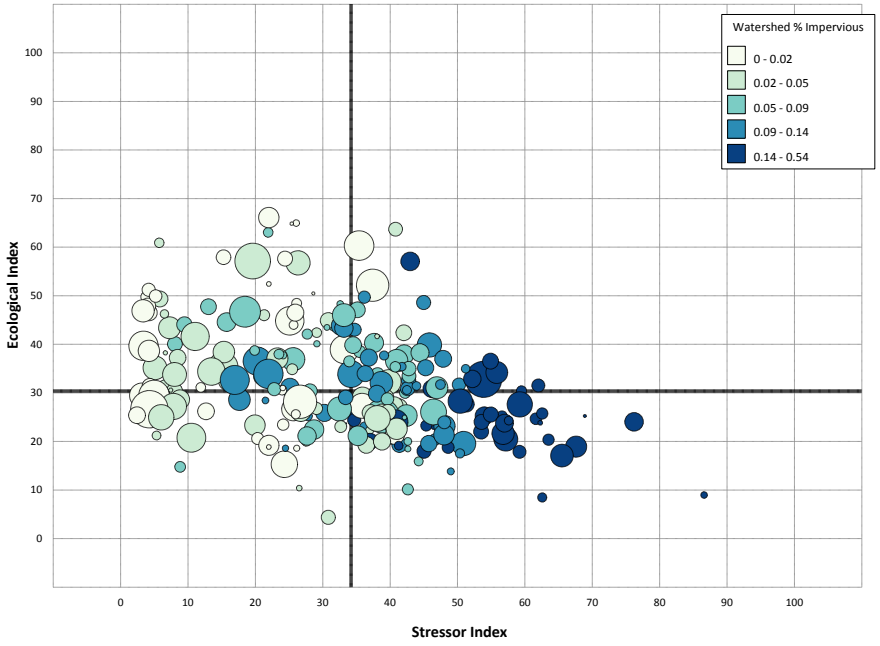
USER GUIDE
FOR THE
RECOVERY POTENTIAL SCREENING (RPS)



SCORING SPREADSHEET TOOL

October 2018

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1. Introduction & Background

1.1. RPS Overview

Recovery Potential Screening (RPS) is a systematic method for comparing watersheds based on characteristics that may influence the relative likelihood of successful watershed restoration or protection. RPS was developed to provide states and other planners with a flexible screening tool to guide prioritization of watersheds according to differences in key environmental and social factors affecting prospects for restoration and protection success.

RPS involves identifying a group of watersheds to be compared and a specific purpose for comparison, selecting appropriate indicators of recovery potential in three categories (Ecological, Stressor, and Social; Figure 1), and calculating recovery potential index scores for the watersheds. Index scores include the Ecological Index, Stressor Index, and Social Index and are calculated by combining indicators from each category. For example, the Ecological Index is calculated from all ecological indicators while the Stressor Index is calculated from all stressor indicators. In addition, an overall Recovery Potential Integrated (RPI) Index score is calculated by combining the Ecological Index, Stressor Index, and Social Index.

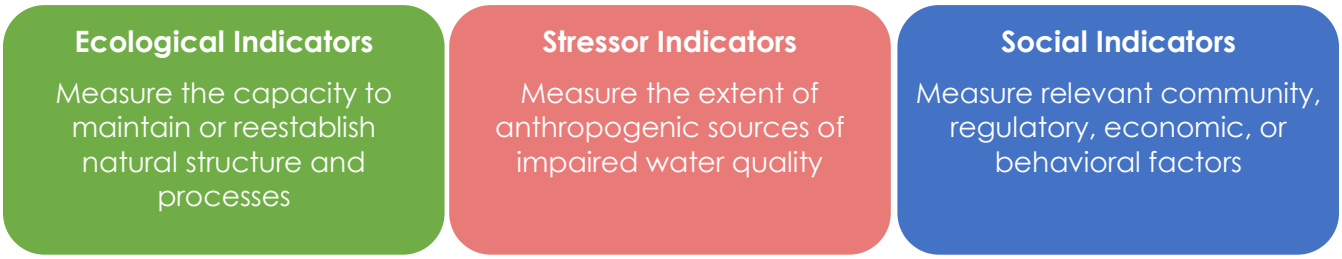


Figure 1. RPS uses three categories of recovery potential indicators to compare watersheds.

1.2. RPS Scoring Spreadsheet Tool

The RPS Scoring Spreadsheet Tool (RPS Tool) is a custom-coded Microsoft Excel workbook designed to facilitate setting up an RPS screening run, perform all recovery potential index calculations, and display results. The State RPS Tool series was first released in July 2014 and updated in September 2018 as a set of ready-to-use RPS spreadsheet tools for each of the lower 48 States. Each RPS Tool has pre-calculated indicator data already embedded for all 12-digit hydrologic unit (HUC12) subwatersheds of the National Watershed Boundary Dataset that are wholly or partially within the State's boundary. In addition to storing pre-calculated indicator data, each State RPS Tool:

- Contains a user-friendly interface for setting up a screening;
- Automatically calculates RPS index scores and ranks for the HUC12 subwatersheds of interest;
- Displays results in customizable table, plot, and map form;
- Can be readily updated with user-generated indicator data.

The RPS Tool is designed for use by anyone with basic familiarity with Microsoft Excel. Instructions for each step are contained within the RPS Tool and this User Guide provides more detailed directions on tool use.

1.3. User Guide Organization

The RPS Tool is made up of several worksheets within a Microsoft Excel workbook. Some worksheets contain interactive menus and buttons while others store data for viewing and use in RPS calculations.

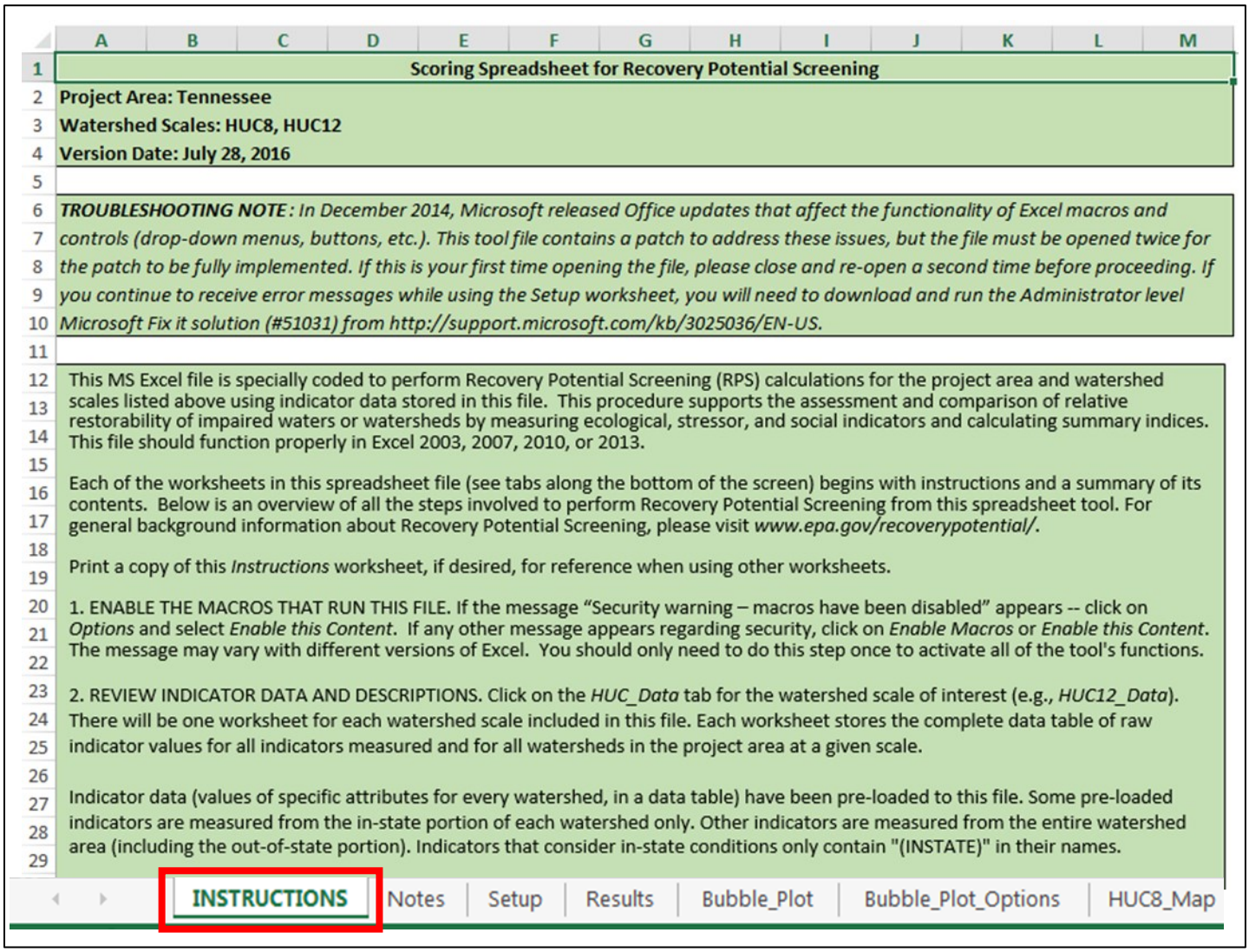
Each section of this User Guide describes a worksheet in the RPS Tool. Worksheet contents are summarized and step-by-step instructions are provided for interactive features within the worksheet. For some worksheets and features, a set of advanced tips are also provided for users that have become proficient in basic use of the tool.

2. Instructions Worksheet

The ***Instructions*** worksheet provides an abridged set of instructions for using the RPS Tool. The ***Instructions*** worksheet is intended to serve as a built-in reference for users of the RPS Tool. It does not supplant the more detailed instructions presented in this User Guide.

Listed at the top of the ***Instructions*** are three key pieces of information for the tool file you are working with:

- **Project Area** – The state, river basin, or other geographic area that the RPS Tool file is designed for. Each tool file comes with a table of pre-calculated indicator data for all watersheds in the Project Area at one or more watershed scales (defined below). Users can decide to screen all watersheds within the Project Area or only a subset of watersheds of interest.
- **Watershed Scales** – The watershed scales that the RPS Tool file is able to screen. The term "watershed scale" refers to pre-defined watershed delineations. A typical tool file is able to screen, at minimum, 12-digit hydrologic units (HUC12s) of the National Watershed Boundary Dataset (WBD). Tool files for some Project Areas are able to screen additional watershed scales such as 8-digit hydrologic units (HUC8s).
- **Version Date** – The date the RPS Tool file was last updated to add new user features or modify existing features.

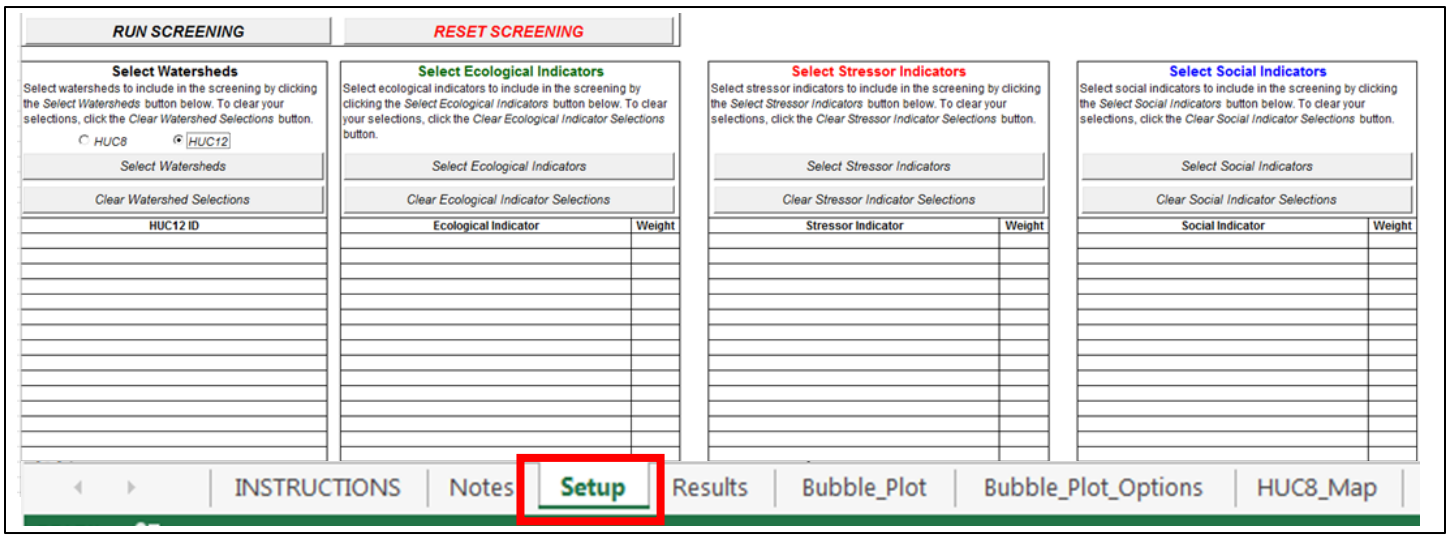


3. Setup Worksheet

3.1. Overview

Basics

The ***Setup*** worksheet is your "home base" for configuring and running a Recovery Potential Screening. It is the first worksheet you should use after opening the tool file, reviewing instructions, and planning your Recovery Potential Screening run. The ***Setup*** worksheet is the only worksheet where you can choose (and change) the watersheds and indicators that are used in your screening run.



The ***Setup*** worksheet is organized into four sections:

- In the **Select Watersheds** section you will specify which watersheds will be included in the screening.
- In the **Select Ecological Indicators** section you will specify which ecological indicators will be used in the screening and how those ecological indicators will be weighted.
- In the **Select Stressor Indicators** section you will specify which stressor indicators will be used in the screening and how those stressor indicators will be weighted.
- In the **Select Social Indicators** section you will specify which social indicators will be used in the screening and how those social indicators will be weighted.

After selecting watersheds, indicators, and weights, you will click the ***RUN SCREENING*** button to populate other worksheets in the tool with screening results. The ***Setup*** worksheet also includes a ***RESET SCREENING*** button to clear the current watershed/indicator selections from the ***Setup*** worksheet and screening results from other worksheets so that a new screening run can be configured from scratch.

The following sections provide step-by-step instructions for how to:

- ***Choose a Watershed Scale***
- ***Select Watersheds to Screen***
- ***Select Indicators and Assign Weights***
- ***Use the Run Screening Button***
- ***Respond to Warning Messages***
- ***Use the Reset Button***

Advanced Tips

- Completing the setup process is far easier if you have already planned out your screening by identifying the screening purpose, watersheds of interest, and relevant indicators (from the full list available) beforehand.
- The process of selecting watersheds and indicators to screen can be streamlined by copying and pasting watershed IDs, indicator names, and indicator weights that have already been compiled in other spreadsheets. This is faster than typing or selecting individually from popup menus on the ***Setup*** worksheet. Instructions for copying and pasting watersheds and indicators into the ***Setup*** worksheet are provided in the following sections.
- After setting up and running a screening, you may want to make minor adjustments to your screening by adding or removing watersheds, adding or removing indicators, or adjusting indicator weights. Do not click the ***RESET SCREENING*** button on the ***Setup*** worksheet if you want to make minor adjustments to an existing screening since clicking the ***RESET SCREENING*** button will clear all selections from the ***Setup*** worksheet. Instead, to adjust an existing screening, simply make the desired changes on the ***Setup*** worksheet and then re-click the ***RUN SCREENING*** button. This will update results stored on other worksheets to reflect the changes made to watershed and indicator selections on the ***Setup*** worksheet.
- Save completed screening runs and change the file name before beginning a new run with different watersheds or indicators, or before using ***RESET SCREENING.***

3.2. Choose Watershed Scale

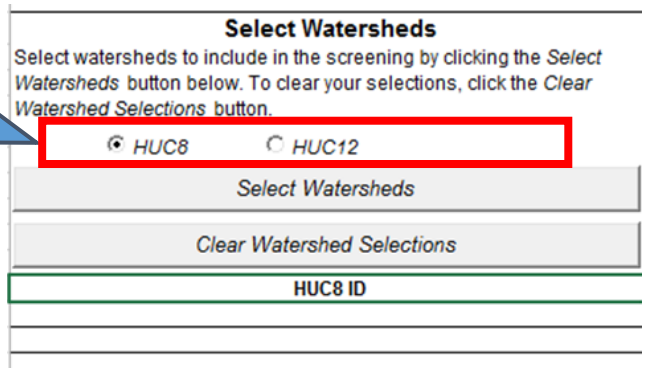
Basics

Some RPS Tool files are designed to screen watersheds at a single scale (e.g., HUC12 subwatersheds only). Others allow users to select between multiple watershed scales for screening (e.g., either HUC8 watersheds or HUC12 subwatersheds). If your tool file includes multiple watershed scales, you must specify which scale your screening will consider on the ***Setup*** worksheet.

Watershed scale options are displayed right below the **Select Watersheds** section title on the ***Setup*** worksheet.

To select a watershed scale, click the option button next to the watershed scale name.

If your RPS tool contains watershed data at one scale only, there will be no options buttons visible.



Advanced Tips

- Users must select only ***one*** watershed scale per screening run (i.e., you cannot screen watersheds from multiple scales in a single screening run).
- Clicking a watershed scale button will prepare the watershed and indicator popup menus on the ***Setup*** worksheet for next steps. For example, clicking the HUC12 option button will add HUC12 IDs to the popup menu displayed when the **Select Watersheds** button is clicked.
- Be aware that changing to a different watershed scale will reset the ***Setup*** worksheet by clearing any selected watersheds, indicators, and weights. If you have begun to setup your screening run by entering watersheds, indicators, or weights on the ***Setup*** worksheet then those entries will be deleted if you click a different watershed scale button and will not be recovered by returning to the original scale.

3.3. Select Watersheds to Screen

Basics

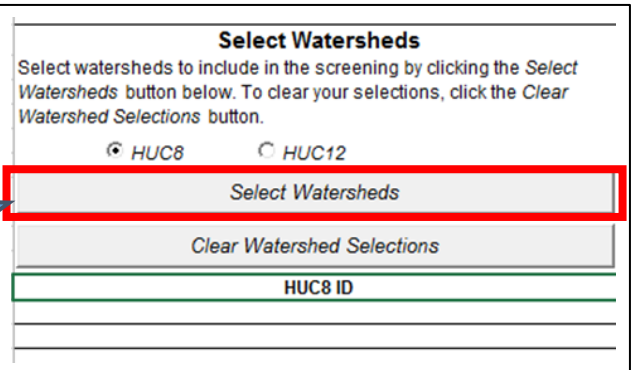
A Recovery Potential Screening run can include all watersheds in the Project Area that the RPS Tool is designed for or a smaller subset of watersheds of interest. Users must decide which watersheds to screen based on the purpose and goals of their screening.

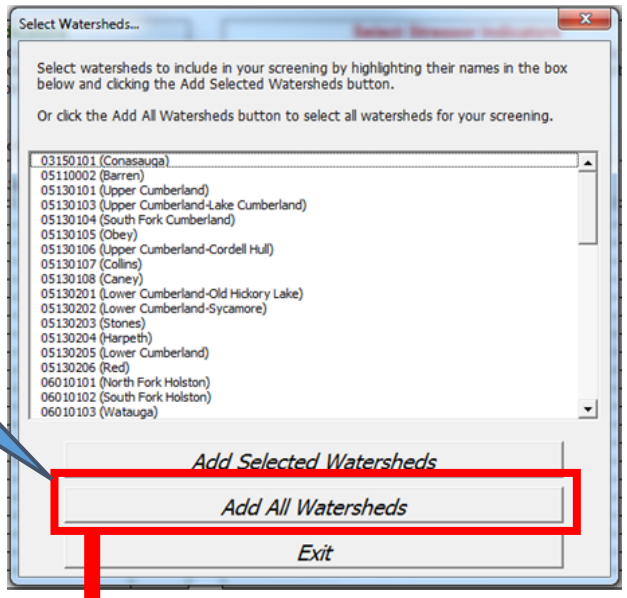
In the **Select Watersheds** section of the ***Setup*** worksheet, you will specify which watersheds to include in the screening by entering a list of watershed IDs (one ID per row). Three options are available for entering watersheds IDs.

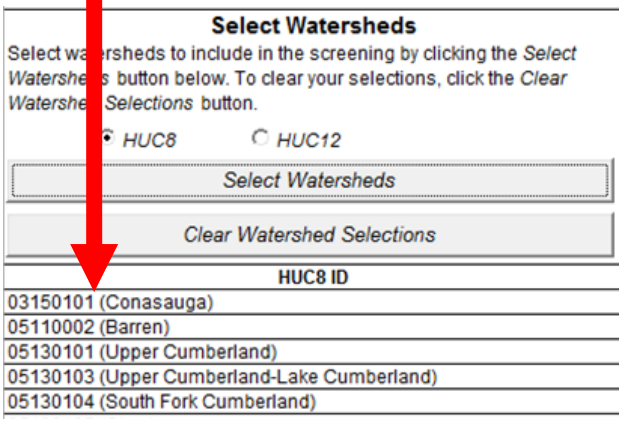
Select Watersheds to Screen Option 1 – Add All Watersheds

Click the ***Select Watersheds*** button. A popup menu will display with a list of all watershed IDs in the Project Area covered by the RPS Tool

Click the ***Add All Watersheds*** button in the popup menu. This will add all watersheds in the Project Area to the list of watershed IDs selected for screening.

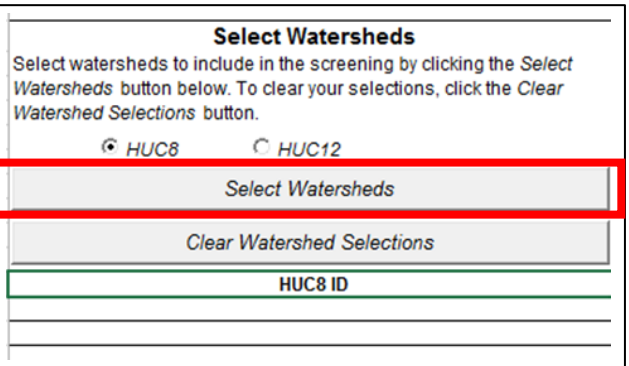






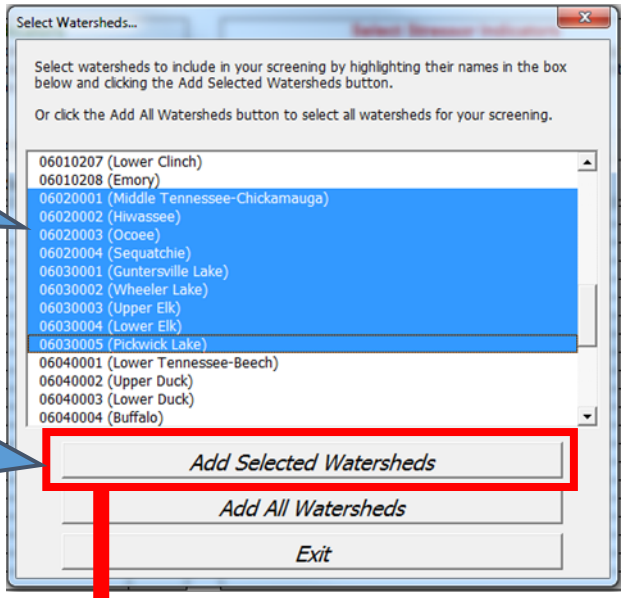
Select Watersheds to Screen Option 2 – Select Watersheds Individually

Click the ***Select Watersheds*** button. This will display a popup menu with a list of all watershed IDs in the Project Area covered by the RPS Tool.



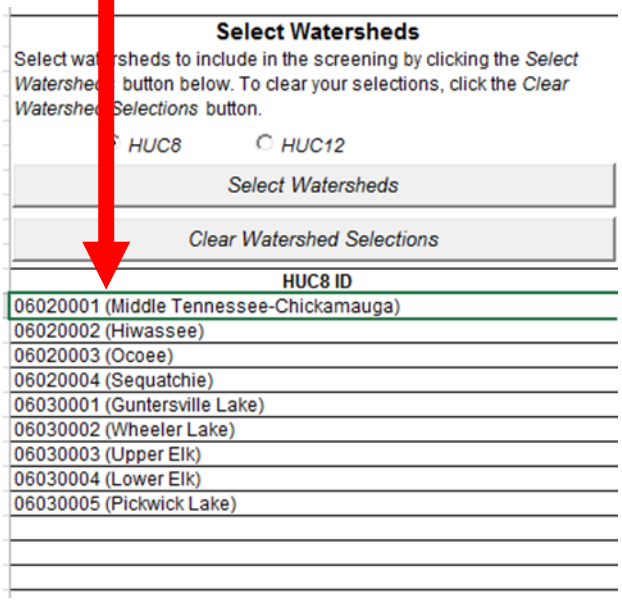
In the popup menu, highlight the watersheds you would like to include in your screening by clicking on their IDs/names.

Multiple watersheds can be highlighted by dragging the mouse cursor down or by holding the Ctrl key and then clicking on each watershed ID individually.



Click the ***Add Selected Watersheds*** button to add the highlighted watersheds to the list of watershed IDs for screening.

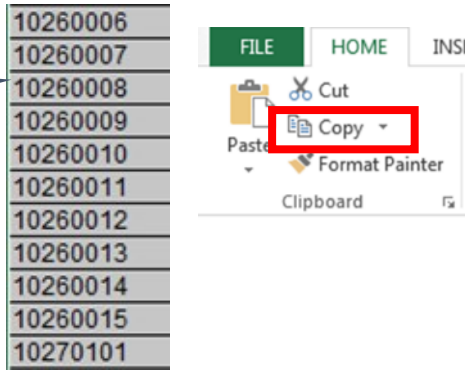
You still have the opportunity to select additional watersheds after clicking the ***Add Selected Watersheds*** button. Repeat the previous step until all watersheds of interest have been selected for the screening, then click the ***Exit*** button to close the popup menu.

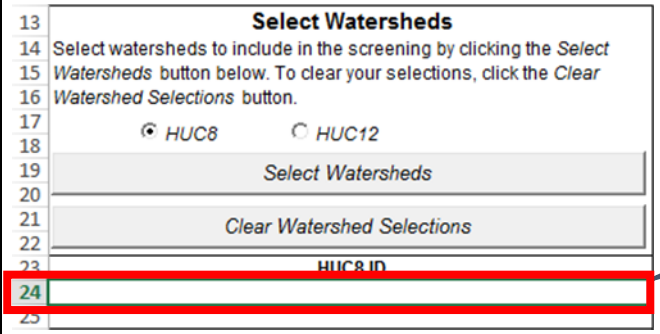


Select Watersheds to Screen Option 3 – Copy and Paste Watershed IDs

To use this options you must already have a pre-existing list of watershed IDs to screen in a separate worksheet. The list of watershed IDs must be formatted with one ID per row.

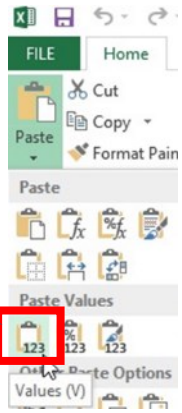
Open the worksheet containing the pre-existing list of watershed IDs to screen. Select the list and click "Copy" on the Excel menu.

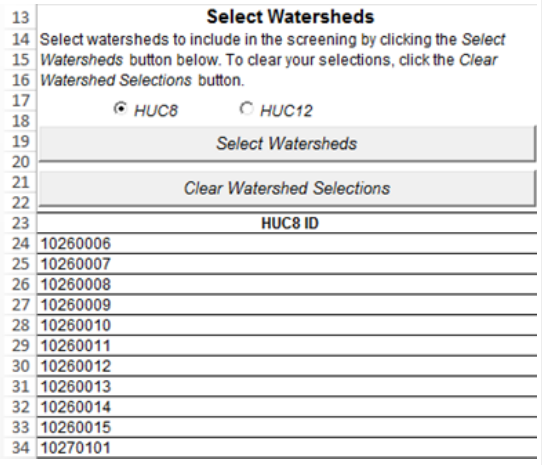




Go back to the ***Setup*** worksheet and set the cursor to cell A24 (the first cell of the watershed ID list in the **Select Watersheds** section.

Select "Paste Values" from the Excel menu to paste the watershed IDs into the **Select Watersheds** section.





