



Learn and Customize Map Direct - Handout

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

September 2018



Map Direct

Map Direct: Generalized Water Information System

[Show Legend](#)

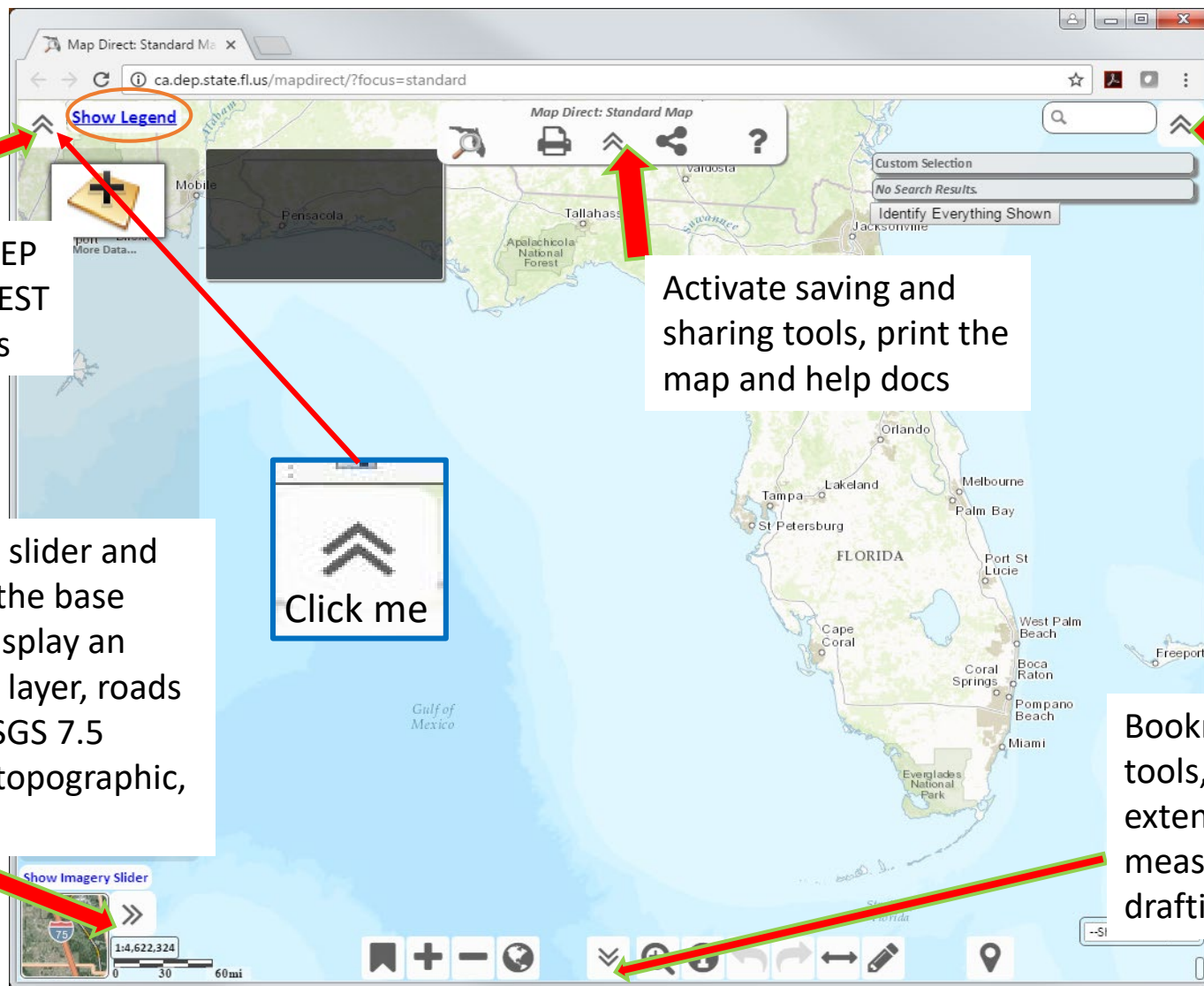
Primary Canal Site Se...

Show Imagery Slider

--Show County--



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





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 buffer searches around selected feature.



Get the most out of Map Direct

- What are some limitations of Map Direct
 - 1) Cannot perform many GIS analyses on layers.
 - 2) Cannot change symbology of the layer.
 - 3) Visible labels supported for one layer only.
 - 4) Advanced spatial queries are not supported.
 - 5) Limited functionality on smart phones.



Frequently Used Mouse Buttons



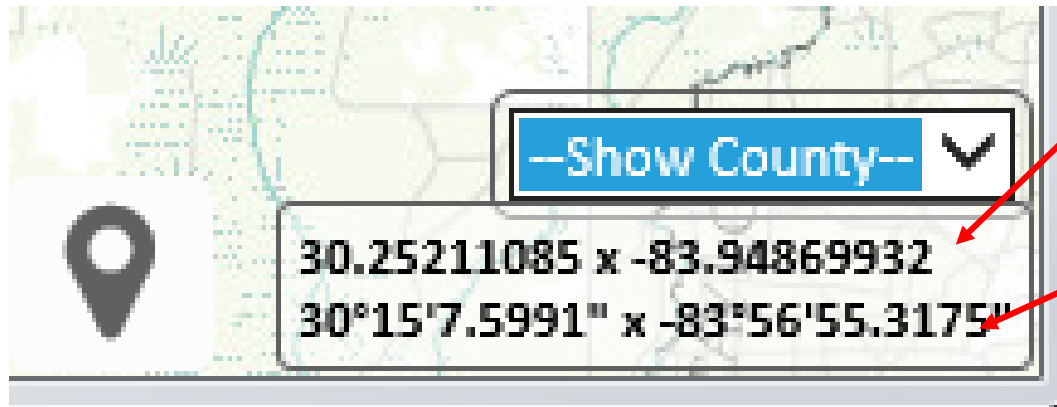
Wheel – use the center wheel button to zoom in or out of the map. Click the center button and hold to pan the map or to zoom into and out of the map view.

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 Navigation Tools



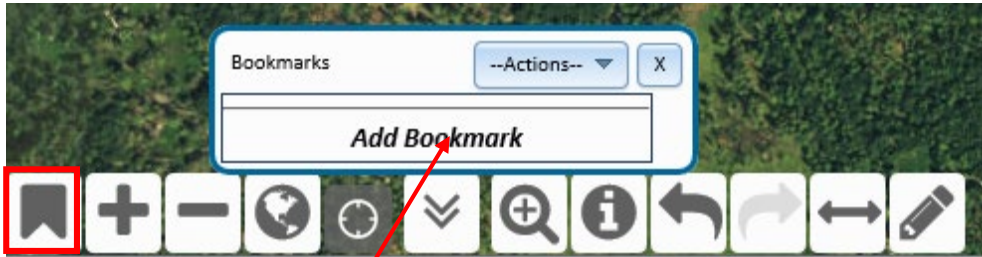
1 2 3 4 5 6 7 8 9 10 11 12

Drop a marker at the location of the mouse pointer

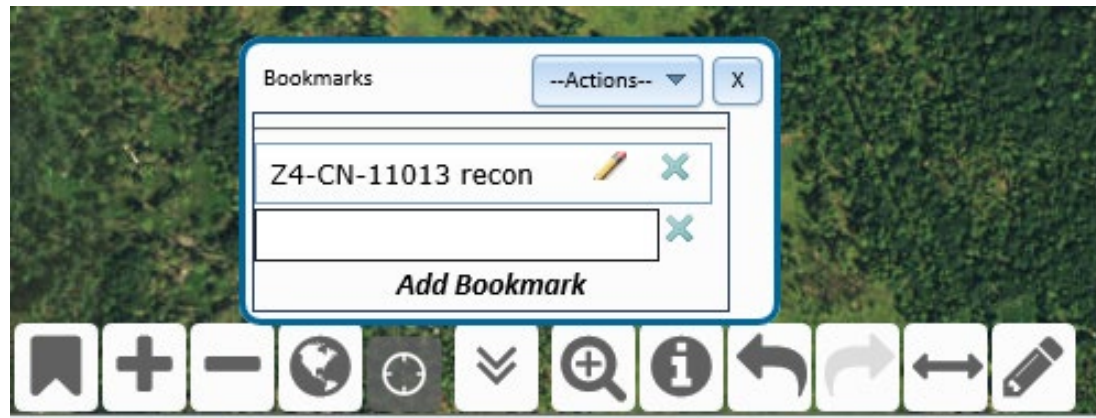
- 1) Add a bookmark
- 2) Zoom into the map
- 3) Zoom out of the map
- 4) Go to the extent of active layer(s)
- 5) Track my location
- 6) Hide or unhide this toolbar
- 7) Zoom to area drawn by the mouse pointer
- 8) Identify a feature or a number of features
- 9) Back to the previous map view
- 10) Go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



