USGS
science for a changing world

Embedding Rendering & Behavior Configuration in Map Data

Danielle Dupuy

Dam Nguyen

U.S. Department of the Interior
U.S. Geological Survey

Why do we do this? In what ways has it been useful? How we implement it.

USGS

Why?

- Gives non-developers more control

USGS

Why?

- Gives non-developers more control
- Limits requests to web developer

USGS

Why?

- Gives non-developers more control
- Limits requests to web developer
- More control with less lines of code

USGS

Examples

Feature colors (fill and outlines)

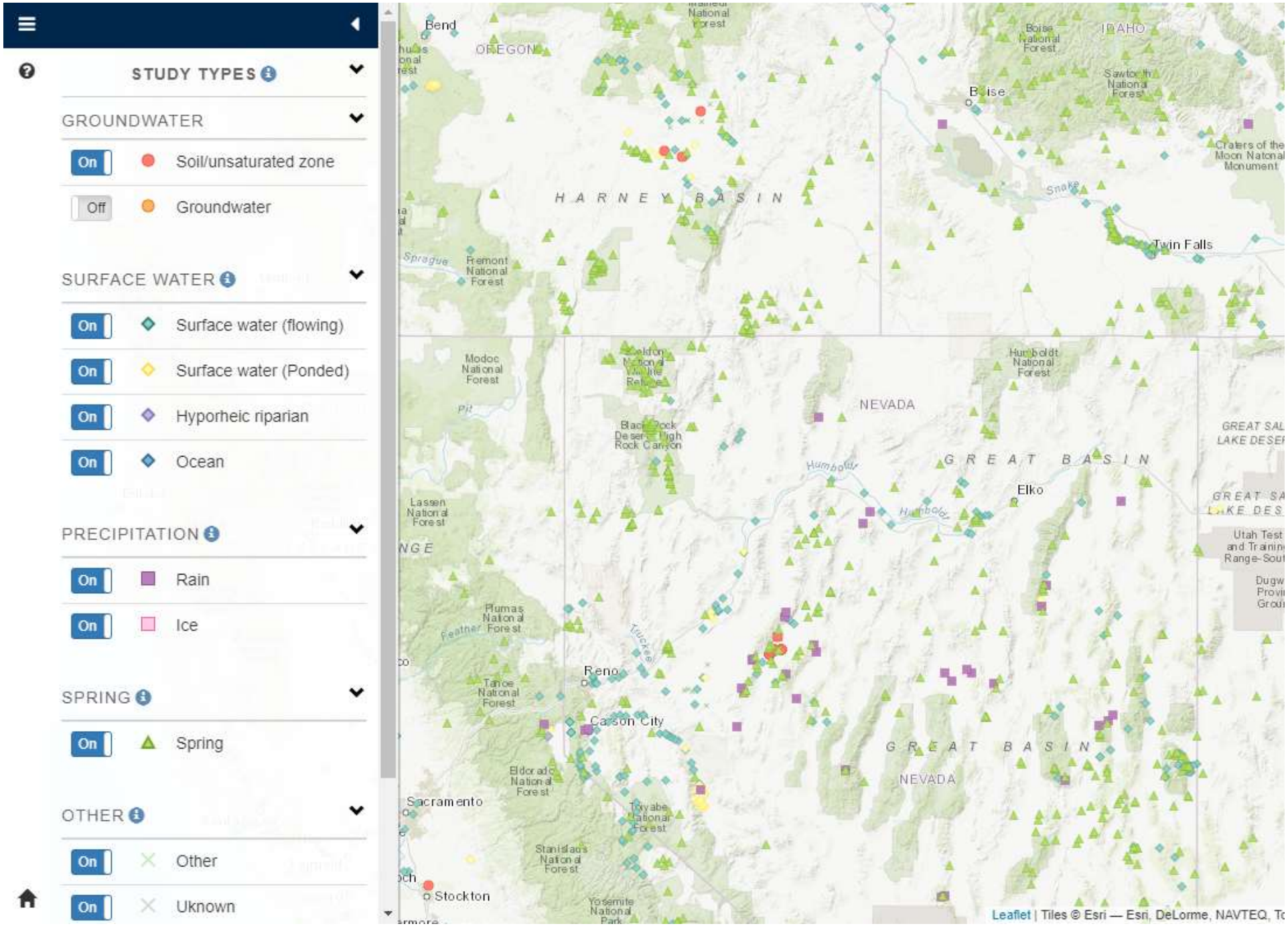
Symbol types and size

Populate HTML

Determine Draw Order (Panes) for feature layers

Order of Legend Items

USGS


STUDY TYPES
GROUNDWATER
On
Soil/unsaturated zone
Off
Groundwater
SURFACE WATER
On
Surface water (flowing)
On
Surface water (Ponded)
On
Hyporheic riparian
On
Ocean
PRECIPITATION
On
Rain
On
Ice
SPRING
On
Spring
OTHER
On
Other
On
Uknown
Bend
OREGON
Boise
IDAHO
Sawtooth National Forest
Craters of the Moon National Monument
HARNEY BASIN
Twin Falls
Fremont National Forest
Modoc National Forest
Humboldt National Forest
NEVADA
GREAT BASIN
Elko
Lassen National Forest
Plumas National Forest
Reno
Tahoe National Forest
Carson City
Eldorado National Forest
Sacramento
Stanislaus National Forest
Stockton
Yosemite National Park
Leaflet | Tiles © Esri — Esri, DeLorme, NAVTEQ, To

