

User Guide - NMNH Field Information Management System (FIMS)

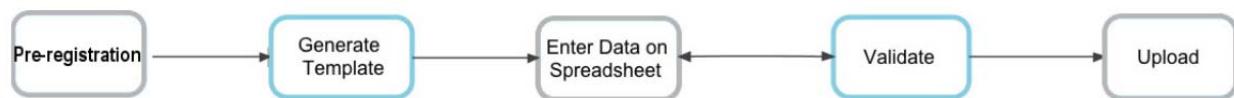
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Introduction

The FIMS is designed to enable NMNH researchers to digitally capture data while on field expeditions, automatically check and correct these data against controlled lists and accepted values, and then upload these data to NMNH storage where it can later be imported into the Museum's collection information system (EMu). FIMS has the following workflow steps:



Pre-Registration

Pre-registration in EMu is a requirement for the field collecting event and will insure that the project has an acquisition transaction record in EMu for later referencing and appending; scientists can populate their field templates with these acquisition numbers before going into the field.

Generate Template

Users can generate a unit-specific Excel spreadsheet template to be used as the primary method of recording field collection information in the field.

Enter Data in Spreadsheet

Once in the field, researchers can use the pre-generated spreadsheet to record data.

Validation

Through the FIMS, researchers can validate recorded data against quality assurance validation scripts. These scripts will show errors (where incorrect values are used) or warnings when data might need modification in order to meet museum or departmental data requirements. Users will use errors and warnings to edit and groom spreadsheet data until the spreadsheet passes validation (an iterative process of checking and correcting).

Upload

Once a spreadsheet has passed validation, it can be deposited in NMNH storage where it can later be retrieved and imported into the Museum's collection information system (EMu).

NMNH FIMS Home Screen and Site Navigation

The NMNH FIMS operates in the following web browsers: Chrome, Firefox, Safari, and Internet Explorer 11. and is located at <https://nmnh-fims.si.edu>. The FIMS application runs on a server in the “SI Scientific Zone”. Applications in this zone are accessible both inside and outside of the SI network, without the need of two-factor authentication (for example using Citrix). All functionality, including *Help* is restricted to valid SI users.



Welcome to the Smithsonian Institution's National Museum of Natural History Field Information Management System (FIMS). The FIMS is designed for NMNH researchers to digitally capture data while on field expeditions, automatically check and correct these data against controlled lists and accepted values, and then upload these data to NMNH storage where it can later be imported into the Museum's collection information system (EMu). The above image outlines the workflow steps [More »](#)

NMNH FIMS Users will need to have valid SI-NET accounts to use NMNH FIMS. If you or your users do not currently have a valid SI-NET account, please contact your department data manager to obtain the proper forms and submit them to the OCIO at OCIOHelpDesk@si.edu.

Once access is granted to SI-NET, users are assigned to one or more collecting groups including: Botany, Entomology, Invertebrate Zoology, VZ-Amphibians and Reptiles, VZ-Birds, VZ-Fishes, VZ-Mammals, Mineral Sciences.

Login

To log into NMNH FIMS, click the *Login* icon, type in your SI-Net username and password and click *Submit*. If this is the first time that you have used NMNH FIMS, your SI-Net account will automatically allow you access to NMNH FIMS.



Tip: your SI-net username is everything to the left of your email id (i.e. without the @si.edu).

Once you have successfully logged into the system, your username will appear on the main menu bar and *Login* will be replaced with *Logout*.



[**What do I do if I can't remember my NMNH-FIMS password or it has expired?**](#)

Login credentials for NMNH FIMS are synchronized with Active Directory (AD). Users will use their AD username and password to log into the system. AD passwords must be reset by contacting OCIO at OCIOHelpDesk@si.edu or calling 202-633-4000.

Logout

To logout of NMNH FIMS, select the *Logout* icon from the main menu.

Sensitive Data and Privacy

Although data collected using templates from the NMNH FIMS system may become a matter of public record through EMu and the NMNH Research and Collections Information System (RCIS), access to certain sensitive information may legitimately be limited at the discretion of the collecting unit. Decisions about limitations must be documented by the collecting unit's Collections Advisory Committee. The collecting unit shall consult the Office of General Counsel and the Office of the Registrar when determining policy for restriction of access to information. In using NMNH FIMS, you as a representative of your unit or units, must adhere to any limitations on use of sensitive data. Please refer to the National Museum of Natural History Collections Management Policy (Rev. April, 2012) for more information. (http://darwin.si.edu/about/CollectionsProgram/NMNH_Colls_Mgmt_Policy_April_2012.pdf)

Pre-Registration

Pre-registration in EMu is a requirement for the field collecting event and will insure that the project will have an acquisition transaction record in EMu for later referencing and appending. Scientists should populate their field templates with these acquisition numbers before going into the field.

Pre-registration involves the creation of a new *In Process Acquisition* transaction in EMu. The subtype of this acquisition should be *Collected for Museum* with *Primary Sponsor* or *Collector* recorded as the *Primary Transactor*. Other collectors or collaborating institutions can be included as secondary transactors. General information about where and what will be collected should be included in the material description field of the transaction. Any permits or agreements received prior to the trip should be scanned and referenced via the Rights module records and linked to the transaction. Item-level information will not be fleshed out until after a collector returns from the trip. Upon the collector's return to the museum and final validation, the data spreadsheet itself should be loaded into EMu as a multimedia asset associated with the transaction.

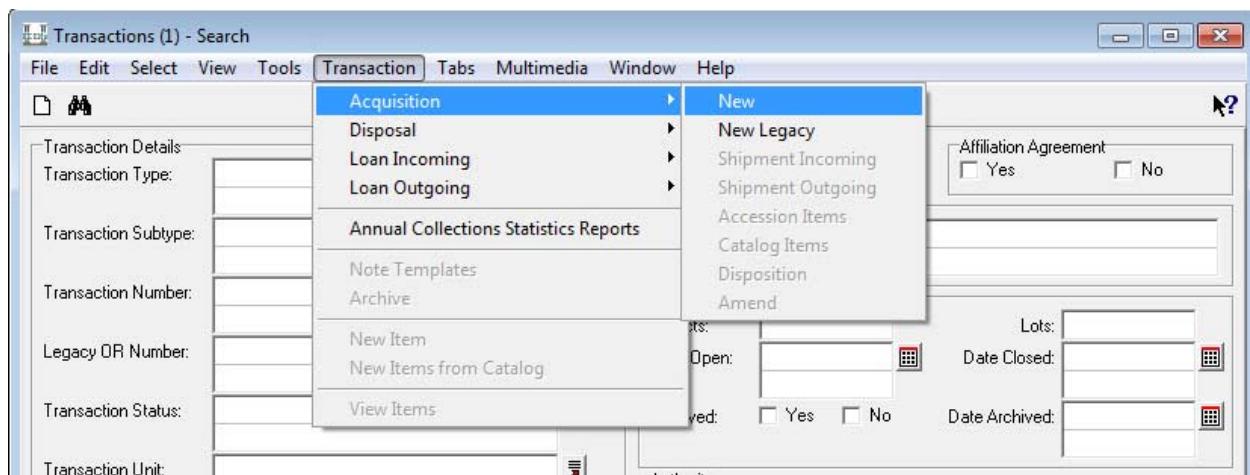
Pre-Registration

IMPORTANT NOTE: The below *Pre-registration* steps are done in the EMu application and not in NMNH FIMS.

Create the Transaction

To pre-register the field collecting trip, a new Acquisition Transaction record must be created in EMu in order to generate an Acquisition Number.

Open the Transactions module in EMu, and create a new Acquisition record using the menu, *Transaction > Acquisition > New*.



This will create a new record, with a *Transaction Type* of “Acquisition”, and an automatically generated Transaction number. This will be the Accession Number that will be recorded on the spreadsheet.

A screenshot of a transaction entry form. At the top, there is a label "Accession Number" enclosed in a green rounded rectangle. Below it, there are four input fields: "Transaction Type" (dropdown menu showing "ACQUISITION"), "Subtype" (dropdown menu), "Transaction No." (text box containing "2070193"), and "Legacy OR No." (text box containing "2070193"). A green arrow points from the "Accession Number" label to the "Transaction No." text box.

The *Subtype* field is a required field for all Transactions, select the value “Collected for Museum” from the dropdown. Once the Subtype is entered the record can be saved at any point. Be sure to save often during data entry. In the *Material Description* field near the bottom left of the window, general information about where and what will be collected should be indicated.

Save after selecting Subtype

Transaction Type: ACQUISITION Subtype: Collected for Museum Transaction No.: 2070193 Legacy OR No.: 2070193

Acquisition Transactor:

- Organization:
- Contact:
- Organization:
- Street Address:

Bequest
Bequest/Gift
Collected for Museum
Collected for Museum/Purchase
Commissioned
Custodial
Exchange

Postal/Zip Code:

Country:

Gift

Gift for Names Partial Gift Deed of Gift Type: IRS 8283

Loan Incoming: Portion Acquired:

Purchase

CAP Fund Fund No.: Fund Name:

Federal Fund Amount: Trust Fund Amount: PO No.:

Material Description

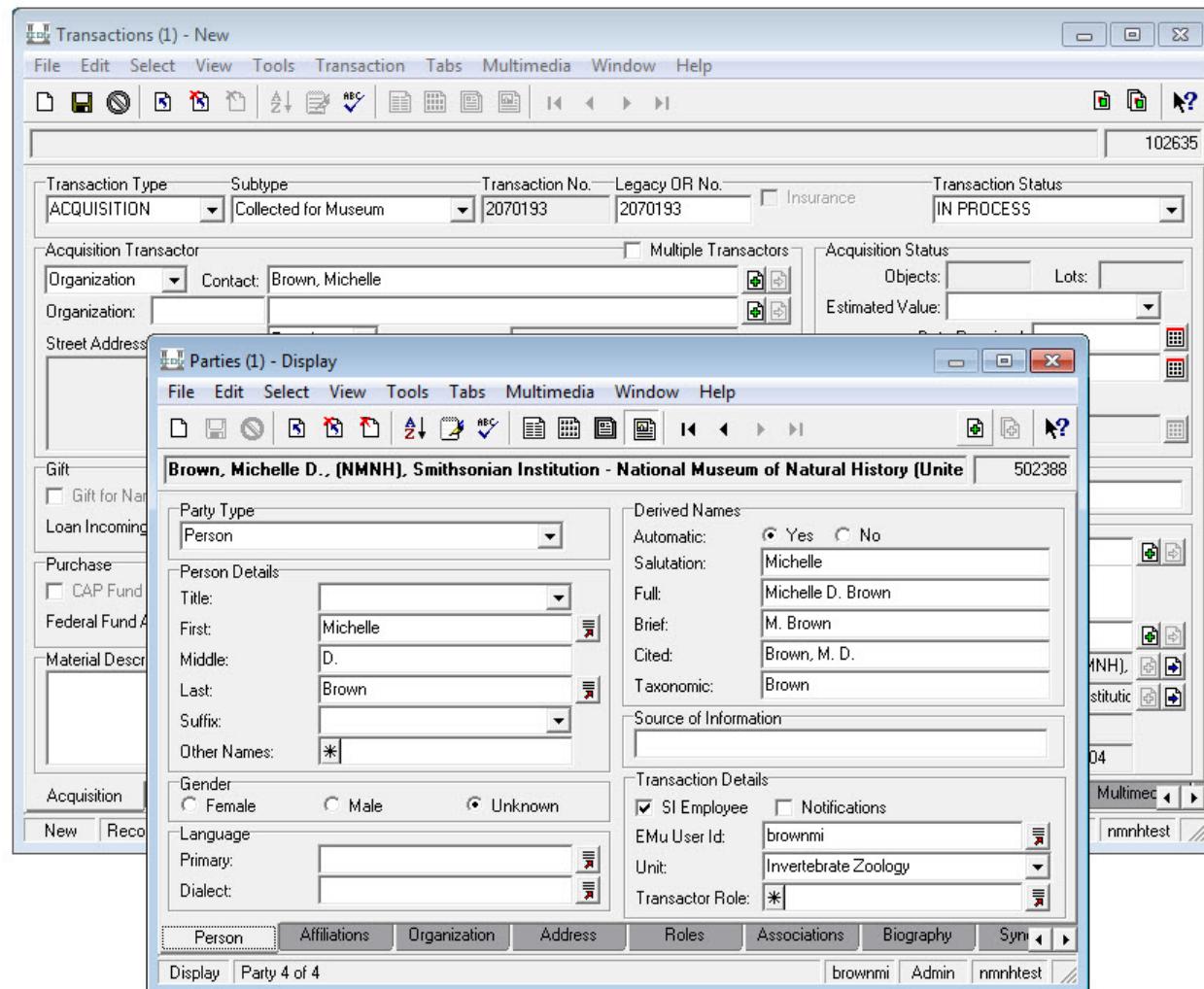
Mollusks from Okinawa Japan

Acquisition Items Catalog Shipments Agreements Associations Projects

New Record 1 of 1

Adding Collectors as Contacts

If there is only one collector or sponsor for the field expedition, that person should be listed as the *Contact* for the Acquisition. On the *Contact* field in EMu, enter the name of the collector, and click on the green [+] icon to the right of the field. EMu will automatically search for and attempt to match to an existing person record within its Parties table. If multiple matches are found, the user can select the appropriate person record, and link it back to the Acquisition using the corresponding green [+] icon at the top right of the Parties window. The organization and address information affiliated with the *Contact* person will automatically fill the fields below. If the collector or sponsor is an institution or organization without a specific person as the contact, the *Contact* field can be left blank, and the *Organization* field directly below *Contact* should be used. An organizational name is entered, and the search is run using the [+] icon the same as searching for a person in *Contact*.



