



Learn and Customize Map Direct - Handout

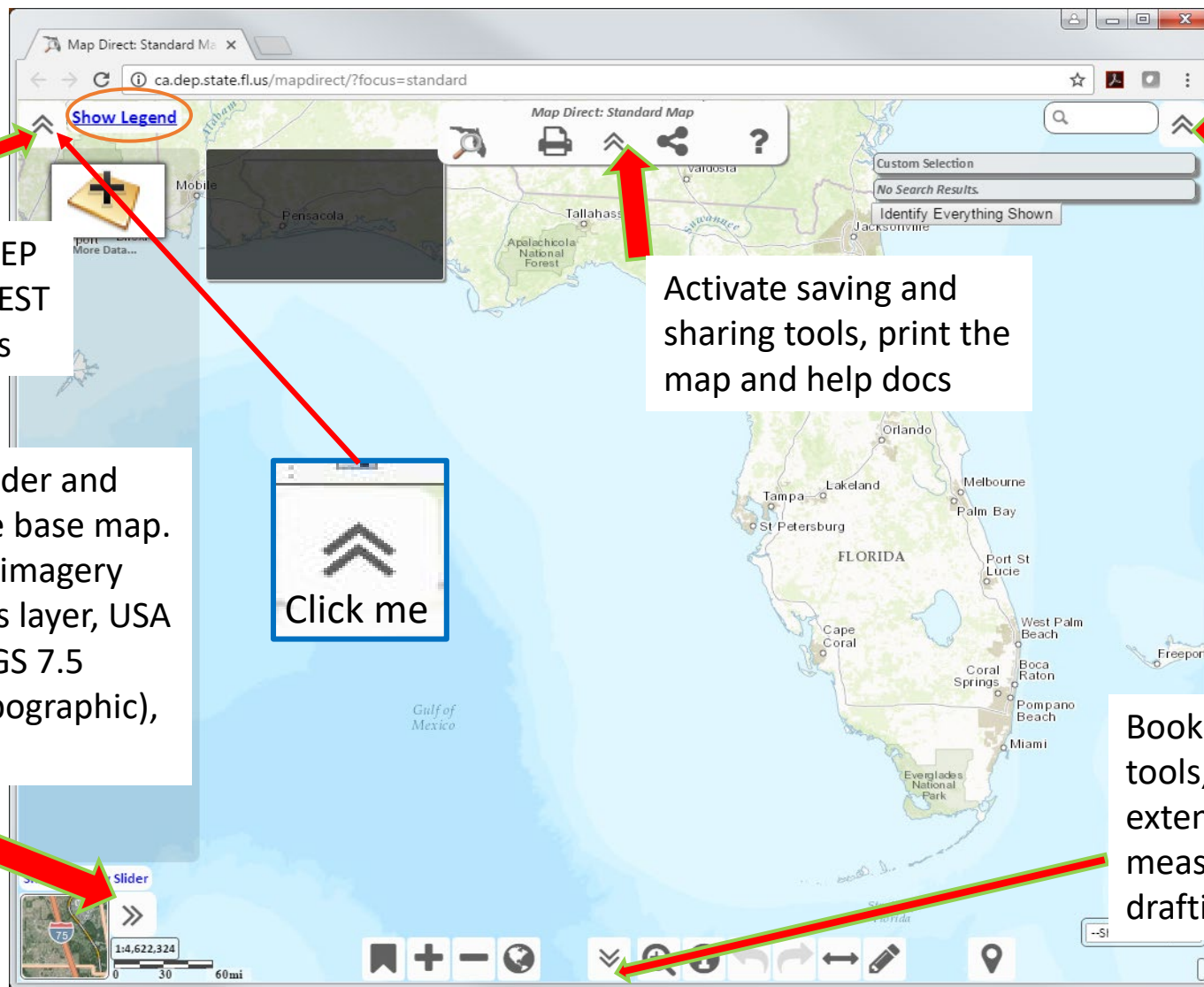
**Presented By Andy Woeber, GIS Analyst
Watershed Monitoring Section**

August 2021





Click the “chevron” or “double arrows” to view the tools for the map display



Click here to access feature details and search boxes

Activate saving and sharing tools, print the map and help docs

Bookmarks, zoom tools, zoom to map extent, identify, measurement and drafting tools

Click me

Show Legend

Slider

1:4,622,324

0 30 60mi



Links to Map Direct

Map Direct Standard Map

- <http://ca.dep.state.fl.us/mapdirect/?focus=standard>

Map Direct Generalized Water Information System (GWIS) Focus

- <http://ca.dep.state.fl.us/mapdirect/?focus=gwis>

GWIS Production Web Portal (Filtered List of Site Selections)

- <https://fldep.dep.state.fl.us/gwis/>



Get the most out of Map Direct

- What Map Direct can do
 - 1) Quickly display layers with no special software.
 - 2) Filtered list of sites and customizable maps.
 - 3) Export and save results of searches – shared maps.
 - 4) Add outside REST services to map.
 - 5) Perform “what’s nearby” searches of other layers.
 - 6) Perform searches within polygon layers or buffer searches around a selected feature.



Get the most out of Map Direct

- What are some limitations of Map Direct
 - 1) Cannot perform advanced GIS analysis on layers.
 - 2) Cannot change symbology of the layer.
 - 3) Cannot edit feature layers within the map.
 - 4) Adding a shapefile has limited support.
 - 5) Limited functionality on smart phones.



Frequently Used Mouse Buttons



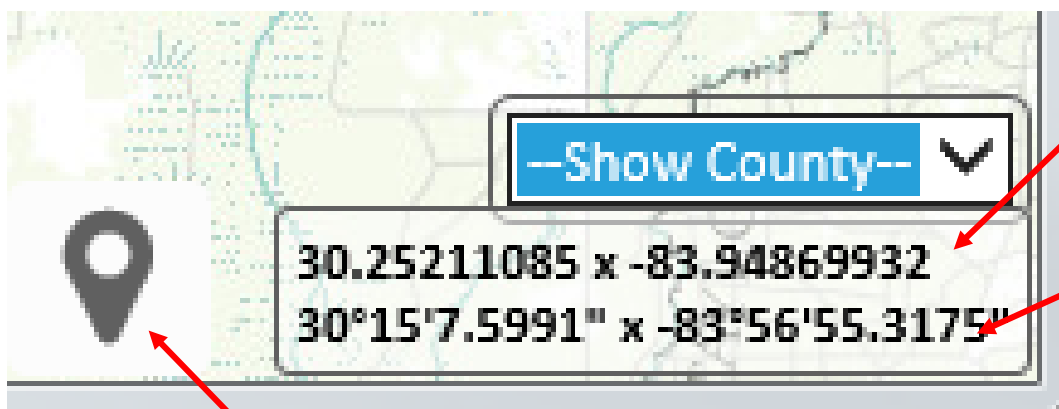
Wheel – use the center wheel button to zoom in or out of the map. Click the center button and hold to pan the map or to zoom into and out of the map view.

Left button (L) – hide or unhide a tool or identify a feature with one click. Click and hold the button down to pan the map or draw search boxes.

Right button (R) – hide all tool menus with a right click and hold the button. Click and hold the button down to pan the map.



Coordinates of Mouse Pointer



Latitude, Longitude
(Decimal Degrees)

Latitude, Longitude
(Degrees, Minutes,
and Decimal
Seconds)

Map Pointer Drop
Symbol

This display is handy to identify the location of your mouse pointer on the Map. Alternatively you can click the map pointer drop symbol to the left of the display to drop a pointer onto the map location of interest



Map Navigation Tools



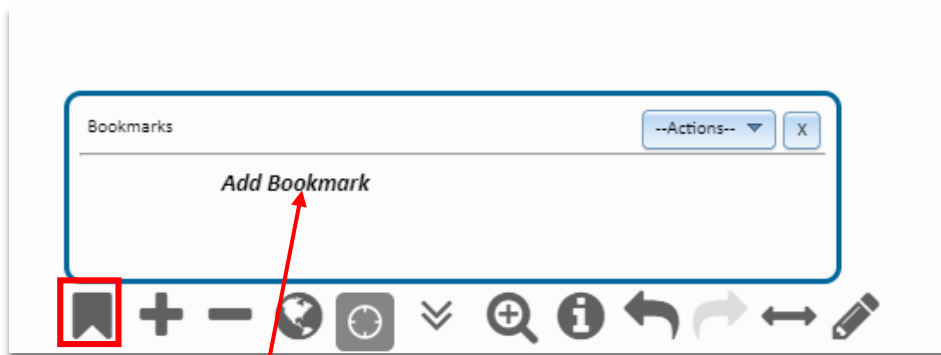
1 2 3 4 5 6 7 8 9 10 11 12

- 1) Add a bookmark
- 2) Zoom into the map
- 3) Zoom out of the map
- 4) Go to the extent of active layer(s)
- 5) Track my location
- 6) Hide or unhide this toolbar
- 7) Zoom to area drawn by the mouse pointer
- 8) Identify a feature or a number of features
- 9) Back to the previous map view
- 10) Go to the current map view
- 11) Perform measurements
- 12) Add graphics such as text, lines and polygons

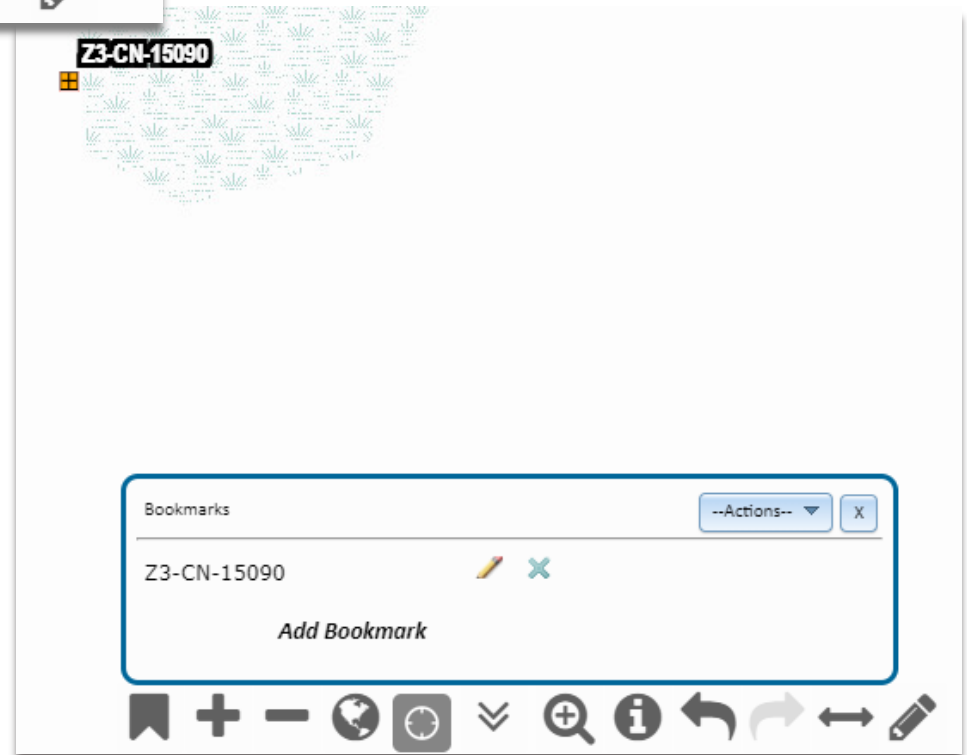
Drop a marker at the location of the mouse pointer



