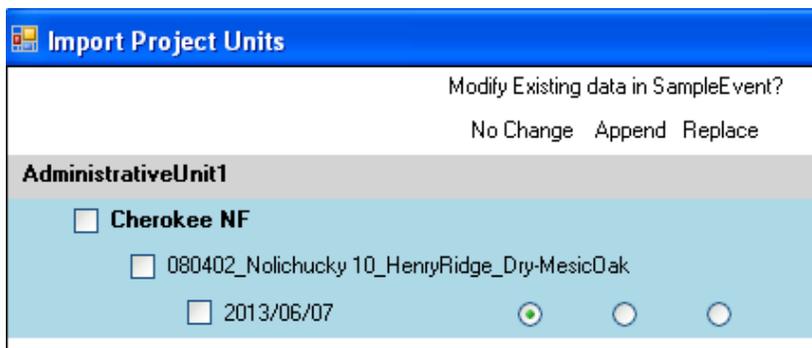
If method attribute records are deleted on a field computer the corresponding record will not be deleted when data is imported. Method attribute records must be deleted on the master computer.

Hierarchy of FFI export files

FFI saves all of the data needed to recreate the original FFI data hierarchy, regardless of whether you create an export file of an administrative unit, project unit or macro plot so the original data structure remains intact.

Data import options: No change, Append, Replace

When data are imported, FFI checks the master database to see if data already exist in the sample event(s) the data are to be imported into and, if data exists, you will be prompted to choose an option for the import: *No change*, *Append* or *Replace*. If data is imported after mistakenly selecting the *No Change* option the data can be re-imported using the correct option.



- The *No change* option will ignore any data in the import file so the data in the master databases will remain unchanged.

- The *Append* option will make a fairly complex comparison of the data in the input file and in the master database to bring new data into the sample event. See the table below for more information about how FFI determines what data are imported when using the *Append* option.

A deleted method attribute record on the field computer will not result in the deletion of the corresponding record in the master database when using the *Append* option. Add a note in the Comment field for the record that should be deleted and make the deletion in the master database after importing the data.

Project Management		
Macro plot data	All data fields	Only the sample event date is imported.
Data Entry and Edit		
Sample Attributes	3-Part protocols (Trees and Surface Fuels)	For <u>required sample attributes in the master database</u> , if the existing sample attribute is 0 or the field is null then the import utility brings the value in from the import file, otherwise the attribute value in the import file is skipped. For <u>non-required sample attributes in the master database</u> a sample attribute will be replaced if the corresponding field in the import file is anything other than null.
	All other protocols	The <u>required and non-required sample attributes</u> in the master database will be replaced if the corresponding field in the import file is anything other than null.
Method Attributes	All protocols	In the master database, if the record GUID exists then the data in that record is modified with the import data. If the record GUID does not exist then the new record is imported and added to the method attributes. Method attribute records are <u>not</u> removed from the master database if the attribute GUID does not exist in the import file.

- The *Replace* option overwrites **ALL** existing sample and method attributes for **ALL** protocols - **even for those protocols where Visited = No** in the import file. If a data field in the import file is null the corresponding data attribute in the master database will be null after import. At the **Project Management** level only the sample event *Date* and *Team* is replaced.

*CAUTION: Use extra care when using the Replace option as there is no way to undo a data Replace change to a database. Never use Replace when importing data collected on multiple computers into the same sample event. **Data accidentally removed from the database using the Replace options will need to be re-entered or re-imported***

Appending data from multiple field computers

We do not recommend using more than one field computer to collect data during a plot visit.

If you choose to use multiple computers for plot data collections these important rules must be followed:

- When the tree data records were copied from a previous visit, collect all tree data on one field computer.

When importing data back into the master computer the file with the updated field data for the Trees-Individuals protocol must be the last file imported. If it is not the last data imported then the original, unmodified tree data copied from the previous sample event will overwrite the updated Trees-Individual in the master database.

CAUTION: Attempting to import tree records from multiple computers when those tree records were copied from a previous sample event will result in only the tree records from one computer being imported.

- Data collected with single-record protocols (Biomass-Fuels, CBI, Plot Description, Fire behavior and FCCS), must be recorded on one field computer
- Data collected with multiple record protocols must include all fields for each record on one field computer. For example, if collecting tree data all data for any particular tree (dbh, tree height, crown class, etc.) must be entered on one field computer.