Advanced Tips

- The watershed ID list in the **Select Watersheds** section must begin in cell A24 of the ***Setup*** worksheet and must contain one watershed ID per row.
- Watershed names alone cannot be added to the watershed ID list. Watershed names can be included in the text but must occur after the watershed ID. For example, the Jacks River HUC12 (HUC12 ID 031501010102) can be entered as "031501010102" or "031501010102 (Jacks River)" but not "Jacks River".
- When manually typing watershed IDs or copying and pasting from another worksheet, be sure that all IDs are present in column A of the ***Indicator Data*** worksheet for the watershed scale you are screening (e.g., the ***HUC12_Data*** worksheet HUC12 subwatersheds are being screened). The tool cannot screen watersheds that are not present in the ***Indicator Data*** worksheet.
- Use the ***HUC Subsets*** worksheet to store lists of watershed IDs that will be of interest for future screenings. For example, you can use the ***HUC Subsets*** worksheet to store lists of HUC12 IDs within each HUC8 in the Project Area. You can then copy and paste a group of HUC12s from the ***HUC Subsets*** worksheet to the ***Setup*** worksheet for a screening run.
- Do not omit leading zeros from watershed IDs (e.g., "04030001" cannot be entered as "4030001"). Omitting leading zeros will cause errors in the screening run.
- If HUC8 watersheds are being screened, the first 8 characters in each watershed ID are used to extract indicator values from the indicator data worksheet. Any text after the eighth character is ignored.
- If HUC12 subwatersheds are being screened, only the first 12 characters in each watershed ID are used to extract indicator values from the indicator data sheet. Any text after the twelfth character is ignored.

3.4. Select Indicators and Weights

RPS index scores and ranks are calculated for each watershed included in a screening using ecological, stressor, and social indicators. The choice of which indicators to use for a screening depends on the purpose of the screening and the nature of the watersheds being screened. Thus, users should review the full list of indicators and their definitions in the ***Indicator Info*** worksheet before selecting indicators on the ***Setup*** worksheet.

Basics

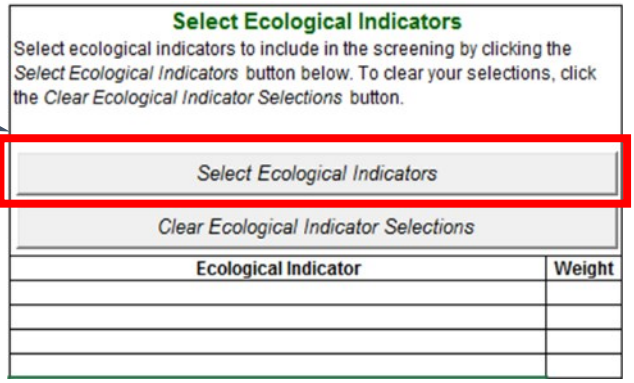
At least one ecological indicator, one stressor indicator, and one social indicator must be selected in order to perform a Recovery Potential Screening run. Neutral indicator values are available in each category if one or more categories are not of interest. In general, three to ten indicators per category are recommended. If too few indicators are selected, index scores will not adequately reflect the factors influencing recovery potential. If too many indicators are selected, index scores will reflect random noise in the indicator data rather than true patterns in recovery potential.

Indicator weights determine the relative influence of each indicator on index scores. Weights must be numeric but any set of numeric values can be used. A typical approach is to select a certain number of weight categories (e.g., 3 = high; 2 = medium; 1 = low) and assign weights to indicators based on their relevance to the purpose of the screening and data quality considerations.

Two options are available for selecting indicators and weights on the ***Setup*** worksheet. Step-by-step instructions for each option are provided on the following pages.

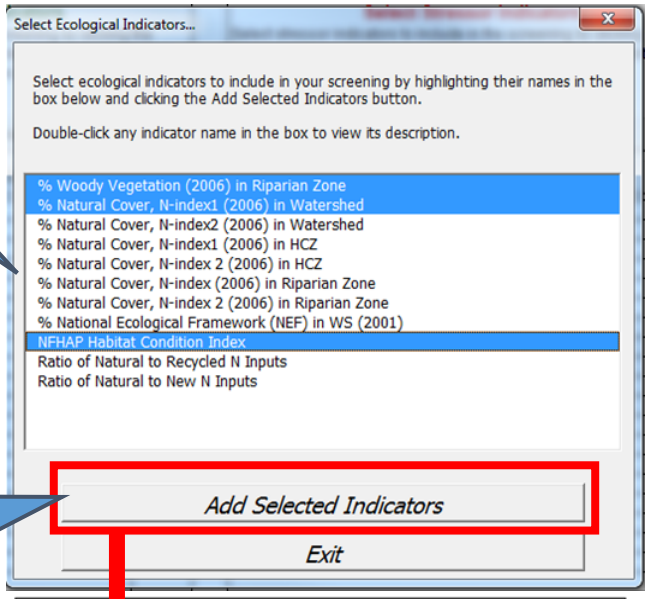
Select Indicators and Weights Option 1 – Select from Popup Menu

Click on the ***Select Ecological Indicators*** button. A popup menu will display with a list of ecological indicators that can be selected for screening.



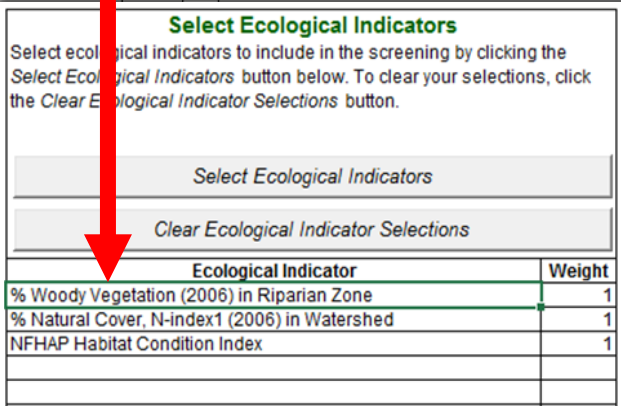
In the popup menu, highlight the indicators you would like to include in your screening by clicking on their name.

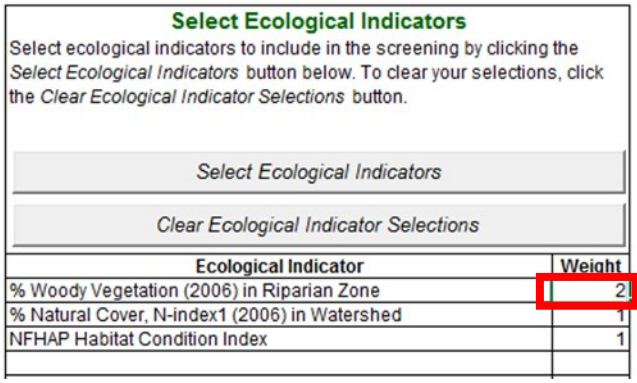
Double-clicking an indicator name will display a popup box with its description.



Click the ***Add Selected Indicators*** button to add the highlighted indicators to the list of indicators selected for screening.

You still have the opportunity to select additional indicators after clicking the ***Add Selected Indicators*** button. Repeat the previous step until all indicators of interest have been selected for the screening then click the ***Exit*** button to close the popup menu.





By default, indicators selected from the popup menu will be assigned a weight of 1.

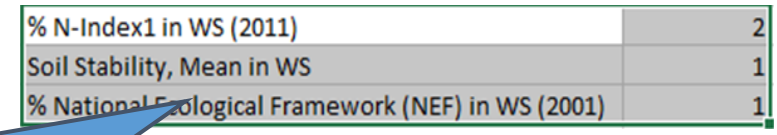
Indicator weights can be adjusted by placing the cursor on the cell containing the weight and typing in a new weight.

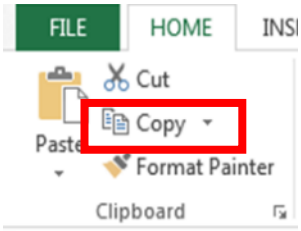
Repeat these steps in the **Select Stressor Indicators** section to select stressor indicators and weights and in the **Select Social Indicators** section to select social indicators and weights.

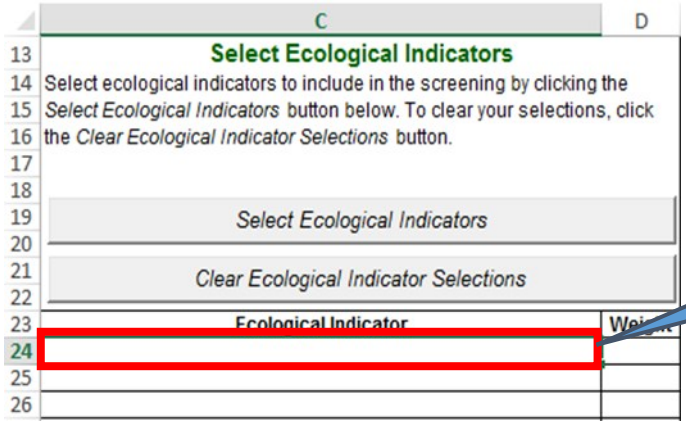
Select Indicators and Weights Option 2 – Copy and Paste Indicator List

To use this option you must already have a pre-existing list of ecological indicator names and weights stored in a separate worksheet. The pre-existing indicator list must be formatted with one indicator per row with the indicator name in the first column and indicator weight in the second column.

Open the worksheet with the pre-existing indicator list. Select the indicator names and weights and click "Copy" on the Excel menu.

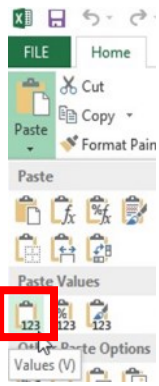


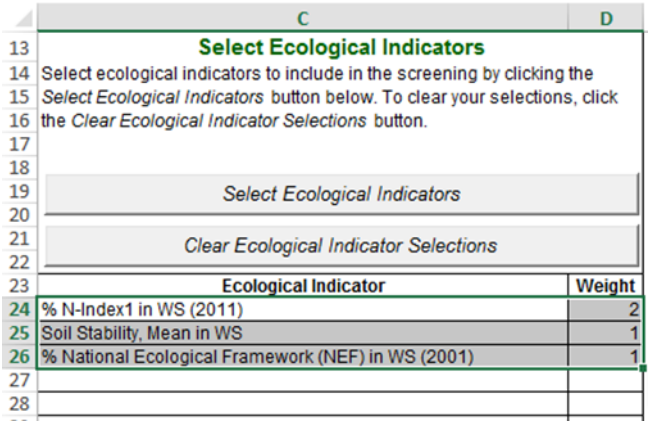




Go back to the ***Setup*** worksheet and set the cursor to cell C24 (the first cell of the indicator list in the **Ecological Indicators** section).

Select "Paste Values" from the Excel menu to paste the ecological indicators and weights into the **Select Ecological Indicators** section.





Repeat these steps in the **Select Stressor Indicators** section to select stressor indicators and weights and in the **Select Social Indicators** section to select social indicators and weights.

Advanced Tips

- The Ecological Indicator list must begin in cell C24 of the ***Setup*** worksheet and must contain one indicator per row.
- The Stressor Indicator list must begin in cell G24 of the ***Setup*** worksheet and must contain one indicator per row.
- The Social Indicator list must begin in cell K24 of the ***Setup*** worksheet and must contain one indicator per row.
- The Ecological, Stressor, and Social Indicator lists must be continuous (no blank rows). If blank rows are present, any indicators below the first blank row will not be included in the screening.
- When copying and pasting from another worksheet, be sure that indicator names exactly match names in the header row (row 7) of the ***Indicator Data*** worksheet for the selected watershed scale (e.g., the ***HUC12_Data*** worksheet if HUC12 subwatersheds are being screened). Any differences in indicator spelling, capitalization, or whitespace will result in errors when the screening is run.
- Indicator weights can be set to zero. A weight of zero means that the indicator has no effect on index scores.
- Indicator weights can be set to negative values. A negative weight will reverse the directional effect of the indicator on index scores. The standard directionality is for larger indicator values to increase Ecological Index, Stressor, and Social Index scores. A negative weight will reverse directionality so that smaller values increase Ecological Index, Stressor, and Social Index scores.
- For ecological and social, higher numbers indicate watershed health, in stressor, higher numbers indicate watershed stress.
- Indicator selections within each category (Ecological, Stressor, and Social) should be topically diverse. A diverse set of indicators will reflect a range of factors relevant to recovery potential rather than one single topic.
- Users may want to consider numeric redundancy as part of the indicator selection process. Non-redundant indicators can be identified by examining correlation coefficients between indicator pairs.
- Up to 20 indicators can be selected in each category.

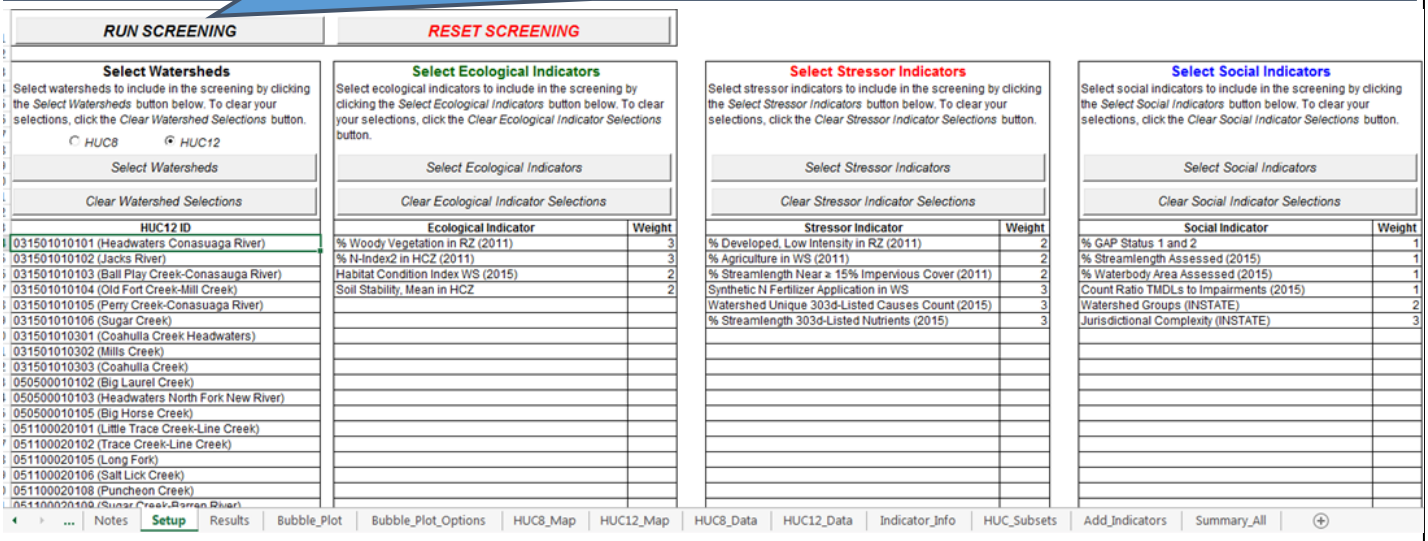
3.5. Run Screening Button

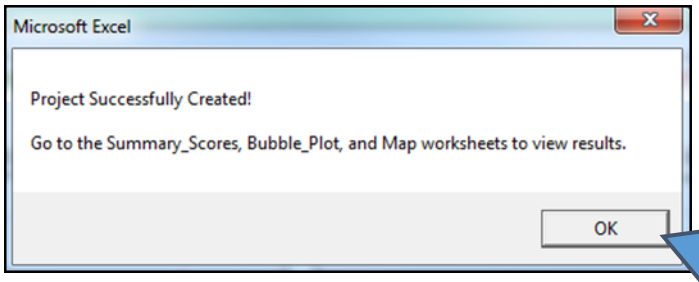
Basics

After selecting watersheds, indicators, and weights for your screening, use the ***RUN SCREENING*** button to auto-calculate Ecological Index, Stressor Index, Social Index, and Recovery Potential Integrated (RPI) Index scores for each watershed. Clicking the ***RUN SCREENING*** button will populate other worksheets in the RPS Tool with screening results. Any results from previous screenings will be cleared from other worksheets in the RPS Tool when the ***RUN SCREENING*** button is clicked.

When the ***RUN SCREENING*** button is clicked from the ***Setup*** worksheet, the tool will first check to verify that watersheds, indicators, and weights have been selected by the user. The tool will then look for potential issues with indicator data.

If no data issues are found, index scores will be automatically calculated and screening results will be added to other worksheets in table, plot, and map form. If indicators data issues are identified, a warning message will appear. Indicator data warnings are described in the next section.





After auto-calculating index scores and populating worksheets with screening results, a message box will appear to notify you that your screening successfully ran to completion.

If your screening includes several thousand watersheds, processing times of up to 1 minute can be expected before the message box appears.

Click ***OK*** and then proceed to other worksheets to review screening results.

Advanced Tips

- After clicking the ***RUN SCREENING*** button an error message may appear. A screening will not successfully run to completion and an error message will be displayed if any of the following errors occur:
  - Watersheds, indicators, and/or weights are not specified.
  - One or more watershed IDs entered in the **Select Watersheds** section do not have an exact match in column A of the ***Indicator Data*** worksheet for the watershed scale you are screening (e.g., the ***HUC12_Data*** worksheet if HUC12 subwatersheds are being screened).
  - One or more indicator names entered in the **Select Ecological Indicators**, **Select Stressor Indicators**, or **Select Social Indicators** sections do not have an exact match in the header row of the ***Indicator Data*** worksheet (e.g., the ***HUC12_Data*** worksheet if HUC12 subwatersheds are being screened).
  - One or more of the indicators selected for screening contain non-numeric data in the ***Indicator Data*** worksheet. Indicator data must be numeric (blank cells are allowed for missing data).

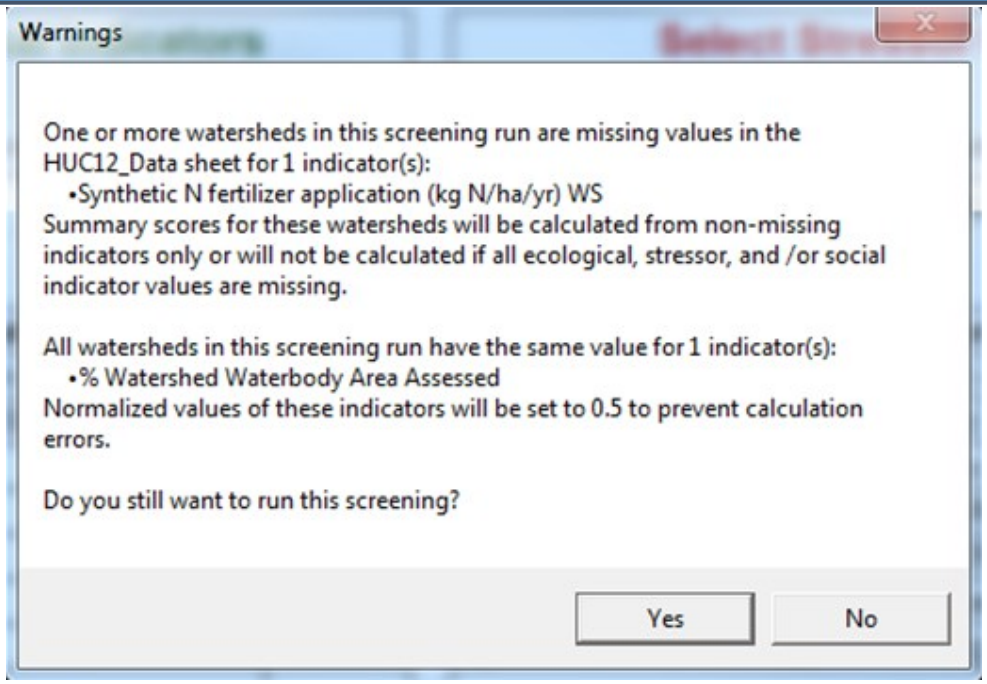
3.6. Respond to Warning Messages

Basics

After clicking the ***RUN SCREENING*** button on the ***Setup*** worksheet, the tool will automatically check for potential issues with indicator data, including:

- Missing indicator values. In most cases, each indicator will have a numeric value for every watershed selected for screening in the ***Indicator Data*** worksheet. However, indicator values may be missing for one or more watersheds. Missing indicator values are denoted as blank cells in the ***Indicator Data*** worksheet. If a watershed is missing indicator values, then RPS index scores for that watershed will be calculated from non-missing indicators only. In rare cases, a watershed will be missing values of all ecological, stressor, and social indicators selected for the screening. If a watershed is missing values for all indicators, RPS index scores cannot be calculated for that watershed.
- Equal-value indicators. Equal value indicators are indicators that have the same exact value for every watershed selected for screening. Equal value indicators therefore provide no information on recovery potential differences between watersheds. RPS index calculations are based on the assumption that indicator values vary between watersheds and cannot be applied to equal value indicators. An equal-value indicator can be included in a screening but normalized values of the equal-value indicator are set to 0.5 for all watersheds to prevent index calculation errors.

After clicking the ***RUN SCREENING*** button, a message box will appear if the tool finds any indicator data issues. The warning message will notify users if missing indicator data or equal-value indicators were found and will list the names of indicators with issues. Users have the option to continue the screening by clicking ***Yes*** on the message box or to stop the screening to adjust indicator selections by clicking ***No***.



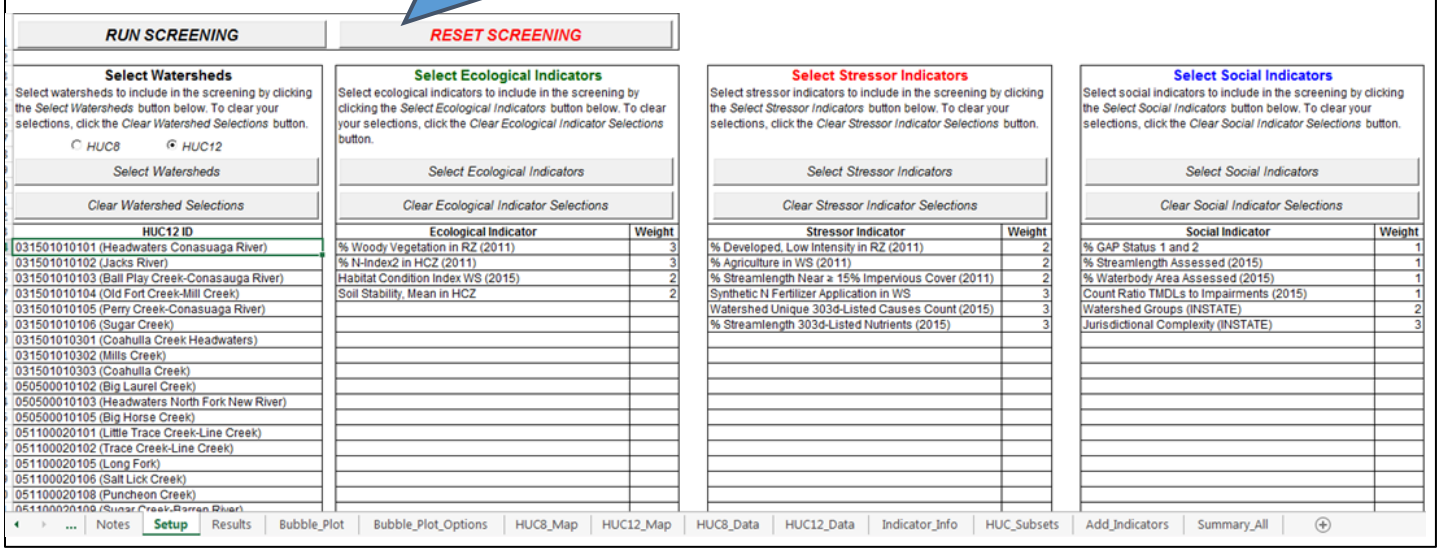
Advanced Tips

- Users can remove indicators with missing values or equal-value indicators by clicking ***No*** on the warning message box and deleting the names of indicators from the **Select Ecological Indicators**, **Select Stressor Indicators**, and/or the **Select Social Indicators** sections.
- Decisions on whether to remove indicators with missing values can be based on the number of watersheds with missing data. Missing indicator values are denoted as blank cells on the indicator data worksheet. As the number of watersheds with missing data increases, the value of the indicator for describing recovery potential differences between watersheds decreases. If most of the watersheds selected for screening are missing values of an indicator, it is likely advantageous to remove that indicator from the screening, particularly if it can be replaced with another indicator with a more complete record that describes a similar watershed characteristic.
- Equal-value indicators should be removed from a screening since they provide no information on recovery potential differences between watersheds. The exception is when a user intentionally selects an equal-value indicator as the only indicator for one of the Ecological, Stressor, or Social groups to evaluate the effect on RPI index scores. For example, selecting an equal-value indicator as the only Social indicator will nullify the effect of Social Index scores on the RPI Index since all watersheds will receive an equal Social Index score.

3.7. Reset Screening Button

The ***RESET SCREENING*** button on the ***Setup*** worksheet can be used to produce a "clean slate" version of the RPS Tool. Do not click the ***RESET SCREENING*** button unless you have saved the current screening setup and results under a separate filename or you are sure you do not want to store the current screening setup and results for future use.

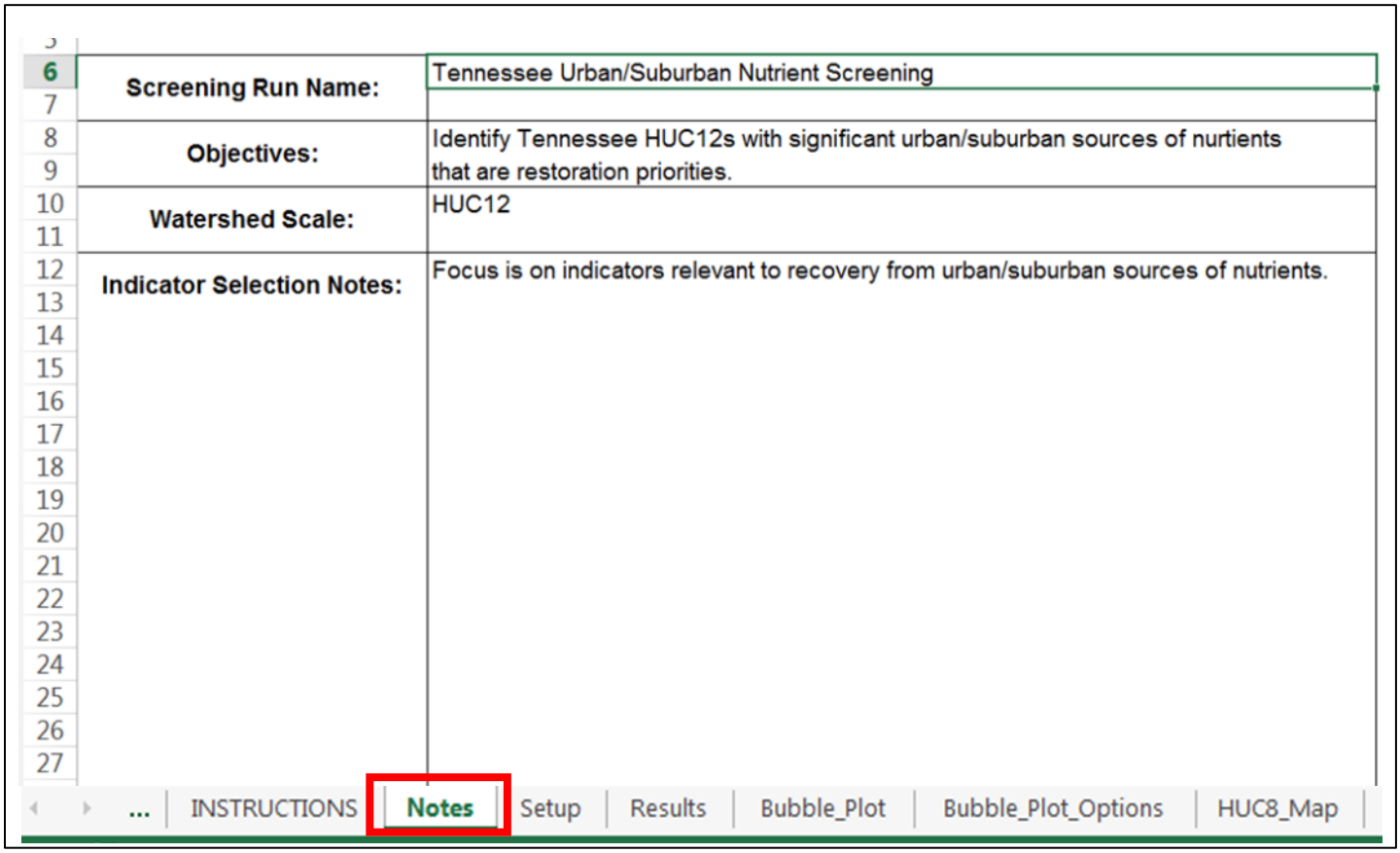
Clicking the ***RESET SCREENING*** button will clear all watershed and indicator selections from the ***Setup*** worksheet and any screening results stored on other worksheets. The only worksheets not affected are the ***Indicator Data*** worksheets (e.g., ***HUC12_Data***).



4. Notes Worksheet

The ***Notes*** worksheet provides users with a space to document information related to their screening run, including a screening run name, screening objectives, watershed scale screened, and notes on indicator selection and weighting.

Filling the ***Notes*** worksheet is optional, its contents are not used in any of the auto-calculation methods in the RPS Tool.



5. Results Worksheet

5.1. Overview

Basics

The ***Results*** worksheet displays a table of Ecological Index, Stressor Index, Social Index, and Recovery Potential Integrated (RPI) Index scores and ranks for each watershed selected for screening. Also displayed are values of the ecological, stressor, and social indicators selected for the screening. All base indicator values are also displayed to allow for sorting or filtering according to base indicator values.