Create Bookmarks

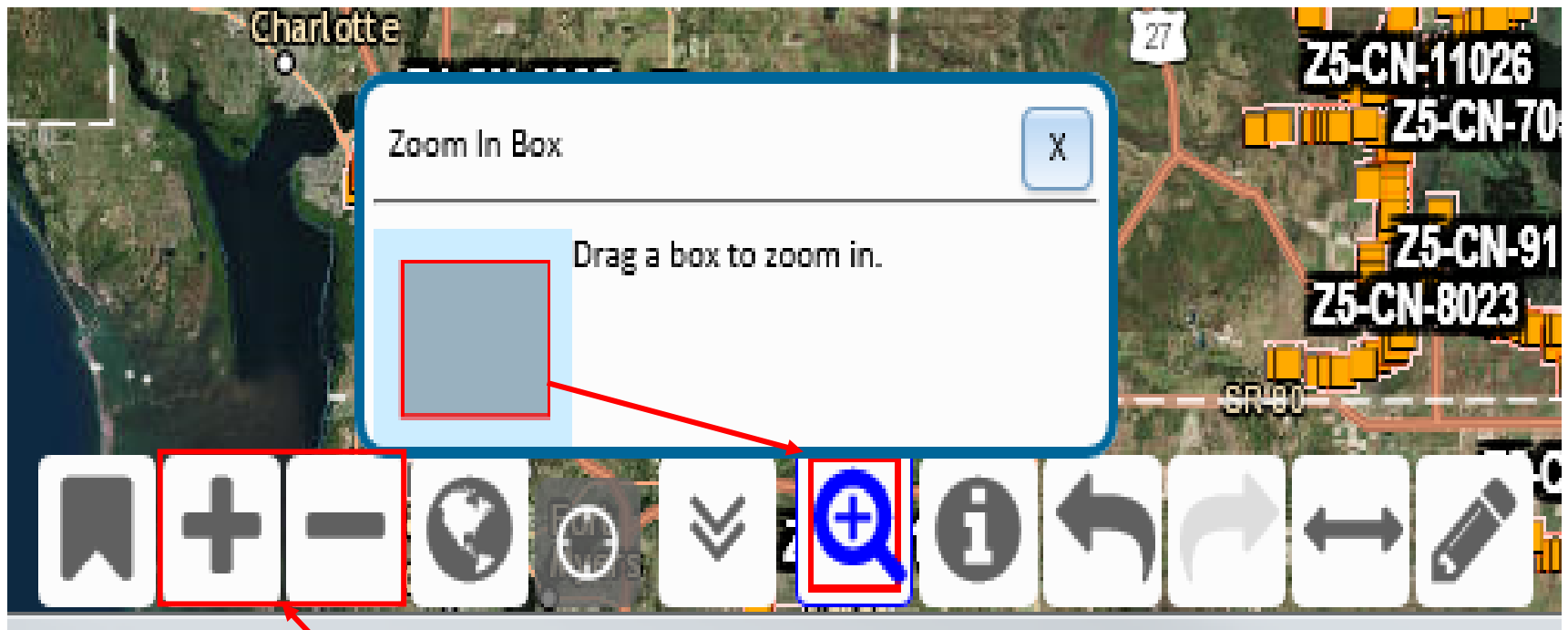


Click in
window to
add text for
bookmark





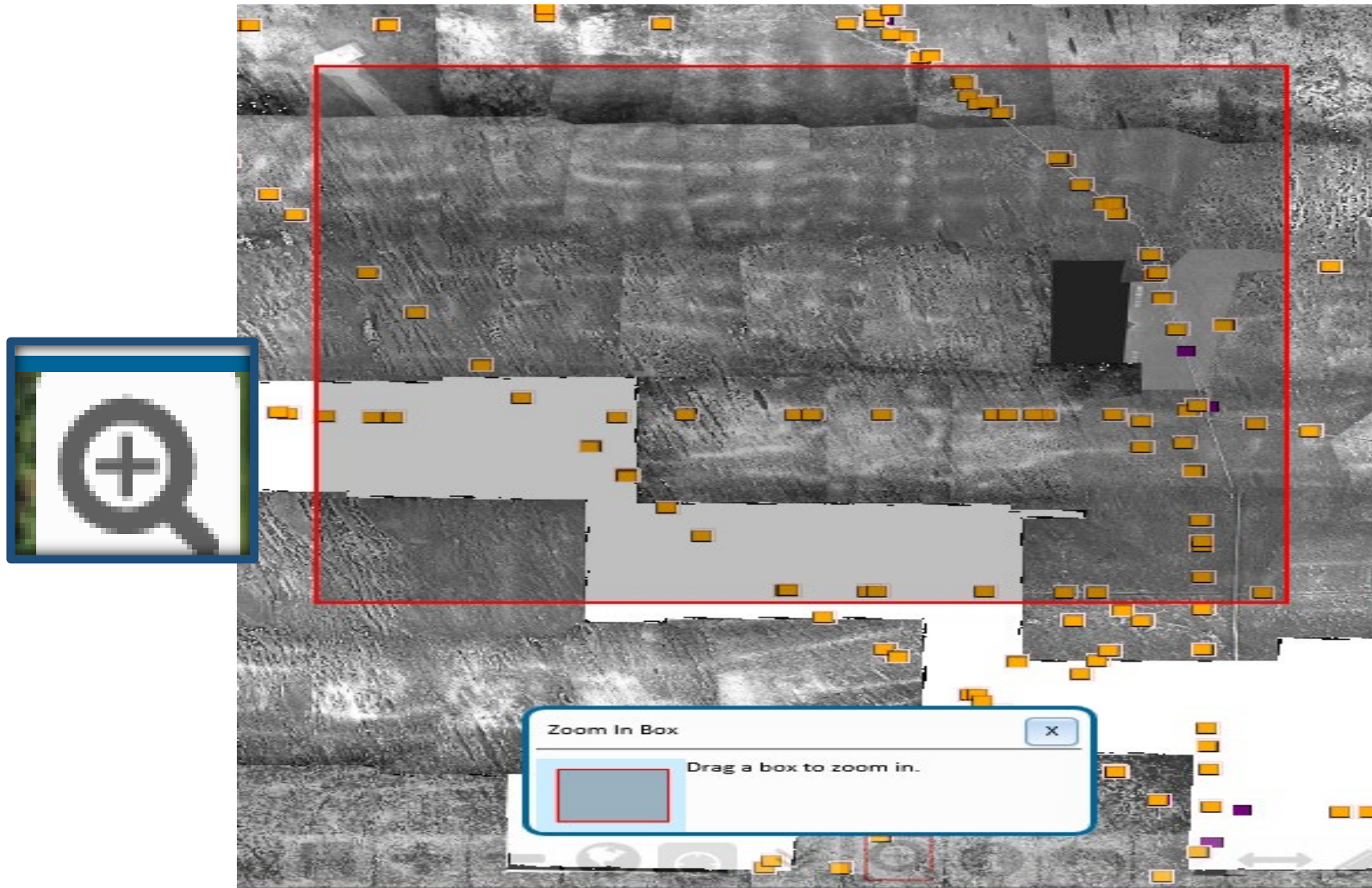
Zoom Tools