During field data collection if you enter all the data for a particular protocol on one field computer you will satisfy the rules above. In other words, if you are going to collect data using the tree and line intercept protocols then use one field computer to record all the tree data and the other computer to record all the line intercept data. If you are using more than the two protocols then make sure that all the data entered for any additional protocol are all recorded on one computer.

For any individual protocol, when data records are combined from multiple computers the order of the records in the master database will be set by the record index. Click column headings to sort by column (e.g., tag number). Use the View options to re-sort by Index.

Things to not do on the field computer

These things should not be done on the field computer or field database. Do them on the master computer, in the master database instead:

1. Do not use the New menu to create Administrative Units, Projects Unit, Macro Plots or Sample Events with the same name as those in the master database. I.e., all Administrative Units, Projects Unit, Macro Plots and Sample Events should be imported to the field computer, not created on the field computer.
2. Do not change local species codes in Species Management
3. Do not identify unknown species using the Identify Unknown utility in Species Management

4. Do not replace a species code using the Replace Species in Method Data utility in Species Management
5. Do not add or edit Monitoring Statuses
6. Do not assign Monitoring Statuses to Sample Events

NOTE: If you use FFI-Lite to store your master database then items 1 through 6 can be done using FFI-Lite, but only in the master database.

Steps for using the import and export functionality with field computers

One benefit of the import and export functionality is being able to easily move sample event data from a field computer into a master database. If you are using field computers there are a few different ways to get data from the field computer back into the master database. The steps below outline the process we suggest.

NOTE: The steps below assume you use FFI for managing your master database but you can use FFI-Lite to manage your master database, if desired.

1. Consider creating a backup of your master database in FFI Database Administration before importing data. Save the backup file in a safe location.
2. On the field computer(s) open *FFI-Lite* and create a new, empty "field" database. Name it something that identifies the project sampled and the date. E.g., *fieldcomputername_projectname_mmdyyy*.
3. Log in to the computer with your *FFI* master database and, for each of macro plot you will (or may) sample during the field visit, create one new sample event with the protocols you will use in the field added to it.
4. On the computer with the master database create an export file that includes the new sample event for all the macro plots you will (or may) sample during the field visit. Move the file to a flash drive.
5. On the field computer, open *FFI-Lite*, select the database you created in step 2 above and import the Administrative Unit you created in the previous step into the field database. Check the box for the imported administrative unit and click **Continue**.
6. Visit field sites and collect data. Remember these rules: [Things to not do on a field computer](#).
7. Back at the office open the database on the field computer in *FFI-Lite*, create an export file of the data you collected in the field and save the export file on a flash drive.
8. On the machine with your master database log in to *FFI* and import the file from the flash drive. Importing into *FFI* can take a long time if there is a lot of data. Move the file you are importing from the flash drive to the computer desktop to make import faster.
9. Check your data, consider making a backup of your master database. As an extra measure of safety you might also want to save the files exported from the field computer.

How the Import/Export utility handles duplicates

FFI uses a Globally Unique Identifier (GUID) to identify almost everything in the database. A GUID is a 26-character random number that should never occur more than once in a database. When you save a value in FFI it is tied to a GUID. If you create a macro plot you can name it whatever you want but FFI will know it by the GUID, which is always unique. So you can create a macro plot and name it *Plot001* and FFI will assign it a unique GUID and then you can create another macro plot and name it *Plot001* and FFI will give it a different GUID. Thus it is possible to have two things with the same name – like two macro plots named *Plot001* in one project unit – which is not a problem for FFI but might be a problem for whoever is trying to keep them differentiated while working with the data. If you know ahead of time that data will be combined with the Import/Export Utility you may want to rename macro plots to avoid duplicates. There is no fast way to rename a number of macro plots in FFI; you have to do it one by one in **Project Management**.

When importing macro plots FFI will check to see if a duplicate macro plot GUID already exists in the administrative unit the data are being imported into. If a duplicate GUID is found - even if the macro plot name is different – you will be prompted to leave existing data unchanged, append existing data with the new data or overwrite the existing data with the new data. See: [Data import options: No change, Append, Replace](#).

In only one case does FFI compare names instead of GUIDs: user species codes. If an import file includes a user species code that has already been saved in the local species list of the database the data are being imported into then the user species code will not be imported. This is not case sensitive. For example, if the user code *grass* is used in data that are to be imported into a database and the user code *GRASS* has already been saved in that database, then the user code *grass* will not be imported - you will not see the user species code *grass* in the local species list in **Species Management**; however, the user code *GRASS* will be in the list. Any data fields in the import file populated with the user code *grass* will be changed to *GRASS* when imported.