If there are multiple collectors, the primary collector or sponsor can be added as outlined above. To enter the additional collectors, click the *Multiple Transactors* checkbox located above the Contact field.

This close-up view of the 'Acquisition Transactor' section shows the 'Multiple Transactors' checkbox, which is highlighted with a green rectangular box. The checkbox is checked, indicating that multiple transactors are being entered.

This will enable a Transactors tab at the bottom of the Acquisition window.

This close-up view of the bottom navigation bar shows several tabs: 'Acquisition', 'Transactors', 'Items', 'Catalog', 'Shipments', 'Agreements', and 'Associations'. The 'Transactors' tab is highlighted with a green rectangular box.

On the Transactors tab, the person added on the main Acquisition tab will appear, designated with the value "Primary" as the Transactor role. This data will appear in the first row of the Transactors grid section below.

Transactions (1) - Edit

File Edit Select View Tools Transaction Tabs Multimedia Window Help

2070193 O: ACQUISITION Collected for Museum; IN PROCESS; NMNH, Michelle D. Brown, United States; 102635

Transaction Type	Subtype	Transaction No.	Legacy OR No.	Insurance	Transaction Status															
ACQUISITION	Collected for Museum	2070193	2070193	<input type="checkbox"/>	IN PROCESS															
Transactor Details Role: Primary Organization: Contact: Brown, Michelle D., (NMNH), Smithsonian Institution - National Museum of Natural History (Unit... Organization: NMNH (NMNH) Smithsonian Institution - National Museum of Natural History (United States) Street Address: P.O. Box 37012 Postal: City/Town: Washington State/Province: DC Postal/Zip Code: 20013-7012 Country: United States																				
Transactors <table border="1"> <thead> <tr> <th>Role</th> <th>Type</th> <th>Contact</th> <th>Acronym</th> <th>Organization</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Primary</td> <td>Brown, Michelle D., (NMNH), Smithsonian Institution - National Museum of Natural History (Unit...</td> <td>NMNH</td> <td>(NMNH) Smithsonian Institution - National Museum of Natural History (United States)</td> </tr> <tr> <td>*</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Role	Type	Contact	Acronym	Organization	1	Primary	Brown, Michelle D., (NMNH), Smithsonian Institution - National Museum of Natural History (Unit...	NMNH	(NMNH) Smithsonian Institution - National Museum of Natural History (United States)	*				
Role	Type	Contact	Acronym	Organization																
1	Primary	Brown, Michelle D., (NMNH), Smithsonian Institution - National Museum of Natural History (Unit...	NMNH	(NMNH) Smithsonian Institution - National Museum of Natural History (United States)																
*																				
Acquisition Transactors Items Catalog Shipments Agreements Associations Projects Tasks Notes																				
Edit Record 195517 of 195517 brownmi Admin nmnhstest																				

Additional collectors or sponsors can be added by selecting a new row within the Transactors grid, indicated by the [*] row. This will display a form in the section above. As with the Primary, additional people may be added by entering the name, and clicking the green [+] button to query and attach a Person record. By default, additional people added as Transactors will receive a *Role* of "Additional".

Transaction Type Subtype Transaction No. Legacy OR No. Transaction Status

ACQUISITION Collected for Museum 2070193 2070193 IN PROCESS

Transactor Details

Role: Organization: Contact: Organization: Street Address: City/Town: State/Province: Postal/Zip Code: Country:

Transactors

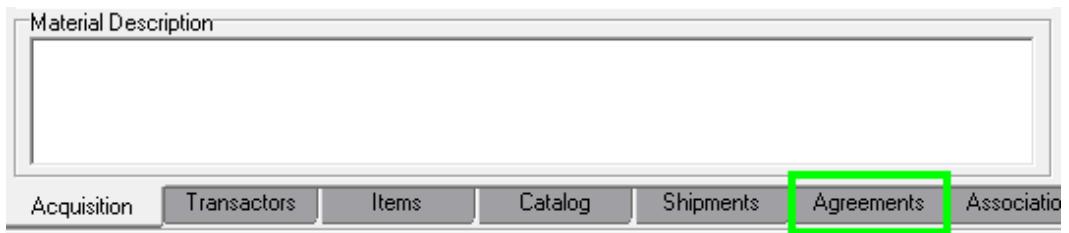
Role	Type	Contact	Acronym	Organization
1	Primary	Brown, Michelle D., (NMNH), Smithsonian Institution - National Museum of Natural History (Unit...	NMNH	(NMNH) Smithsonian Institution - National Museum of Natural History (United States)
*				

Return to the original screen at any time by clicking the Acquisition tab at the bottom of the window.

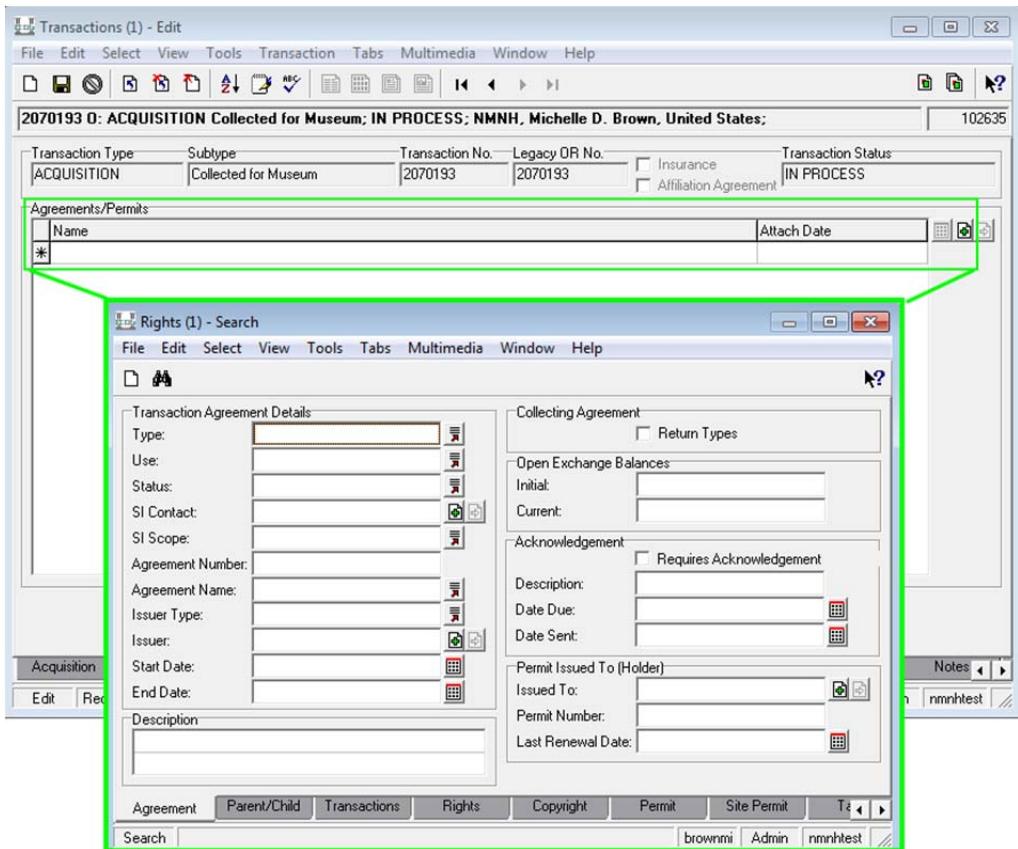


Attaching Permits

If the collecting trip requires permits, collecting agreements, MTAs, etc., these will be attached to the Agreements tab.



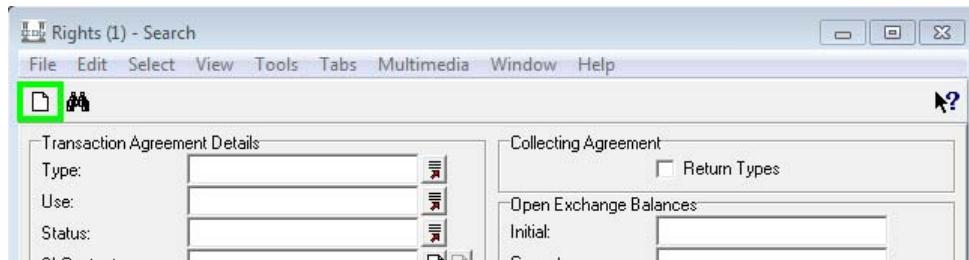
On the Agreements tab, click on the green [+] icon to the right of the main field. This will launch the Rights module where a permit, agreement, etc. can be searched for and selected or new record created. By default the Rights module will open in Search mode so the user can query for the desired records.



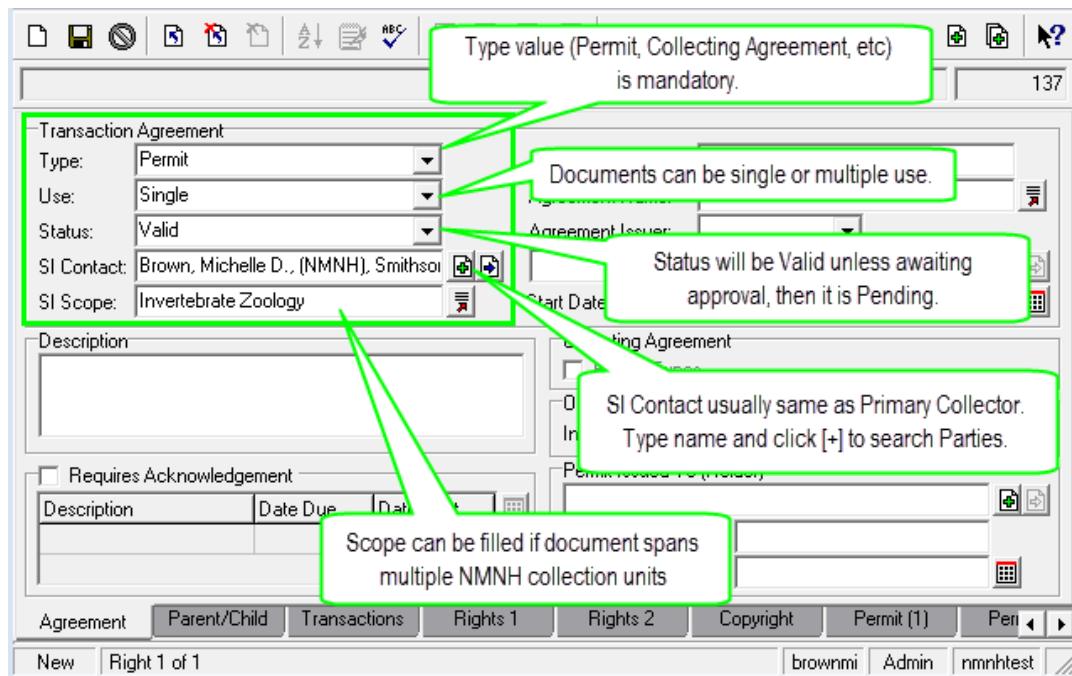
The Rights module contains records for permits, collecting agreements, custody arraignments, MTAs, open exchange agreements, and restrictions. Most MTA (Material Transfer Agreements) are museum wide agreements and are managed by the Office of the Registrar. These should already be in the system, if not please contact the OR for assistance.

Often the necessary permits are created for specific collection trips, and must these must be added to EMu as new Rights records. Hard copies of any permitting documentation should be scanned, and these scans should be attached to the Rights record as multimedia.

To create a new Rights record, click the New icon in the top right.



Every record must have a Type value. This is a controlled vocabulary field containing values such as Permit, Collecting Agreement, Contract, MTA, etc. If the document is for just this collecting trip then select Single in the Use field. If the document can be used for future trips then select Multiple. Status most likely will be Valid unless final approval has not been granted yet in which case Pending can be used. SI Contact will most likely be the same as the Primary Collector for the trip or possibly the chair of the department. Type in name and click the green plus sign to the right of the field to locate the appropriate party record for the individual. SI Scope can be filled in if the scope of the permit or agreement spans more than one collecting unit within the museum.