Create Bookmarks

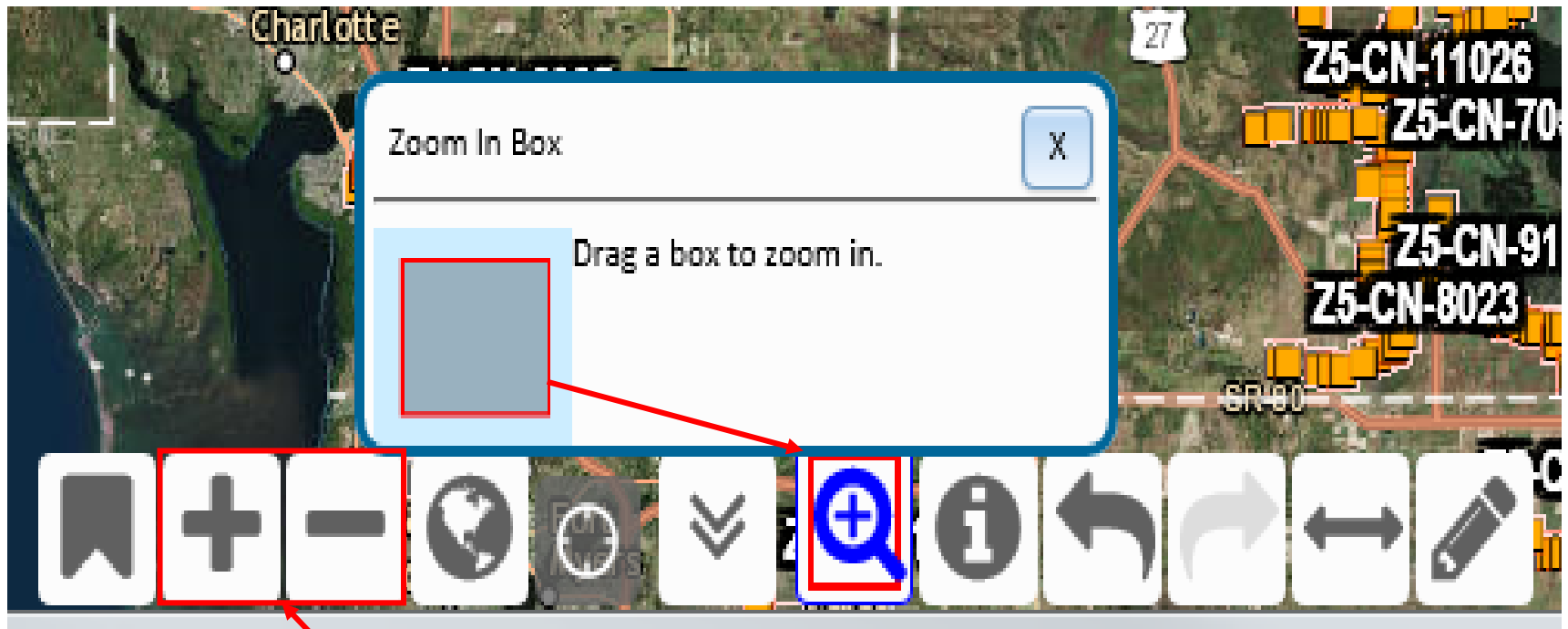


Click in
window to
add text for
bookmark





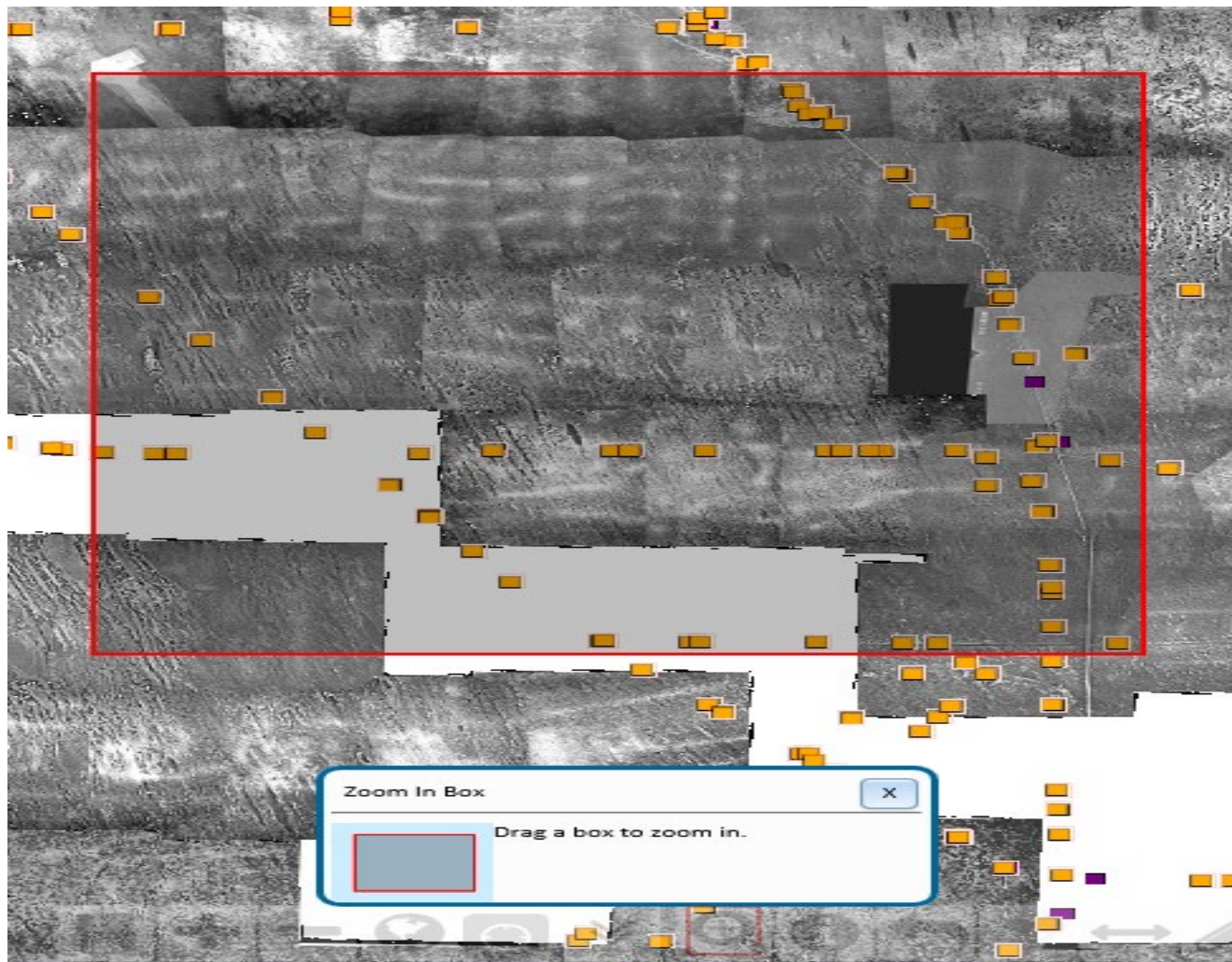
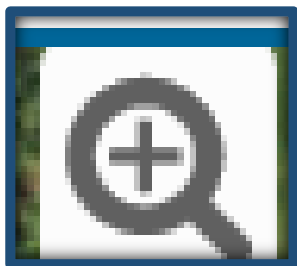
Zoom Tools



Zoom into or out of the entire map area using these buttons

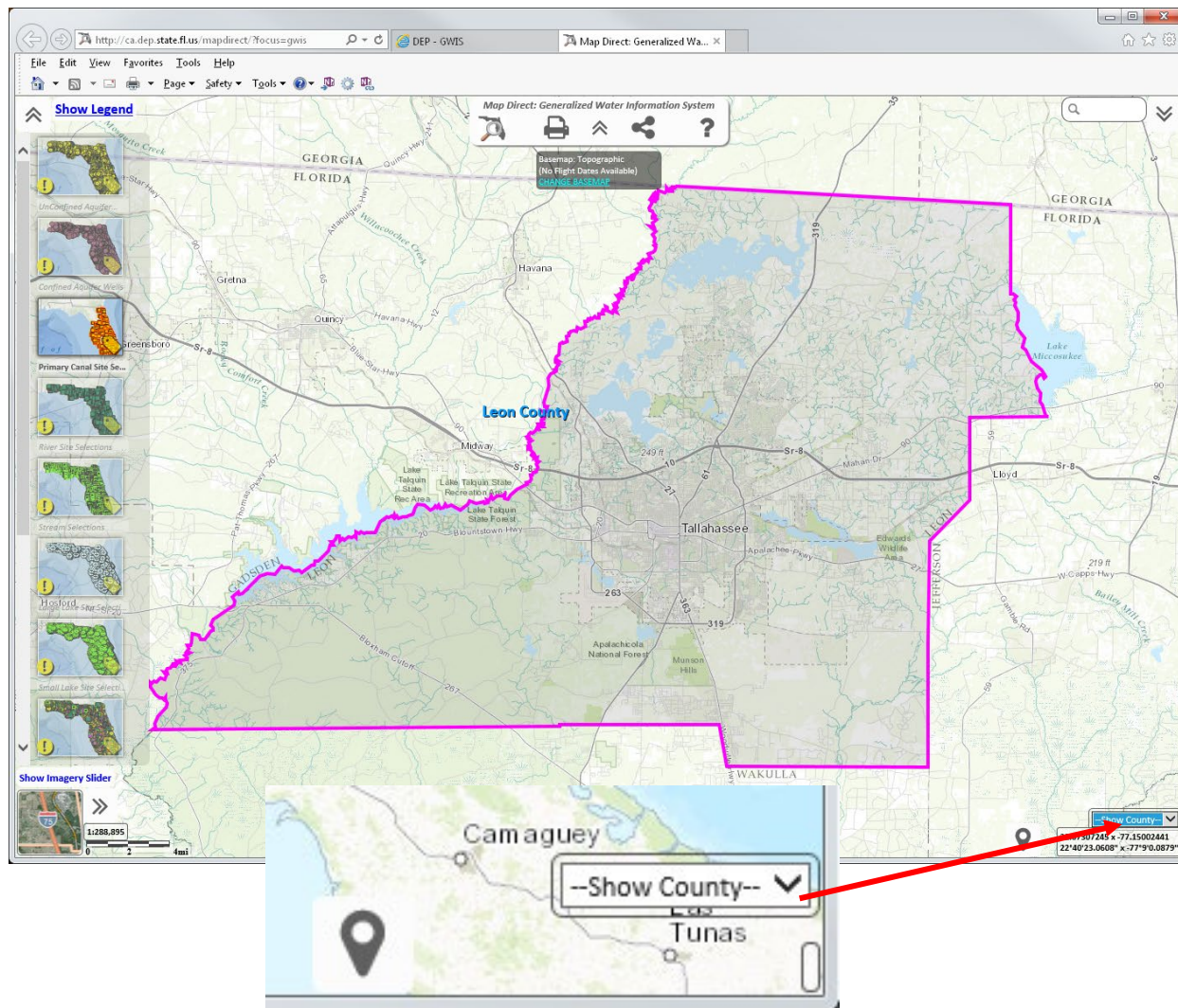


Draw box around features



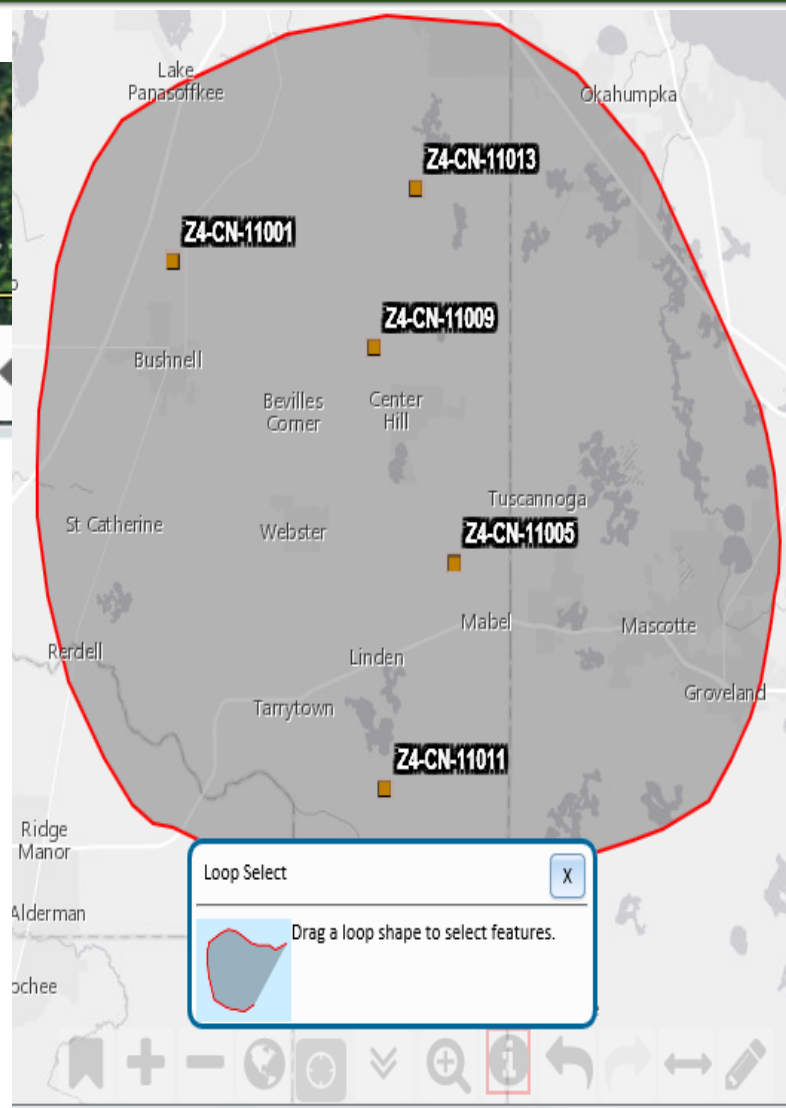
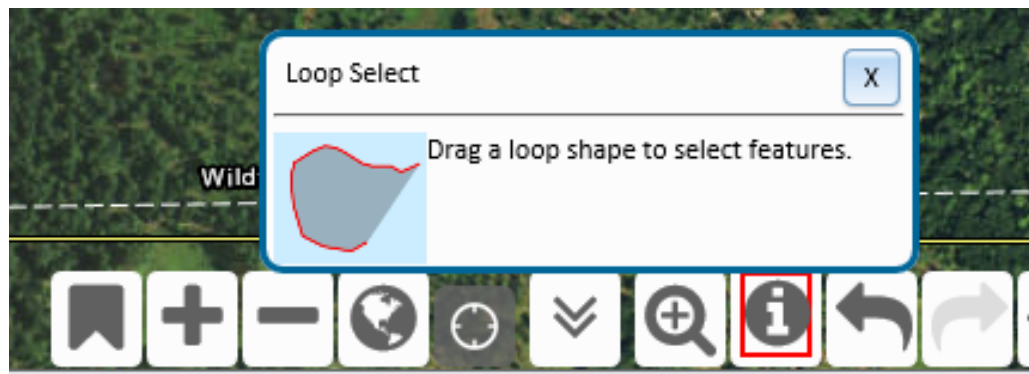


