DATIM

Design and Analysis Toolkit for Inventory and Monitoring

User Guide

Version 13.1

October 2020

DATIM User Guide, version 13.1

Last updated: October, 2020

This guide for users of DATIM is supplied by:

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USDA Forest Service
Washington, DC

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Product Disclaimer

Design and Analysis Toolkit for Inventory and Monitoring:

User Guide (version 13.1)

Contents

Preface

Last updated: 10/2020

Design and Analysis Toolkit for Inventory and Monitoring (DATIM) is a suite of software tools intended to improve natural resource inventory and monitoring designs and data analyses by providing nationally consistent tools to access corporate databases.

DATIM is composed of four separate but integrated tools:

- ATIM, the Analysis Tool for Inventory and Monitoring, is used for creating statistically defensible analyses and reports which can be based on the monitoring questions posed in DTIM. ATIM is also integrated with the SIT tool, to focus an analysis on a geographic area of interest and to summarize results using map-based attributes.
- DTIM, the Design Tool for Inventory and Monitoring, is used for identifying information needs and designing more efficient and effective monitoring plans.
- SIT, the Spatial Intersection Tool, is used to perform spatial intersections between plot-based data and user-selected geospatial layers. The results of those intersections are stored in DATIM for analysis in ATIM.
- DCS, the DATIM Compilation System, is used by regional administrators to extract data from external sources, transform the data according to region-specific requirements, and then load the data into the DATIM data mart. Data sources include Field Sampled Vegetation (FSVeg) and FIA's FIADB.

DATIM is available to everyone to use with some users having specialized or advanced roles and permissions.

Conventions Used

A number of special conventions are used in this guide to assist you.

Text conventions include various typefaces used to identify terms and other special objects. These special typefaces include the following:

Convention	Meaning	Example
Bold	Indicates a field name or label prompting user input, or a button or link that you click.	In the **Analysis name** field, type in a unique name for your new analysis… When finished, click **Create Analysis**.
Blue boxes	To show what needs to be addressed	Blue Box
Hyperlink	Provides a hyperlink to another resource.	For more information about DATIM and the Resource Information Group, go to the RIG-DATIM Internet site.

Table 1-1. Text Conventions.

Responsible Organizations

Programming support for DATIM is provided by database and software developers employed by the USDA Forest Service in partnership with the University of Nevada, Las Vegas (UNLV) and Southern Utah University (SUU). The DATIM project is sponsored by the Ecosystem Management Coordination (EMC) Director and Research and Development's (R&D) National Inventory and Monitoring Application Center (NIMAC) which is part of the Forest Inventory & Analysis (FIA) Program.

The Organization responsible for DATIM is:

USDA Forest Service
Ecosystem Management Coordination
Sidney R. Yates Federal Building
201 14th Street, SW
Washington, DC 20024

Assistance

The DATIM staff maintains the RIG-DATIM web site with information and documents related to DATIM, including the DATIM Reference Document which contains a more detailed description of DATIM. Frequently Asked Questions (FAQs) are posted to the web.

Users are welcome to report bugs and other problems with functionality, usability, or workflow by sending an email to datim@usda.gov. Suggestions for improvements to the application are also welcome.

Technical Support

Microsoft Edge, the default browser in the Windows 10 operating system, is not recommended for use with DATIM.

If you have questions or need help with e-Authentication, contact the Customer Help Desk (CHD) at 1-866-945-1354 or 1-800-877-8339 (TTY). If you are behind the Forest Service firewall, you can also initiate a help ticket via the Customer Help Desk website.

Welcome to DATIM

Last updated: 10/2020

A Quick Tour of DATIM

When you launch DATIM, the user interface consists of five main parts as shown in (Figure 1-1) and explained in Table 1-2:

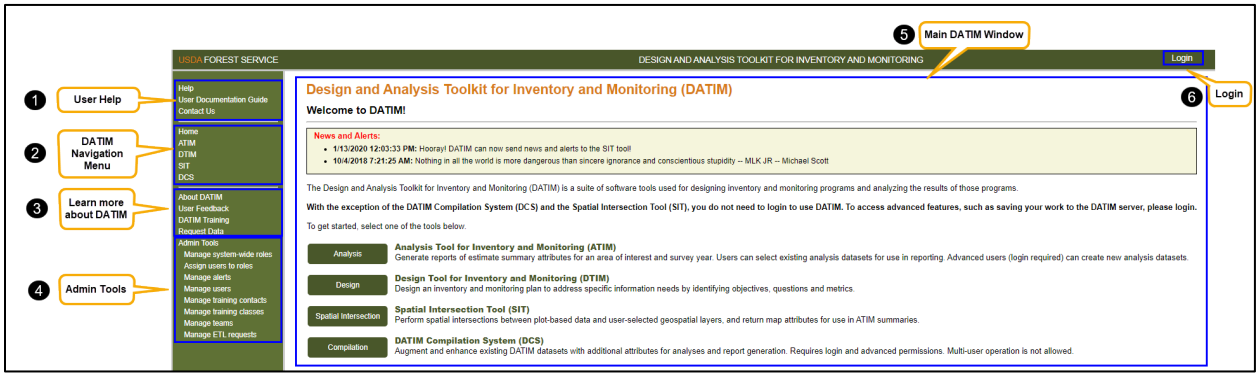


Figure 1-1. The DATIM user interface.

Component number in Figure 1-1	Description of component
1	The **User Help** area provides: • The user help content via the **Help** link. • The **Contact Us** link will open up the **Contact Us** page, where you can provide your name, email, and a brief message detailing your inquiry, and/or provide an attachment. You can also request a different user role from this page. Your message will be delivered to the DATIM team. The **Contact Us** page also provides the contact information for our NFS liaisons & GIS Administrators and FIA contacts.
2	The **DATIM navigation menu** provides links to each of the major areas of DATIM –Home, ATIM, DTIM, SIT, and DCS – and is your way of navigating through the application.
3	The **Learn more about DATIM** area provides links to learn more about DATIM, provide user feedback, sign up to be notified of future DATIM training, and request data to be ETL'd to DATIM.
4	The **Admin Tools** area provides links to the tools specific to users with Administrator privileges. This submenu will not appear unless you are logged in as an administrator.
5	The **main DATIM view** is where you will interface with the various subsystems as you navigate around DATIM. When you open the DATIM application the **Welcome to DATIM** page is shown in the **main DATIM view**.
6	The **Login** link opens a login view where you will be directed to the USDA eAuth login portal. You are prompted to enter your USDA eAuthethication user name and password. From this view, you can also sign up for a Level 1 eAuthentication account if you are a guest user and would like to become a Registered User. Once you are logged in, you will be able to use the DATIM application according to the permissions and authorizations granted to you. Logging in is Optional but allows for more functionality.

Table 1-2. DATIM user interface components described.

The Welcome to DATIM page

When you first open the DATIM application in your web browser, the **Welcome to DATIM** page appears. This page welcomes you to the application, provides a brief description of the function of each of the tools in DATIM, and allows you to access the tools. Select the **Analysis**, **Design**, **Spatial Intersection**, or **Compilation** buttons to be taken to the desired tool (Figure 1-2).

This page can be accessed at any time while using DATIM; simply select the **Home** link in the DATIM navigation menu.

Many of the tools have wizards that you can navigate through by selecting the numbered steps on the side of the wizard or by selecting the navigation buttons. Throughout the wizards there are **Help** buttons available that will describe the content of the page in more detail. Also throughout the wizards are **Remove All** or **Remove** links and buttons that can be utilized when necessary.

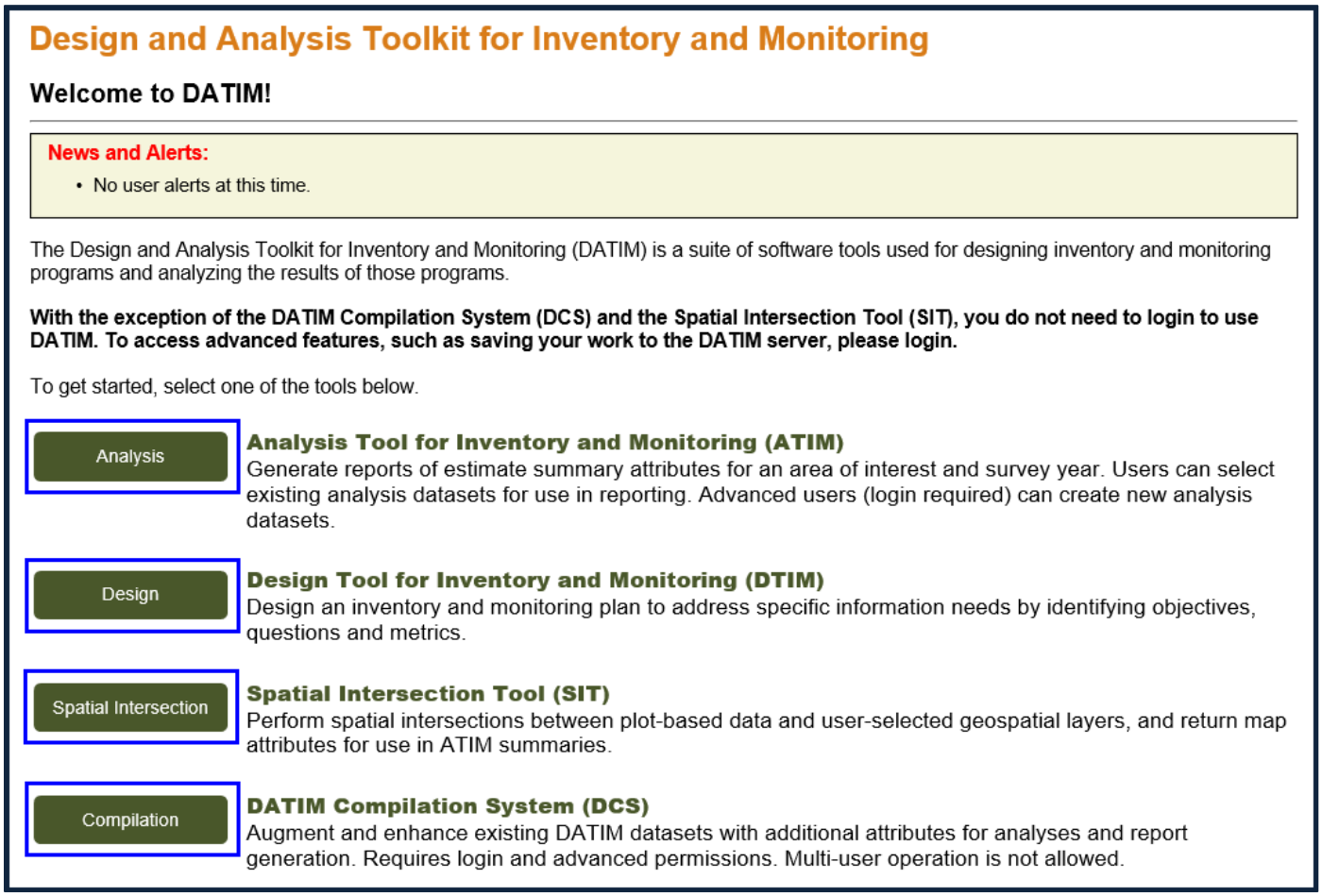


Figure 1-2. The Welcome to DATIM home page.

User Roles

Users have different levels of access to DATIM based on their role. The default role for logged-in users is Registered User. DATIM uses the following roles listed in (Figure 1-3)

Permissions \ User Roles	Guest User	Registered User	Spatial Data Services (SDS)	Forest Administrator	Regional Administrator	Administrator	Wheels*	FIA Staff**
Generate reports in ATIM	X	X	X	X	X	X	X	X
Create custom reports in ATIM	X	X	X	X	X	X	X	X
Save ATIM reports to local file directory	X	X	X	X	X	X	X	X
Include SIT generated attributes in ATIM reports	X	X	X	X	X	X		X
Create standard analysis report templates in ATIM				X	X	X		
Delete or archive analyses in ATIM					X	X	X	X
Create and edit analysis datasets in ATIM				X	X	X		
Load project into DTIM	X	X	X	X	X	X	X	X
Use the DTIM Administrative Tool				X	X	X		
Share DTIM projects		X	X	X	X	X		X
Add DTIM projects to the server		X	X	X	X	X		X
Create spatial plot intersection with fuzzed and swapped coordinates in SIT	X	X	X	X	X	X		X
Create spatial plot intersection with a mix of real & fuzzed/swapped coordinates in SIT			X	X	X			
Create spatial plot intersection with real coordinates in SIT			X	X	X	X		X
Access to DCS				X	X	X		
Save reports to DATIM data mart				X	X	X	X	X
Create new DATIM datasets					X	X	X	X
Manage users			X			X		
Manage roles and groups					X	X		
*This is a supplementary role available to DATIM Administrators to complete additional high level tasks for application testing purposes								
** This role is intended for high level FIA staff members who are authorized to access actual coordinates for plots on all lands without restriction by the 250-acre rule								

Figure 1-3. DATIM's user roles and their corresponding permissions.

If you would like to change your user permissions to one of DATIM's other user roles, please contact DATIM administrators at datim@usda.gov to request an alternate account. This user guide was written using the perspective of an administrator. Some features will not be available to you if you are not logged in.

Login

Logging in to DATIM is optional; users can continue working in DATIM as a Guest User with limited permissions. To access the toolkit with advanced permissions, users must login with their eAuthentication (eAuth) accounts.

Login to DATIM:

1. Select **Login** in the upper right-hand corner of the DATIM screen (Figure 1-4).

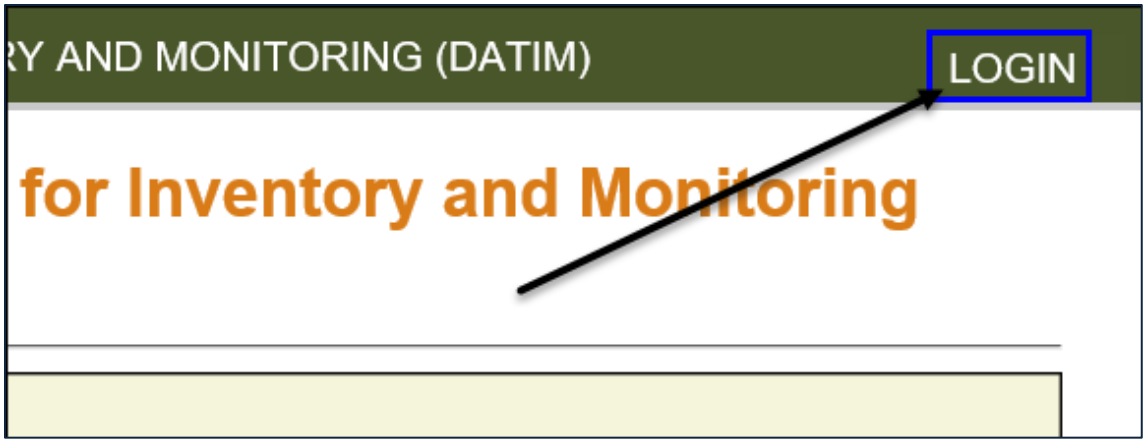


Figure 1-4. Logging into DATIM.

2. The **Login** window will open. Select the **eAuth Login** button (Figure 1-5, #1) and you will be directed to the USDA's eAuthentication Login page. On this page you will enter your eAuth credentials or use your LincPass to login. If you do not have eAuth credentials select the **Click here** link (Figure 1-5, #2). You will be directed to the USDA's eAuthentication Level 1 Access Account Registration page where you will fill out the required information.

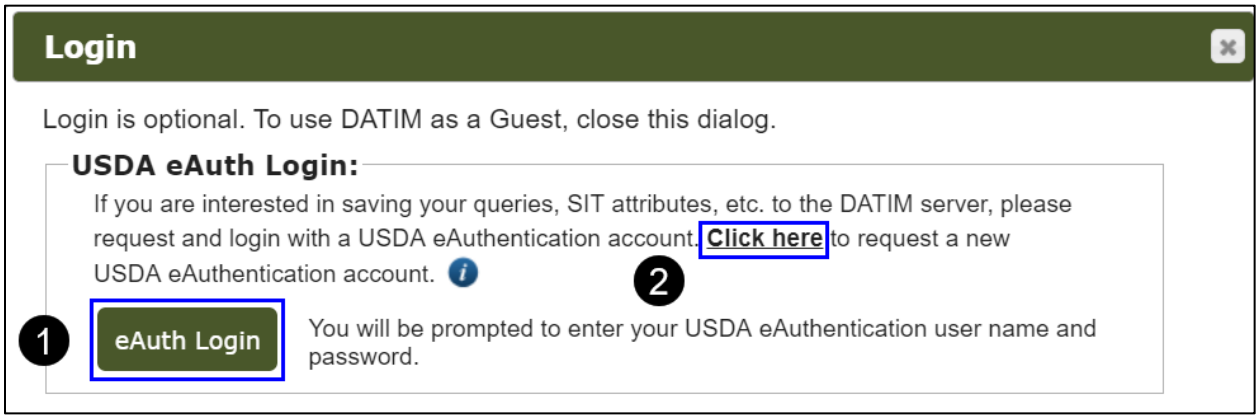


Figure 1-5. Logging in with an eAuth account through DATIM.

For first time users, the DATIM **User Profile** window opens where you can fill in or change the following information regarding your user account in DATIM: Friendly name, Email, Forest Service affiliate?, Affiliation, Specific affiliation, Please specify, New Password, and Confirm New Password (Figure 1-6).

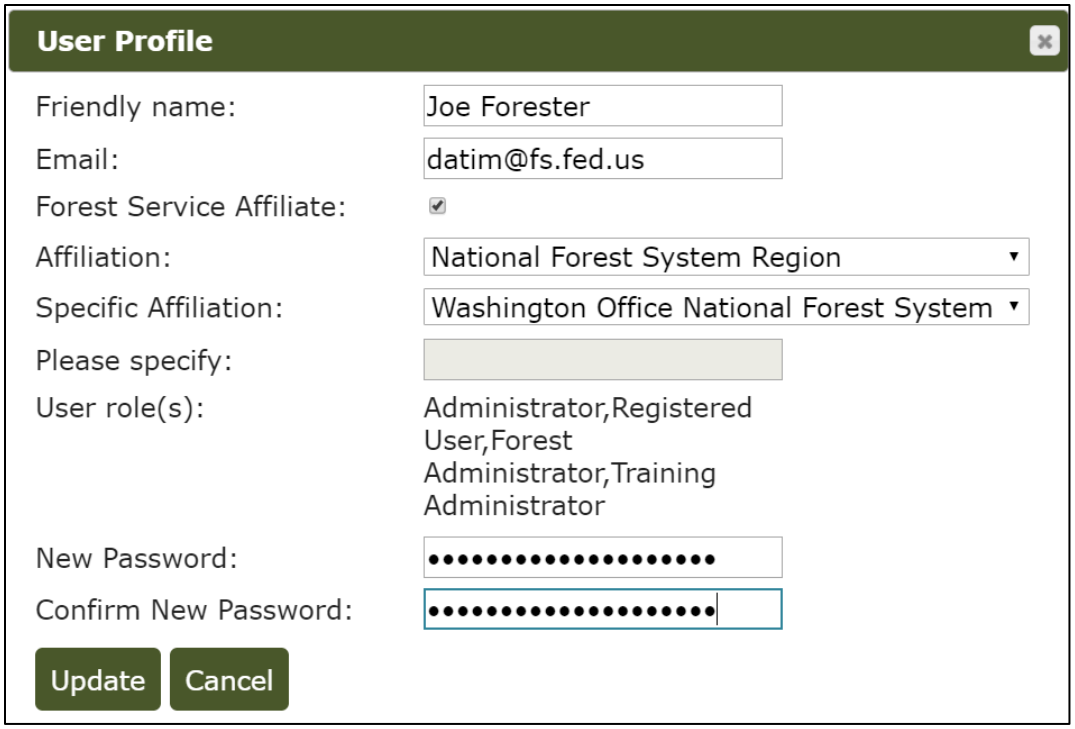


Figure 1-6. Updating 'User Profile' information in DATIM.

You can also make changes to your User Profile any time you are logged in by hovering your mouse over your username and selecting **Manage user account** (Figure 1-7).

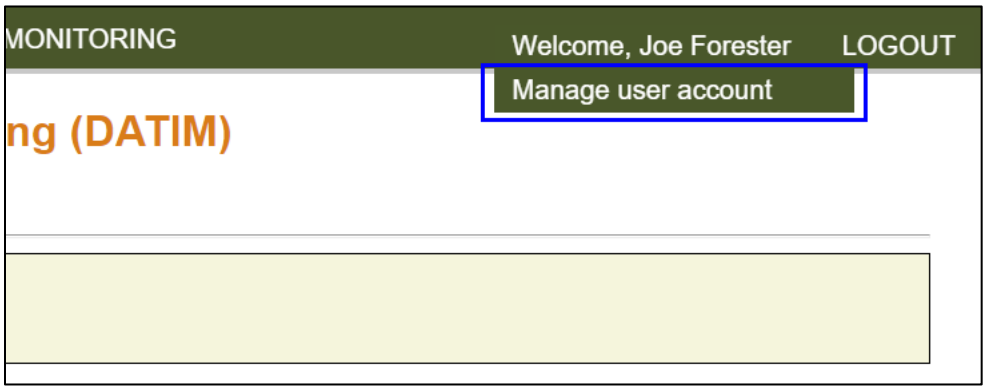


Figure 1-7. Selecting the Manage user account link.

To request a change to your user role and permissions, visit the Contact Us page in DATIM.

ATIM

Last updated: 10/2020

The Analysis Tool for Inventory and Monitoring (ATIM) was developed to provide a tool for analyzing resource inventory and monitoring data from across the country. ATIM is used to derive estimates of current conditions for attributes associated with vegetation to meet information needs on National Forests and surrounding landscapes. It is also intended to be used by the Design Tool for Inventory and Monitoring (DTIM) tool to evaluate whether existing data are sufficient to meet information needs. For additional information regarding ATIM, please see the Reference User Guide.

Getting Started with ATIM

To start using ATIM:

The **ATIM Welcome** page contains five options: Reports: Live Analyses, Reports: Static Analyses, Create New Analysis, Custom Report Manager, and Custom Analysis Manager. **Reports: Live Analyses** runs reports using FIADB data directly (Figure 2-1, #1). **Reports: Static Analyses** runs standard or saved reports and creates custom reports against existing analysis datasets (Figure 2-1, #2). **Create New Analysis** requires administrative access and allows the creation of new static analyses (Figure 2-1, #3). Since this requires administrative access, it will not be discussed in this manual and more information can be found in the Reference User Guide. The **Custom Report Manager** allows registered users to view their custom reports and reports shared with them (Figure 2-1, #4). The **Custom Analysis Manager** allows registered users to manage their custom analyses, view analyses shared with them, and view public custom analyses (Figure 2-1, #5).

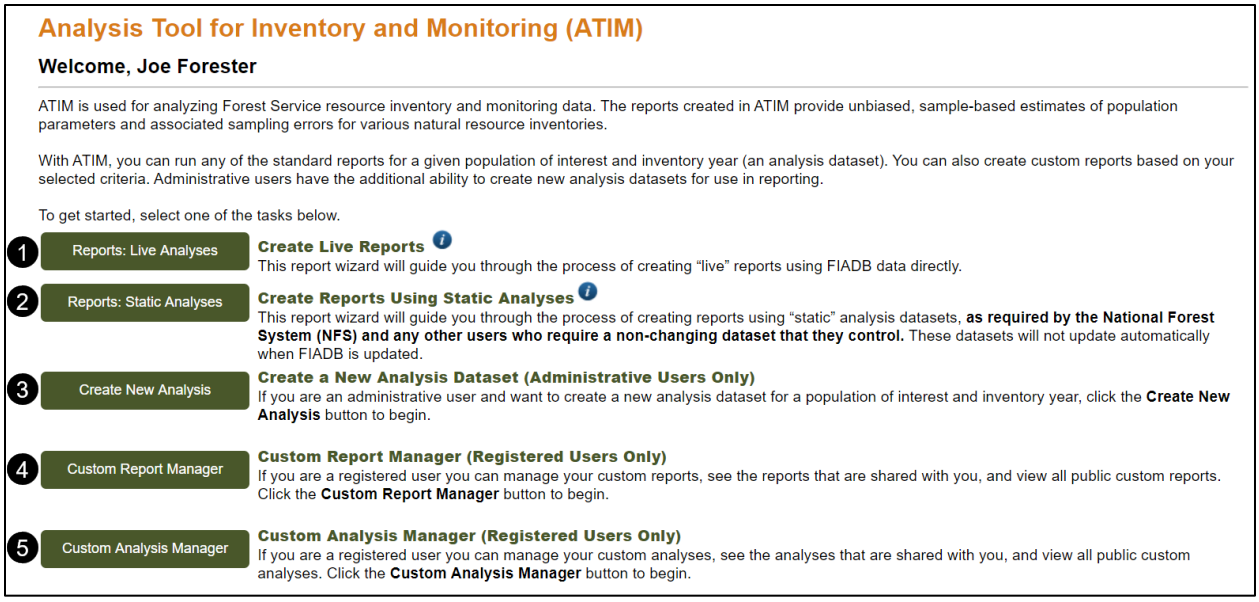


Figure 2-1. The ATIM Welcome page.

Creating Reports

Step 1: Welcome!

From the ATIM Welcome page, select the **Reports: Live Analyses** or **Reports: Static Analyses** button (Figure 2-1, #1 & #2). Reports: Live Analyses and Reports: Static Analyses have similar workflows and the differences will be noted in the steps below.

Step 2: Open Analysis

From the Open Analysis page, you can select one or more **State**, **National Forest**, **Custom,** or **Shared with Me** (Figure 2-2, #1, #2, #3, #4) analysis dataset by selecting the corresponding arrowhead to expand the list of datasets. Note that custom analyses cannot be made in Reports: Live Analyses so the Custom option will not be available in Reports: Live Analyses. Also note that when selecting an analysis by National Forest, a filter based on Forest ownership will automatically be applied to any standard report selected. If desired, this filter can be removed on the Dataset Filters page when customizing a report.

To view the analysis summary, including the general metadata, the DATIM datasets included, and SIT attributes included, select the arrowhead next to the analysis name in the Selected Analysis Summaries box (Figure 2-2, #5). Note that in the analysis summary, the Created By and the Date Created fields

represent the user, date, and time that the request for the new analysis was submitted, while the Last Modified By and the Date Modified fields represent the user, date, and time that the new analysis was successfully created in the database.

To export analysis datasets in Reports: Static Analyses for archival purposes into a CSV format, select the **Export CSV** link next to the analysis (Figure 2-2, #6). The ATIM Export Tool will open, select the **Prepare Export** button to continue (Figure 2-3, #1). This process may take up to ten minutes. Once the export is prepared, the **Download CSV Export** button will appear and you can download your analysis (Figure 2-3, #2). Please note that the associated SIT data will be exported with the CSV file but large datasets, such as Oregon, may not be able to be exported.

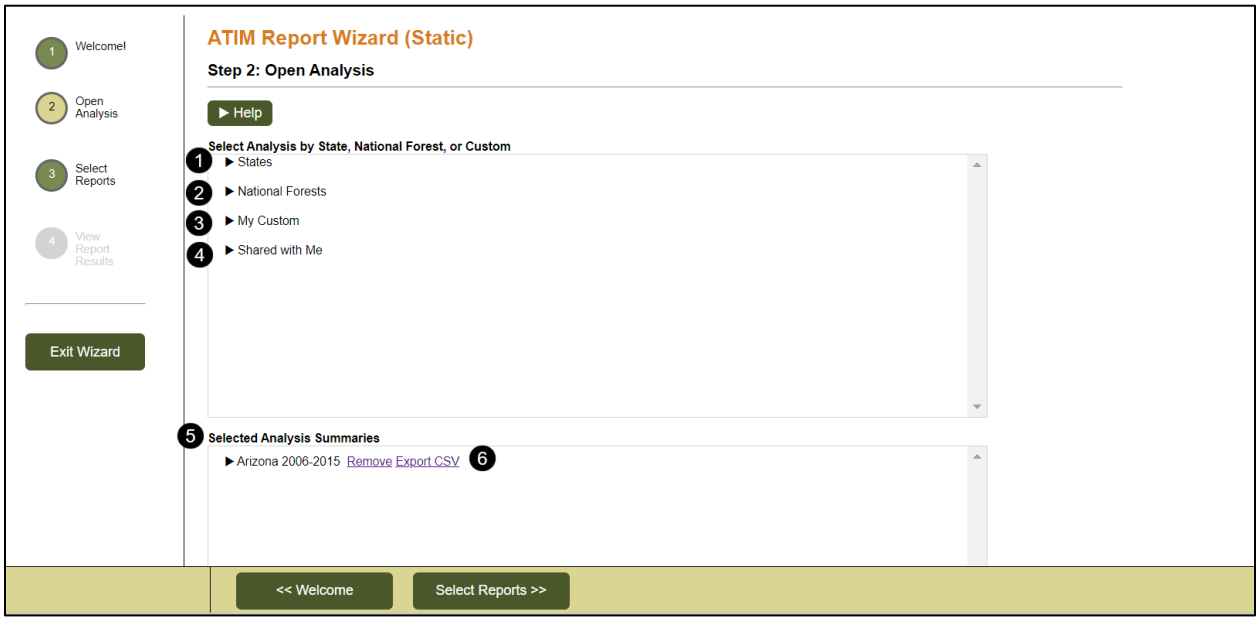


Figure 2-2. The ATIM Open Analysis page.

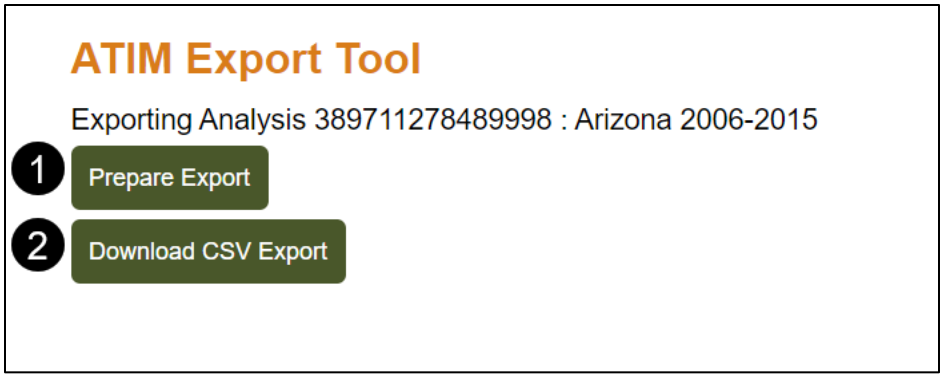


Figure 2-3. The ATIM Export Tool.

Step 3: Select Reports

Before selecting a report you have the option to only show reports for a selected land use, which include Forest Land and Timberland (Figure 2-4, #1).

The Select Reports box organizes available reports using four report types, with an arrowhead indicating that reports are available for that report type. **Standard Reports** (Figure 2-4, #2) include report templates created by DATIM representing common retrievals of estimate attributes by suggested row and column grouping variables. **Saved Analysis Reports** (Figure 2-4, #3) include any custom reports saved to the analysis in an earlier session. **Unsaved Session Reports** (Figure 2-4, #4) include custom reports you have created during the present session but have not yet saved. The **Custom Report** link (Figure 2-4, #5) allows you to create a custom report from scratch. To select your desired report expand the arrowheads next to the report type.

In Reports: Static Analyses, you can also load a report design previously saved to your local file directory to run in this current session (Figure 2-4, #6).