Index scores and ranks are automatically calculated and added to the ***Results*** worksheet after clicking the ***RUN SCREENING*** button on the ***Setup*** worksheet. Watersheds are displayed in the same order as they are entered in the **Select Watersheds** section of the ***Setup*** worksheet.

Ecological Index, Stressor Index, and Social Index scores are calculated as the average of weight-adjusted, normalized indicator values. RPI scores are calculated from Ecological Index, Stressor Index, and Social Index scores. Index scores can be interpreted using the following guidelines:

- **Higher** Ecological Index scores correspond to **higher** recovery potential.
- **Lower** Stressor Index scores correspond to **higher** recovery potential.
- **Higher** Social Index scores correspond to **higher** recovery potential.
- **Higher** RPI Index scores correspond to **higher** recovery potential.

Watershed ID	Watershed Name	Ecological Index	Ecological Rank	Stressor Index	Stressor Rank	Social Index	Social Rank	RPI Score	RPI Rank
031501010101	eadwaters Conasuaga River	53.98	78	2.10	93	19.38	743	57.09	177
031501010102	Jacks River	53.17	84	0.01	7	43.97	58	65.71	7
031501010103	Ball Play Creek-Conasauga River	50.06	160	3.13	156	39.44	125	62.13	42
031501010104	Old Fort Creek-Mill Creek	41.22	582	21.81	917	38.87	131	52.76	451
031501010105	Perry Creek-Conasauga River	43.14	481	11.60	599	31.48	287	54.34	333
031501010106	Sugar Creek	45.38	362	13.53	671	21.59	652	51.15	598
031501010301	Coahulla Creek Headwaters	42.16	537	14.59	717	26.53	471	51.37	573
031501010302	Mills Creek	37.20	812	13.53	671	21.37	662	48.35	809
031501010303	Coahulla Creek	44.65	408	9.14	475	15.52	897	50.34	672
050500010102	Big Laurel Creek	51.47	118	4.44	235	7.50	1103	51.51	560
050500010103	Headwaters North Fork New River	46.73	292	4.08	212	14.83	928	52.49	471
050500010105	Big Horse Creek	49.44	173	6.26	311	7.73	1099	50.30	675
051100020101	Little Trace Creek-Line Creek	35.39	910	14.89	730	22.32	629	47.61	842
051100020102	Trace Creek-Line Creek	35.82	885	14.94	732	22.94	602	47.94	826
051100020105	Long Fork	39.16	705	25.14	979	15.63	891	43.22	1005
051100020106	Salt Lick Creek	40.38	631	15.10	737	19.82	729	48.37	806
051100020108	Puncheon Creek	36.82	833	15.30	747	18.29	789	46.60	901
051100020109	Sugar Creek-Barren River	41.01	597	15.37	750	2.98	1139	42.87	1020
051100020201	Upper Long Creek	36.27	863	16.23	787	16.23	875	45.42	942
051100020203	Pinchgut Creek-Barren River	40.81	606	13.25	656	22.58	620	50.05	699
051100020501	Headwaters Trammel Creek	37.29	804	19.23	863	28.57	394	48.88	767

... | Setup | **Results** | Bubble_Plot | Bubble_Plot_Options | HUC12_Map | HUC8_Data | HUC12_Data

Advanced Tips

- The formula used to calculate each weight–adjusted normalized indicator value is:

$$Ind_{Norm} = Weight * \frac{(Ind - Ind_{Min})}{(Ind_{Max} - Ind_{Min})}$$

  where Ind_{Norm} is the weight-adjusted normalized indicator value, *weight* is the indicator weight, *Ind* is the raw indicator value, Ind_{Min} is the minimum indicator value for watersheds selected for screening, and Ind_{Max} maximum indicator value for watersheds selected for screening.

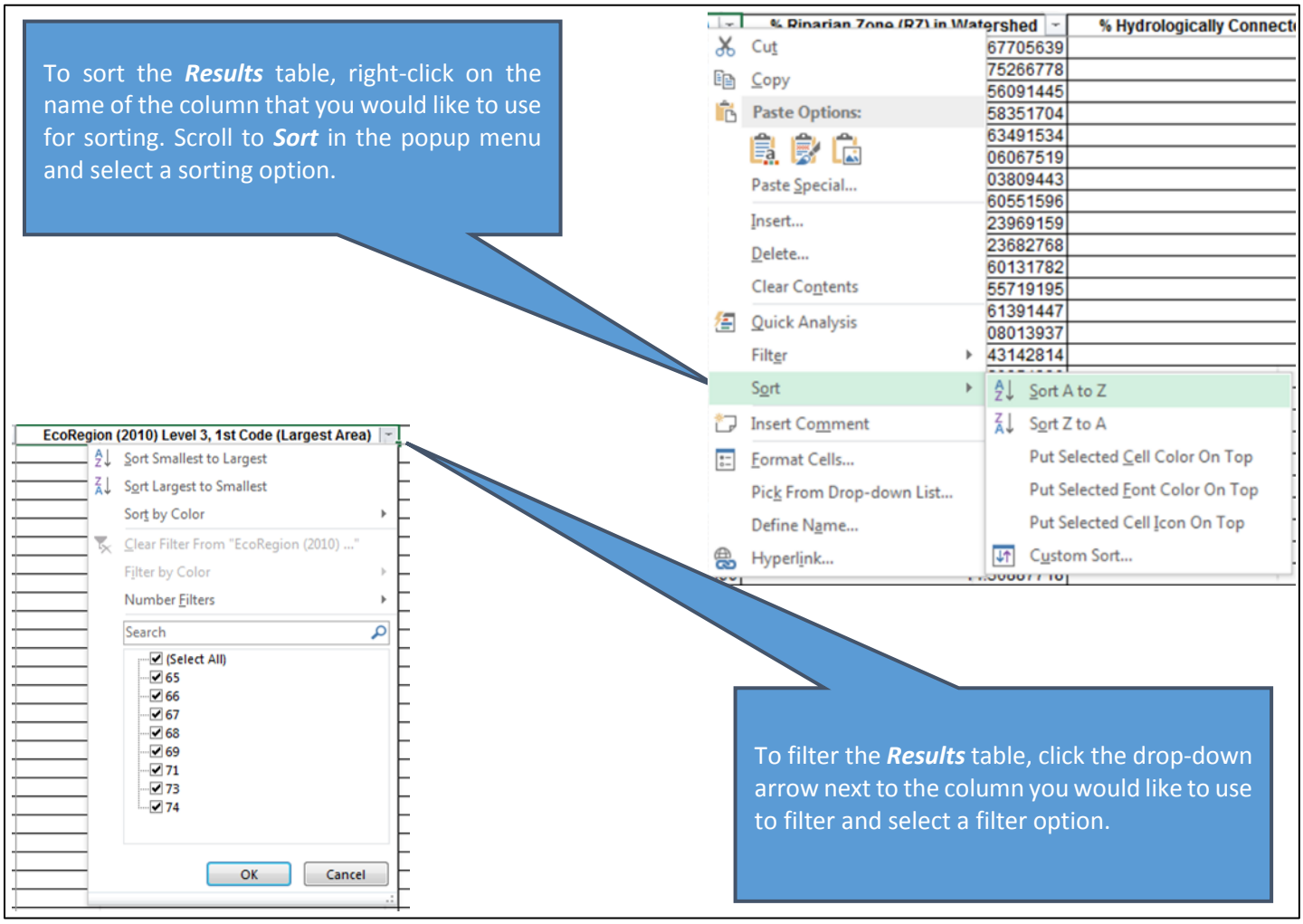
- RPI scores are calculated from Ecological Index, Stressor Index, and Social Index scores using the formula:

$$RPI = \frac{[Ecological\ Index + Social\ Index + (100 - Stressor\ Index)]}{3}$$

- Ecological Index, Social Index, and RPI Index ranks are determined by sorting index scores from highest to lowest (i.e., the watershed with the highest Ecological Index score receives a rank of 1).
- Stressor Index ranks are determined by sorting index scores from lowest to highest (i.e., the watershed with the lowest Stressor Index score receives a rank of 1).

5.2. Sort and Filter

By default, the ***Results*** table displays indicator data and index scores for all watersheds included in the screening and sorted by watershed ID. Users can sort the ***Results*** table based on values in any column in the table (e.g., from highest to lowest Ecological Index score). Users can also filter the ***Results*** table to only display watersheds that meet certain criteria (e.g., watersheds within a particular ecoregion).

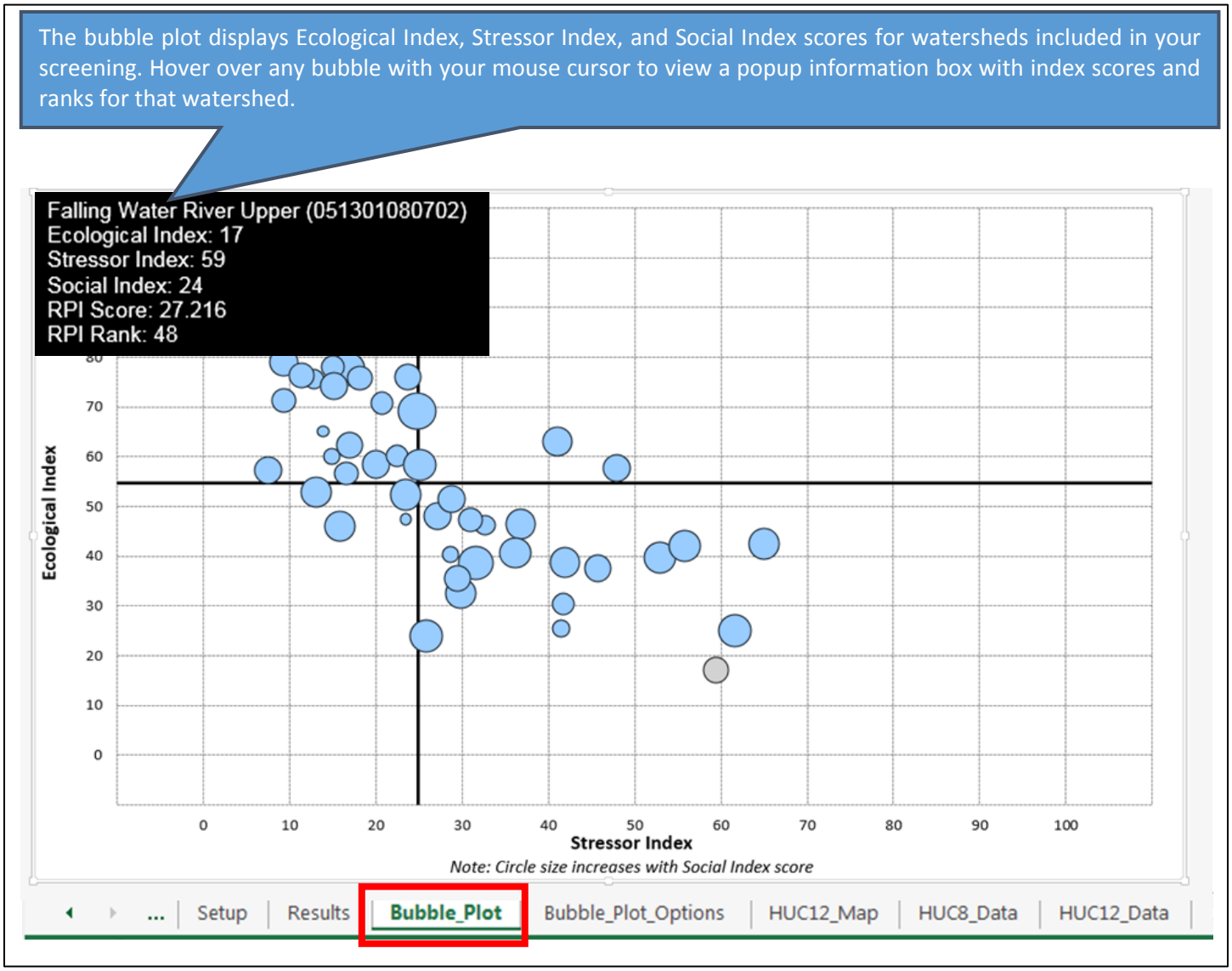


6. Bubble Plot Worksheet

The ***Bubble Plot*** worksheet contains a bubble plot that displays RPS results.

The ***Bubble Plot*** is automatically created when the ***RUN SCREENING*** button is clicked on the ***Setup*** worksheet. It contains one "bubble" for each watershed selected for screening, with the Stressor Index score plotted on the horizontal (x) axis, Ecological Index score plotted on the vertical (y) axis, and Social Index plotted as the bubble size. Larger bubbles have higher Social Index scores relative to smaller bubbles.

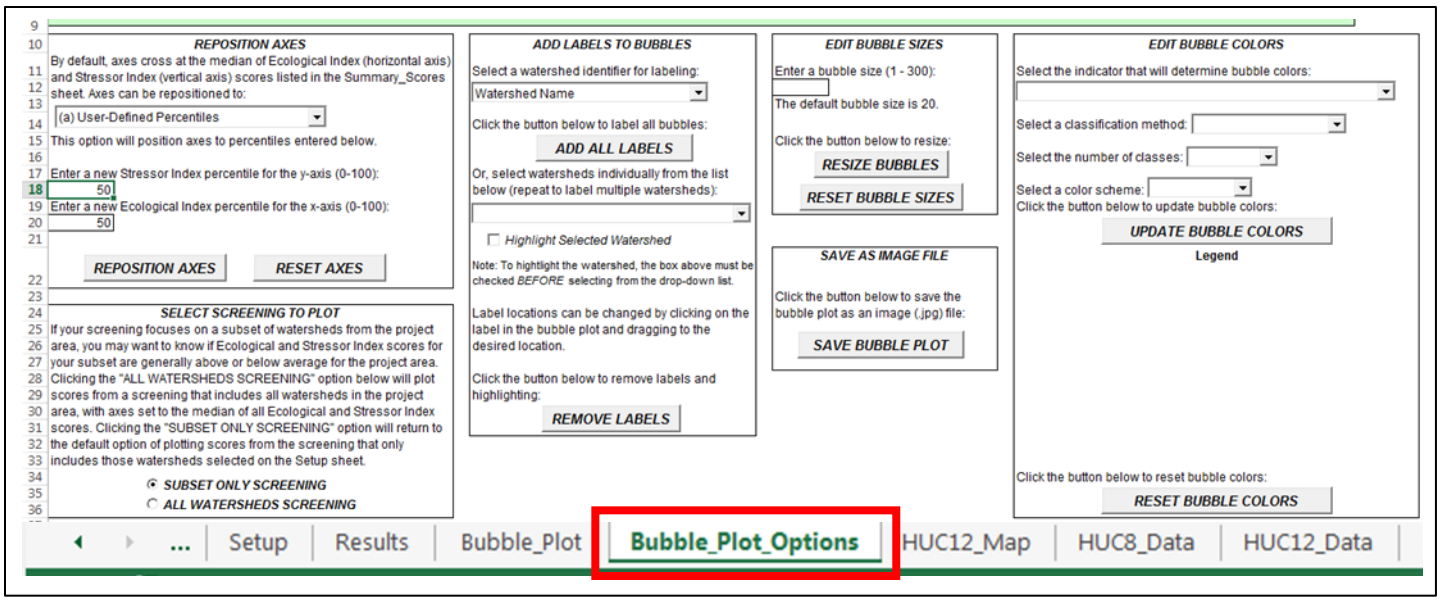
The bubble plot can be customized using controls on the ***Bubble Plot Options*** worksheet.



7. Bubble Plot Options Worksheet

7.1. Overview

The ***Bubble Plot Options*** worksheet provides users the ability to customize the ***Bubble Plot*** worksheet that displays screening results.



The following sections provide step-by-step instructions for how to use the ***Bubble Plot Options*** worksheet to:

- ***Reposition Plot Axes***
- ***Toggle Between Plotting a Subset Only Screening or an All Watersheds Screening***
- ***Add Labels to Bubbles***
- ***Edit Bubble Sizes***
- ***Edit Bubble Colors***
- ***Save an Image File of the Bubble Plot***

7.2. Reposition Axes

The horizontal axis and vertical axis of the ***Bubble Plot*** can be set to any user-defined position.

By default, the horizontal axis is positioned at the median of Ecological Index scores for the active screening and the vertical axis is positioned at the median of Stressor Index scores.

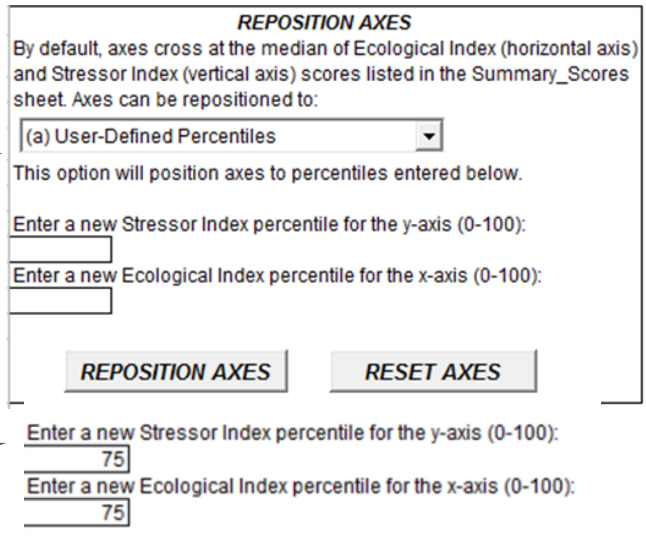
Users have two options for repositioning ***Bubble Plot*** axes:

- Reposition to new index percentiles – Under this option, users can reposition axes to any desired percentile of Ecological Index and Stressor Index scores (25th percentile, 75th percentile, etc.);
- Reposition to specific index scores – Under this option, users can reposition axes to any desired Ecological and Stressor Index score (e.g., index scores of 50).

Reposition Axes Option 1 – Reposition to New Percentiles

To reposition axes to new percentiles, select the "User-Defined Percentiles" option from the drop-down menu in the **Reposition Axes** section of the ***Bubble Plot Options*** worksheet.

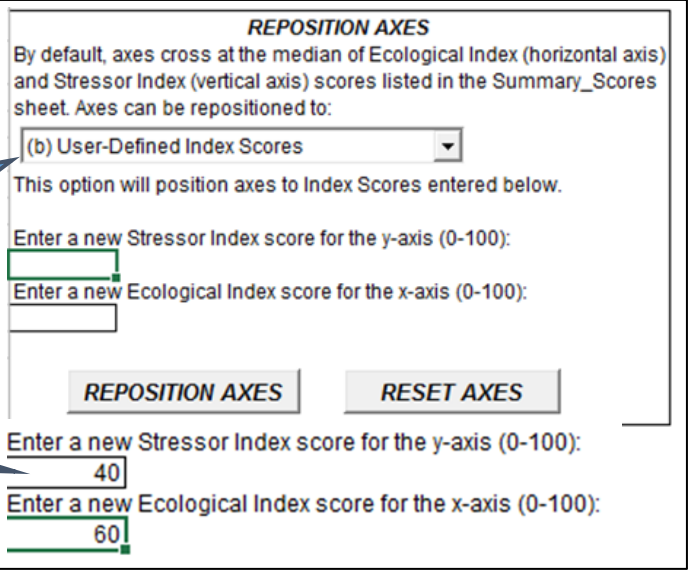
Then enter new a new Stressor Index percentile for the vertical axis and a new Ecological Index percentile for the horizontal axis in the designated cells.



Reposition Axes Option 2 – Reposition to Specific Index Scores

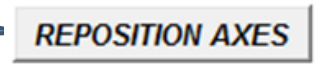
To reposition axes to specific index scores, select the "User-Defined Index Scores" option from the drop-down menu in the **Reposition Axes** section of the ***Bubble Plot Options*** worksheet.

Then enter new Stressor Index score for the vertical axis and a new Ecological Index score for the horizontal axis in the designated cells.



After entering new index percentiles or scores, click the ***REPOSITION AXES*** button.

Axes on the ***Bubble Plot*** will be automatically moved to the new index percentiles or scores.



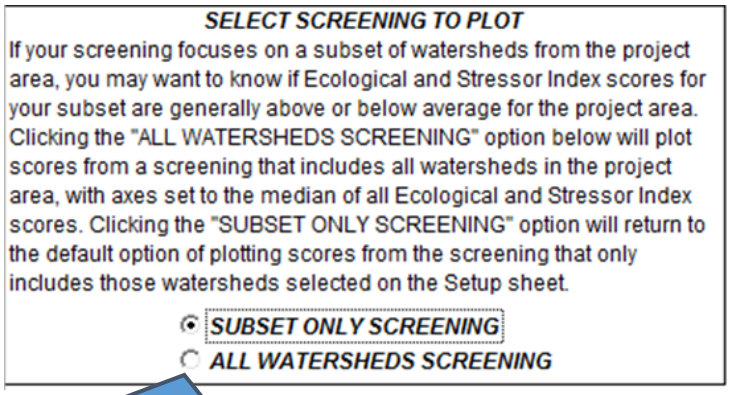
To move ***Bubble Plot*** axes back to their default position, click the ***RESET AXES*** button.

7.3. Toggle Screening to Plot

By default, the ***Bubble Plot*** displays Ecological Index, Stressor Index, and Social Index scores listed in the ***Summary Scores*** worksheet. These scores are derived from indicators that are normalized to minimum and maximum values for the subset of watersheds included in the screening. Index scores are therefore relative rather than absolute, they depend on the subset of watersheds selected for screening. A given watershed will have two different sets of index scores for two screenings that include different groups of watersheds.

Users may be interested in how the subset of watersheds selected for screening compares to all other watersheds in the Project Area. For example, users may want to know whether ecological conditions in the screened subset are above- or below-average for the Project Area as a whole. Such questions can be answered by running the same screening on all watersheds in the Project Area and then reviewing the resulting index scores for the watershed subset of interest. To streamline this process, the RPS Tool allows users to view an alternate version of the bubble plot with index scores that result from a screening that includes all watersheds in the Project Area. This can be done on-the-fly in the **Select Screening to Plot** section of the ***Bubble Plot Options*** worksheet without adjusting settings on the ***Setup*** worksheet or creating a new file.

The **Select Screening to Plot** section contains option buttons to toggle between a "Subset Only" screening or an "All Watersheds" screening. A "Subset Only" screening includes only those watersheds selected for screening on the ***Setup*** worksheet. An "All Watersheds" screening includes all watersheds in the Project Area. Note that if you selected all watersheds in the Project Area on the ***Setup*** worksheet then there is no difference between the two options.



By default, the ***Bubble Plot*** displays index scores resulting from "Subset Only" screening.

Click the ***ALL WATERSHEDS SCREENING*** option button to view index scores resulting from a screening that includes all watersheds in the Project Area. The ***Bubble Plot*** worksheet will automatically update with new index scores for the "All Watersheds" screening.

If you have viewed bubble plot for the "All Watersheds" screening and want to return to the "Subset Only" screening bubble plot, click the ***SUBSET ONLY SCREENING*** button**.** The ***Bubble Plot*** worksheet will automatically update with index scores for the "Subset Only" screening.

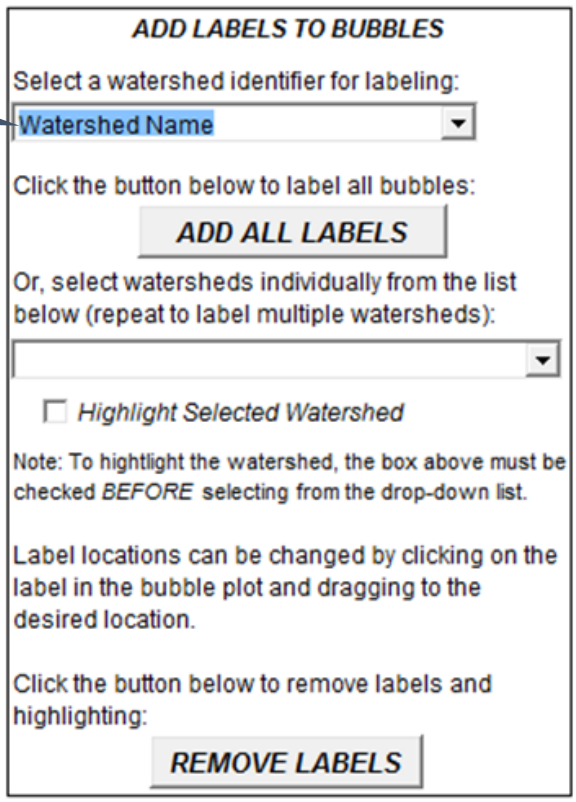
7.4. Label Bubbles

Bubbles in the ***Bubble Plot*** worksheet can be labeled to identify one or more watersheds. Bubbles can be labeled with the watershed name or the watershed ID. Users also have the option to highlight labeled bubbles to make them stand out from other unlabeled bubbles.

Basics

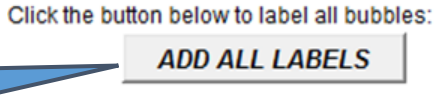
To label bubbles, first select a label option from the drop-down menu in the **Add Labels to Bubbles** section of the ***Bubble Plot Options*** worksheet.

Users can choose to have labels display watershed names or watershed IDs.



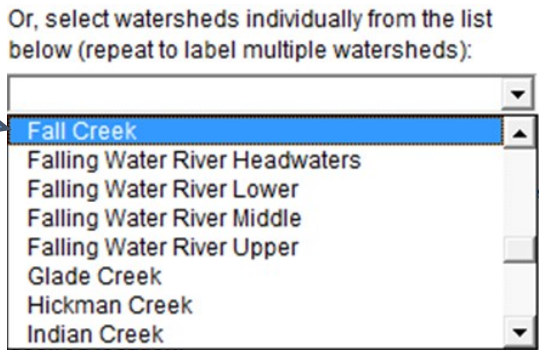
Add Labels Option 1 – Label All Bubbles

If you would like to add labels to all bubbles on the ***Bubble Plot*** worksheet, click the ***ADD ALL LABELS*** button. Labeling all bubbles is generally not recommended if your screening includes more than 20 watersheds.

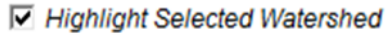


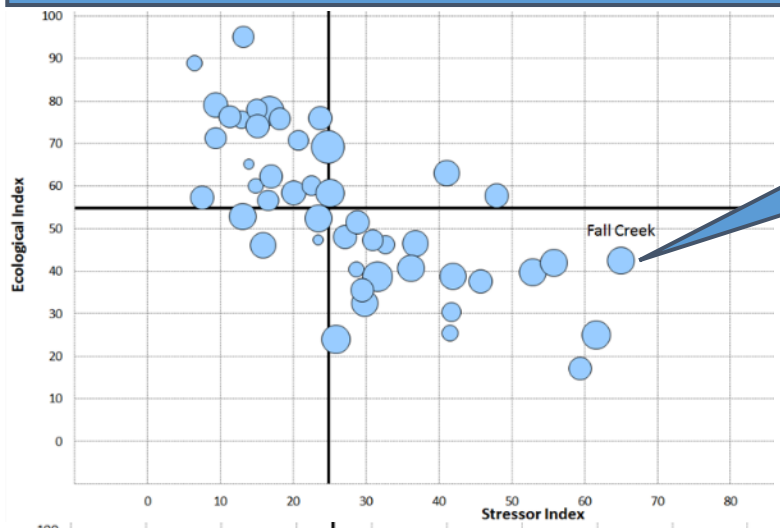
Add Labels Option 2 – Label Bubbles Individually

To label individual bubbles in the ***Bubble Plot***, select the watershed to label from the drop-down menu in the **Add Labels to Bubbles** section of the ***Bubble Plot Options*** worksheet. Watersheds names are displayed in the drop-down menu alphabetically from A to Z. Watershed IDs are displayed in ascending numerical order.

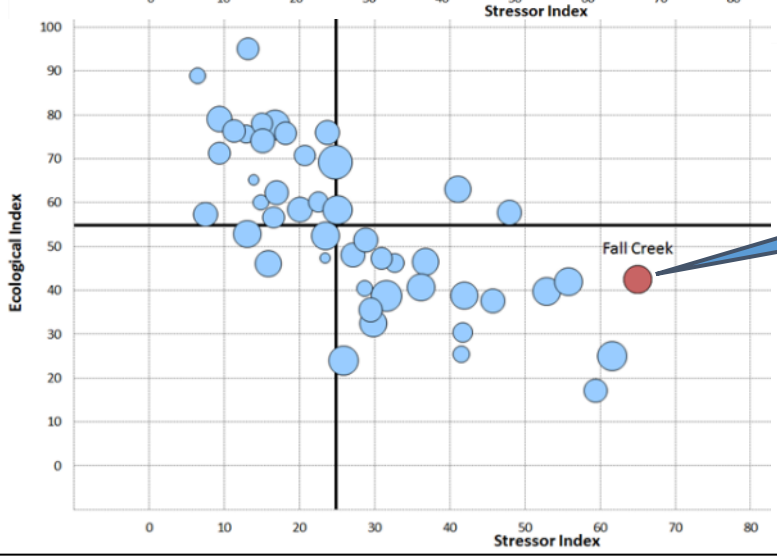


To highlight the labeled bubble, check the ***Highlight Selected Watershed*** box before selecting a watershed from the drop-down menu.





