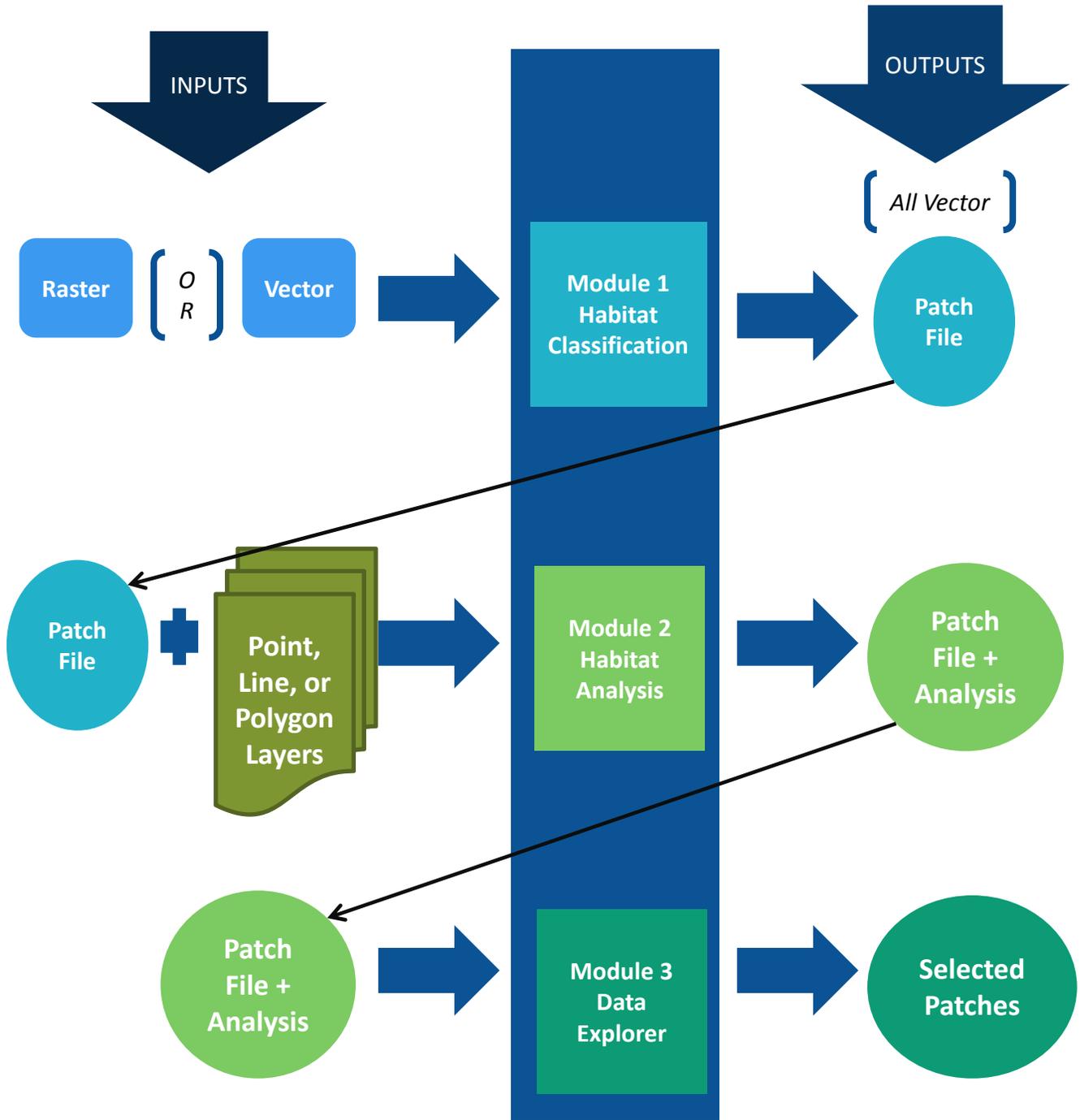


# Quick Reference for the Habitat Priority Planner Version 3.0

*Quick Reference – HPP Process Schematic*

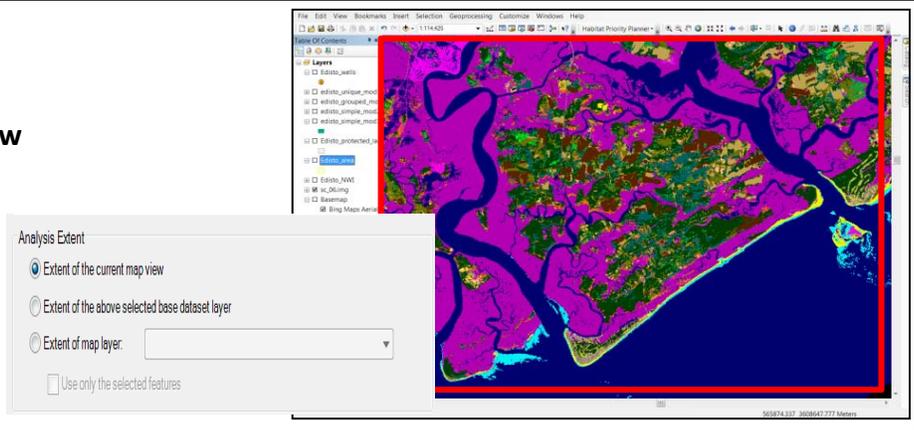


## Quick Reference – Module 1, Analysis Extent

### Current map extent

**Extent = Area in current map view**

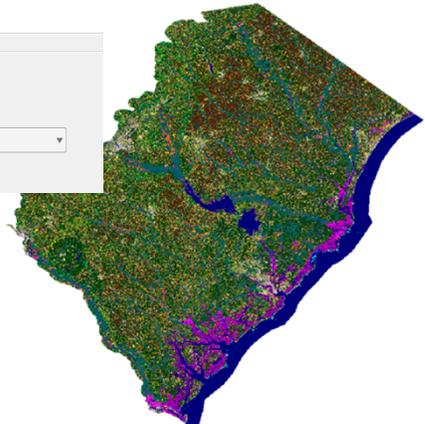
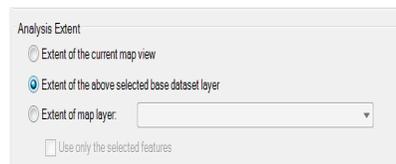
- May be hard to duplicate; use bookmarks to preserve extent



### Same as base dataset

**Extent = Entire base dataset layer**

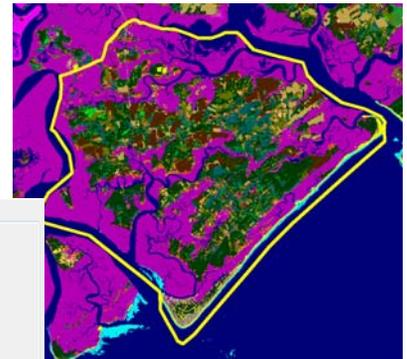
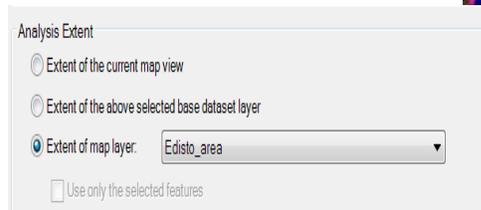
- May be large area (for example, C-CAP is entire coastal extent of state)
- May be appropriate for small, high-resolution areas
- Larger geographic areas take more time to run



### Map layer

**Extent = Clipped portion of base dataset inside a polygon**

- May not contain donuts (holes in analysis area)
- May not contain islands (areas outside main polygon)



## Quick Reference – Classify Habitats, Defining Your Classification Scheme

### Unique

- Most complex (visually and spatially)
- Preserves selected classes identical to base data
- Allows the user to leave classes out of analysis
- Performs similar to a *select by attribute*, but in a user-friendly wizard