FFI manages local species codes (from the NRCS PLANTS database) and user codes separately. If a NRCS species code in the database is the same as a user species code being imported, the code will still be imported. For instance, the NRCS species code for *Bacopa repens* is *BARE*, which is the same as the user code many people use for bare ground. Because FFI manages user codes and species code differently it is possible for the species code *BARE* to be imported into a database with the user code *BARE*.

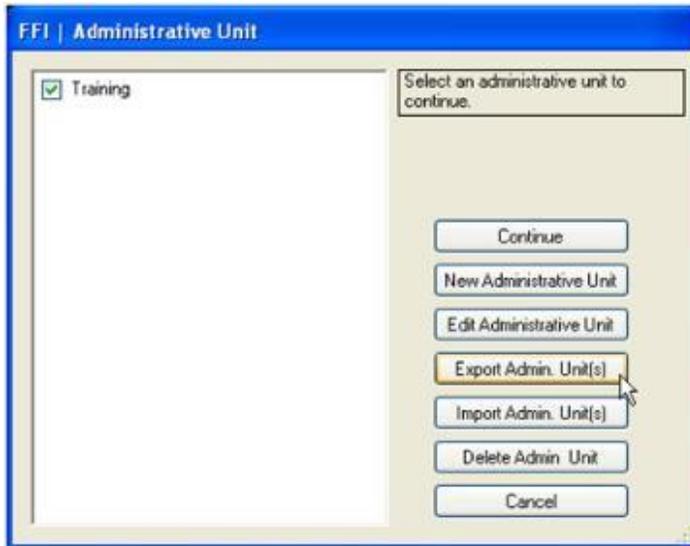
How the Import/Export utility handles species/item codes

When data are imported the import/export function compares species/item codes (NRCS code, user species code or “unknown” code) in the import file and in the master database. If a species/Item code is in the import file but not in the master database then the code is imported as in the import file. If a species/item code in the import file is the same as a species/item code in the master database - including upper and/or lower case letters - then all the species Properties are compared. If there are no differences in the Properties then the code in the imported file is given the GUID in the master database. If there are any differences then the species code, properties and GUID are imported as in the import file resulting in two instances of the same species symbol in the local species list. You can consolidate species codes using the [Species Replacement](#) tool in the Toolbox.

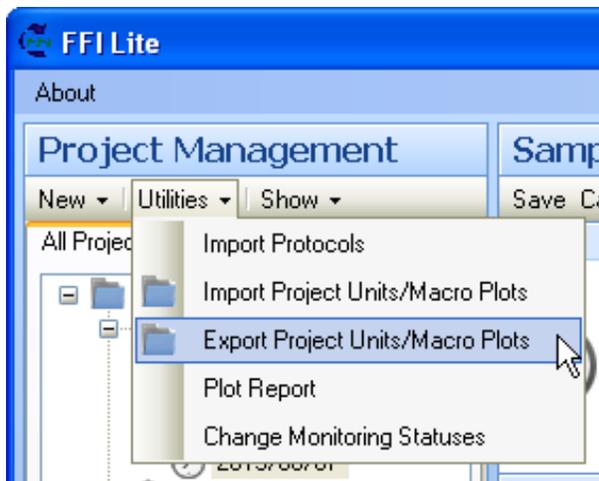
Where to find Import/Export functions

The Import/Export utility is available in two places:

1. On the *Administrative Unit* screen you see when you log in. From here you can export or import all of the data linked to an administrative unit.