The description for each selected report is listed in the Selected Report Summaries list box. Select the **Customize** link to customize a standard report (Figure 2-4, #7).

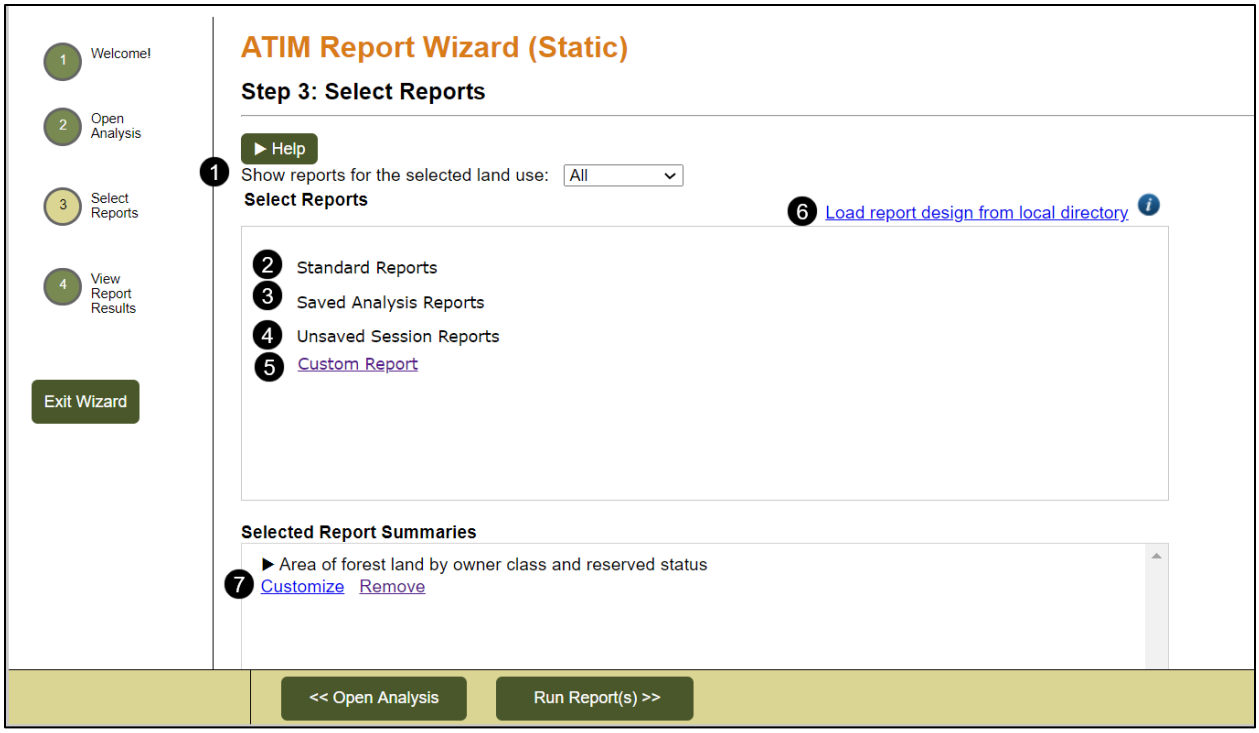


Figure 2-4. The ATIM Select Reports page.

Creating Custom Reports

To create a custom report select either the **Custom Report** or the **Customize** link. The custom report wizard contains seven tabs. Note that GRM attributes cannot be used to create custom reports.

File+ Tab

The **File+** tab allows you to save your report to your local machine, save the report to the database if you are an administrator, run the report, and navigate to the Custom Report Manager (Figure 2-5). The Custom Report Manager can also be accessed by selecting the **Report Manager** button. In Reports: Live Analyses

you will not be able to save your report to your local machine.

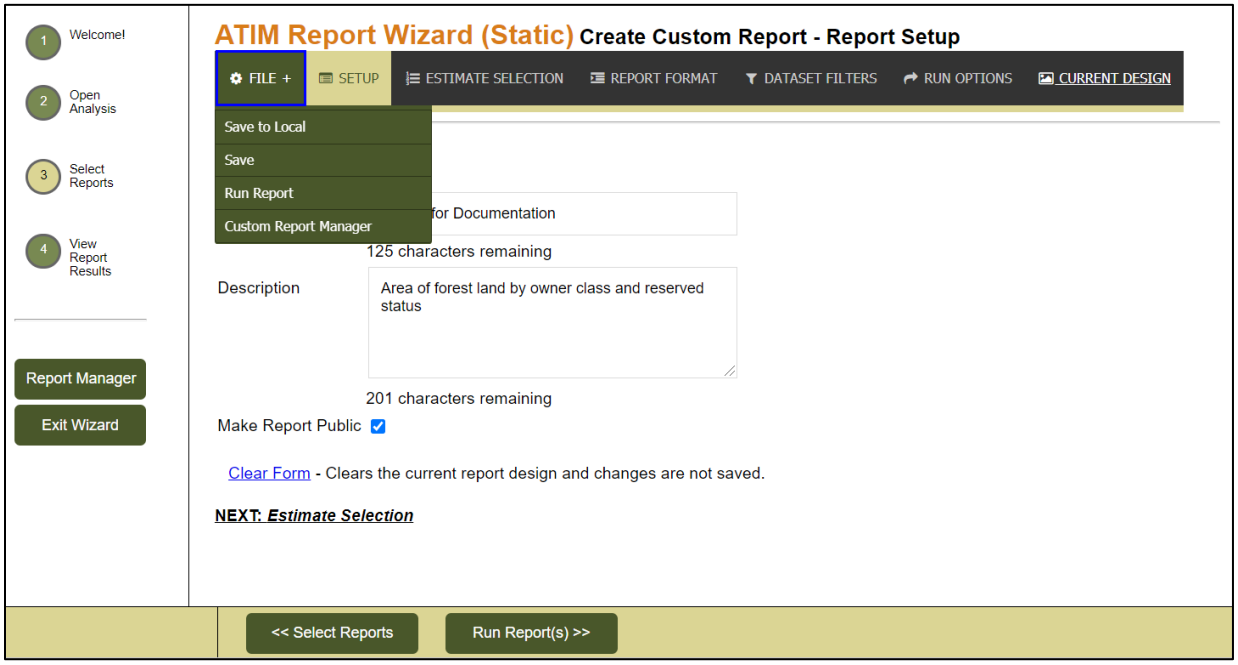


Figure 2-5. The ATIM Custom Report Wizard File+ Tab.

Report Setup

This tab will be opened by default. Enter a Title (Figure 2-6, #1) and Description (Figure 2-6, #2) for your report. When logged in, you have the option to make your report public (Figure 2-6, #3).

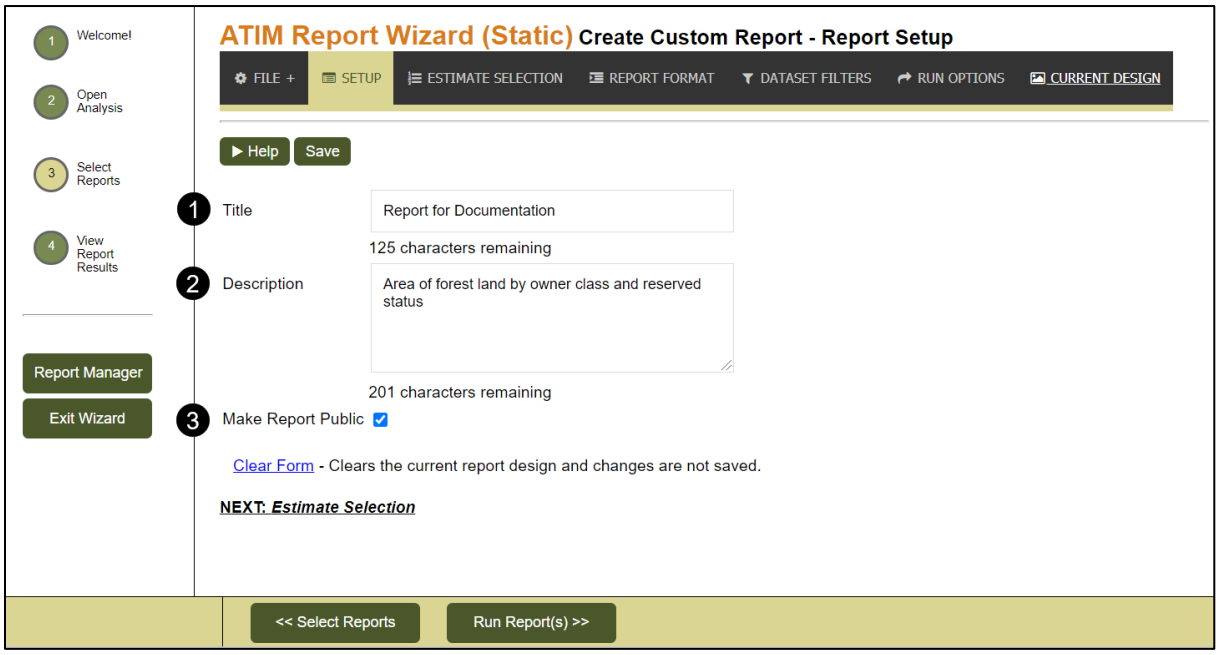


Figure 2-6. The ATIM Custom Report Wizard Setup tab.

Estimate Selection

Expand the dropdown list for the theme of interest and select your desired estimate (Figure 2-7). You also have the option to select a denominator estimate if desired. In Reports: Static Analyses, the FVS attributes enabled in DCS are available for selection as an estimate under the FVS estimate heading. If a desired FVS attribute is not available, this attribute can be turned on in DCS by an administrator. If the attribute has not been run through DCS and uploaded to the DATIM datamart the report may state, “No Rows Found”. For more information on adding FVS attributes view the Updating FVS Attributes section in DCS.

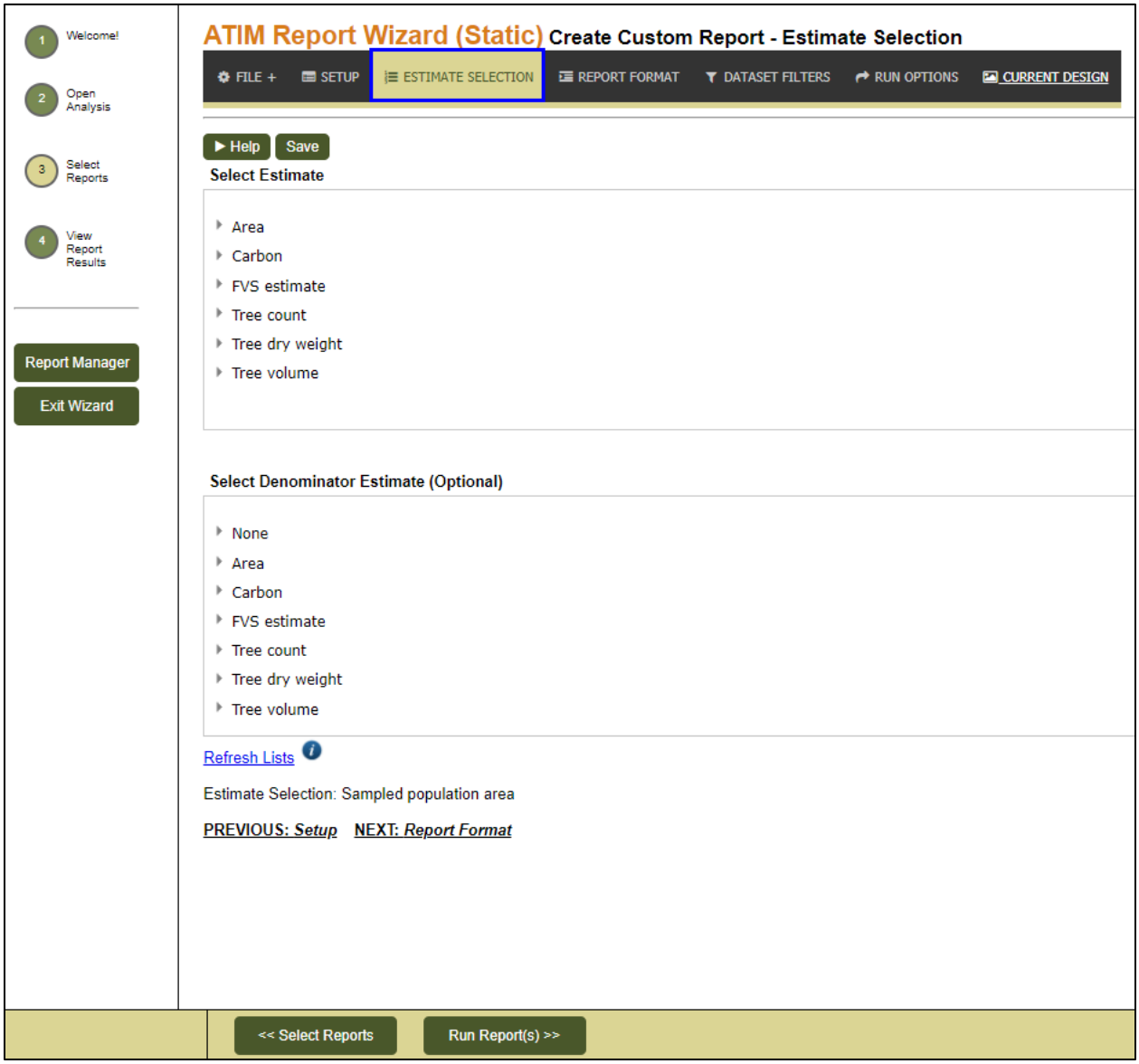


Figure 2-7. The ATIM Custom Report Wizard Estimate Selection tab.

Report Format

In Reports: Static Analyses the Grouping Level (Figure 2-8, #1) and Grouping Variable (Figure 2-8, #2) dropdown lists are available for you to format your sampling unit or geographic scope of interest for your pages, rows, and columns. The status of the creation of a county map is also shown (Figure 2-8, #3). When available, you can also select FVS attributes for the Grouping Level and then select a corresponding FVS Grouping Variable.

In both Reports: Static Analyses and Reports: Live Analyses, when multiple analyses for the same state are selected the Evaluation identifier (EVALID) will be enforced as the row attribute.

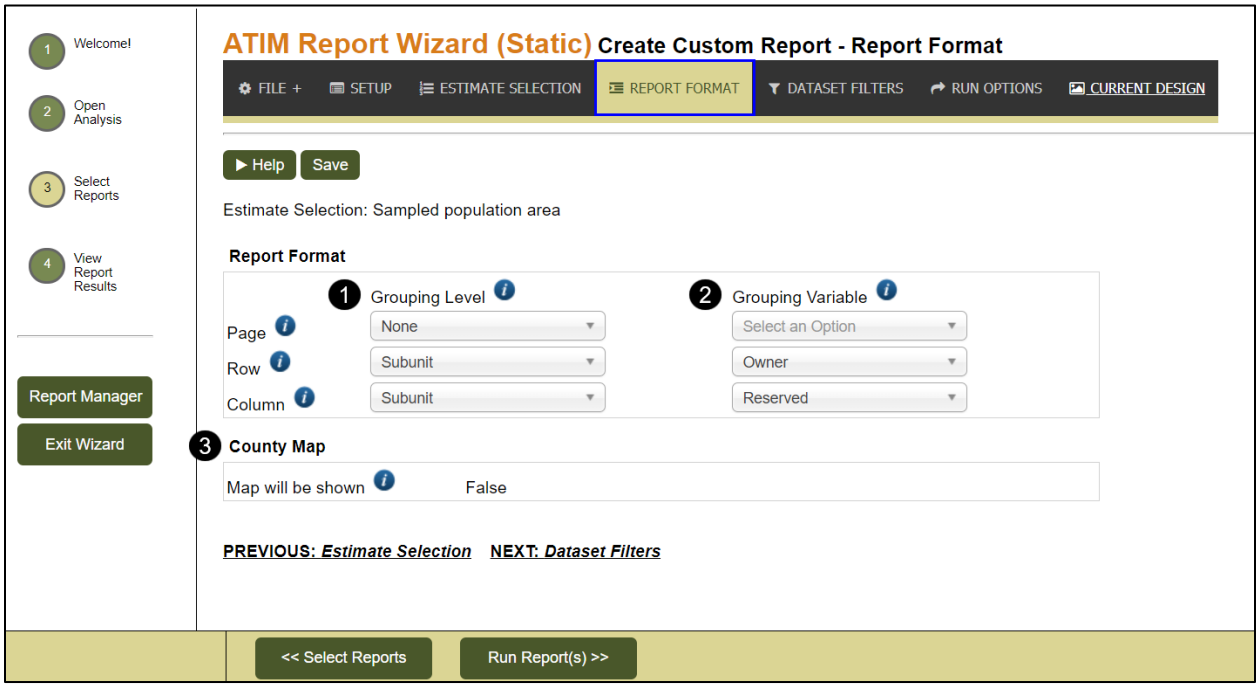


Figure 2-8. The ATIM Reports: Static Analyses Custom Report Wizard Report Format tab.

In Reports: Live Analyses you also have the option of grouping by Temporal Basis (Figure 2-9) but you do not have the option of creating a county map.

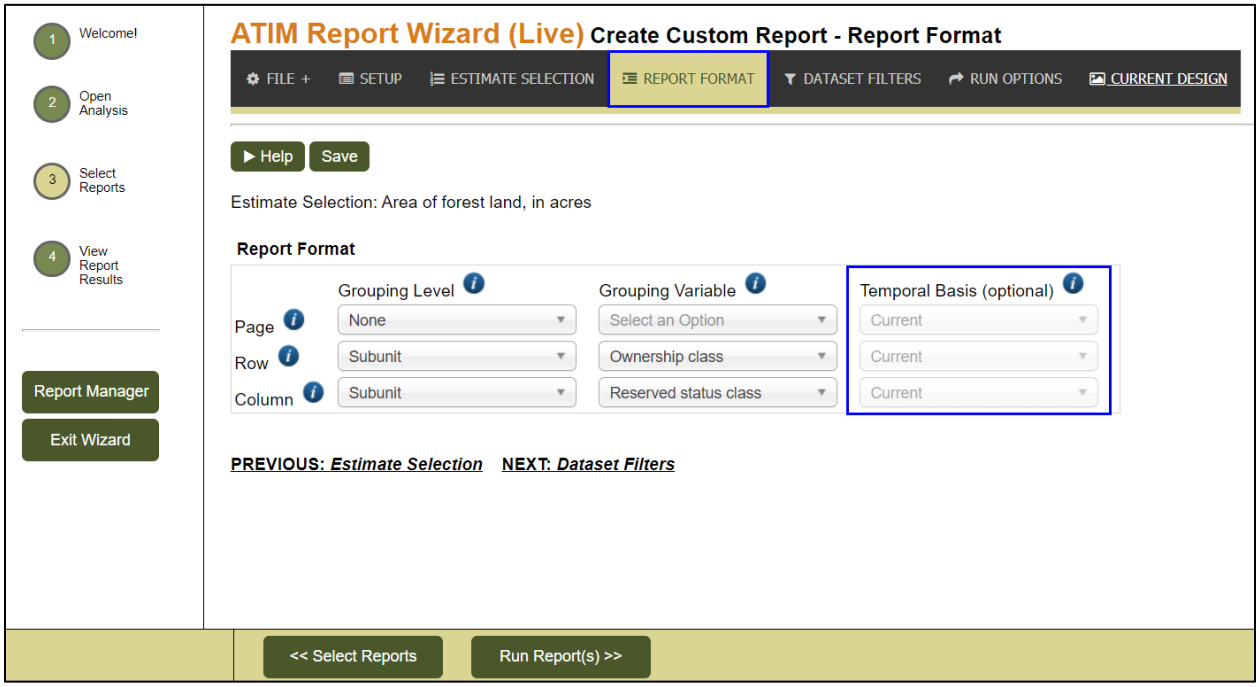


Figure 2-9. The ATIM Reports: Live Analyses Custom Report Wizard Report Format tab.

Dataset Filters

With Reports: Static Analyses you can add dataset filters using filter levels and attributes (Figure 2-10, #1), and view the selected filters in the Selected Filters box (Figure 2-10, #2). When available, you can add FVS attributes as a Filter Level then select the corresponding FVS Filter Attribute. You can also add Circular Retrieval filters if desired (Figure 2-10, #3). Note that when an analysis

was selected by National Forest the filters applied will be displayed at the top of the page (Figure 2-10, #4).

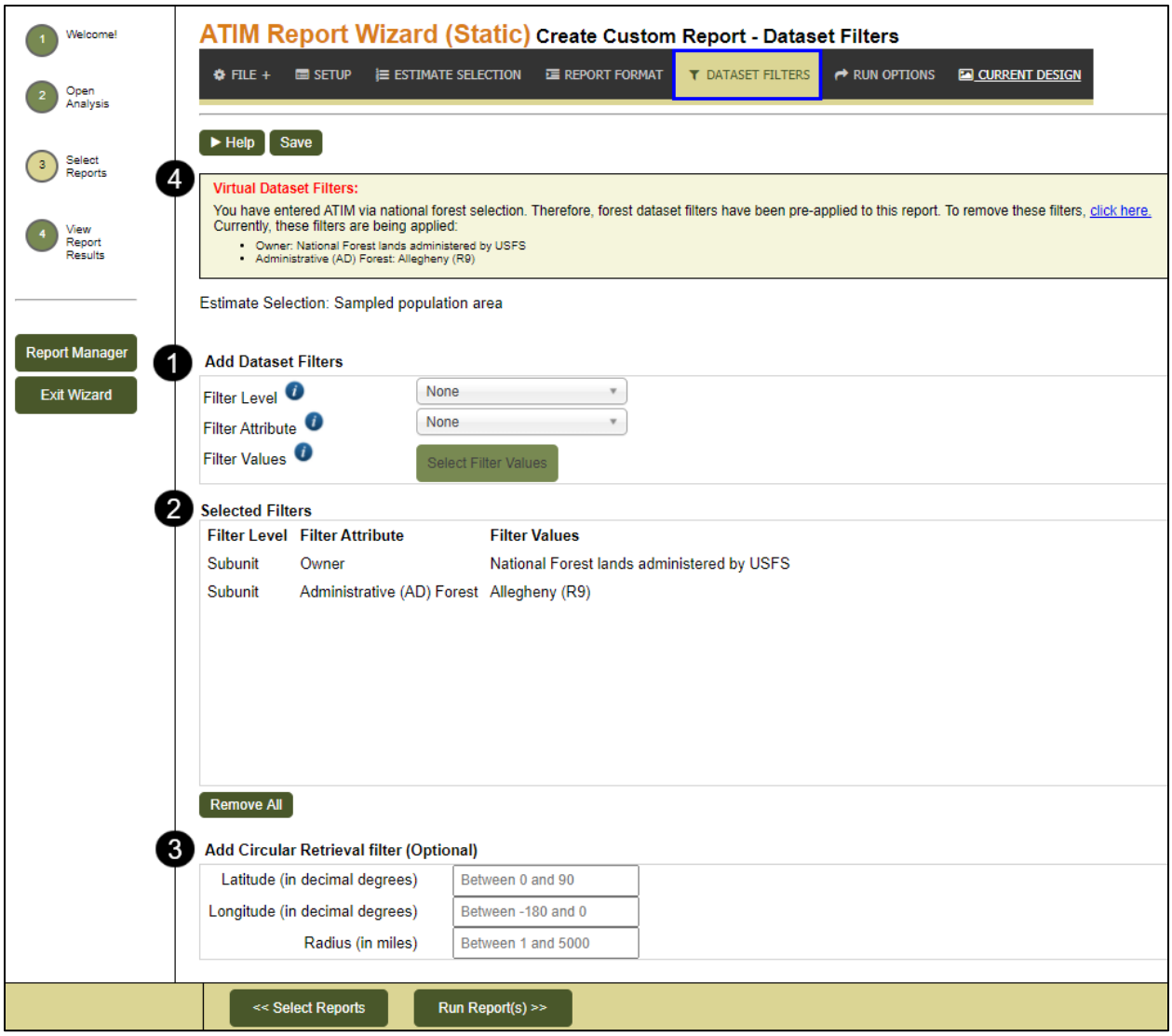


Figure 2-10. The ATIM Reports: Static Analyses Custom Report Wizard Dataset Filters Tab.

With Reports: Live Analyses you can add a Circular Retrieval filter (Figure 2-11, #1) or a SQL filter if desired (Figure 2-11, #2). You can also apply the SQL filter to either only the Numerator or both the Numerator and the Denominator (Figure 2-11, #3).

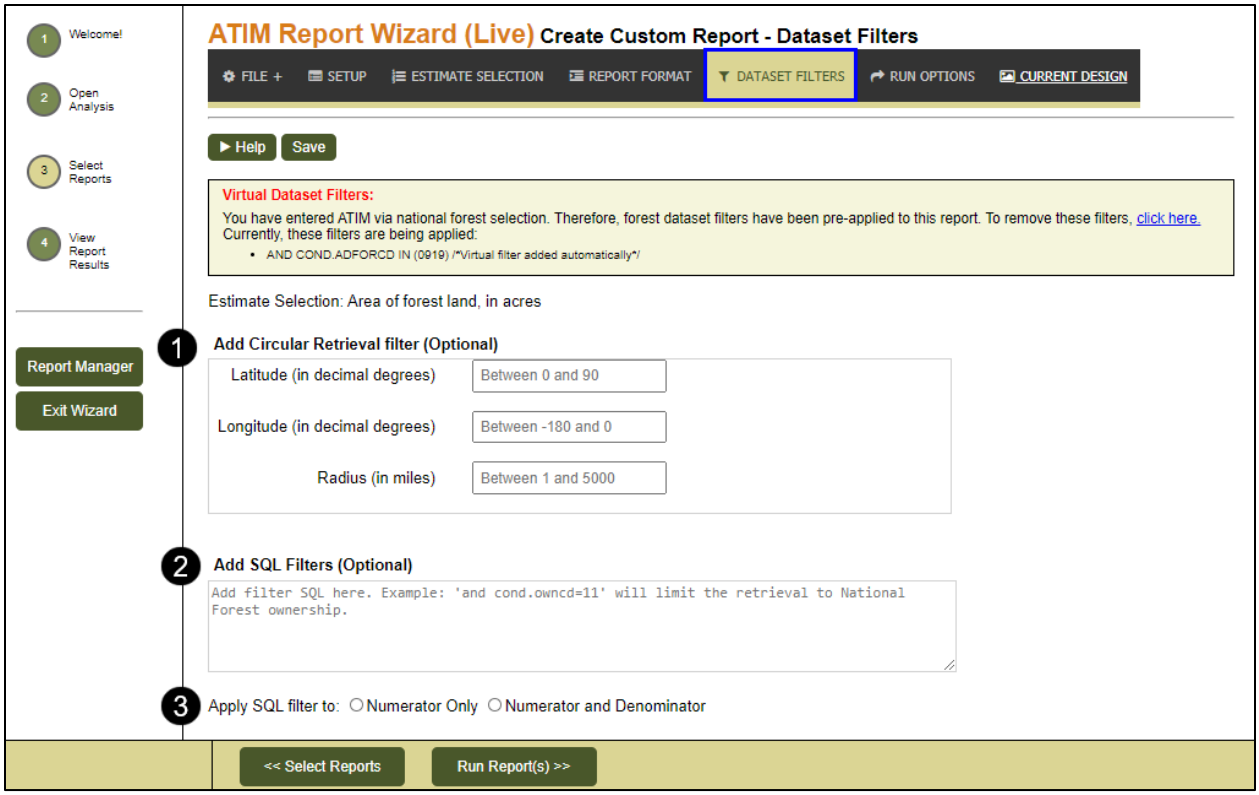


Figure 2-11. The ATIM Reports: Live Analyses Custom Report Wizard Dataset Filters Tab.

Run Options

In Reports: Static Analyses, the **Run Options** tab allows you to change how the Error is shown (Figure 2-12, #1), the Confidence Level (Figure 2-12, #2), hide rows (Figure 2-12, #3), and add notes to your report (Figure 2-12, #4).

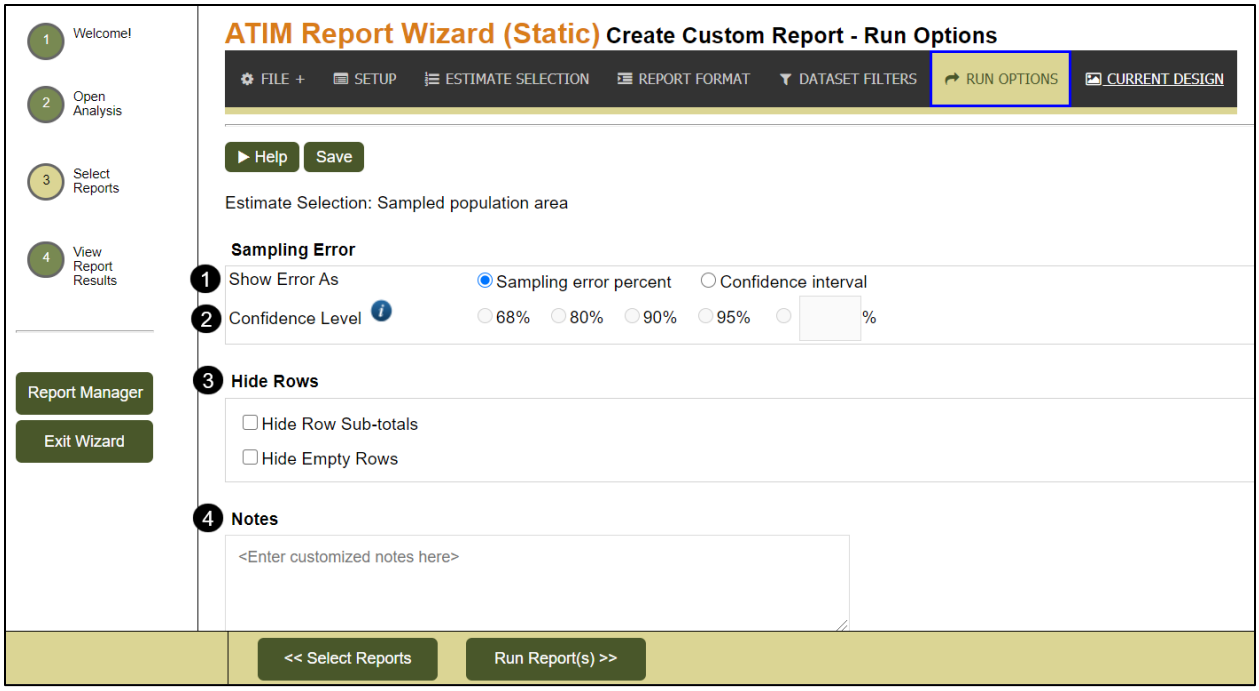


Figure 2-12. The Reports: Static Analyses Custom Report Wizard Run Options tab.

In Reports: Live Analyses the **Run Options** tab only allows you to add customized notes to your report (Figure 2-13).