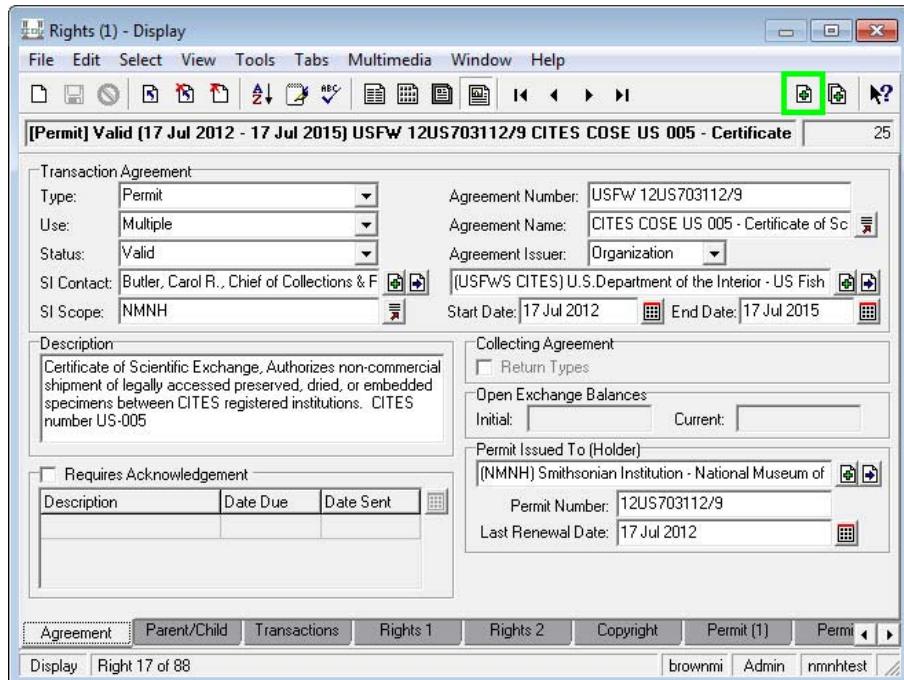
A brief description of the document should be placed in the Description field.

If the agreement or permit requires acknowledgement, check that box.

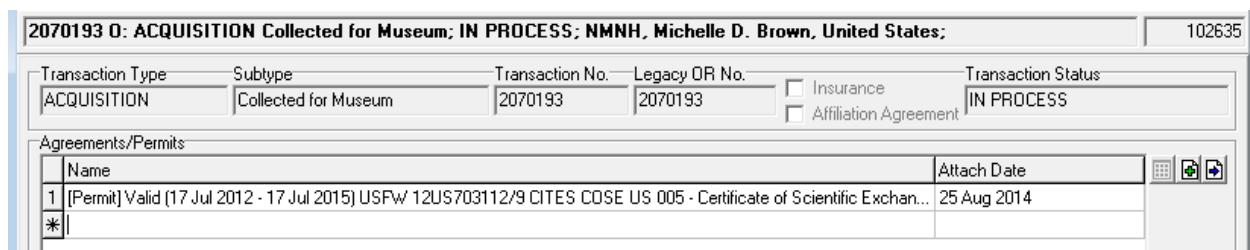
If there is a number associated with the document that can be entered in the Agreement Number field. An Agreement Name should be provided. This should be the document title or brief description of the document to help in identification within the system. Agreement Issuer type should be selected. Either the issuer is an individual Person or an institution/agency/organization, select Organization for those values. Agreement Issuer is a link to a Parties record. First search to see if the issuer is already in the system and if not create a new record. Link found or created record back to the agreement issuer field. If the agreement has valid date ranges put those in the start and end date fields.

For Collecting Agreements check the Return Types box if this is a requirement. For Permits, make sure to enter a link to the official holder of the document. This may be the same as the SI Contact but could be at a higher level such as the museum itself. This link can be to an organization or individual person record.

Save the Rights record.



Once the desired permit or other documentation has been found or created, the record can be attached back to the Acquisition record using the [+] in the top right of the window. The Rights module will close and the permit will display in the gridded field, along with the date the permit was attached. Since the Agreements/Permits field is a grid, multiple permits or other Rights records can be added, simply by clicking on the blank [*] row, and again clicking on the green [+] icon to reopen the Rights module.



To review:

- Acquisition Transaction must be created and Accession number assigned prior to collection trip
- *Subtype* will be "Collected for Museum," *Material Description* should be populated
- Primary collector or sponsor is the main Contact, but additional collectors can be added
- Attach all associated permits or agreements.

Once these steps have been completed, the user can proceed to generating a project spreadsheet template.

Template Generation

Unit-specific Excel spreadsheet template can be generated in NMNH FIMS and are to be used as the primary method of recording specimen and sample collection information in the field. Users can customize these spreadsheets by selecting desired fields to add to the spreadsheet. Once desired fields are selected, users can then generate an Excel spreadsheet and save it to their local computer for use during the collecting trip. Fields available to users are based on a set of standardized metadata fields, with the core sets from EMu, Darwin Core, MIxS, and the ABCDDNA/DwC DNA and Tissue extension for the Global Genome Biorepository Network (GGBN). Based on NMNH unit-specific collection requirements, each NMNH unit has designated fields that are **mandatory** (always part of the template), **desirable** (suggested as part of the template), and **optional** (can be added as part of the template).

Important Note: It is *strongly advised* and best-practice to use NMNH FIMS to generate a **new** spreadsheet before each collection trip. It is not recommended to reuse a template generated for a previous trip for a subsequent collection trip. Since each spreadsheet is linked to a process to generate Globally Unique Identifiers (GUIDs) for collected items, spreadsheet reuse can cause unwanted and problematic duplication of identifiers – and potential data corruption. A newly generated spreadsheet also guarantees that a collection trip is using the most up-to-date fields, definitions, and validation information.

Generate Template

To generate a template for a collecting trip, click on *Tools* on the main menu and select “Generate Template.” This action will load the main Generate Template page.

The screenshot shows the NMNH Field Information Management System (FIMS) interface. At the top, there is a navigation bar with links for 'Tools', 'demo', 'Logout', and 'Help'. Below this, a secondary menu bar has options for 'Generate Template' (which is highlighted with a green box) and 'Validation'. The main content area is titled 'Generate Template'. It contains two main sections: 'Field Categories' on the left and 'Definition' on the right. Under 'Field Categories', there is a note: 'Expand category headings to select or un-select fields.' Under 'Definition', there is a note: 'Click on the "DEF" link next to any of the headings to see its definition in this pane.' At the bottom left, there is a button labeled 'Export Excel'.

Choose project

From the *Choose Project* pull-down list select a unit-level project (Botany, Entomology, Invertebrate Zoology, VZ-Amphibians and Reptiles, VZ-Birds, VZ-Fishes, VZ-Mammals, Mineral Sciences) by clicking on your department or project.

NMNH Field Information Management System (FIMS)

Tools ▾ demo Logout Help

Generate Template

Field Categories

Choose Project VZ-Birds

Select a department ...
Botany
Entomology
Invertebrate Zoology
VZ-Amphibians and Reptiles
VZ-Birds
VZ-Fishes
VZ-Mammals
Mineral Sciences

Expand category headings to select or un-select fields.

Definition

Click on the "DEF" link next to any of the headings to see its definition in this pane.

This action will load a unit-specific template based on a list of properties, validation rules, and definitions stored in a master configuration file that resides within the application. The master configuration file is constantly being reviewed and updated by NMNH Informatics. Although users cannot change this file directly, users who wish to add new fields, change current fields or field status, or add or change validation rules can submit a request to InformaticsHelp@si.edu.

Navigating the unit specific Generate Template page

Once on the unit specific Generate Template page, two primary panes are displayed: "Field Categories" on the left and "Definition" on the right.

Generate Template

Choose Project VZ-Birds

Field Categories

Expand category headings to select or un-select fields.

CollectingEvent	<p>This list of properties, validation rules, and definitions were generated by an automated script that parsed information from the Informatics Team's Field Matrix Spreadsheet. You may un-check desired fields or check any other field on the list but may not un-check mandatory fields.</p> <p>Definition:</p> <p>Click on the "DEF" link next to any of the headings to see its definition in this pane.</p> <p>Column Name: Collector 1 (Primary) URI: urn:recordedBy1 Defined_by: http://rs.tdwg.org/dwc/terms/#recordedBy</p> <p>Definition:</p> <p>Synonyms:</p> <p>recordedBy = DwC, "recordedBy" = IndoPacific Template v7, "Gathering/Agents/GatheringAgent/FullName" = ABCDDNA, "DarCollector" = EMuDwC, "CollectedBy" = Biocode, "CollectedBy" = DwC (Proposed 1.4), "CollectedBy" = Entomology - Sean Brady, "Collector/Source" = Reptiles & Amphibians, "Collector" = Kress PB Collect'n Spreadsheet, "Collector" = Botany - Acevedo, "Collectors" = BOLD, "collector_1" = Plantbarcodes.individual, "collector1" = Plantbarcodes.plot,</p>
DepthElevation	
Georeference	
Identification	
Institution	
Locality	

Field Categories

Field Categories are expandable categories of fields organized by theme. These themes include, for example (in VZ Birds Collecting Event), Depth Elevation, Georeference, Identification, Institution, Locality, Measurements, and Preparation. Other units have columns specific to their field value needs. Clicking on any of these column headings will expand or collapse the available fields.

Field Categories

Expand category headings to select or un-select fields.

CollectingEvent

- Collector 1 (Primary) DEF
- Date Visited (From) DEF

DepthElevation

Georeference

Identification

Institution

Locality

Field Categories

Expand category headings to select or un-select fields.

CollectingEvent

- Collector 1 (Primary) DEF
- Date Visited (From) DEF

DepthElevation

- Elevation From (ft) DEF
- Elevation From (m) DEF

Georeference

- Latitude Decimal DEF
- Longitude Decimal DEF
- Datum DEF
- Coordinate Determination Method DEF
- Coordinate Notes DEF
- Coordinate Determination Source DEF
- Latitude Degrees DEF
- Latitude Minutes DEF
- Latitude Direction DEF

Field Definitions

Clicking the DEF next to any field name will display and/or change the Definition information in the right frame of the screen to correspond to that field.

CollectingEvent

- Collector 1 (Primary) DEF
- Date Visited (From) DEF

This list of properties, validation rules, and definitions were generated by an automated script that parsed information from the Informatics Team's Field Matrix Spreadsheet. You may un-check desired fields or check any other field on the list but may not un-check mandatory fields.

Definition

Click on the "DEF" link next to any of the headings to see its definition in this pane.

Column Name: Collector 1 (Primary)
URI = urn:recordedBy
Defined_by = <http://rs.tdwg.org/dwc/terms/#recordedBy>

Definition:

Synonyms:

recordedBy = DwC,
"recordedBy" = IndoPacific Template v7,
"Gathering/Agents/GatheringAgent/FullName" = ABCDDNA,
"DarCollector" = EMuDwC,
"CollectedBy" = Biocode,
"CollectedBy" = DwC (Proposed 1.4),
"CollectedBy" = Entomology - Sean Brady,
"Collector/Source" = Reptiles & Amphibians,
"Collector" = Kress PB Collect'n Spreadsheet,
"Collector" = Botany - Acevedo,
"Collectors" = BOLD,
"collector_1" = Plantbarcodes.individual,
"collector1" = Plantbarcodes.plot,

The definitions include a list of properties specific to that field. These properties include the following information.

- **Column Name** – a vernacular field name, often the one used as the field name in the EMu application.
- **URI** - a Uniform Resource Identifier is a string of characters used to identify a name of a resource. In this case, the URI is a Uniform Resource Name (URN) design to be a persistent resource identifier in NMNH FIMS.
- **Defined_by** - link of the term used, with reference to an explicit definition based on a standard vocabulary.
- **Definition** – general definition of the term with examples of its use.
- **Synonyms** – synonymy of terms used across numerous vocabularies and initiatives.
- **Validation Rules** – rules used to validate field in NMNH FIMS Validation step.

Selecting Fields

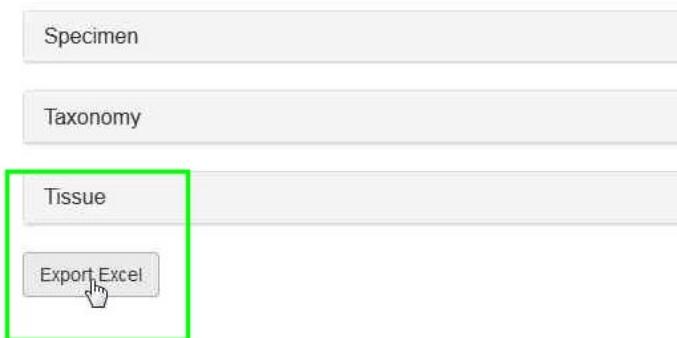
In order to select the fields that will appear in the Excel spreadsheet, check the box next to your desired field(s).. Not all fields can be selected, as some fields are mandatory. Below is a list of the available field types.