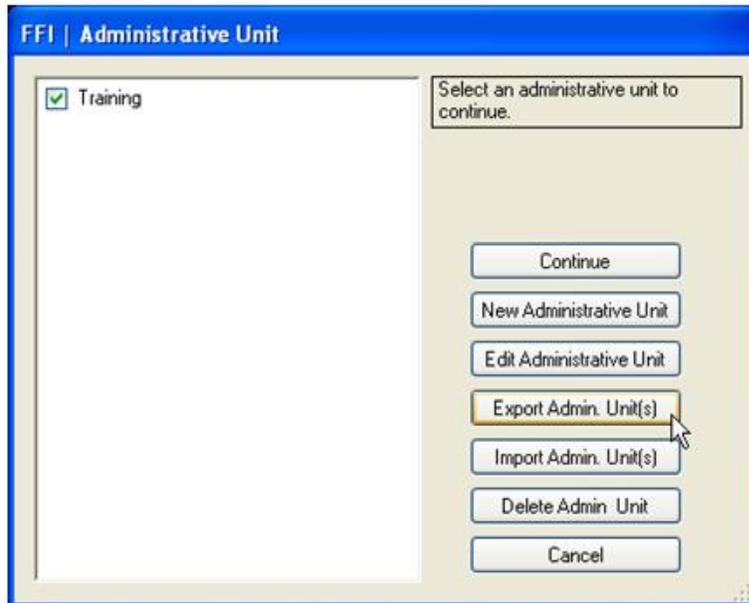
2. From the *Utilities* menu in *Project Management* you can import or export data in project units or individual macroplots.



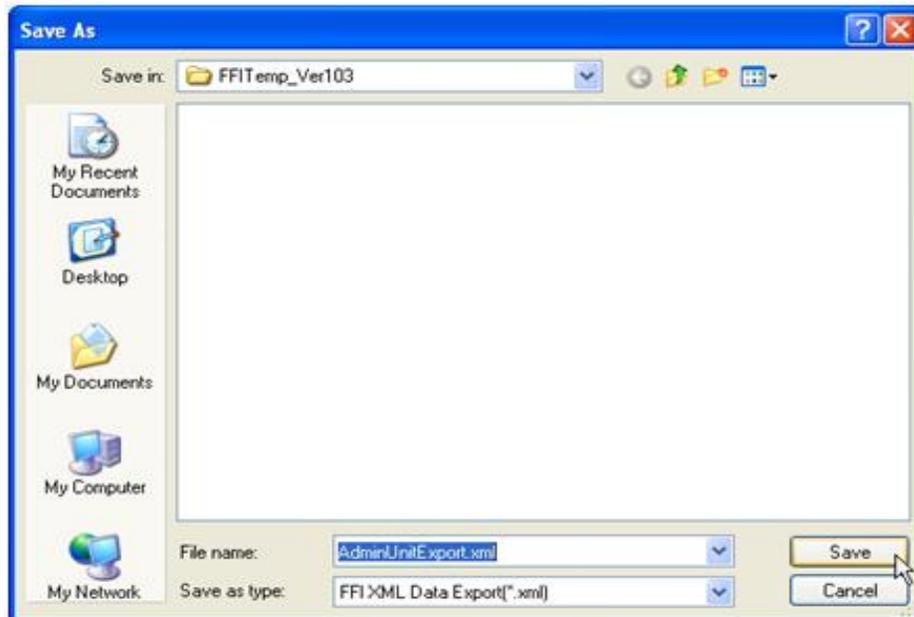
Exporting an Administrative Unit

1. Log in to FFI. Check the box for the administrative unit(s) you want to export and click **Export Admin. Unit(s)**.

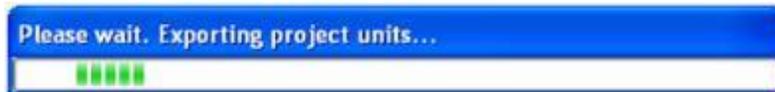
NOTE: If multiple administrative units are selected they will be added to the same export file but they will not be combined into one administrative unit.



2. Name the export file and click **Save**.



3. A progress bar will be displayed while the file is created.



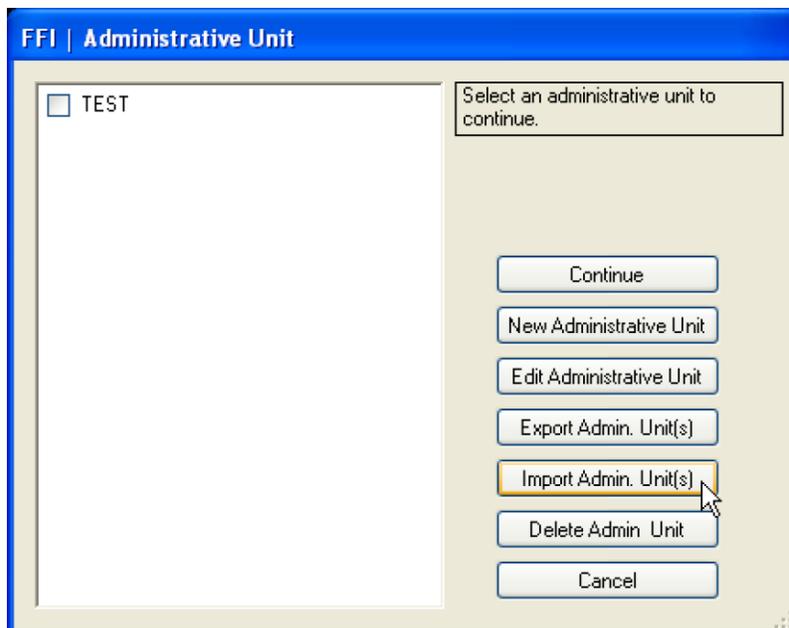
4. Click **OK** in the dialogue box to complete the export.