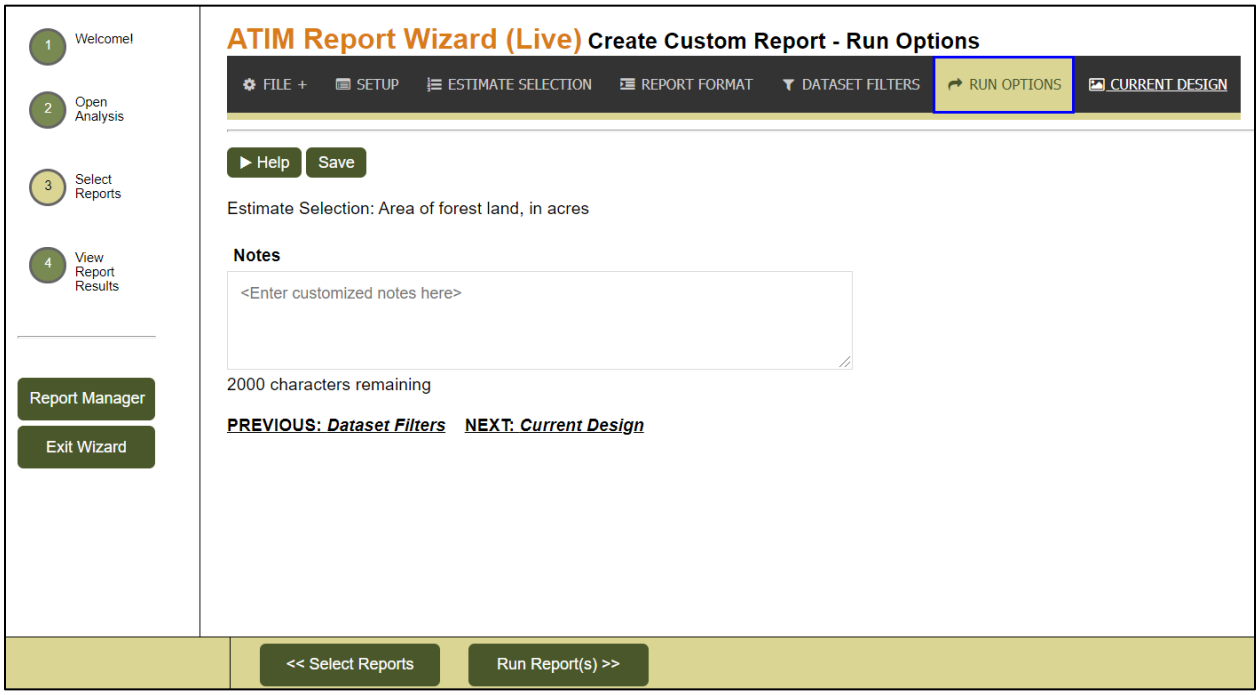


Figure 2-13. The Reports: Live Analyses Custom Report Wizard Run Options tab.

Current Report Design

You can view the current report design at any time during the process of creating a custom report. Here you can review selections and inputs made in previous steps or view the **Print Preview** (Figure 2-14).

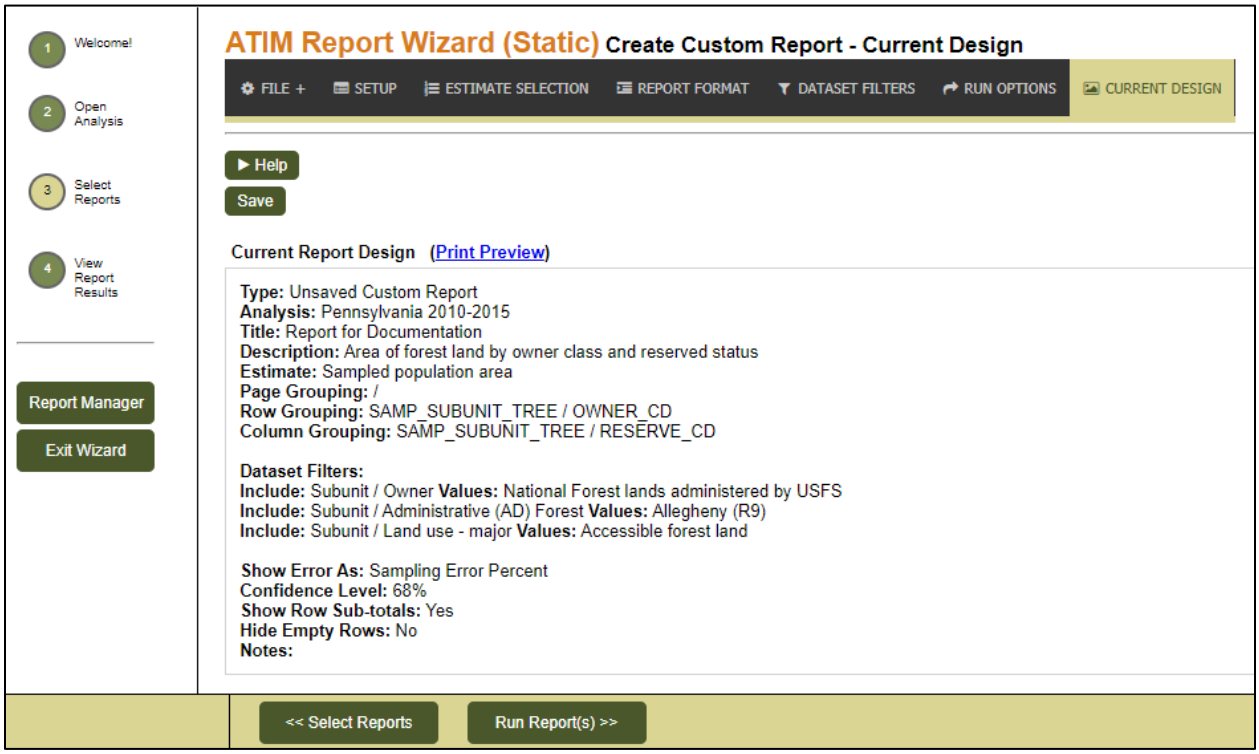


Figure 2-14. The ATIM Custom Report Wizard Current Design tab.

Step 4: View Report Results

The View Report Results page shows the compatibility of the report design with the analysis and the **Excel**, **XML**, and **HTML** report outputs (Figure 2-15). Reports: Static Analyses also shows the query while Reports: Live Analyses shows the EVALIDator API Request.

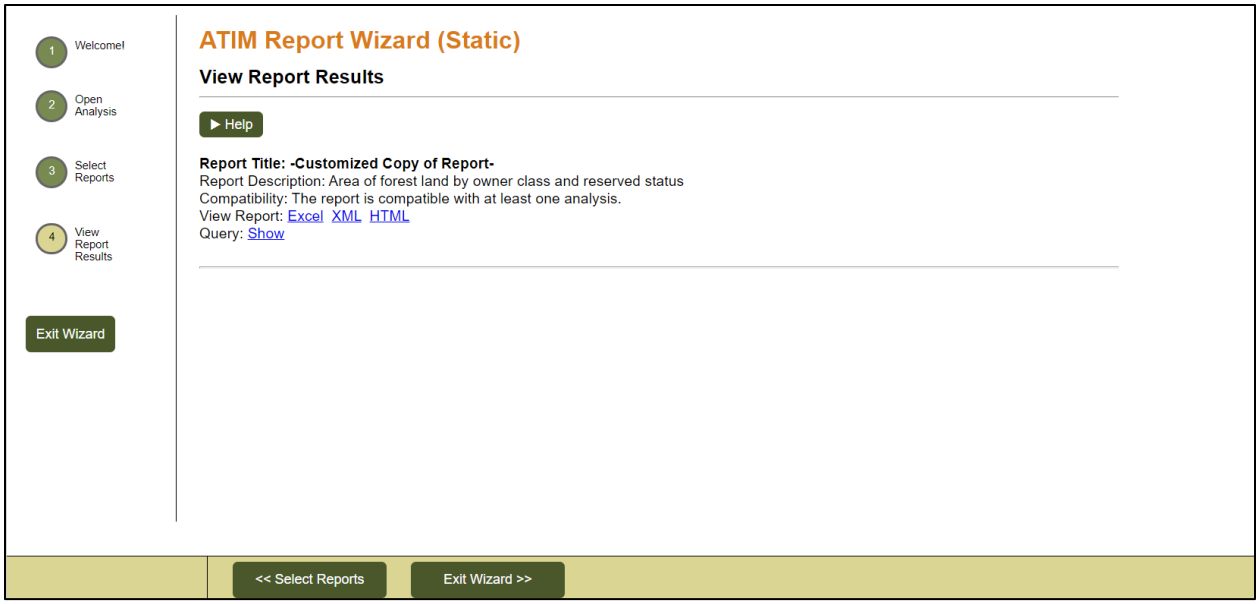


Figure 2-15. The View Report Results page.

The Excel output table will have three sheets: the **Header details, Summary Report 1**, and **Summary Attribute 1**. Each will give you an overview of the analysis you have chosen (Figure 2-16).

	A	B
1	**General Information**	
2	Title	Area of forest land
3	Description	Area of forest land by owner group and reserved status
4	Sampling Error Type	post-stratification
5	Show Subtotals	Y
6	Show Confidence Intervals	N
7	Confidence Level	68
8	Hide Empty Rows	N
9	Run Date and Time	10/23/2019 12:42 PM
10	Report Created By	1gtxsualrgmlbqpqvht1wwtm
11	Note	
12		
13	**Estimate Attribute**	
14	Description Short	Area of forest land, in acres
15	Measurement Units	---
16		
17	**SQL Filter**	None
18	**Circle Center Latitude**	None
19	**Circle Center Longitude**	None
20	**Circle Radius**	None

Header Details | Summary Report 1 | Summary Attributes 1

Figure 2-16. Excel Output Results.

The XML report allows users to view and save the ATIM-encoding portion of the report contents (Figure 2-17).

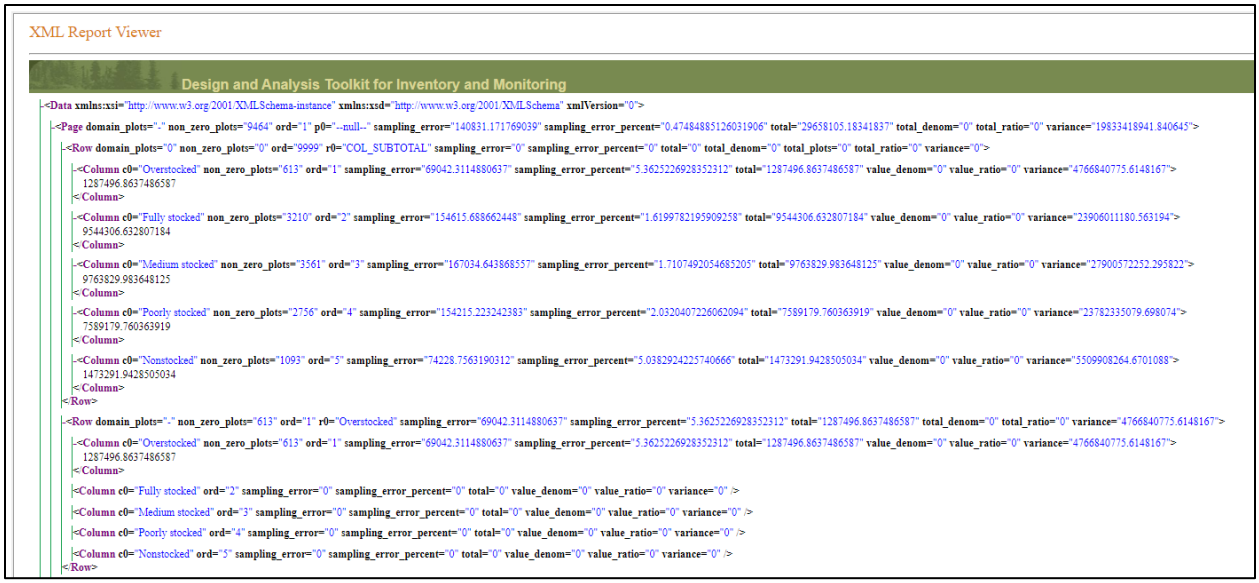
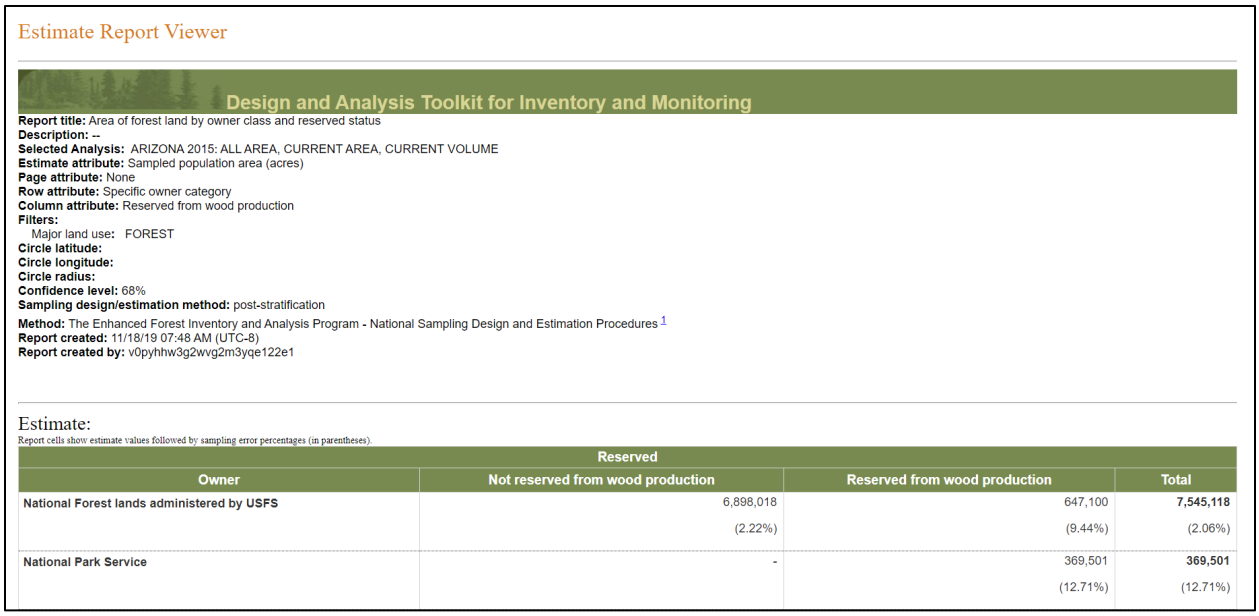


Figure 2-17. XML Report Viewer.

The HTML report output opens the Estimate Report Viewer which includes the metadata report information, estimate table, graphs, maps, non-Zero Plots table, and references, notes, and suggested citation sections related to your report (Figure 2-18).



Estimate Report Viewer

Design and Analysis Toolkit for Inventory and Monitoring

Report title: Area of forest land by owner class and reserved status
Description: --
Selected Analysis: ARIZONA 2015: ALL AREA, CURRENT AREA, CURRENT VOLUME
Estimate attribute: Sampled population area (acres)
Page attribute: None
Row attribute: Specific owner category
Column attribute: Reserved from wood production
Filters:
Major land use: FOREST
Circle latitude:
Circle longitude:
Circle radius:
Confidence level: 68%
Sampling design/estimation method: post-stratification
Method: The Enhanced Forest Inventory and Analysis Program - National Sampling Design and Estimation Procedures [1]
Report created: 11/18/19 07:48 AM (UTC-8)
Report created by: v0pyhhw3g2wvg2m3yqe122e1

Estimate:

Report cells show estimate values followed by sampling error percentages (in parentheses).

	Reserved		
Owner	Not reserved from wood production	Reserved from wood production	Total
National Forest lands administered by USFS	6,898,018	647,100	**7,545,118**
	(2.22%)	(9.44%)	(2.06%)
National Park Service	-	369,501	**369,501**
		(12.71%)	(12.71%)

Figure 2-18. The HTML report output.

Custom Report Manager

In the Custom Report Manager you can manage your custom reports (Figure 2-19, #1), custom reports shared with you (Figure 2-19, #2), and your public reports (Figure 2-19, #3). You can change the information contained in the reports (Figure 2-19, #4) and share them with an individual or a team (Figure 2-19, #5 & #6). Reminder: you must be logged in to access this feature.

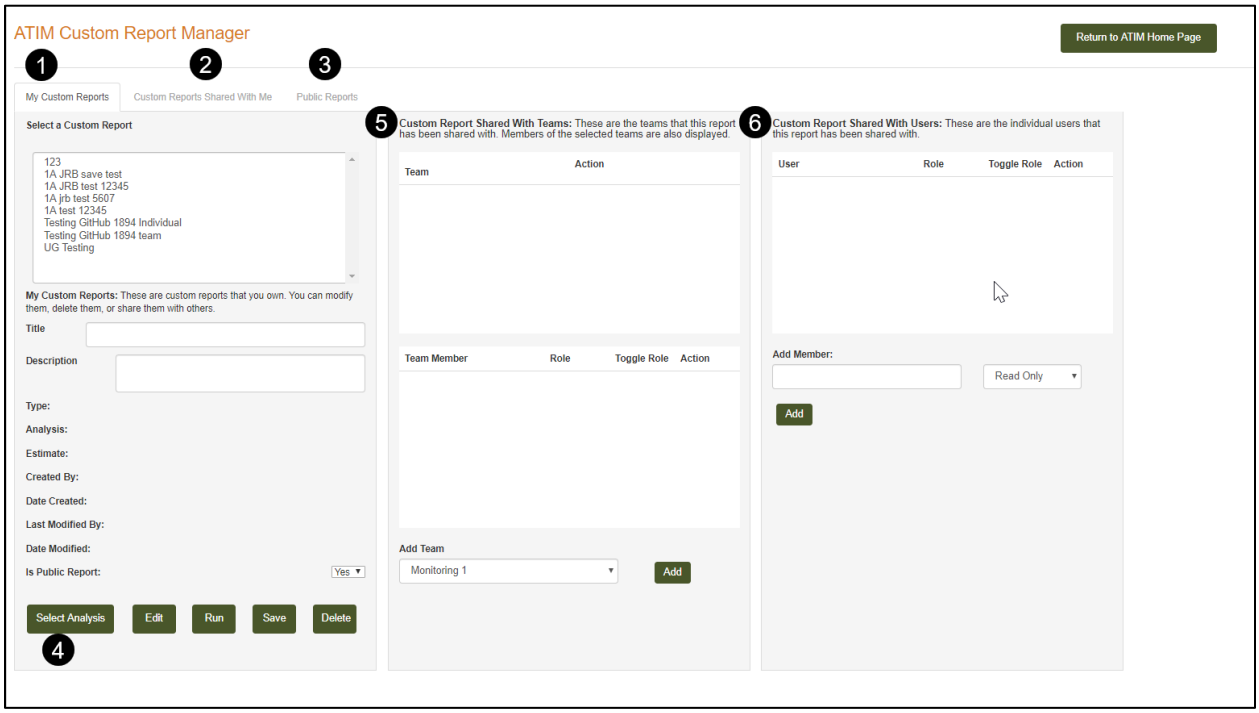


Figure 2-19. The ATIM Custom Report Manager.

Custom Analysis Manager

The Custom Analysis Manager follows a similar flow as the Custom Report Manager. In the Custom Analysis Manager you can manage your custom analyses (Figure 2-20, #1), custom analyses shared with you (Figure 2-20, #2), and your public analyses (Figure 2-20, #3). You can view the information contained in the analyses (Figure 2-20, #4) and share them with a team or individual (Figure 2-20, #5 & #6).

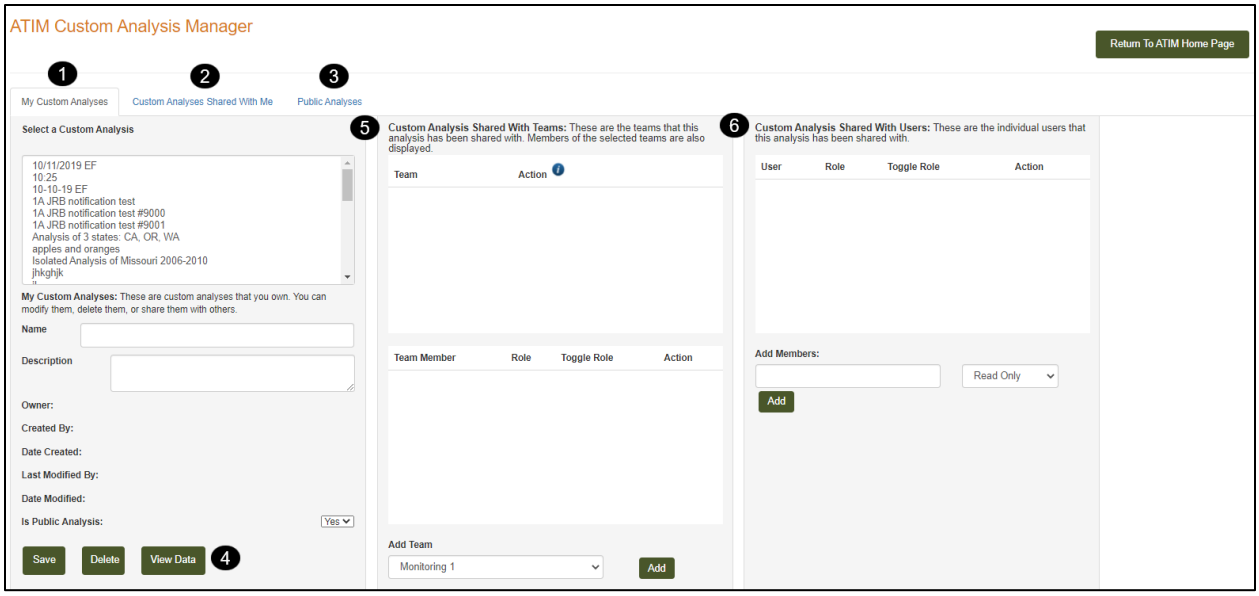


Figure 2-20. The ATIM Custom Analysis Manager.

DTIM

Last updated: 10/2020

The **Design Tool for Inventory and Monitoring (DTIM)** is a wizard tool intended to support natural resource managers in designing resource inventory and monitoring plans. DTIM provides a wide selection of inventory and monitoring objectives, questions, and metrics defined by the U.S. Department of Agriculture (USDA) Forest Service (FS) and the FS National Forest Regions.

Designing a resource monitoring and inventory plan in DTIM involves a number of steps. These include identifying the broad objectives of the plan, selecting monitoring questions, and indicating the attributes, or metrics, necessary to answer the questions. Existing data are then evaluated to determine whether the data are adequate to meet the information needs. If additional data are needed to meet precision requirements, a plan is designed to intensify an existing inventory or start a new one.

Designing a DTIM Project

The DTIM project creation wizard walks you through seven main steps as you design your inventory and monitoring plan. Users are also encouraged to login to DATIM as more options become available, including saving and opening DTIM projects created using the wizard.

To access the wizard, select **DTIM** in the DATIM navigation menu or the **Design** button from the DATIM home page (Figure 3-1).

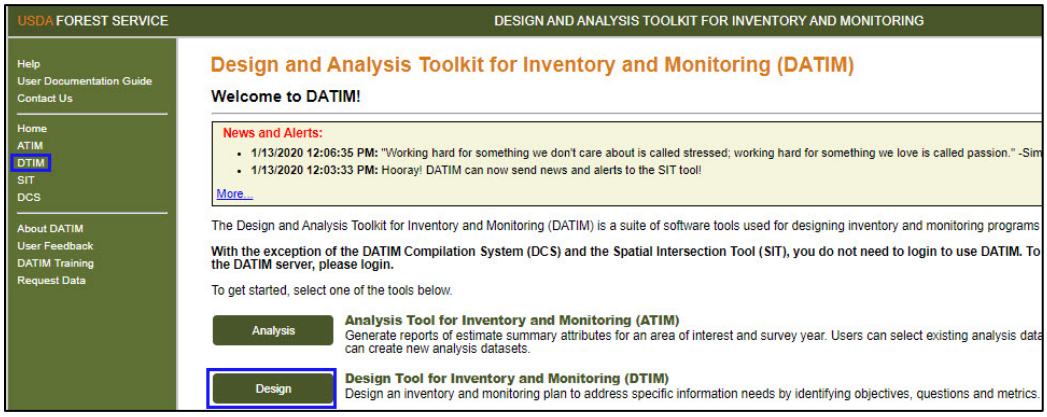


Figure 3-1. Accessing DTIM from the DATIM navigation menu and DATIM home page.

Step 1: Welcome

You are directed to the DTIM Welcome page (Figure 3-2) which contains a brief introduction to the tool and its intended uses. Guest users have access to the Get Project link while logged in registered users have access to the **Save** function and the **DTIM Tools: Report Manager, Project Manager, and DTIM Administrative tool**. Note that while registered users will see the DTIM Administrative Tool link, you must be an administrative user to have access to this tool.

Using the Get Project Link

As you work through the wizard to design your projects, be sure to note the **Get Project Link** (Figure 3-2) found below the DTIM wizard steps. The Get Project Link allows you to return to edit/finish a project you were working on, or to share your report with others without logging into the DATIM application.

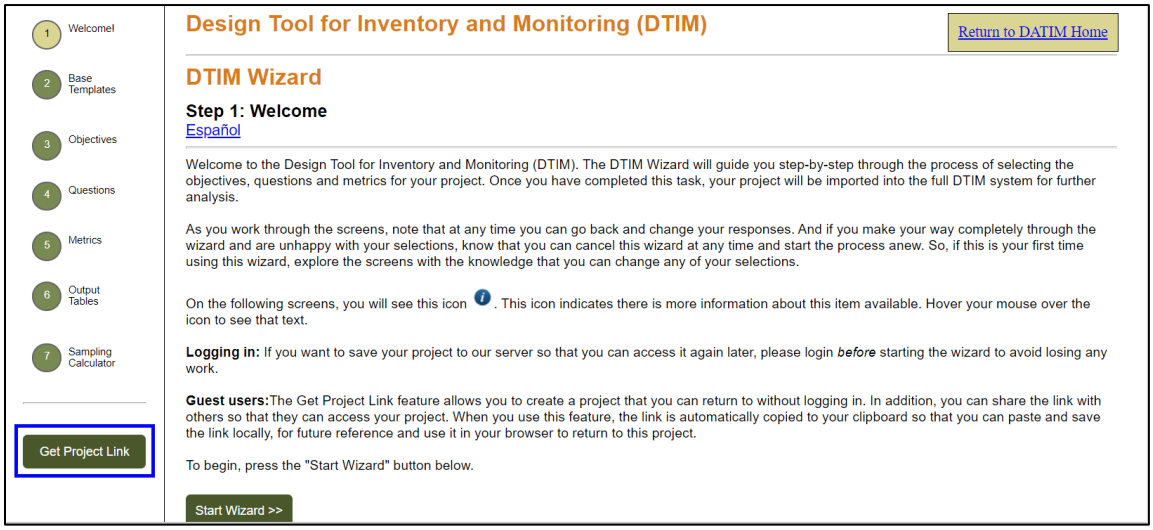


Figure 3-2. DTIM Wizard -- Guest View: Welcome and Get Project Link. Saving the DTIM Report

To save a DTIM report, you must be logged in, at a minimum as a registered user role. If you are not logged in, the **Save** button is not available and does not appear until you do so. Please be aware if you navigate through some of the wizard steps then login mid-process, your progress will be lost and you will be redirected to the DTIM homepage.

Once you are logged in, you can select the **Save** button (Figure 3-3, #1) to save your new project to DTIM. Logged in users also can use the DTIM Tools (Figure 3-3, #2).

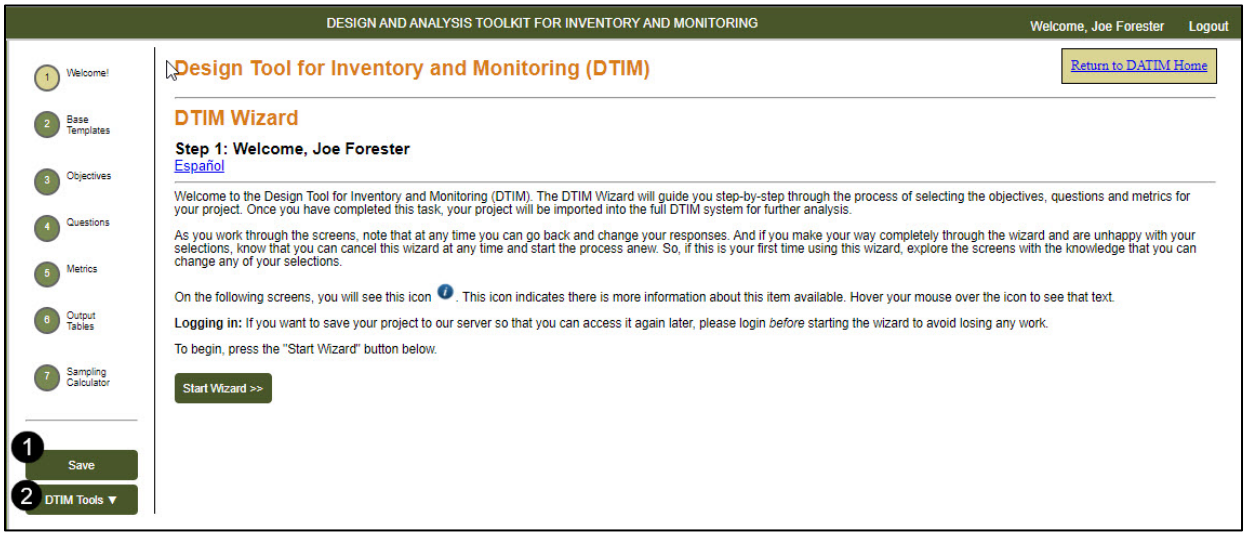


Figure 3-3. DTIM Wizard - Administrative Features: Save and DTIM Tools

DTIM Tools

The **DTIM Tools** drop down menu offers three features available only to registered users and/or administrative users (Figure 3-4). These tools will stay available throughout the whole use of the Wizard. See the DTIM Tools: Report Manager, Using the Project Manager, and DTIM Tools: DTIM Administrative Tool sections for more information on each tool.

Figure 3-4. DTIM Tools.

NOTE: To start a new DTIM project: After you save or open a project, the **New** link appears. Selecting the **New** link will return you to the Welcome page where you can begin designing a new DTIM project.

Step 2: Selecting a Base Template

In this step you will select a base template to use for your DTIM project that comes with objectives, questions and metrics specific to the selected template.

To view only those templates associated with a given Region, use the **Region** drop-down list to select your region of interest (Figure 3-5, #1). After selecting a Base Template, you can view its metadata under the **More Information** area (Figure 3-5, #2).