Zoom to County of Interest



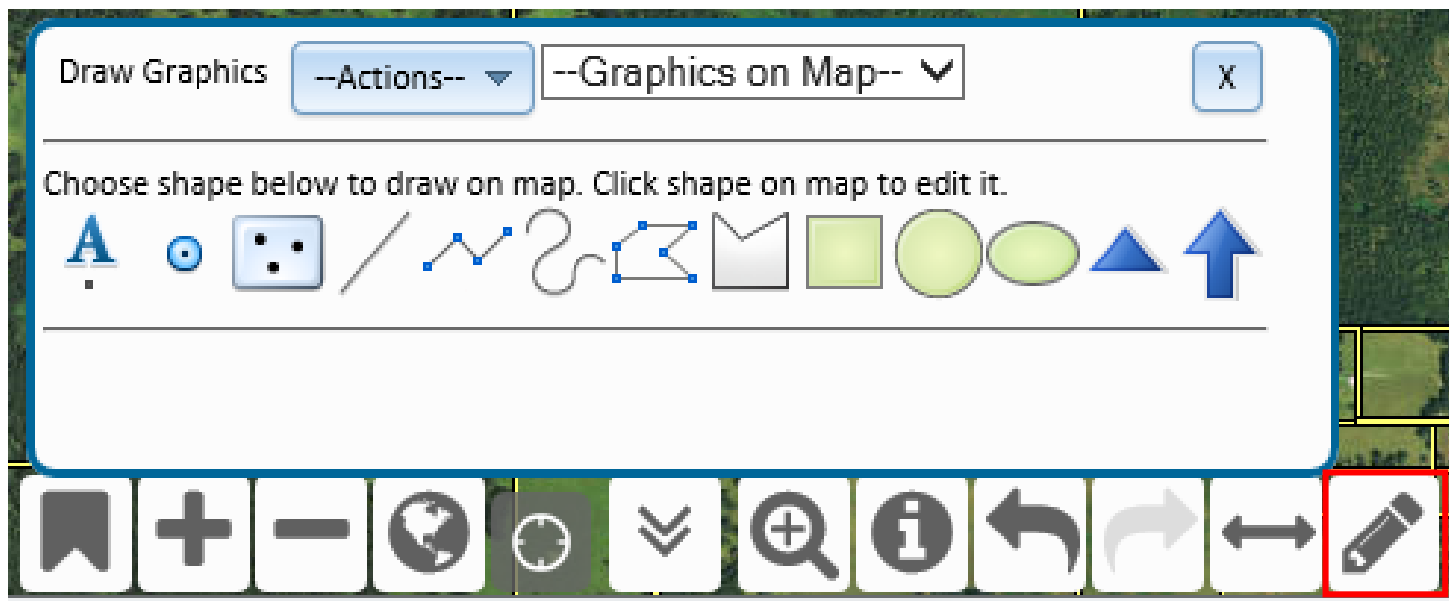


Identify sites or features



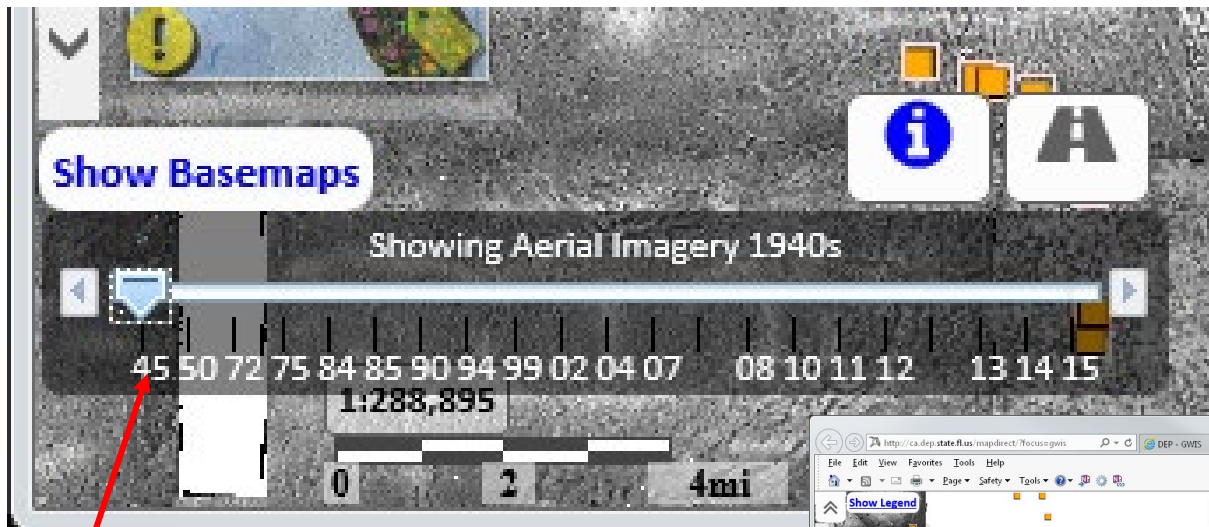


Draw helpful graphics on the map



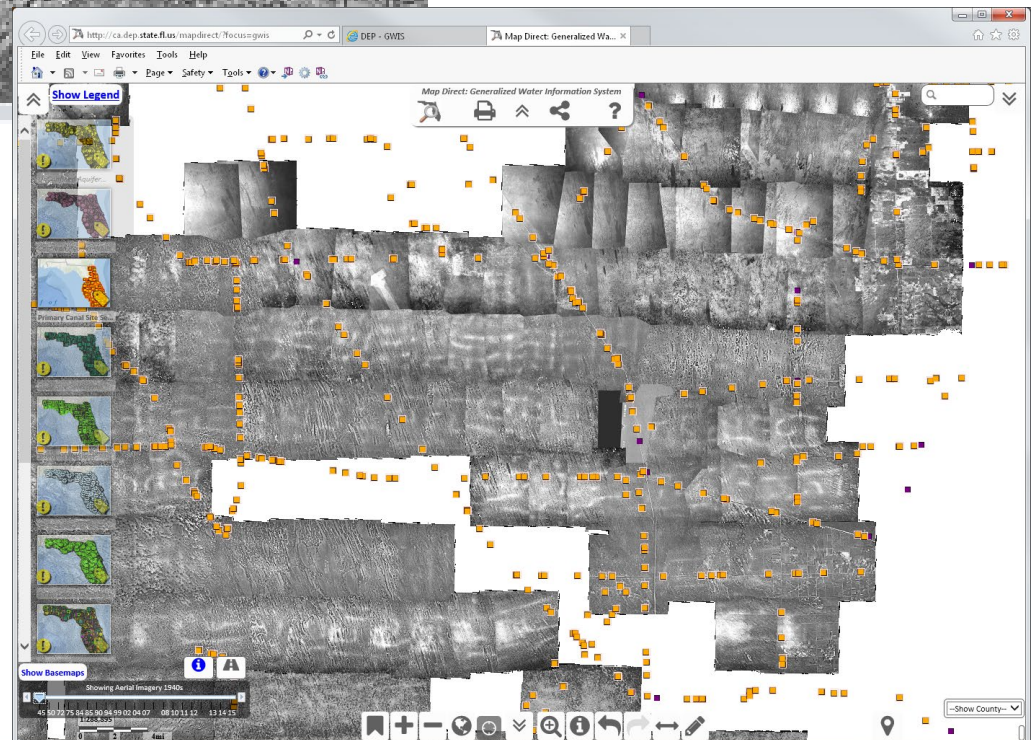


How to use the imagery slider?



Flight years shown here – move slider to left or right to scroll through imagery sets.

Note: Some flight sets are incomplete or have gaps (this is a limitation of the slider imagery – full sets are available in the Map Direct imagery layers).



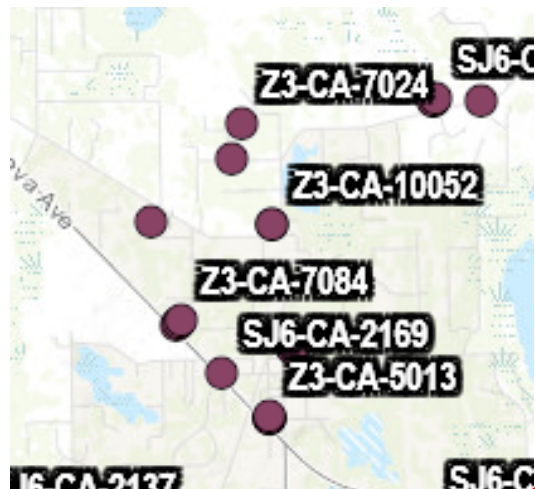


How to change the base map?

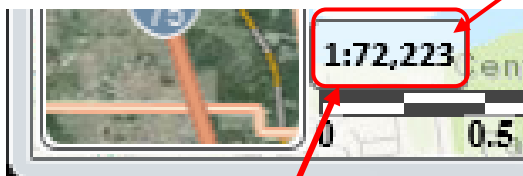




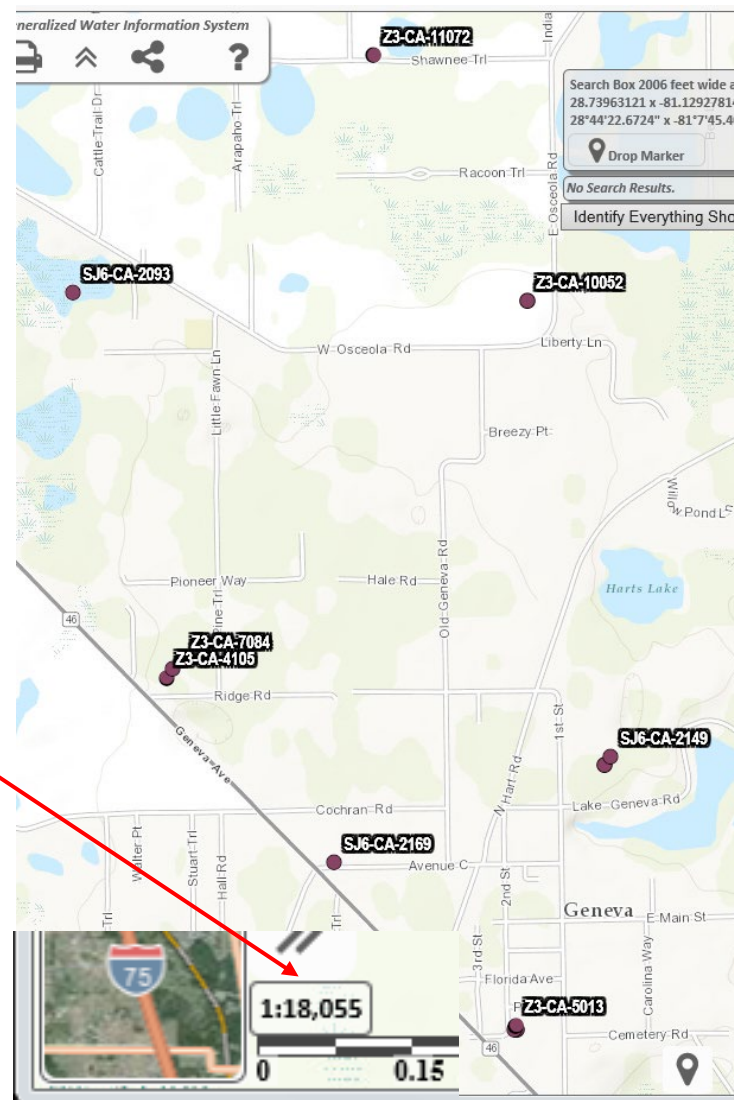
Tips on Scale



Small scale – a large area is shown with few details



Current scale of the map (representative fraction, i.e. one inch = 72,223 inches)



Large scale – less area shown and more details



How are layers drawn in Map Direct?

Top



Bottom

Order as
drawn to
the left

0

(0) WMS Flowing Waters

1

(1) Reporting Units

2

(2) Cadastral Layer

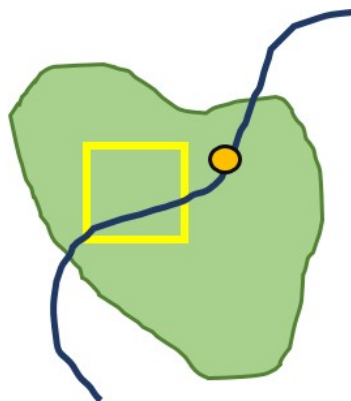
3

(3) Canal Site Selections



How are layers drawn in Map Direct?

Preferred drawing order for viewing layers



(0) Canal site selections - points

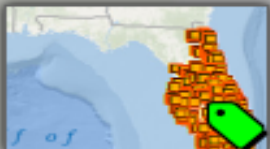
(1) WMS Flowing Waters - lines

(2) Cadastral Layer – small polygons

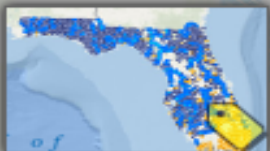
(3) Reporting Units – large polygons



[Show Legend](#)



Primary Canal Site Se...



WMS Flowing Water...



Cadastral 2016 Prope...



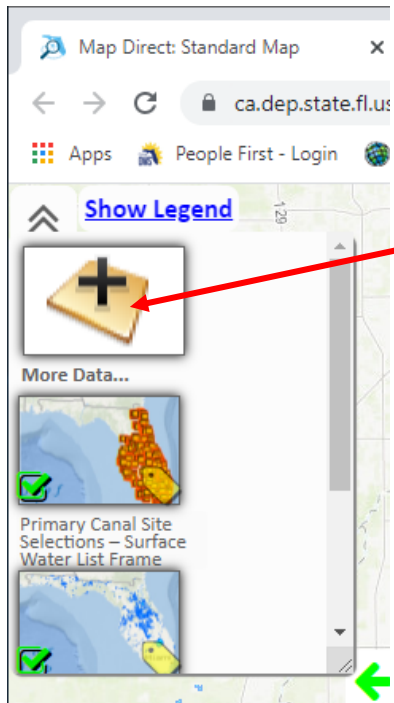
WMS Cycle 3 Reporti...



More Data...