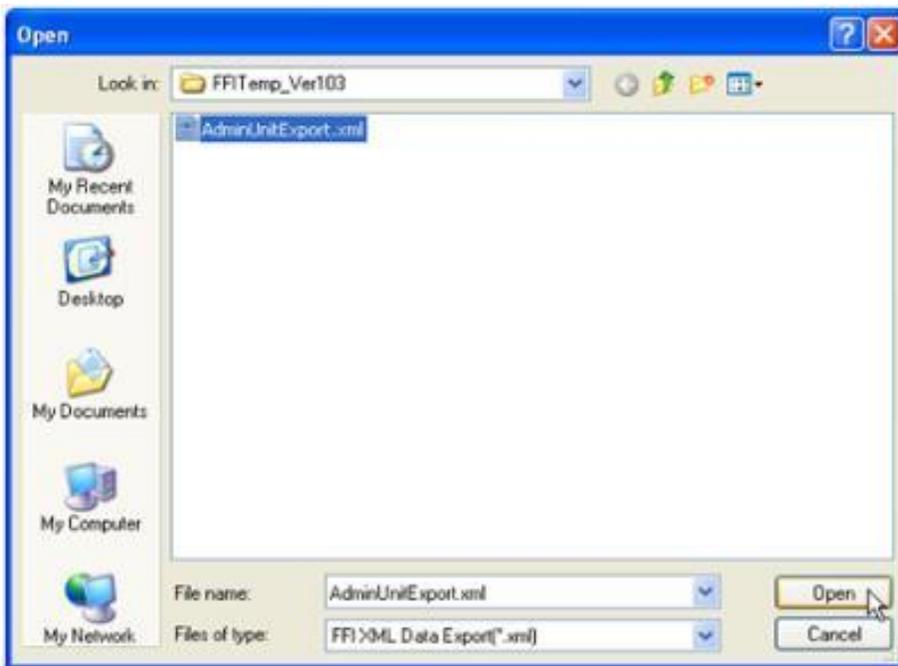
Importing an Administrative Unit

1. Log into FFI. Click the **Import Admin. Unit(s)** button.

NOTE: You cannot import an administrative unit with the same name as an administrative unit already in the database. You cannot import an administrative unit with the same GUID as an administrative unit already in the database.



2. Select a data file containing exported administrative units and click **Open**.

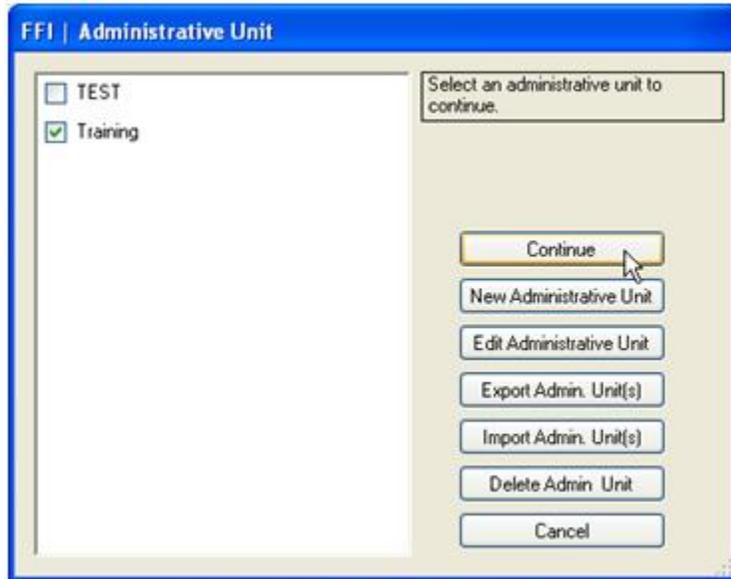


3. Select the administrative unit to import and click **Import**.

NOTE: If more than one administrative unit was saved when the export file was created the administrative units will need to be imported individually.