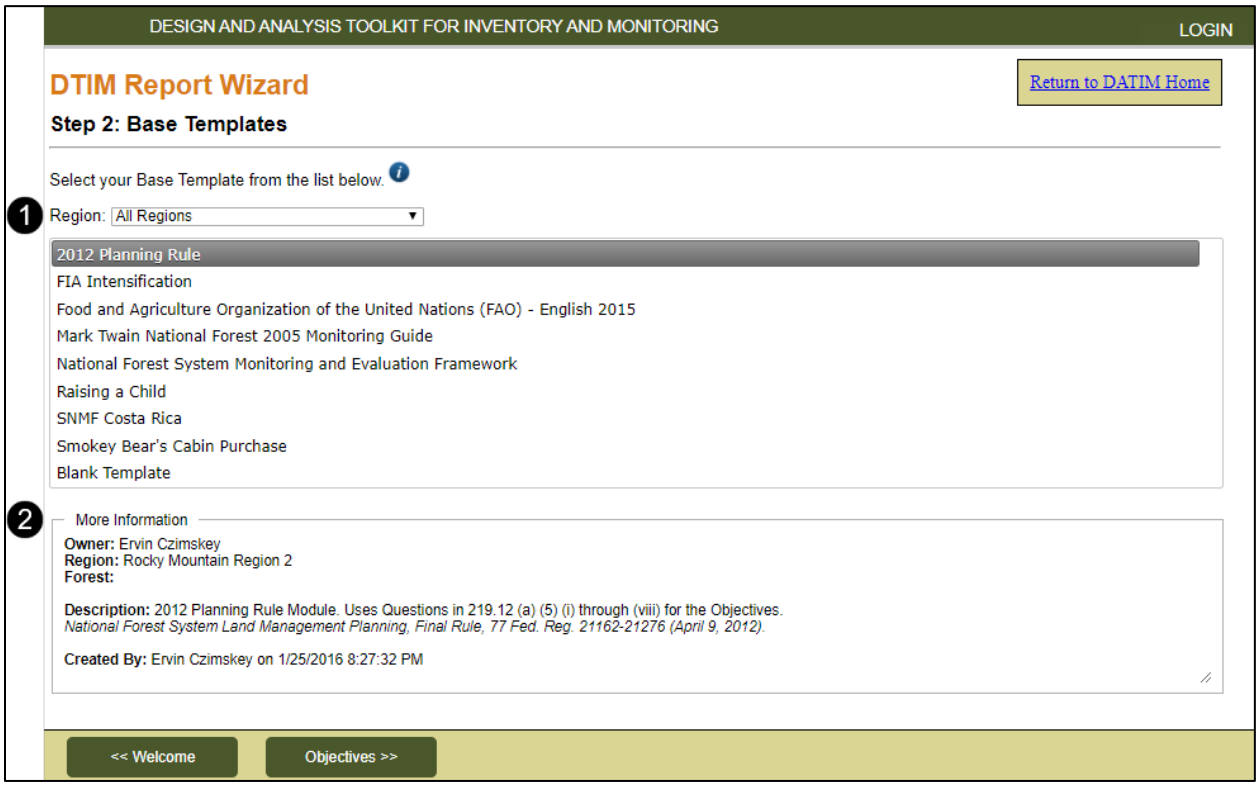


Figure 3-5. Selecting a base template.

Step 3: Selecting Objectives

In this step you will identify the broad objectives of your monitoring plan based on desired conditions or outcomes. From the Objectives page, select one or more objectives from the Objectives Available list box (Figure 3-6, #1). Prioritize your objectives by dragging and dropping them to the desired order in the Objectives Selected box with highest priorities positioned at the top of the list (Figure 3-6, #2).

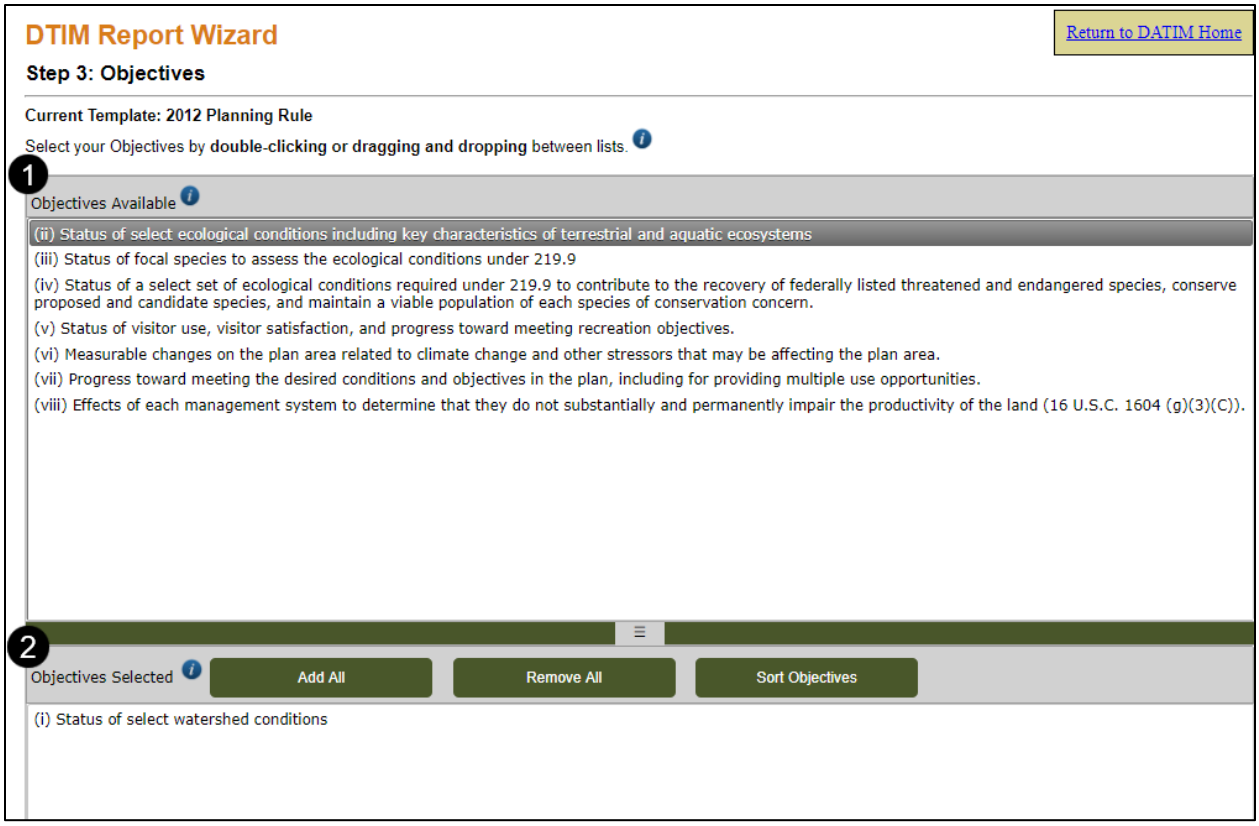


Figure 3-6. Selecting Objectives page.

You also have the option to create custom objectives. Custom objectives can be created from scratch through text entry or created from an existing objective.

Creating New Objectives

From the Objectives page, select the **Create New Objective** link in the Project Features box at the bottom of the page (Figure 3-7) to open the New Objective window.

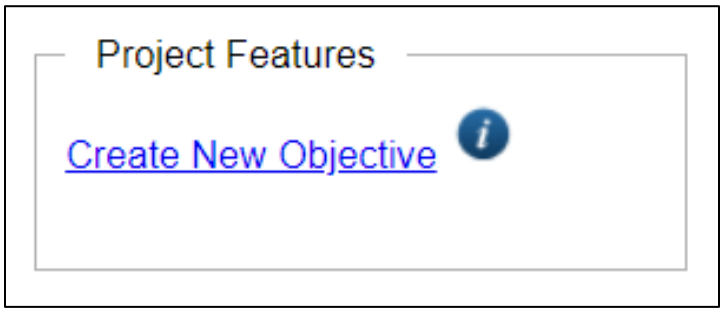


Figure 3-7. Creating New Objective link.

To create a custom objective, from scratch, simply type your desired objective in the textbox (Figure 3-8) and select the **Save** button.

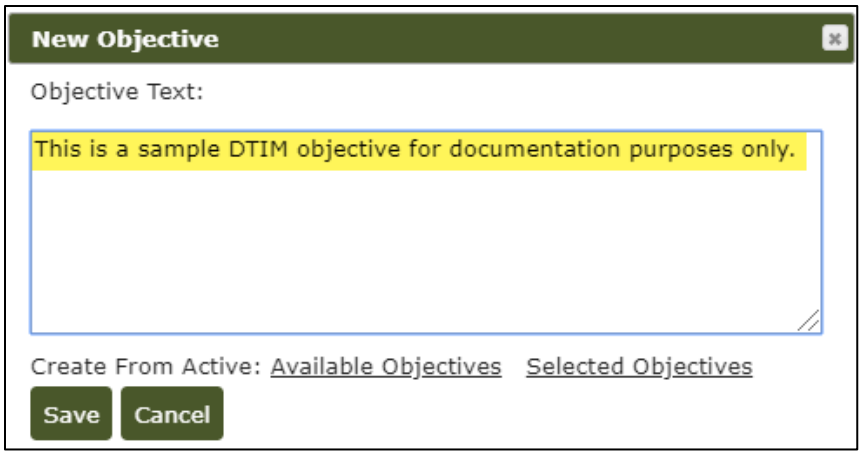


Figure 3-8. Creating a new objective.

To create an objective from an existing objective, you must highlight an objective from either the Objectives Available (Figure 3-9, #1) or the Objectives Selected (Figure 3-9, #2) list box.

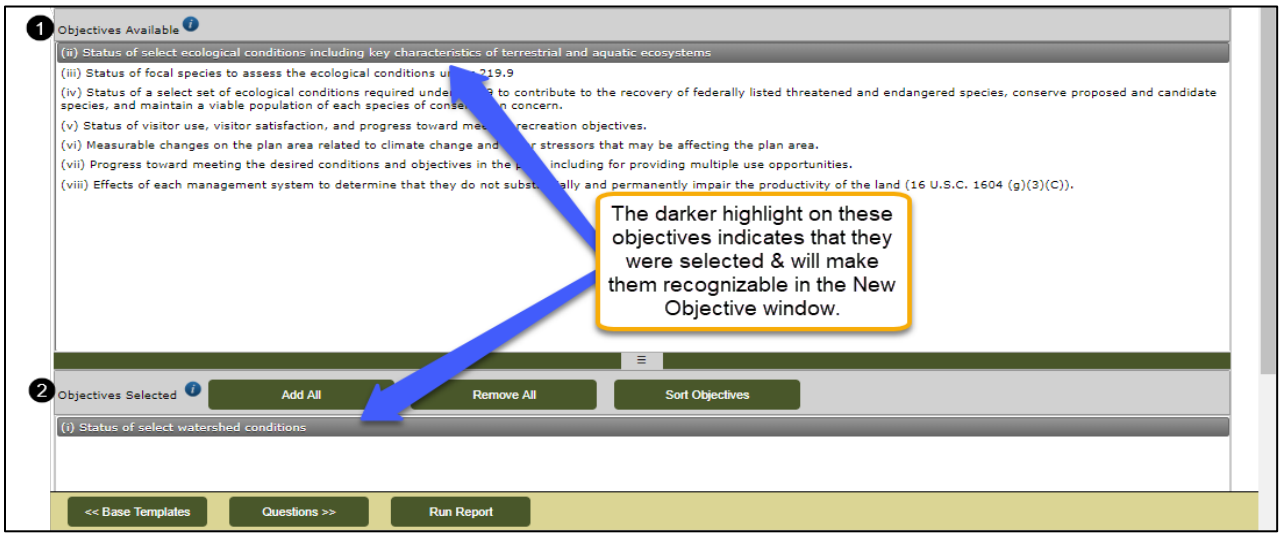


Figure 3-9. Creating a new objective from an existing objective.

Then, open the New Objective link and select the link for either **Available Objectives** (Figure 3-10, #1) or **Selected Objectives** (Figure 3-10, #2), which depends on the location of your highlighted objective. The selected objective is then automatically copied to the text box where you can edit it.

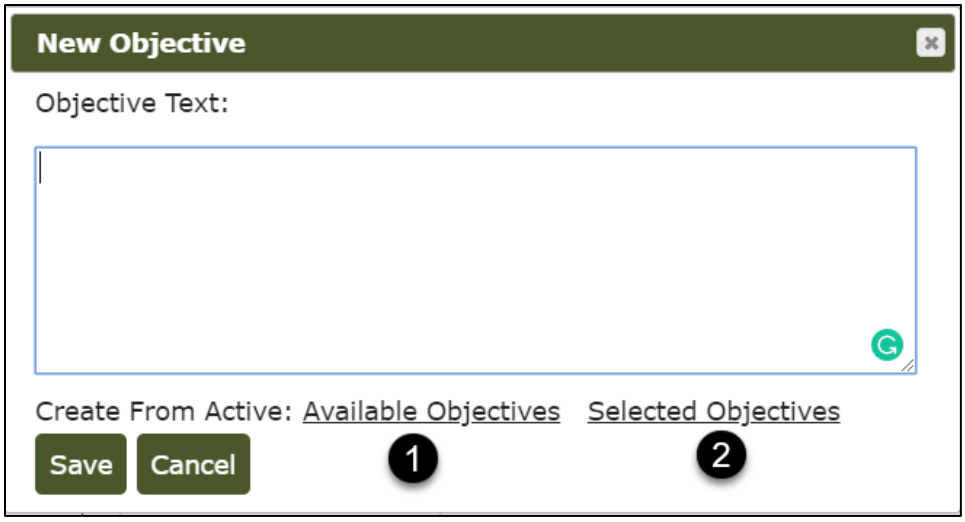


Figure 3-10. Creating a new objective from an active Available and Selected Objective.

When you select the **Save** button, you will be returned to the Objectives page, where your new objective will already be selected and available in the Objectives Selected list box.

Repeat the previous steps to add any additional custom objectives.

Editing and Deleting Custom Objectives

Once you have created a custom objective you are able to edit and delete that objective by selecting the **Edit/Delete Custom Objectives** link (Figure 3-11). Note that this link, and the **Associate with Questions** link, will only appear after a custom objective is created.

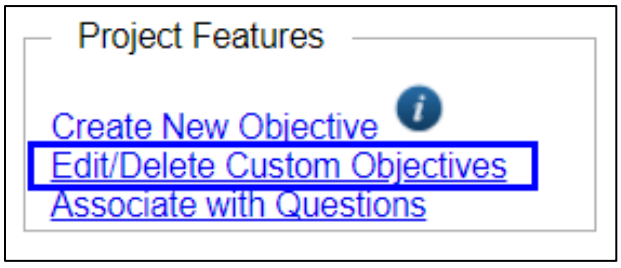


Figure 3-11. Link to editing and deleting a custom objective.

In the **Edit Custom Objective** window you are able to select an objective and change the text as necessary (Figure 3-12, #1 & #2). Then you can Save or Delete the objective (Figure 3-12, #3 & #4).

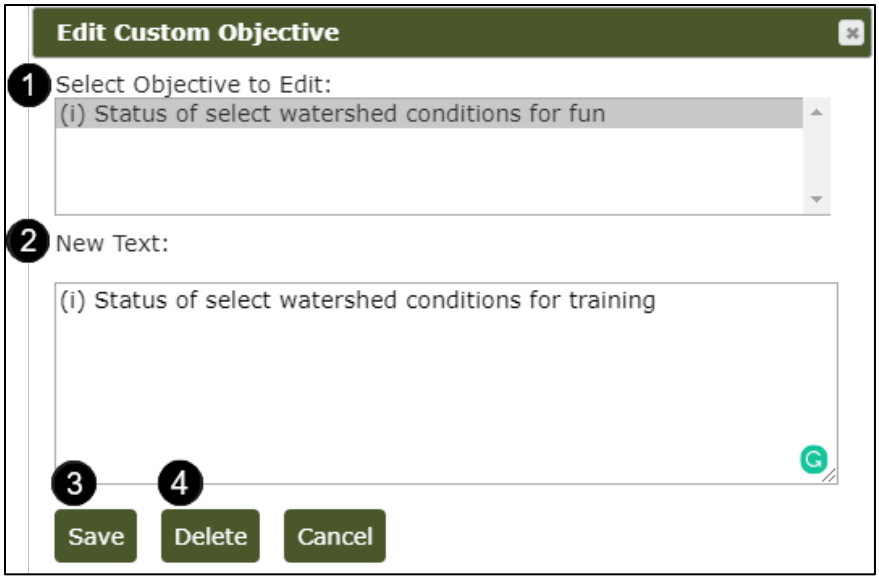


Figure 3-12. Editing a custom objective.

Associating Objectives with Questions

You can also associate questions with the custom created objectives. While this step is optional, if you choose to not associate questions with the new objectives, there will be no available 'Most Relevant' questions and you will need to select the Show Least Relevant Questions link to show the available questions. Next, select the **Associate with Questions** link (Figure 3-13).

Figure 3-13. Associate with Questions link.

Once the Associate Custom Objectives with Questions box opens pick your Custom Objective. Under Relevancy expand the arrowhead to pick which relevancy you would like for your question, options include: Most, Somewhat, and Least relevant (Figure 3-14).

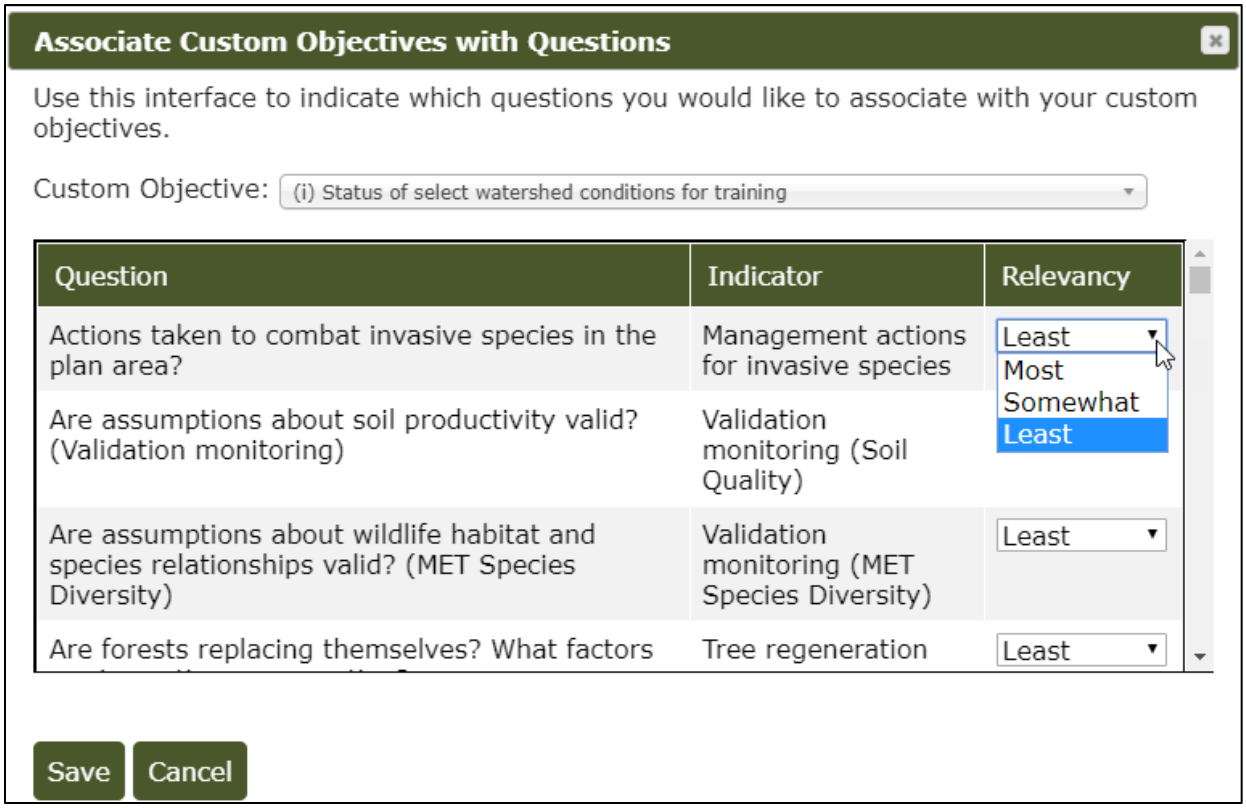


Figure 3-14. Custom Question and Relevancy.

Step 4: Selecting Questions

The objective you will be selecting questions for is displayed in the Current Objective box (Figure 3-15, #1). Add a question to each objective by double-clicking or selecting and dragging a question from the Available Questions list box to the Selected Questions list box. At least one question needs to be added for each objective (Figure 3-15, #2 & #3).

Questions are organized based on their relevancy (most, somewhat, and least) to the current objective assisting users in selecting appropriate questions. By default, only the Most and Somewhat relevant questions are shown. Select the Show Least Relevant Questions link to view the remaining questions (Figure 3-15, #4).

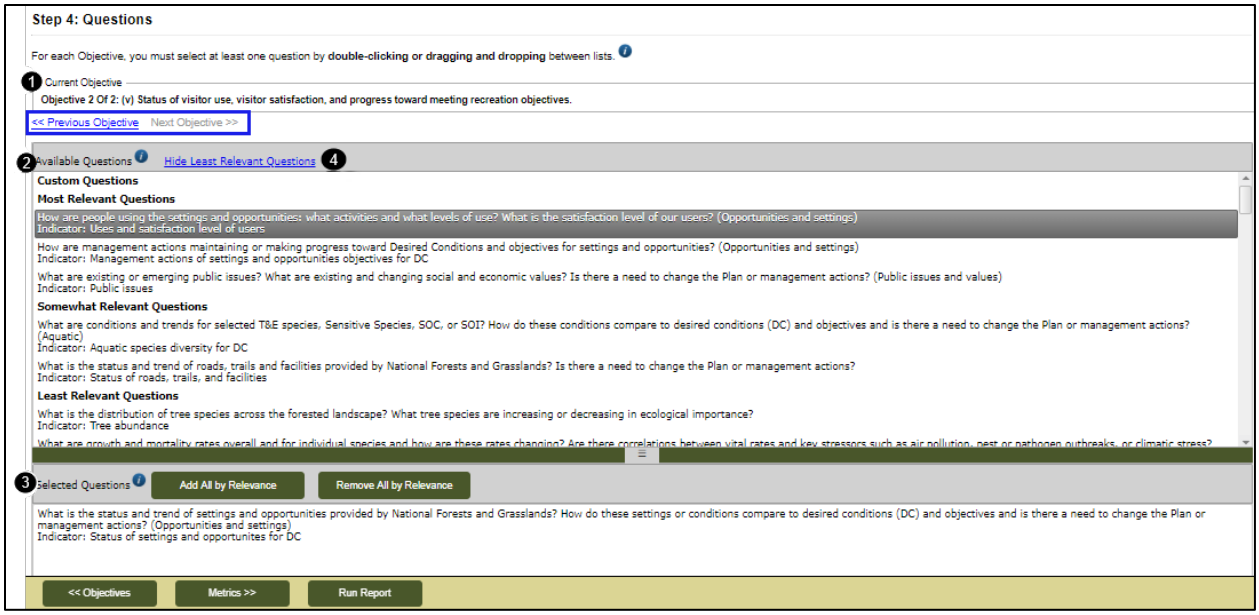


Figure 3-15. The Current Questions box.

Users also have the option to create custom questions. Custom questions can be made from scratch through text entry or created from an existing question.

Using the Project Features

Similar to the Objectives page, you have the option to use the Project Features (Figure 3-16) and create a custom question and indicator. For more instructions, view the section Creating New Objectives.

Once a custom question is created you can then edit or delete that question or associate it with metrics (Figure 3-16). These features follow the same process described in the Objectives section. For more information view the section Editing and Deleting Custom Objectives or Associating Objectives with Questions.

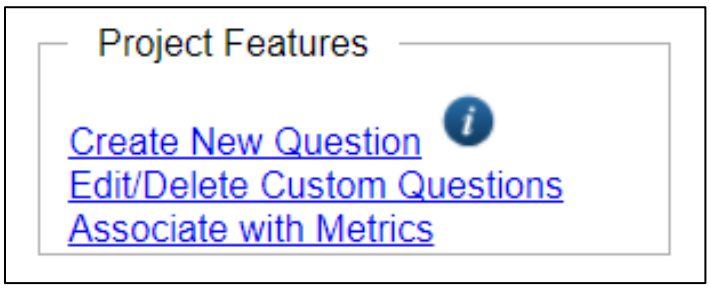


Figure 3-16. Project features for the custom questions.

Step 5: Selecting Metrics

Here you will select one or more metrics that need to be computed to answer each objective and question pairing included in your project. For each selected metric, you will also design an output table by selecting the variables you want to use for the page, row and/or column groupings.

At the top of the Metrics page, the question you will be selecting metrics for is displayed in the Current Question box (Figure 3-17, #1). Select at least one metric, whether a DTIM-only metric or an ATIM-compatible metric, for each objective and question pairing in your project.

For the chosen metric, select your output table **Page, Row,** and **Column** variables (Figure 3-17, #2) using the drop-down lists. Use the search feature above the expandable lists to find a specific metric or table variable. To add a metric select **Add** after selecting your desired metrics (Figure 3-17, #3).

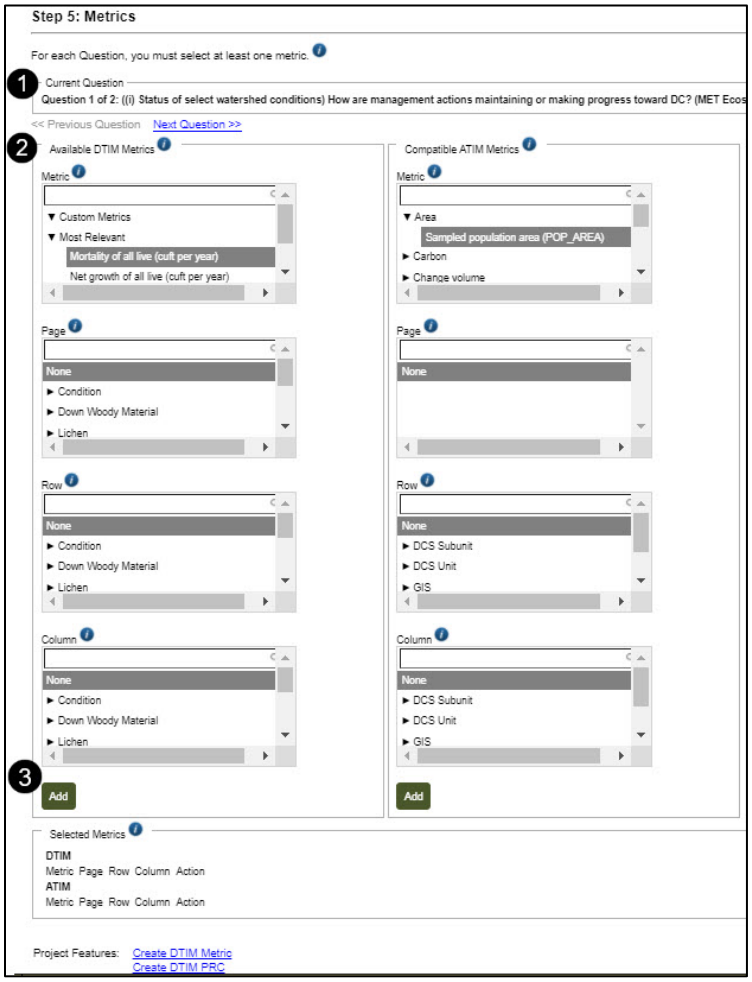


Figure 3-17. The DTIM Metrics page.

Metrics that have been added will appear in the Selected Metrics box. Here you can remove a metric if necessary (Figure 3-18). If you fail to select the Add button before navigating to the next or previous step, the current metric selection will not save to your project.

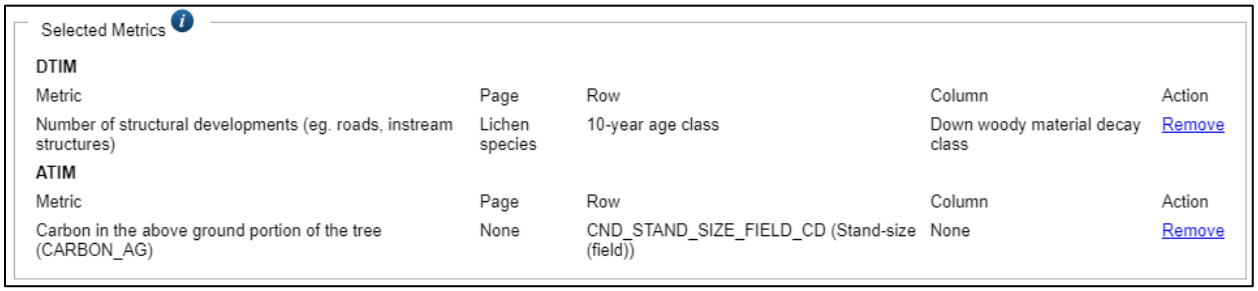


Figure 3-18. Selected metrics.

Using the Project Features

Similar to the Objectives page, you have the option to use the Project Features and create a custom metric and PRC (Figure 3-19). For more instructions, view the section Creating New Objectives. Once a custom metric or PRC is created you can then edit or delete that metric or PRC. These features follow the same process described in the Objectives section. For more information view the section Editing and Deleting Custom Objectives.

Figure 3-19. Project features of Metrics page.

Step 6: Designing Output Tables

The Output Tables page displays each combination of objectives, questions, metrics, and page, row, column (PRC) variables selected in the previous steps. In this step, you will review each of your output tables.

Editing Output Table Values

From the Output Tables page, select a linked metric to open the **Update Output Table Values** dialog. Use the drop-down lists to make any desired changes to the **Metric**, **Page**, **Row**, and/or **Column** values (Figure 3-20).

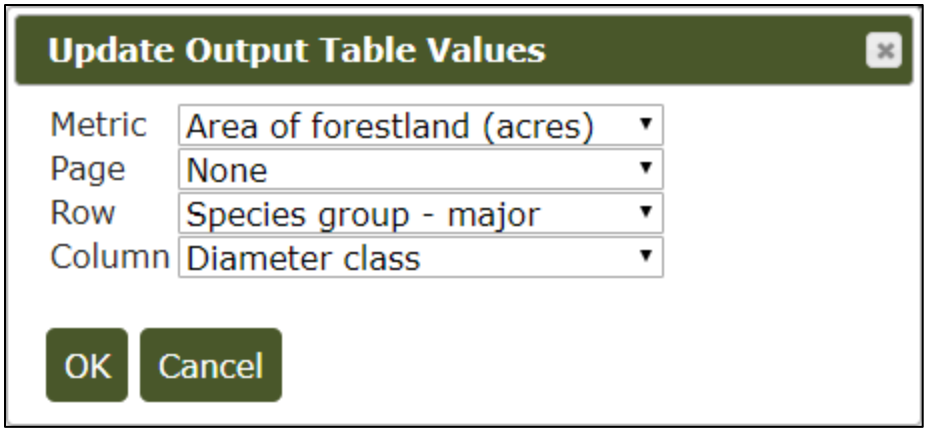


Figure 3-20. The Update Output Table Values dialog.

Including/Excluding Output Tables in the Sampling Calculator

All of your output tables will be passed to the **Sampling Calculator** page by default. To exclude an output table, select the output table and uncheck the checkbox under the Include in Sampling Calculator label (Figure 3-21).

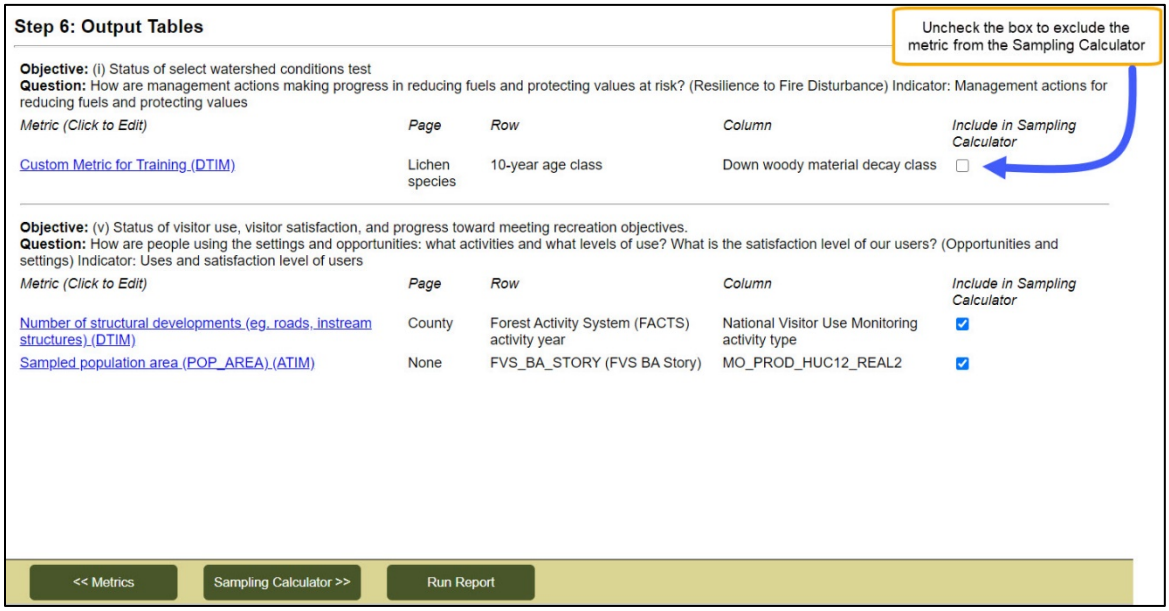


Figure 3-21. Output Tables page.