A label will be automatically added to the bubble for the selected watershed.



The labeled bubble will also be highlighted if the ***Highlight Selected Watershed*** box is checked when selecting the watershed from the drop-down menu.

To remove labels from the ***Bubble Plot***, click the ***REMOVE LABELS*** button. This will also remove any highlighting from labeled bubbles.

Advanced Tips

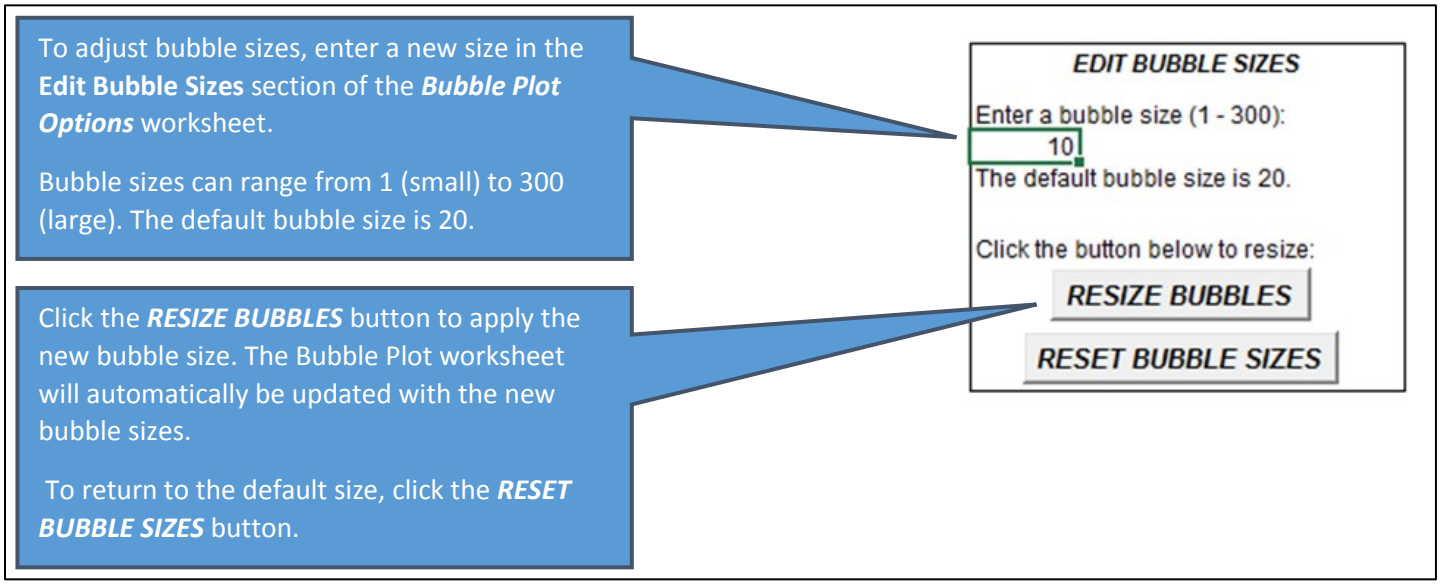
- Label text, formatting, and position can be edited manually after labels are added.
- To edit label text, click on the label in the ***Bubble Plot*** worksheet and revise the text as desired
- To edit label formatting (font size, color, etc.) click on the label in the ***Bubble Plot*** worksheet and use Excel's font formatting menu.
- To edit the position of a label, click on the label in the ***Bubble Plot*** worksheet and drag it to the desired location.

7.5. Edit Bubble Sizes

The size of each bubble in the ***Bubble Plot*** is based on the Social Index score for the corresponding watershed (i.e., bubbles for watersheds with higher Social Index scores are larger than bubbles for watersheds with lower Social Index scores).

While users cannot adjust the size of an individual bubble, they can collectively increase or decrease the size of all bubbles to improve the look of the ***Bubble Plot***.

A common reason for editing bubble sizes is to reduce overlap between bubbles with similar Ecological Index and Stressor Index scores.



7.6. Edit Bubble Colors

The ***Bubble Plot*** worksheet displays three pieces of information for each watershed included in your screening: the Ecological Index score on the y-axis, Stressor Index score on the x-axis, and Social Index score using the bubble size. The ***Bubble Plot*** worksheet can also display a fourth piece of information by shading bubbles different colors to reflect different values of an indicator. This feature is implemented in the **Edit Bubble Colors** section of the ***Bubble Plot Options*** worksheet.

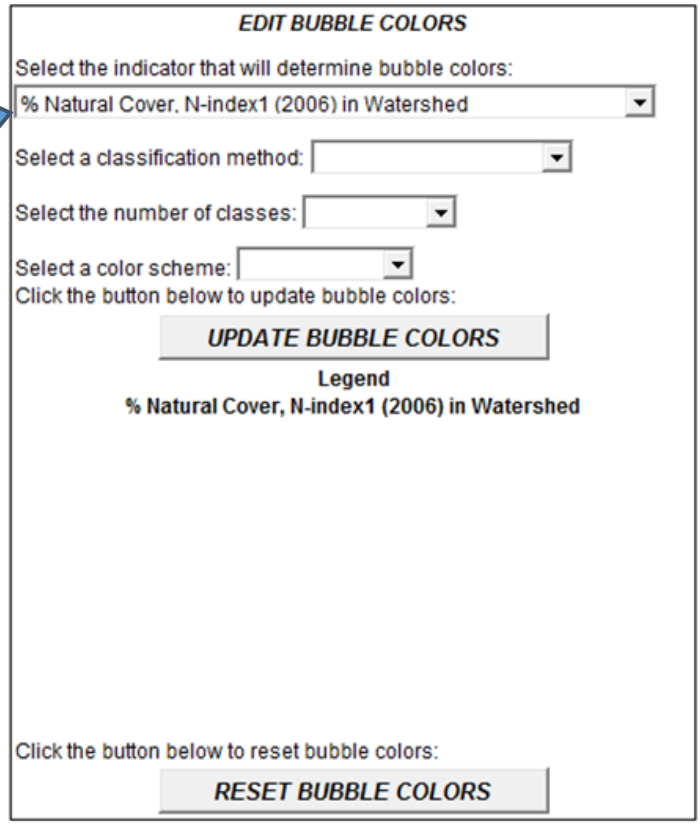
To display indicator values using bubble colors, users must select the number of **Classes** to display, a method for defining **Class Breaks**, and a **Color Scheme**. These terms are defined below.

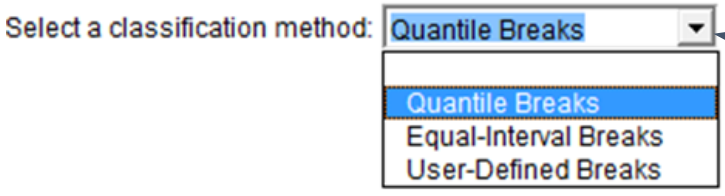
- **Classes** – The number of groups or bins to separate watersheds into. Up to 10 classes can be selected.
- **Class Breaks** – The cutoff indicator values used to define class membership. Three options are available for defining class breaks:
  - *Quantile Breaks* result in classes that have an equal number of watersheds. For example, if four classes are selected then then quantile breaks option would result in each class containing one-quarter of the total number of watersheds using the 25th percentile, 50th percentile, and 75th percentile of indicator values as class breaks.
  - *Equal-Interval Breaks* result in classes that cover an equal range of indicator values. For example, if four classes are selected for an indicator with a minimum value of 0% and a maximum value of 100%, then the equal-interval breaks option would result in each class spanning 25 percentage points use values of 25%, 50%, and 75% as class breaks. Under the equal-interval option, the definition of breaks is independent of the number of watersheds within each class. Depending on the distribution of indicator values, some classes may contain zero watersheds.
  - *User-Defined Breaks* are supplied by the user.
- **Color Scheme** – The primary color(s) used to shade bubbles. Options are blue, green, or blue-green.

To display values of an indicator on the ***Bubble Plot*** worksheet using bubble colors, first select which indicator you would like to plot from the indicator drop-down menu in the **Edit Bubble Colors** section of the ***Bubble Plot Options*** worksheet.

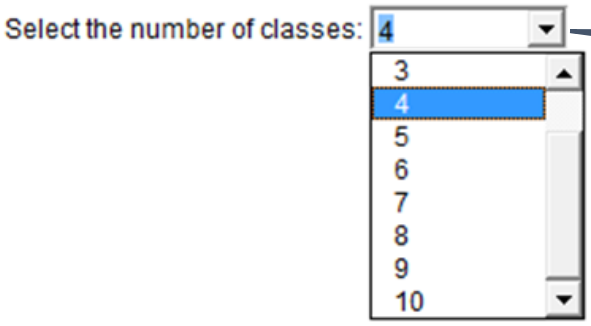
Any indicator can be selected for plotting, regardless of whether it was included in your screening or not.

Index scores such as the Recovery Potential Integrated (RPI) Index can also be selected.





After selecting an indicator, choose a method for defining class breaks (Quantile, Equal-Interval, or User-Defined) from the classification method drop-down menu.



Next, choose the number of classes to use for plotting (between 2 and 10).

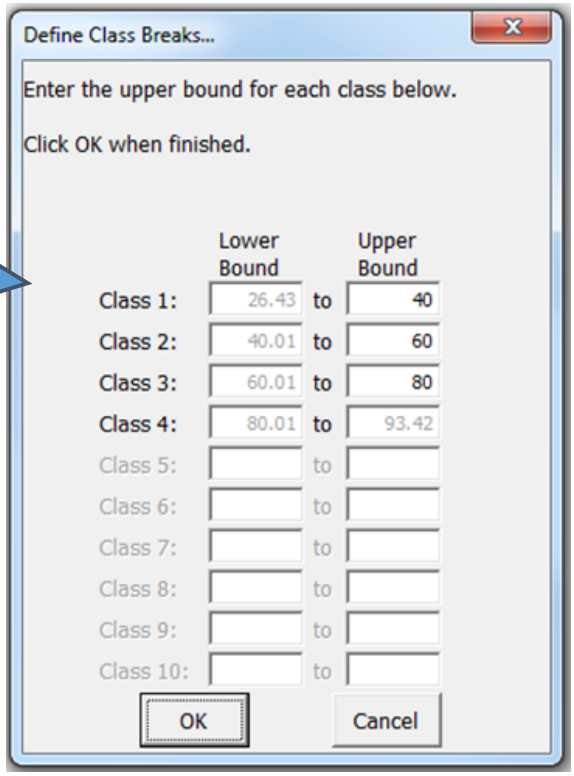
If the Quantile or Equal-Interval options are selected for defining class breaks, then break values will be automatically calculated.

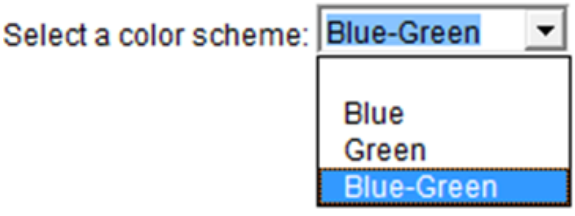
If the User-Defined option is selected, a popup form will display for you to enter class breaks.

In the class break form, the lower bound of the first class will automatically be set to the minimum value of the selected indicator. The upper bound of the last class will be set to the indicator's maximum value.

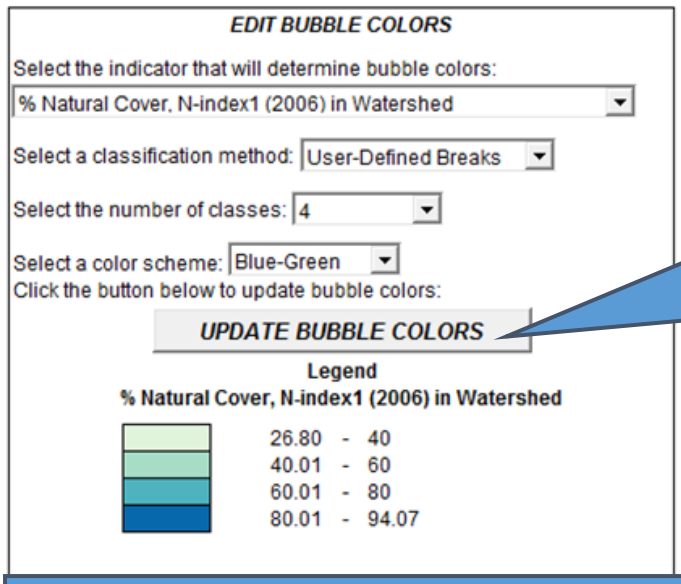
Enter break values for each class in the "Upper Bound" column. The lower bound of the next class will be calculated automatically by adding 0.01 to the upper bound you entered for the preceding class.

When all breaks have been entered, click the ***OK*** button.





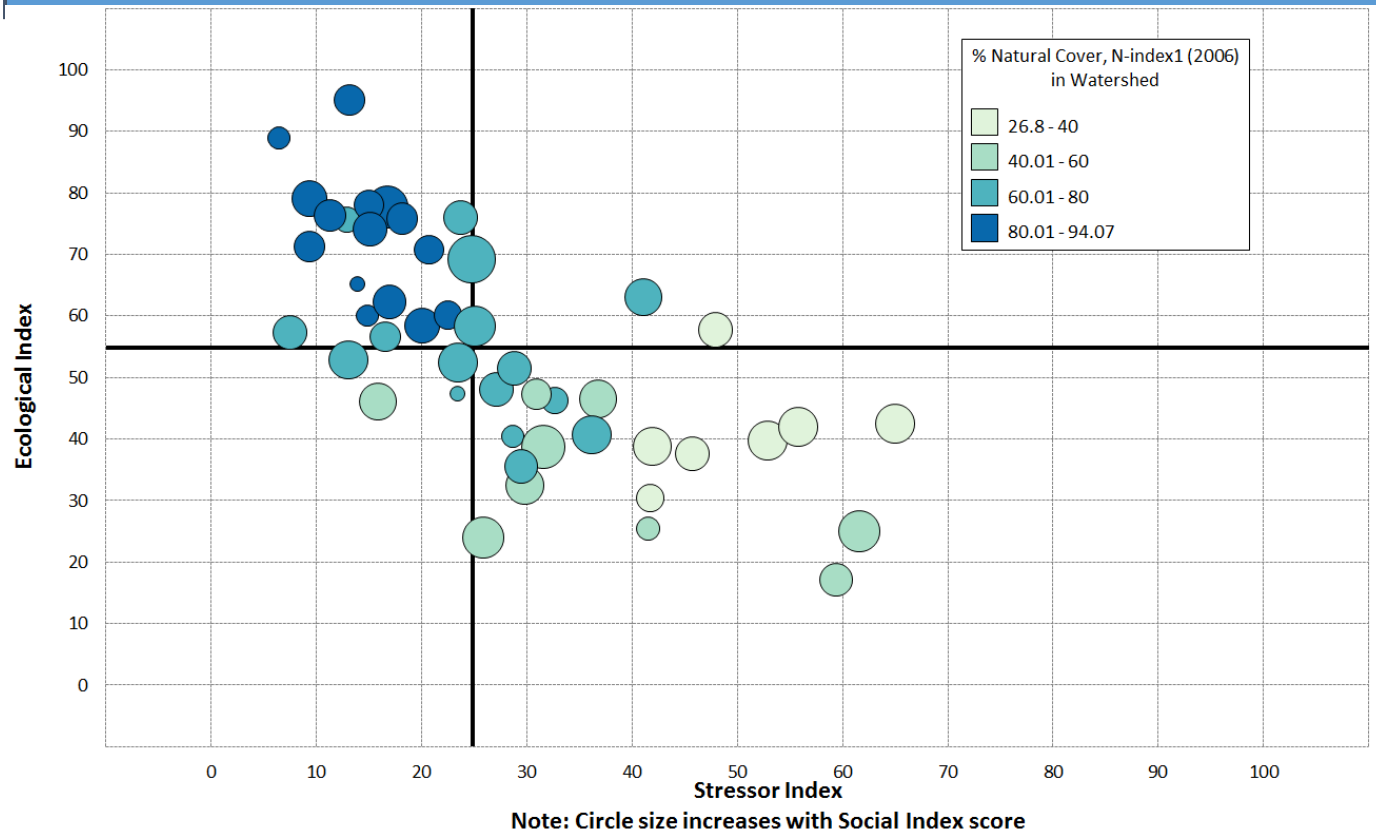
Finally, select a color scheme to use for shading bubbles. Options are blue, green, or blue-green.



After you have selected the indicator to plot, the method for defining class breaks, the number of classes, and the color scheme, a legend will display in the **Edit Bubble Colors** section that illustrates your selections.

Click the ***UPDATE BUBBLE COLORS*** button to apply the selected settings to the ***Bubble Plot*** worksheet.

After clicking the ***UPDATE BUBBLE COLORS*** button the ***Bubble Plot*** worksheet will automatically update to shade bubbles according to the selected indicator. Users can adjust bubble color settings at any time by revising selections in the **Edit Bubble Colors** section of the ***Bubble Plot Options*** sheet and clicking the ***UPDATE BUBBLE COLORS*** button.



Note: Circle size increases with Social Index score

To return to the default bubble plot (all bubbles shaded the same color), click the ***RESET BUBBLE COLORS*** button.

RESET BUBBLE COLORS

7.7. Save As Image File

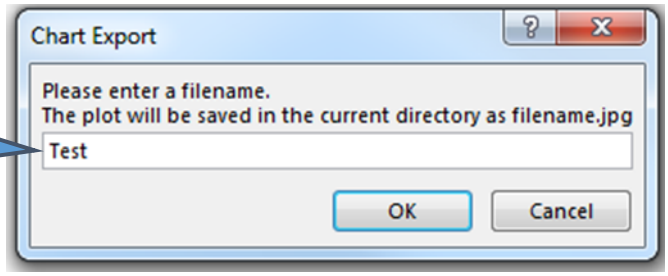
A copy of the ***Bubble Plot*** worksheet can be saved as an image file for use in reports or presentations.

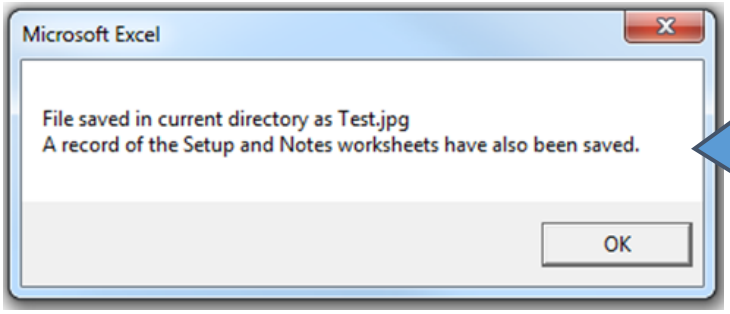
The ***Bubble Plot*** can be saved as an image file from the **Save As Image File** section of the ***Bubble Plot Options*** worksheet.

First, click the ***SAVE BUBBLE PLOT*** button.

You will then be prompted to enter a filename for the image file.

Type a filename into the space provided and click ***OK***.





A message box will notify you that the image file saved in JPEG format using the filename you provided.

The file will be saved in the same directory that the RPS Tool file is saved in.

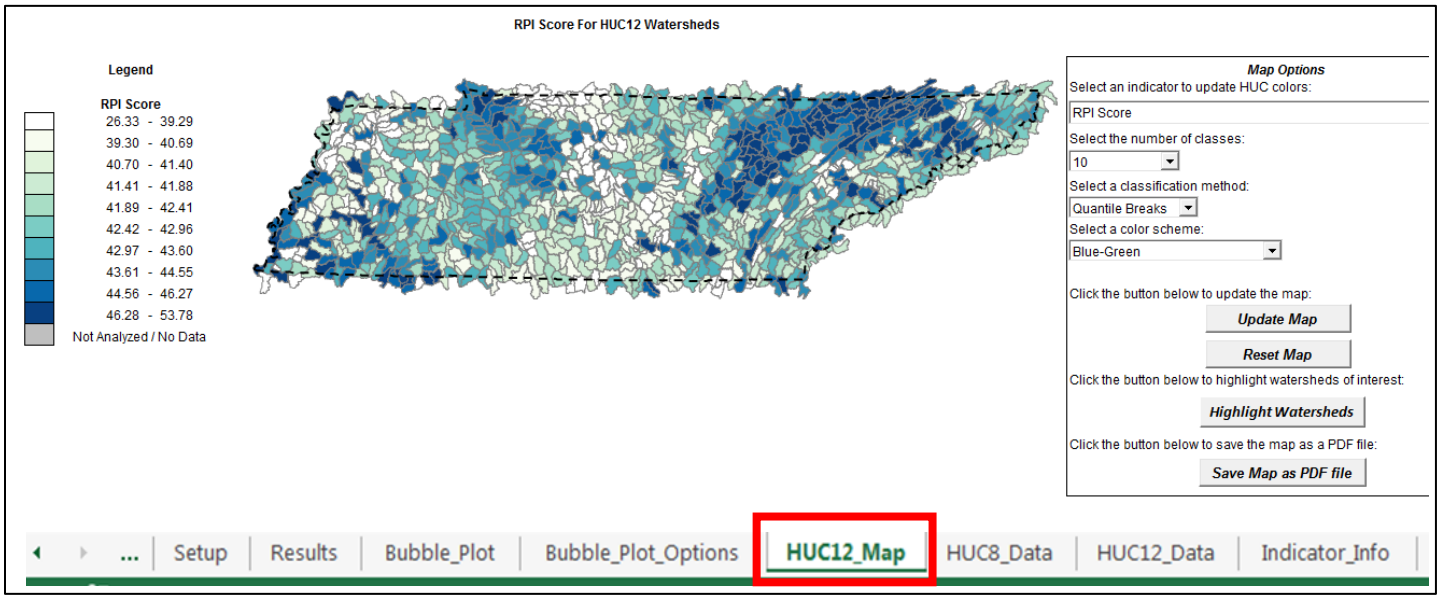
Two PDF files storing the contents of the ***Setup*** sheet and ***Notes*** sheet are also saved to provide a record of the screening settings used to produce the ***Bubble Plot*** image file.

8. Map Worksheet

8.1. Overview

The ***Map*** worksheet that displays screening results in map form. The ***Map*** worksheet is automatically created when the ***RUN SCREENING*** button is clicked on the ***Setup*** worksheet. By default, the ***Map*** worksheet displays Recovery Potential Integrated (RPI) index scores.

The name of the ***Map*** worksheet displayed in the bottom tab of your RPS Tool will reflect the scale of watersheds selected for screening. For example, if you screened HUC12 subwatersheds, then the ***Map*** worksheet will be named ***HUC12_Map***. Most RPS tools have a map worksheet for HUC12 subwatersheds and, if the tool is also setup to screen HUC8 watersheds, a map for HUC8s. RPS Tools that are setup to screen other watershed scales may not have a map for those additional watershed scales.



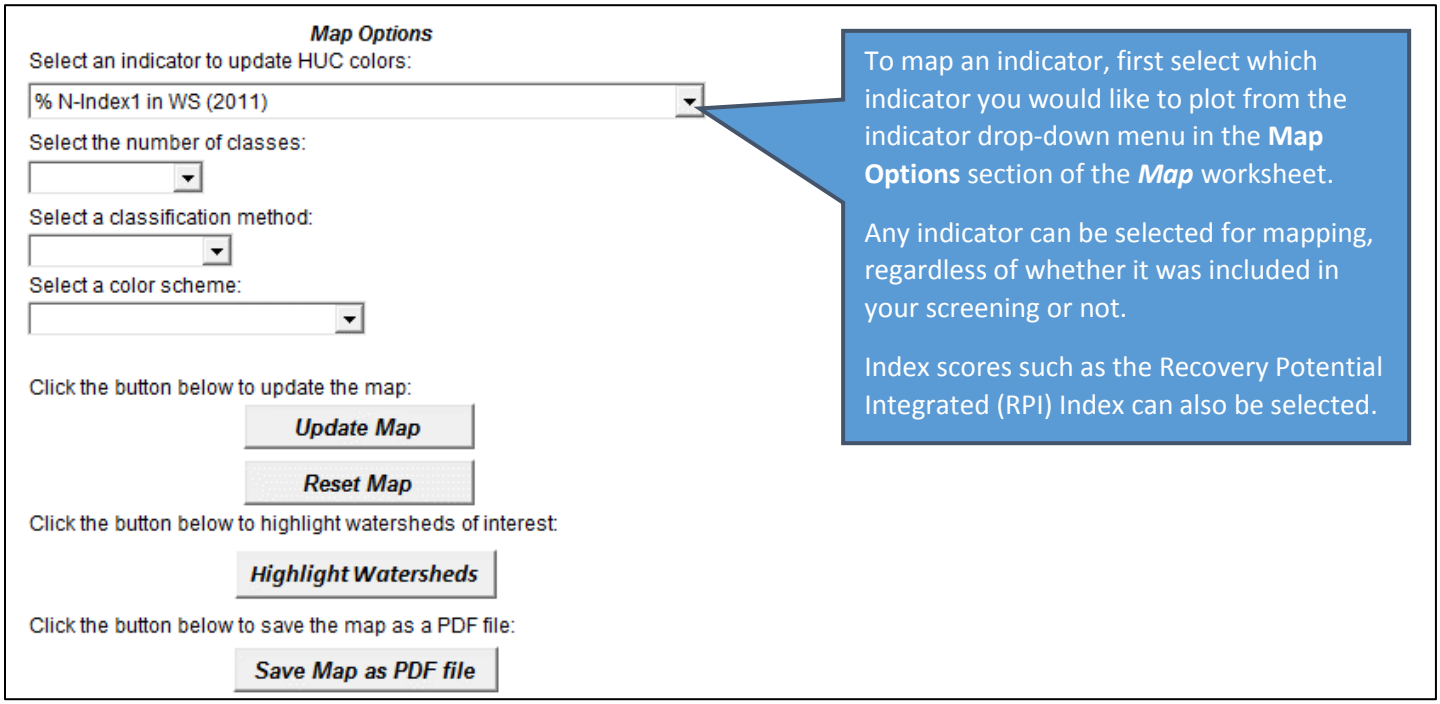
The following sections describe how to:

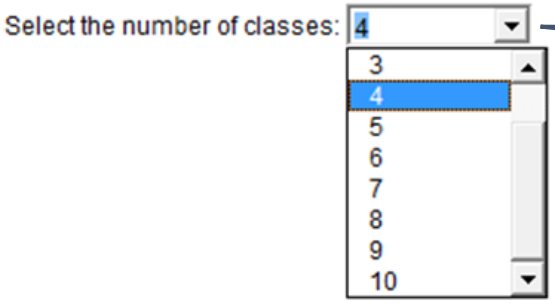
- ***Create a Custom Map***
- ***Highlight Watersheds of Interest***
- ***Save the Map as a PDF File***

8.2. Create Custom Map

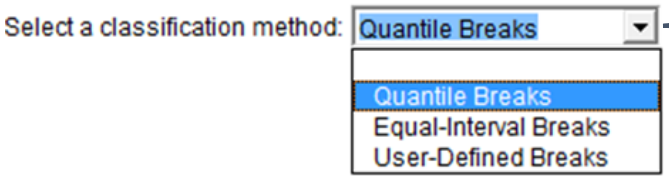
Users can customize the ***Map*** worksheet to shade watersheds on the map using any indicator or index. To customize the ***Map*** worksheet, users must select the number of **Classes** to display, a method for defining **Class Breaks**, and a **Color Scheme**. These terms are defined below.

- **Classes** – The number of groups or bins to separate watersheds into. Up to 10 classes can be selected.
- **Class Breaks** – The cutoff indicator values used to define class membership. Three options are available for defining class breaks:
  - *Quantile Breaks* result in classes that have an equal number of watersheds. For example, if four classes are selected then the quantile breaks option would result in each class containing one-quarter of the total number of watersheds using the 25th percentile, 50th percentile, and 75th percentile of indicator values as class breaks.
  - *Equal-Interval Breaks* result in classes that cover an equal range of indicator values. For example, if four classes are selected for an indicator with a minimum value of 0% and a maximum value of 100%, then the equal-interval breaks option would result in each class spanning 25 percentage points using values of 25%, 50%, and 75% as class breaks. Under the equal-interval option, the definition of breaks is independent of the number of watersheds within each class. Depending on the distribution of indicator values, some classes may contain zero watersheds.
  - *User-Defined Breaks* are supplied by the user.
- **Color Scheme** – The primary color(s) used to shade watersheds on the map. Options are blue, green, or blue-green.





Then select the number of classes to use for mapping (between 2 and 10).



Next, select a method for defining class breaks (Quantile, Equal-Interval, or User-Defined).