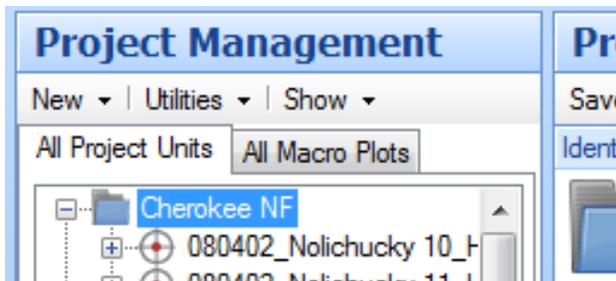
4. A progress bar will be displayed and, when the import is complete, the administrative unit will appear in the administrative unit selection window.



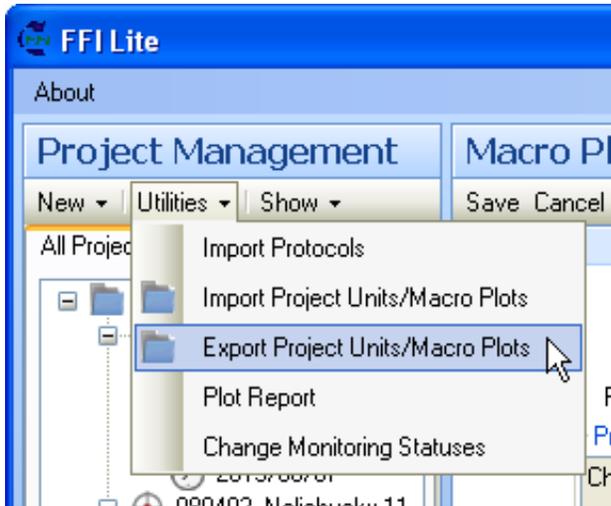
5. Select the administrative unit you want to view and click **Continue**.

Exporting Project Units and Macro Plots

1. In *Project Management* highlight the project unit you want to export by clicking the project unit name once.

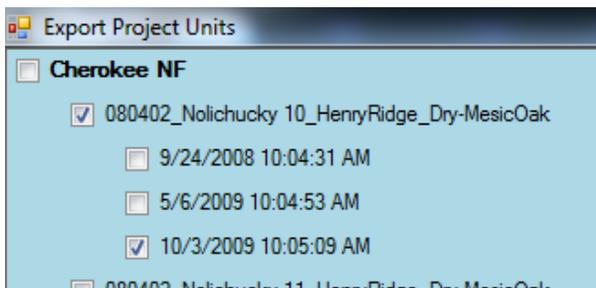


2. Select **Utilities > Export Project Units/Macro Plots**

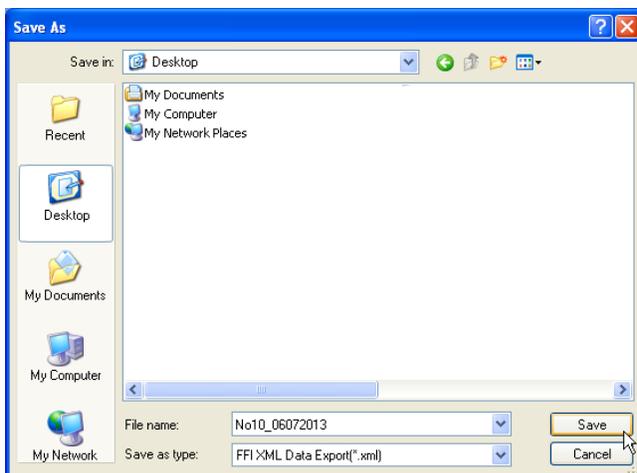


3. Check the box(es) of the project unit and/or macro plots you want to export and click **Export**.

NOTE: When you select a check box to export a project unit all of the macro plots and sample events associated with the project are automatically checked. Uncheck macro plots you do not want to be exported. In this example only the last sample event is selected. Even though the project unit name is not selected it will be included in the export file.