- **Mandatory** – These fields are always selected and will always be part of any Excel spreadsheet. They cannot be unchecked.
- **Desirable** – These fields are desirable based on unit input, but can be removed if desired.
- **Present** – These fields are present and can be added to the Excel spreadsheet by checking the field's checkbox.

Tip: Only select those fields which will be helpful for a field collection. Although all fields can be added, it is unlikely that data for ALL fields will be collected in the field.

Exporting Spreadsheet

Once fields relevant to your collecting trip are selected, an Excel spreadsheet is generated. Click the “Export Excel” button at the very bottom of the Left pane.



This button may be below the active screen and may require scrolling down.

Add Accession Number and Dataset Code

After clicking the “Export Excel” button, an entry form will appear which requires the user input the Accession Number (received from the Pre-registration step) and the Dataset Code.

A screenshot of a dialog box titled "NMNH Project Additional Information". It contains two text input fields: "Accession Number:" and "Dataset Code:". Below the fields are two buttons: "Create" and "Cancel".

Accession Number - an integer generated in EMu that is at least 6 characters long. Please use only valid Accession Numbers in this field.

Dataset Code – unique alphanumeric sequence that describes the collection trip. Dataset codes must be between 8 and 20 alphanumeric characters containing numbers (0-9), letters (A-Z) or an underscore (_).

Tip: A Dataset Code is designed to help track the field collection through the entire process of data management. Using a unique Dataset Code each time a spreadsheet is generated allows for best-practice in data management. An example of a good Dataset Code would be: Collector initials, underscore, collection location abbreviation, underscore, date (ABC_VA_10AUG2014).

Warnings - Accession Number and Dataset Codes

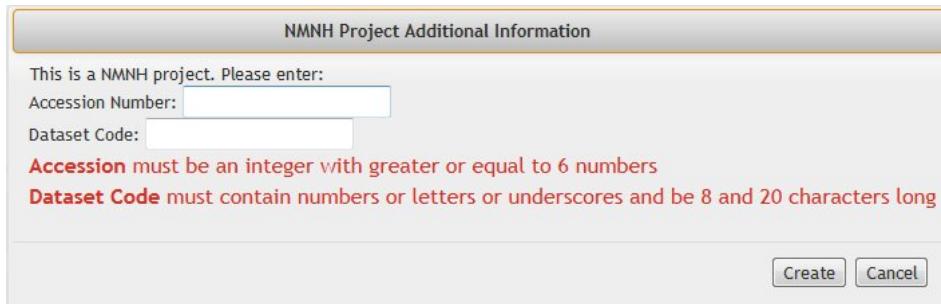
“Warning: Dataset Code ‘[Dataset Code]’ already exists.”

A screenshot of a dialog box titled "Dataset Code". It displays a single line of text: "Warning: Dataset Code 'Birds_Test' already exists. The Dataset Code designates a globally unique key for this dataset. Select CONTINUE only if you wish to update column names for a spreadsheet you recently downloaded, otherwise select CANCEL to type in a new Dataset Code". At the bottom are "Continue" and "Cancel" buttons.

This warning is encountered when entering a Dataset Code value that is not unique. The system allows you to update an existing spreadsheet (such as adding new columns to it).

Pressing “Continue” will update an existing spreadsheet. Pressing “Cancel” will return the entry form so a new, unique Dataset Code can be entered.

“Make sure your Accession Number is an integer and the Dataset Code is an alphanumeric between 4 and 16 chars long!”

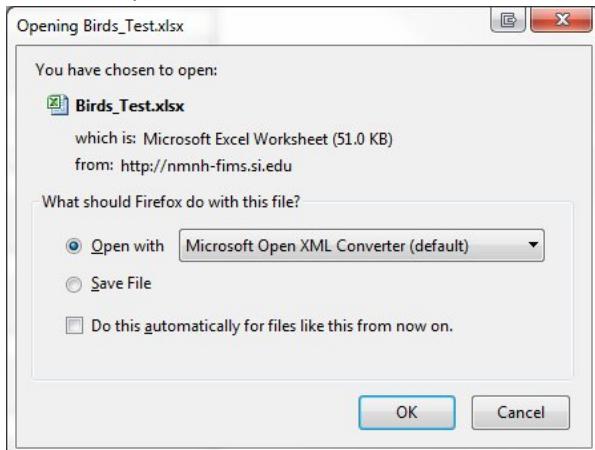


This warning can be encountered when entering values for Accession Number or for Dataset code. Filling in either field with incorrect values will trigger the warning. Correct values must be entered to

clear the warning. Accession numbers should be 6 or more numeric characters and should correspond to the pre-registration in EMu and the Accession Number for the in Process Acquisition transaction. Dataset codes must be between 8 and 20 alphanumeric characters containing numbers (0-9), letters (A-Z) or an underscore (_).

Saving or Opening Excel Spreadsheet

After successfully entering a valid Accession Number and Dataset Code, a dialog box will appear. Select “Save File” or “Open with” and the select “OK”. The file will either be saved to your local computer or opened with



the default program for a Microsoft Excel .xlsx file, the newer (Office 2007 and above) format for Excel files.

Note: If the Excel file is downloaded, the download location of this file on your computer is controlled by your browser settings. Check your browser setting to locate the default folder for downloads.

NMNH FIMS Spreadsheets

Spreadsheet Tabs

Spreadsheets that are generated from NMNH FIMS contain four tabs- Instructions, Samples, Data Fields, and Lists. Each of these tabs is important for the proper functioning of the spreadsheet and none of them should ever be removed. Functionality for each spreadsheet tab is described in the following subsections:

Instructions Tab

The instructions tab contains information about the Excel spreadsheet that was downloaded from NMNH FIMS. These information include the NMNH unit for which the spreadsheet was designed, the Dataset Code, an ARK root (see below for more information), the Accession Number, the username of the person that generated the spreadsheet, the date the spreadsheet was generated, a field to collect information on the person(s) that record data in the spreadsheet, and brief definitions of content in the other spreadsheet tabs. Although not mandatory, it is best-practice to enter the name(s) of the individual(s) entering data into the spreadsheet. Enter these data into row 8 within the [] following "Person(s) responsible for data entry".

Important Note: Row 1 of the Instructions Tab is hidden and contains vital information to be used when validating and versioning the spreadsheet. **Do not edit or remove this row.**

The screenshot shows a Microsoft Excel window with the title bar 'bIRD_tEST.xlsx - Microsoft Excel'. The ribbon menu is visible with tabs like File, Home, Insert, Page Layout, Formulas, Data, Review, View, and Acrobat. The Home tab is selected, showing various font and style tools. The spreadsheet content includes:

- Row 2: Hidden row containing vital validation and versioning information.
- Row 3: 'Smithsonian VZ-Birds'
- Row 4: 'Dataset Code: Bird_Test'
- Row 5: 'ARK root: ark:/99999/AU2'
- Row 6: 'Accession Number: 999999'
- Row 7: 'Templated generated by 'orrellt' on August 29, 2014'
- Row 8: 'Person(s) responsible for data entry []'
- Row 10: 'Samples Tab'
Detailed description: Please fill out each field in the "Samples" tab as completely as possible. Fields in red are required (data cannot be uploaded to the database without these fields). Required and recommended fields are usually placed towards the beginning of the template. Some fields have a controlled vocabulary associated with them in the "Lists" tab and are provided as data validation in the provided cell. If you have more than one entry to a field (i.e. a list of publications), please delimit your list with semicolons (;). Also please make sure that there are no newline characters (=carriage returns) in any of your metadata. Fields in the Samples tab may be re-arranged in any order so long as you don't change the field names.
- Row 13: 'Data Fields Tab'
Detailed description: This tab contains column names, associated URIs and definitions for each column.
- Row 16: 'Lists Tab'
Detailed description: This tab contains controlled vocabulary lists for certain fields. DO NOT EDIT this sheet!

ARK Root , GUIDs, BCIDs, and EZIDs

An ARK stands for "Archival Resource Key" – and is a persistent identifier used in the library, archive and museum community. The ARK root establishes a unique value for the dataset collected in the generated NMNH FIMS spreadsheet. Based on the ARK root, each spreadsheet object will eventually be assigned a Globally Unique Identifier (GUID). The GUID can be used to associate the object so that it can be managed over time; the GUID is persistent and will not change if the item is moved or renamed. This means that an

item can be reliably referenced and resolved for future access. The GUID standard being are EZIDs from the California Digital Library. The EZIDs fall under the Creative Commons Attribution 3.0 License.

Samples Tab

Please fill out each field in the "Samples" tab as completely as possible. Fields in red are required (data cannot be uploaded to the database without these fields). Required and recommended fields are usually placed toward the beginning of the template. Some fields have a controlled vocabulary associated with them in the "Lists" tab and are provided as data validation in the provided cells. If you have more than one entry to a field (i.e. a list of publications), please delimit your list with pipe character (|). Also please make sure that there are no new line characters (=carriage returns) in any of your metadata. Fields in the Samples tab may be re-arranged in any order so long as you don't change the field names.

The screenshot shows a Microsoft Excel spreadsheet titled "Smithsonian_VZ-Birds.xls [Compatibility Mode] - Microsoft Excel". The "Samples" tab is selected. The first row contains the following column headers: "Collector 1 (Primary)", "Date Visited (From)", "Elevation From (m)", "Latitude Decimal", "Longitude Decimal", and "Collection Department/Division". The "Collector 1 (Primary)" cell is highlighted with a yellow background, indicating it is a required field. The other five columns are white. The "Collector 1 (Primary)" cell contains the text "Collector 1 (Primary)". The "Samples" tab is also highlighted in the bottom navigation bar.

Some fields have pull-downs lists with controlled vocabulary selections. These controlled vocabulary contents are based on unit input and are often related to controlled values in EMu. These items are designed to make input easier and to reduce the potential for typographic error.

G	H	I
Country	Continent	District/County/Shire
	Africa Antarctica Asia Australia Europe North America Oceania South America	

Data Fields Tab

The DataFields tab contains Column Name, Definitions, Controlled Vocabulary, and Data Format for each column and is designed to be a reference for proper data entry format used in the Samples Tab; by referencing the Data Format and Definitions columns for any corresponding Column Name, users can record data in the format preferred for import into EMu.

	A1	Column Name	B	C	D
		Definition	Controlled Vocabulary (see Lists)	Data Format	
1	ColumnName	 <div id="synonyms">Synonyms:</div> <div id="recordedBy">recordedBy = IndoPacificTemplate v7, "Gathering/Agents/GatheringAgent/FullName" = ABCDDNA, "DarCollector" = EMuDwC, "CollectedBy" = Biocode, "CollectedBy" = DwC (Proposed 1.4), "CollectedBy" = Entomology - Sean Brady, "Collector/Source" = Reptiles & Amphibians, "Collector" = Kress PB Collect'n Spreadsheet, "Collector" = Botany - Acevedo, "Collectors" = BOLD, "collector_1" = Plantbarcodes.individual, "collector1" = Plantbarcodes.plot,</div> <div id="dataFormat">Data Formatting Instructions:<p id="dataFormatValue">Lastname, FirstInitial. SecondInitial. Ex.: Darwin, C. R. (with spaces)</p></div>			
2	Collector 1 (Primary)	DwC: The date-time or interval during which an Event occurred. For occurrences, this is the date-time when the event was recorded. Not suitable for a time in a geological context. Recommended best practice is to use an encoding scheme, such as ISO 8601:2004(E) Examples: "1963-03-08T14:07:0600" is 8 Mar 1963 2:07pm in the time zone six hours earlier than UTC, "2009-02-20T08:40Z" is 20 Feb 2009 8:40am UTC, "1809-02-12" is 12 Feb 1809, "1906-06" is Jun 1906, "1971" is just that year, "2007-03-01T13:00:00Z" http://rs.tdwg.org/dwc/terms/EventDate BOLD: Date of collection, must be in DD-MMM-YYYY. If there is a date range, the Collection Date should be the mid-point, and the +/- can be entered into the Accuracy field. FROM MIGS: The time of sampling, either as an instance (single point in time) or interval. In case no exact time is available, the date/time can be right truncated i.e. all of these are valid times: 2008-01-23T19:23:10+00:00; 2008-01-23T19:23:10; 2008-01-23; 2008-01; 2008; Except: 2008-01; 2008 all are ISO8601 compliant ABCDNA: date when voucher was collected, if you have content you can also use ISO format (e.g. 21. April 1951) Birds: Calculation field; extracts date from standard Collector's Number <div id="synonyms">Synonyms:<p>"eventDate" = DwC, "Gathering/DateTime/DateTimeText" = ABCDDNA, "collection date" = M1xS, "DateCollected" = Entomology - Sean Brady, "Collection Date" = Kress PB Collect'n Spreadsheet, "collection_date" = Plantbarcodes.individual, "Collection Date" = BOLD, "Coll_Date" = Botany - Acevedo, "Date" = Birds, "Date" = Entomology - Ted Schultz.,</div> <div id="dataFormat">Data Formatting Instructions:<p id="dataFormatValue">YYYY MM DD ex. 2014 08 26</p></div>		Lastname, FirstInitial. SecondInitial.	
3	Date Visited (From)				YYYY MM DD ex. 2014 08 26

List Tab

The List Tab contains controlled vocabulary lists for certain fields. These lists are used in the Samples Tab whenever a field value has a pull-down option (see Sample Tabs above). **Please do not edit these items.**

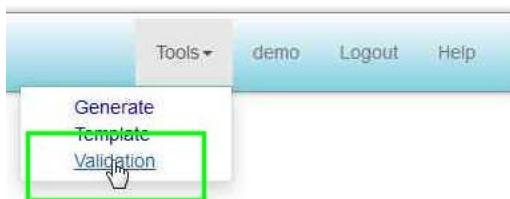
1	Sex	measurementUnit	sampleQuality	ocean	hybridRank	Zoology Stage	phylum	collector	order	geodeticDatum	latitude
2	Female	cm	High	Antarctic Ocean	Genus					NAD27	N
3	Male	ft	Medium	Arctic Ocean	Species	Adult				NAD83	S
4	Unknown	g	Low	Indian Ocean		Chick					WGS84
5		in		North Atlantic Ocean		Embryo					
6		ins		North Pacific Ocean		Immature					
7		kg		South Atlantic Ocean		Juvenile					
8		lb		South Pacific Ocean		Subadult					
9		lbs									
10		mm									
11		oz									
12		ct									
13											
14											
15											
16											
17											
18											
19											
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Validation

Spreadsheet validation is a process by which spreadsheet data are proofed against a master configuration file; the master configuration file contains field validation rules, list values, and, mandatory, preferred, or optional field status. The process of validation is meant to be iterative – a spreadsheet that does not pass validation is to be corrected, and then resubmitted for validation. The process would continue until a spreadsheet has no errors and warnings are minimized.