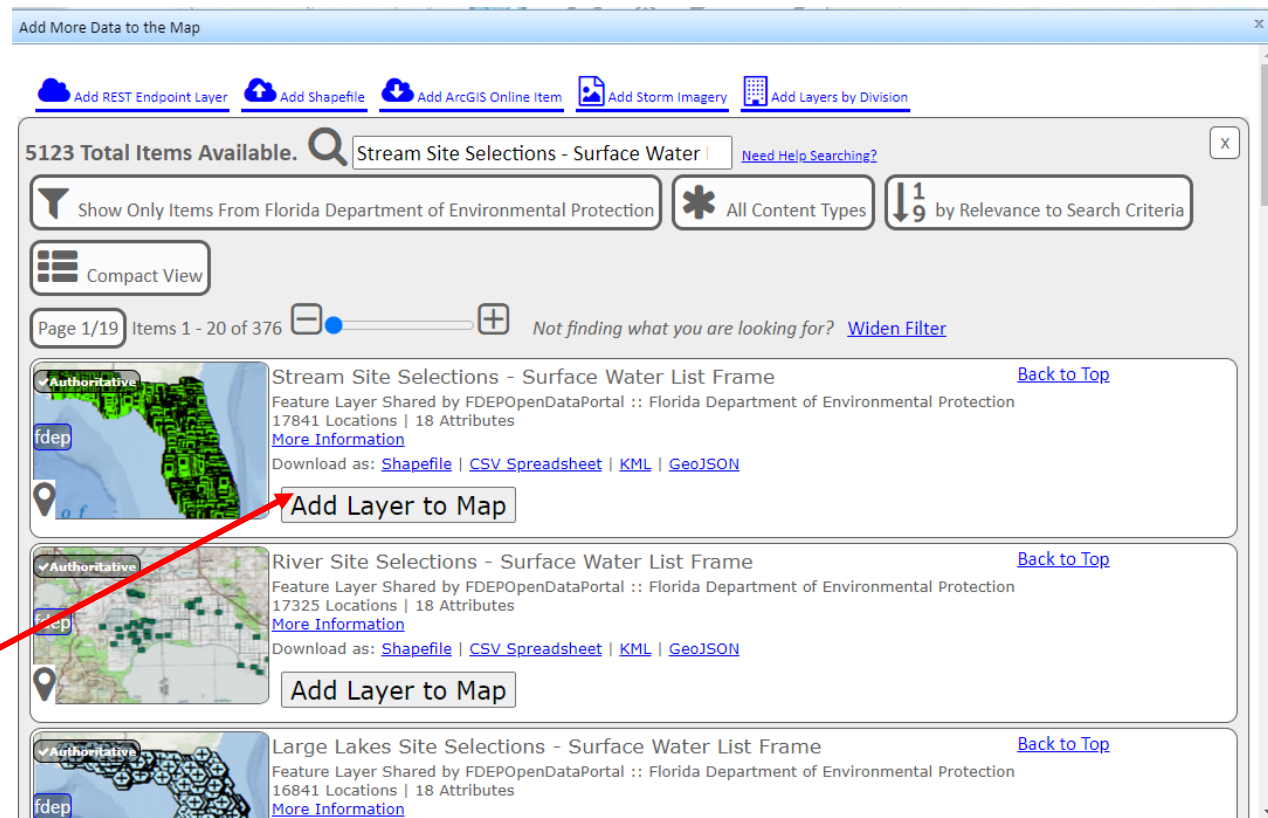


How to add layer in Map Direct



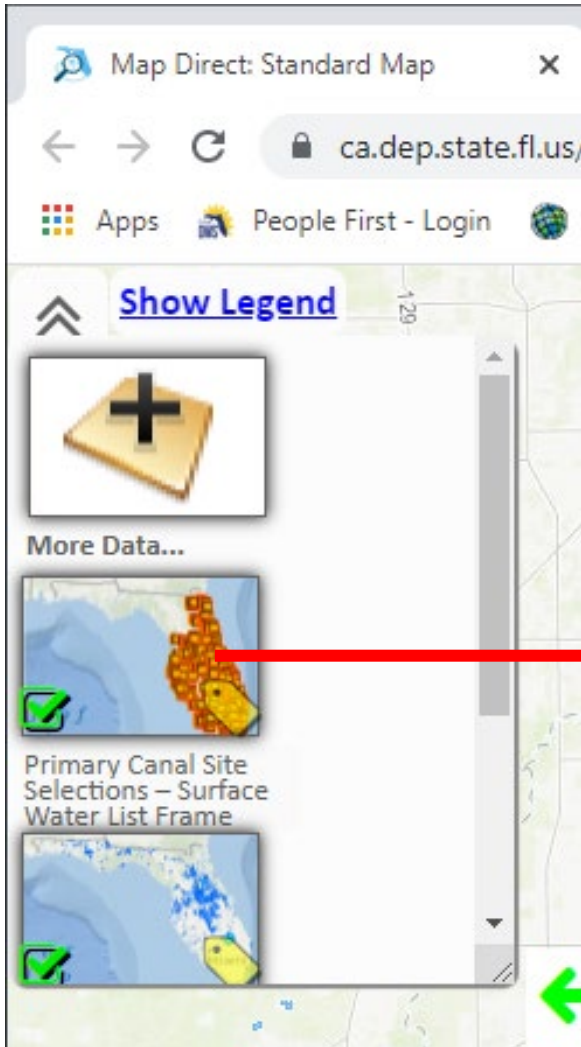
Click on “More Data...” icon to add layers to Map Direct.

Click on “Add Layer to Map” to add the selected layer to the contents window. When finished, click the “X” to close the “Add More Data” window.

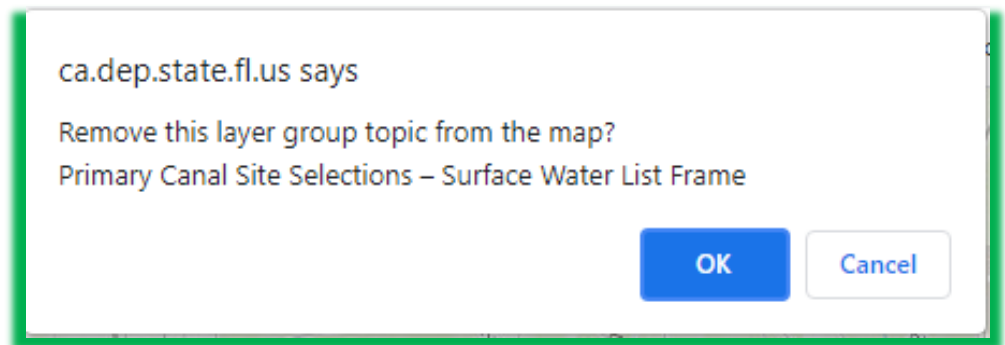




How to remove a layer in Map Direct

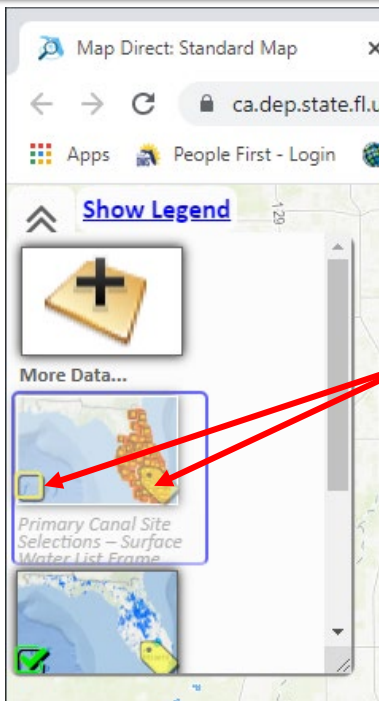


Left-click tile with mouse and drag layer to right to a region outside contents menu to remove it.





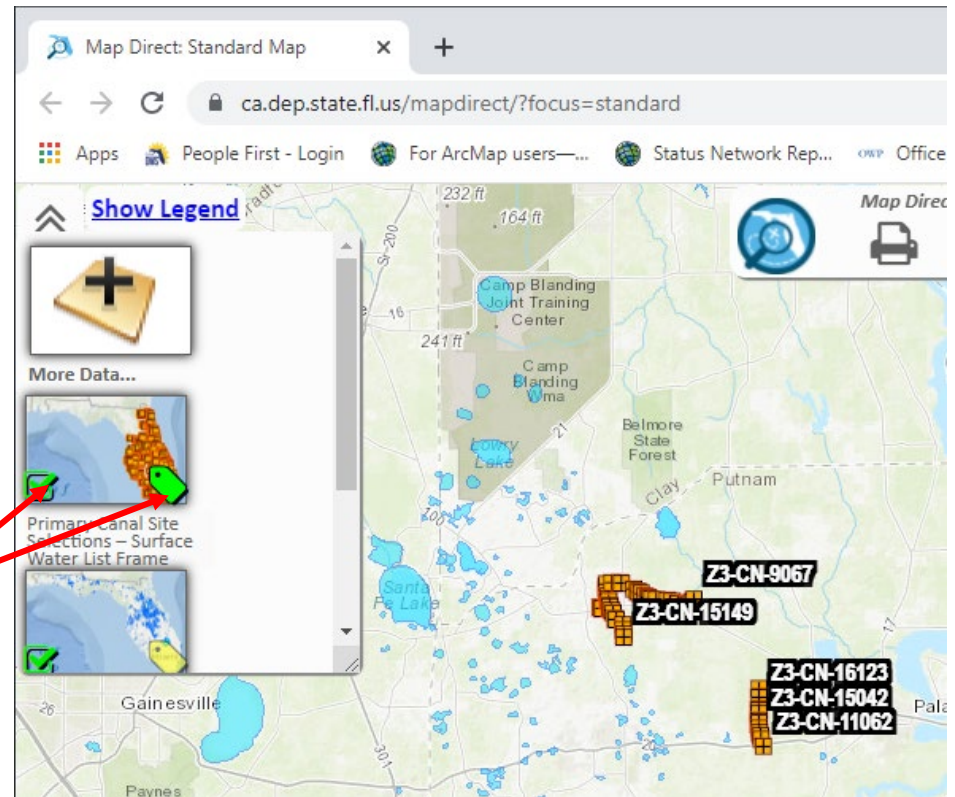
How to turn on visibility of a layer or labels



Layer and labels are turned off for the layer (yellow box and yellow label icons)

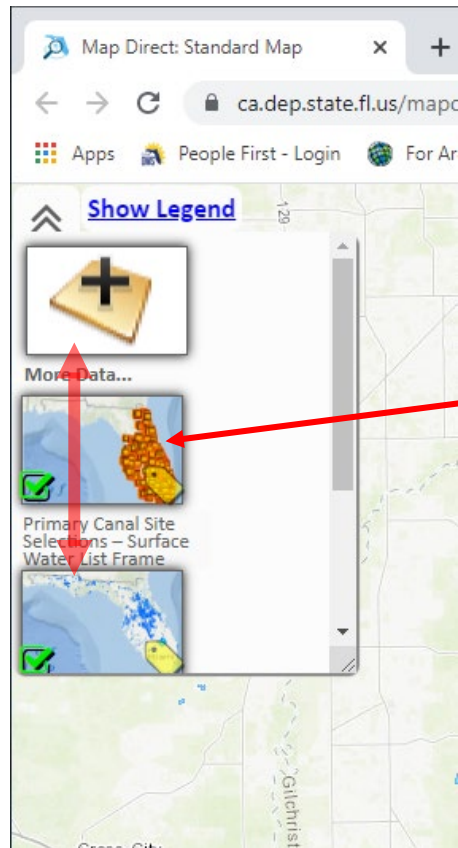
Layer and labels are turned on (green check mark and label icon)

Note: You may have to zoom into the map to activate visibility for the layer or labels.





Drag layer up or down to change drawing order

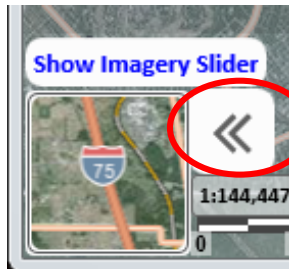


Left-click tile
with mouse and
drag layer up or
down in the
thumbnail list



Tip – Activate a few layers first when zoomed out of the map

- Activate your sites (turn layer and labels on)
- Add a base map layer –imagery with roads or the USA Topo Maps



- Add FWC boat layer from the Florida Fish and Wildlife Conservation Commission (Add more data to the map –filter for only show items from FWC)

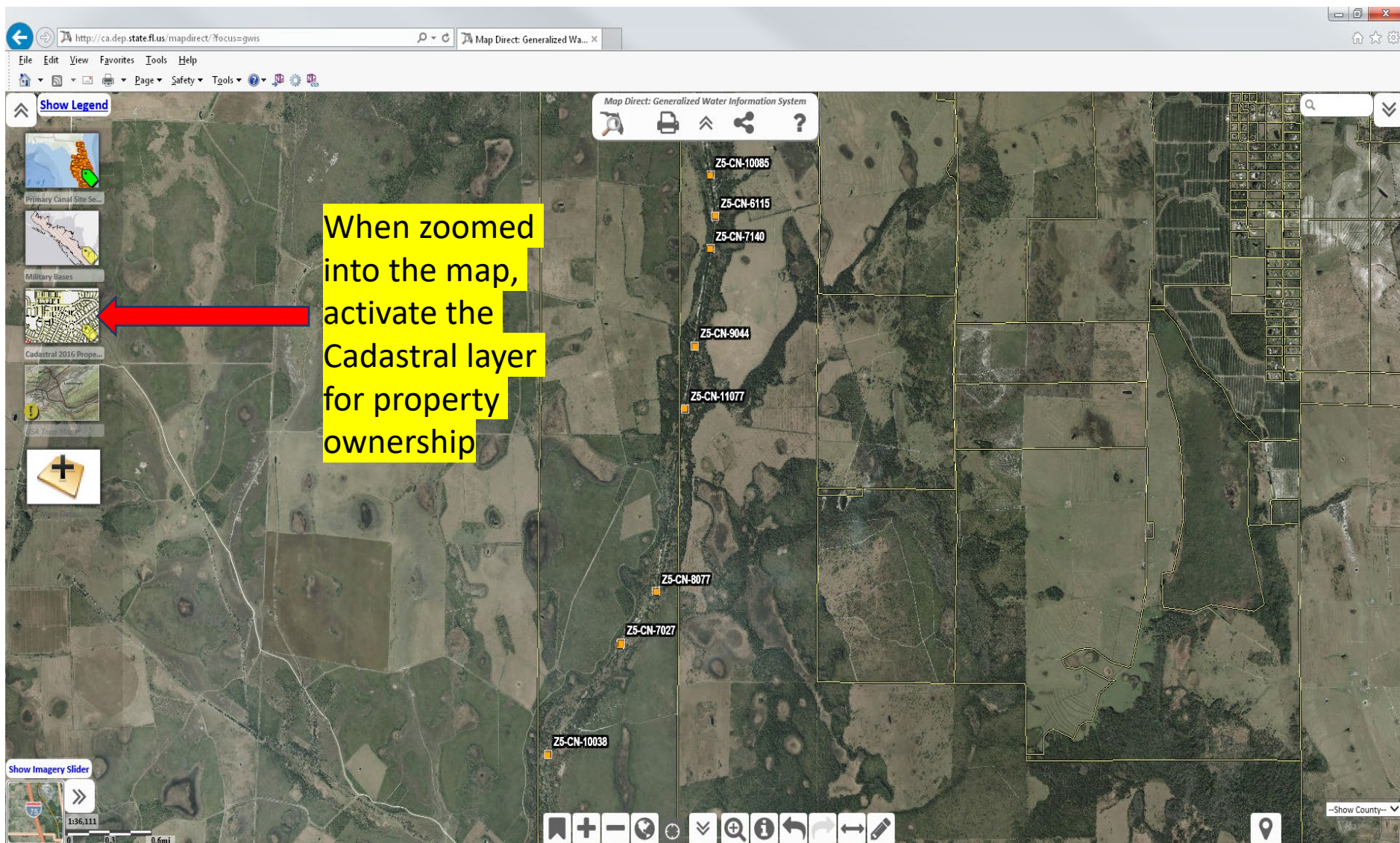


- Zoom to the area of your site locations





Zoomed in



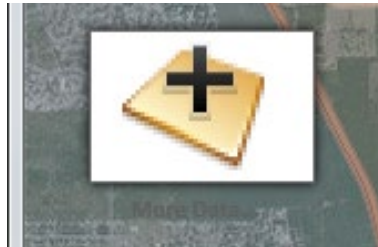


Tip – After Zooming Into Area of Interest

- Create bookmark(s) of your locations



- Add additional layers as needed for recon (Cadastral, land use/land cover, wetlands, phosphate mining areas, DEP permitted facilities, etc.)