4. Name the file and click **Save**.

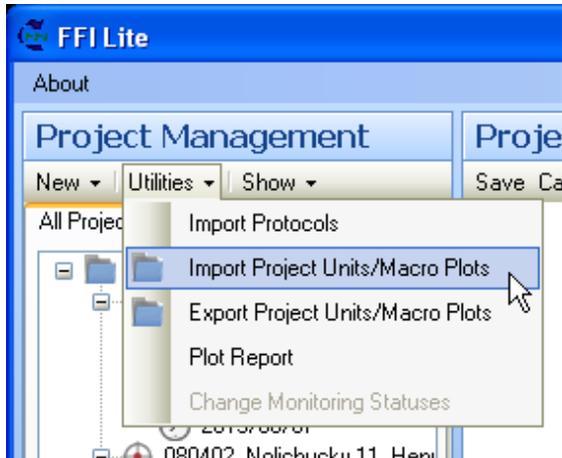


5. A progress bar will be displayed. When the progress bar closes the file has been saved.

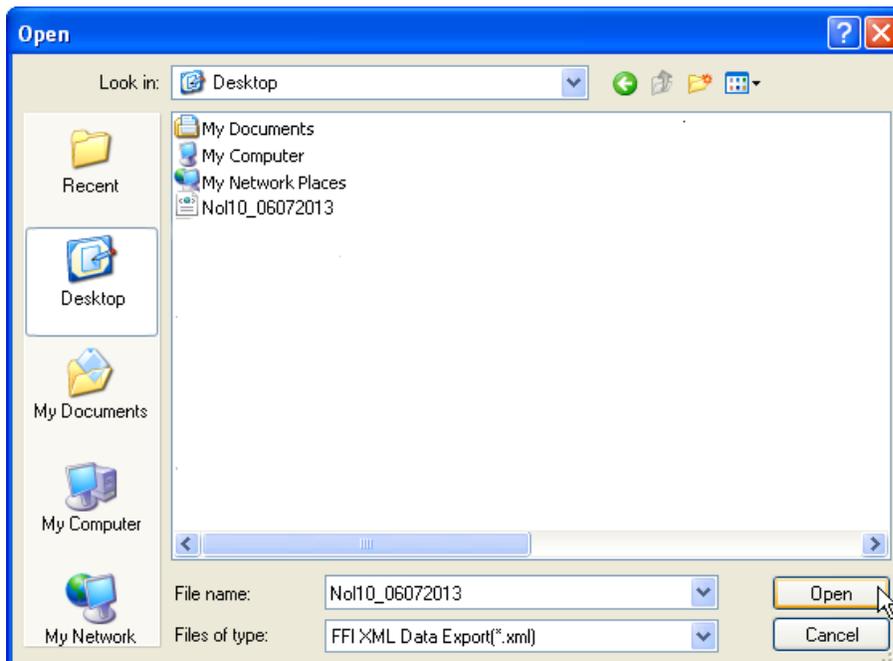


Importing Project Units and Macro Plots

1. Select **Utilities > Import Project Unit(s)**

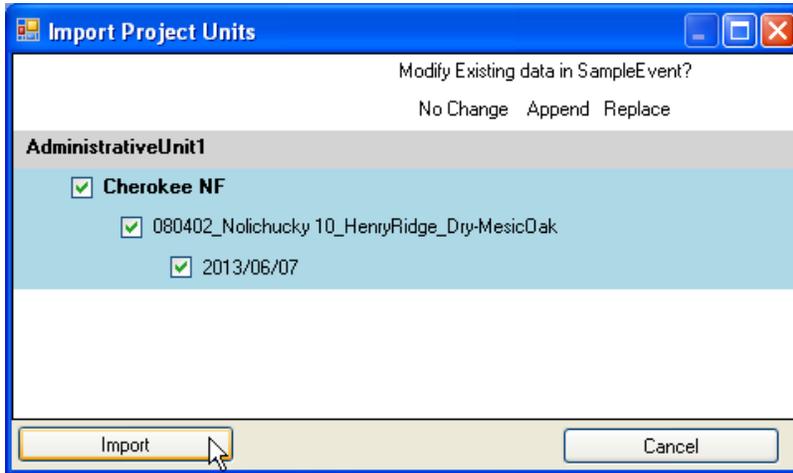


2. Select the file to import and click **Open**.



3. Check the box(es) for the projects you want to import and click *Import*.

NOTE: If the sample event being imported already exists in the database radio buttons will be displayed under the No Change, Append and Replace column headers.



4. The progress bar will display. When the progress bar closes the project(s) will appear in the directory tree.