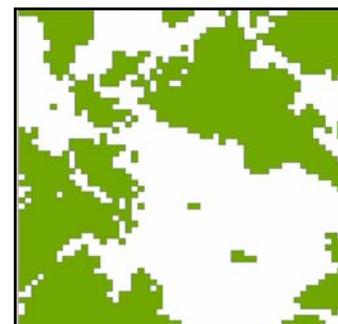
### Grouped

- Allows the user to designate functional groups (such as wetland, forest, or developed)
- Appropriate functional groups may be application specific and depend on user knowledge
- Performs *region-group* for raster inputs and a *dissolve* for vector inputs



### Simple

- Least complex
- Good for either a single class or a single group of classes
- Good for large area analysis
- Areas in white were not selected for analysis
- Reported as *habitat* in the attribute table
- Performs *region-group* for raster inputs and a *dissolve* for vector inputs



*The output from all three classification methods is a vector file (the “patch” file).*

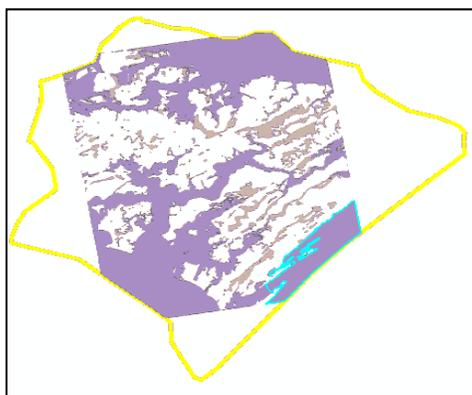
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## Quick Reference – Classify Habitats, Attribute Table Results

### HPP Module 1 Attribute Table Result Fields and their Descriptions

These values are reported for each patch that met your classification criteria.

Field Name	Definition
HPP_Area_Size	Patch area in original units.  For example, if your base dataset was in meters, the area size will be represented in square meters.
HPP_Area_Acre	Patch area in acres.
HPP_Area_Hect	Patch area in hectares.
HPP_Cls_Value	Numeric value field of the original base dataset.
HPP_Cls_Name:	Name of new description field (depends on type of classification selected).
HPP_PatchID	Unique ID field.
HPP_Is_Border_Patch	True/false value that determines whether or not a patch falls on the edge of the analysis extent (see figure).



#### Border Patch Figure

- The yellow line represents the border of your analysis extent.
- The blue outlined area is an example of a patch of interest that falls on a border (the attribute table lists *true*).
- If you have border patches, it is recommended that you increase your analysis area to obtain full statistics for those patches.

## ***Quick Reference – Module 2, Landscape Analysis***

### ***Landscape Analysis Definition***

- ❖ Landscape Analysis analyses analyze the characteristics of individual patches and their relationship to other patches of the **same** habitat type.
- ❖ Habitat Quality Analysis measures characteristics internal to each habitat patch, while Habitat Connectivity Analysis measures between habitat patches of the same type.
- ❖ All analyses are optional: Users may skip Landscape Analysis and perform a Custom Analysis only (or vice versa).
- ❖ Refer to the HPP Help Document Landscape Analysis Appendix for specific calculation parameters related to each analysis.

*Quick Reference – Module 2, Landscape Analysis*

Analysis	Ecological Importance
<b>Habitat Quality</b>	
Perimeter-to-Area Ratio	Reflects both the area and shape of a patch. This ratio is a strong predictor of both individual species presence and overall species richness. Larger ratio values denote more edge habitat and less interior habitat.
Core Area	Calculates the size of the core area, which is the area remaining after the internal buffer is applied. The core area provides information about patch shape and the amount of patch edge to internal area. A patch may have a substantial size, but no significant core area (e.g., a patch shape that is long and narrow).
Size (from Module 1)	Calculates the size of a contiguous habitat patch. Size helps determine the contribution of the patch to overall ecosystem and species health: The larger the area of continuous habitat, the better the habitat quality.
<b>Habitat Connectivity</b>	
Proximity	Assesses the quantity of like-typed habitats within a user-defined buffer distance from the patch of interest. Proximity is one measure of landscape configuration—in this case, how dispersed or clumped patches are on the landscape.
Nearest Neighbor	Answers the question: “How close is the nearest habitat of the same type as the focal patch?” The nearest neighbor is the neighbor with the least physical separation by a straight-line distance.