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

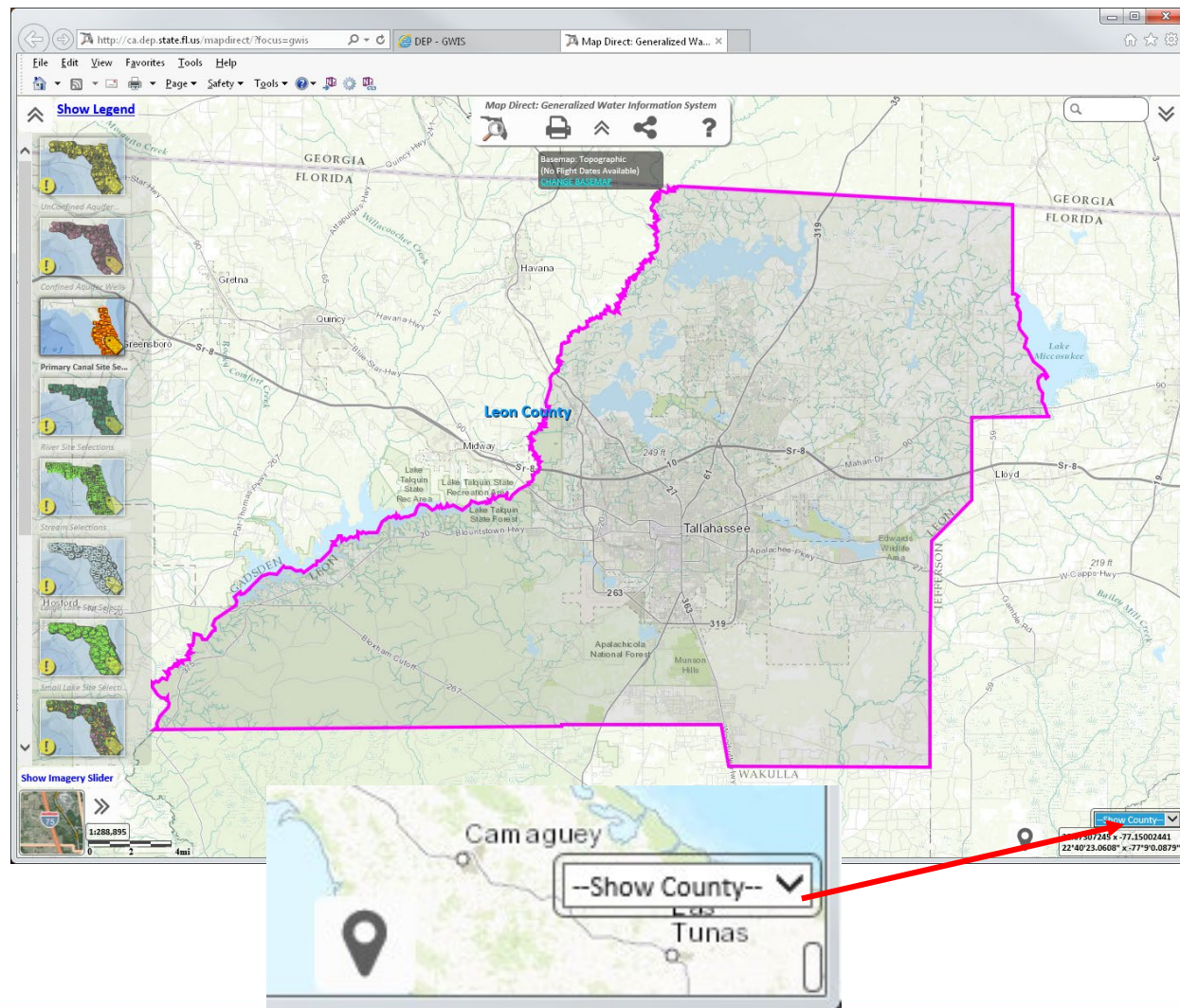


Draw box around features



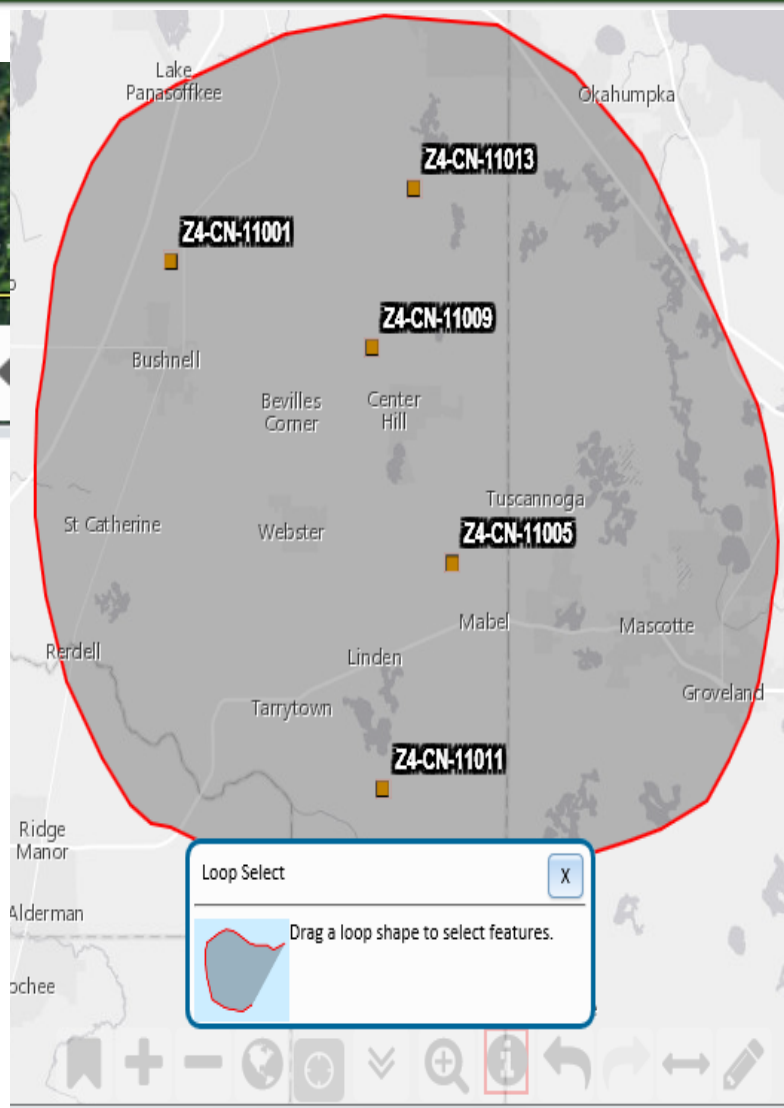
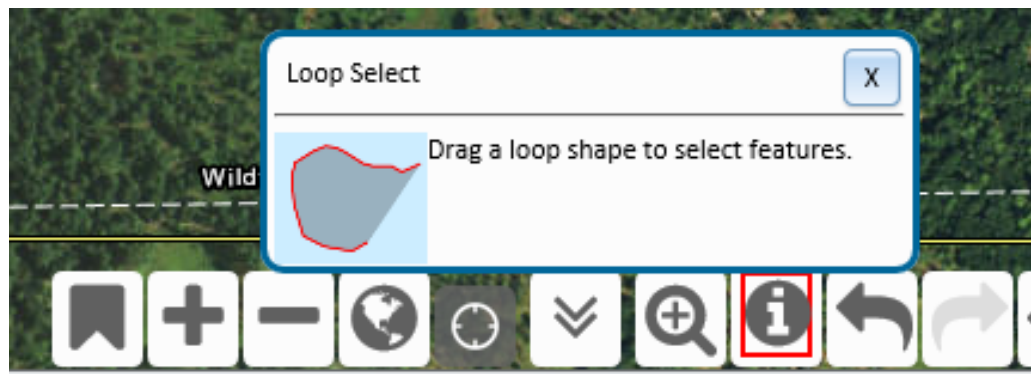