- Save your map for future recon activities.





Example process to load sites and view map

GWIS Reconnaissance Tracking <https://fldep.dep.state.fl.us/gwis/>

DEP - GWIS

Secure | <https://fldep.dep.state>

Florida Department of Environmental Protection

GWIS Generalized Water Information System Database Utilities

Recon Tracking Existing Station New SW Station New GW Station

Resource Type: CANAL

Reporting Unit: ZONE 3

Reporting Cycle: 11

Site Location Range: 1 - 15
(Leave empty to return all records)

Submit Reset

DEP - GWIS

Secure | https://fldep.dep.state.fl.us/gwis/gwis_search_results.asp

Florida Department of Environmental Protection

GWIS Generalized Water Information System Database Utilities

Recon Tracking Existing Station New SW Station New GW Station

RESOURCE TYPE = CANAL; LOWER RANGE = 1; REPORTING UNIT = ZONE 3; REPORTING CYCLE = 11; UPPER RANGE = 15;

Show Map(Random Sample Location) Generate Export File

RANDOM SAMPLE LOCATION	RANDOM LATITUDE	RANDOM LONGITUDE	SAMPLEABLE	STATION ID
Z3-CN-11001	30° 19m 20.45496s	81° 56m 15.01188s	YES	
Z3-CN-11002	28° 47m 57.26616s	81° 03m 13.33188s	NO	
Z3-CN-11003	30° 09m 15.49152s	81° 23m 49.1316s	YES	
Z3-CN-11004	27° 49m 24.17628s	80° 35m 48.25572s	YES	
Z3-CN-11005	30° 18m 23.53356s	81° 28m 06.9744s	YES	
Z3-CN-11006	28° 54m 15.72732s	81° 08m 27.30588s	NO	
Z3-CN-11007	28° 39m 07.55028s	81° 13m 20.24328s	YES	
Z3-CN-11008	27° 52m 03.00504s	80° 43m 15.64752s	NO	
Z3-CN-11009	28° 59m 39.70968s	81° 28m 47.11008s	NO	
Z3-CN-11010	29° 04m 58.9818s	81° 53m 18.82428s	YES	
Z3-CN-11011	28° 18m 06.44076s	80° 55m 18.5124s	N/A	
Z3-CN-11012	27° 39m 42.39216s	80° 36m 03.37716s	N/A	
Z3-CN-11013	28° 47m 39.82128s	81° 18m 44.523s	YES	
Z3-CN-11014	29° 32m 41.6364s	81° 25m 24.75408s	YES	
Z3-CN-11015	28° 14m 59.72568s	80° 46m 32.89188s	NO	

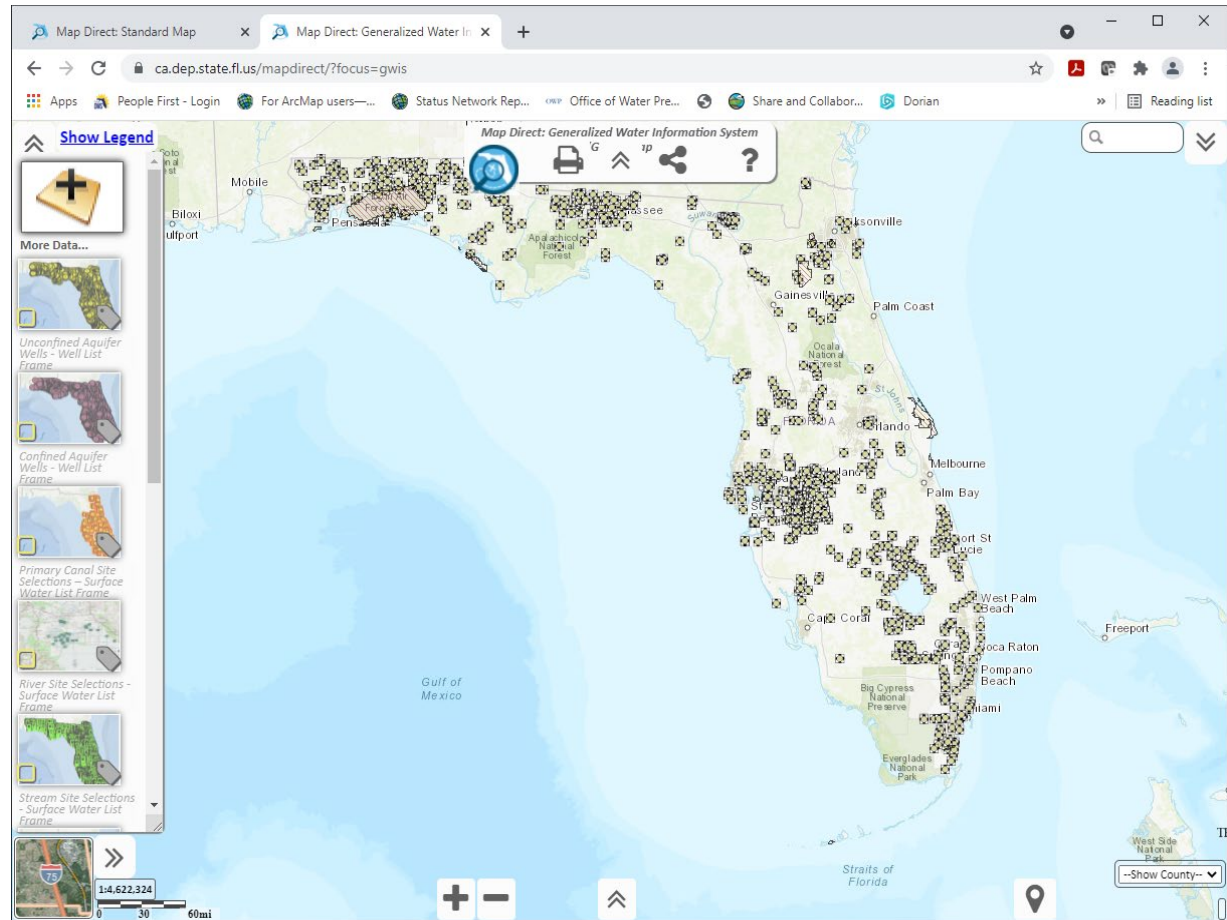


Map Direct with GWIS focus

GWIS focus – layers added for default map

- Site selections (sampling locations)
 - Canal, streams, rivers
 - Small and large lakes
 - Confined and unconfined aquifers
- Resource Maps
 - ESRI Topo Map (default base map)
 - Cadastral map
 - EPA dams (visible)
 - Military bases (visible)

You can add more layers and customize the map!!

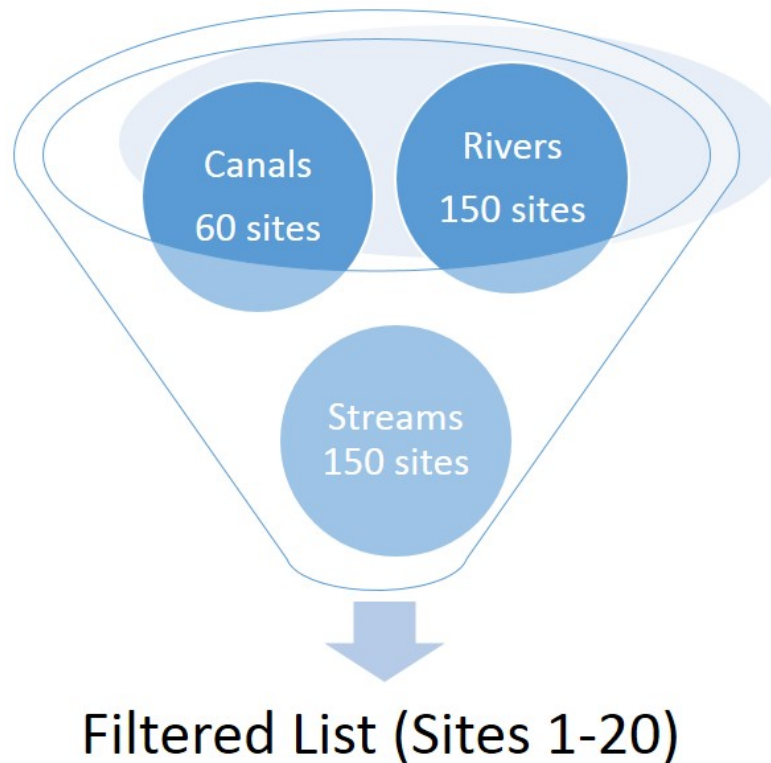


<https://ca.dep.state.fl.us/mapdirect/?focus=gwis>



What is “filtering” a layer

A method of restricting the display results of a layer to a range or selection of features.





Layer Properties Menu (Double-click Layer Tile in Contents Window)

Map Direct: Generalized Water Information System (GWIS) Map - Google Chrome

ca.dep.state.fl.us/mapdirect/?focus=gwis&querytype=gwis_WMS_CNP_SP_VW&zoom=query&queryvalues=Z3-CN-15001%2CZ3-CN-15002%2CZ3-CN-15003%2CZ3-CN-15004%2CZ3-CN-15005%2CZ3-CN-15006%2CZ3-CN-15007%2CZ3-CN-15008%2CZ3-CN-15009%2CZ3-CN-15010%2CZ3-CN-15011%2CZ3-CN-15012%2CZ3-CN-15013%2CZ3-CN-15014%2CZ3-CN-15015

3 of 11 : Primary Canal Site Selections – Surface Water List Frame

Primary Canal Site Selections – Surface Water List Frame

ArcGIS Online Item ...

Map Service ...

Remove Layer from Map

Change Layer Draw Order

Move to Top

Move to Bottom

Move Up

Move Down

Visible

Layer can be shown out to scale 1:4,500,000.

Opacity: 1

Labels Visible

Labels can be shown out to scale 1:4,500,000.

Label Field: PK_RANDOM_SAMPLE_LOCATION

Change Label Field

Legend:

Canal Site

Find Tools:

PK_RANDOM_SAMPLE_LOCATION

WATERBODY_NAME

COUNTY_NAME

Search Results: 15

PK_RANDOM_SAMPLE_LOCATION

23-CN-15009

23-CN-15010

23-CN-15011

23-CN-15012

23-CN-15013

23-CN-15014

23-CN-15015

Description:

Florida Department of Environmental Protection's Watershed Monitoring Section (WMS) collects samples from a number of water resources. Beginning in 2012, samples will be obtained from Canals in addition to Rivers, Streams, Large This dataset illustrates potential Status Monitoring Network Canal sampling locations across the state. For more information on the Status Monitoring Network refer to <https://floridadep.gov/dear/watershed-monitoring-section/content>

Please reference the metadata for contact information.

Credits:

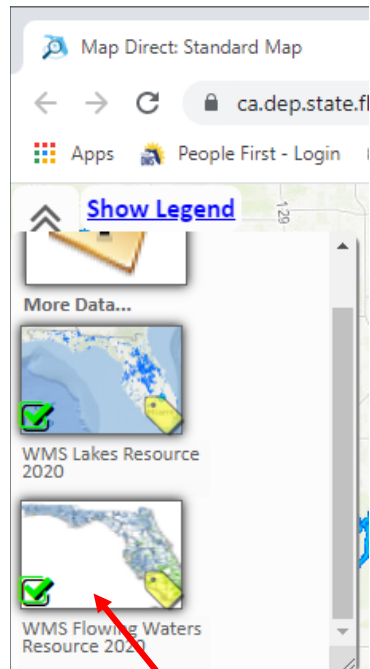
The data are intended for general information and planning purposes, and not appropriate for legal and/or cadastral work.

Double-click tile in table of contents to get to the layer properties menu above.