Step 7: Sampling Calculator

For each output table included, the Sampling Calculator can calculate the estimates based on existing data and precision requirements. If additional sampling is needed, DTIM will calculate the number of additional samples necessary to address your monitoring questions.

Each output table created for your project is listed on the Sampling Calculator page (Figure 3-22). If you have many output tables in your project, you can prioritize their ordering in the list. Select the up or down button, ⇩ ⇧, for an output table to position it higher or lower on the list.

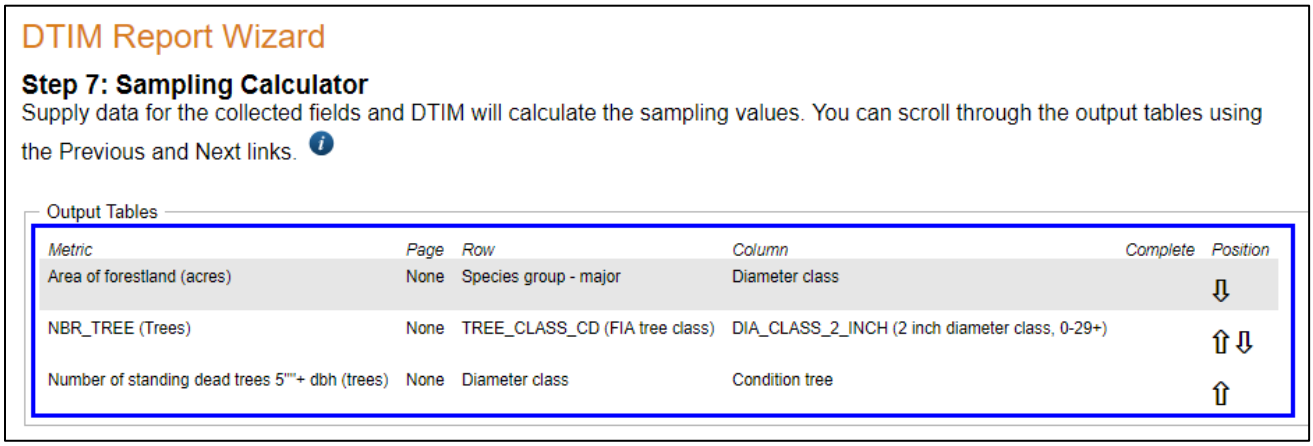


Figure 3-22. Output tables in the Sampling Calculator page.

The Details section provides information about the output table you are currently working with (Figure 3-23, #1). The ATIM Compatibility field indicates whether the metric is compatible with ATIM (Figure 3-23, #2). If it is compatible, you can retrieve estimates and required precision values for the output table directly from ATIM.

The Labels section allows you to supply custom labels for the page, row, and column variables for your output table (Figure 3-23, #3). When you generate the DTIM Report, your custom labels will be included in the master Sampling Values table.

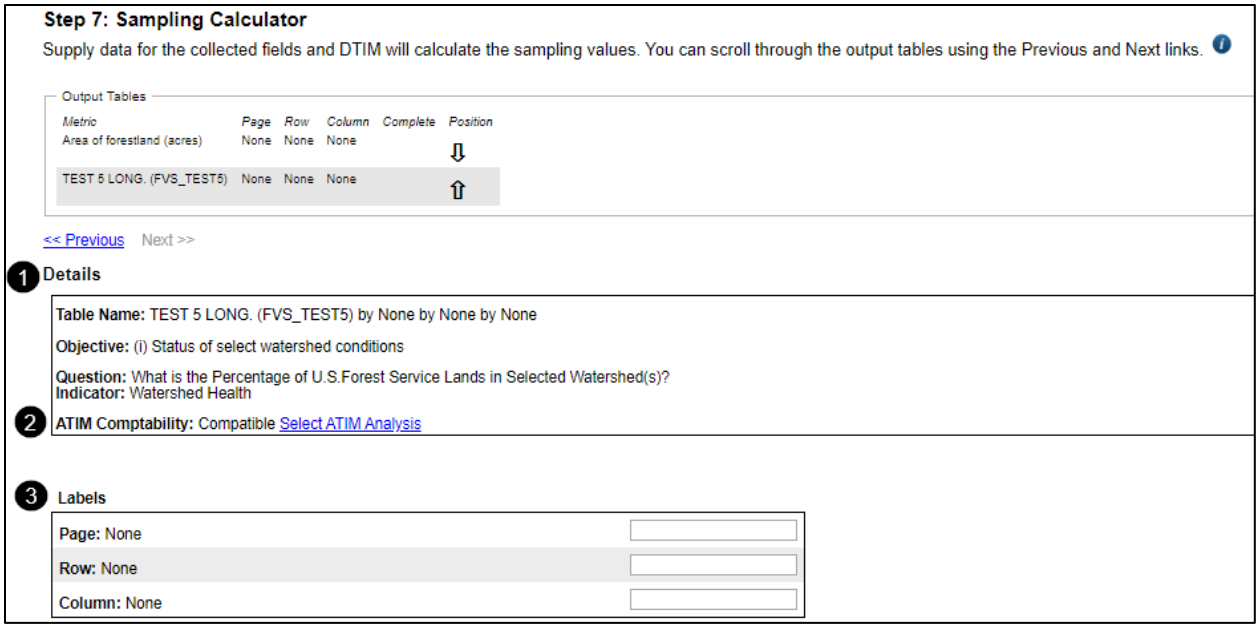


Figure 3-23. Entering custom row and column labels for an output table.

Providing Sampling Values for DTIM Compatible Metrics

If the metric combination is not compatible with ATIM, as indicated by the ATIM Compatibility field in the Details section, you will need to supply the estimation attributes needed for DTIM to calculate the remaining sampling values (Figure 3-24).

Most of these values can be obtained by creating a report in ATIM with the same estimate and page, row, column selections as you have selected in DTIM. You can either run a standard report if it exists with these same selections, create a custom report, or customize a standard report to fit your needs. Visit the section on creating reports in ATIM for more information.

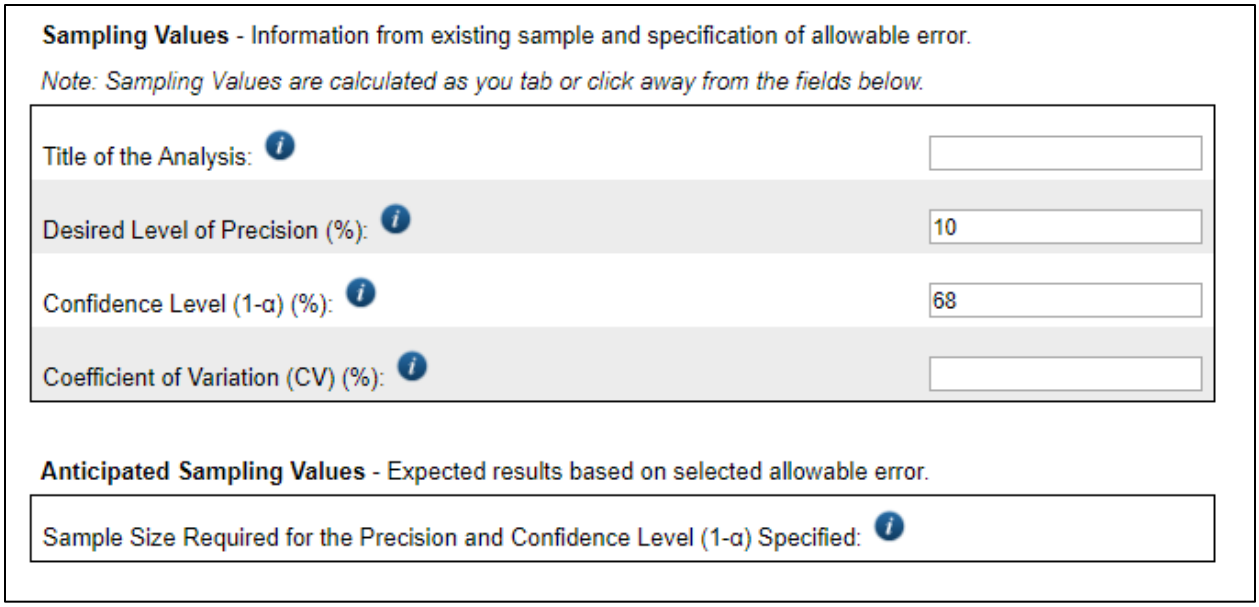


Figure 3-24. Sampling values page.

Based on the values you entered, DTIM will automatically calculate the Anticipated Sampling Values. Once the required sampling values have been supplied for a given output table, a completion indicator, will display in the list.

Repeat the steps above for each additional metric and PRC combination that you want to calculate sampling values for and is not compatible with an ATIM analysis.

Providing Sampling Values for ATIM Compatible Metrics

If the selected metric and PRC combination is compatible with ATIM you can select an ATIM analysis to retrieve estimation attribute values from, which will automatically populate some of the sampling fields on the Sampling Calculator page.

To retrieve estimation attributes you must first **Select the ATIM Analysis** (Figure 3-23, #2). A window will open allowing you to select the state or National Forest analysis you want to retrieve estimates for (Figure 3-25).

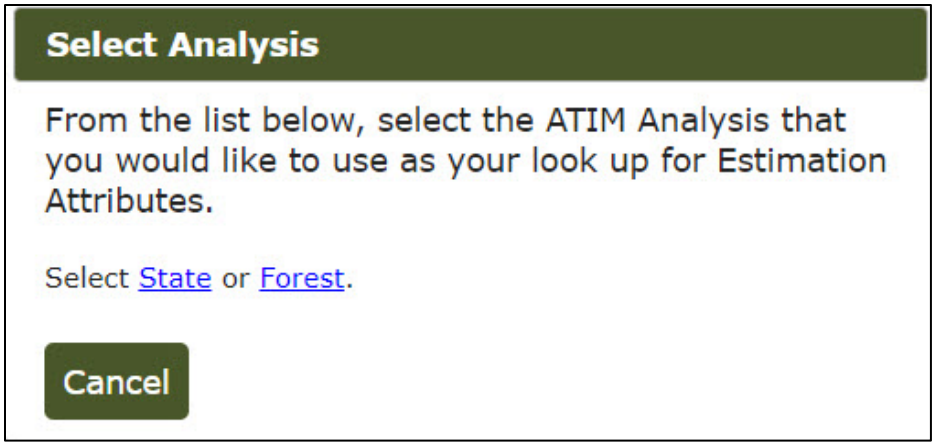


Figure 3-25. Select an Analysis from a State or National Forest for your estimation attributes.

Select the **Change ATIM Analysis** link (Figure 3-26, #1) to change your selection for the ATIM analysis. Alternatively, if you are content with your ATIM analysis selection, select the **Retrieve Estimation Attributes** link (Figure 3-26, #2).

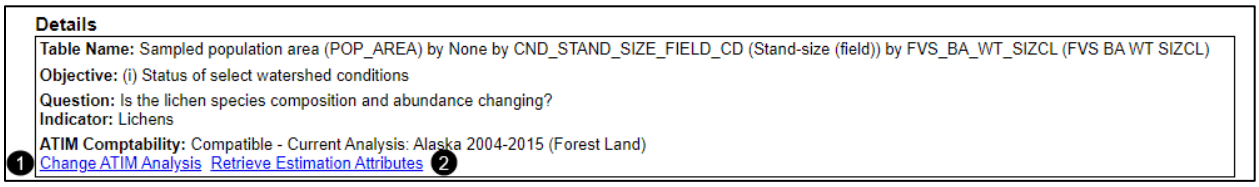


Figure 3-26. Retrieving Estimation Attributes from selected ATIM Analysis.

Based on these values from the estimate attribute selected, DTIM will automatically calculate the anticipated sampling into the reference data box (Figure 3-27).

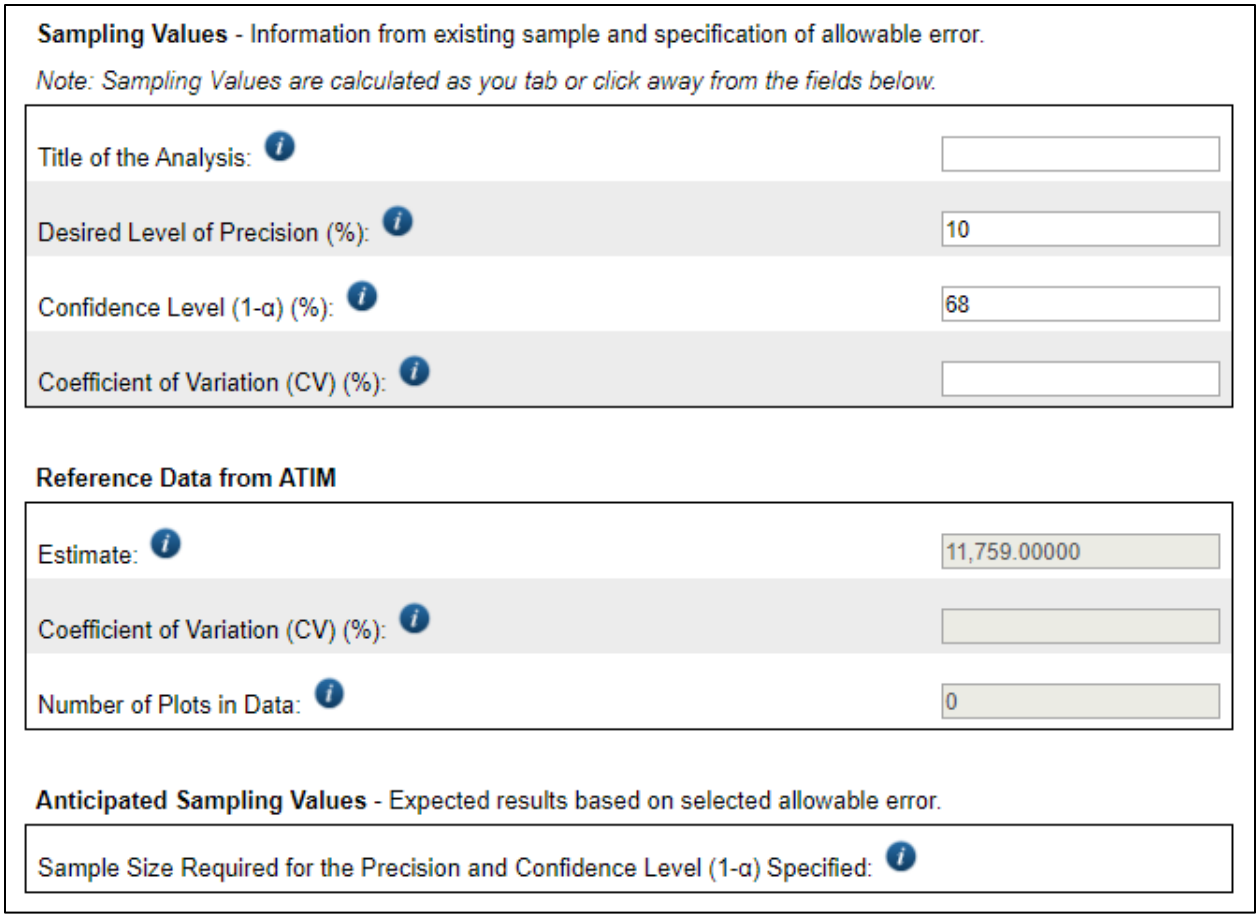


Figure 3-27. Anticipated sampling values calculated by DTIM.

Viewing the DTIM Report

When you run your report, a new tab will open in your browser displaying your DTIM report consisting of metadata related to your project, your objective, question & metric selections, and output tables.

Downloading the DTIM Report

To download the report select the **Report PDF** link (Figure 3-28, #1).

Metadata

Each report has metadata associated with it (Figure 3-28, #2). The metadata informs the viewer who created the report, the date the report was created, and the last modified date. It also shows the base template used for this report, who created the base template, and if a region and forest were selected for the project.

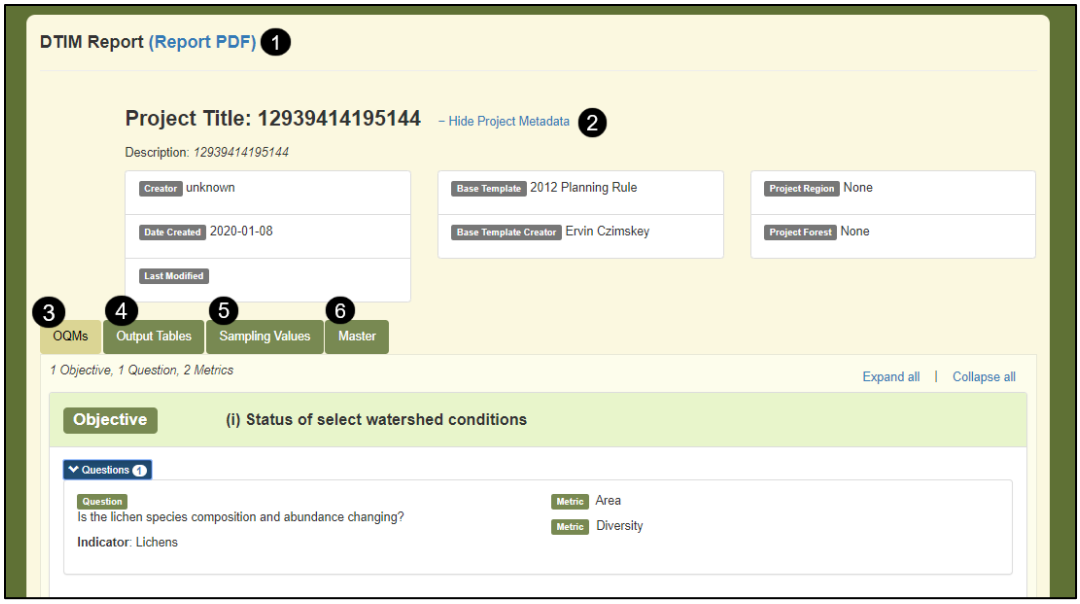


Figure 3-28. DTIM View Report page.

OQM's

The report opens with the **OQMs** tab (Figure 3-28, #3) of the report output as active. This tab lists all of your Objective, Question, and Metric selections made during the project creation in DTIM (Figure 3-29).

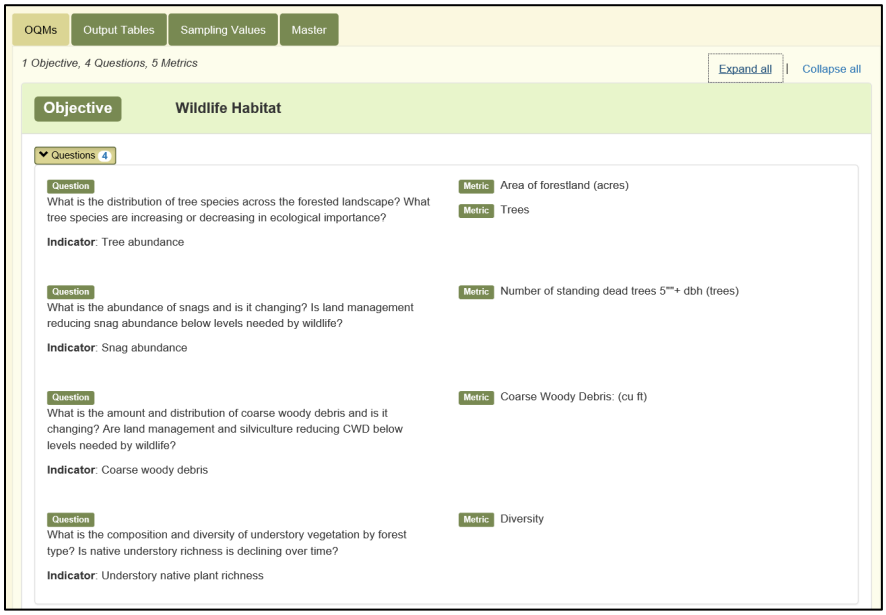


Figure 3-29. The Objectives, Question and Metric report page.

Output Tables

The **Output Tables** tab (Figure 3-28, #4) displays the output tables that consist of the output table names and the associated objective question, and metrics. By default, all of your output tables are listed. You can use the **Objective** (Figure 3-30, #1) **Question** (Figure 3-30, #2), and **Metric** (Figure 3-30, #3) drop-down menus to filter or sort the output tables that are displayed by their respective category.

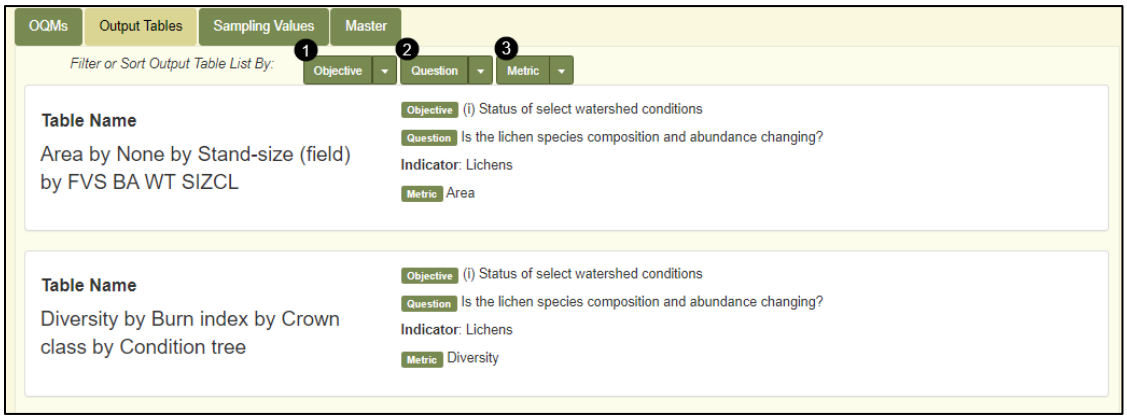


Figure 3-30. The DTIM report Output Tables tab.

Sampling Values

The Sampling Values tab (Figure 3-28, #5) shows the sampling values for the selected metric (Figure 3-31, #1). Metrics can be shown as a list or a table (Figure 3-31, #2).

Figure 3-31. The Sampling Values listed for the selected metric.

Master

The Master tab (Figure 3-28, #6) displays all of the output tables you created in your DTIM project (Figure 3-32, #1). The sampling values calculated for the metrics you specified are also displayed (Figure 3-32, #2).

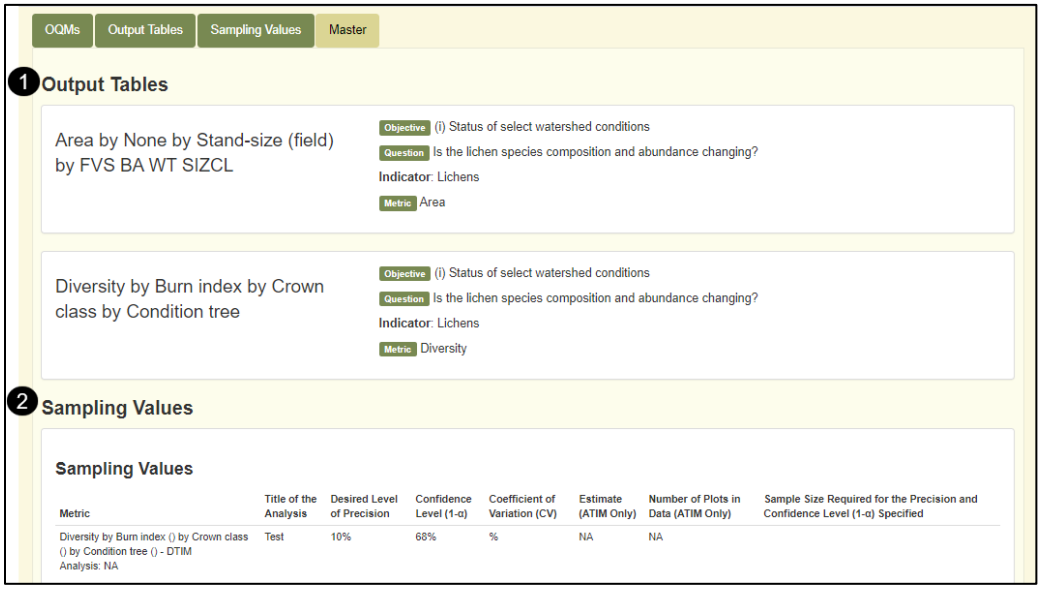


Figure 3-32. The Master tab on the DTIM Report.

Suggested Citation

At the bottom of the all DTIM Report pages, you will find a suggested citation to use in your reports, presentations, etc. (Figure 3-33).

Suggested Citation: Forest Inventory and Analysis. Design and Analysis Toolkit for Inventory and Monitoring web application, Version February 28, 2019 10.1-rc.3 8b3aba2 . St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. Available only on internet: https://www.fs.fed.us/emc/rig/DATIM/index.shtml. 3/1/2019 9:57:06 AM.

Figure 3-33. Suggested Citation for publications.

Exiting DTIM Wizard

Once you are finished using the DTIM wizard, you can exit the wizard by selecting the **Return to DATIM Home** button (Figure 3-34, #1). This will prompt a message confirming that you do want to return to the DATIM home page and that any unsaved changes will be lost (Figure 3-34, #2). Select No to stay on DTIM and save your changes. Otherwise, press Yes to return to DATIM home.

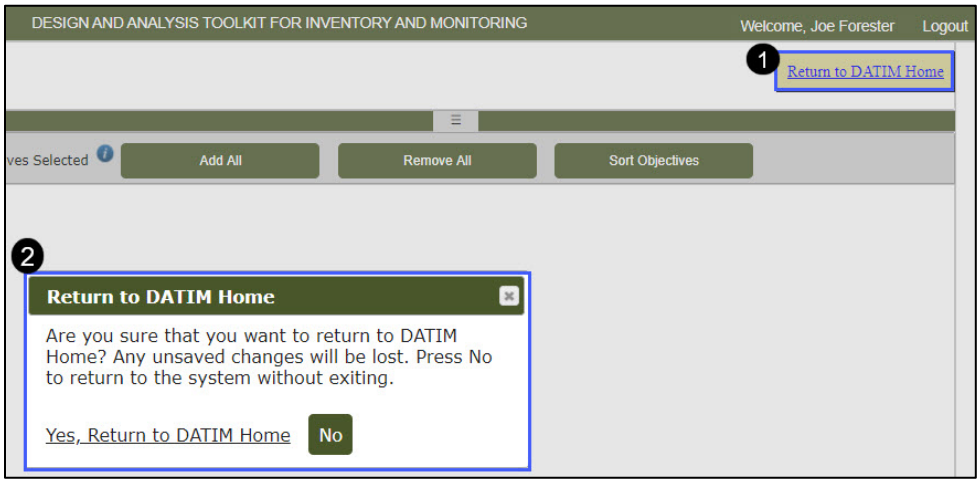


Figure 3-34. Exit DATIM using the Return to DATIM Home button.

DTIM Tools: Report Manager

The Report Manager allows you to access the feature, which provides details for one project, and the feature, which combines details from multiple reports.

To access, select the **Report Manager** link (Figure 3-35) underneath the DTIM Tools. The Report Manager link is available throughout the whole DTIM wizard, you do not need to navigate through all the steps in the DTIM wizard to get to the Report Manager.

Figure 3-35. Report Manager Link.

Step 1: Select Report Type

In step 1 of the report manager, you will select the type of project you need to access**. Project Reports** (Figure 3-36, #1) allows you to print or export the content of a single report. **Aggregate Reports** (Figure 3-36, #2) combine details from many projects and give you a summary and comparative information.

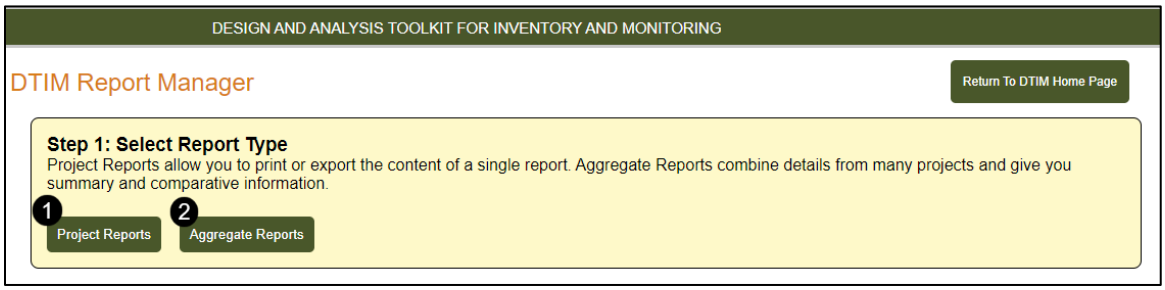


Figure 3-36. DTIM Report Manager Page.

Using the Project Reports

Select Projects

In step one, selecting **Project Reports** will open a list of available reports that can be filtered by template (Figure 3-37, #1), if necessary.

Project Details and Report Selection

After you choose a report, Step 3: Project Details and Report Selection opens (Figure 3-37, #2). You are able to view the full details of the report, print the report, or export it as a PDF (Figure 3-37, #3-5). When you select any of the three buttons, a new tab will open displaying the chosen page.

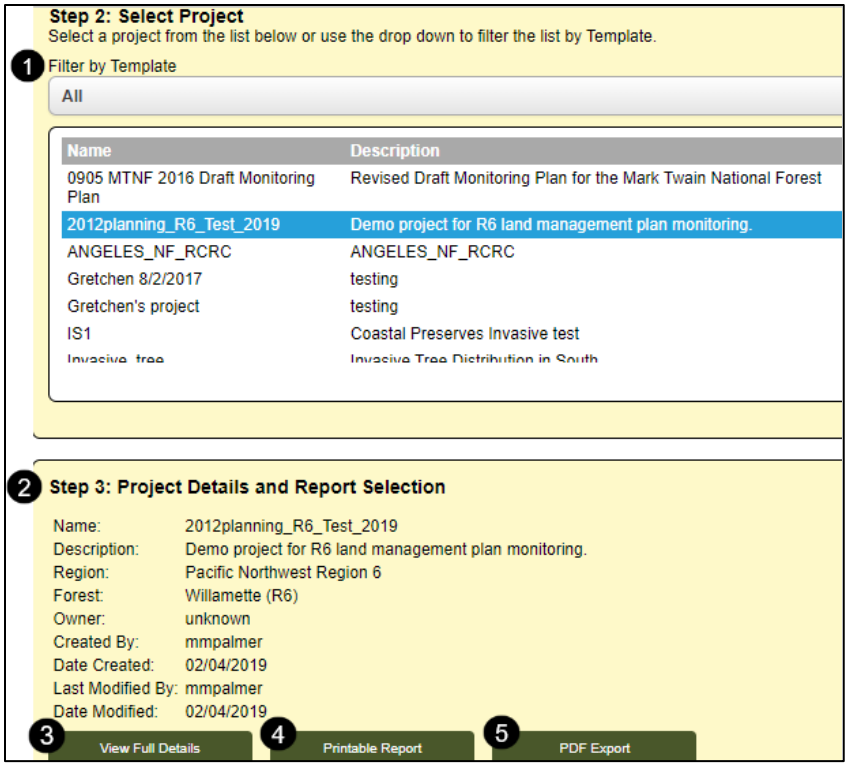


Figure 3-37. Project Reports Page.