## ***Quick Reference – Module 2, Custom Analysis***

### ***Custom Analysis definition***

- ❖ Custom Analysis allows the user to examine relationships between habitat patches and additional site-specific data that provide more information about the area. Examples of site-specific data include nesting sites, proposed development, and hazardous waste areas.
- ❖ Custom analyses can be created using **any** information that can be represented as point, line, or polygon files within ArcGIS.
- ❖ Custom analyses help the user quantify the association between supporting data and the habitats (or sites) of interest.
- ❖ These analyses are optional.
- ❖ There is no limit to the number of custom analyses that the user may add.
- ❖ Refer to the HPP Help Document Landscape Analysis Appendix for specific calculation parameters.

***These analyses are always operationally conducted from your classified habitat patches to the point, line, or polygon data.***

**Quick Reference – Module 2, Custom Analysis**

**Custom Analysis definitions**

<b>Analysis</b>	<b>File Type</b>	<b>Definition</b>
Count	Point	Number of points (from the user-defined point layer) that fall within the patch.
Distance to Feature	Point Line Polygon	Linear distance from the edge of the patch to the nearest designated feature (point, line, or polygon). HPP reports the distance and identifies the patch that meets these requirements (designated in the attribute table with a label of <code>_OID</code> ).
Presence/ Absence	Point Line Polygon	Indication of whether a user-defined point feature is present within the boundary of the patch. Values can be reported as true/false or 1 (true)/0 (false). Users can determine preference, as both types are reported.
Linear Distance Within	Line	Summation of the length of a user-defined linear feature that falls entirely within the patch. The value can be in feet or meters.
Polygon Overlay	Polygon	Summation of the area (and percentage) of overlap between the patch and a user-defined polygon file. The area can be in acres or hectares.

## Habitat Priority Planner

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### Quick Reference – Habitat Analysis, Attribute Table Results

Note: Your field names may differ if you've edited them; however, for each analysis type you should see some version of these designations.

Field Name	Definition
<b>Landscape Analysis (measure between habitat patches)</b>	
HPP_Perimeter_Area_Ratio	Numeric value representing the ratio for this field. Larger ratio values denote more edge habitat and less interior habitat.
HPP_Nearest_Neighbor	Distance to the nearest patch of the same class type. (User selects units in the wizard.)
HPP_Nearest_Neighbor_ID	Identity of the patch that is the nearest neighbor.
HPP_Core_Area	Area of the patch remaining <i>after</i> an internal, user-selected buffer is applied. (User selects units in the wizard.)
HPP_Proximity	Amount of area of the same habitat type within a user-defined buffer.
<b>Custom Analysis (measure from a habitat patch to a point, line, or polygon feature)</b>	
HPP_Count	Number of point features that occur within each habitat patch.
HPP_Distance_To	Distance from the habitat patch to the closest point, line, or polygon feature. (User selects units in the wizard.)
HPP_Distance_To_OID	Identity of the closest feature that is used for each patch's Distance To calculation. (User selects units in the wizard.)
HPP_Linear_Distance_Within	Distance that a linear feature intersects a patch. For example, how much road length runs through a patch. (User selects units in the wizard.)
HPP_Presence_Absence	True/false value that determines whether or not the feature is present within a patch.
HPP_Presence_Absence_01	Secondary, numeric value for Presence/Absence ( 1 = true, 0= false).
HPP_Polygon_Overlay	Area of overlap of the patch with another polygon type of interest. (User selects units in the wizard.)
HPP_Polygon_Overlay_Pct	Percentage of overlap of the patch with another polygon type of interest.