Template validation

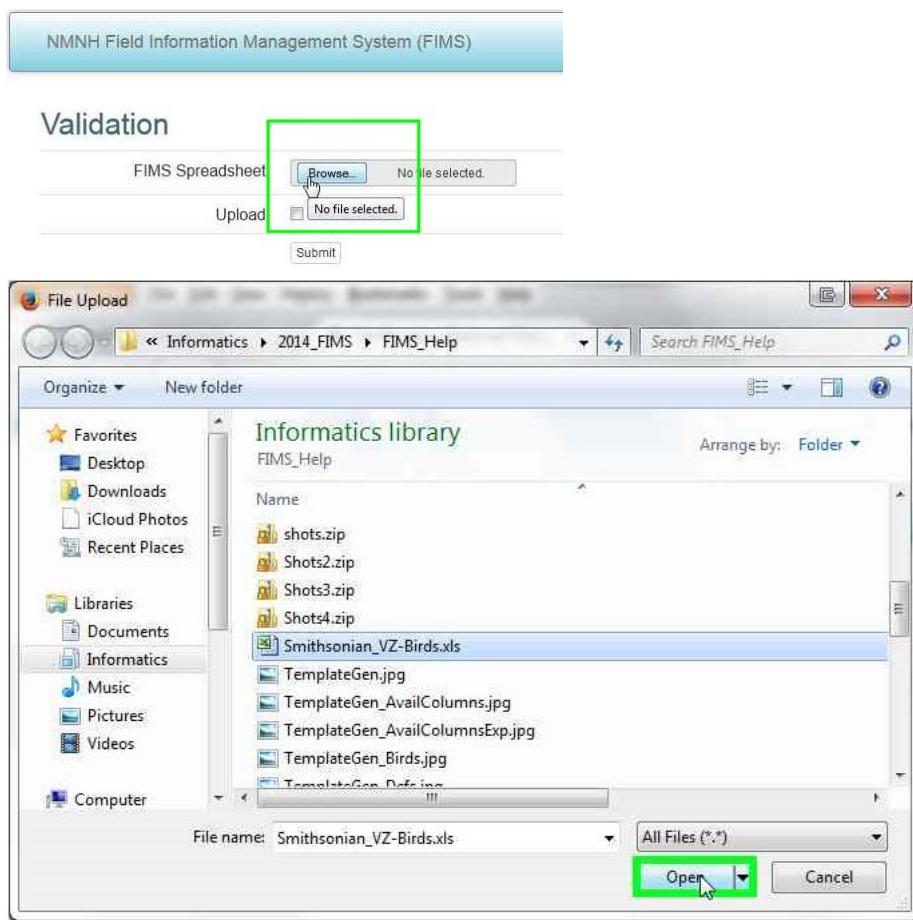
To validate a collecting spreadsheet, click on the Tools pull-down icon on the main menu and select "Validation".



The screen below shows the main validation screen.



Click the "Browse" button to find the spreadsheet on your file system.



Highlight desired file and select Open. This will select the desired spreadsheet for upload.

When the file is loaded successfully, the spreadsheet file name will appear to the right of the Choose File button and the project name will appear in the Project field. Then click "Submit"

Important Tip: Do not check the Upload box yet.

NMNH Field Information Management System (FIMS)

Validation

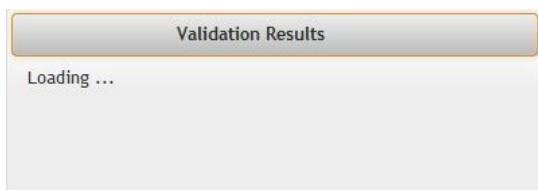
FIMS Spreadsheet Birds_TEST.xlsx

Project VZ-Birds

Upload

Passing Validation

Once the "Submit" button is clicked, the system will parse the spreadsheet to identify any data errors or inconsistencies. You may see the following dialog box while this is occurring:



The system will then return a set of validation results.

NMNH Field Information Management System (FIMS) Tools ▾ orrexit Logout Help

Validation

FIMS Spreadsheet Birds_Test2.xlsx

Project VZ-Birds

Upload

Initializing...
inputFilename = Birds_Test2.xlsx
Validating...

Validation results on "Samples" worksheet.
1 or more errors found. Must fix to continue. Click each message for details
Warning: "Genetic Sample Type Secondary" contains invalid value [see list](#)

Error: Required column check rule failed

Warning: Required column check rule failed

Warning: Dependent column value check

These results can either be errors (spreadsheets values that must be fixed to continue to the loading process) or warnings (spreadsheet values that are either missing or wrong but will not keep a spreadsheet from continuing to the load step.) Click on the error or warning message to see a detailed list.

Validation results on "Samples" worksheet.
1 or more errors found. Must fix to continue. Click each message for details
Warning: "Genetic Sample Type Secondary" contains invalid value [see list](#)

Error: Required column check rule failed

Warning: Required column check rule failed

Warning: Dependent column value check

The detailed error and warning messages will refer to the row and cell where the error occurred. Note – for large spreadsheets, these explicit lists can become very large and it is suggested to copy or download these messages for future use.

Initializing...
inputFilename = Birds_Test2.xlsx
Validating...

Validation results on "Samples" worksheet.
1 or more errors found. Must fix to continue. Click each message for details
Warning: "Genetic Sample Type Secondary" contains invalid value [see list](#)
Row 1: "stuff" not an approved "Genetic Sample Type Secondary"

Error: Required column check rule failed
"Genus" has a missing cell value

Warning: Required column check rule failed
"District/County/Shire" has a missing cell value "Habitat" has a missing cell value "Precise Locality" has a missing cell value
"Province/State/Territory" has a missing cell value "Measurement 1 of" has a missing cell value "Measurement 1 Type" has a missing cell value
"Measurement 1 Unit" has a missing cell value "Measurement 1 Value" has a missing cell value "Preparation Date" has a missing cell value
"Microhabitat description" has a missing cell value "Molt 1 Description" has a missing cell value "Molt 1 Part" has a missing cell value
"Reproductive Part 1" has a missing cell value "Reproductive Part 1 Length" has a missing cell value "Reproductive Part 1 Remarks" has a missing cell value
"Reproductive Part 1 Unit" has a missing cell value "Reproductive Part 1 Width" has a missing cell value "Soft Part 1" has a missing cell value
"Soft Part 1 Color" has a missing cell value "Biorepository ID" has a missing cell value "Genetic Sample Type Verbatim" has a missing cell value

Warning: Dependent column value check
Row 1: "Kind of Object" is declared as "Genetic Sample" and associated column "Biorepository ID" has no value
Row 1: "Kind of Object" is declared as "Genetic Sample" and associated column "Genetic Sample Type Verbatim" has no value

If a value entered for a field is not part of an approved list value (an occurrence that would require advanced spreadsheet knowledge¹) – then a warning will be encountered with an option to view an approved list for that field. Click on “see approved” to the right of the warning to see the approved list.

Validation results on "Samples" worksheet.
1 or more errors found. Must fix to continue. Click each message for details
Warning: "Genetic Sample Type Secondary" contains invalid value [see list](#)

Error: Required column check rule failed

Warning: Required column check rule failed

Warning: Dependent column value check

Clicking “see approved” will reveal a list of acceptable values for that particular look-up list.

¹ In MS Excel, the Data Validation rules are set to give a stop error if an entered value is not part of a list. However, this can be overruled by changing the data validation error alert to a warning. This option should only be used if a required value is missing while on a collection trip.

Validation

FIMS Spreadsheet Birds:

Project

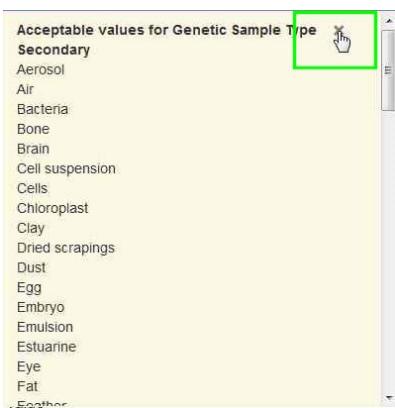
Upload

Initializing...
inputFilename = Birds_Test2.xlsx
Validating...

Validation results on "Samples" worksheet.
1 or more errors found. Must fix to continue. Click [here](#) for details.
Warning: "Genetic Sample Type Secondary" contains an error.

Error: Required column check rule failed
"Genus" has a missing cell value

Clicking “X” will close approved list box.



Passing Validation and Submitting Spreadsheet

Once a spreadsheet passes validation (i.e. there are no errors and the warnings shown in the validation results set will not be resolved), the spreadsheet can be submitted to storage by clicking “Upload”.

NMNH Field Information Management System (FIMS)

Tools ▾ orreit Logout Help

Validation

FIMS Spreadsheet Birds_Test2.xlsx

Project

Upload

Dataset Code

Initializing...
inputFilename = Birds_Test2.xlsx
Validating...

Validation results on "Samples" worksheet.
1 or more warnings found. Click each message for details
Warning: Required column check rule failed

Clicking “Upload” will populate *Dataset Code* which is pulled from the first tab of the Excel workbook. The system will validate the spreadsheet one last time and display the results. To continue uploading the file to storage, click on “Continue”. To stop the upload so that the data can be corrected, click on “Cancel”.



If “Continue” is selected, the system will upload the file to storage and provide an upload confirmation. Click “Ok”. Please maintain a local copy of your file!

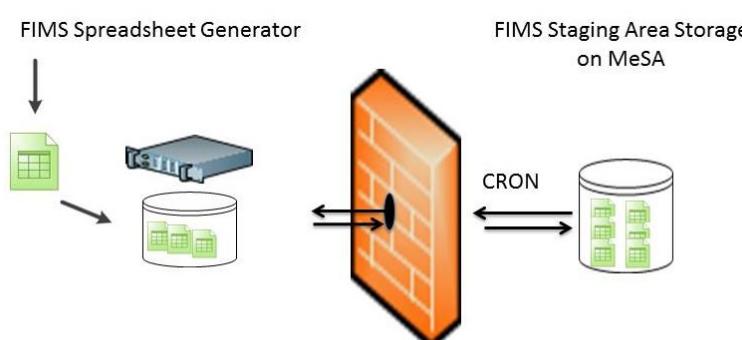
Validation

FIMS Spreadsheet	<input type="button" value="Browse..."/>	No file selected.
Upload	<input type="checkbox"/>	
	<input type="button" value="Submit"/>	

Successfully uploaded your spreadsheet to the server!
dataset code = Birds_Test2
dataset ARK = ark:/99999/AI2
Please maintain a local copy of your File!
Your file will be processed soon for ingestion into RCIS.

Saved NMNH FIMS Files

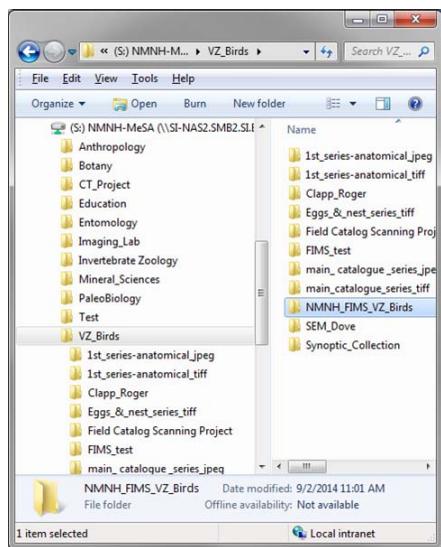
Once a file has been saved in NMNH FIMS, it copied from the NMN-FIMS server to local, enterprise storage on NMNH’s Media Staging Area (MeSA) in a unit specific directory.