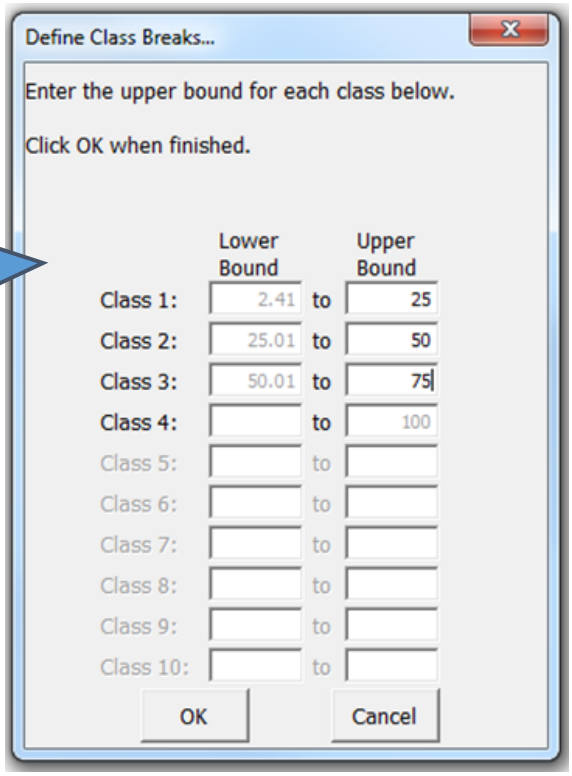
If the Quantile or Equal-Interval options are selected for defining class breaks, then break values will be calculated automatically.

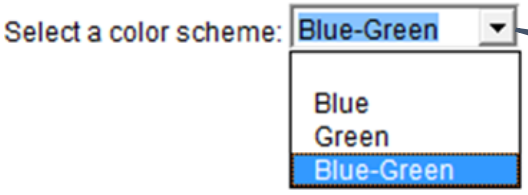
If the User-Defined option is selected, a popup form will display for entering class breaks.

In the class break form, the lower bound of the first class will automatically be set to the minimum value of the selected indicator. The upper bound of the last class will be set to the indicator's maximum value.

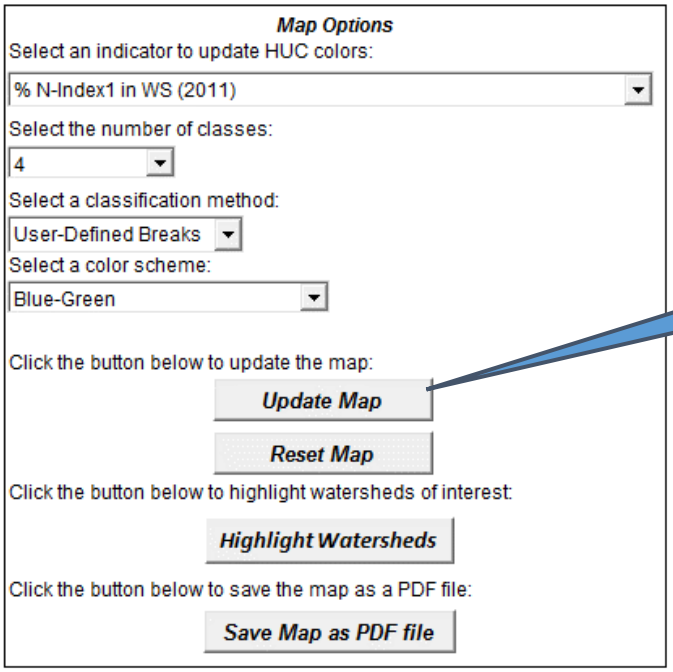
Enter break values for each class in the "Upper Bound" column. The lower bound of the next class will be calculated automatically by adding 0.01 to the upper bound you entered for the preceding class.

When all breaks have been entered, click the ***OK*** button.



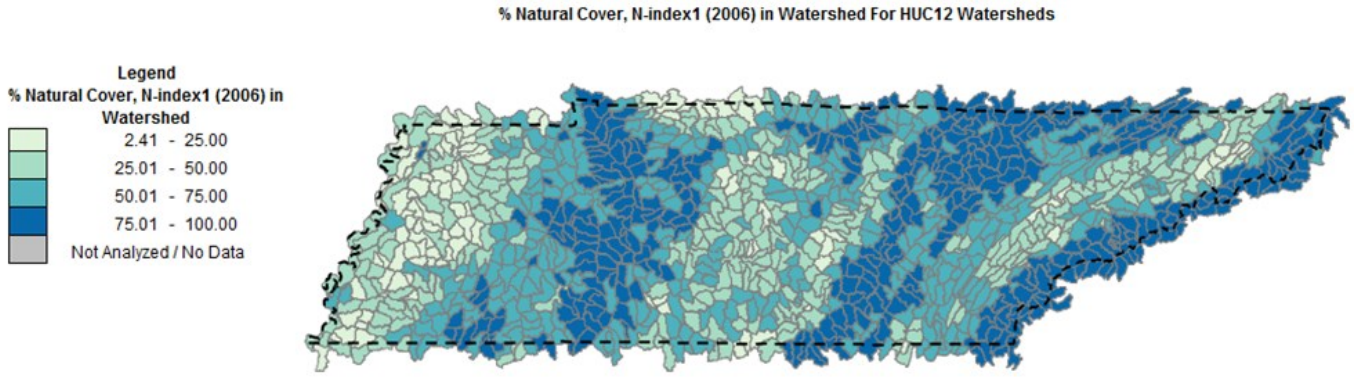


Finally, select a color scheme to use for shading watersheds in the map. Options are blue, green, or blue-green.



After you have selected the indicator to map, the number of classes, the method for defining class breaks, and the color scheme click the ***UPDATE MAP*** button to apply the selected settings to the watershed map.

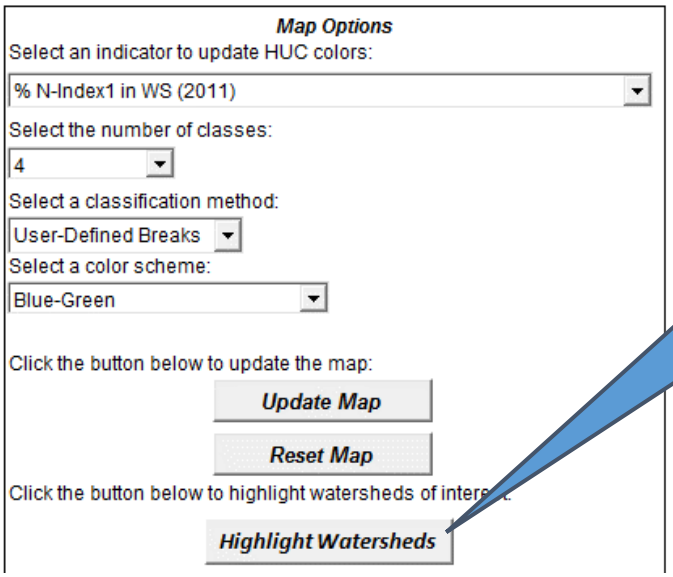
The ***Map*** worksheet will automatically update to shade watersheds according to the selected indicator or index. Users can adjust map settings at any time by revising selections in the **Map Options** section of the ***Map*** worksheet and clicking the ***UPDATE MAP*** button.



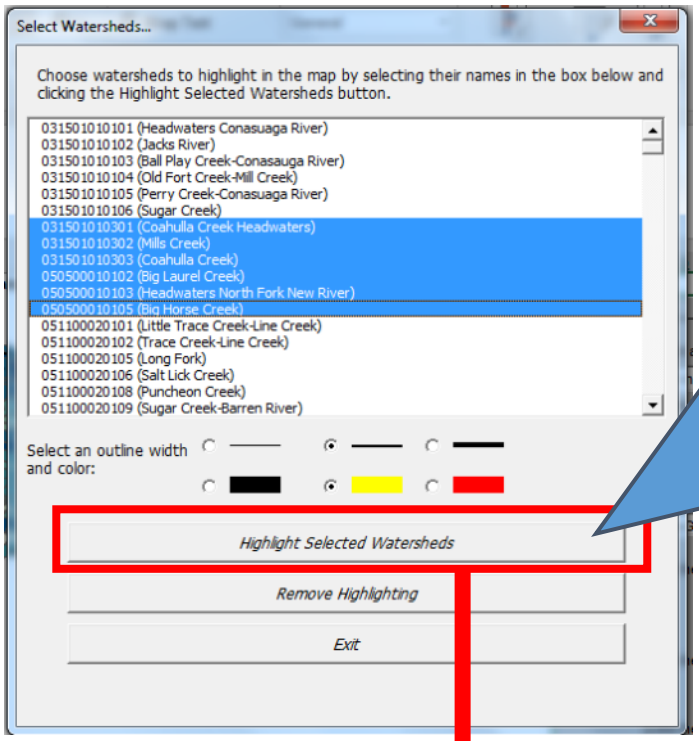
To return to the default map (displaying Recovery Potential Integrated Index scores), click the ***RESET MAP*** button.

Reset Map

8.3. Highlight Watersheds of Interest



You can highlight one or more watersheds of interest on the map by clicking the ***HIGHLIGHT WATERSHEDS*** button.

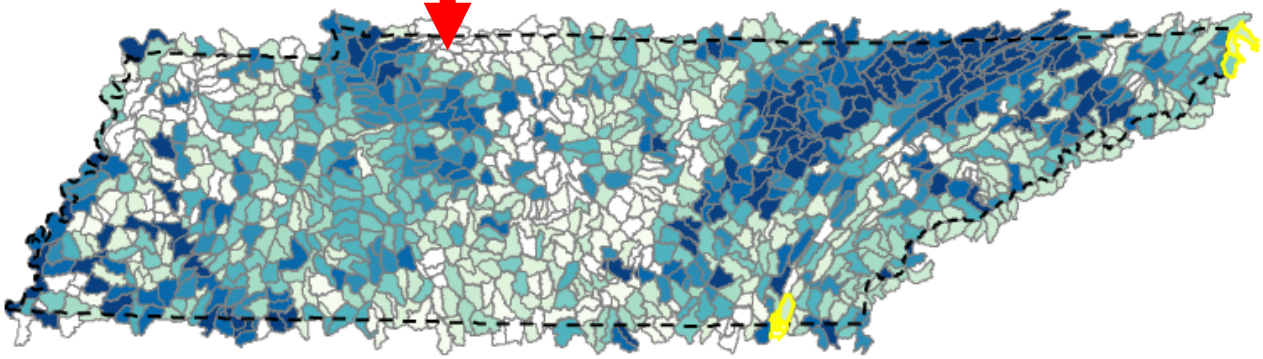


A popup box will appear displaying a list of watersheds in your tool's study area and design options for highlighting the selected watersheds.

Choose the watersheds to highlight from the list and your preferred options for the outline width and color. Then click the ***HIGHLIGHT SELECTED WATERSHEDS*** button.

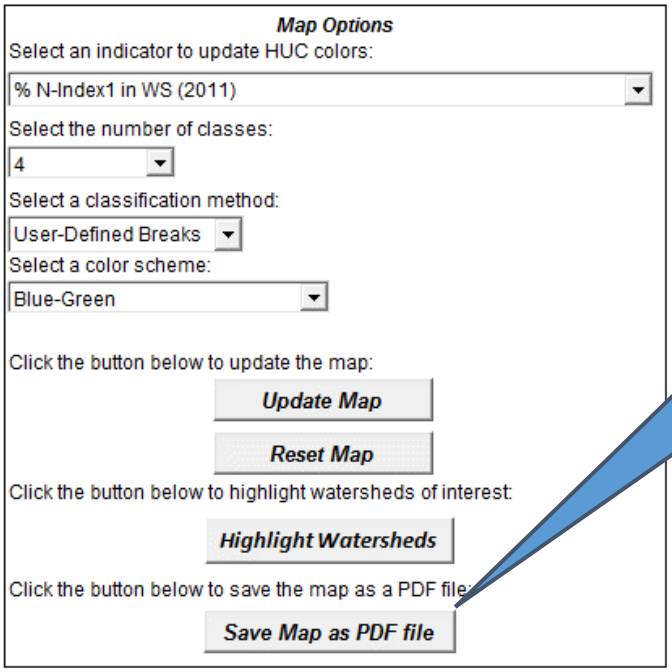
The map will automatically update to add an outline to the selected watersheds with the selected width and color.

You can remove the highlighting from the map at any time by clicking the ***REMOVE HIGHLIGHTING*** button.



8.4. Save Map as PDF File

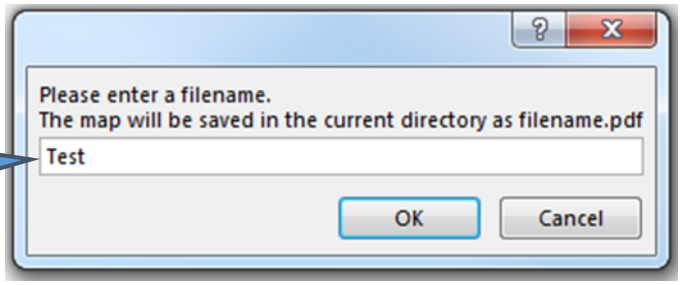
The watershed map on the ***Map*** worksheet can be saved as a PDF file for use in reports or presentations.

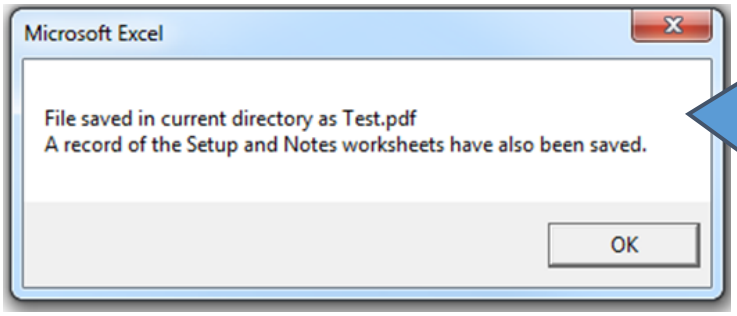


The watershed map can be saved as a PDF by clicking the ***SAVE MAP AS PDF FILE*** button from the **Map Options** section of the ***Map*** worksheet.

You will then be prompted to enter a filename for the PDF file.

Type a filename into the space provided and click ***OK***.





A message box will notify you that the PDF file saved using the filename you provided.

The file will be saved in the same directory that the RPS Tool file is saved in.

Two PDF files storing the contents of the ***Setup*** sheet and ***Notes*** sheet are also saved to provide a record of the screening settings used to produce the watershed map.

9. Indicator Data Worksheet(s)

The ***Indicator Data*** worksheet contains a table of indicator values for all watersheds in the Project Area covered by your RPS Tool file.

Indicators are grouped by category in the ***Indicator Data*** worksheet and are ordered from left-to-right as Base, Ecological, Stressor, and Social indicators. Indicator categories are displayed in row 6. Indicator names are displayed in row 7.

The name of the ***Indicator Data*** worksheet displayed in the bottom tab of your RPS Tool will reflect the watershed scale of the indicator data it stores. For example, the ***Indicator Data*** worksheet for HUC12 subwatersheds is named ***HUC12_Data***. If your tool file includes multiple watershed scales (e.g., both HUC8 and HUC12) then it will contain multiple ***Indicator Data*** worksheets, one for each scale (e.g., ***HUC8_Data*** and ***HUC12_Data***).

6	BASE INDICATORS			
7	Hydrologic Unit Code 12-Digit (HUC12)	Name HUC12 Watershed	Area Of Watershed (HUC12) In Square Meters (Grid)	% Riparian Zone (RZ) in Watershed
8	031501010101	Headwaters Conasuaga River	95344200.0000	23.6771
9	031501010102	Jacks River	127184400.0000	21.7527
10	031501010103	Ball Play Creek-Conasauga River	77161500.0000	26.5609
11	031501010104	Old Fort Creek-Mill Creek	63687600.0000	22.5835
12	031501010105	Perry Creek-Conasuaga River	54007200.0000	25.6349
13	031501010106	Sugar Creek	52865100.0000	24.0607
14	031501010301	Coahulla Creek Headwaters	117395100.0000	29.0381
15	031501010302	Mills Creek	34851600.0000	23.6055
16	031501010303	Coahulla Creek	67117500.0000	23.2397
17	050500010102	Big Laurel Creek	75533400.0000	24.2368
18	050500010103	Headwaters North Fork New River	107905500.0000	19.6013
19	050500010105	Big Horse Creek	91665000.0000	21.5572
20	051100020101	Little Trace Creek-Line Creek	102894300.0000	19.6139
21	051100020102	Trace Creek-Line Creek	75423600.0000	21.0801
22	051100020105	Long Fork	162519300.0000	22.4314
23	051100020106	Salt Lick Creek	144657000.0000	24.2095
24	051100020108	Puncheon Creek	75887100.0000	18.4098
25	051100020109	Sugar Creek-Barren River	93788100.0000	22.1411
26	051100020201	Upper Long Creek	134667000.0000	17.9656
27	051100020203	Pinchgut Creek-Barren River	75322800.0000	21.8456
28	051100020501	Headwaters Trammal Creek	66985200.0000	20.3203
29	051100020502	Rough Creek-Trammel Creek	62374500.0000	18.6740
30	051100020503	Little Trammel Creek	70362900.0000	19.4088
31	051100020601	West Fork Drakes Creek Headwaters	138340800.0000	19.1800
32	051100020602	Sharps Branch-West Fork Drakes Creek	136977300.0000	14.3689
33	051100020604	Dutch Creek-Middle Fork Drakes Creek	148890600.0000	17.9993
34	051100020605	Sulphur Fork Creek	115533000.0000	16.3613
35	051301010201	Little Yellow Creek-Yellow Creek	[illegible]0000	17.8163

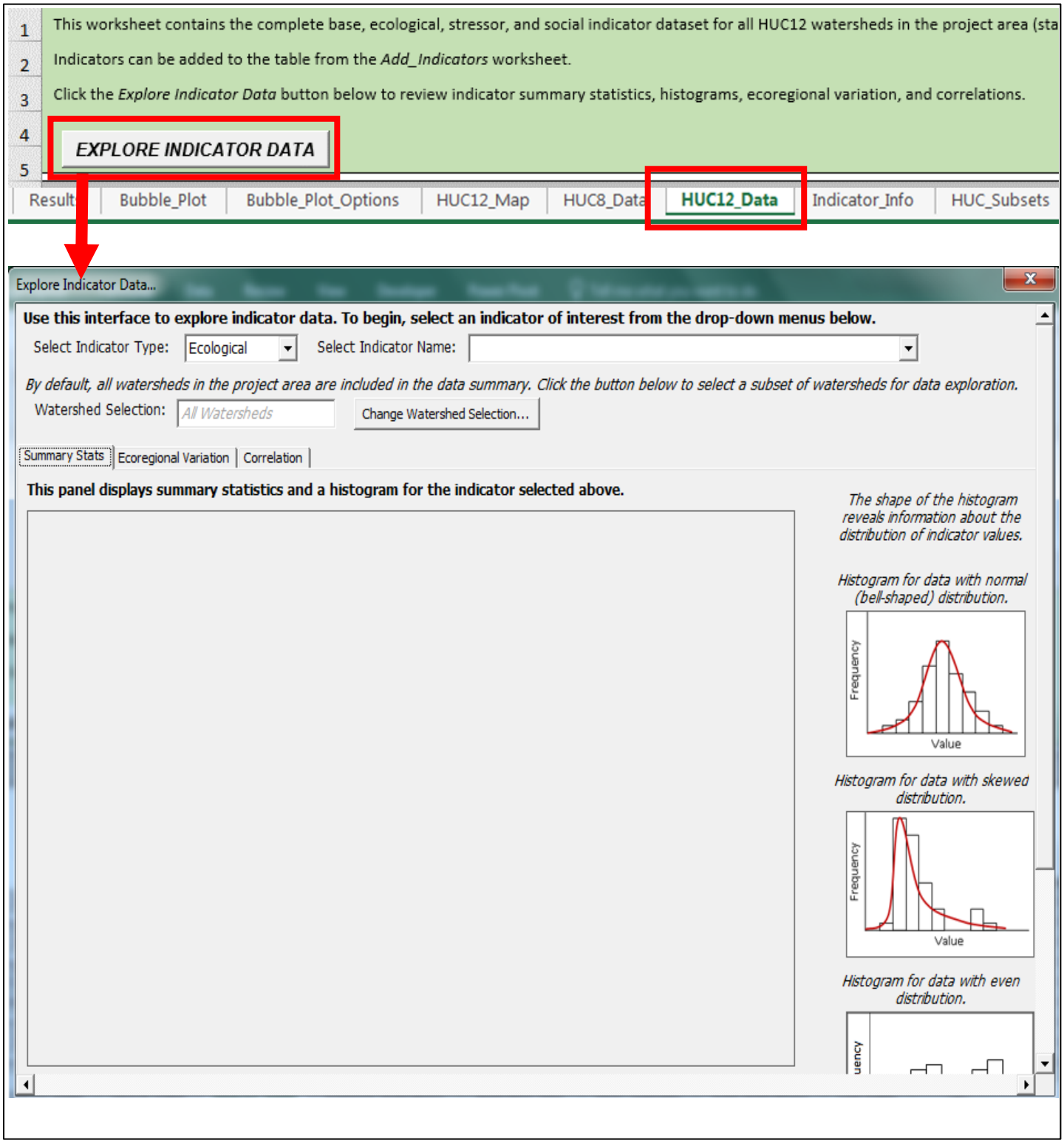
Results | Bubble_Plot | Bubble_Plot_Options | HUC12_Map | HUC8_Data | **HUC12_Data** | Indicator_Info | HUC_Subsets

10. Explore Indicator Data Menu

10.1. Overview

The RPS Tool includes built-in functions for exploring the statistical properties of indicator data. This information can be useful when making decisions on which indicators to include in a screening.

Indicator statistics are displayed within the ***Explore Indicator Data*** menu. To open the menu, select an indicator data worksheet tab (***HUC12_Data***, ***HUC8_Data,*** etc.). Then click the ***EXPLORE INDICATOR DATA*** button.



The ***Explore Indicator Data*** menu contains drop-down menus for selecting an indicator to explore and three tabs for reviewing the statistical properties of the selected indicator:

- The ***Summary Stats*** tab displays summary statistics (minimum, maximum, mean, etc.) and a histogram of indicator values;
- The ***Ecoregional Variation*** tab displays a boxplot of indicator summary statistics by Level 3 Ecoregion (https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states). The tab also contains a table listing the number of watersheds in each ecoregion and the number of watersheds with blank or missing values of the selected indicator per ecoregion. The ***Ecoregional Variation*** tab is only visible when reviewing indicator data for HUC12 watersheds.
- The ***Correlation*** tab contains additional drop-down menus for users to select a second covariate indicator to evaluate correlation between two indicators. Correlation statistics and a scatterplot of indicator values are displayed in the tab.

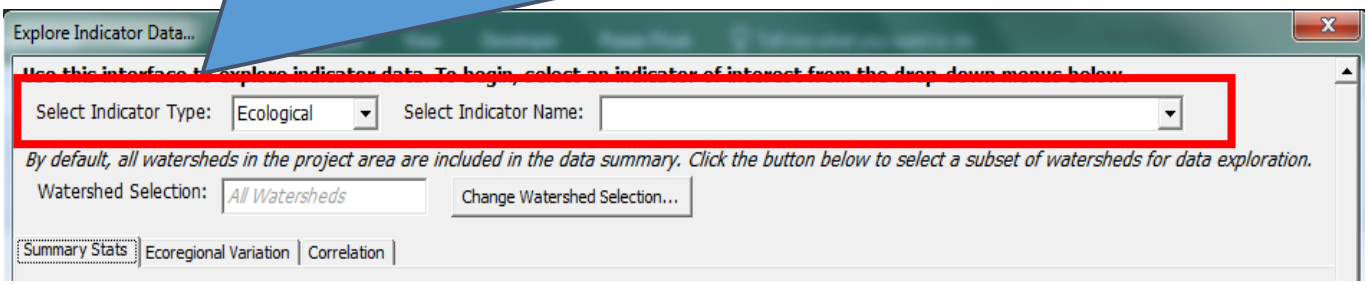
By default, all watersheds in your tool's study area are included in the indicator data summary. The menu also contains the ***CHANGE WATERSHED SELECTION*** button for selecting a custom subset of watersheds for the indicator data summary.

The following sections describe how to:

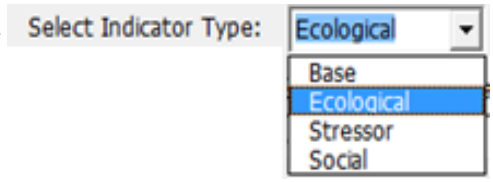
- ***Select an Indicator to Explore***
- ***Select a Covariate Indicator to Review Correlation***
- ***Save or Copy a Chart***
- ***Use the Change Watershed Selection Button***

10.2. Select an Indicator to Explore

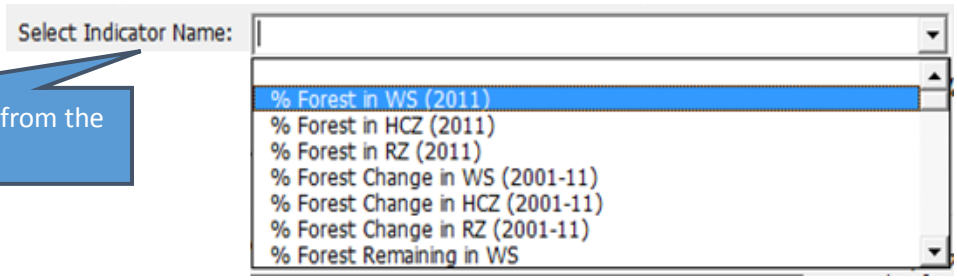
To explore the statistical properties of an indicator, select the indicator of interest from the drop-down menus at the top of the ***Explore Indicator Data*** menu.



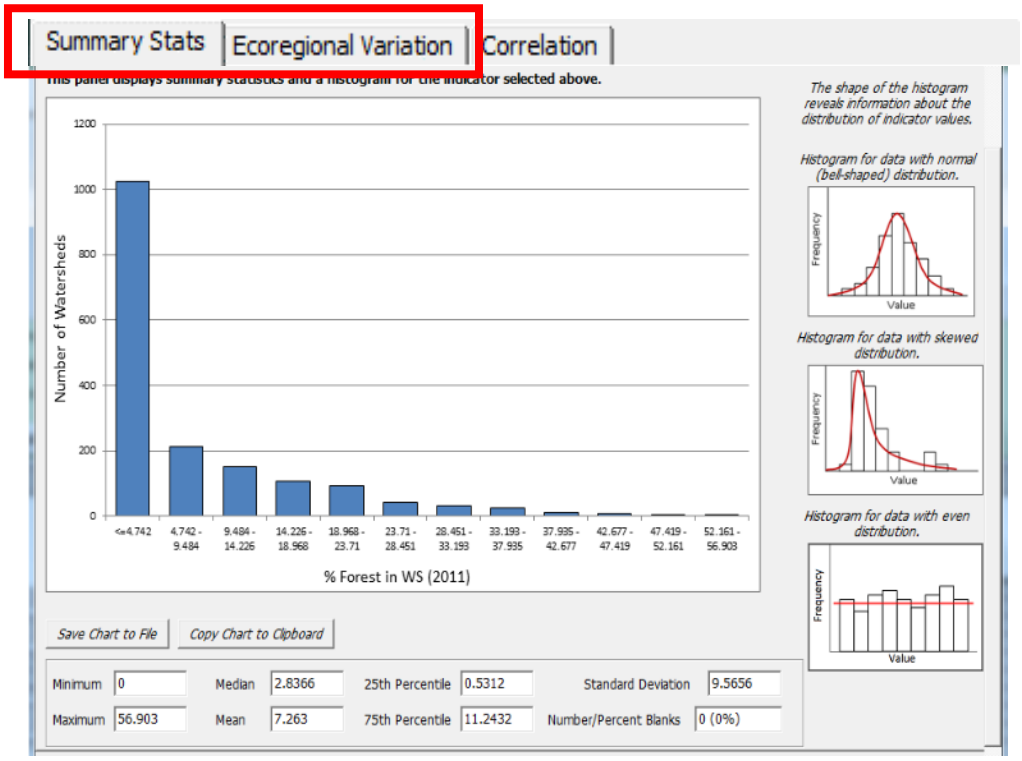
First choose the indicator type (Base, Ecological, Stressor, or Social) from the ***Select Indicator Type*** menu.



Then choose the indicator name from the ***Select Indicator Name*** menu.

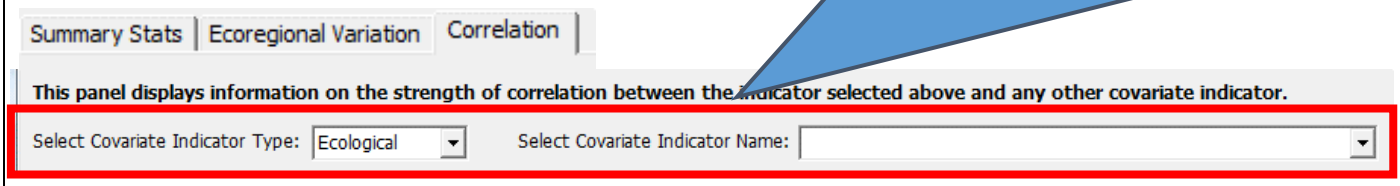


The ***Summary Stats*** and ***Ecoregional Variation*** tabs will automatically populate with statistical information for the selected indicator. Click on each tab name to view its contents.