The **View Full Details** button will open the DTIM Project Manager where you can then select the project to open or view. To return directly to the **Report Manager** you must go back to the tab you were previously on. The View Report Manager will return you to the beginning of the Report Manager.

The **Printable Report** button opens the DTIM Report where you can then print a copy of the report and the **PDF Export** button will download the report as a PDF.

Using the Aggregate Reports

In step one select Aggregate Reports. This will then open step 2, where you will choose a region and forest for your report (Figure 3-38, #1). Step 3 will automatically open where you can filter the projects by template and date (Figure 3-38, #2).

The final step is to select the report type (Figure 3-38, #3), which include **Objective Report, Question Report, Metric Report,** and **Projects List**. Once you have selected the report type you can then select either the **Excel Export** (Figure 3-38, #4) or the **PDF Export** (Figure 3-38, #5) button. Once selected, these will automatically begin the download sequence.

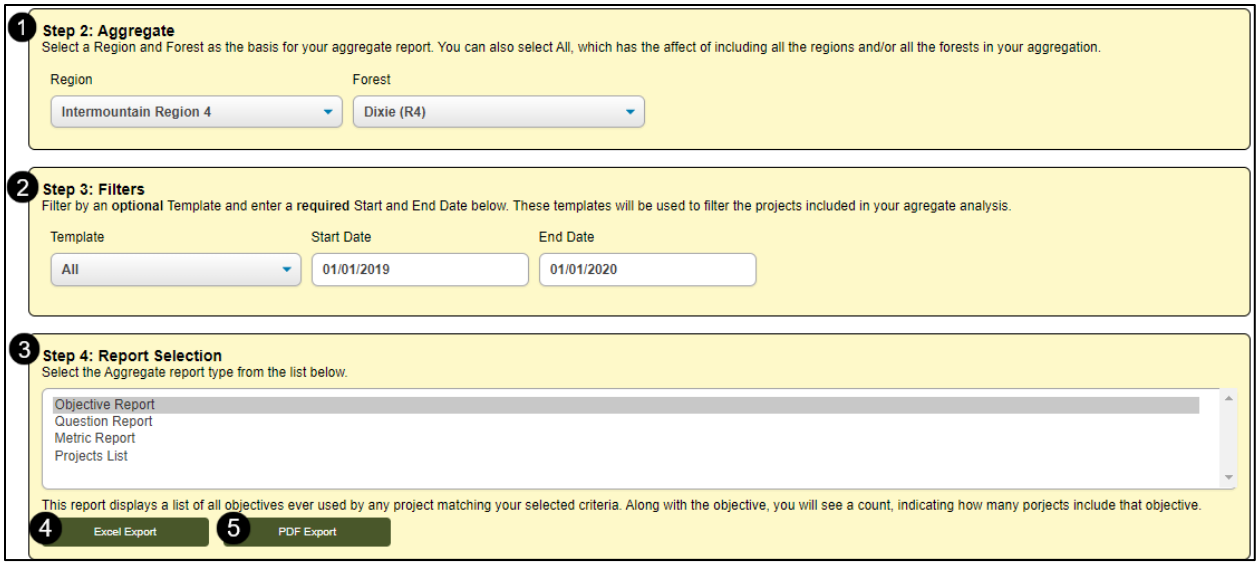


Figure 3-38. Aggregate Reports Page.

DTIM Tools: Using the Project Manager

The Project Manager is used to open and delete existing projects in DTIM. You must be logged in to use this feature. To begin, select the **Project Manager** link in the DTIM tools menu (Figure 3-39).

Figure 3-39. The DTIM Project Manager link.

On the **My Projects** tab, you have the option to open, save, view, and delete your project (Figure 3-40, #1-4). Below these options you can also share the project with a team or a member and assign their role (Figure 3-40, #5-6).

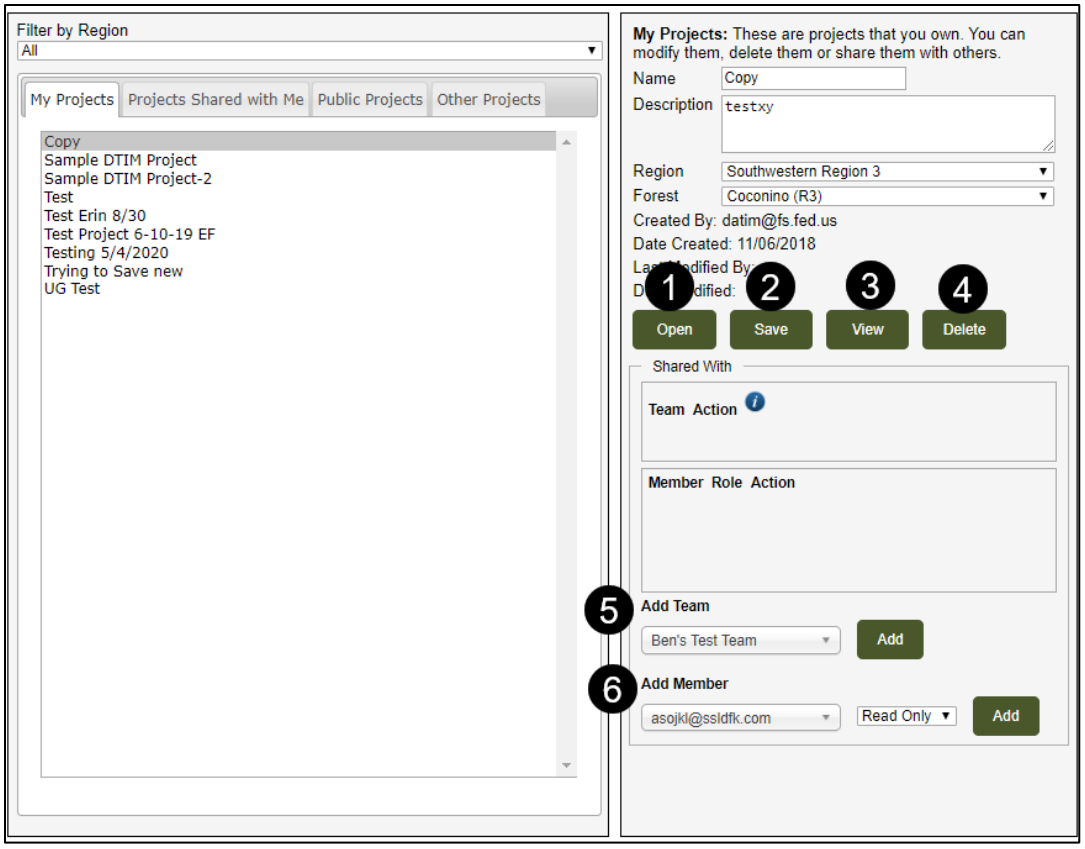


Figure 3-40. Viewing the My Projects tab in the DTIM Project Manager.

When viewing a project you will be redirected to the Run Report page (Figure 3-41, #1). The DTIM Project Viewer page will also show the project details, template used, objectives, questions, metrics set, and the precision values (Figure 3-41, #2).

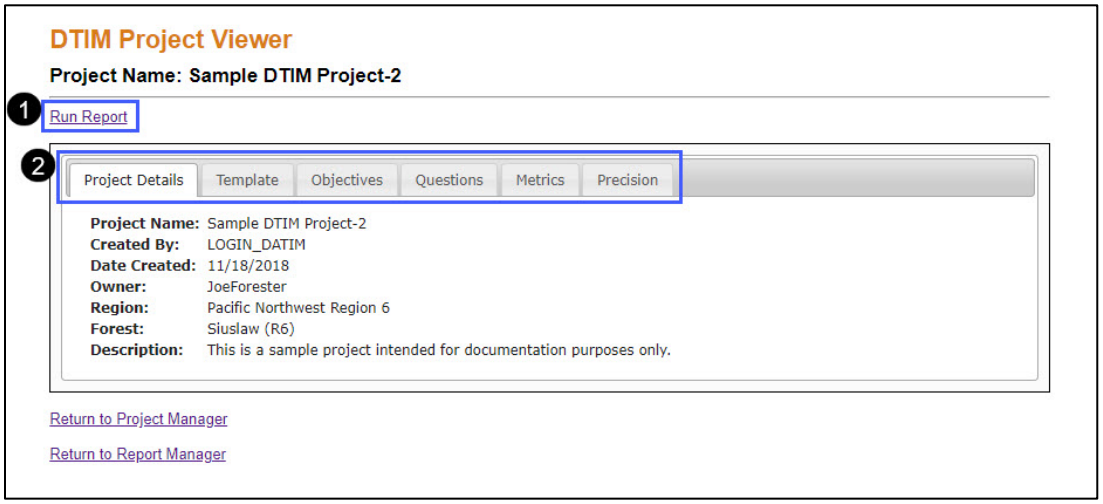


Figure 3-41. The DTIM Project Viewer.

The Projects Shared with Me, Public Projects, and Other Projects tabs have similar functionalities as the My Projects tabs. On these tabs you can open, create, or view projects that are shared with you or public.

DTIM Tools: DTIM Administrative Tool

Administrators can use this tool to manage Base Templates and other DTIM Features. To read more information about the DTIM Administrative tool, see the DATIM Reference Guide.

SIT

Last Updated: 10/2020

Introduction to SIT

The **Spatial Intersection Tool (SIT)** provides an interface for users to access natural resource inventory datasets and intersect plot-based data with geospatial layers via ArcMap in the ArcGIS Desktop. It is integrated with the **Analysis Tool for Inventory and Monitoring (ATIM)** to enable you to focus your ATIM analysis on a geographic area of interest and to summarize the results of your analysis reports using map-based attributes.

GIS information including plot or polygon files must be provided by users or created by SIT and meet Forest Service standards. Users can add in or create shapefiles using FIADB data.

Before using the Spatial Intersection Tool (SIT), the user should have a basic understanding of geographic information systems (GIS) and your computer needs to meet the system requirements to use ArcMap and the geospatial interface (GI).

Forest Service employees with current Active Directory accounts are encouraged to run it from the Citrix environment as often as possible.

Getting started with SIT

To start using SIT:

Select **SIT** in the DATIM navigation menu or select the **Spatial Intersection** button from the Welcome to DATIM home page as shown in (Figure 4-1).

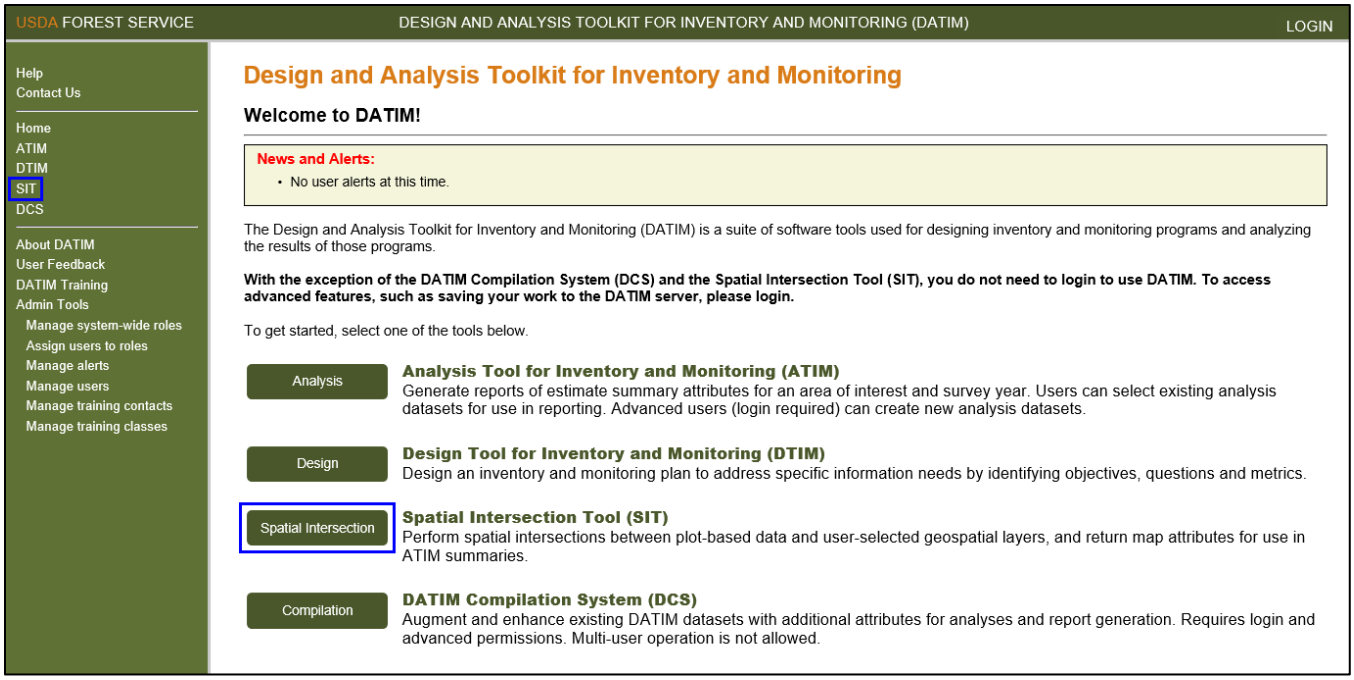


Figure 4-1. Launching the Spatial Intersection Tool (SIT).

The Spatial Intersection Tool page opens with instructions on how to access the add-in file from the Citrix Home Directory and instructions on where to save the SIT Addin file in your Desktop Home Directory if you choose to use ArcGIS from your desktop. A link to download the SIT add-in file is also provided on this page (Figure 4-2). To begin, you must install the SIT Addin file.

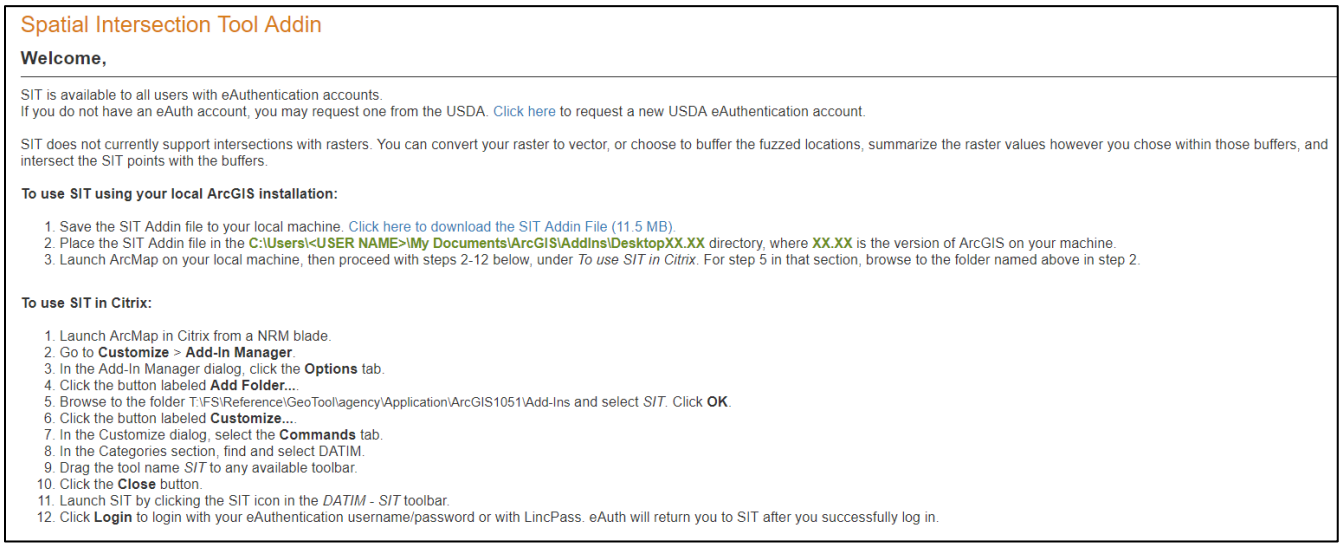


Figure 4-2. Spatial Intersection Tool Addin Instructions page.

Installing the SIT ArcMap Add-in to your Desktop

From the SIT homepage, select the link: **Click here to download the SIT Addin File (11.5MB)** as shown in (Figure 4-3).

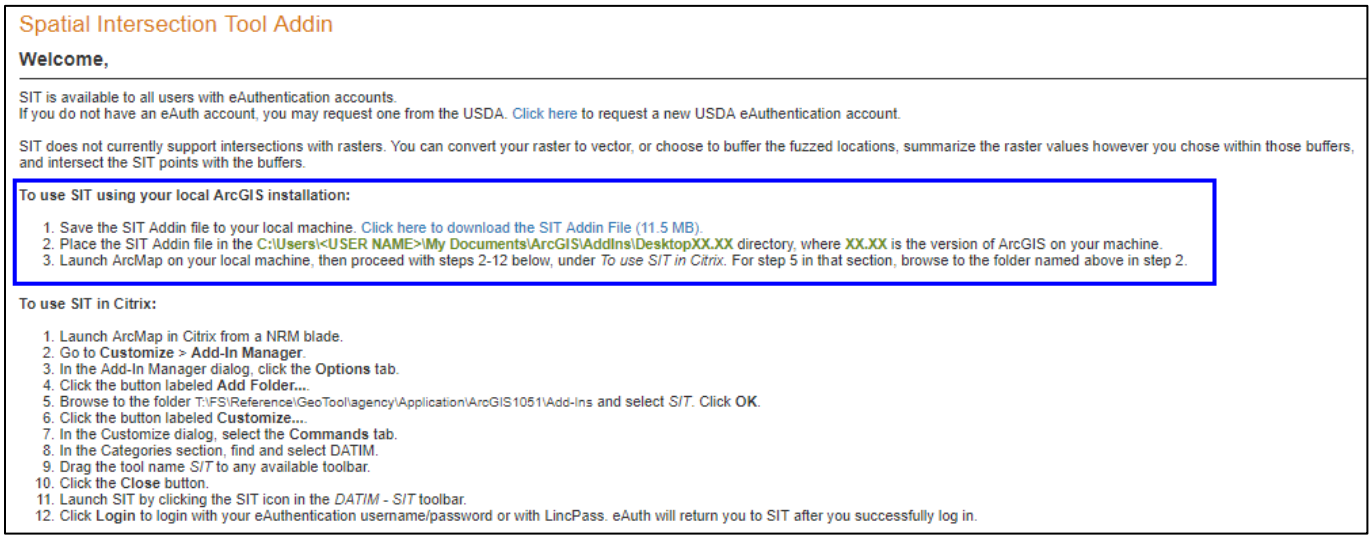


Figure 4-3. Spatial Intersection Tool Addin Link.

To use the SIT Tool and ArcMap from your Desktop, cut and paste the add-in file in your Downloads to the following location: C:\Users\<USER NAME>\My Documents\ArcGIS\AddIns\DesktopXX.XX.

NOTE: XX.XX is the version of ArcGIS on your machine. ArcGIS will need to be installed, and then add the last folder.

If a new version of the SIT Add-in file has been released, you will need to repeat the process of installing the updated SIT add-in file to your Desktop.

Launching SIT in Citrix

To launch SIT in Citrix:

Login to the VDC Citrix StoreFront environment using your Active Directory user name and password (Figure 4-4).

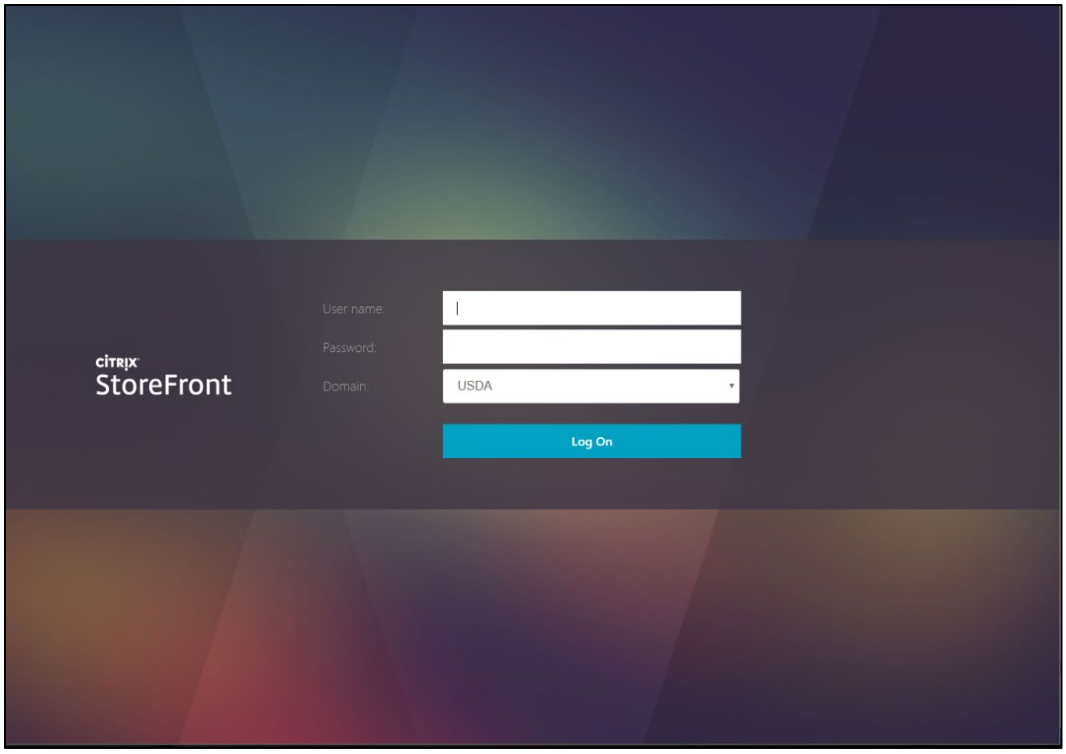


Figure 4-4. Logging into Citrix.

From the **Categories** tab use the following sequence of folders to open ArcMap: **National Applications** > Natural Resource Manager > ArcGIS 10-7-1 > **ArcMap 1071** icon (Figure 4-5).

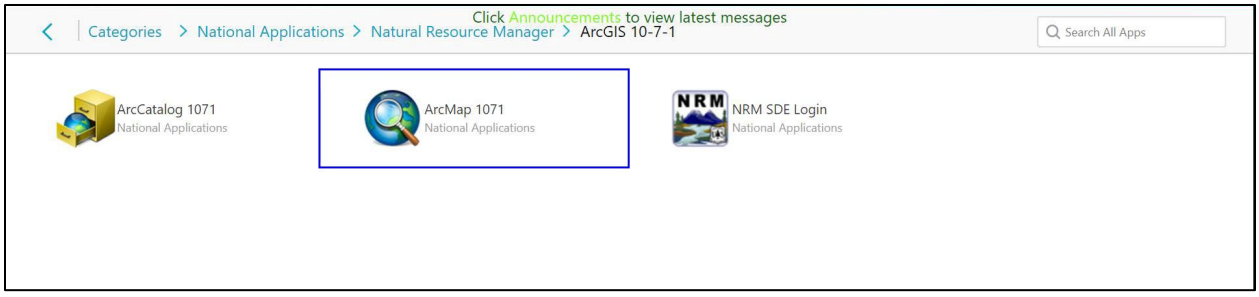


Figure 4-5. Running ArcMap from the Natural Resource Manager Directory.

To immediately start working with SIT, skip to the section entitled Working with SIT.

Installing the SIT Add-in File in ArcMap

From the ArcMap standard toolbar, select **Customize,** then select the **Add-In Manager option** (Figure 4-6)**.**

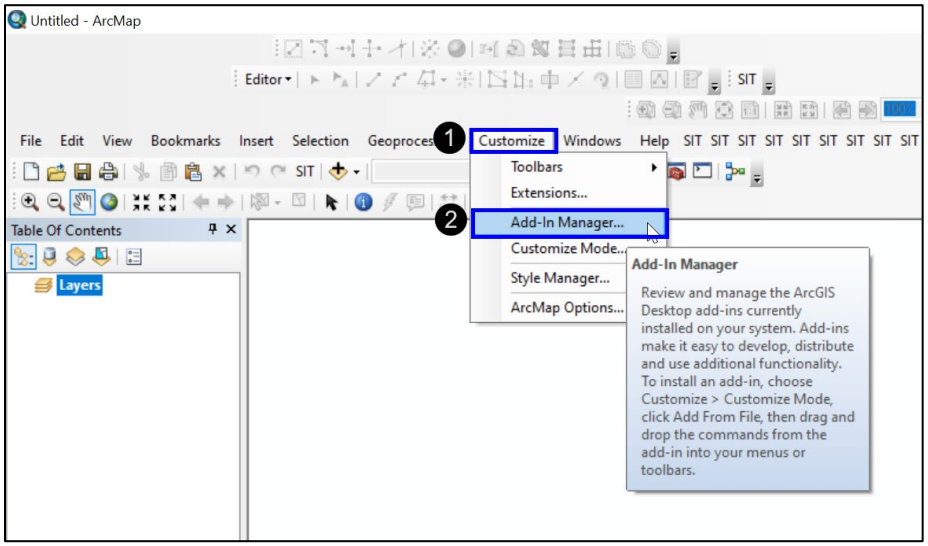


Figure 4-6. The Customize menu options.

The **Add-In Manager** window will open, select the **Options** tab (Figure 4-7, #1).

On the **Options** tab, select the **Add Folder** button (Figure 4-7, #2).

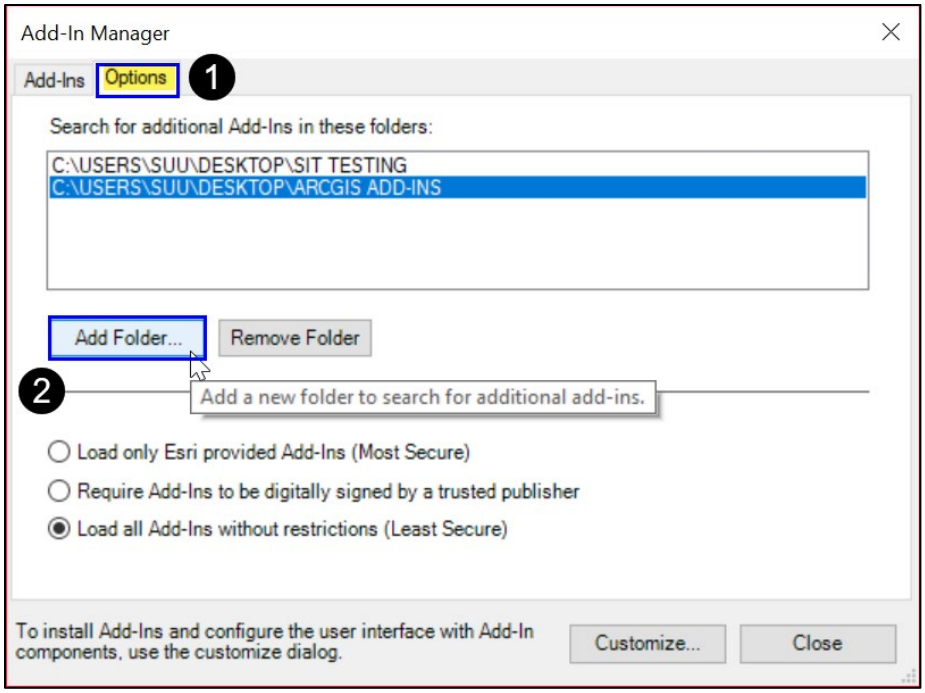


Figure 4-7. The Add-In Manager window.

Next, browse to the folder: C:\Users\<USER NAME>\My Documents\ArcGIS\AddIns\DesktopXX.XX and select **SIT** (Figure 4-8).

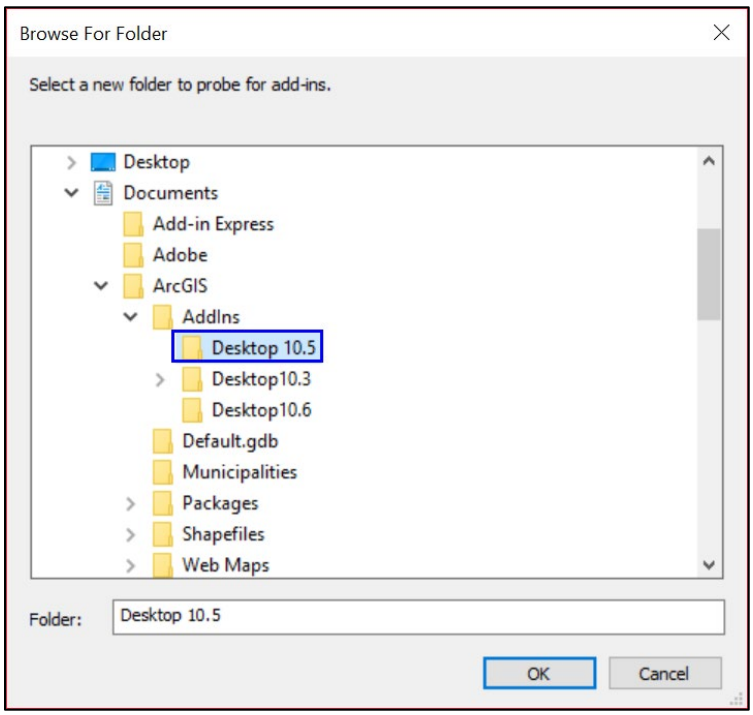


Figure 4-8. Browsing the SIT Add-In File.

Back in the Add-In Manager window, ensure the option to **Load all Add-Ins without restrictions** is selected (Figure 4-9).

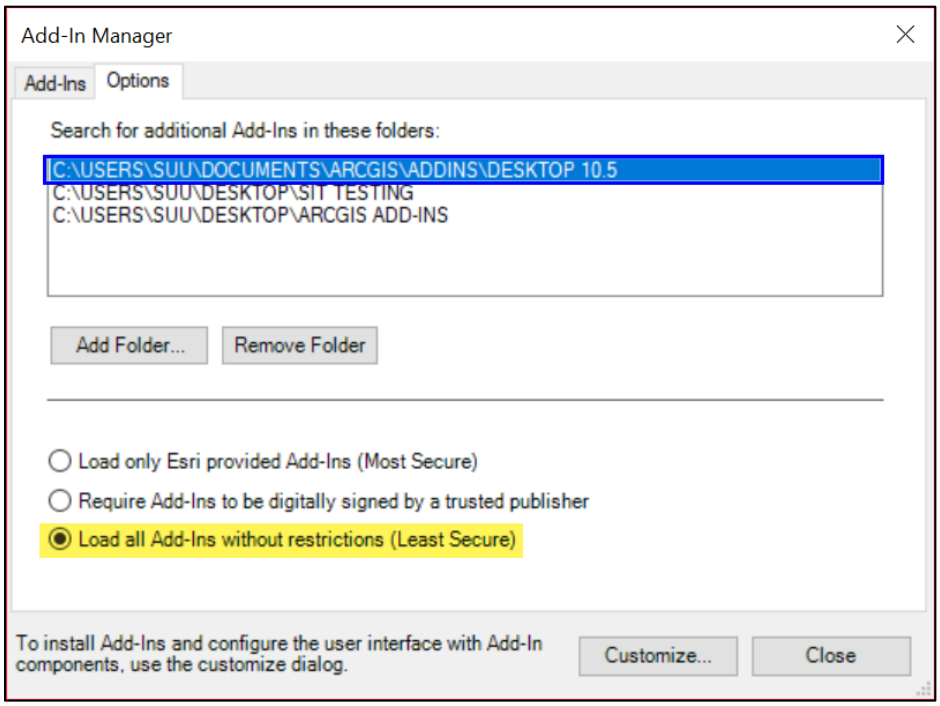


Figure 4-9. Adding the SIT Add-In file.