The copying process is automated and runs every 30 minutes. MeSA is designed for unit-level access only.

A file on MeSA becomes part of the overall NMNH enterprise storage and is routinely backed-up. Unit data managers can request new access to MeSA.

As an example, a Birds NMNH FIMS spreadsheet file will be saved in the Birds MeSA area under the subdirectory NMNH_FIMS_VZ_Birds (full path): \\SI-NAS2.SMB2.SI.EDU\\NMNH-MeSA\\VZ_Birds\\NMNH_FIMS_VZ_Birds\\.



The following paths are designated for unit-specific NMNH FIMS uploads on MeSA:

- Botany: \\SI-NAS2.SMB2.SI.EDU\\NMNH-MeSA\\Botany\\NMNH_FIMS_Botany\\
- Entomology: \\SI-NAS2.SMB2.SI.EDU\\NMNH-MeSA\\Entomology\\NMNH_FIMS_Ento\\
- Invertebrate Zoology: \\SI-NAS2.SMB2.SI.EDU\\NMNH-MeSA\\InvertebrateZoology\\NMNH_FIMS_IZ\\
- VZ Birds: \\SI-NAS2.SMB2.SI.EDU\\NMNH-MeSA\\VZ_Birds\\NMNH_FIMS_VZ_Birds\\
- VZ Fishes: \\SI-NAS2.SMB2.SI.EDU\\NMNH-MeSA\\VZ_Fishes\\NMNH_FIMS_VZ_Fishes\\
- VZ Amphibians and Reptiles: \\SI-NAS2.SMB2.SI.EDU\\NMNH-MeSA\\VZ_Herps\\NMNH_FIMS_VZ_Herps\\
- VZ Mammals: \\SI-NAS2.SMB2.SI.EDU\\NMNH-MeSA\\VZ_Mammals\\NMNH_FIMS_VZ_Mammals\\
- Mineral Sciences \\SI-NAS2.SMB2.SI.EDU\\NMNH-MeSA\\Mineral_Sciences\\NMNH_FIMS_MinSci\\

Uploading NMNH FIMS Spreadsheets to RCIS

Upon return from the collecting trip, the populated spreadsheets should be added to EMu, and linked to the preregistered Acquisition record. The saved spreadsheet can be found on the unit-specific storage area (see above section “About Saved NMNH FIMS Files.”

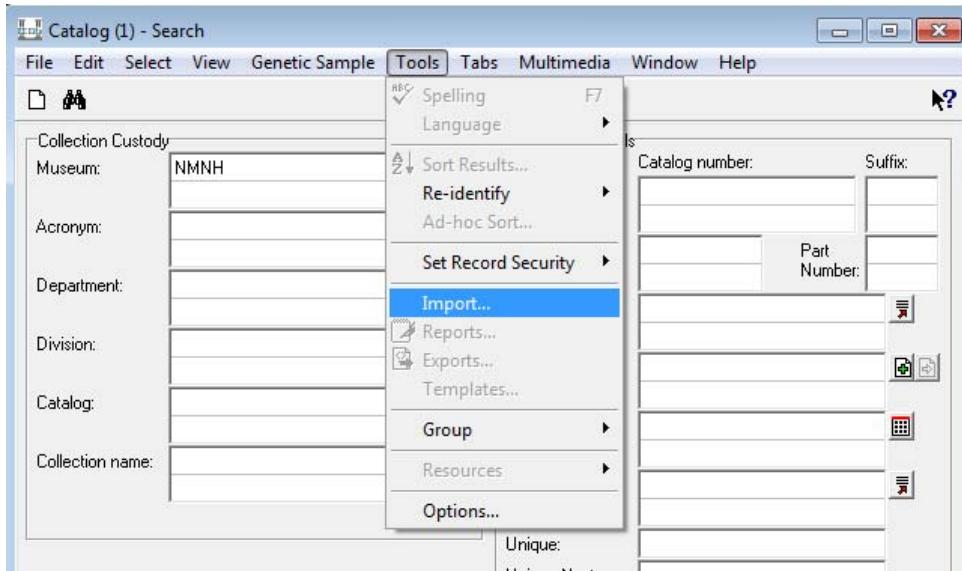
IMPORTANT NOTE: The below Uploading NMNH FIMS Spreadsheets to RCIS steps are done in the EMu application and not in NMNH FIMS.

Uploading the spreadsheets files to EMu

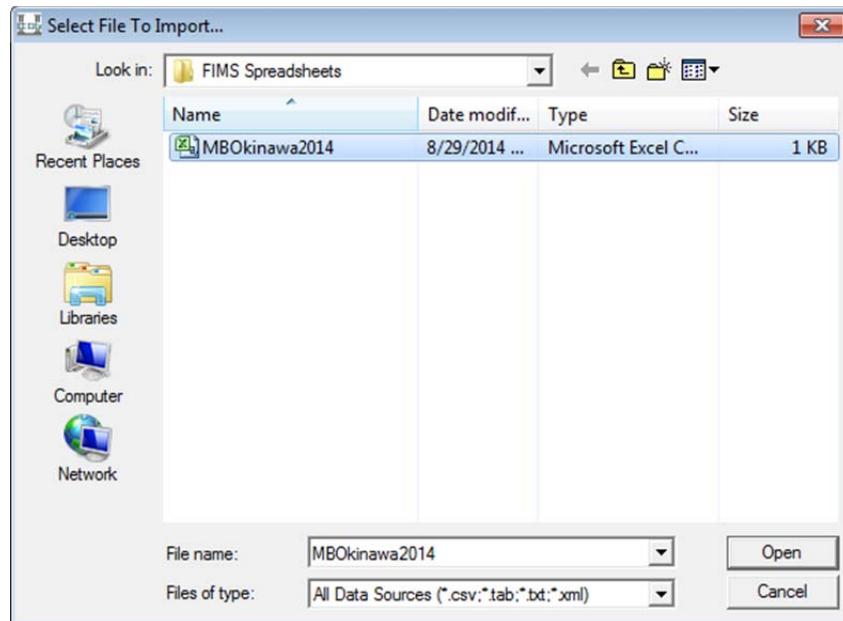
NOTE: In order to be able to upload the data from the FIMS spreadsheet into EMu, the user will need to have Import tool permissions within the EMu system.

At this time, the FIMS spreadsheet will have different column headers than the back-end names required for EMu imports. Please see the mapping cheat-sheet in each department's MeSA folder.

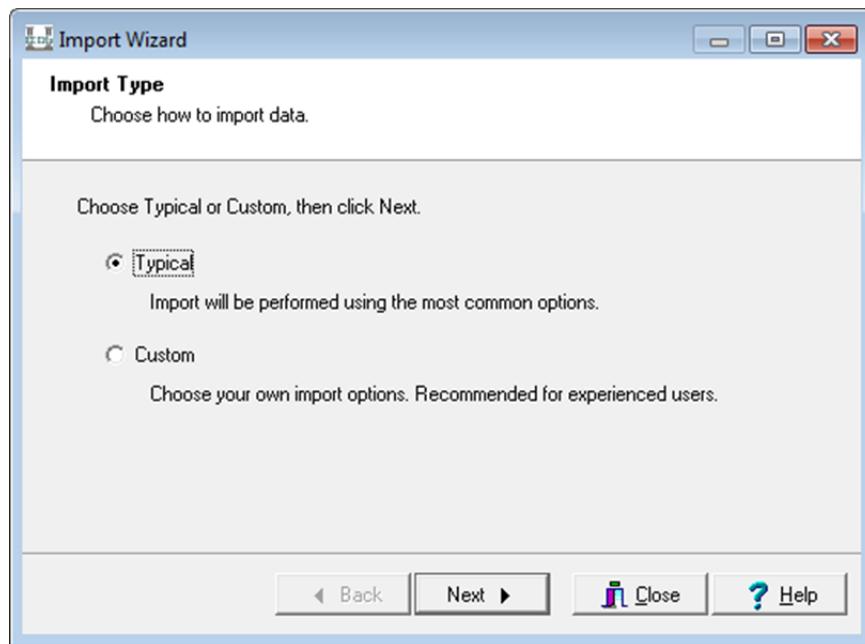
Open the Catalog module in EMu. On the menu, select the option *Tools > Import*.



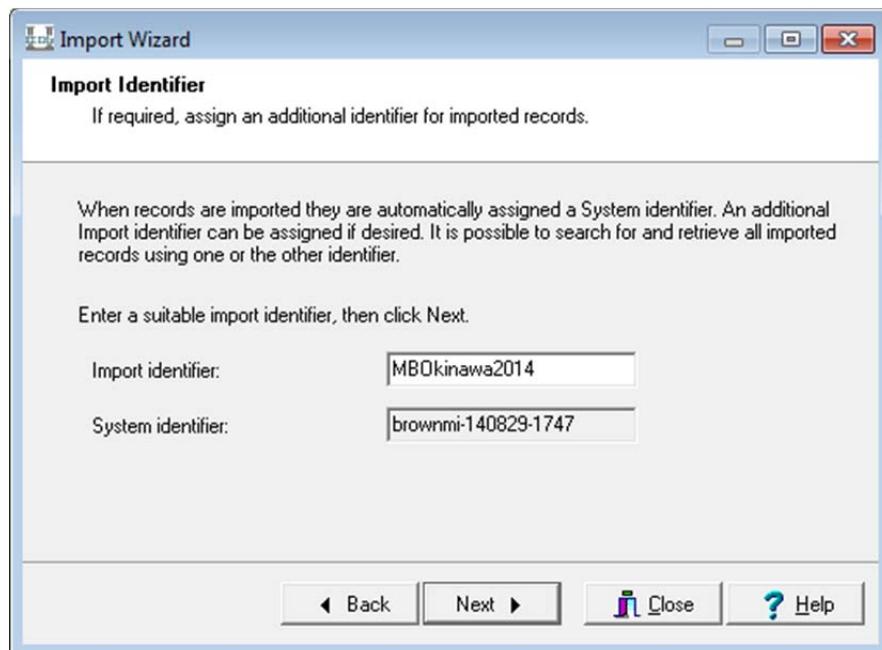
This will open up a file selector window. Navigate to the file's location on the local or network drive, and click "Open".



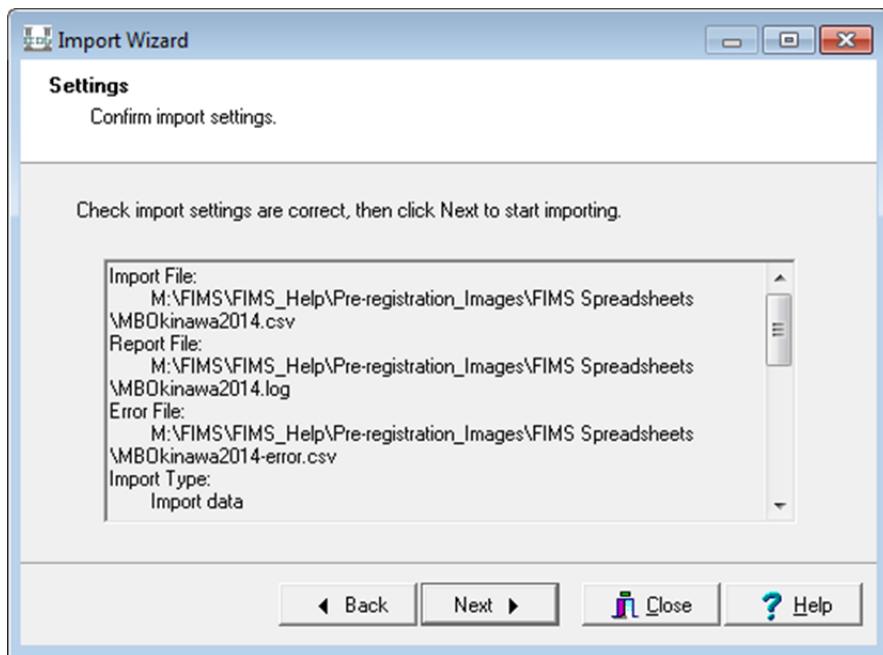
This will launch the EMu Import Wizard. Select the "Typical" import, and click Next.