Zoom to County of Interest



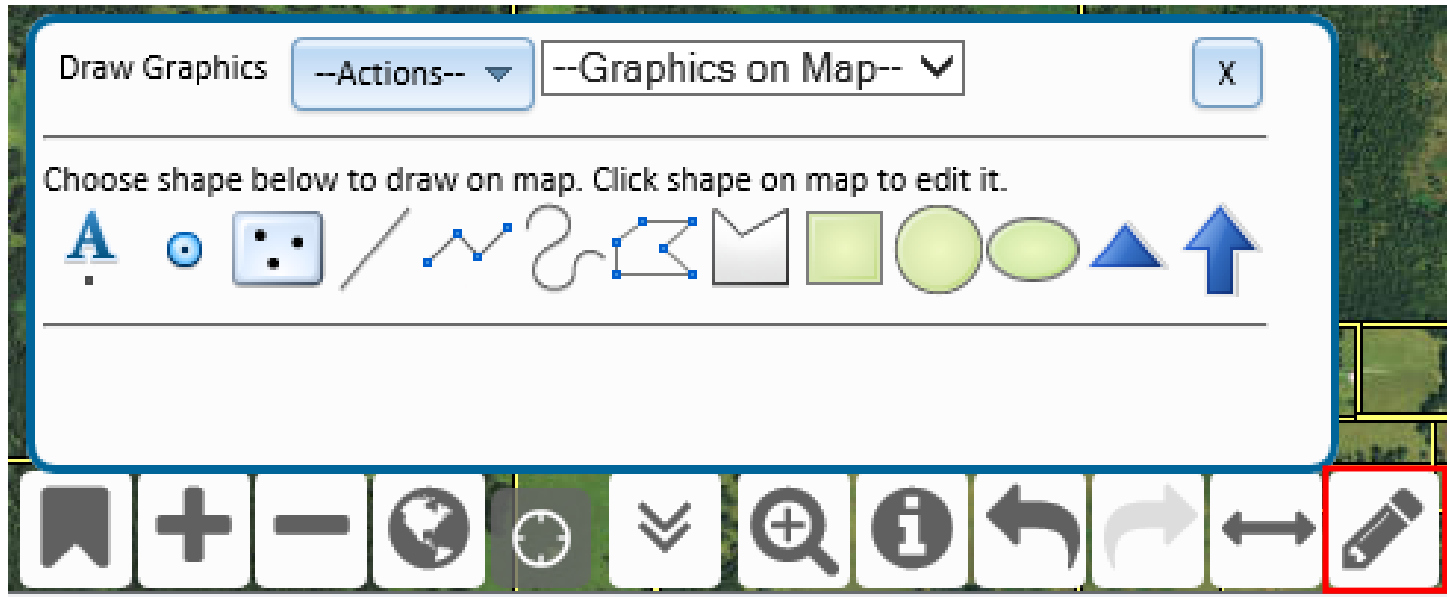


Identify sites or features



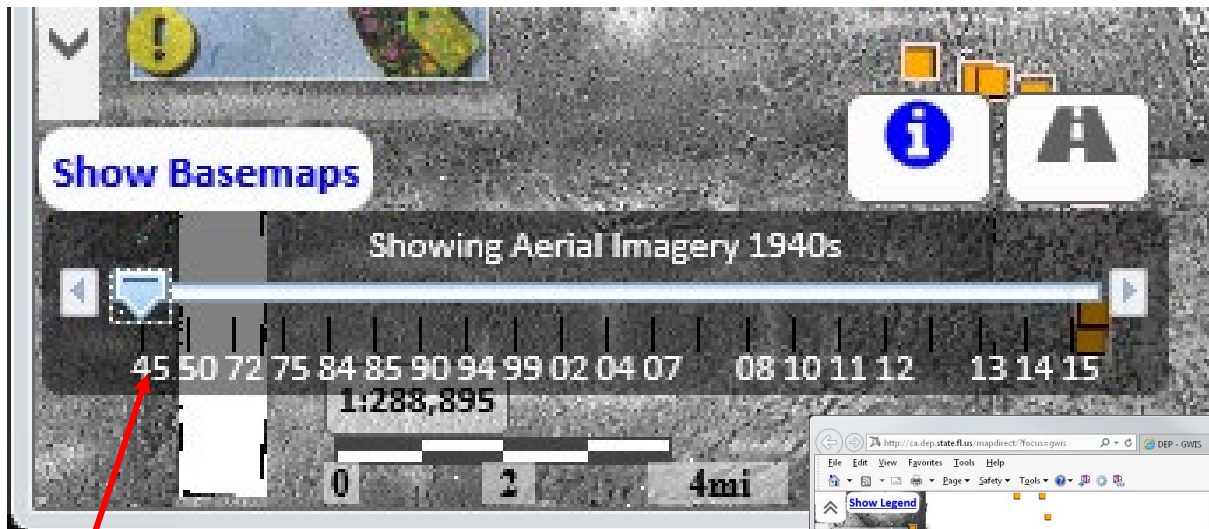


Draw helpful graphics on the map



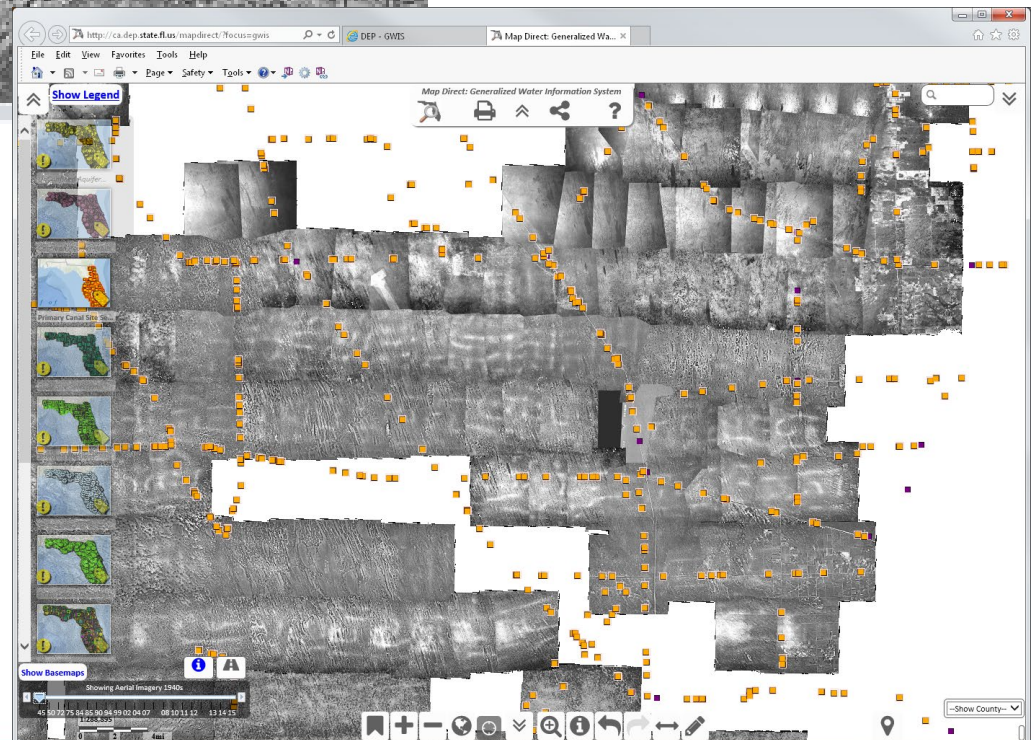


How to use the imagery slider?



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).





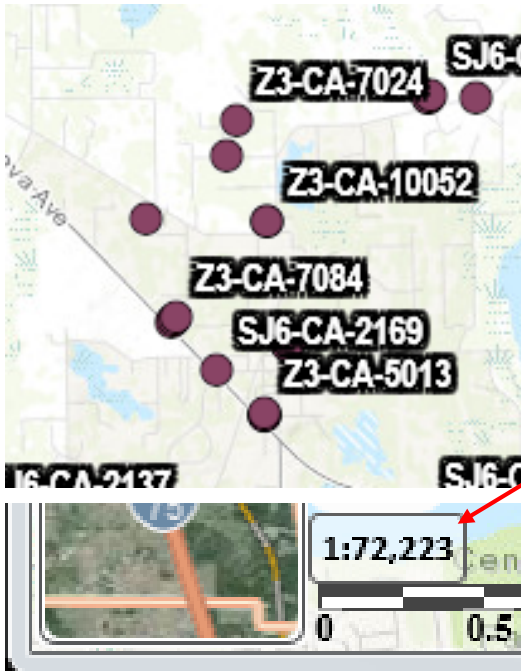
How to change the base map?



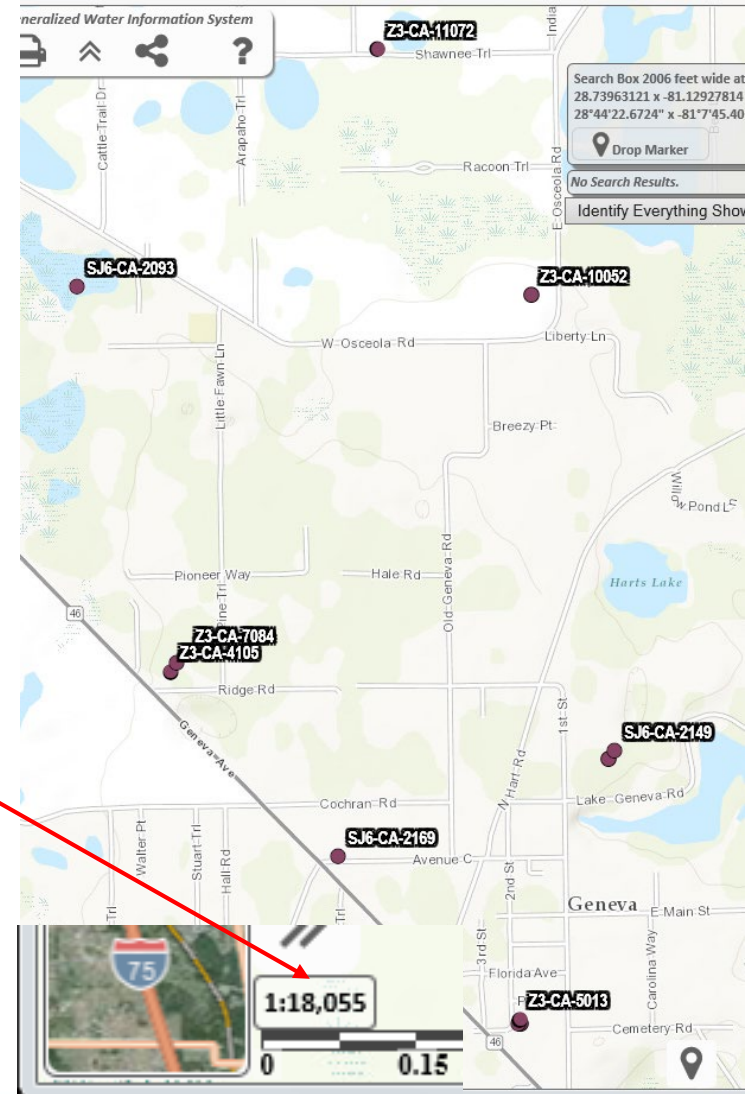


Tips on Scale

Small scale – a large area is shown with few details



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

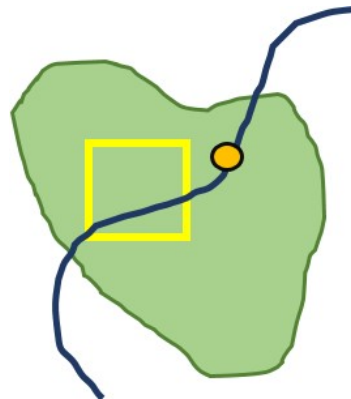
3

(3) Canal Site Selections



How are layers drawn in Map Direct?

Preferred drawing order for viewing layers



(0) Canal site selections - points

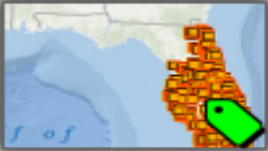
(1) WMS Flowing Waters - lines

(2) Cadastral Layer – small polygons

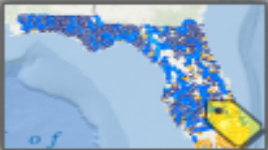
(3) Reporting Units – large polygons



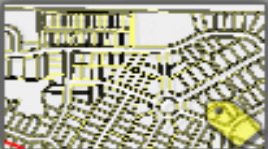
[Show Legend](#)



Primary Canal Site Se...



WMS Flowing Water...



Cadastral 2016 Prope...



WMS Cycle 3 Reporti...



More Data...