### Quick Reference – HPP Report Contents

In all three modules of the Habitat Priority Planner, users have the option to create a report which can be useful for documenting your work in a concise and complete manner. The report is created in an easy-to-share .pdf format that includes:

- ❖ Project (file) name
- ❖ Location of saved settings and layers
- ❖ Land cover used for analysis
- ❖ Classification type, names, and values
- ❖ Landscape analyses run (with their corresponding buffer distances)
- ❖ Custom analyses run (with type of analysis and layer used)
- ❖ Basic statistics for each land cover class
- ❖ Number of features in each class

<b>Habitat Priority Planner</b>		
<i>Habitat Classification Report</i>		Start date: 2011-08-10 03:02 Processing time: 1 minutes 8 seconds
<b>Project Information</b>		
Project Name:	edisto_simple_mod1	
Project Settings File:	C:\Documents and Settings\chrisa.waite\My Documents\NOAA Coastal Services Center\Habitat Priority Planner\Patch Settings\edisto_simple_mod12.xml	
<b>Habitat Classification Properties</b>		
Date Created:	2011-08-10 03:02	
Base Data Set:	S:\Land Use Planning\habitat_priority_planner\FY11 \Training\Arc10_Update\Data\Trainer\Edisto\Edisto_NWI_preprocess.shp	
Value Field:	Value	Name Field: WETLAND_TY
Minimum Patch Size:	Not Specified	
Classification Scheme:	Simple	
Classifications:		
	Original Name (Value)	New Name (Value)
	Freshwater Emergent Wetland (3)	Habitat (1)
	Freshwater Forested/Shrub Wetland (4)	Habitat (1)
<b>Land Use Change Scenarios</b>		
Not Specified.		

## Quick Reference – Module 3, Data Exploration

**Step 1: Select a map layer**

**Step 2: Select a field**

**Step 3: Select data using criteria. Drag across the histogram or enter numbers into the Minimum and Maximum boxes**

**Step 4: Build query using AND or OR statements**

The screenshot shows the 'Data Explorer' window with the following components:

- Dataset:** Map Layer: edisto\_simple\_mod2; Field: Area\_Acre; Minimum: 50; Maximum: 100.
- Statistics:**

	All Features	Selected
Count:	282	5
Minimum:	0.14	51.72
Maximum:	324.59	99.81
Sum:	3,112.18	370.68
Mean:	11.04	74.14
Median:	2.21	59.90
Standard Deviation:	30.96	23.76
- Field Histogram:** A histogram of 'Area\_Acre' with a cyan selection box from 50 to 100. The y-axis is 'Count' (0-300) and the x-axis is 'Area\_Acre' (0-320).
- Query Builder:** Shows the query: `Select * FROM edisto_simple_mod2 Where Area_Acre >= 50 and Area_Acre <= 100`. Buttons for 'And', 'Or', 'Clear', 'Verify', 'Apply', and 'Save Result As...' are visible.

## Quick Reference – Module 3, Query Building

### Exclusionary queries

- ❖ To reduce the number of patches as you add criteria, insert AND statements between each selection criteria
- ❖ The end result will have habitat patches that fit every single criteria in the query.
- ❖ For example, if our two criteria are freshwater wetland habitats and the presence of wells. If we insert an AND statement between the selection criteria, the final result will be only polygons that represent freshwater wetland habitat that also contain drinking water wells

Query Builder

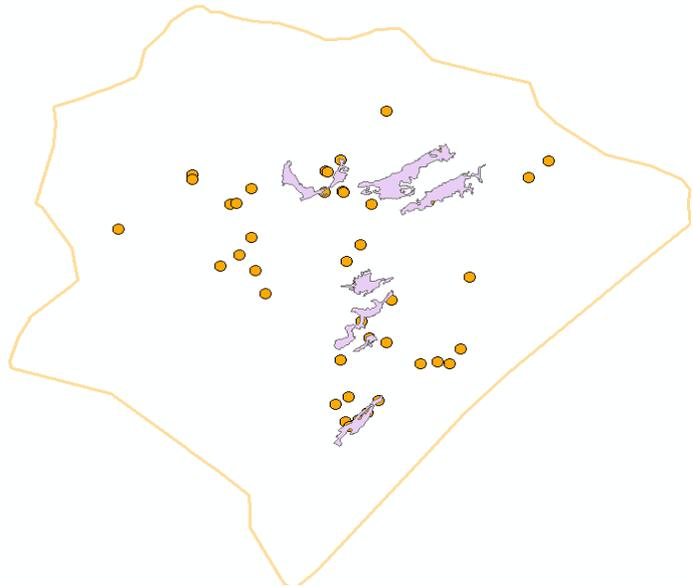
Select \* FROM edisto\_unique\_mod2 Where