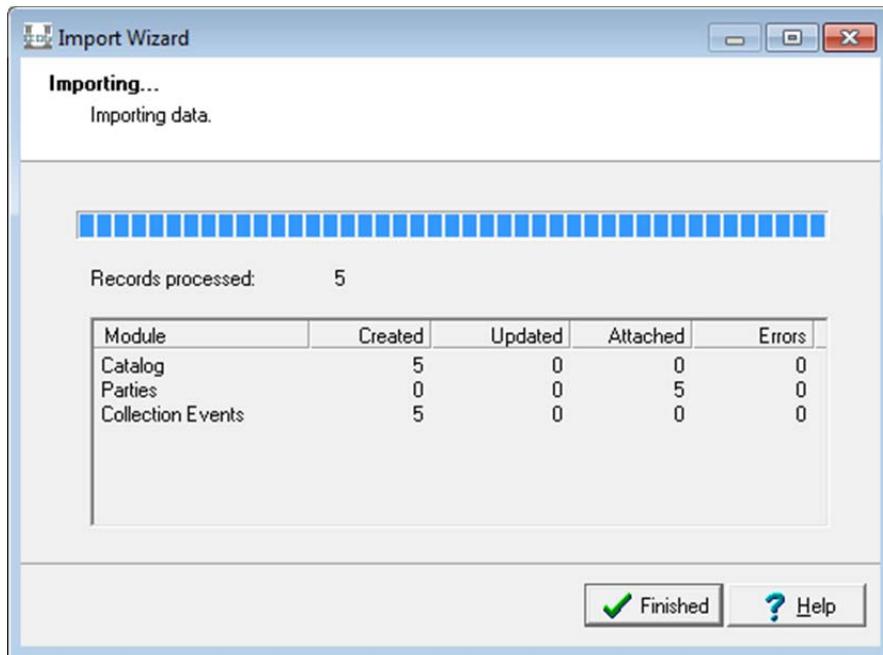
Enter an import identifier. This is a text field so that the user can enter value (for example, the dataset code) that will allow for easier recall of all records included in the import. Click Next again.



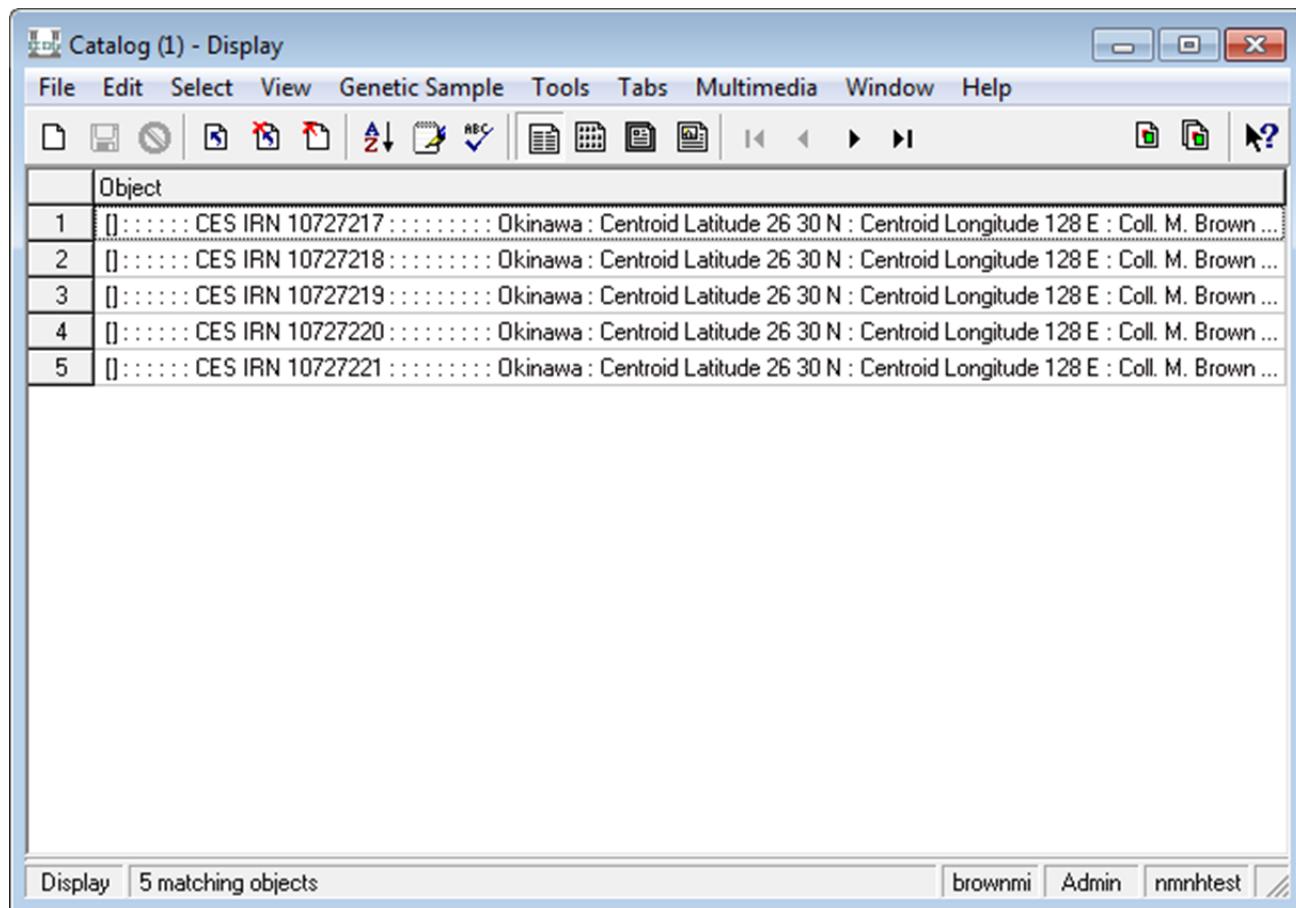
The Settings screen of the wizard confirms the location of the import file, and the destinations of the log file and potentially the error file generated by the import. Clicking Next again will begin the actual import of the data from the spreadsheet to EMu.



The Import will begin to run, displaying its progress. Once the import completes, click the Finish button. Click the Close button on the Import Complete screen that will follow to close out of the Import Wizard.



After the Import Wizard is closed, the imported records from the dataset will be immediately displayed in the Catalog module.



Attaching the spreadsheet files to the Acquisition Transaction

NOTE: This workflow outlines just one of the many possible ways to attach multimedia resources to records in EMu. If you are a regular EMu user and already have a preferred method of attaching multimedia, it is fine to use whatever method you are most comfortable with.

In the Transactions module in EMu, search for the pre-registered Acquisition transaction by entering the accession number in the Transaction Number field. Run the query by clicking on the Search icon in the top left of the window.

Transactions (1) - Search

File Edit Select View Tools Transaction Tabs Multimedia Window Help

Transaction Details

Transaction Type:

Transaction Subtype:

Transaction Number: **2070193**

Legacy OR Number:

Transaction Status:

Transaction Unit:

Insurance: Yes No

Affiliation Agreement: Yes No

Material Description:

Status:

Objects: Lots:

Date Open: Date Closed:

Archived: Yes No Date Archived:

Authority: Current Initiator:

If the record displays as a single row, double click on that row to view the detailed record.

Transactions (1) - Display

File Edit Select View Tools Transaction Tabs Multimedia Window Help

Summary Data	
1	2070193 O: ACQUISITION Collected for Museum; IN PROCESS; NMNH, Michelle D. Brown, United States;

In the menu bar, select the option Tabs>Multimedia. This will quickly navigate to the Multimedia tab of the record.

Transactions (1) - Display

File Edit Select View Tools Transaction Tabs Multimedia Window Help

2070193 O: ACQUISITION Collected for Museum

Transaction Type: ACQUISITION Subtype: Collected for Museum

Acquisition Transactor

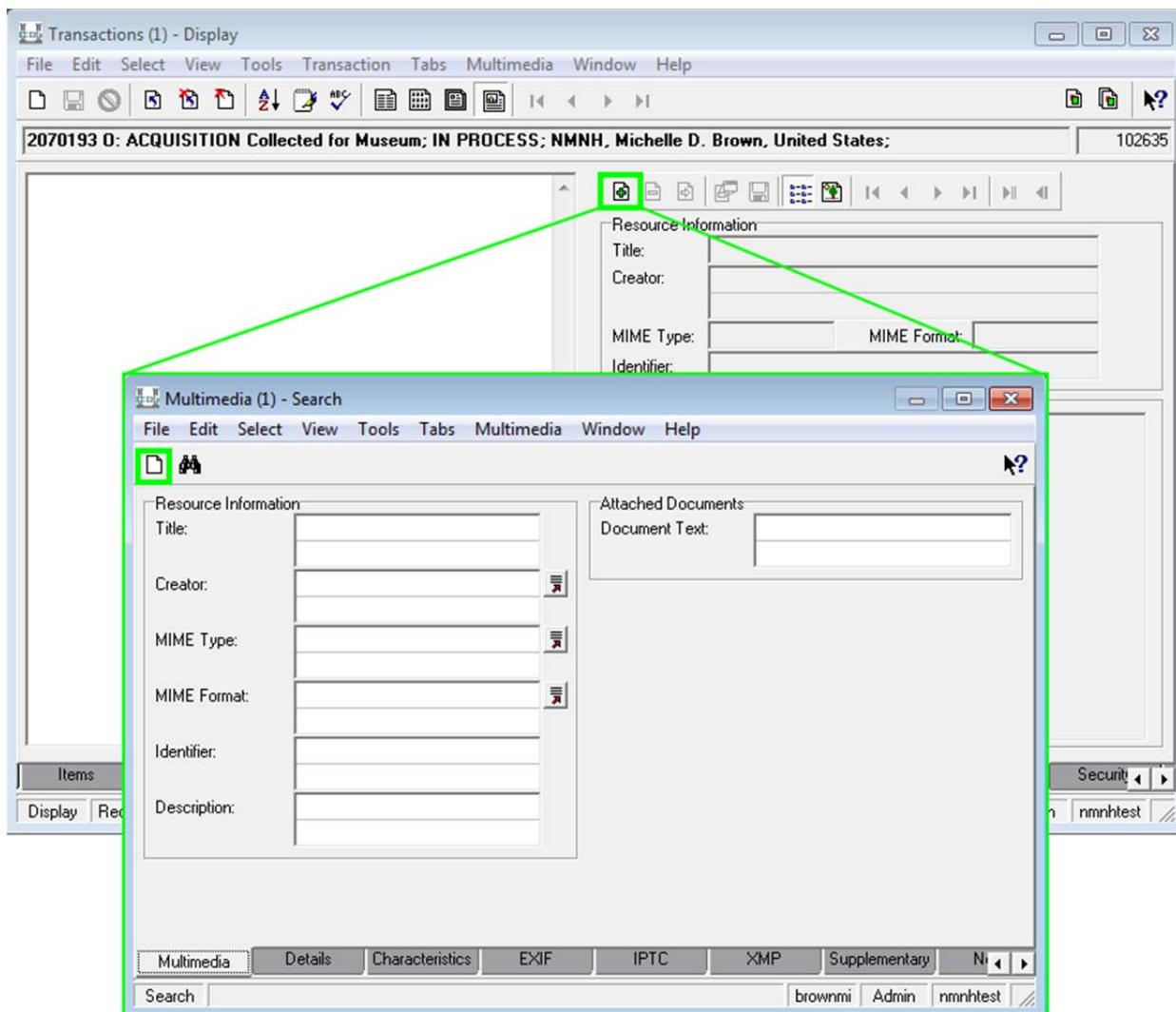
Organization: NMNH Contact: Brown, Michelle D., (NMNH) Smithsonian

Street Address: P.O. Box 37012

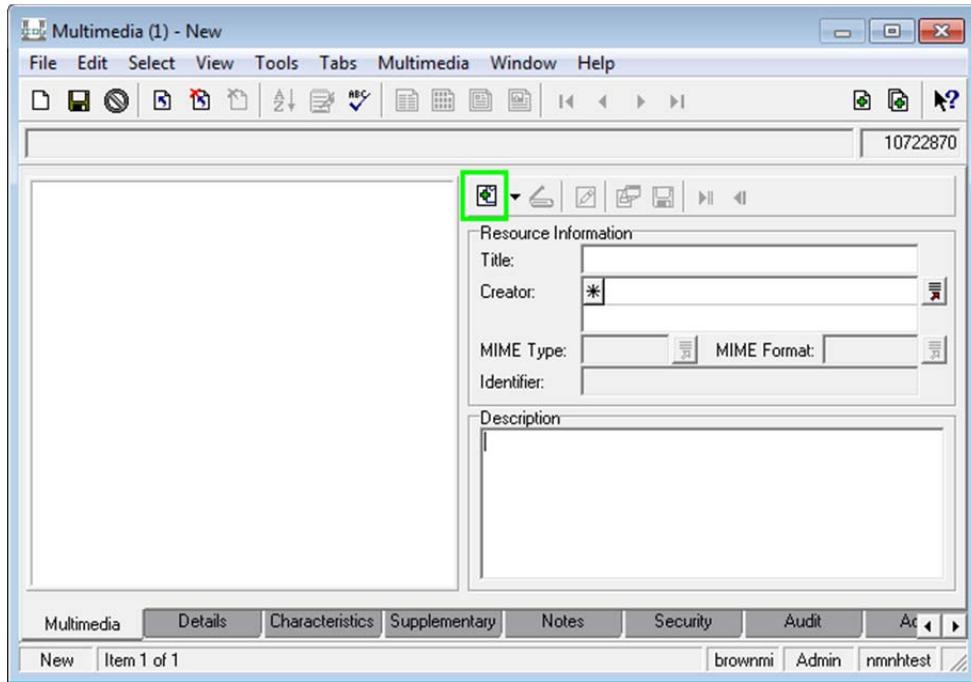
Tabs

- 1 Acquisition
- 2 Transactors
- 3 Items
- 4 Catalog
- 5 Shipments
- 6 Agreements
- 7 Associations
- 8 Projects
- 9 Tasks
- a Notes
- b Multimedia**
- c Security
- d Audit
- e Admin