Adding the SIT Add-in to the ArcMap toolbar

To use the SIT tool you will need to add it to the ArcMap toolbar.

From the ArcMap standard toolbar, select **Customize** (Figure 4-10, #1).

From the **Customize** menu, select the **Customize Mode** (Figure 4-10, #2).

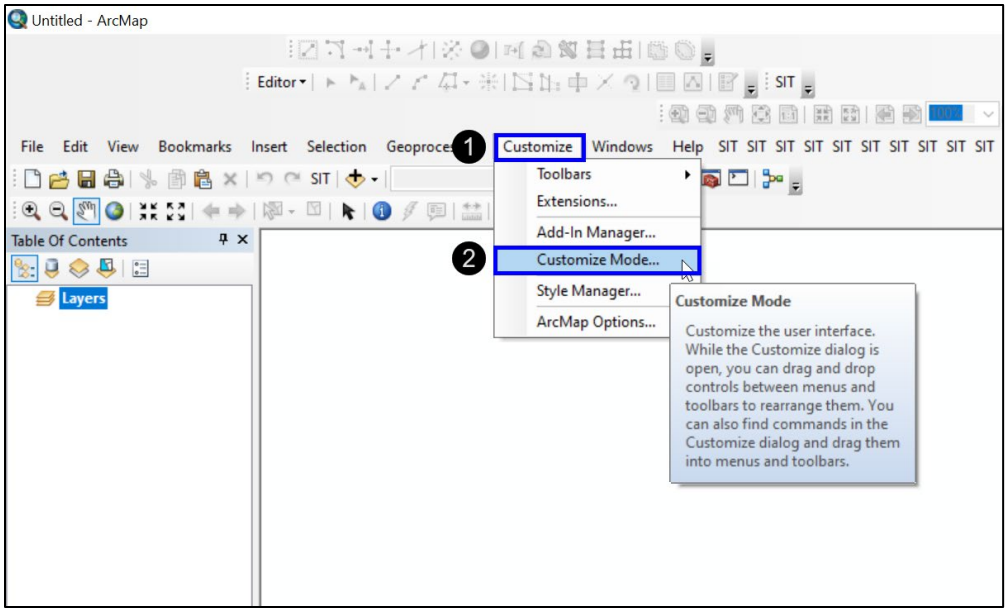


Figure 4-10. Selecting the 'Customize Mode...' option.

From the Customize window, select the **Commands** tab (Figure 4-11, #1).

From the Categories list, select **DATIM** (Figure 4-11, #2).

Drag the **SIT** tool icon from the **Commands** list (Figure 4-11, #3) onto an existing menu or toolbar (Figure 4-11, #4).

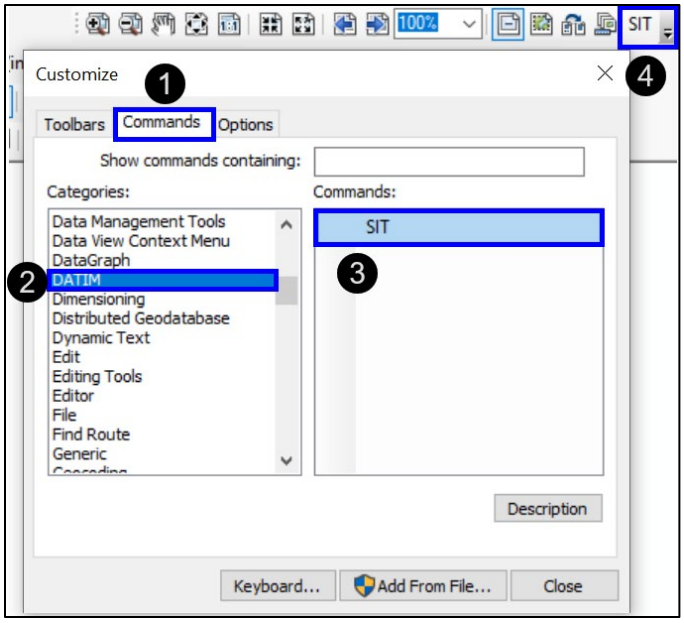


Figure 4-11. Adding the SIT Add-in to the ArcMap toolbar.

Working with SIT

Logging In

Select the data layers in your map and drag a .shp file or feature layer into ArcMap. The .shp file or feature layer will need to be loaded into ArcMap before opening SIT. This will ensure that the files in the Table of Contents in ArcMap are loaded into the pull down menus in SIT so you can create fuzzed coordinates. For real coordinate intersections, a feature layer and a county layer with a county .fips code attribute is required.

TIP: If you do not have a shapefile and want to report on a particular area, a polygon can be created in ArcGIS to do so. The polygon would need to have an attribute that you would then select in the SIT interface.

Once you have uploaded your .shp file or feature layer select the **SIT TOOL** icon from the ArcMap toolbar. This button will launch SIT.

The SIT Prerequisites window will pop-up. Select **Proceed** if you have met the requirements to run SIT.

Ensure that **PROD** is selected from the Connection drop-down (Figure 4-12) and select **Login** to continue. If you are working at PROD you will only see PROD listed.

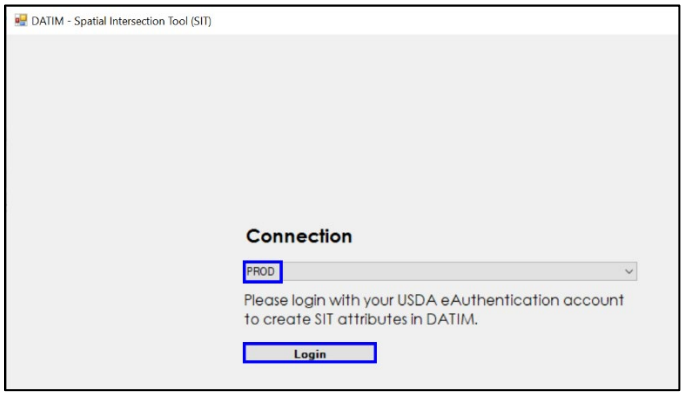


Figure 4-12. DATIM login required to run SIT.

You will be redirected to the eAuthentication page where you can provide your eAuth login credentials.

After logging into DATIM, you are automatically directed to the DATIM – Spatial Intersection Tool (SIT) page as shown in (Figure 4-13).

Plot Intensification

From the DATIM-Spatial Intersection Tool (SIT) page, note that you will have your Username and Selected Role (Figure 4-13, #1). The user will only be able to see the roles they have been assigned. To view the DATIM Roles select the **View DATIM Roles** link (Figure 4-13, #2). This will open a matrix showing all the available roles and the corresponding permissions they have. Select either the **Start Wizard** button (Figure 4-13, #3) or **Step 2: Create Point Feature Class** button to continue (Figure 4-13, #4).

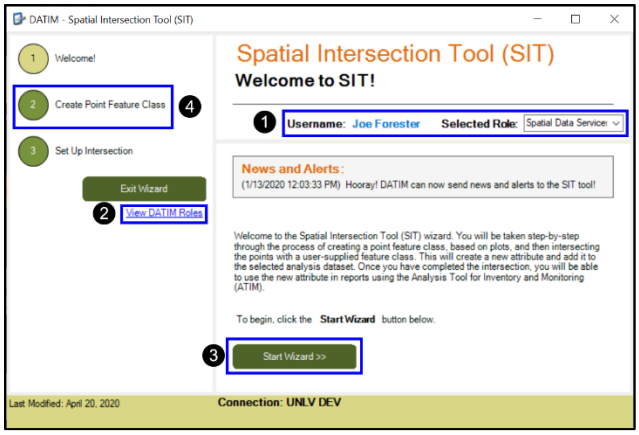


Figure 4-13. Selecting Step 2: Create Point Feature Class.

First, choose an Analysis from the Select Analysis list box (Figure 4-14, #1). Next, select the **Feature Class** to match the Layer's Projection (Figure 4-14, #2). Note that the layers shown are those in the table of contents in your ArcMap project (Figure 4-14, #3). Lastly, select the **Create Point Layer (Fuzzed Coordinates)** button (Figure 4-14, #4).

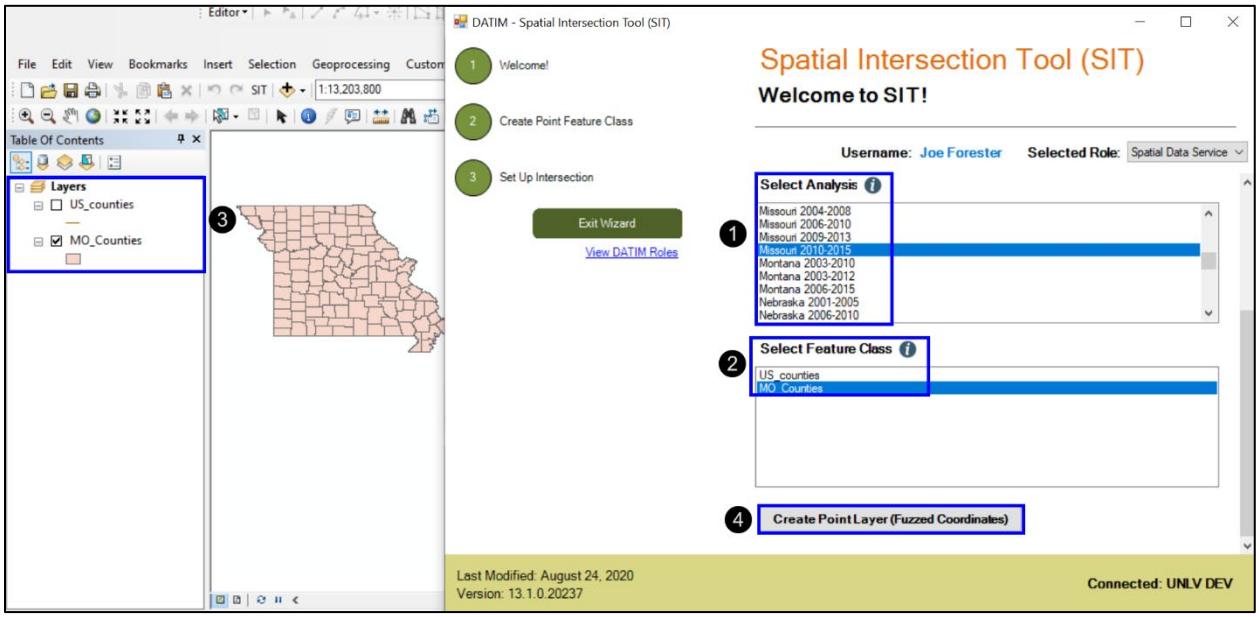


Figure 4-14. Selecting the Select Analysis, Feature Class, and Create Point Layer.

A **Save As** screen will pop-up, create a file name for your shape file and a destination to save it to.

At this point, SIT will create the point layer using the fuzzed coordinates. Once the point layer has been created, you will be returned to the SIT wizard's Set Up Intersection tab. The point layer dataset will now appear in the **Table of Contents** section of ArcMap (Figure 4-15).

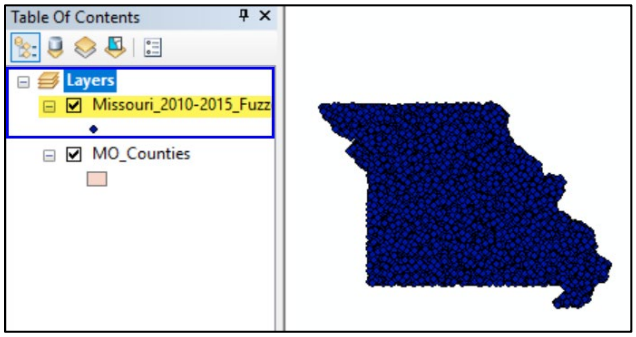


Figure 4-15. ArcMap with the Point Layer Dataset in the table of contents.

Note: If you are trying to reduce the size of your file do not remove the polygons in the county where a plot sits over the polygon.

If necessary, you can view the attributes associated with the layer that was just created. To do this, right click the dataset to view more options; select the **Open Attribute Table** option (Figure 4-16).

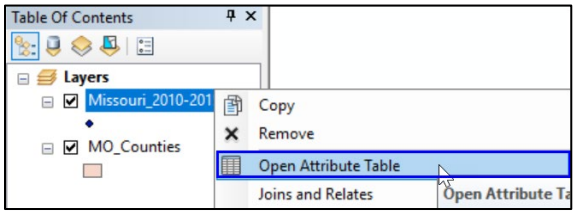


Figure 4-16. Opening an Attribute Table.

The Attribute Table will open in ArcMap. The **XCoord** and **YCoord** columns are the X and Y fuzzed UTM coordinates. The **sauf_cn** column consists of control numbers that will be used by ATIM and other applications, including SIT, to perform intersections and more.

TIP: The layers should all be in the same projection in your map. The actual plot locations are never displayed in SIT.

Creating a SIT intersection

Once your point layer has been created you will automatically be taken to step 3 Set Up Intersection.

Next, select the DATIM analysis you want to work with from the **Analysis** drop-down list (Figure 4-17, #1). Second, select the **Point Feature Class** dropdown to select the Point Feature Class that you want to use (Figure 4-17, #2). Below the Select Point Feature Class are boxes you can check: Use Actual Coordinates or Use 250 Acre Rule, (Figure 4-17). Setting up an Intersection., #3). Note that the use of the 250 Acre Rule will only be applied when using actual plot locations. Depending on your Selected Role you have the choice to check 1 or both of the boxes. You will need an FIA Staff or Spatial Data Services role to turn off the 250-Acre Rule.

Next, enter an **Attribute Name** (Figure 4-17, #4 & #5) and enter an **Intersection Description** for the intersection you want to create. Lastly, select a **Feature Class** (Figure 4-17, #6).

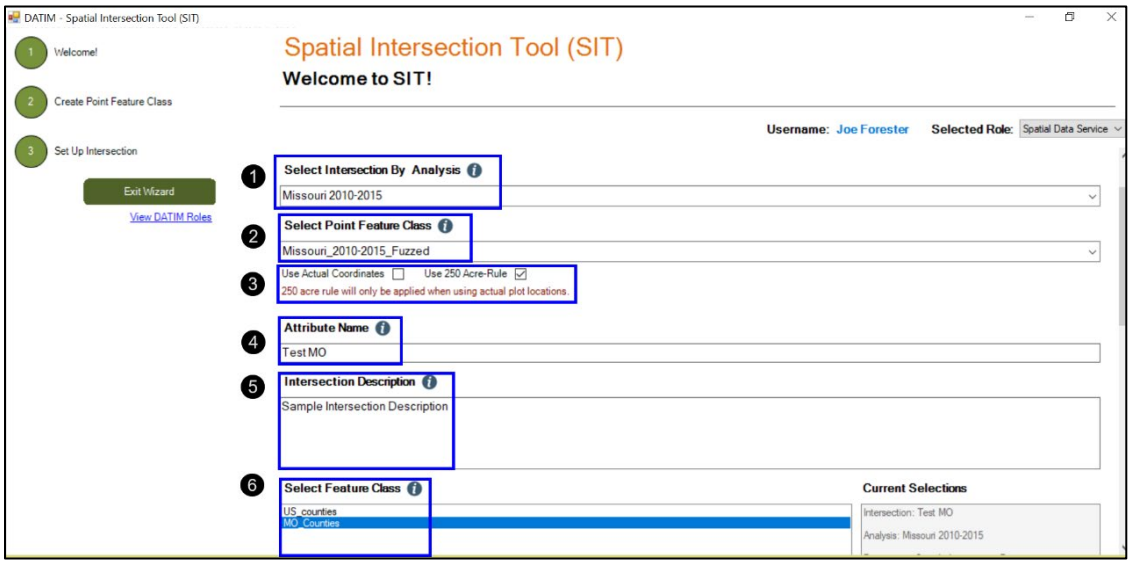


Figure 4-17. Setting up an Intersection.

Then select an attribute in **Select Attribute(s)** (Figure 4-18, #1). If you are intersecting against the real coordinates, you must upload a county layer with a FIPS code attribute to **Select County Feature Class** and to **Select FIPS code Attribute** (Figure 4-18, #2).Once all of your selections have been made, select the **Run Intersect** button (Figure 4-18, #3).

Note: At this time you are unable to run a shared report because you do not have access to the SIT attribute.

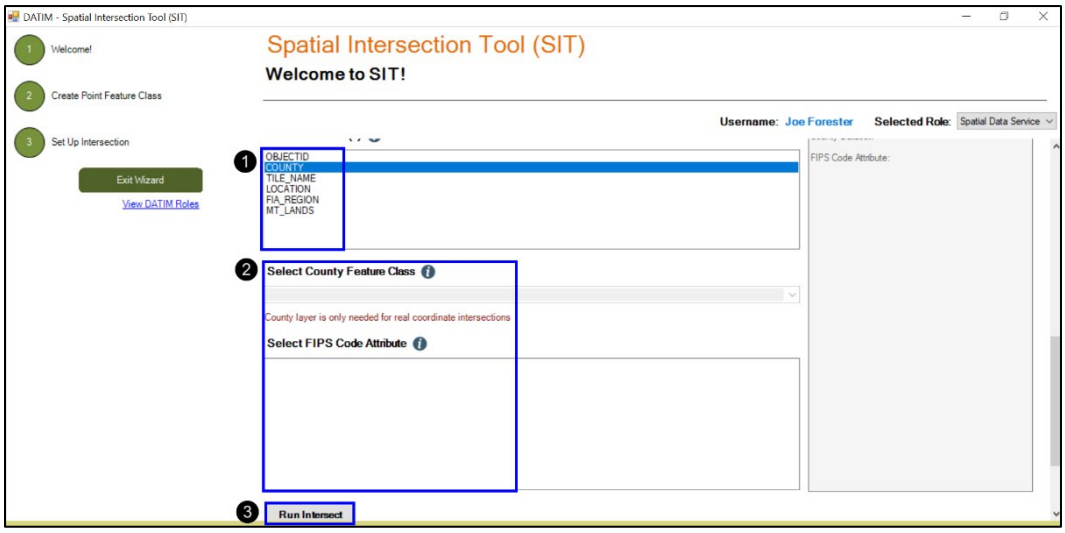


Figure 4-18. Selecting an Attribute and running the intersection.

Once completed, a message will display indicating that the attribute has been created. Select **Go to DATIM** to return to the DATIM homepage or select **Return to SIT** to return to the SIT wizard homepage. The intersection results are now stored in the Analysis dataset in the DATIM data mart.

TIP: If you ran your intersection while logged into DATIM and do not see your attributes in ATIM's Reports: Static Analyses Wizard Custom drop-down lists, you can either logout of DATIM or use the Refresh Lists link on the Estimate Selection tab in the ATIM Create Custom Report wizard.

How to do multi-state analysis with SIT variable via custom reports.

To create a multi-state analysis using SIT first login to DATIM as a DATIM Administrator. Then go to ATIM and **Create a New Analysis** (Figure 4-19).

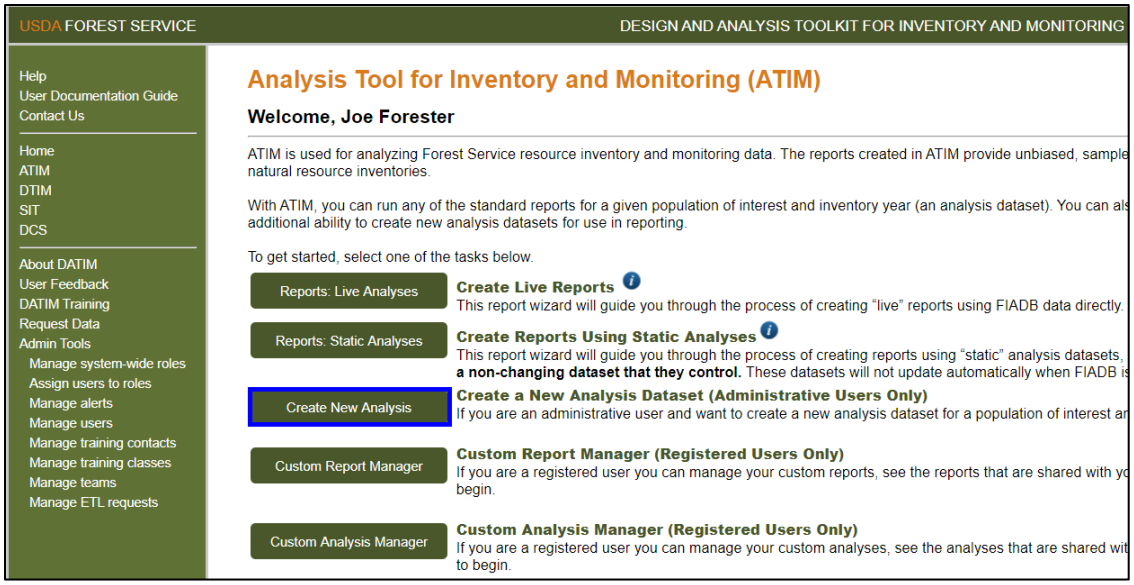


Figure 4-19. Creating a New Analysis.

Once in the Create New ATIM Analysis page. You now need to enter an email, analysis name, and description to begin (Figure 4-20, #1). You also have the choice to make your ATIM Analysis Public or Private (Figure 4-20, #2).

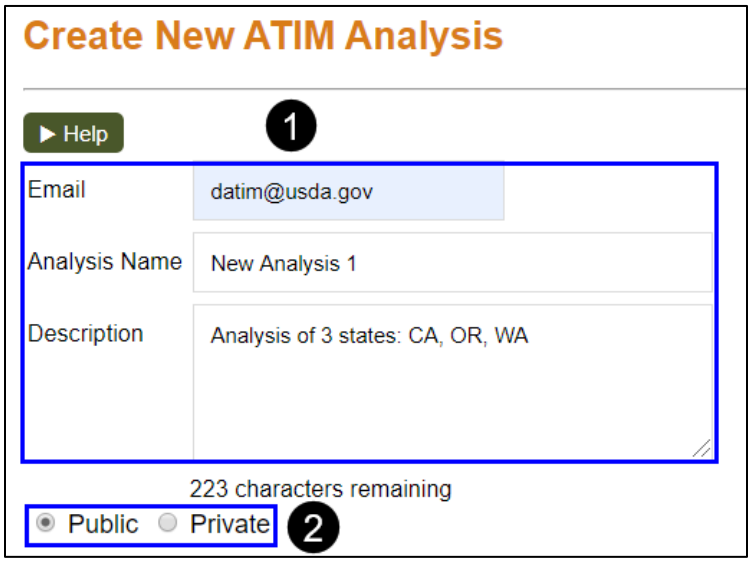


Figure 4-20. Creating a New Analysis in ATIM.

Next, select **State** and choose the multiple states that you would like to use to create an analysis (Figure 4-21, Figure 4-22, & Figure 4-23).

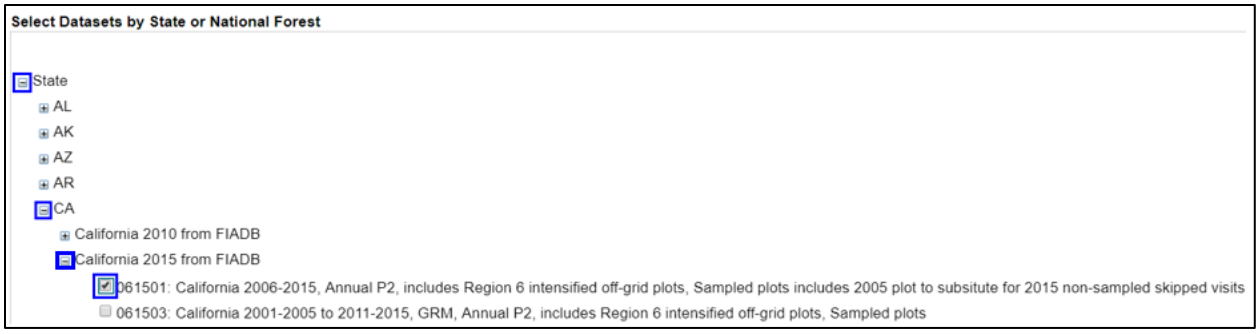


Figure 4-21. Selecting a CA dataset.

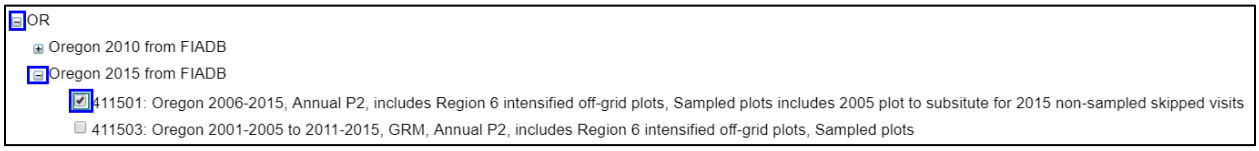


Figure 4-22. Selecting an OR dataset.

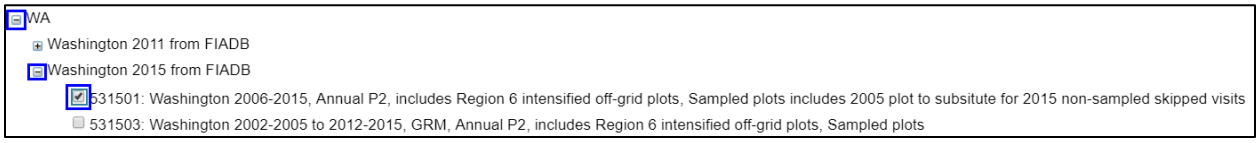


Figure 4-23. Selecting a WA dataset.

After selecting the states that you would like for your custom analysis the summaries will be displayed in the Selected Dataset Summaries box. Then select **Create Analysis** (Figure 4-24).

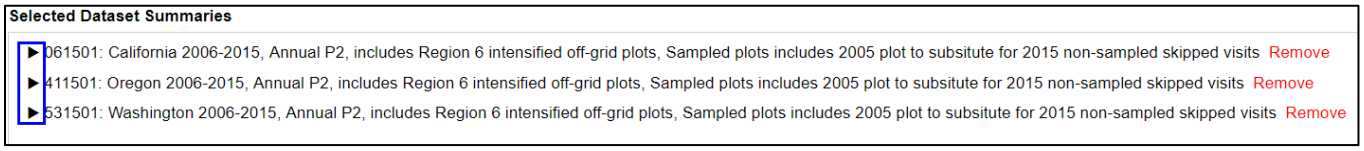


Figure 4-24. Selected Dataset Summaries.

When the analysis creation is complete, the Analysis Creation Successfully submitted pop up will display, select **OK** to continue**.** You should then get an email confirming that your new analysis has been created.

Go to ArcMap and navigate through the steps to complete plot intensification and create a SIT intersection using the analysis you just created (Figure 4-25).

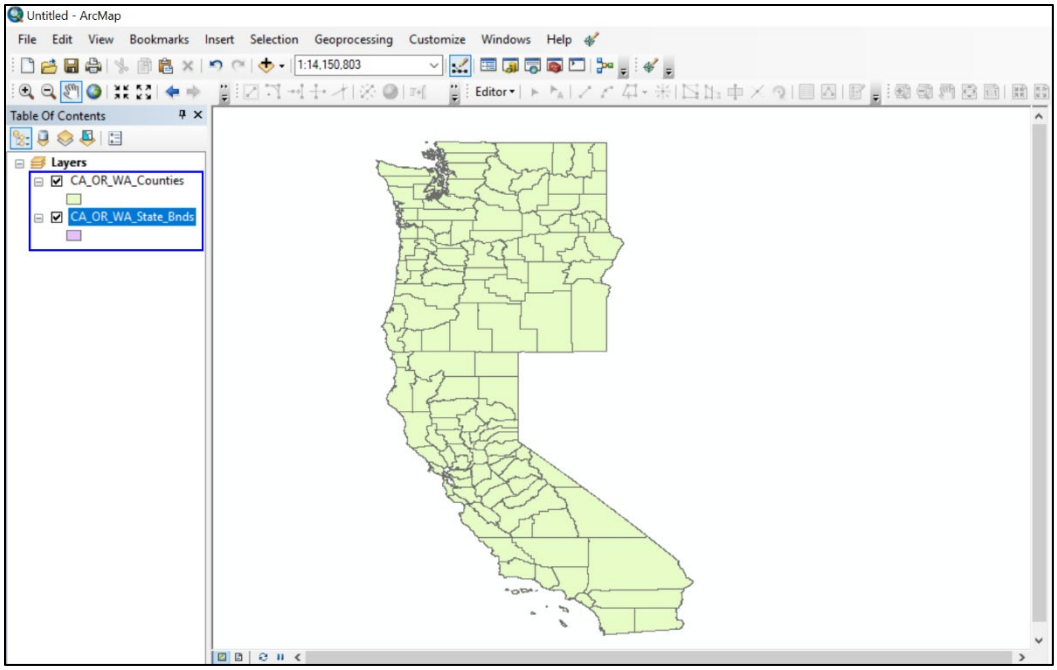


Figure 4-25. Adding multiple analyses.

Once the SIT intersection has been created, navigate back to ATIM and go to **Reports: Static Analyses** (Figure 4-26).

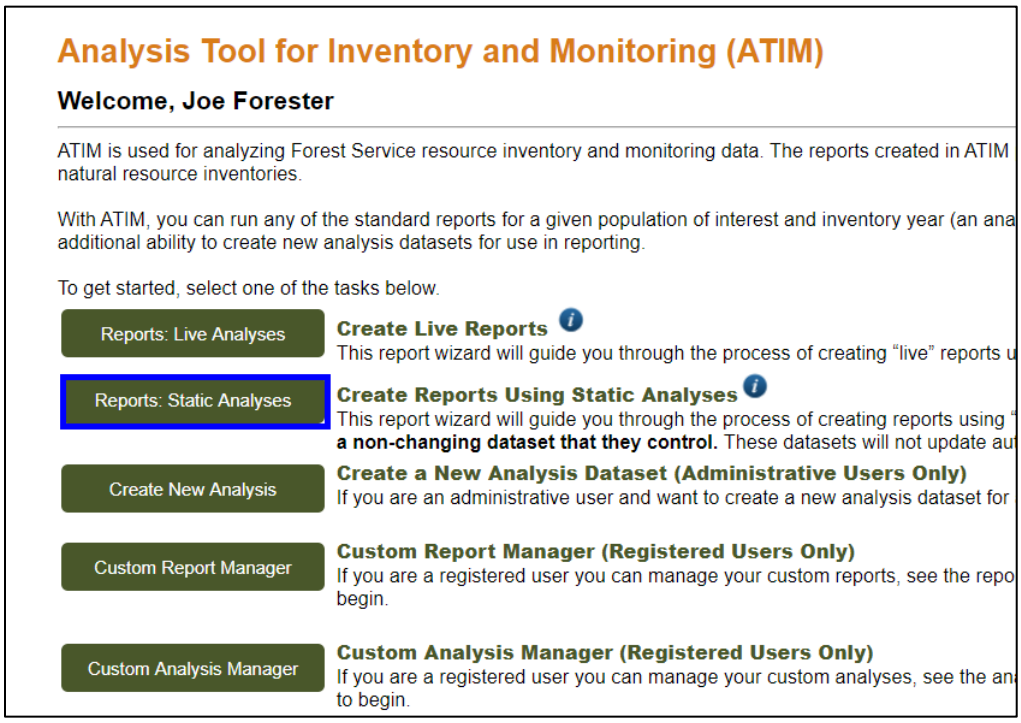


Figure 4-26. ATIM Reports: Static Analyses.