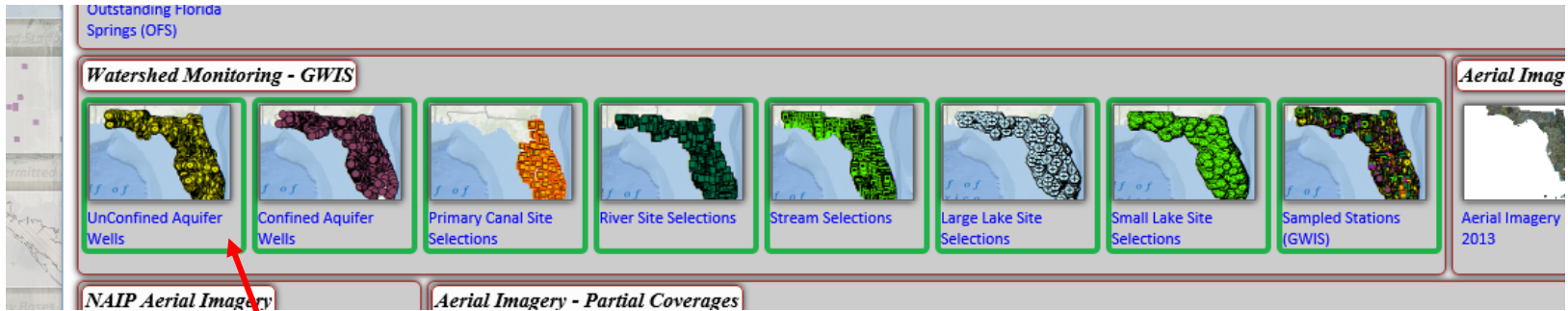
Drag layer up or down to change drawing order

Drag layer up or down in the thumbnail list

Use these buttons to move layer to top or bottom of list or up or down in the order



How to remove or add layer in “Add More Data to Map”

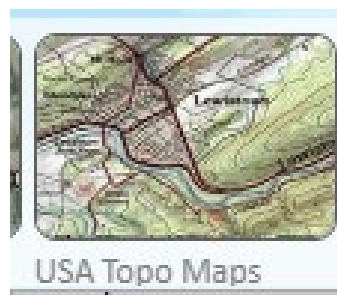
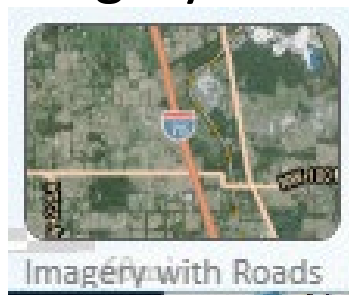


Click on thumbnail to
remove from map or
click thumbnail to add
layer to current map



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

When zoomed into the map, activate the Cadastral layer for property ownership

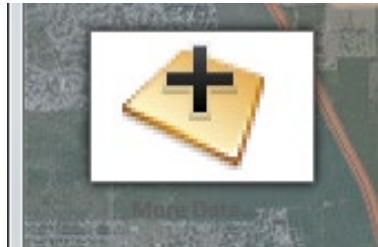


Tip – After Zooming Into Area of Interest

- 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	



- Site selections (sampling locations)
 - Canal, streams, rivers
 - Small and large lakes
 - Confined and unconfined aquifers

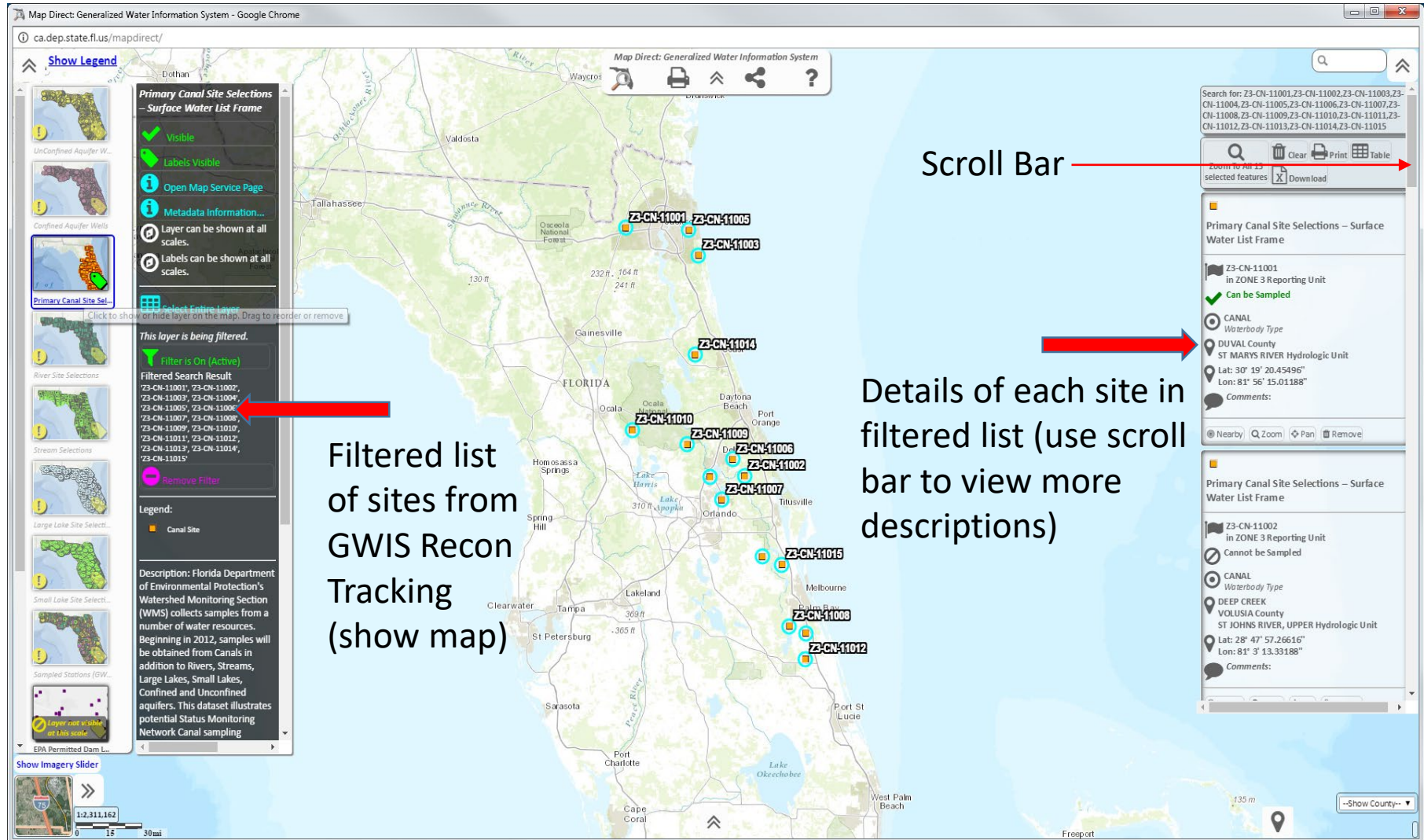
- Resource Maps
 - ESRI Topo Map (default base map)
 - EPA dams
 - Military bases
 - USA Topo Maps

You can add more layers and customize the map!!