Results | Messages

	StudyID	StudyType	StudyClass	Symbol	ColorCode	OutlineColor	DrawOrder
1	00	Uknown	Unknown	X	#d9d9d9	#999999	pane1
2	01	Surface water (flowing)	Surface Water	diamond	#8dd3c7	#328173	pane2
3	02	Surface water (Ponded)	Surface Water	diamond	#ffffb3	#ffdb4d	pane2
4	03	Hyporheic riparian	Surface Water	diamond	#bebada	#837ab8	pane2
5	04	Groundwater	Groundwater	circle	#fdb462	#e27a03	pane3
6	05	Spring	Spring	triangle	#b3de69	#77a725	pane4
7	06	Soil/unsaturated zone	Groundwater	circle	#fb8072	#f94c39	pane3
8	07	Rain	Precipitation	square	#bc80bd	#964e97	pane2
9	09	Ice	Precipitation	square	#fccde5	#f556a8	pane2
10	13	Other	Other	X	#ccebc5	#4fab3b	pane1
11	14	Ocean	Surface Water	diamond	#80b1d3	#346e98	pane2

NetSiteID	StudyID	Latitude	Longitude	ColorCode	OutlineColor	Symbol	SymbolSize	StudyClass	DrawOrder
01010901109700	01	42.1973...	-71.771...	#bdd7e7	#8fbbd6	diamond	3.5	Surface Water	pane3
01010901110500	01	42.1537...	-71.652...	#bdd7e7	#8fbbd6	diamond	3.5	Surface Water	pane3
010109413531070302901	01	41.5921...	-70.507...	#bdd7e7	#8fbbd6	diamond	3.5	Surface Water	pane3
010109413607070301201	01	41.6019...	-70.502...	#bdd7e7	#8fbbd6	diamond	3.5	Surface Water	pane3
010109413630070300901	01	41.6084...	-70.501...	#bdd7e7	#8fbbd6	diamond	3.5	Surface Water	pane3
010109413702070300401	01	41.6174...	-70.500...	#bdd7e7	#8fbbd6	diamond	3.5	Surface Water	pane3
010109413720070285301	01	41.6222...	-70.480...	#bdd7e7	#8fbbd6	diamond	3.5	Surface Water	pane3
010109413727070300501	01	41.6243...	-70.500...	#bdd7e7	#8fbbd6	diamond	3.5	Surface Water	pane3
010109413759070301901	01	41.6332...	-70.504...	#bdd7e7	#8fbbd6	diamond	3.5	Surface Water	pane3
010109413808070305101	01	41.6355	-70.513	#bdd7e7	#8fbbd6	diamond	3.5	Surface Water	pane3

```
bMethod]
riptMethod(ResponseFormat = ResponseFormat.Json)]
ence | 0 exceptions
lic List<Site> GetAllSites()

SqlConnection conn = null;
SqlDataReader rdr = null;

List<Site> sites = new List<Site>();

try
{
    conn = new SqlConnection(System.Configuration.ConfigurationManager
        .ConnectionStrings["GAMA_WQmap"].ConnectionString);
    conn.Open();

    SqlCommand cmd = new SqlCommand("[trc_Select_AllSites]", conn);
    cmd.CommandType = CommandType.StoredProcedure;

    using (SqlDataReader reader = cmd.ExecuteReader())
    {
        while (reader.Read())
        {
            sites.Add(new Site
            {
                NetSiteID = reader["NetSiteID"].ToString(),
                XCoord = reader["Latitude"].ToString(),
                YCoord = reader["Longitude"].ToString(),
                StudyID = reader["StudyID"].ToString(),
                DrawOrder = reader["DrawOrder"].ToString(),
                StudyClass = reader["StudyClass"].ToString(),
                ColorCode = reader["ColorCode"].ToString(),
                OutlineColor = reader["OutlineColor"].ToString(),
                Symbol = reader["Symbol"].ToString(),
                SymbolSize = reader["SymbolSize"].ToString()
            }); ;
        }
    }

}
catch (SqlException ex)
```