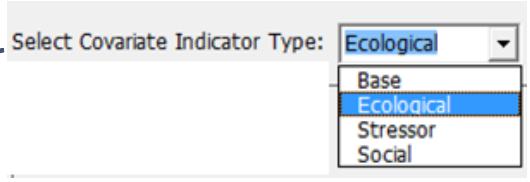


10.3. Select a Covariate Indicator

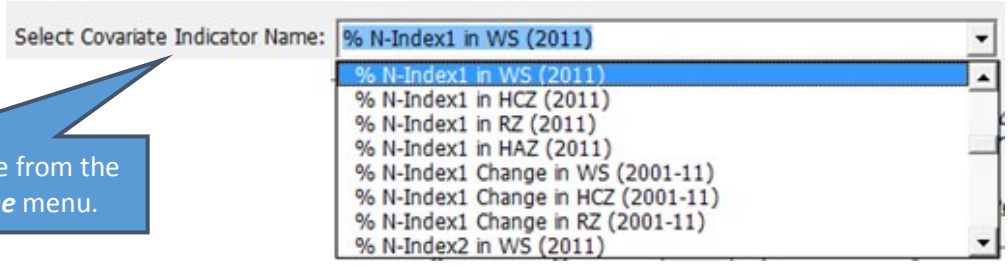
The ***Correlation*** tab of the ***Explore Indicator Data*** menu contains additional drop-down menus for users to select a second covariate indicator to evaluate correlation between two indicators.



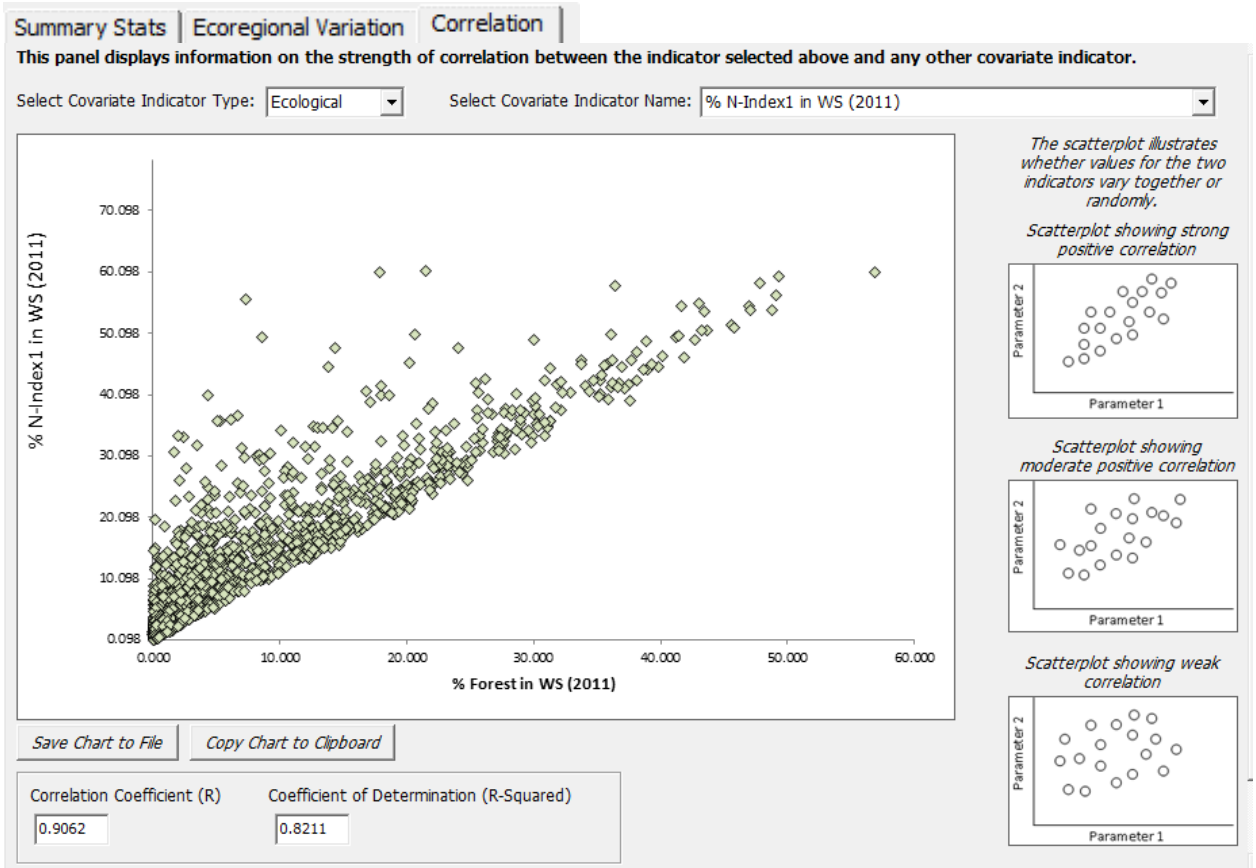
First choose the indicator type (Base, Ecological, Stressor, or Social) from the ***Select Covariate Indicator Type*** menu.



Then choose the indicator name from the ***Select Covariate Indicator Name*** menu.

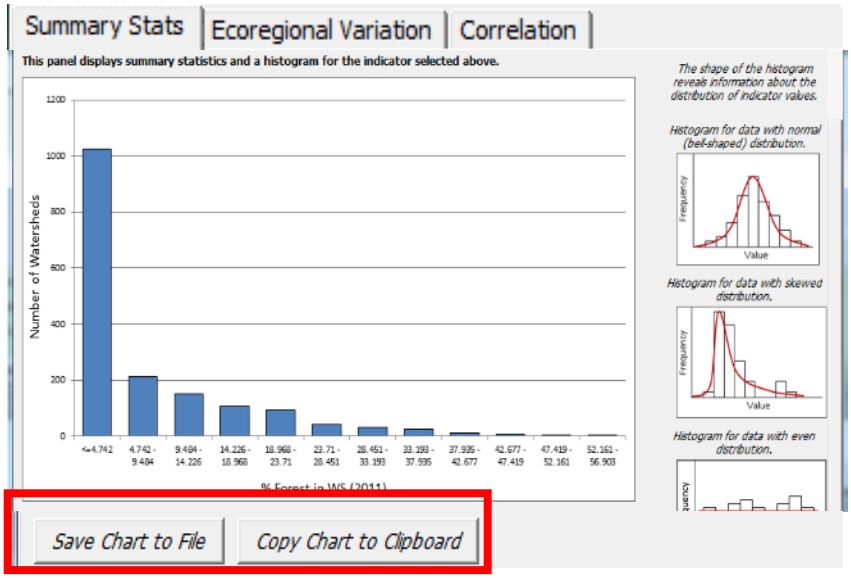


The scatterplot and correlation statistics will automatically populate with values for the selected indicator and the covariate indicator.



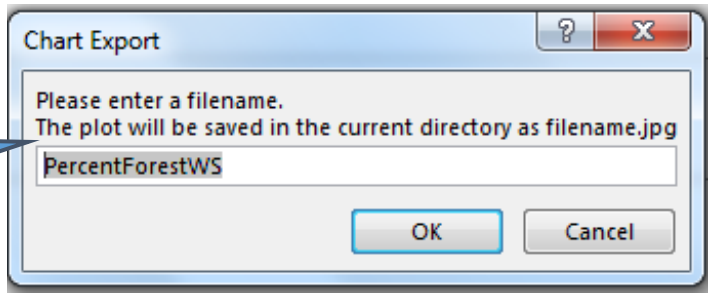
10.4. Save or Copy a Chart

The ***Summary Stats***, ***Ecoregional Variation***, and ***Correlation*** tabs each have buttons that allow users to save or copy an image of the histogram, ecoregional boxplot, or correlation scatterplot.

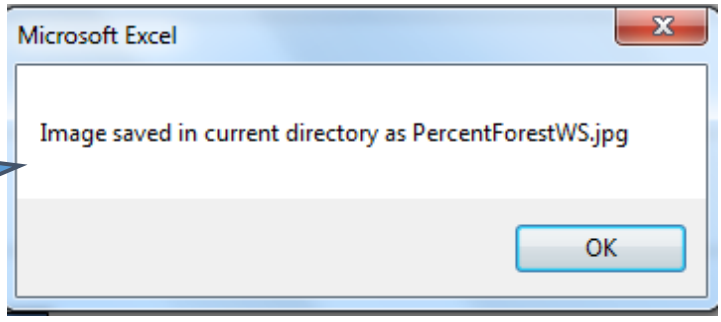


A copy of your chart can be saved as an image file in JPEG format by clicking the ***SAVE CHART TO FILE*** button.

Enter a filename for the chart image in the Chart Export box. Click ***OK***.

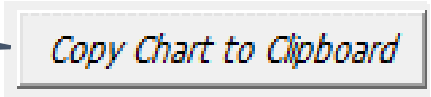


A message box will then display to notify you that the image was successfully saved. The file will be saved in the same folder as your RPS tool file.



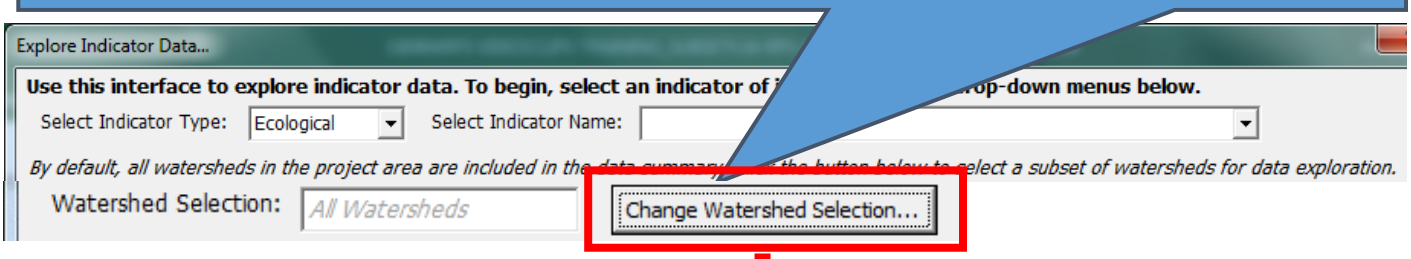
An image of your chart can also be copied to the clipboard by clicking the ***COPY CHART TO CLIPBOARD*** button.

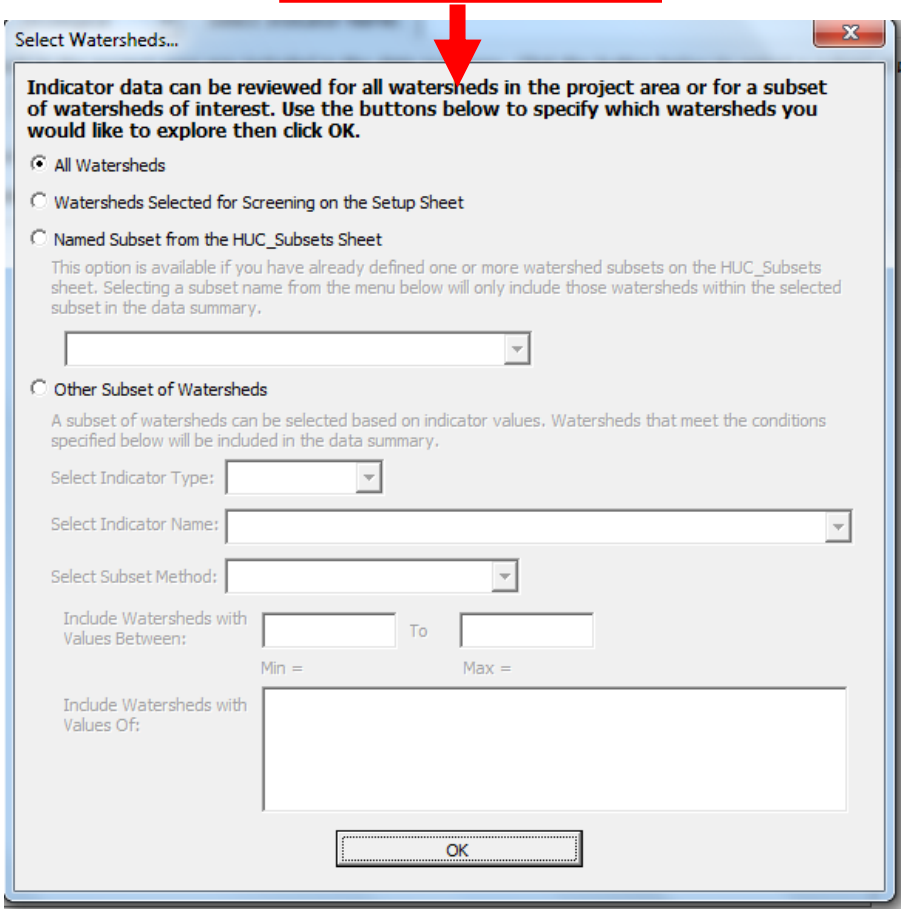
You can then paste your chart into a report document or other file using the Paste menu button or by typing Ctrl-V.



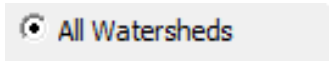
10.5. Change Watershed Selection Button

By default, the ***Explore Indicator Data*** menu displays indicator statistical properties for all watersheds in your tool's study area. You can instead explore indicator data for just a subset of watersheds using the ***CHANGE WATERSHED SELECTION*** button at top of the ***Explore Indicator Data*** menu. Clicking the button will launch the ***Select Watersheds*** menu.



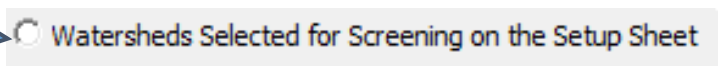


The ***Select Watersheds*** menu contains four option buttons for choosing watersheds to include in your indicator data summary. By default, the ***ALL WATERSHEDS*** button is selected.



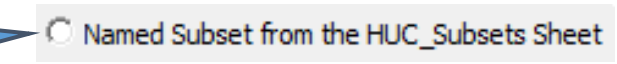
The second option button selects watersheds that have already been chosen for an RPS screening on the ***Setup*** worksheet.

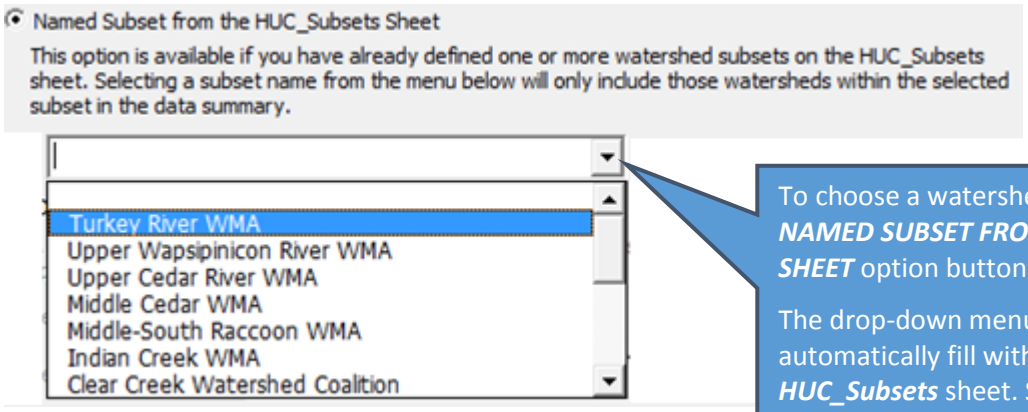
To use this option, you must have previously entered a list of watershed IDs in the ***Select Watersheds*** section of the ***Setup*** worksheet (see Section 3.3).



The third option button selects watersheds that have already been defined in a named watershed subset on the ***HUC_Subsets*** worksheet.

To use this option, you must have previously entered one or more watershed subsets on the ***HUC_Subsets*** worksheet (see Section 13).



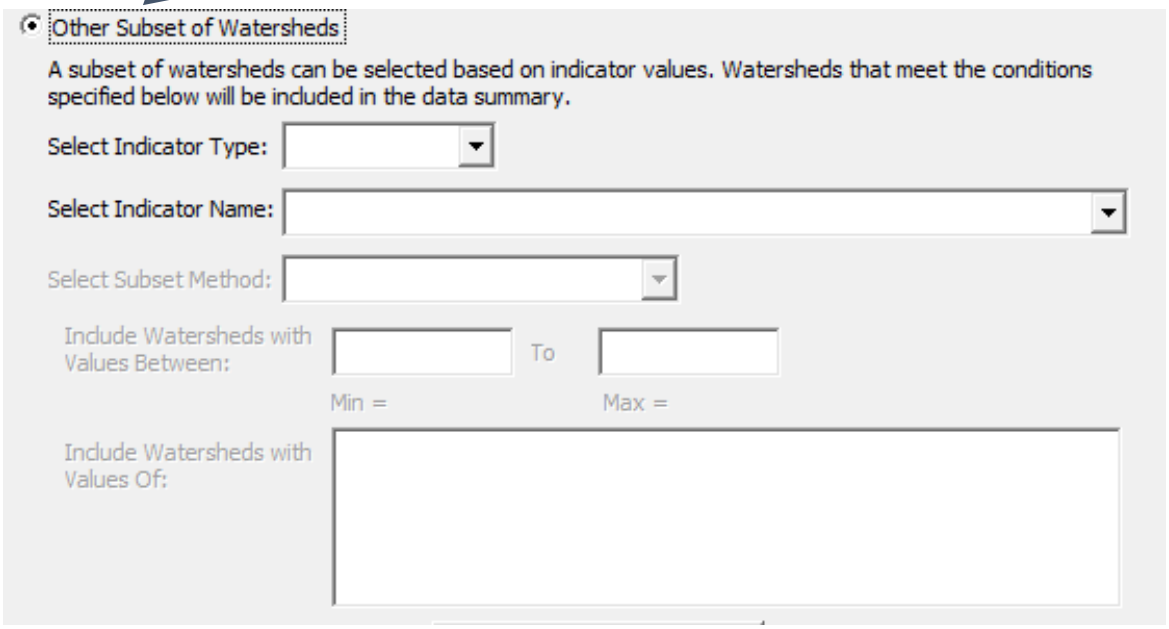


To choose a watershed subset, click the ***NAMED SUBSET FROM THE HUC_SUBSETS SHEET*** option button.

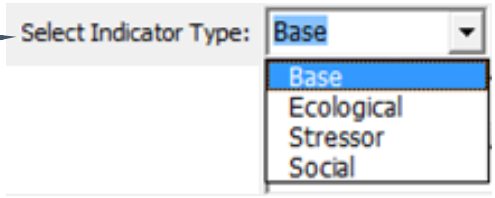
The drop-down menu below the button will automatically fill with subset names from the ***HUC_Subsets*** sheet. Select the name of the subset of interest.

The fourth option button allows you to select a group of watersheds based on the values of any indicator stored in the RPS Tool.

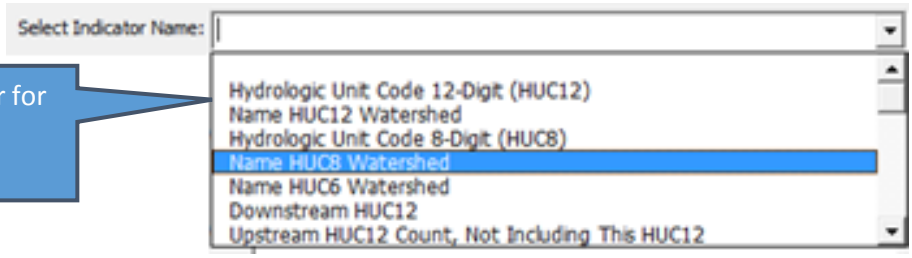
Clicking the ***OTHER SUBSET OF WATERSHEDS*** option button will activate drop-down menus for selecting the indicator type, name, and values to use for your watershed selection.



After clicking the ***OTHER SUBSET OF WATERSHEDS*** option button, choose the type of indicator for selecting watersheds (Base, Ecological, Stressor, or Social) from the ***Select Indicator Type*** drop-down menu.



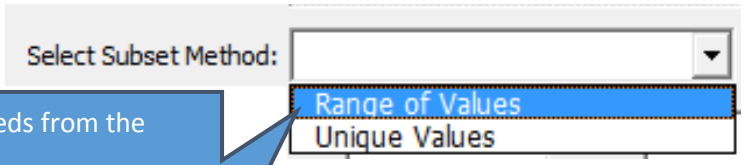
Then choose the name of the indicator for selecting watersheds from the ***Select Indicator Name*** drop-down menu.



Next, choose a subset method for selecting watersheds from the ***Select Subset Method*** drop-down menu.

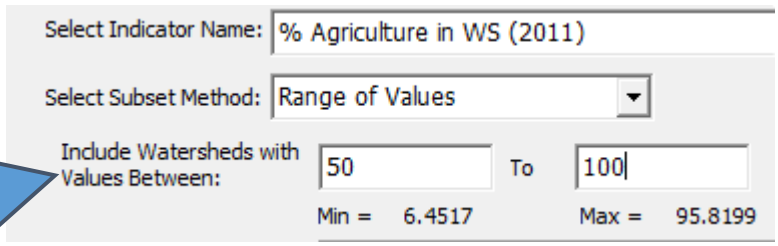
The Range of Values option allows you to specify minimum and maximum values of interest for the selected indicator. Watersheds with indicator values in the specified range will be included in the indicator data summary.

The Unique Values option allows you to select one or more unique values of interest for the selected indicator. Watersheds with the specified values will be included in the data summary. The unique values option will typically only be used for categorical variables.



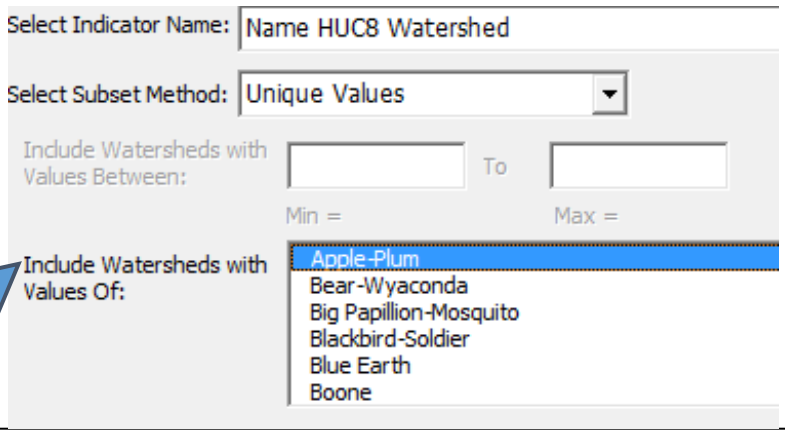
If you choose the Range of Values method, enter the range of values of interest for the selected indicator in the text boxes.

For reference, the tool will display minimum and maximum values of the selected indicator below the boxes.

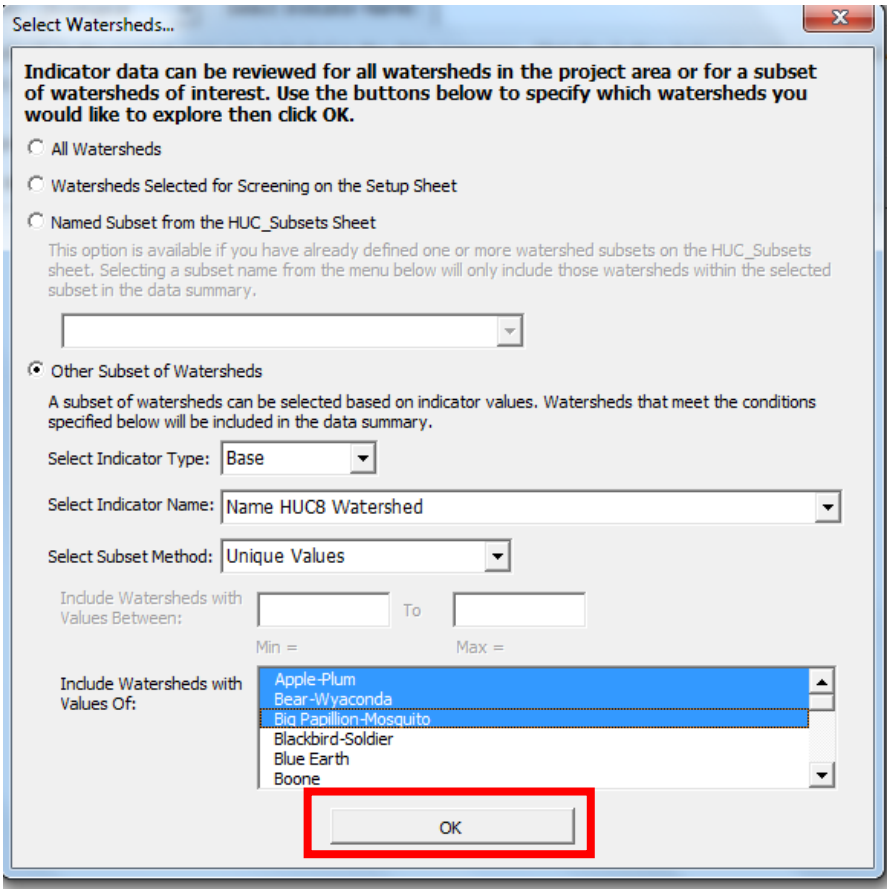


If you choose the Unique Values method, a list of unique indicator values will automatically display in the selection box below the ***Select Subset Method*** drop-down menu.

Choose one or more of the unique indicator values by highlighting the values in the selection box.



After choosing an option for selecting watersheds to include in the indicator data summary, click the ***OK*** button at the bottom of the ***Select Watersheds*** menu.

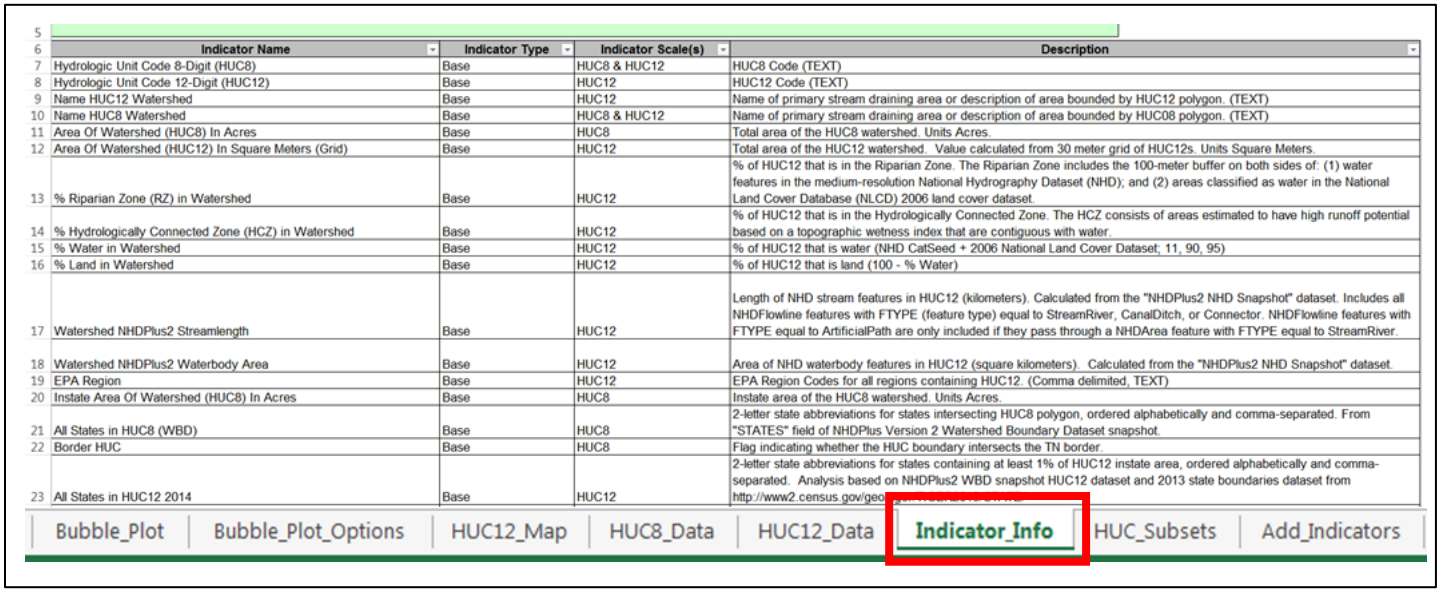


The ***Explore Indicator Data*** menu will now only display indicator summary statistics, histograms, correlations, and other statistical properties for the group of watersheds specified on the ***Select Watersheds*** menu. You can adjust your watershed selection at any time by clicking the ***CHANGE WATERSHED SELECTION*** button on the ***Explore Indicator Data*** menu.

11. Indicator Info Worksheet

11.1. Overview

The ***Indicator Info*** worksheet contains a table of indicator information, including the category of each indicator (Base, Ecological, Stressor, or Social), the watershed scale(s) that each indicator is quantified at, and a description of what watershed characteristic the indicator measures.