GWIS Map with 15 Canal Locations Filtered



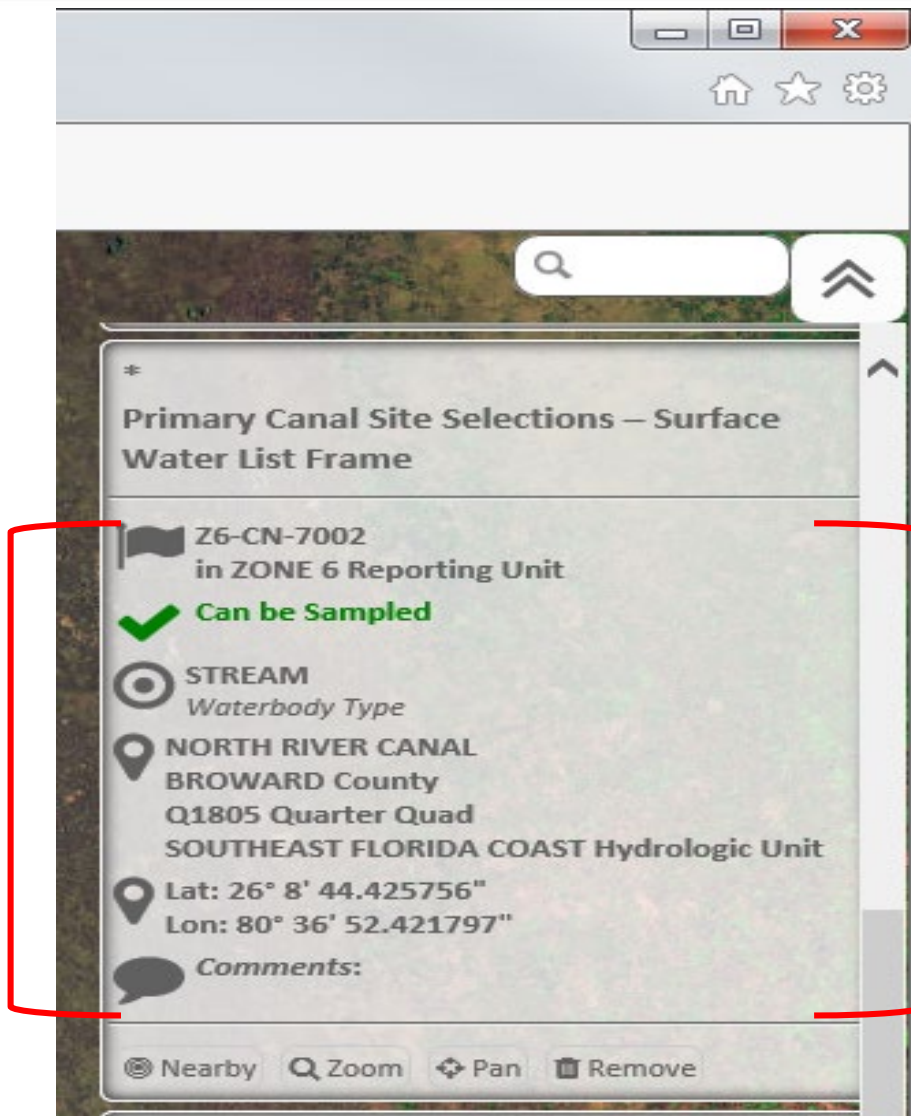


- Filter is loaded and active as shown by the green funnel icon

- Filter can be removed to view all sites in layer.



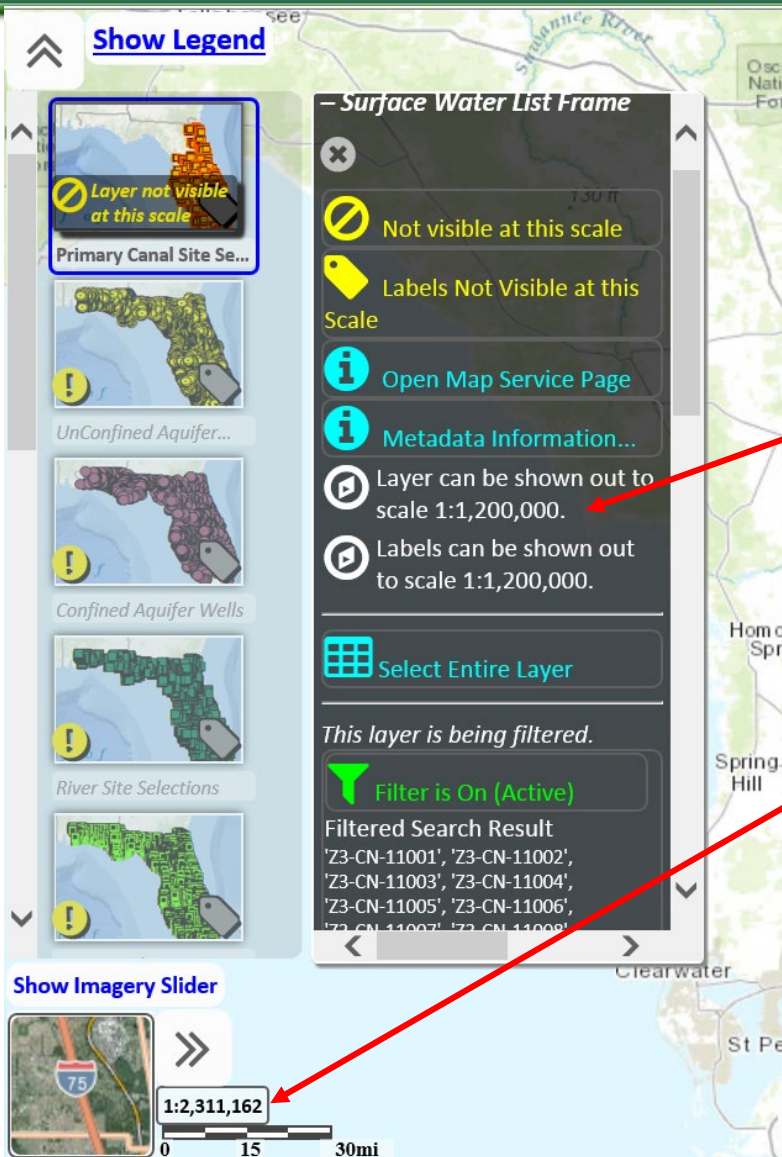
How to find details on a sampling site?



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



Layer/Label Visibility Controlled by Scale of Map



This layer and its labels are only visible at 1:1,200,000, therefore check current scale below; if larger number to right of ":" then the layer and labels will not be visible. Must zoom into the map.

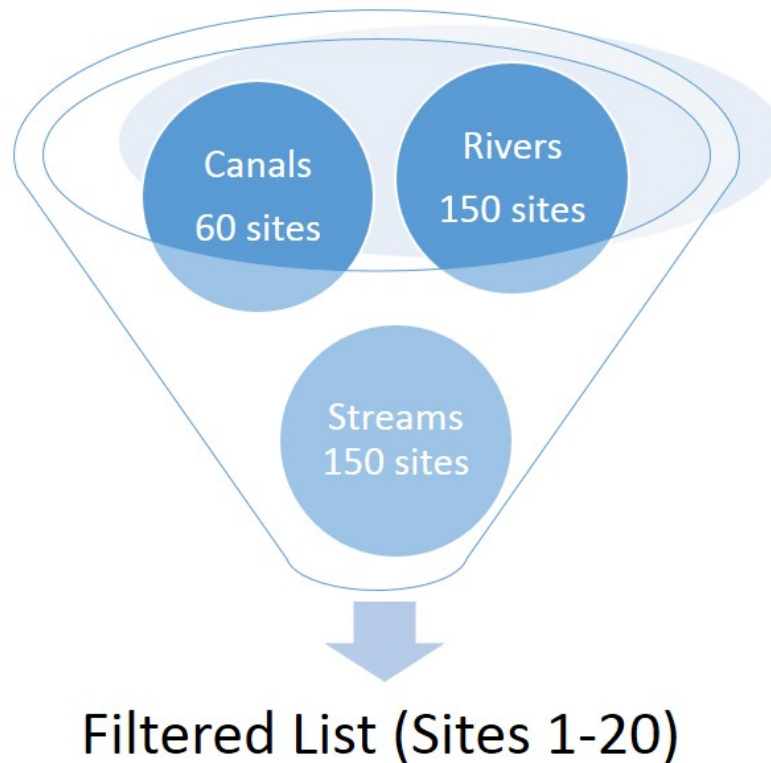
Current scale of the map (representative fraction, i.e. one inch = 2,311,162 inches)