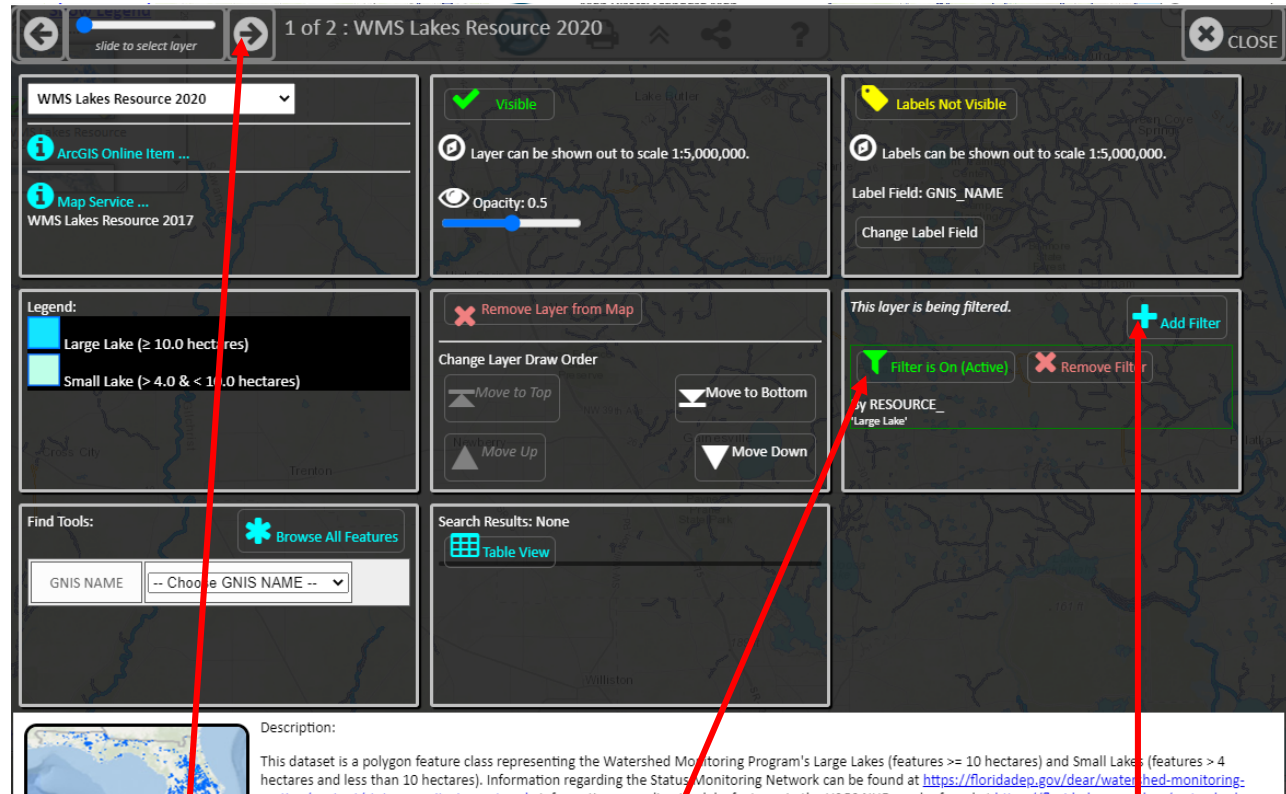
Please consult the help area in Map Direct here for more complete information on the options for this panel – [Map Direct Quick Start](#)



How to find the filtered list in the layer?



Double-click a tile
In the layer contents
window and pop-up
menu displays
(shown to right)



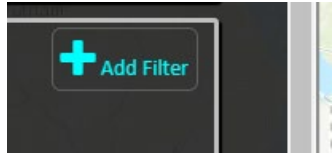
Click arrow here to
scroll through layers
already loaded in
your map

Filter is loaded and
active as shown by
the green funnel
icon

Add filter based on
layer field here.



How to create a filtered layer?



Click “Add Filter”
blue button in layer
pop-up menu
(previous slide)

Choose field to filter on and then enter field value. Click “Get Samples” to retrieve samples of values to enter. Once “Get Samples” is clicked, menu will change to “Choose {Field} to Add to Filter”. You can then choose a value to add to the filter. Additional instructions are provided.

Add Filter to this Layer ✕

Primary Canal Site Selections – Surface Water List Frame

Choose a field to filter on:

Alphanumeric (String) : One of the six geographic zones used for data analysis. Zones correspond to WMS boundaries, except for South Florida which is split into an east and west subunits. For cycle two of the status network see TMDL_BASIN database field name.

Exact Match Filter:

- Type a field value in the text box to show only that feature on the map
- You may include multiple values by separating them with a pipe |
- Click Get Samples to get sample values in a drop down. PLEASE NOTE - Internet Explorer may crash when trying to do this for fields with thousands of values
- You can choose a sample from the drop down to add it to the filter
- For String fields only - Check the 'Near Match' box to make the filter match any value containing the entered values. Example - 'Z2-SS-14' would match 'Z2-SS-14001' and 'Z2-SS-14199'
- Click Set Filter to apply the filter
- Click Cancel to abort

Near Match ☐

Near Match ☐

Other fields (filters not supported at this time for these types of fields)

- GEOMETRY (esriFieldTypeGeometry)
- OBJECTID (esriFieldTypeOID)



GWIS Map with 15 Canal Locations Filtered

Map Direct: Generalized Water Information System (GWIS) Map - Google Chrome

ca.dep.state.fl.us/mapdirect/?focus=gwis&querytype=gwis_WMS_CNP_SP_VW&zoom=query&queryvalues=Z3-CN-15001%2CZ3-CN-15002%2CZ3-CN-15003%2CZ3-CN-15004%2CZ3-CN-15005%2CZ3-CN-15006%2CZ3-CN-15007%2CZ3-CN-15008%2CZ3-CN-15009%2CZ3-CN-15010%2CZ3-CN-15011%2CZ3-CN-15012%2CZ3-CN-15013%2CZ3-CN-15014%2CZ3-CN-15015

Show Legend

More Data...

Unconfined Aquifer Wells - Well List Frame

Confined Aquifer Wells - Well List Frame

Primary Canal Site Selections - Surface Water List Frame

River Site Selections - Surface Water List Frame

Stream Site Selections - Surface Water List Frame

Large Lakes Site Selections - Surface Water List Frame

Show Imagery Slider

Map Direct: Generalized Water Information System

Details of each site in filtered list (use scroll bar to view more descriptions)

Scroll Bar

Filtered list of sites from GWIS Recon Tracking (show map)

https://ca.dep.state.fl.us/mapdirect/?focus=gwis&querytype=gwis_WMS_CNP_SP_VW&zoom=query&queryvalues=Z3-CN-15001%2CZ3-CN-15002%2CZ3-CN-15003%2CZ3-CN-15004%2CZ3-CN-15005%2CZ3-CN-15006%2CZ3-CN-15007%2CZ3-CN-15008%2CZ3-CN-15009%2CZ3-CN-15010%2CZ3-CN-15011%2CZ3-CN-15012%2CZ3-CN-15013%2CZ3-CN-15014%2CZ3-CN-15015&imagery=

Search for: Z3-CN-15001,Z3-CN-15002,Z3-CN-15003,Z3-CN-15004,Z3-CN-15005,Z3-CN-15006,Z3-CN-15007,Z3-CN-15008,Z3-CN-15009,Z3-CN-15010,Z3-CN-15011,Z3-CN-15012,Z3-CN-15013,Z3-CN-15014,Z3-CN-15015

Zoom To All 15 selected features

Clear

Print

Table

Download

Format

Primary Canal Site Selections - Surface Water List Frame

LOWER ST. JOHNS HYDROLOGIC UNIT NAME

Z3-CN-15009, FL PK RANDOM SAMPLE Address

FLAGLER County COUNTY NAME

No CAN BE SAMPLED

ZONE 3 REPORTING UNIT

CANAL WATERBODY TYPE

COMMENTS

Latitude: 29° 26' 17.408282" Longitude: 81° 23' 22.524895"

Nearby

Zoom

Pan

Remove

Primary Canal Site Selections - Surface Water List Frame

LOWER ST. JOHNS HYDROLOGIC UNIT NAME

Z3-CN-15010, FL PK RANDOM SAMPLE Address

ST. JOHNS County COUNTY NAME

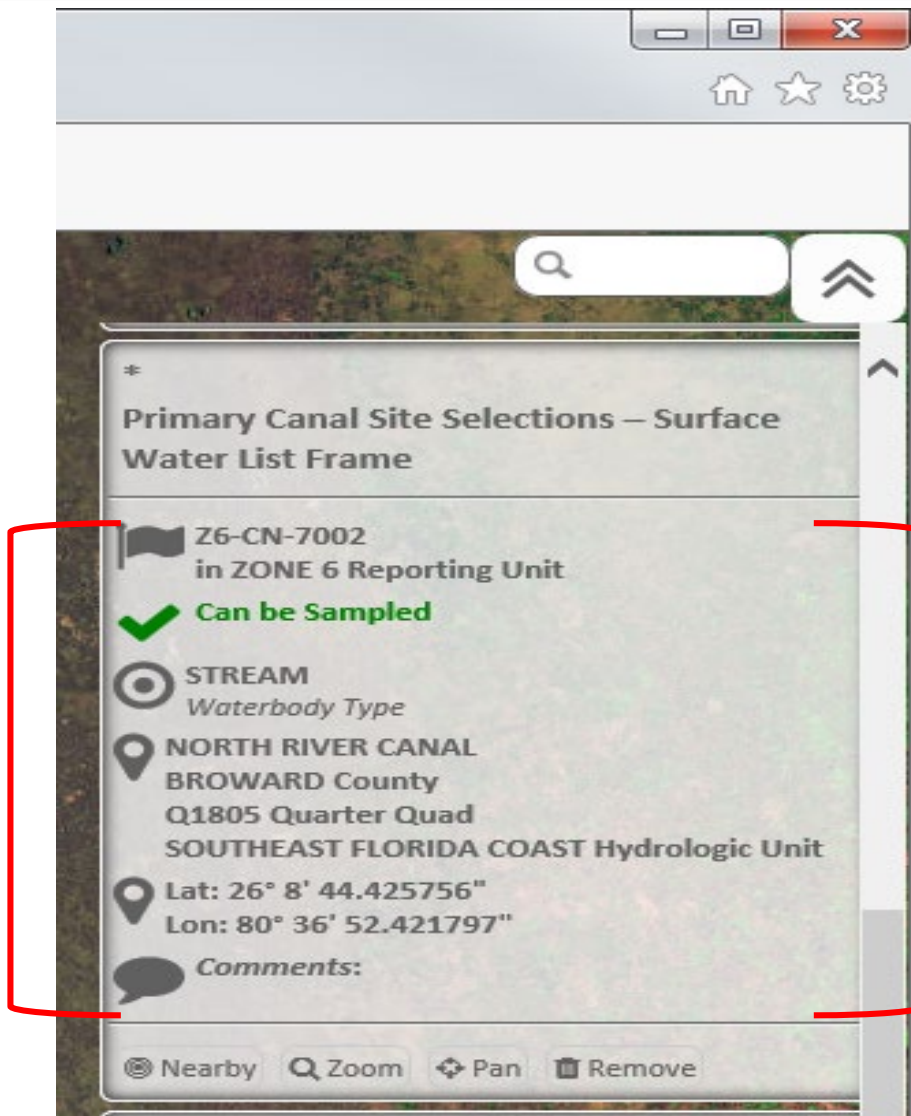
Yes CAN BE SAMPLED

ZONE 3

--Show County--



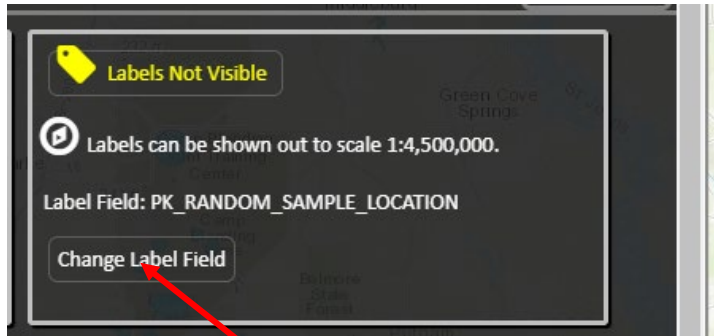
How to find details on a sampling site?



Commonly used attributes are provided from the layer's data table



How to change the label field for a layer?