Indicator Name	Indicator Type	Indicator Scale(s)	Description
Hydrologic Unit Code 8-Digit (HUC8)	Base	HUC8 & HUC12	HUC8 Code (TEXT)
Hydrologic Unit Code 12-Digit (HUC12)	Base	HUC12	HUC12 Code (TEXT)
Name HUC12 Watershed	Base	HUC12	Name of primary stream draining area or description of area bounded by HUC12 polygon. (TEXT)
Name HUC8 Watershed	Base	HUC8 & HUC12	Name of primary stream draining area or description of area bounded by HUC08 polygon. (TEXT)
Area Of Watershed (HUC8) In Acres	Base	HUC8	Total area of the HUC8 watershed. Units Acres.
Area Of Watershed (HUC12) In Square Meters (Grid)	Base	HUC12	Total area of the HUC12 watershed. Value calculated from 30 meter grid of HUC12s. Units Square Meters.
% Riparian Zone (RZ) in Watershed	Base	HUC12	% of HUC12 that is in the Riparian Zone. The Riparian Zone includes the 100-meter buffer on both sides of: (1) water features in the medium-resolution National Hydrography Dataset (NHD); and (2) areas classified as water in the National Land Cover Database (NLCD) 2006 land cover dataset.
% Hydrologically Connected Zone (HCZ) in Watershed	Base	HUC12	% of HUC12 that is in the Hydrologically Connected Zone. The HCZ consists of areas estimated to have high runoff potential based on a topographic wetness index that are contiguous with water.
% Water in Watershed	Base	HUC12	% of HUC12 that is water (NHD CatSeed + 2006 National Land Cover Dataset; 11, 90, 95)
% Land in Watershed	Base	HUC12	% of HUC12 that is land (100 - % Water)
Watershed NHDPlus2 Streamlength	Base	HUC12	Length of NHD stream features in HUC12 (kilometers). Calculated from the "NHDPlus2 NHD Snapshot" dataset. Includes all NHDFlowline features with FTYPE (feature type) equal to StreamRiver, CanalDitch, or Connector. NHDFlowline features with FTYPE equal to ArtificialPath are only included if they pass through a NHDArea feature with FTYPE equal to StreamRiver.
Watershed NHDPlus2 Waterbody Area	Base	HUC12	Area of NHD waterbody features in HUC12 (square kilometers). Calculated from the "NHDPlus2 NHD Snapshot" dataset.
EPA Region	Base	HUC12	EPA Region Codes for all regions containing HUC12. (Comma delimited, TEXT)
Instate Area Of Watershed (HUC8) In Acres	Base	HUC8	Instate area of the HUC8 watershed. Units Acres.
All States in HUC8 (WBD)	Base	HUC8	2-letter state abbreviations for states intersecting HUC8 polygon, ordered alphabetically and comma-separated. From "STATES" field of NHDPlus Version 2 Watershed Boundary Dataset snapshot.
Border HUC	Base	HUC8	Flag indicating whether the HUC boundary intersects the TN border.
All States in HUC12 2014	Base	HUC12	2-letter state abbreviations for states containing at least 1% of HUC12 instate area, ordered alphabetically and comma-separated. Analysis based on NHDPlus2 WBD snapshot HUC12 dataset and 2013 state boundaries dataset from http://www2.census.gov/geo

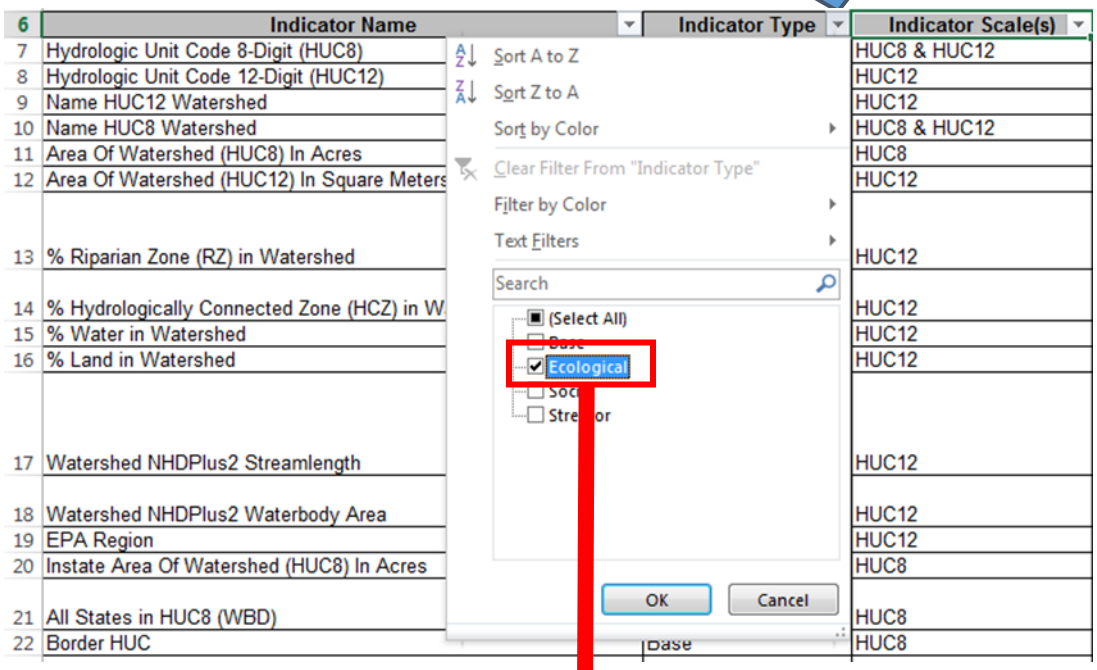
The following sections describe how to:

- **Filter the Indicator Info Table**
- **Add Indicator Info**

11.2. Filter Table

The indicator information table can be filtered to view information for a specific indicator type (Base, Ecological, Stressor, or Social) or for a specific watershed scale by clicking the drop-down arrow next to the column name and selecting a filter option.

In the example below, the table is filtered to only display information for Ecological indicators.



6	Indicator Name	Indicator Type	Indicator Scale(s)
7	Hydrologic Unit Code 8-Digit (HUC8)		HUC8 & HUC12
8	Hydrologic Unit Code 12-Digit (HUC12)		HUC12
9	Name HUC12 Watershed		HUC12
10	Name HUC8 Watershed		HUC8 & HUC12
11	Area Of Watershed (HUC8) In Acres		HUC8
12	Area Of Watershed (HUC12) In Square Meters		HUC12
13	% Riparian Zone (RZ) in Watershed		HUC12
14	% Hydrologically Connected Zone (HCZ) in W		HUC12
15	% Water in Watershed		HUC12
16	% Land in Watershed		HUC12
17	Watershed NHDPlus2 Streamlength		HUC12
18	Watershed NHDPlus2 Waterbody Area		HUC12
19	EPA Region		HUC12
20	Instate Area Of Watershed (HUC8) In Acres		HUC8
21	All States in HUC8 (WBD)		HUC8
22	Border HUC		HUC8

6	Indicator Name	Indicator Type	Indicator Scale(s)
33	% Deciduous Forest (2006) in Watershed	Ecological	HUC12
34	% Evergreen Forest (2006) in Watershed	Ecological	HUC12
35	% Mixed Forest (2006) in Watershed	Ecological	HUC12
36	% Forest (2006) in Watershed	Ecological	HUC12
37	% Forest (2006) in HCZ	Ecological	HUC12
38	% Forest (2006) in Riparian Zone	Ecological	HUC12
39	% Shrub/Scrub (2006) in Watershed	Ecological	HUC12
40	% Shrub/Scrub (2006) in HCZ	Ecological	HUC12
41	% Shrub/Scrub (2006) in Riparian Zone	Ecological	HUC12
42	% Woody Vegetation (2006) in Watershed	Ecological	HUC12

11.3. Add Indicator Info

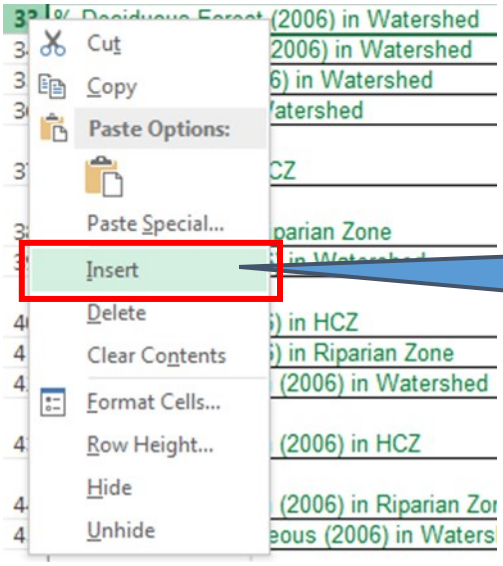
The ***Indicator Info*** worksheet can be updated by users to store information for new indicators added to the ***Indicator Data*** worksheet(s).

To add indicator information for a new indicator, first insert a row for the new indicator.

Right-click the margin of the ***Indicator Info*** worksheet (where row numbers are displayed) where you would like to insert the new row.

For example, if you would like to add information for a new Base indicator, right-click the margin of the first Ecological indicator row.

	Indicator Name	Indicator Type
30	Tribal Lands in HUC12 Flag	Base
31	% Tribal Lands in HUC12	Base
32	HUC12 Adjacent to Tribal HUC12s	Base
33	% Deciduous Forest (2006) in Watershed	Ecological
34	% Evergreen Forest (2006) in Watershed	Ecological
35	% Mixed Forest (2006) in Watershed	Ecological
36	% Forest (2006) in Watershed	Ecological
37	% Forest (2006) in HCZ	Ecological



After right-clicking, select "Insert" from the Excel popup menu.

A new row will be inserted into the indicator information table.

Type the name of the new indicator in the Indicator Name column.

	Indicator Name	Indicator Type
32	HUC12 Adjacent to Tribal HUC12s	Base
33	New Base Indicator	
34	% Deciduous Forest (2006) in Watershed	Ecological
35	% Evergreen Forest (2006) in Watershed	Ecological
36	% Mixed Forest (2006) in Watershed	Ecological

Type the category of the new indicator (Base, Ecological, Stressor, or Social) in the Indicator Type column.

6	Indicator Name	Indicator Type
32	HUC12 Adjacent to Tribal HUC12s	Base
33	New Base Indicator	Base
34	% Deciduous Forest (2006) in Watershed	Ecological
35	% Evergreen Forest (2006) in Watershed	Ecological
36	% Mixed Forest (2006) in Watershed	Ecological

Type the watershed scale of the new indicator in the Indicator Scale(s) column. For example, if the indicator is calculated for HUC12s in the Project Area then type "HUC12".

6	Indicator Name	Indicator Type	Indicator Scale(s)
32	HUC12 Adjacent to Tribal HUC12s	Base	HUC12
33	New Base Indicator	Base	HUC12
34	% Deciduous Forest (2006) in Watershed	Ecological	HUC12
35	% Evergreen Forest (2006) in Watershed	Ecological	HUC12

Type a description of the new indicator in the Indicator Description column.

6	Indicator Name	Indicator Type	Indicator Scale(s)	Description
32	HUC12 Adjacent to Tribal HUC12s	Base	HUC12	Reservation Trust Lands, and Census O
33	New Base Indicator	Base	HUC12	Example new Base indicator.
34	% Deciduous Forest (2006) in Watershed	Ecological	HUC12	% of HUC12 with deciduous forest cover
35	% Evergreen Forest (2006) in Watershed	Ecological	HUC12	% of HUC12 with evergreen forest cover

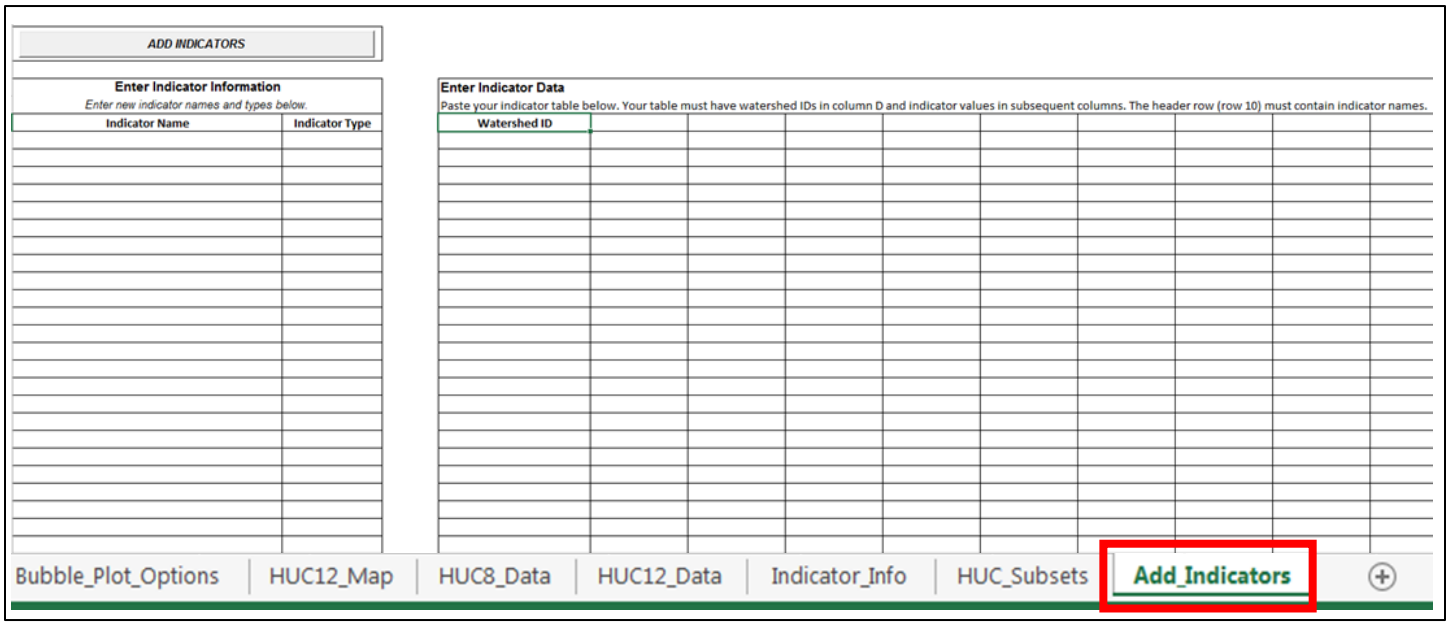
Repeat these steps for each new indicator added to the ***Indicator Data*** worksheet.

12. Add Indicators Worksheet

12.1. Overview

New indicators can be added to the RPS Tool from the ***Add Indicators*** worksheet for use in a screening run. Note that the RPS Tool does not include features for calculating new indicators. New indicators must be calculated outside of the RPS Tool and, once calculated, can be added at any time. New indicators are inserted into new columns on the ***Indicator Data*** worksheet and will display in the indicator menus on the ***Setup***, ***Bubble Plot Options***, and ***Map*** worksheets.

If your RPS Tool file is setup to screen multiple watersheds scales then new indicators must be added separately for each watershed scale. For example, if you would like to add new HUC8 indicators and new HUC12 indicators, you must add the HUC8 indicators in a separate step from the HUC12 indicators. Up to 50 indicators can be added at a time for each scale.



The **Add Indicators** worksheet is organized into two sections:

- In the **Enter Indicator Information** section you will enter a list of new indicator names and types (Ecological, Stressor, Social, or Base).
- In the **Enter Indicator Data** section you will paste in a table of indicator values for watersheds in the Study Area.

The following sections provide step-by-step instructions for how to:

- ***Enter New Indicator Information***
- ***Enter New Indicator Data***
- ***Use the Add Indicators Button***

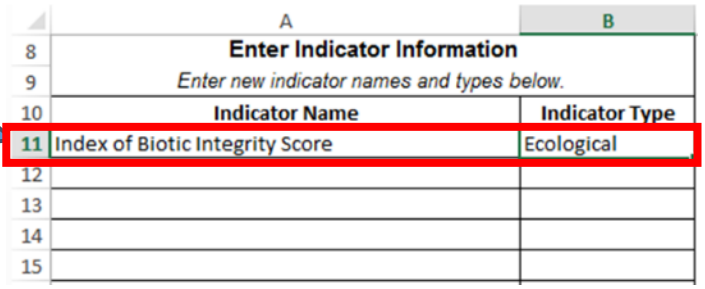
12.2. Enter New Indicator Information

In the **Enter Indicator Information** section of the ***Add Indicators*** worksheet, you will enter the name and type of each new indicator. This information is used to update the indicator menus on the ***Setup***, ***Bubble Plot Options***, and ***Map*** worksheets.

Enter New Indicator Information Option 1 – Type New Indicator Names and Types

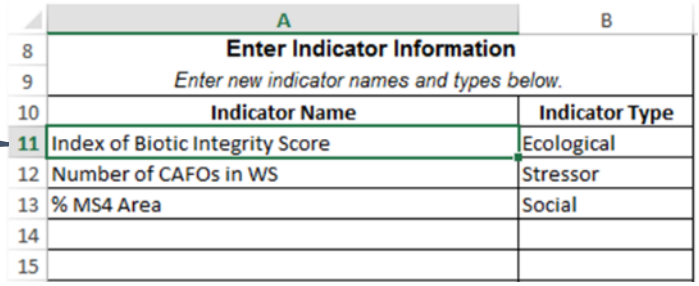
In the **Enter Indicator Information** section, select cell A11 and type the name of the first new indicator.

Then enter the new indicator type in cell B11. Indicator type must be Ecological, Stressor, Social, or Base.



	A	B
8	**Enter Indicator Information**	
9	*Enter new indicator names and types below.*	
10	**Indicator Name**	**Indicator Type**
11	Index of Biotic Integrity Score	Ecological
12		
13		
14		
15		

Repeat until each new indicator name and type has been added.

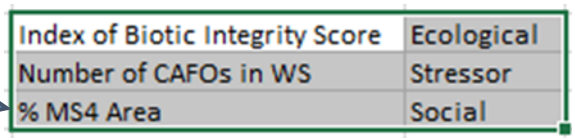


	A	B
8	**Enter Indicator Information**	
9	*Enter new indicator names and types below.*	
10	**Indicator Name**	**Indicator Type**
11	Index of Biotic Integrity Score	Ecological
12	Number of CAFOs in WS	Stressor
13	% MS4 Area	Social
14		
15		

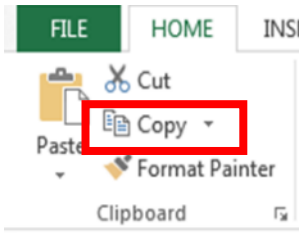
Enter New Indicator Information Option 2 – Copy and Paste New Indicator Names and Types

To use this option you must already have a pre-existing list of new indicator names and types stored in a separate worksheet. The pre-existing indicator list must be formatted with one indicator per row with the indicator name in the first column and indicator type in the second column.

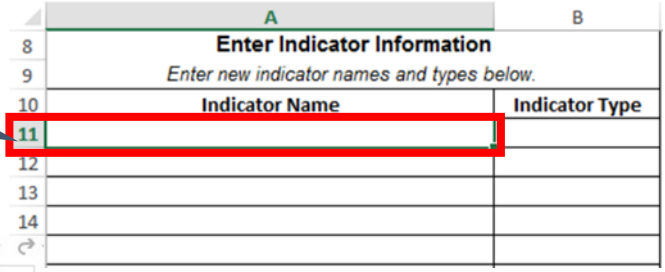
Open the worksheet with the pre-existing indicator list. Select the indicator names and types and click "Copy" on the Excel menu.



Index of Biotic Integrity Score	Ecological
Number of CAFOs in WS	Stressor
% MS4 Area	Social

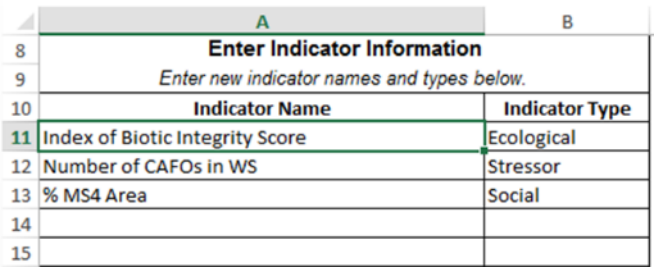


Go back to the ***Add Indicators*** worksheet and set the cursor to cell A11 in the **Enter Indicator Information** section.



	A	B
8	**Enter Indicator Information**	
9	*Enter new indicator names and types below.*	
10	**Indicator Name**	**Indicator Type**
11		
12		
13		
14		

Select "Paste Values" from the Excel menu to paste the new indicator names and types into the **Enter Indicators Information** section.



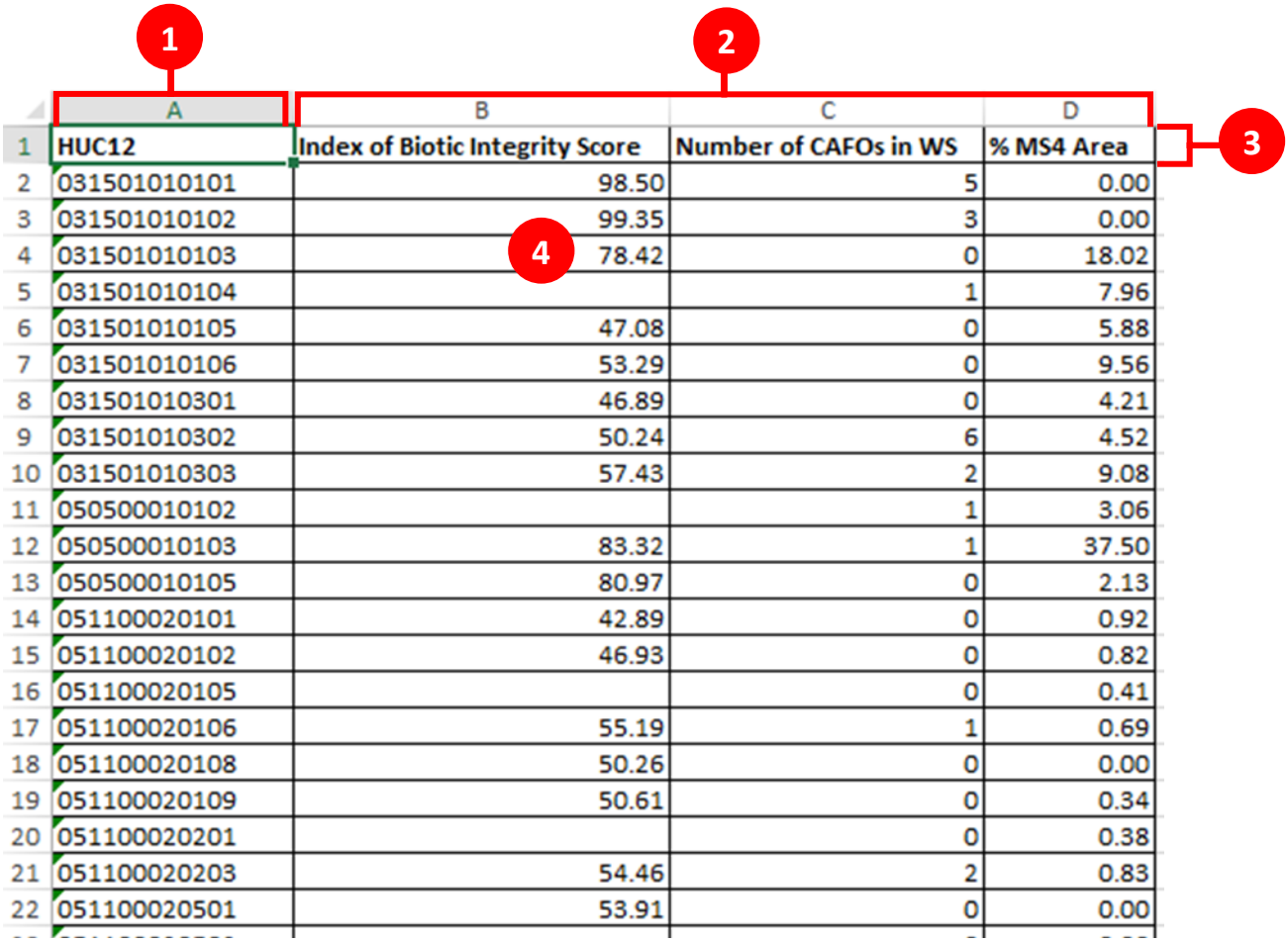
	A	B
8	**Enter Indicator Information**	
9	*Enter new indicator names and types below.*	
10	**Indicator Name**	**Indicator Type**
11	Index of Biotic Integrity Score	Ecological
12	Number of CAFOs in WS	Stressor
13	% MS4 Area	Social
14		
15		

12.3. Enter New Indicator Data

In the **Enter Indicator Data** section of the ***Add Indicators*** worksheet, you will copy and paste a table of new indicator values for watersheds in the Study Area. These values are used to update the indicator data table in the ***Indicator Data*** worksheet.

To add new indicators, you must first prepare a table of new indicator values in a separate spreadsheet file. An example indicator table is displayed below. Note the following characteristics of the table:

1. The table must have watershed IDs entered in the first column. Your table does not need to have a row for every watershed in the study area. Any watersheds that are missing from your table will have blank cells for the new indicators when added to the ***Indicator Data*** worksheet. Your table can include extra watersheds that are not in the study area; however, those watersheds will be skipped when updating the ***Indicator Data*** worksheet. Watersheds can be sorted in any order in your table.
2. The table must have indicator values in subsequent columns.
3. The table must have a header row with indicator names. Names of new indicators cannot match an existing indicator name already in the tool. We recommend limiting indicator names to 50 characters or less to properly display in tool menus.
4. Values of new ecological, stressor, and social indicators in your table should be numeric or blank. Non-numeric values will be skipped when updating the ***Indicator Data*** worksheet. Non-numeric values are allowed for base indicators.

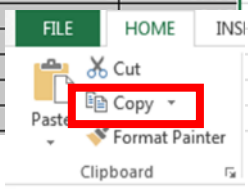


	A	B	C	D
1	HUC12	Index of Biotic Integrity Score	Number of CAFOs in WS	% MS4 Area
2	031501010101	98.50	5	0.00
3	031501010102	99.35	3	0.00
4	031501010103	78.42	0	18.02
5	031501010104		1	7.96
6	031501010105	47.08	0	5.88
7	031501010106	53.29	0	9.56
8	031501010301	46.89	0	4.21
9	031501010302	50.24	6	4.52
10	031501010303	57.43	2	9.08
11	050500010102		1	3.06
12	050500010103	83.32	1	37.50
13	050500010105	80.97	0	2.13
14	051100020101	42.89	0	0.92
15	051100020102	46.93	0	0.82
16	051100020105		0	0.41
17	051100020106	55.19	1	0.69
18	051100020108	50.26	0	0.00
19	051100020109	50.61	0	0.34
20	051100020201		0	0.38
21	051100020203	54.46	2	0.83
22	051100020501	53.91	0	0.00

After you have prepared your indicator data table in a separate spreadsheet file, you will copy and paste the table into the **Enter Indicator Data** section.

Open the spreadsheet file containing your pre-calculated new indicators. Select the cells containing watershed IDs and new indicator values in that file (including the header row) and click "Copy" on the Excel menu.

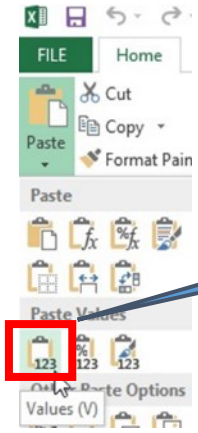
	A	B	C	D
1	HUC12	Index of Biotic Integrity Score	Number of CAFOs in WS	% MS4 Area
2	031501010101	98.50	5	0.00
3	031501010102	99.35	3	0.00
4	031501010103	78.42	0	18.02
5	031501010104		1	7.96
6	031501010105	47.08	0	5.88
7	031501010106	53.29	0	9.56
8	031501010301	46.89	0	4.21
	031501010302	50.24	6	4.52
	031501010303	57.43	2	9.08
11	050500010102		1	3.06
12	050500010103	83.32	1	37.50
13	050500010105	80.97		
14	051100020101	42.89		
15	051100020102	46.93		
16	051100020105			
17	051100020106	55.19		



Go back to the ***Add Indicators*** worksheet and set the cursor to cell D10.

Note that by default cell D10 contains the text "Watershed ID". This text is included as a placeholder and should be overwritten by your indicator data table.

	D	E	F
8	**Enter Indicator Data**		
9	Paste your indicator table below. Your table must have watershed IDs		
10	Watershed ID		
11			
12			
13			
14			



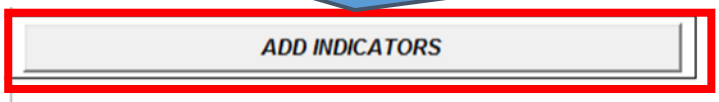
Select "Paste Values" from the Excel menu to paste the indicator data table into the ***Add Indicators*** worksheet.