Note: Some layers are visible at all scales



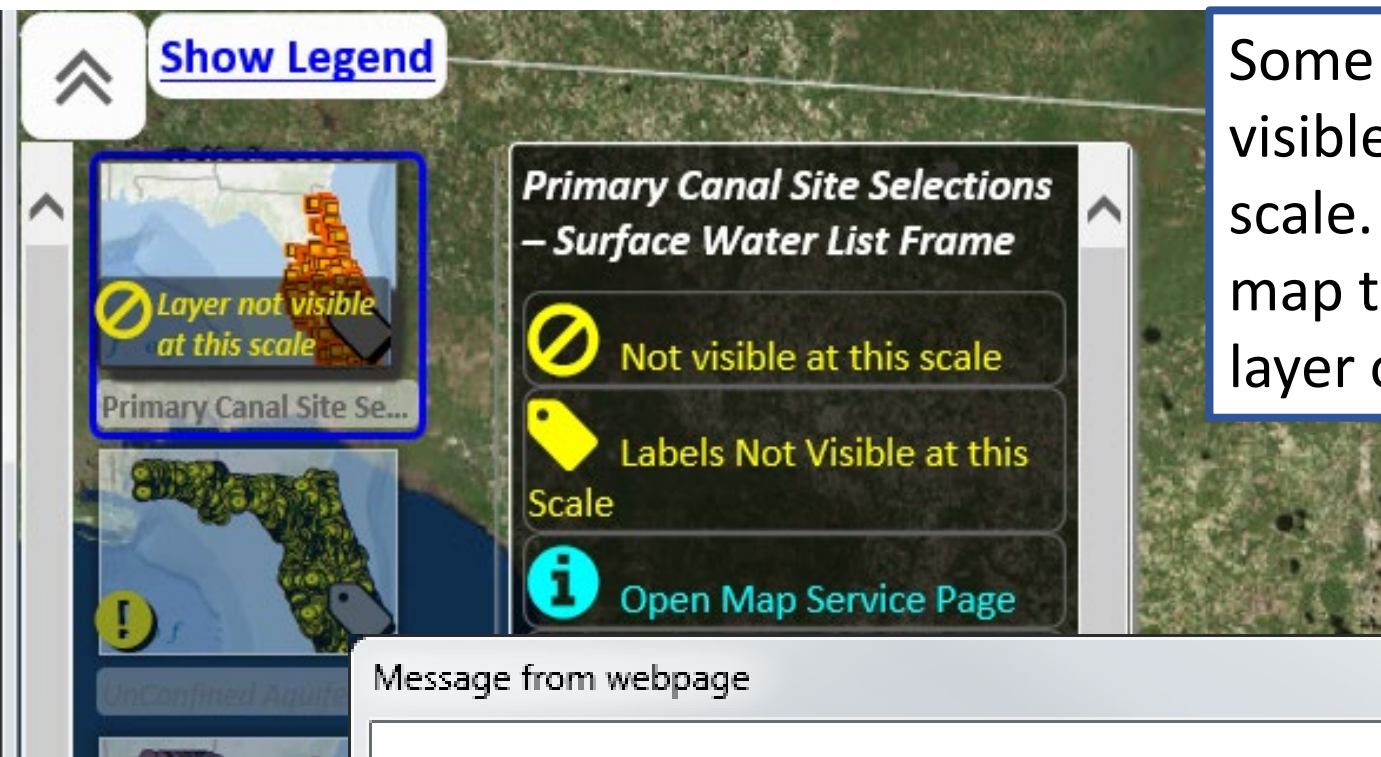
What is “filtering” a layer

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





Map Direct alerts you with messages

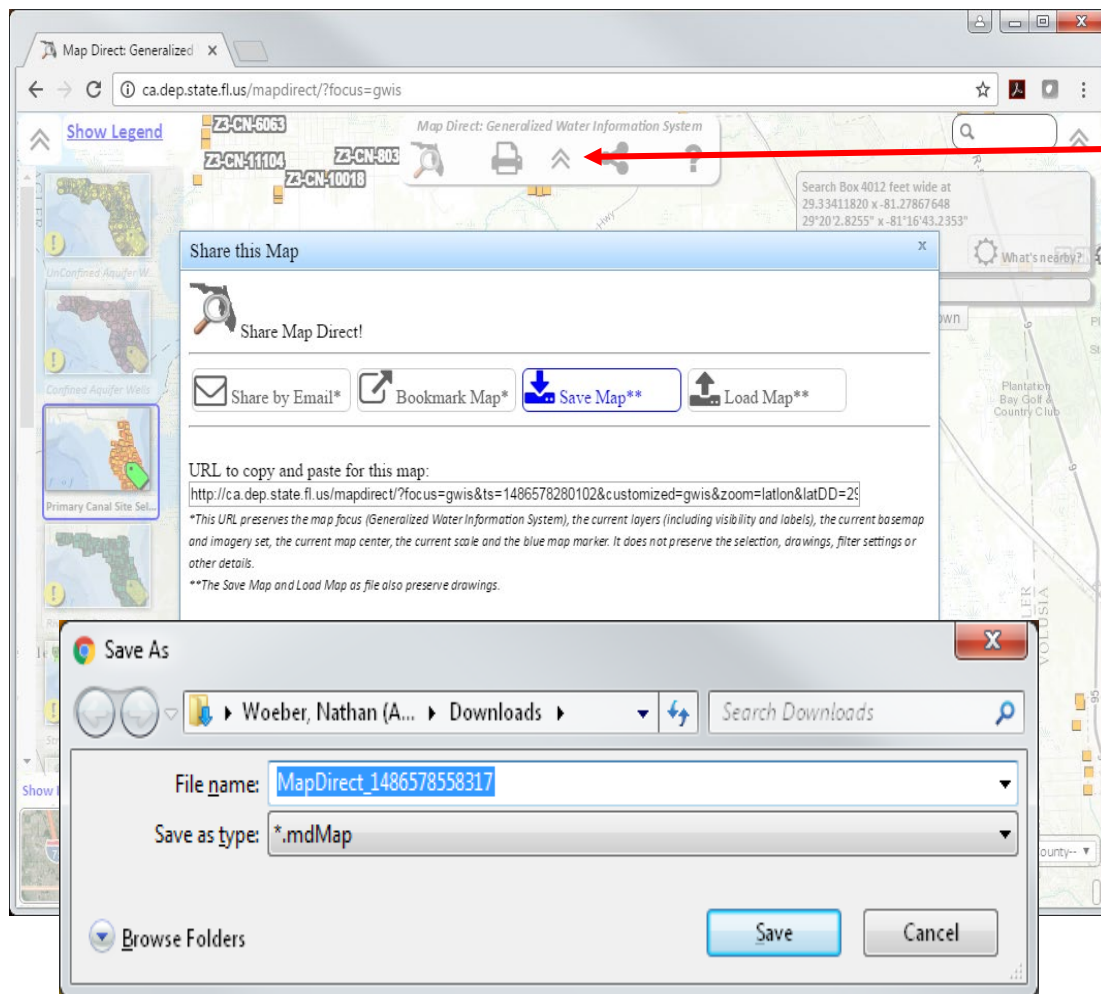


Some layers are only visible at a certain scale. Zoom into the map to make the layer or labels visible.





How do I save the map?



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



Save Map**

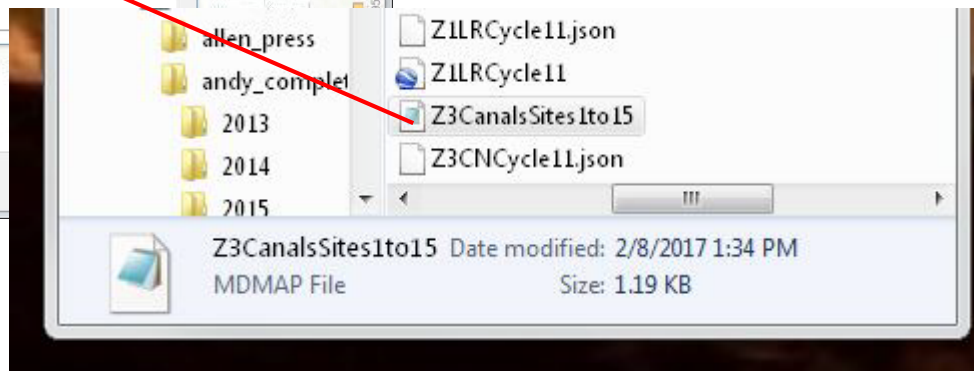
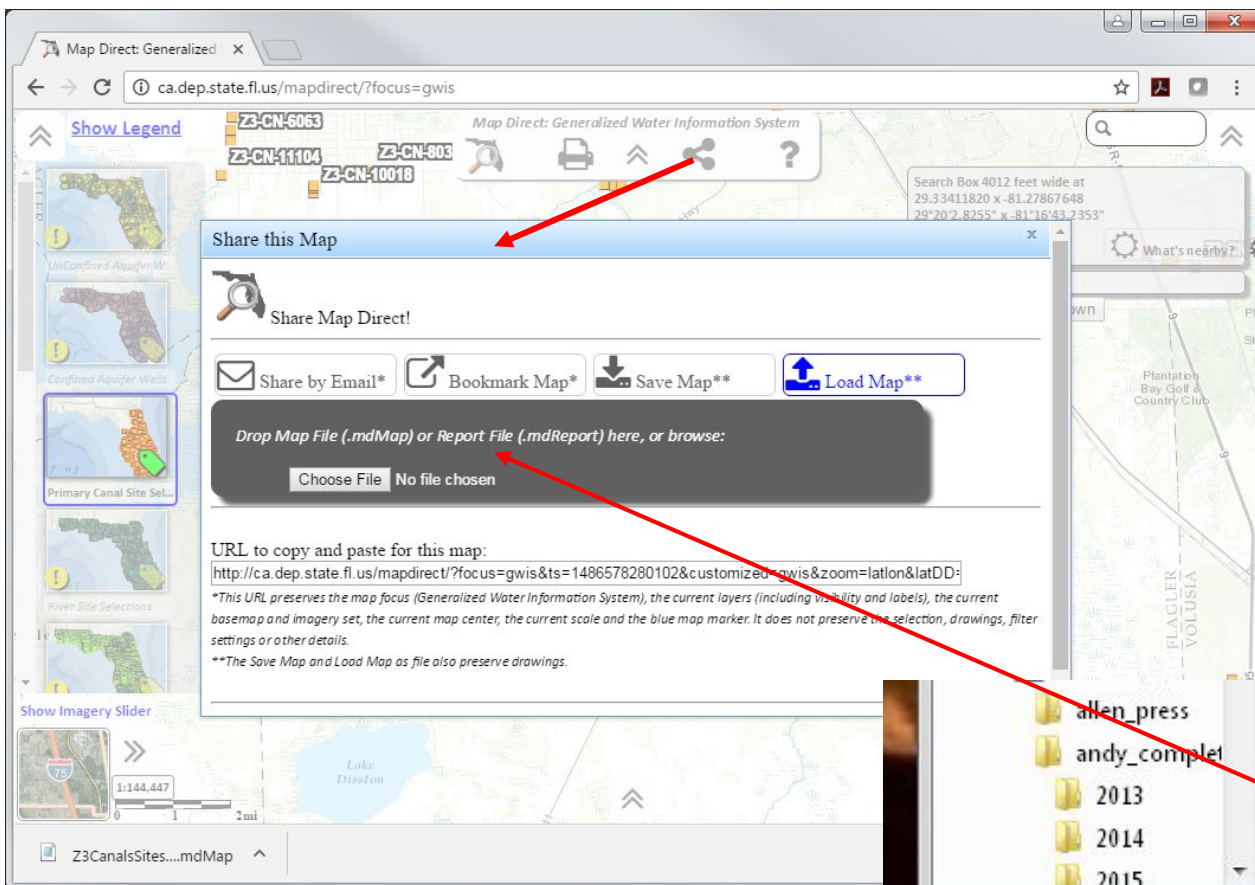
File will be saved with the “.mdMap” extension