In Step 2: Open Analysis select the arrowhead next to My **Custom** and find your custom analysis. It will appear in the Selected Analysis Summaries box (Figure 4-27).

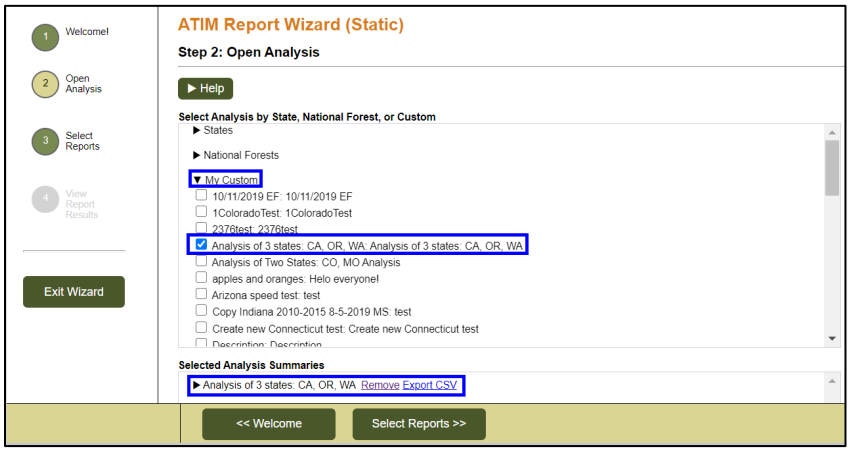


Figure 4-27. Find your Custom report.

Select the arrowhead next to your analysis to expand the Analysis Summary (Figure 4-28).

Figure 4-28. Analysis Summary.

Scroll to the bottom to see your new Attribute Created by SIT in this Analysis (Figure 4-29).

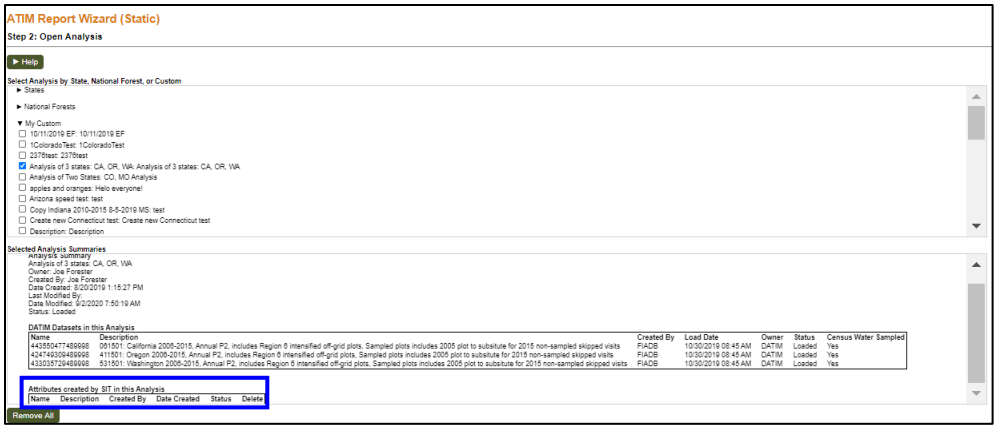


Figure 4-29. Attributes created by SIT.

DCS (Administrative Users Only)

Last updated: 10/2020

Introduction to DCS

The **DATIM Compilation System (DCS)** augments and enhances existing DATIM datasets with additional metrics to conduct analyses and generate reports. Advanced users can convert DATIM datasets to a format that can be read by the Forest Vegetation Simulator (FVS), and then run FVS to obtain computed variables. Users can also run post-processors in DCS to produce additional computed variables using FVS variants that contain regional algorithms and methods. The augmented dataset can then be loaded back into the DATIM data mart for use in ATIM (Analysis Tool for Inventory and Monitoring), DTIM (Design Tool for Inventory and Monitoring), and SIT (Spatial Intersection Tool) tools.

Running a compilation in DCS is an optional step in building a DATIM dataset. Advanced knowledge of the inventory data, compilation methods, and DATIM dataset construction is recommended. The data is “compiled” according to region-specific requirements using FVS. A working knowledge of FVS is also highly recommended. Users must have administrative privileges to run this program. For additional information regarding DCS and FVS, please see the Reference User Guide.

Getting Started with DCS

1. From the DATIM home page, select the **Compilation** button, or **DCS** in the DATIM navigation menu (Figure 5-1).

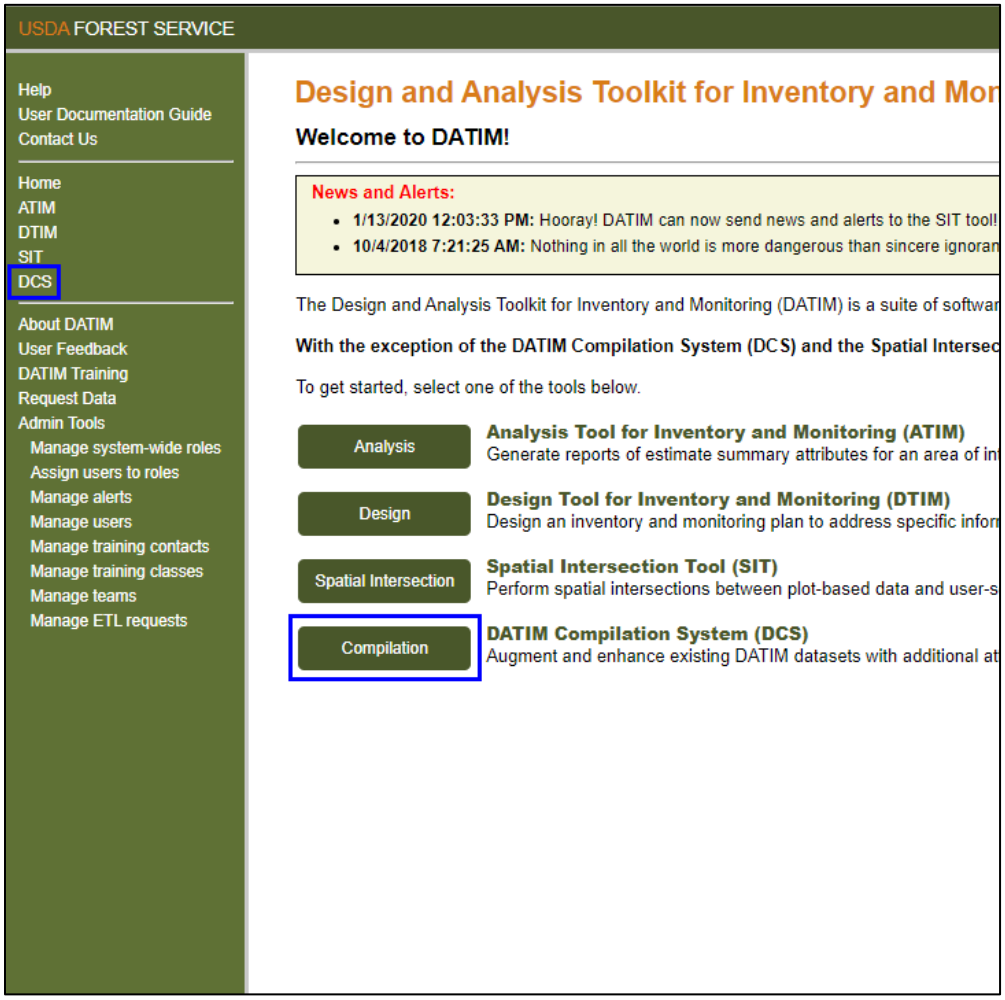


Figure 5-1. Navigating to DCS.

2. You will be directed to the **DATIM Compilation System (DCS)** page with three options: **Add New Compilation, Add New Attribute, and Update Attributes**.

DCS Compilation Wizard

Compilation in DCS refers to a predetermined set of user inputs and processes used to run a compilation to enhance selected DATIM datasets using the Forest Vegetation Simulator (FVS) and, in some cases, to conduct post-processing.

When compiling an Extract, Transform, and Load (ETL) project, you can do so by utilizing FVS with or without the use of an uploaded keyword component file (KCP), which is an “addfile” used to perform complicated interactions with the

FVS models. You will be able to load and compile basic data and create new DATIM datasets.

The DCS wizard walks you through four steps to compile an ETL project: (1) Create Compilation; (2) Plot Selection; (3) Configure FVS; (4) Submitted.

DCS Home Page

The DCS Home Page displays three buttons: Add New Compilation, Add New Attribute, and Update Attribute. It also displays the Compilation Jobs table, in which you can view the ID, name, status, created by, and date of each compilation.

Step 1: Add New Compilation

1. From the Welcome to the DATIM Compilation System (DCS) page, select the **Add New Compilation** button (Figure 5-2).

Figure 5-2 The Add New Compilation button.

From the **Step 1: Create Compilation** page, provide a title of your compilation project in the **Title** text field (Figure 5-3, #1).

2. Next, enter your email address into the **Email** text field (Figure 5-3, #2).
3. From the **Filter by Region** drop down list, select the region associated with the ETL you would like to work with (Figure 5-3, #3).
4. Select the type by selecting the radio button next to FSVeg Project or Custom Analysis.
    a. When selecting FSVeg Project, you will be prompted to select a project by using the **Select FSVeg Project** dropdown list.

b. When selecting Custom Analysis, you will be prompted to select an isolated Analysis by using the **Select Custom Analysis** dropdown list.

The ETL project and isolated analyses lists will be populated specifically for the region you selected. Use the respective drop down menus to select an ETL Project or isolated analysis (Figure 5-3, #4).

NOTE: To unlock an ETL project or Isolated Analysis: Select the **Unlock** button.

CAUTION! **All administrative users can unlock any ETL Project or analysis whether it is in use or not. Once you are finished working with a particular ETL Project or analysis, it is very important that you find the project and unlock it. Otherwise, an administrative user may unknowingly unlock a project being worked on. If you are an administrative user and would like to unlock an ETL project or analysis, we recommend you check back at a later time to see if the user has unlocked the project. Unlocking a project in use could cause disruptions in the compilation.**

5. Select the **Next** button to continue on to the next page (Figure 5-3, #5).

NOTE: Most ETL projects are processed by State and Inventory Year (the initial year the data were collected in the field). Currently, FIADB and FSVeg data can be loaded into the DATIM data mart. Check with your Regional Administrator for data availability and compatibility.

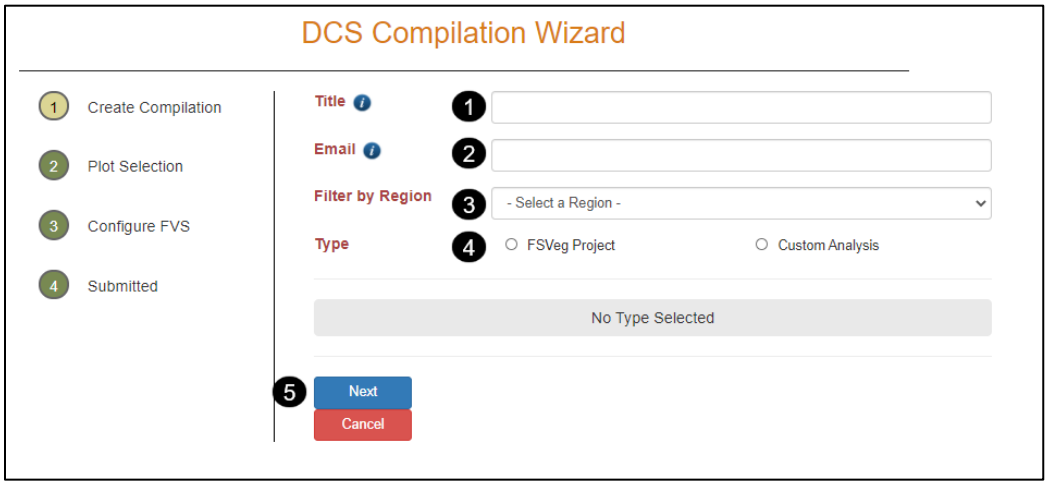


Figure 5-3. Step 1: Create Compilation

Step 2: Plot Selection

1. Next to **Run Settings**, choose to **Run National Forest Plots Only** or to **Run State, Private, and National Forest Plots** using the respective buttons (Figure 5-4, #1 & #2).

2. Select the **Next** button to continue to the next step (Figure 5-4, #3). This process allows DCS to determine which FVS variants are included in the ETL project selected.

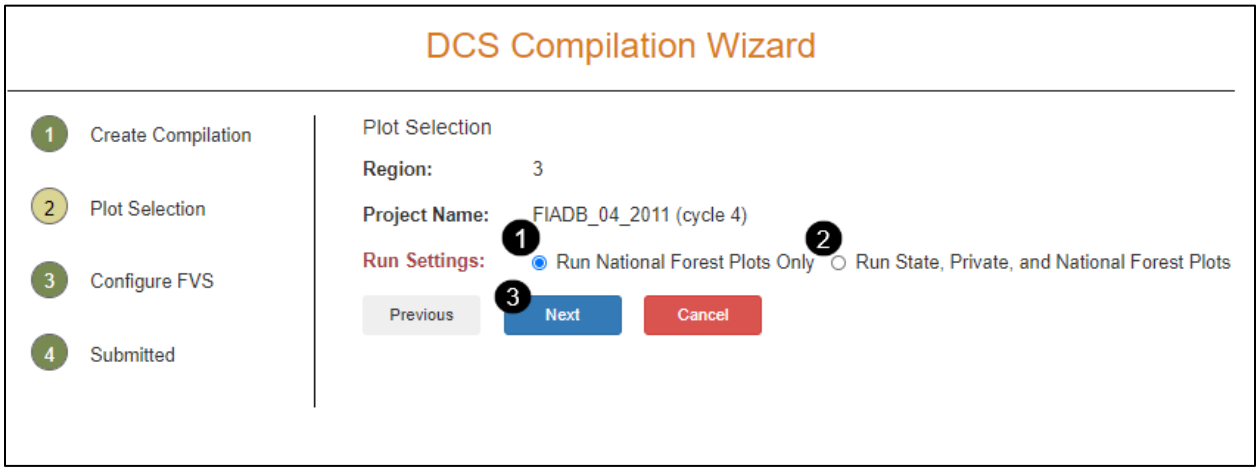


Figure 5-4 Choosing Project Run Settings

3. A notification will pop-up informing you that DCS is processing. This process can take several minutes to complete.

NOTE: All ETL datasets have one or more FVS variants, assigned by the FS Region where the plots are located. Variants are geographic zones that are mutually exclusive and non-overlapping. A variant controls which volume and growth models will be used to process the data. The variant is part of the dataset, and each plot is assigned to a variant based on the plot's location.

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4. Once the data has been successfully split into separate data files according to FVS variant, you will automatically be directed to the **Step 3: Configure FVS** page.

Step 3: Configure FVS Settings

1. From the **Step 3: Configure FVS** page, use the **Variants** drop-down menu to view the variant code(s) found during the search and select the variant of interest (Figure 5-5, #1).

CAUTION! **Multiple variants are especially common in the Western Regions, while the Eastern and Southern Regions typically use a single variant. If your ETL project contains more than one variant, you will need to process each variant one at a time.**

---

2. Next, you will choose how you want to run FVS by choosing one of two available options, Default settings or Custom settings (Figure 5-5, #2 & #3).

    a. **Default DCS Settings:** For ETL projects in Regions 8 or 9, DCS will run the FVSSTAND post-processor that is programmed into DCS. For ETL projects in Regions 2, 3, and 4, the default Region 3 KCP file will run, which is also programmed into DCS. There are currently no default settings for regions 1, 5, 6, and 10, a custom KCP file should be run for ETL projects selected for those regions. The names of the computed attributes must exactly match the names of the FVS data attributes.

    b. **Customized DCS Settings:** The second option for processing an ETL project or isolated analysis is to upload a custom KCP file, which you can do for any FS region. The customized settings can also be used for Regions 1, 5, 6, and 10 since there is no default settings for these regions. You can also choose to use the FVS post-processor to run FVS.

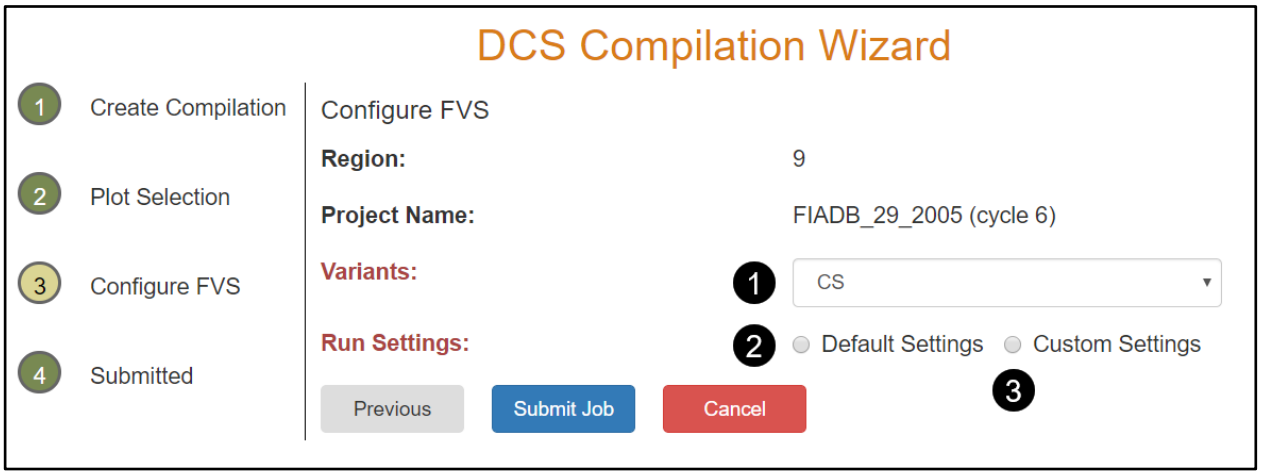

Figure 5-5. Selecting an FVS variant.

3. If you select the customized settings, in the **Custom FVS File** box, you can either type or copy and paste the KCP file you would like to use (Figure 5-6, #1). Below the **Custom FVS KCP File** box, you can use the **Post Processor** drop-down to select whether you would like to use a post-processor or not (Figure 5-6, #2). If you select default settings, no further information is required.

4. After you have completed all of your selections, select the **Submit Job** button.

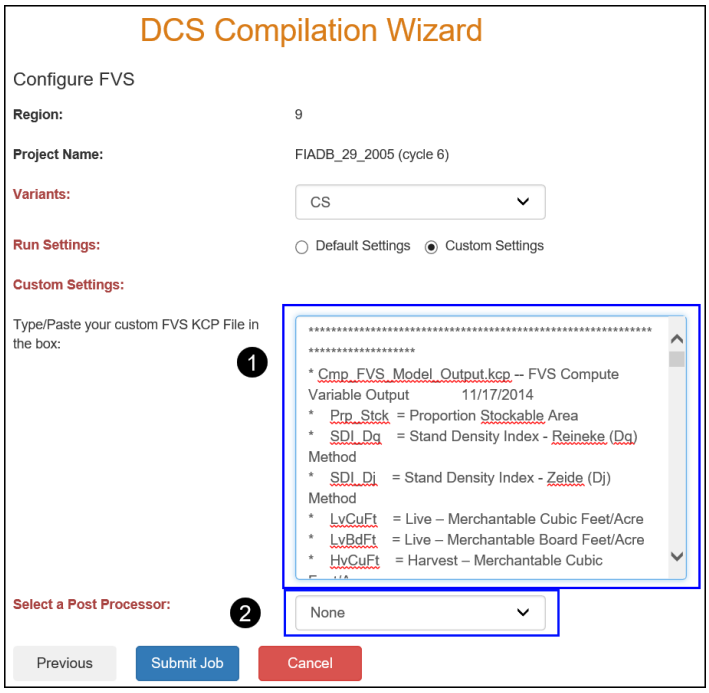

Figure 5-6 Custom FVS settings.

NOTE: For more information about FVS keyword component addfiles, visit the Forest Vegetation Simulator web page.

Step 4: Submitted Page

After submitting your job, you will advance to the **Step 4: Submitted** page where you will be notified that your request has been submitted for compilation. Your compilation will be running in the background. You will be notified via email when the compilation job has finished and can continue work in DCS until it is complete. From this page you can return to Jobs Home or DCS Home. Return to Jobs Home to download and commit FVS results.

Downloading and Commiting FVS Results

Once your compilation job has finished running in the background, you can download a zip file of the results to your local system or commit the FVS results to the DATIM data mart from the **Compilations Jobs** page.

1. To download FVS results:
    a. From Step 4: Submitted page, select the **Jobs Home** button.
    b. Locate the job on the **Compilation Jobs** page and select the **Download Results** icon next to the project name (Figure 5-7).
    c. The FVS Results file will download as a zip file named in the following format: FVSResults-[YYYYMMDD].zip.
2. To commit FVS results:
    a. From Step 4: Submitted page, select the **Jobs Home** button.
    b. Locate the job and select the **Commit Results** icon next to the project name
    c. The **Commit Compilation** message will appear asking you to confirm commitment of the results to the DATIM data mart, select the **Commit** option.

d. When the FVS results have been successfully loaded into the DATIM data mart, a notification will pop up letting you know that the results successfully committed to the data mart (Figure 5-7).

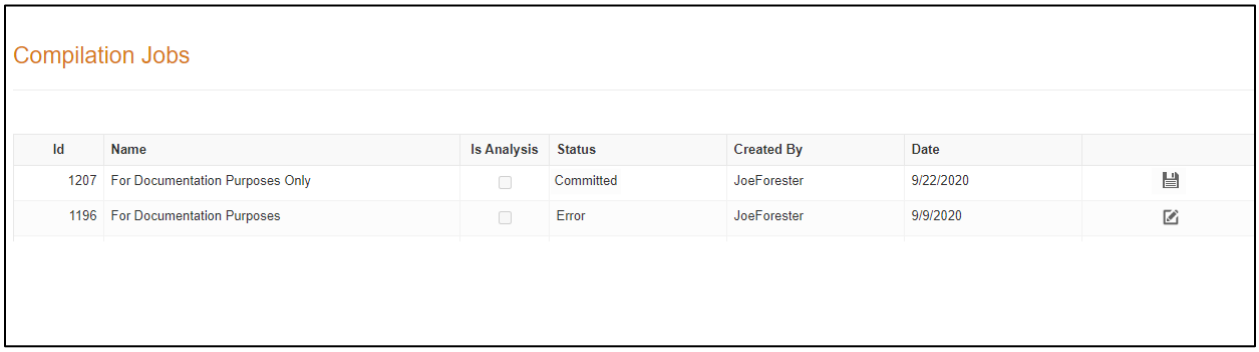

Figure 5-7. Downloading FVS Results.

CAUTION! The FVS results that are committed to the data mart vary. An alternate message will pop up in the instance that not all attributes are committed to the data mart.

Congratulations! You added a compiled dataset to the DATIM data mart! This dataset is now available for selection using create new analysis in ATIM.

Updating FVS Attributes

Administrators responsible for running the compiler can also use DCS to update FVS attributes. This feature places the updated FVS attributes in either the SAMP_UNIT_FOREST or SAMP_UNIT_TREE table in the data mart.

To update FVS attributes:

1. From the **Welcome to the DATIM Compilation System (DCS)** page, select the **Update Attributes** button (Figure 5-8).

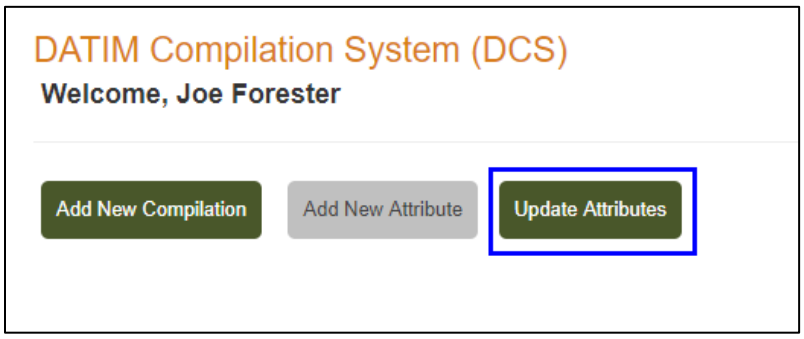

Figure 5-8. Selecting the DCS 'Update Attributes' task.

2. You will be directed to the **Project Attribute** page, where you will select the region and ETL project for which the attribute metadata you would like to update (Figure 5-9). The Project Attribute page.).

3. Use the **Select a Region** dropdown list to select the region associated with the ETL project which you would like to update the attribute metadata for (Figure 5-9, #1).

4. Next, from the **Select a Project** dropdown list, select the ETL project (Figure 5-9, #2).

5. The **Project Description** box is populated with the description metadata for the project. You can alter the text in the **Project Description** as needed (Figure 5-9, #3). Once you are finished select the **Save** button and continue (Figure 5-9, #4).

6. A pop up will appear stating your project description was saved successfully. Select **Ok** to continue.

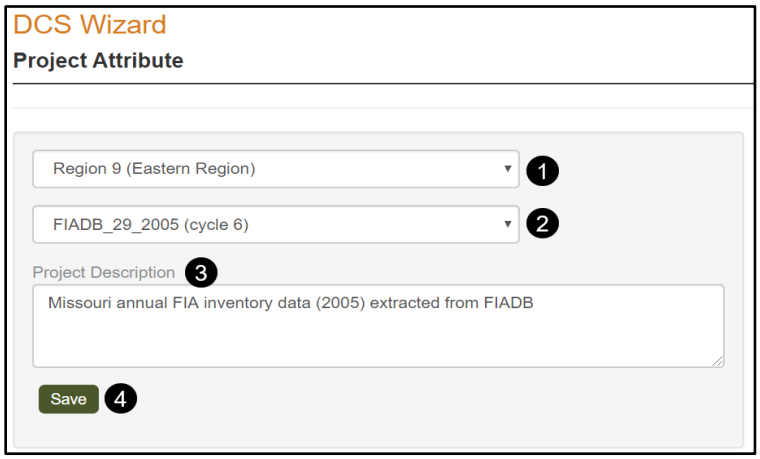

Figure 5-9. The Project Attribute page.

7. In the **Attribute** section, use the **Attribute Level** drop down list to filter the attributes available for selection (Figure 5-10, #1). The levels available for selection are plot or subplot. Choose plot to filter the attributes available for selection by plot. Choose subplot to filter the attributes available for selection by plot.

8. Next, from the filtered attributes, use the Attribute drop down list to view and select the attribute for which you would like to update metadata (Figure 5-10, #2).

9. Please note that some attributes have the PRCF turned on by default. More attributes are available for selection, but will need to be turned on manually by changing the appropriate PRCF value from N to Y in the form field.

10. Once you have selected an attribute, the metadata will be displayed in the fields listed in the **Attribute** area (Figure 5-10, #2). Some of these fields come pre-populated; grayed-out fields cannot be updated.

11. After you have finished making changes to the metadata for a particular attribute, you can either save your results to the DATIM data mart using the **Save** button and/or you can download a report of the updated project attribute metadata to your local system by selecting the **Download Report** (Figure 5-10, #3 & #4).

12. To return to the DCS main page, at any time, select the Return to DCS Main button at the bottom of the screen.

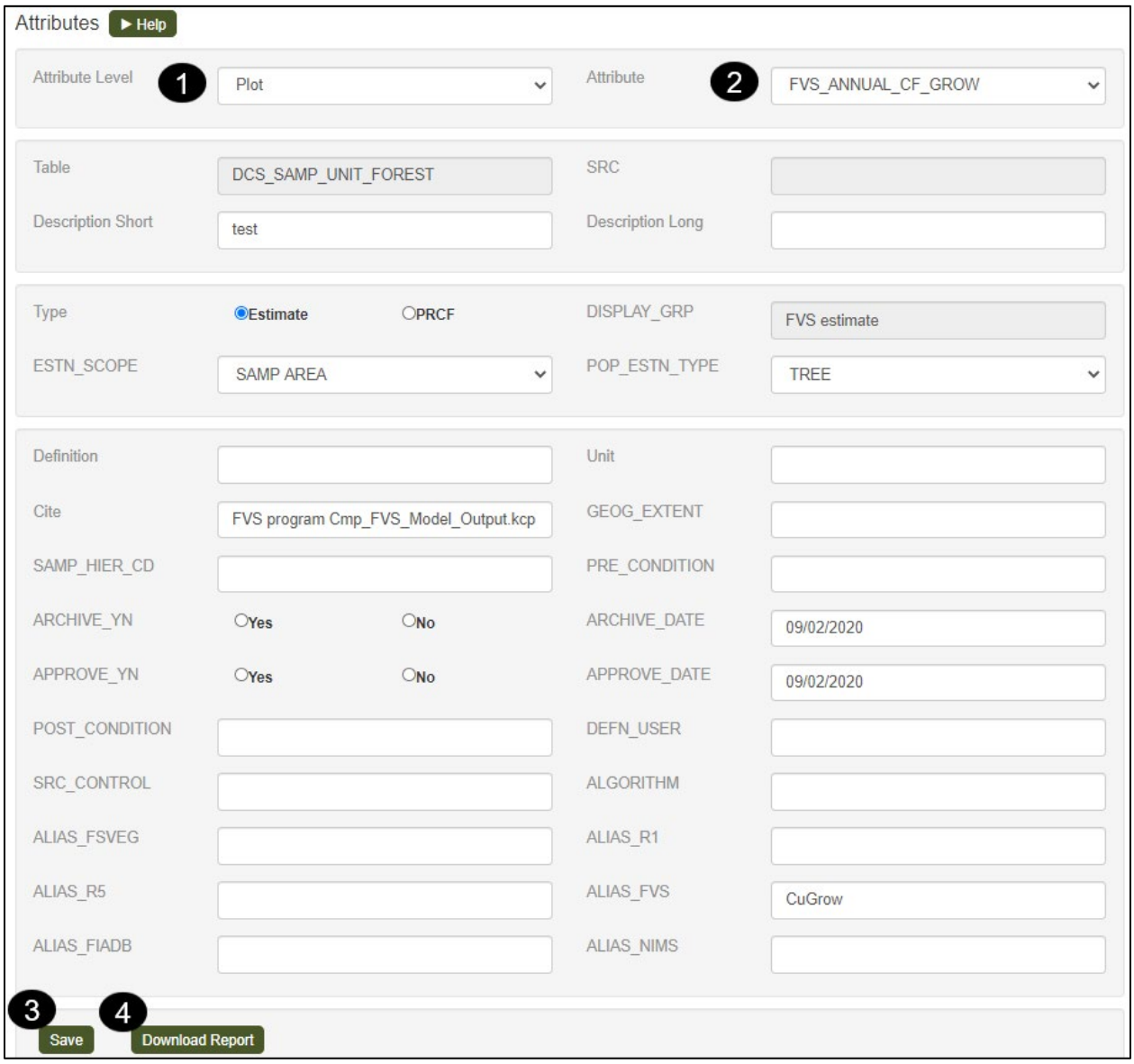

Figure 5-10. Attribute Metadata Fields