	D	E	F	G
8	**Enter Indicator Data**			
9	Paste your indicator table below. Your table must have watershed IDs in column D and indicator valu			
10	HUC12	Index of Biotic Integrity Score	Number of CAFOs	% MS4 Area
11	031501010101	98.49662401	5	0
12	031501010102	99.35390734	3	0
13	031501010103	78.42011275	0	18.02
14	031501010104		1	7.96026228
15	031501010105	47.0843994	0	5.880882549
16	031501010106	53.28558028	0	9.559236623
17	031501010301	46.89142972	0	4.214230407
18	031501010302	50.2423724	6	4.519161244
19	031501010303	57.42810532	2	9.08079115
20	050500010102		1	3.058646903
21	050500010103	83.31772027	1	37.5
22	050500010105	80.97092932	0	2.125675012
23	051100020101	42.88632856	0	0.921042273
24	051100020102	46.93380457	0	0.816190158
25	051100020105		0	0.408689922

12.4. Add Indicators Button

After entering new indicator names, types, and values use the ***ADD INDICATORS*** button to update the other tool worksheets with new indicators.

Clicking the ***ADD INDICATORS*** button from the ***Add Indicators*** worksheet will display a message box listing the requirements for adding new indicators. Review that the requirements are met and click ***YES*** to continue.



Enter Indicator Information

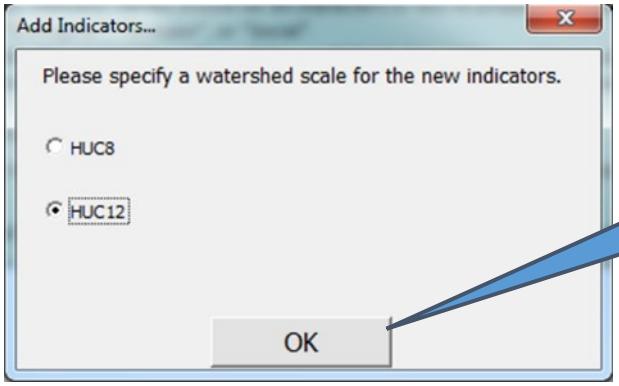
Enter new indicator names and types below.

Indicator Name	Indicator Type
Index of Biotic Integrity Score	Ecological
Number of CAFOs in WS	Stressor
% MS4 Area	Social

Enter Indicator Data

Paste your indicator table below. Your table must have wate

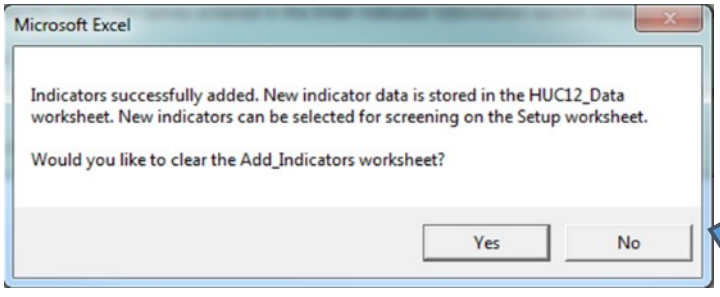
HUC12	Index of Biotic Integrity Score
031501010101	98.49662401
031501010102	99.35390734
031501010103	78.42011275
031501010104	



If your tool file includes multiple watershed scales, a message box will prompt you to specify which scale the new indicators apply to. Select the option button for the appropriate watershed scale and click ***OK***.

The tool will then check to verify that indicator names, types, and values have been correctly entered on the ***Add Indicators*** worksheet. The tool will also look for potential issues with new indicator data.

If no data issues are found, the new indicators will be automatically added as new columns to the ***Indicator Data*** worksheet and will be added to menus on the ***Setup***, ***Bubble Plot Options***, and ***Map*** worksheets. If issues are identified, an error message will appear.



A message box will appear to notify you that your new indicators were successfully added to the tool file.

The message box will prompt you to clear new indicator names, types, and values from the ***Add Indicators*** worksheet. If you would like to automatically clear the ***Add Indicators*** worksheet click ***YES***. Or click ***NO*** to clear manually.

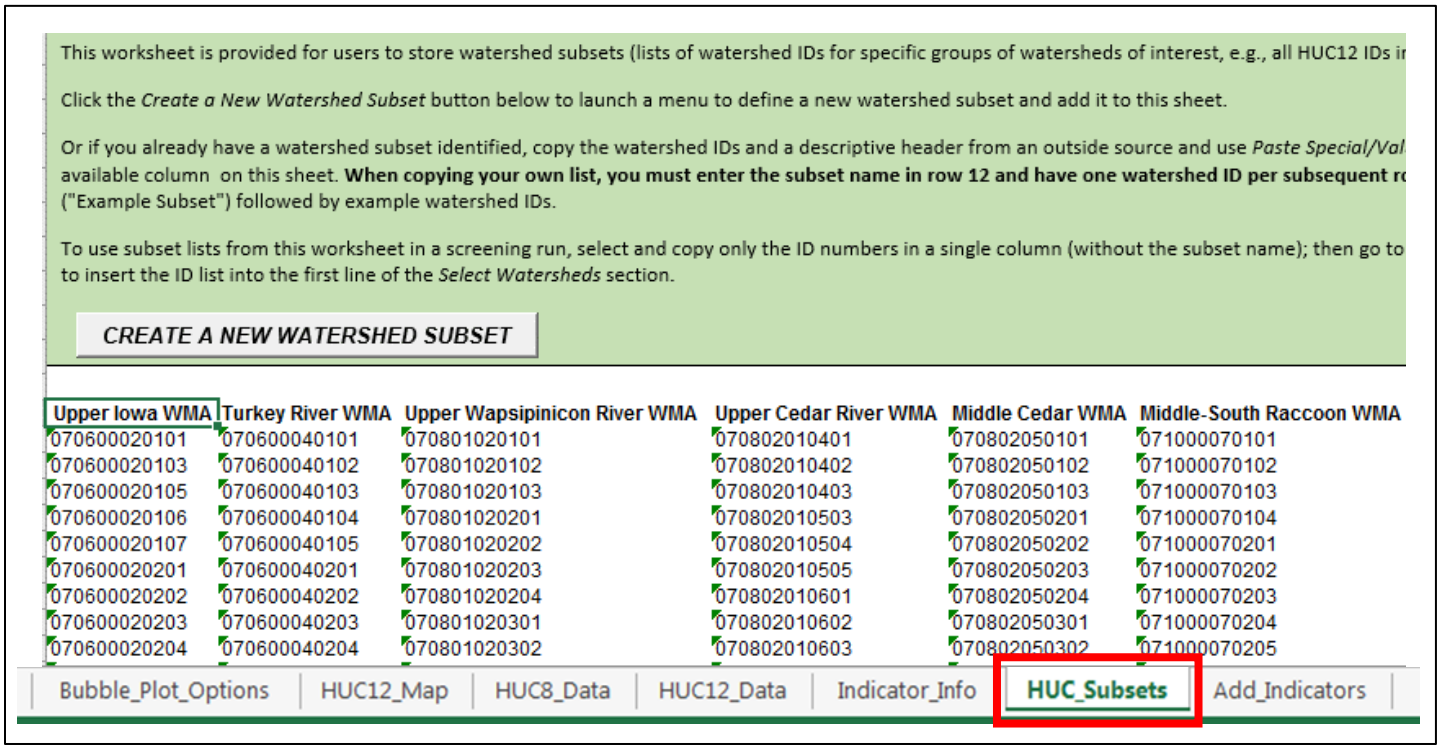
It is strongly recommended that you enter information for the new indicators (name, type, scale, and description) to the ***Indicator Info*** worksheet. Refer to the ***Indicator Info*** worksheet section of this guide for instructions on inserting information for new indicators.

13. HUC Subsets Worksheet

13.1. Overview

When setting up an RPS screening, you'll often want to focus on just a subset of watersheds of interest rather than all watersheds in the Project Area. The ***HUC Subsets*** worksheet provides a space to identify and store groups of watersheds that fit your selection criteria for use in a future screening. For example, within the HUC Subsets tab you can generate a list of HUC12 watersheds that are located in a particular HUC8 of interest or that have a certain land cover profile.

Watershed subsets include only a portion of all watersheds in the Project Area. A watershed subset "list" is comprised of the watershed IDs for the subset. Watershed subset lists are stored on the ***HUC Subsets*** worksheet with watershed ID per row. The lists can be copied and pasted into the **Select Watersheds** section of the ***Setup*** worksheet for screening. Watershed subsets are defined automatically with the ***CREATE A NEW WATERSHED SUBSET*** button or entered manually.



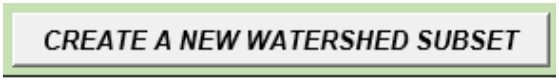
The following sections provide step-by-step instructions for how to:

- ***Use the Create a New Watershed Subset Button***
- ***Manually Add a Subset List***

13.2. Create a New Watershed Subset Button

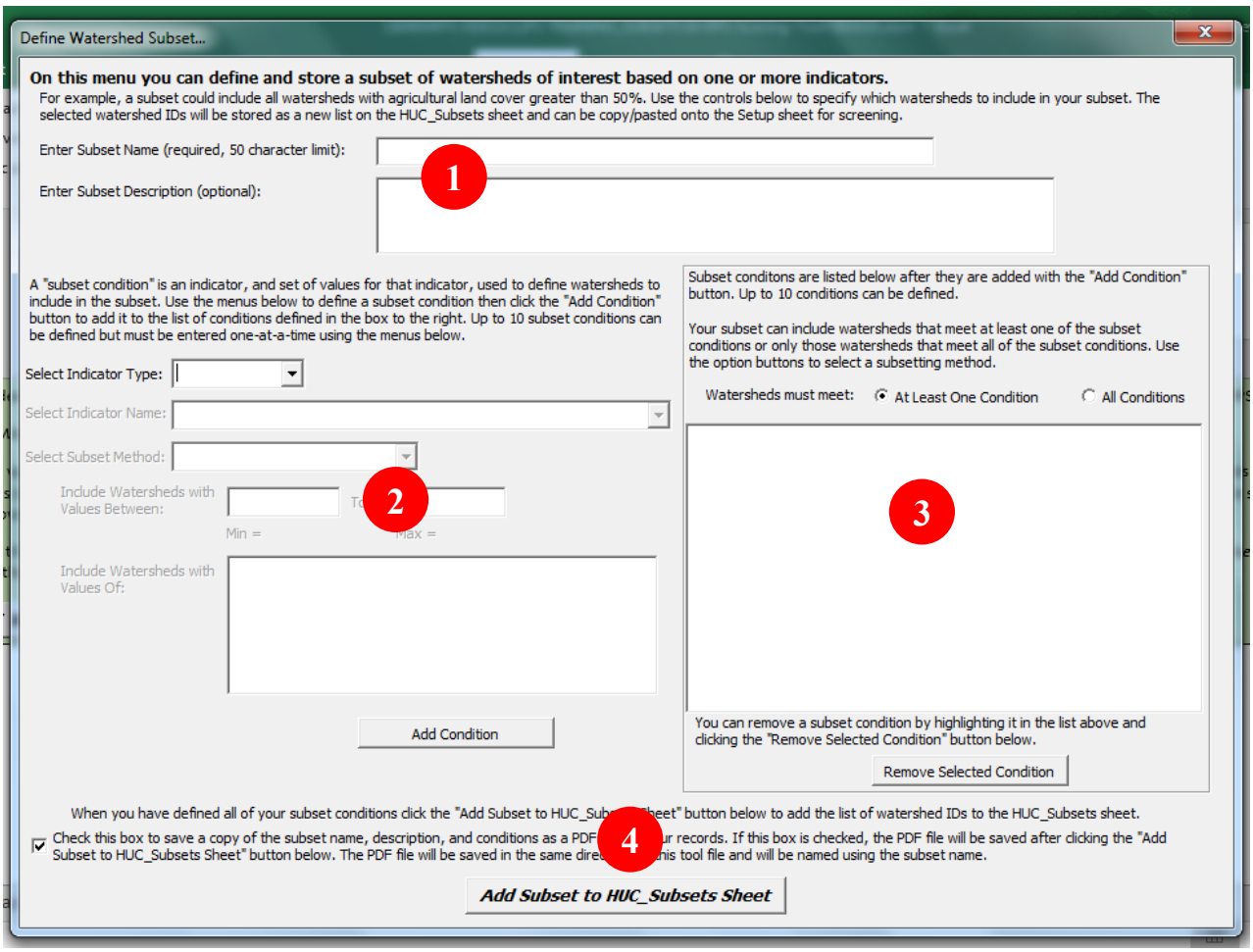
The RPS Tool includes an interface for defining a watershed subset. The interface can be accessed by clicking the ***CREATE A NEW WATERSHED SUBSET*** button on the ***HUC Subsets*** worksheet.

Before clicking the button, you should already have in mind a set of criteria or conditions for defining your watershed subset.



The ***Define Watershed Subset*** interface will now display. The interface contains four components:

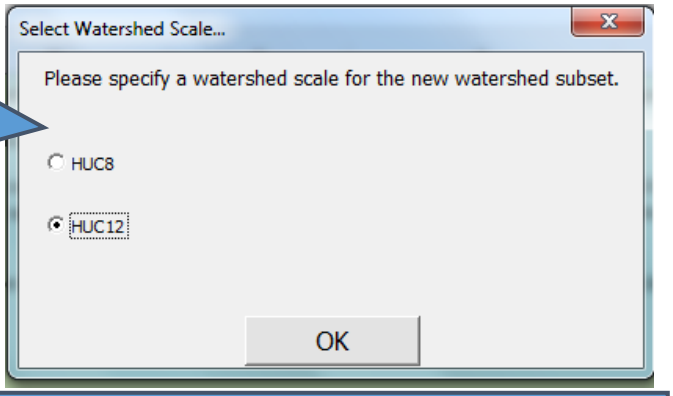
1. Text boxes for entering a subset name and description.
2. Drop-down menus and boxes for defining a subset condition. A "subset condition" is an indicator, and a set of values for that indicator, that is used to select the watersheds included in the subset (at least 50% cropland cover in the watershed, for example). Up to 10 conditions can be defined for a given subset.
3. A list of subset conditions that have been entered for the current subset with buttons for removing a condition and defining how the conditions are used.
4. The ***ADD SUBSET TO HUC_SUBSETS*** sheet button with an optional check box to save a record of the subset name, description, and conditions in PDF format.



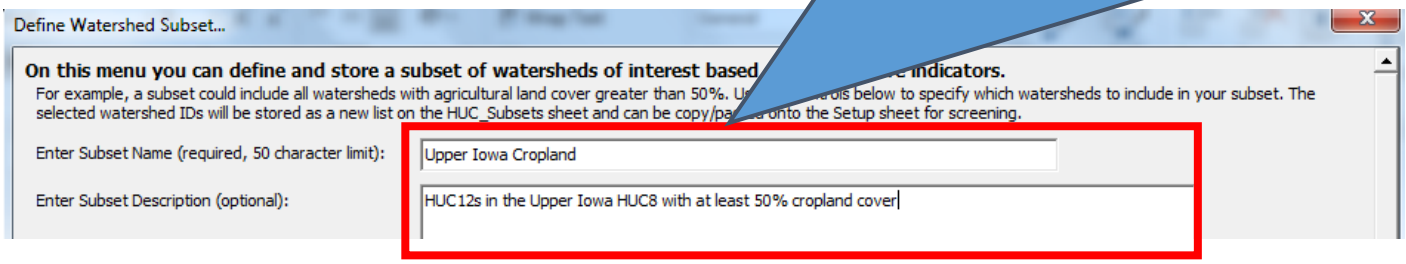
If your tool file includes multiple watershed scales, then a popup box will display after you click the ***CREATE A NEW WATERSHED SUBSET*** button.

The popup box will contain a list of watershed scales and ask you to specify the scale to use for defining your subset.

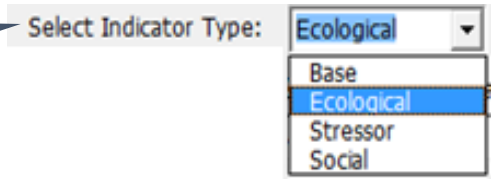
A subset can only contain watersheds from a single scale. Choose your desired scale and click OK.



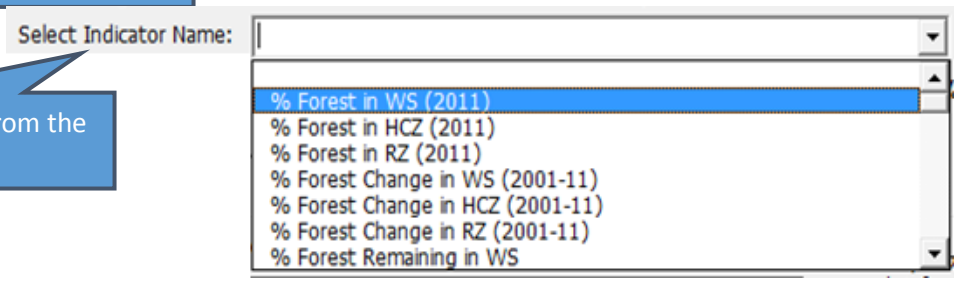
On the ***Define Watershed Subset*** menu, type a name for your subset in the ***Enter Subset Name*** text box and an optional description in the ***Enter Subset Description*** text box.

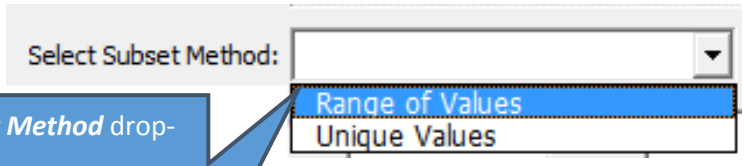


You can now begin to define subset conditions. First select an indicator type (Base, Ecological, Stressor, or Social) for your subset condition from the ***Select Indicator Type*** drop-down menu.



Then choose the indicator name from the ***Select Indicator Name*** menu.





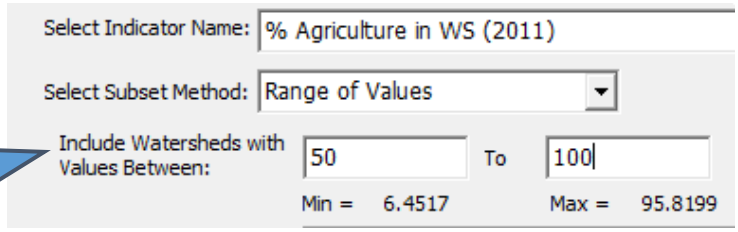
Next, choose a subset method from the ***Select Subset Method*** drop-down menu.

The Range of Values option allows you to specify minimum and maximum values of interest for the selected indicator. Watersheds with indicator values in the specified range will be included in the subset.

The Unique Values option allows you to select one or more unique values of interest for the selected indicator. Watersheds with the specified values will be included in the subset. The unique values option will typically only be used for categorical indicators.

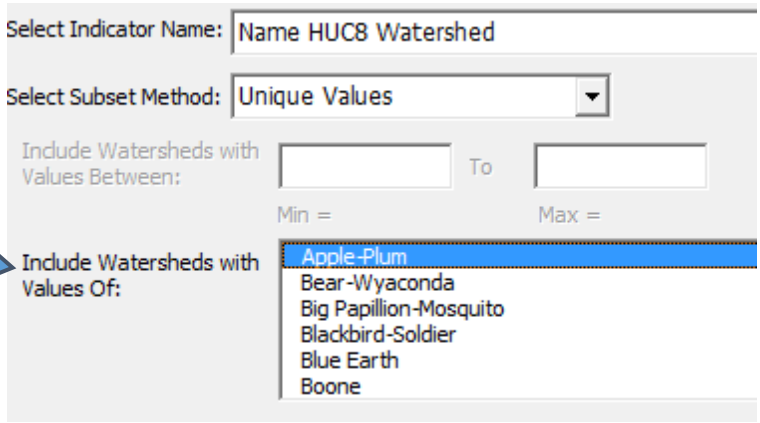
If you choose the Range of Values method, enter the range of values of interest for the selected indicator in the text boxes.

For reference, the tool will display minimum and maximum values of the selected indicator below the boxes.



If you choose the Unique Values method, a list of unique indicator values will automatically display in the selection box below the ***Select Subset Method*** drop-down menu.

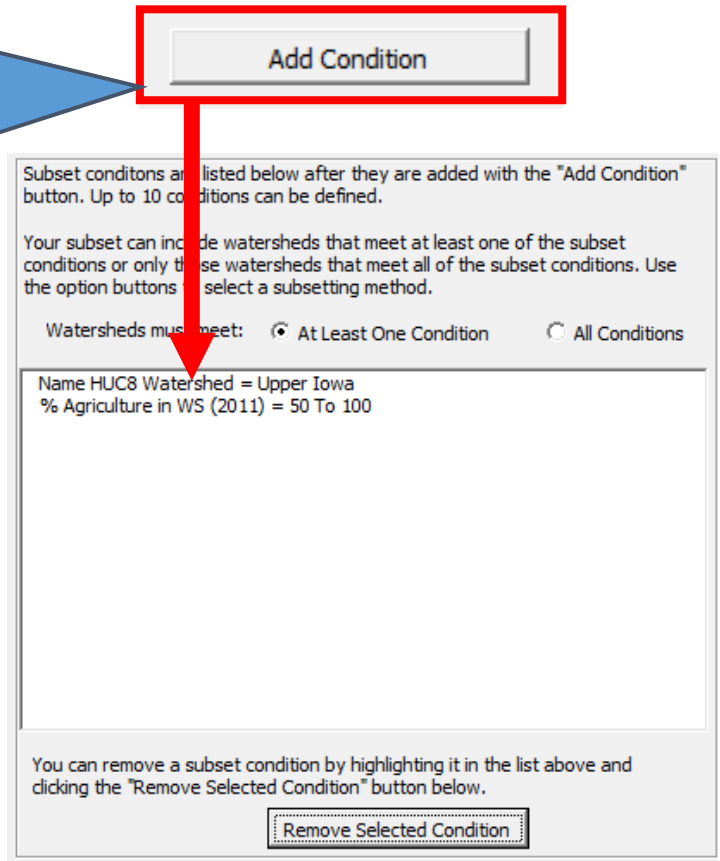
Choose one or more of the unique indicator values by highlighting the values in the selection box.



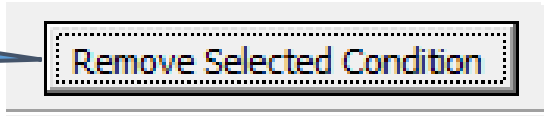
After you have selected an indicator type, name, subset method, and indicator values for your subset condition, click the ***ADD CONDITION*** button.

The condition will now be added to the list of subset conditions on the right side of the interface.

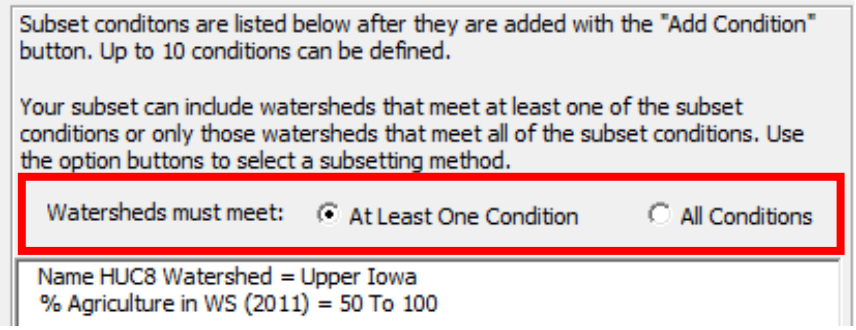
Repeat this process as needed to enter up to ten conditions for your subset.



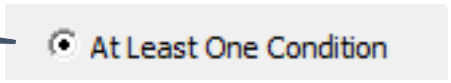
You can remove any subset condition from the list by highlighting it and clicking the ***REMOVE SELECTED CONDITION*** button.



The ***Define Watershed Subset*** interface contain two option buttons for choosing how the subset conditions will be used to select watersheds to include in your subset. The option buttons are displayed on the right side of the interface above the subset list.



If the ***AT LEAST ONE CONDITION*** button is selected, then your subset will include any watershed that meets at least one condition in the subset condition list.

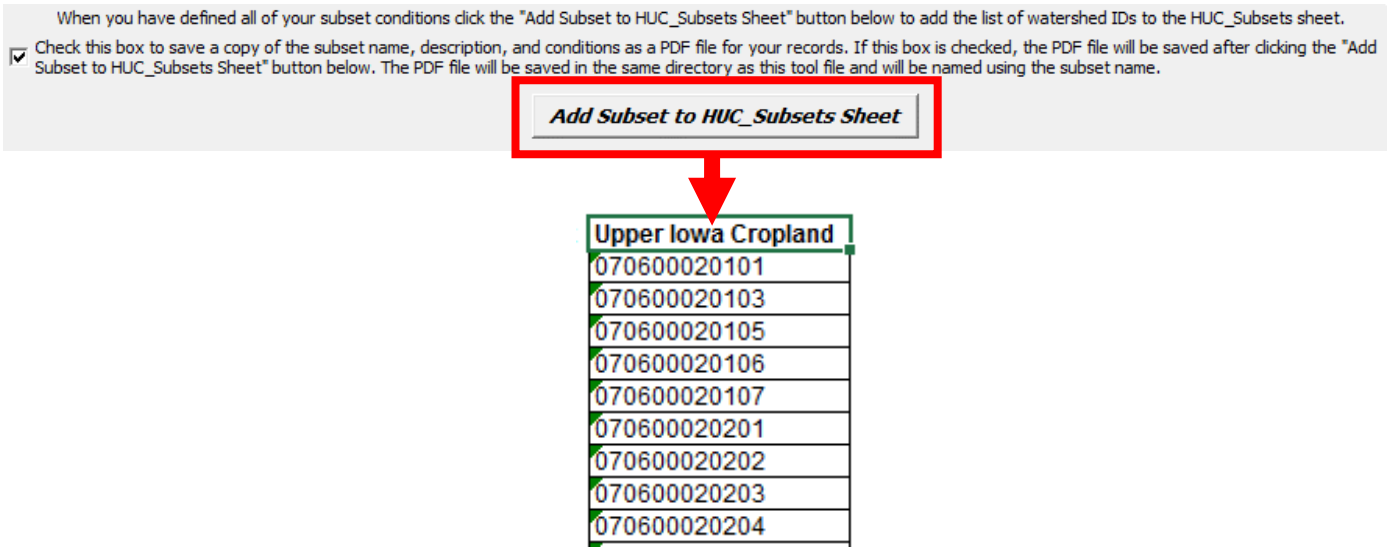


If the ***ALL CONDITIONS*** button is selected, then your subset will only include watersheds that meet all of the conditions in the subset condition list.

After defining your subset conditions and selecting an option for applying the conditions (i.e., At Least One Condition versus All Conditions), you are ready to add the watershed subset to your tool file with the ***ADD SUBSET TO HUC_SUBSETS SHEET*** button.

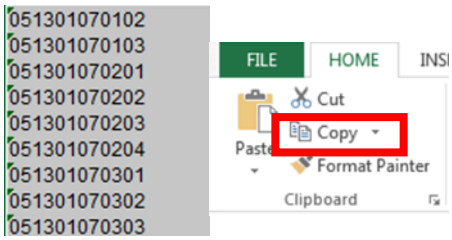
By default, a record of the subset name, description, and conditions are saved in a PDF file when the ***ADD SUBSET TO HUC_SUBSETS SHEET*** button is clicked. The PDF file is saved in the same folder as your tool file using the subset name in the PDF filename. If you would like to create your subset without saving a record of the subset settings, uncheck the box above the ***ADD SUBSET TO HUC_SUBSETS SHEET*** button.

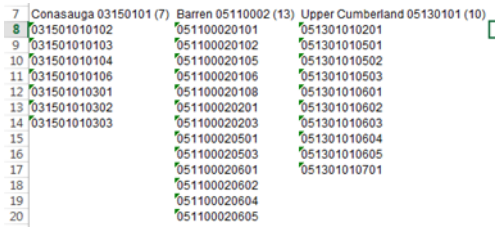
After clicking the ***ADD SUBSET TO HUC_SUBSETS SHEET*** button, the tool will automatically identify watersheds that satisfy your subset conditions. The subset name and list of watershed IDs in the subset will be added to the first available column in the ***HUC Subsets*** worksheet for use in a screening run.



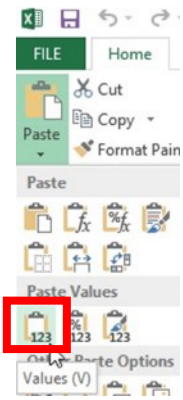
13.3. Manually Add a Subset List

To add a new subset list to the ***HUC Subsets*** worksheet, select the pre-existing list of watershed IDs from a separate worksheet (formatted with one ID per row) and click "Copy" on the Excel menu.





Set the cursor to row 8 in the first open column on the ***HUC Subsets*** worksheet.

Select "Paste Values" from the Excel menu to paste the watershed IDs into the ***HUC Subsets*** worksheet.

If desired, type a descriptive header for the subset list in row 7. Save the tool file. The new subset list is now stored for future use in a screening run.