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,
      "id": "WMS_UA_LISTFRAME_SP",
      "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": {
        "UtilSearch_qt_gwis_WMS_CNP_SP_VW": {
          "id": "UtilSearch_qt_gwis_WMS_CNP_SP_VW",
          "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,
      "id": "WMS_LOSTR_SP",
      "name": "Stream Selections",
      "visible": false,
      "labelsOn": false,
      "id": "WMS_LGLAKES_SP",
      "name": "Large Lake Site Selections",
      "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,
      "id": "EPA_PERMITTED_DAMS",
      "name": "EPA Permitted Dam Locations",
      "visible": false,
      "labelsOn": false,
      "id": "MILITARY_BASES",
      "name": "Military Bases",
      "visible": false,
      "labelsOn": false,
      "id": "services_arcgisonline_com_USA_Topo_Maps_MapServer_0",
      "name": "USA Topo Maps",
      "visible": false,
      "labelsOn": false
    ]
  ],
  "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)

Primary Canal Site Selections – Surface Water List Frame

TIGER CREEK
WATERBODY NAME

KISSIMMEE
HYDROLOGIC UNIT NAME

Z5-CN-13093, FL
PK RANDOM SAMPLE Address

POLK County
COUNTY NAME

N/A
CAN BE SAMPLED

ZONE 5
REPORTING UNIT

CANAL
WATERBODY TYPE

COMMENTS

Latitude: 27° 48' 29.910231"
Longitude: 81° 26' 19.37479"

Nearby **Zoom** **Pan** **Remove**

Search Nearby Feature

EITHER

OR Find Places Nearby this Location.

Search how far away?
 Miles

Primary Canal Site Selections – Surface Water List Frame

TIGER CREEK
WATERBODY NAME

KISSIMMEE
HYDROLOGIC UNIT NAME

Z5-CN-13093, FL
PK RANDOM SAMPLE Address

POLK County
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N/A
CAN BE SAMPLED

ZONE 5
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CANAL
WATERBODY TYPE

COMMENTS

Latitude: 27° 48' 29.910231"
Longitude: 81° 26' 19.37479"

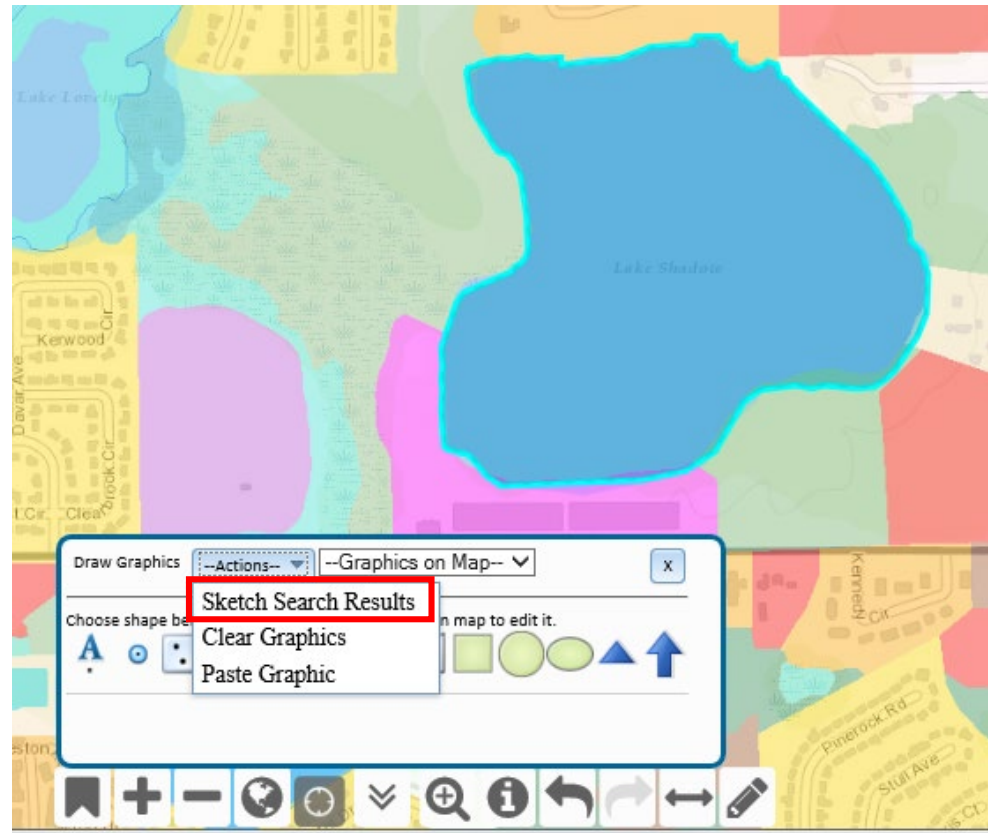


Buffer Search using Graphical Tools

What is the land use around a typical lake?



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

Editing Buffer of Polygon Selection.
Click the Map or the Done button to stop editing this shape.

Fill Style

Color... Outline... Remove Done

Identify Buffer Zoom To Front To Back Cut Copy Paste



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

Please contact

Andy Woeber

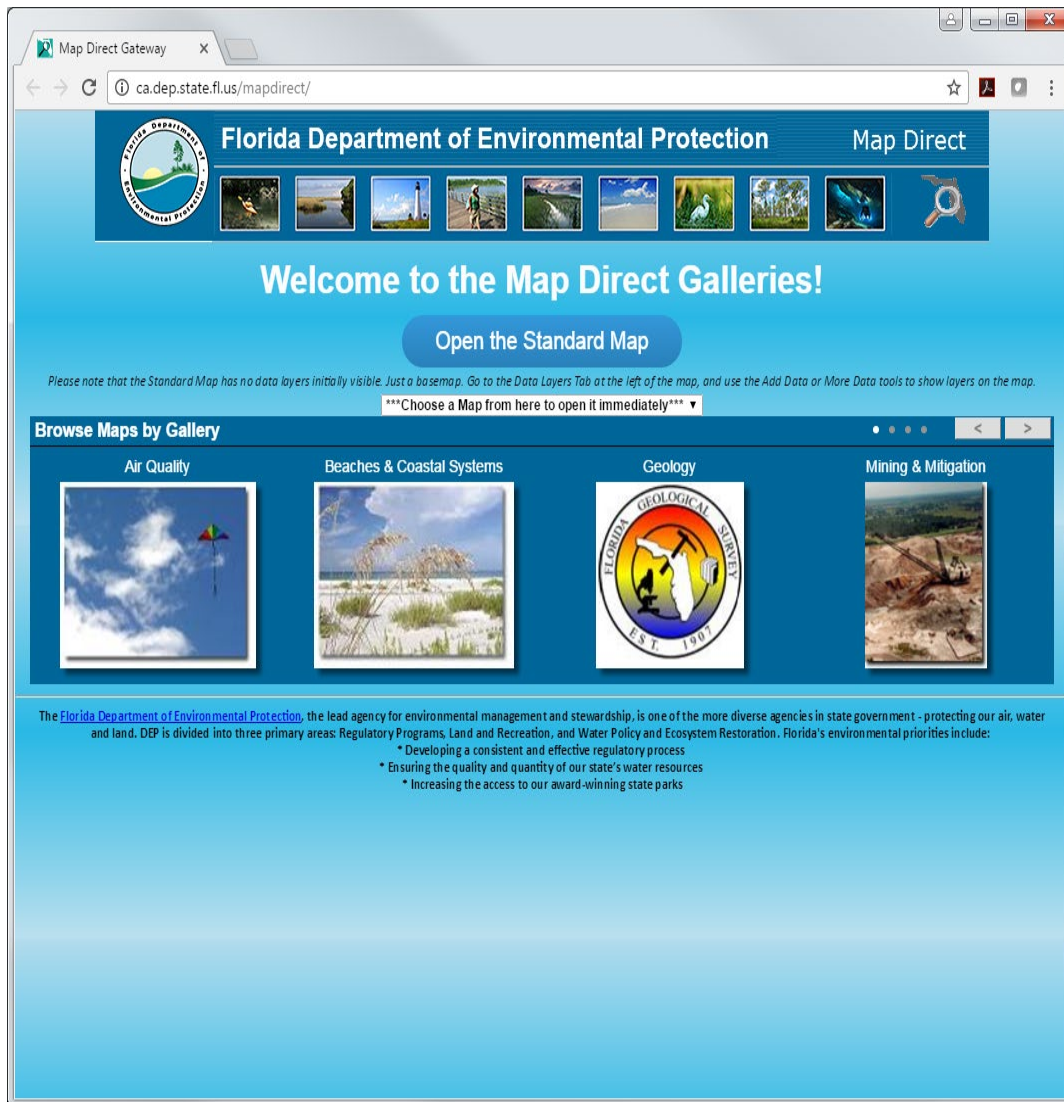
GIS Analyst

Or

Elizabeth Miller

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