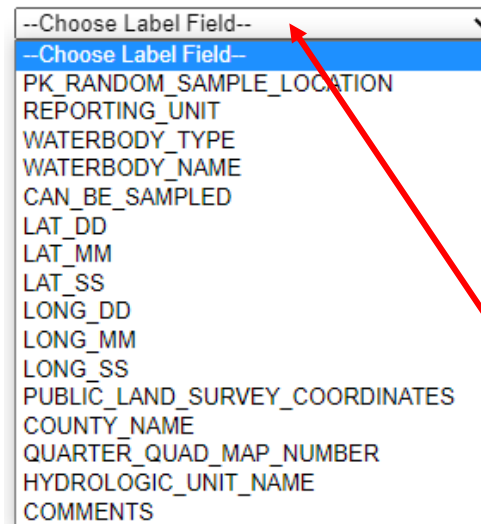


Change the layer label by clicking this icon

Edit Labeling for this Layer

Primary Canal Site Selections – Surface Water List Frame

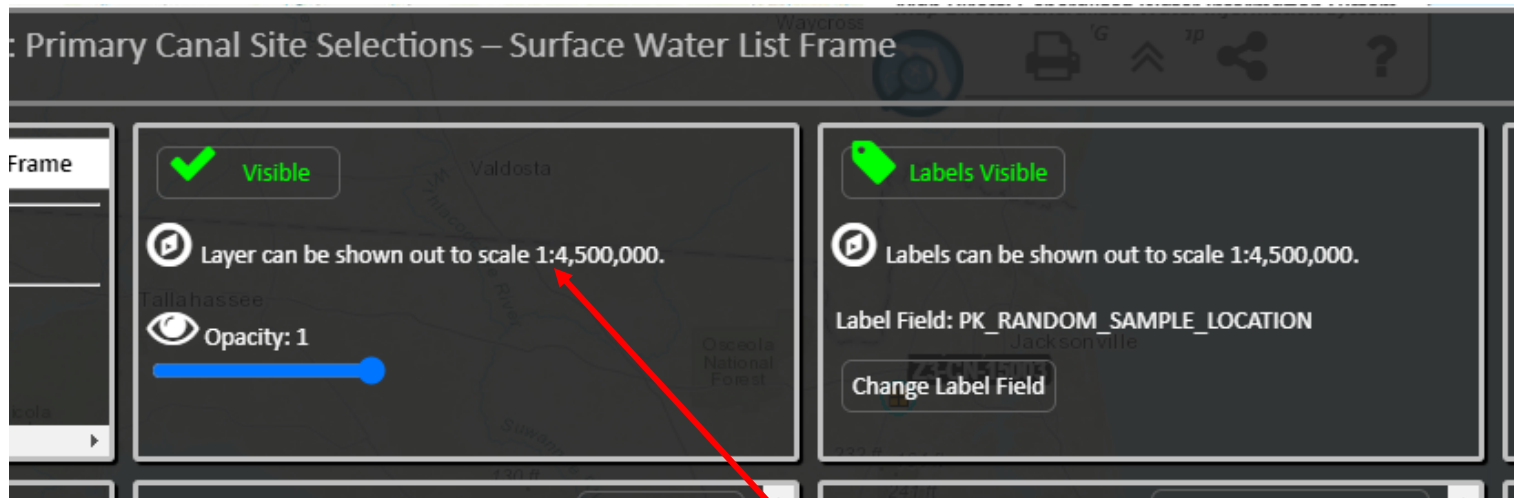
Choose a field to use for labels:



Choose from the fields in the layer for the new label in your map



Layer/Label Visibility Controlled by Scale of Map

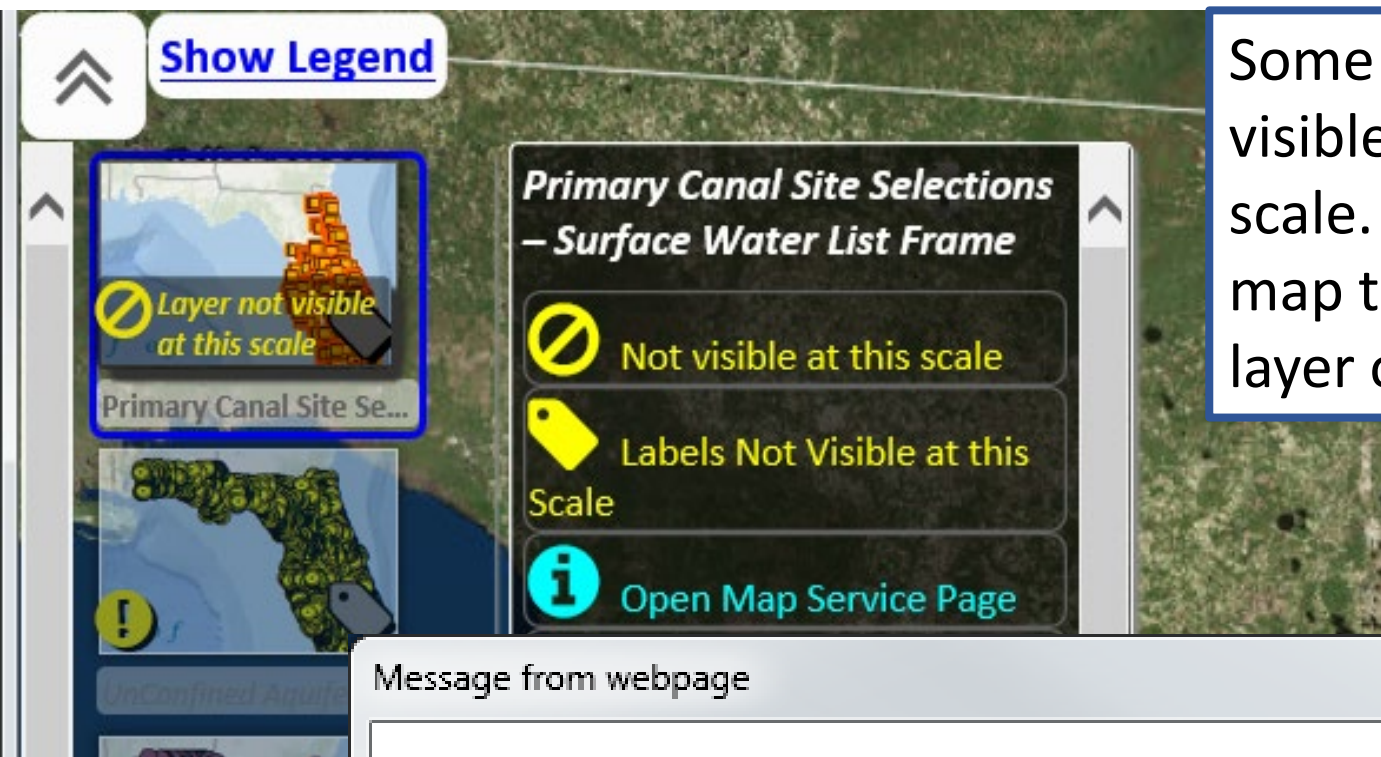


This canals layer and its labels are only visible below 1:4,500,000, therefore check the current scale in Map Direct just to right of Imagery Slider. If a larger number is shown to the right of “:” then the layer and labels will not be visible. Must zoom into the map.

Note: Some layers are visible at all scales



Map Direct alerts you with messages

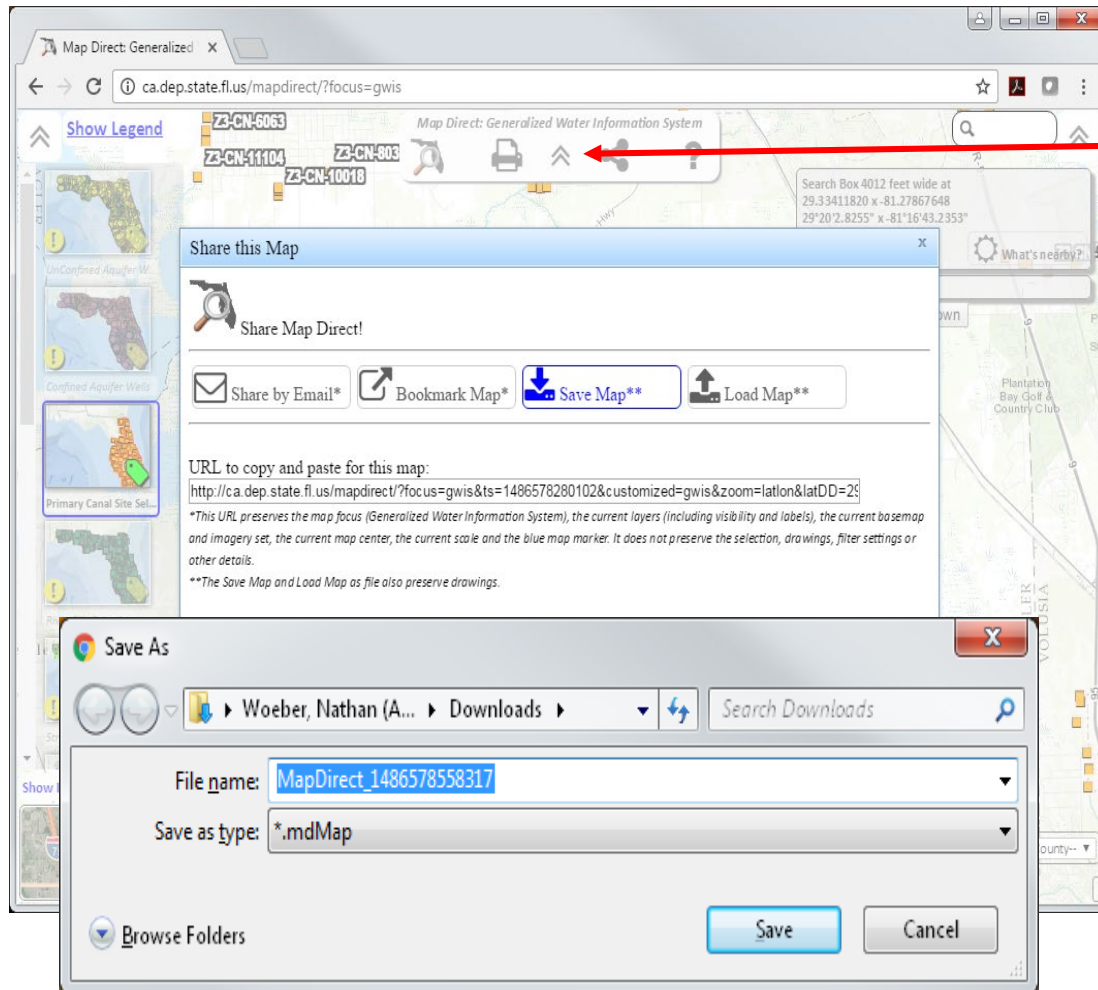


Some layers are only visible at a certain scale. Zoom into the map to make the layer or labels visible.





How do I save the map?



Click on the share icon and choose “save map” button.



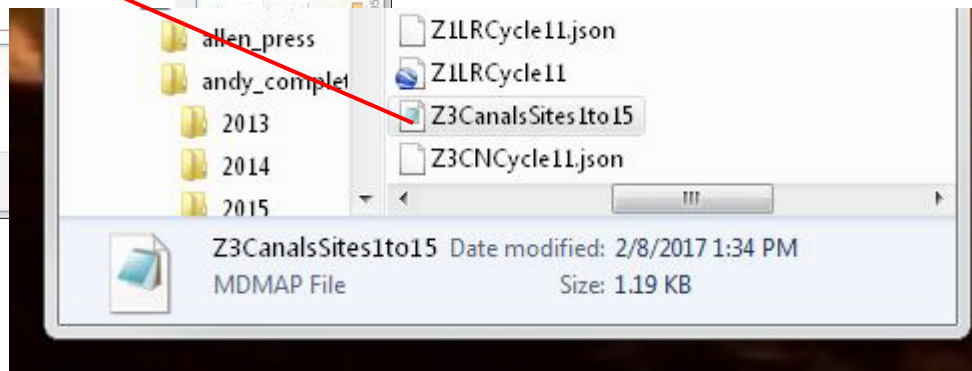
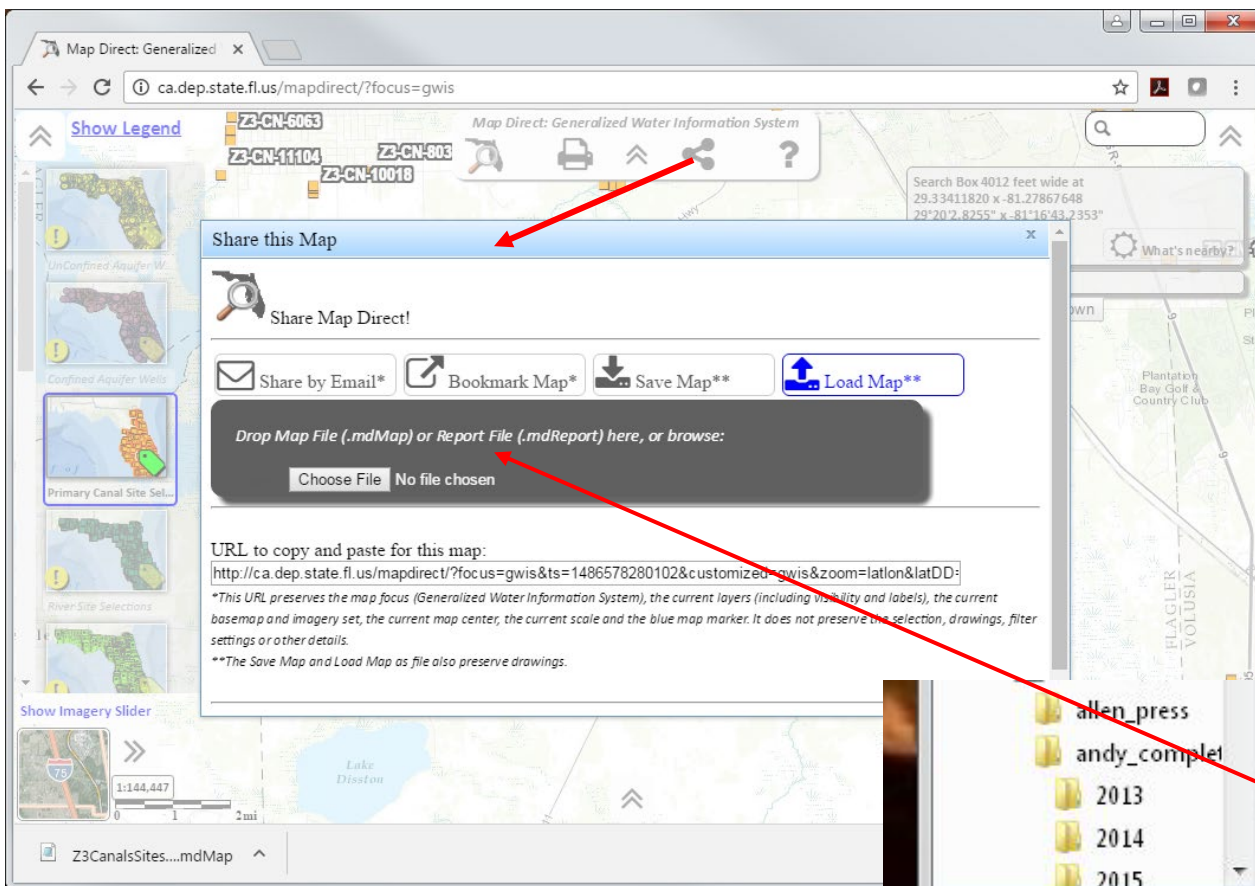
File will be saved with the “.mdMap” extension

You can rename the file to something useful like “Z3CanalsSites1to15.md Map”



How do I load a map?

Click “Load Map”; then drag file to gray area of button or browse to file location “Choose file” to load into the “standard” map.