Cls\_Name = 'Freshwater Forested/Shrub Wetland' AND PA\_wells = 'True'

And

Or

Clear Verify Apply Save Result As...



## Quick Reference – Module 3, Query Building

### Inclusionary queries

- ❖ To create more broad queries, insert an OR statement between your criteria
- ❖ If you choose OR statements, it is important to place these at the beginning of a query string. The query should not be applied until both pieces of the OR statement have been inserted
- ❖ The end result will include freshwater wetland habitats, but will also include any other habitat type that contains a drinking water well

Query Builder

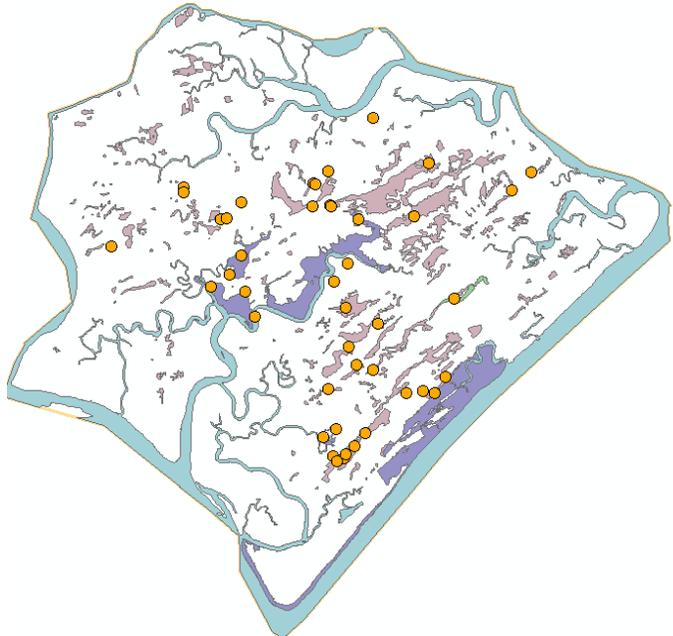
Select \* FROM edisto\_unique\_mod2 Where

Cls\_Name = 'Freshwater Forested/Shrub Wetland' OR PA\_wells = 'True'

And

Or

Clear Verify Apply Save Result As...



**Quick Reference – Module 3, Stakeholder engagement tips**

Goal	Technique	Example
Ensure your comfort with group facilitation using the Data Explorer	Practice the steps and ensure your comfort level prior to group engagement	Conduct a practice run with the data you plan to use in an engagement activity with your peers
Orient Stakeholders to the area of interest	Revisit goals and analysis	Before opening any map revisit the session goals
	Start with lowest technology common to participants	Use paper maps first if the participants have never seen GIS
	Use orienting data	Include a roads layer, county names, etc. to orient the group (even if you don't use these in the analysis)
Orient Stakeholders to the Data Explorer	Demonstrate data explorer features to the group before using for analysis	Demonstrate key features (histogram, map highlighting selections, statistics)
Empower stakeholder to make decisions facilitated by Data Explorer	Take your time, ensure everyone is on the same page at each step	Check in with your stakeholders often to ensure they are following
	Turn on/off each supporting data set as you need it (don't clutter the map)	If you use a stream layer show the occurrence, then conduct selections
	Show the map, and the highlighted features in between selection steps	Show the selection on the map following each histogram selection, show each applied selection as well