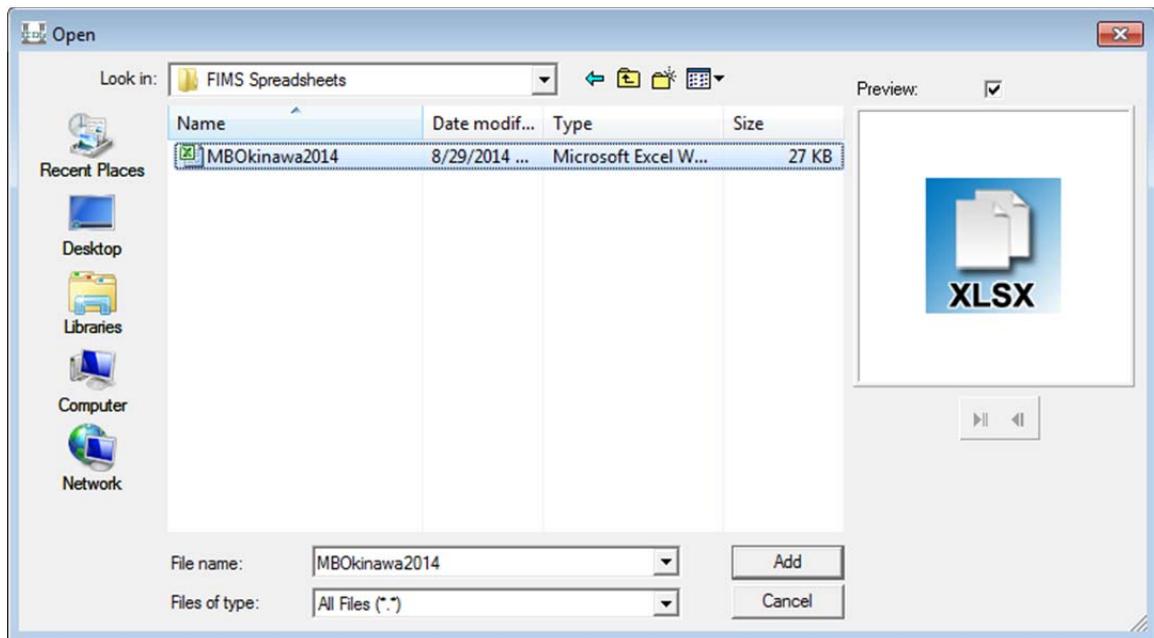
Once on the Multimedia tab of the Acquisition record, click the green [+] icon to launch the Multimedia module in a new window. All media files in EMu are stored within their own module, Multimedia. These Multimedia records (and the assets they represent) can then be linked to any other record in the EMu database. To upload the completed FIMS spreadsheet, a new Multimedia record will be created and the file uploaded to it. To begin, click the New Record icon in the top right of the Multimedia window.



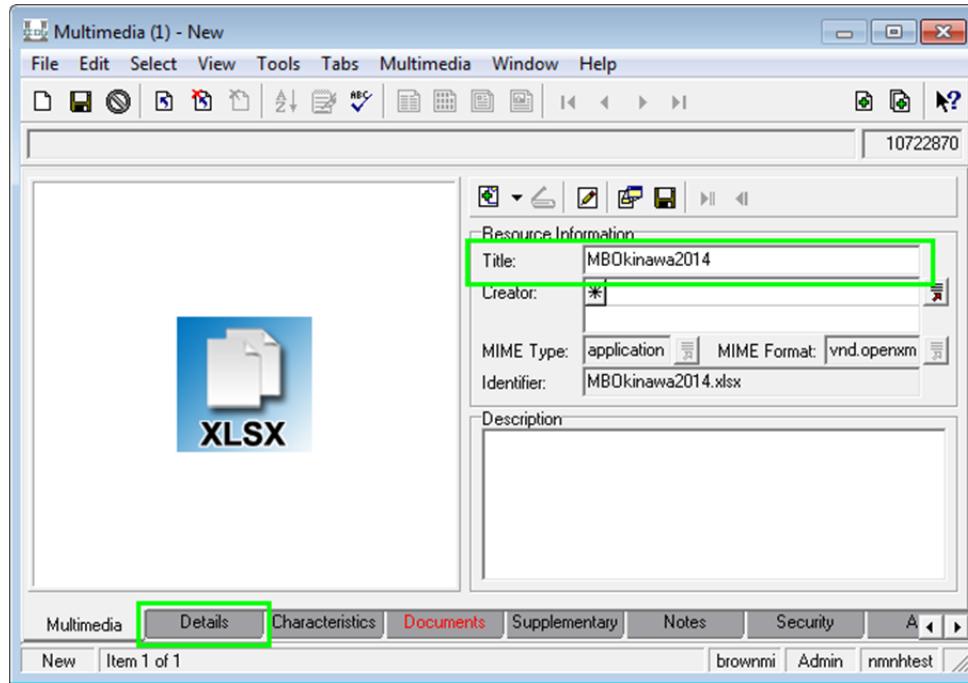
This will open a new blank multimedia record. Click on the green [+] on this window to open the file explorer. The user can then navigate to the location of the spreadsheet on the local or network drive.



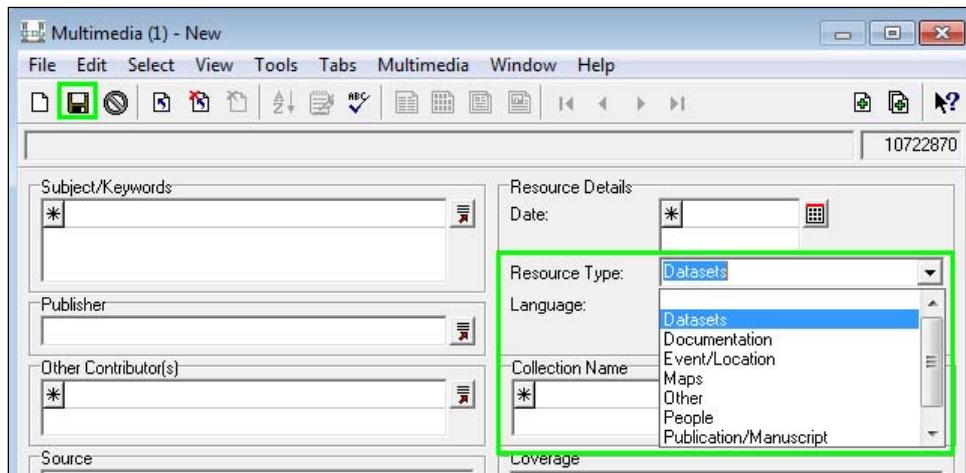
Click the Add...button to upload the spreadsheet into EMu.



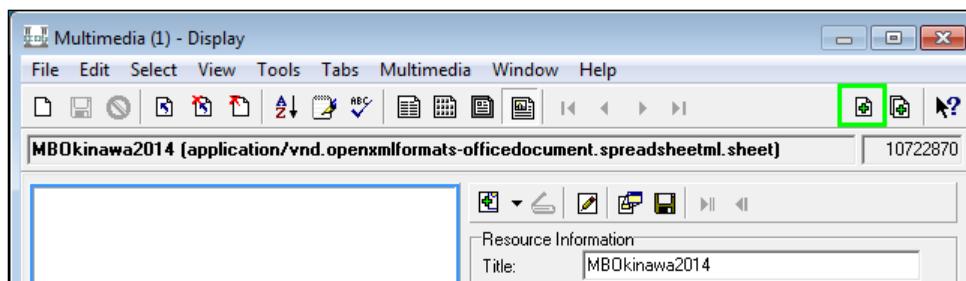
Once the spreadsheet has been loaded enter a Title value, Title is a required field within EMu. The filename of the spreadsheet should be used. After the Title, click the Details tab at the bottom of the window.



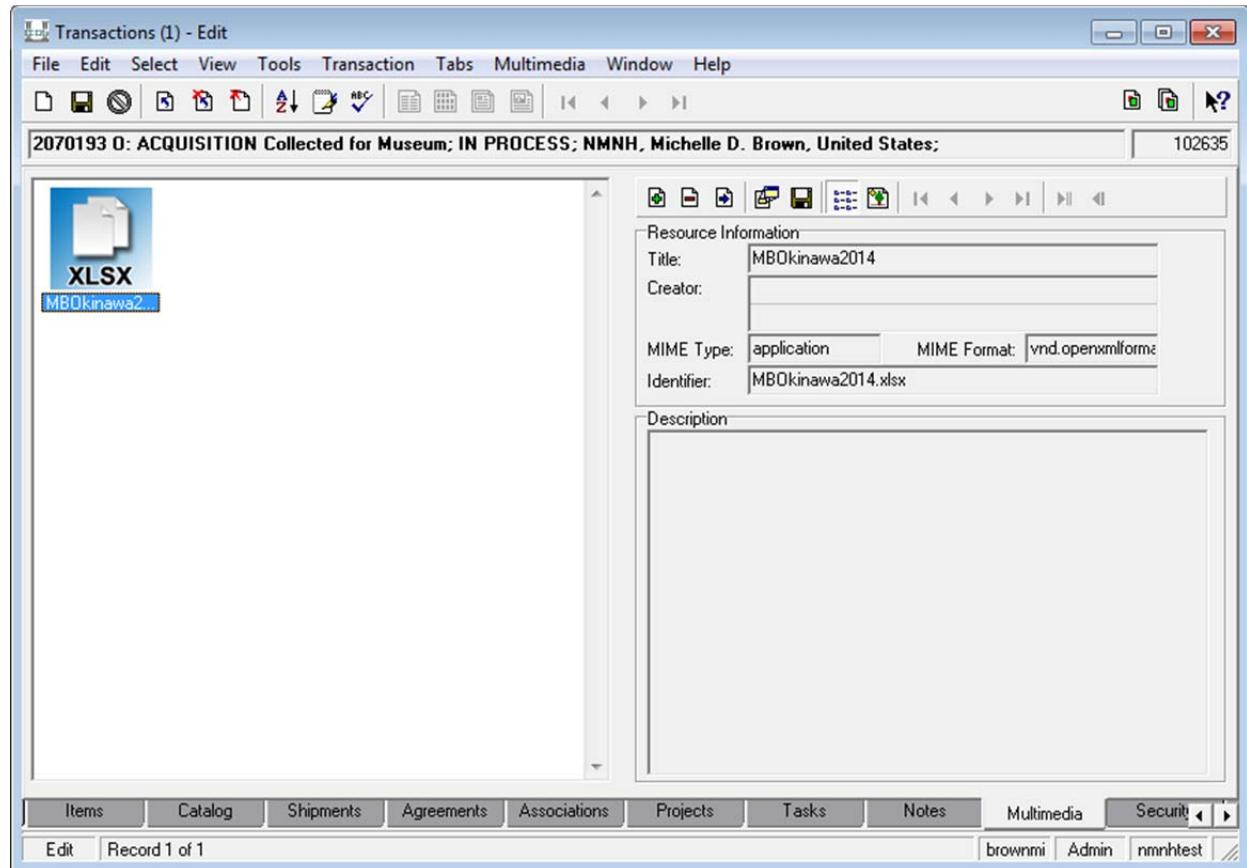
On the Details tab, click on the dropdown on the Resource Type field, and select the value “Datasets”. As with Title, Resource Type is also a mandatory field, and must have a value before the record can be saved.



After saving the Multimedia record, click the green [+] icon at the top right of the Multimedia window.



This will simultaneously close the Multimedia window, and attach the Multimedia record (with its spreadsheet file) to the original Acquisition Transaction. The Multimedia file will display as a thumbnail within the tab on the Acquisition Transaction, double clicking on the thumbnail at any time will open the spreadsheet in Excel or designated program for the .xls/.xlsx extension.



To review:

- Find the pre-registered Acquisition by searching on the Accession (Transaction) number.
- Open the link to the Multimedia module via the Multimedia tab in the Transaction record.
- Create a new Multimedia record, and upload the spreadsheet via the file explorer. Fill in required Multimedia fields *Title* and *Resource Type* (On the Details tab)
- Attach the Multimedia record back to the Transaction record and save