What is an mdMap file?

```
{
  "focus": "standard",
  "name": "Generalized Water Information System",
  "url": "http://gwis.dep.state.fl.us/",
  "saveVersion": "v6.160210",
  "topicVersion": "v6.170201",
  "type": "Map",
  "latDD": 29.54803766,
  "lonDD": -81.38964553,
  "marker": null,
  "scale": 288896,
  "basemap": "topo",
  "topics": [
    {
      "id": "http://atoll.floridamarine.org/arcgis/rest/services/FWC_GIS/OpenData_Boating/MapServer/1",
      "name": "FWC Florida Boat Ramp Inventory",
      "visible": true,
      "labelsOn": false
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    {
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      "name": "UnConfined Aquifer Wells",
      "visible": false,
      "labelsOn": false
    },
    {
      "id": "WMS_CA_LISTFRAME_SP",
      "name": "Confined Aquifer Wells",
      "visible": false,
      "labelsOn": false
    },
    {
      "id": "WMS_CNP_SP",
      "name": "Primary Canal Site Selections",
      "visible": true,
      "labelsOn": true,
      "filters": {
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          "where": "UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11001' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11002' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11003' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11004' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11005' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11006' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11007' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11008' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11009' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11010' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11011' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11012' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11013' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11014' OR UPPER(PK_RANDOM_SAMPLE_LOCATION)='Z3-CN-11015'",
          "name": "Filtered Search Result",
          "desc": "'Z3-CN-11001', 'Z3-CN-11002', 'Z3-CN-11003', 'Z3-CN-11004', 'Z3-CN-11005', 'Z3-CN-11006', 'Z3-CN-11007', 'Z3-CN-11008', 'Z3-CN-11009', 'Z3-CN-11010', 'Z3-CN-11011', 'Z3-CN-11012', 'Z3-CN-11013', 'Z3-CN-11014', 'Z3-CN-11015'",
          "visible": true
        }
      },
      "id": "WMS_HISTR_SP",
      "name": "River Site Selections",
      "visible": false,
      "labelsOn": false
    },
    {
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      "name": "Stream Selections",
      "visible": false,
      "labelsOn": false
    },
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      "visible": false,
      "labelsOn": false
    },
    {
      "id": "WMS_SMLAKES_SP",
      "name": "Small Lake Site Selections",
      "visible": false,
      "labelsOn": false
    },
    {
      "id": "WMS_GWIS_SP",
      "name": "Sampled Stations (GWIS)",
      "visible": false,
      "labelsOn": false
    },
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      "id": "EPA_PERMITTED_DAMS",
      "name": "EPA Permitted Dam Locations",
      "visible": false,
      "labelsOn": false
    },
    {
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    },
    {
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      "name": "USA Topo Maps",
      "visible": false,
      "labelsOn": false
    }
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  "graphics": [],
  "custom": true,
  "ts": 1487090081412
}
```



Custom map settings and base layer



Layers and layers with filters added (top to bottom)



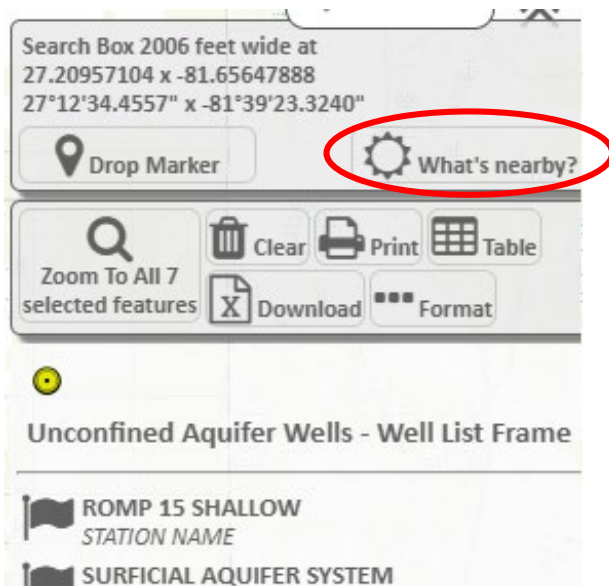
REST layer URL description



Resource layers



What is nearby your site(s)



Select a feature of interest from the layers in the map and click “What’s nearby”.

Select a search radius (five miles or less) to search other layers for nearby features.

What's Nearby?

Point of Interest:
28.10935492 x -81.83672333
28°06'77" x -81°50'40"

Search Radius (Buffer) Miles

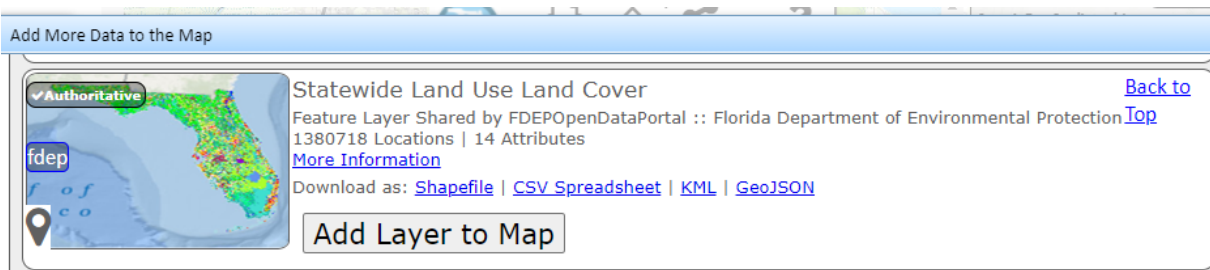
Report Title

- Pops up an Area of Interest Report (AIR) in a new tab/window.
 - Finds features nearby the Point of Interest.
 - Searches all the layers in your map, even if not visible.
 - Gives results ready for printing.
 - Report URL can be bookmarked so it can be run again later.
 - NOTE: Please use [this Permitting Information map](#) to search the layers that were in the old default Area of Interest Report.
- Also does some searches inside your map:
 - Draws the search buffer area on the map.
 - Selects visible features in the map.
- Pops up an Area of Interest Report (AIR) in a new tab/window.
 - Finds features nearby the Point of Interest.
 - Searches all the layers in your map, even if not visible.
 - Gives results ready for printing.
 - Report URL can be bookmarked so it can be run again later.



Buffer Search using Graphical Tools

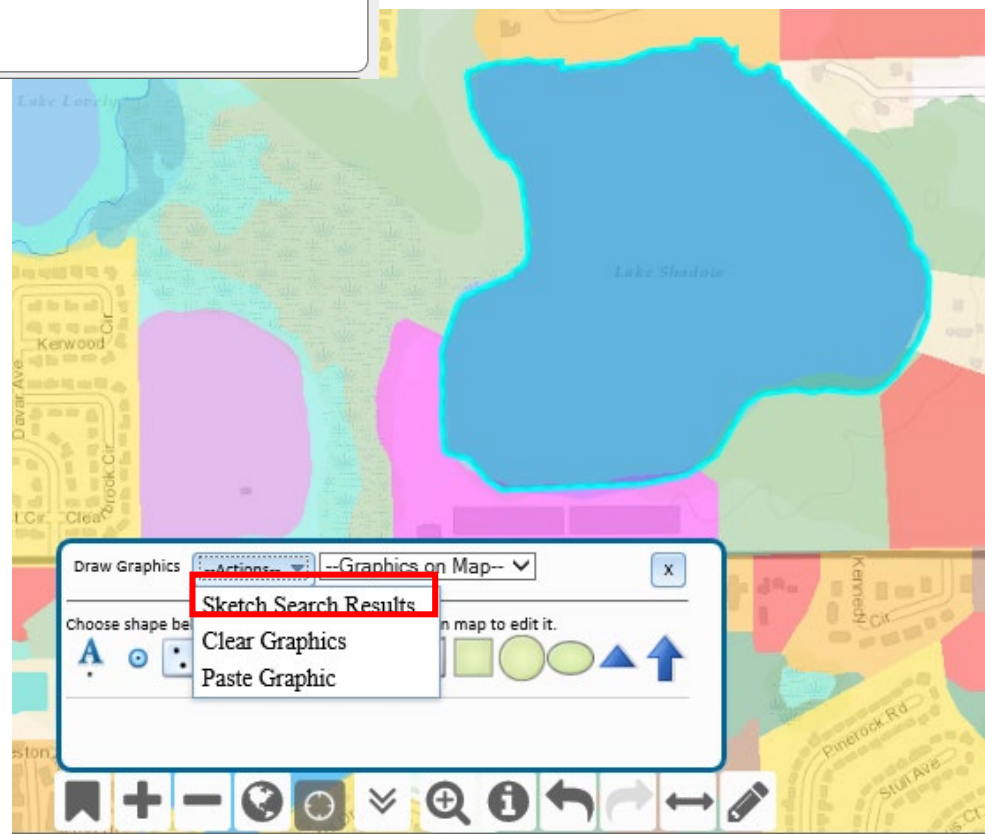
What is the land use around a typical lake?



Add the Statewide Land Use Land Cover layer to the map



Select graphics icon, select feature to buffer (in this case a large lake). Then select "Sketch Search Results"





Buffer Search using Graphical Tools

Complete Distance and units selection in buffer window and then click "Buffer" icon





Buffer Search using Graphical Tools

Click “Done” icon and view results of buffer selection to right in “Custom Selection” window.

Click here to get a table of the results.

Custom Selection

Zoom To All 35 selected features

Clear Print Table Download

Statewide Land Use Land Cover

Land Use

- 1300: High Density, 6 or more dwelling units/acre
- 1300: Residential High Density
- 1000: Urban and Built-Up

Land Cover

- 1300: High Density, 6 or more dwelling units/acre

Land Use Year: 2009

St. Johns River Water Management District

Nearby Zoom Pan Remove



Who do I contact if I have issues with Map Direct from the GWIS portal?

Please contact

Andy Woeber

GIS Analyst

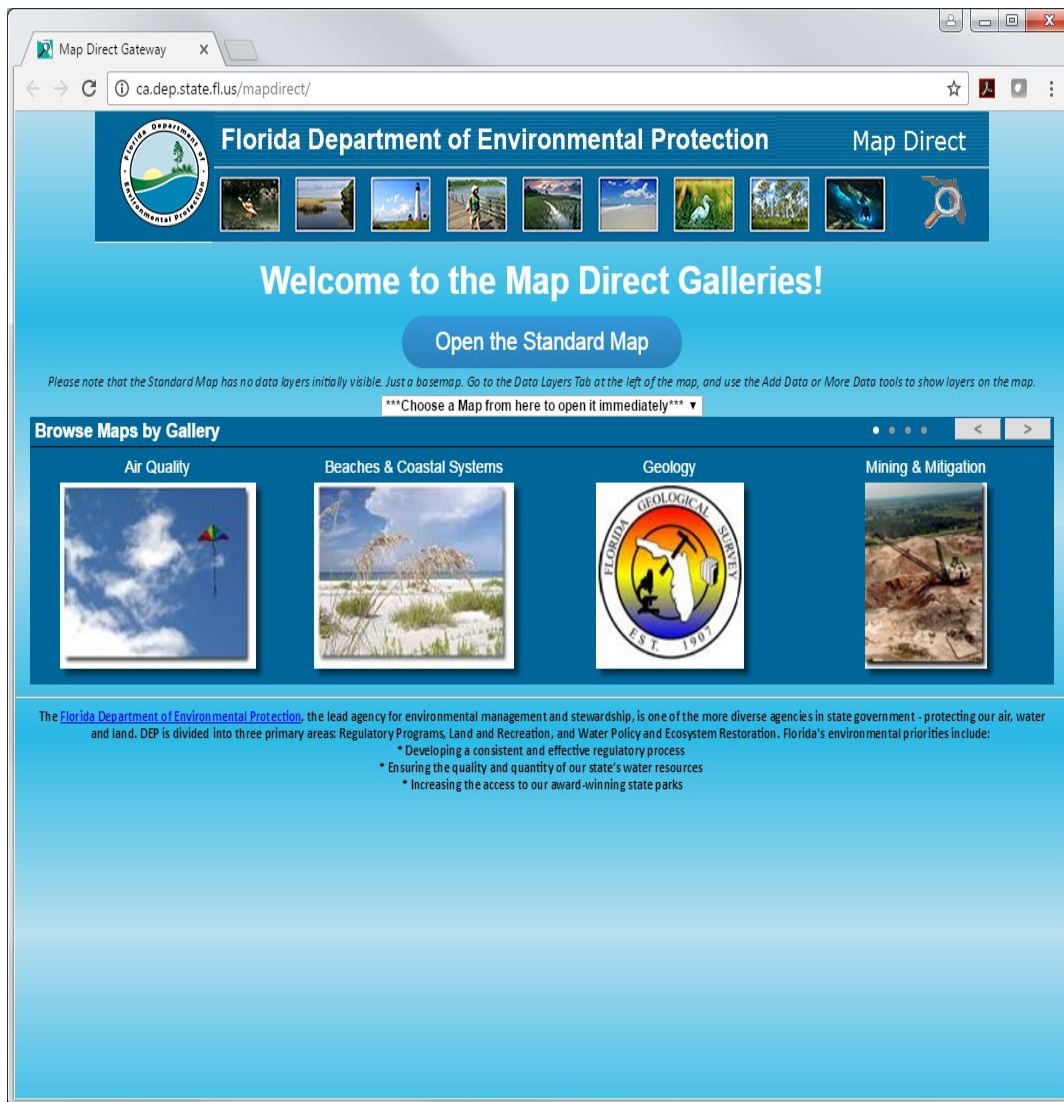
Or

WMS Data

Management Systems

Coordinator

who will review the
request and forward
to OTIS-GIS





Thanks and Good Luck with Map Direct

For more information on customizing Map Direct or this presentation contact:

Andy Woeber

GIS Analyst

Watershed Monitoring Section

Water Quality Assessment Program, DEAR, DEP.

Phone: 850-245-8031

Email: andy.woeber@dep.state.fl.us