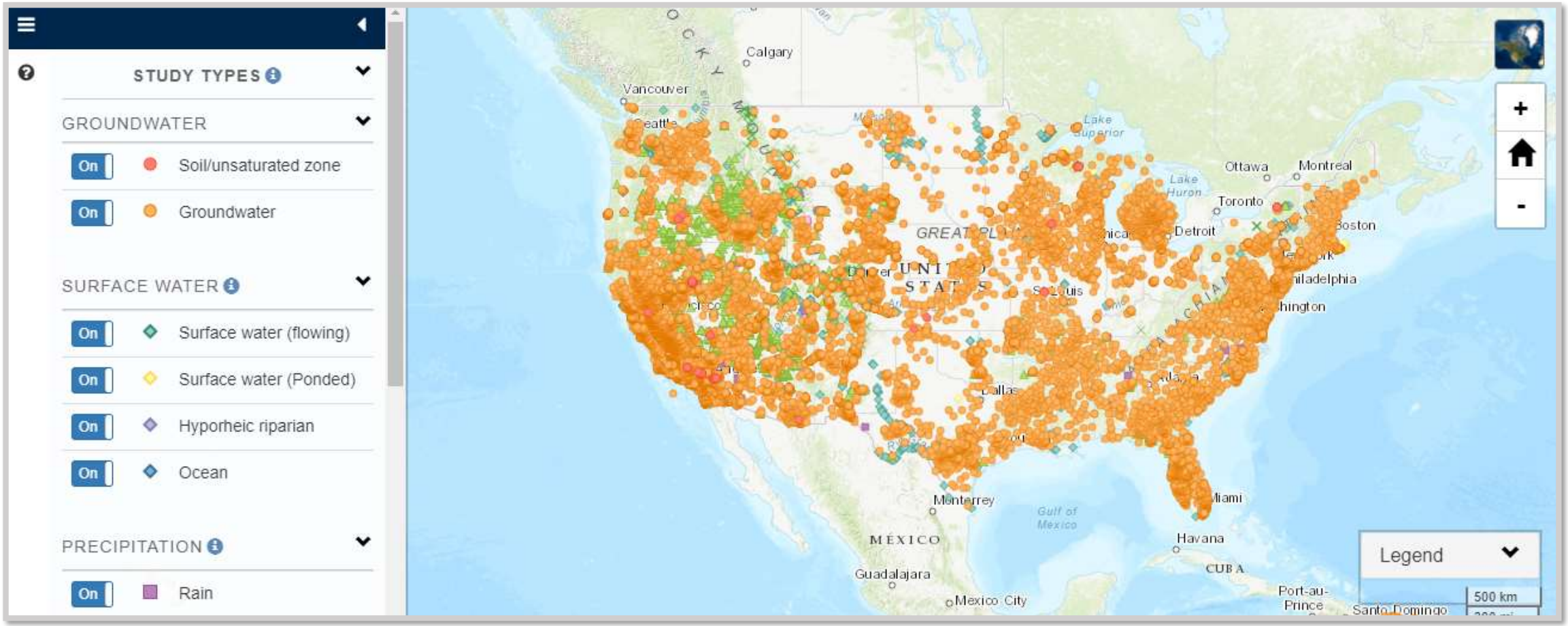
USGS

```
ajaxGetLegend(function () {

    $.ajax({
        type: "post",
        url: 'services/GetPointFile.asmx/GetAllSites',
        contentType: "application/json; charset=utf-8",
        dataType: "json",
        beforeSend: function () {
            $(".sk-wave").show();
        },
        success: function (data) {
            function onEachWell(callback) {
                $.each(data.d, function (index, item) {
                    markerOptions = {

                        pane: item.DrawOrder,
                        color: item.OutlineColor,
                        fillColor: item.ColorCode,
                        fillOpacity: 1,
                        weight: 1,
                        opacity: 1,
                        radius: parseFloat(item.SymbolSize),
                        shape: item.Symbol.toLowerCase()
                    };
                    marker = L.shapeMarker([item.XCoord, item.YCoord],
                                           markerOptions);
```

```
switch (item.StudyID) {
    case '01': // 'Surface Water (flowing)':
        surfaceFlowLayerGroup.addLayer(marker);
        break;
    case '02': //'Surface water (Ponded)':
        surfacePondLayerGroup.addLayer(marker);
        break;
    case '03': //'Hyporheic riparian':
        hyporheicLayerGroup.addLayer(marker);
        break;
    case '04': //'Groundwater':
        groundwaterLayerGroup.addLayer(marker);
        break;
    case '05': //'Spring':
        springLayerGroup.addLayer(marker);
        break;
    case '06': // 'Soil/unsaturated zone':
        soilLayerGroup.addLayer(marker);
        break;
    case '07': // 'Rain':
        rainLayerGroup.addLayer(marker);
        break;
    case '09': //'Ice':
        iceLayerGroup.addLayer(marker);
        break;
    case '14': //'Ocean':
        oceanLayerGroup.addLayer(marker);
        break;
    case '13': //'Other':
        otherLayerGroup.addLayer(marker);
        break;
    case '00': //'Unknown':
        unknownLayerGroup.addLayer(marker);
        break;
}
```

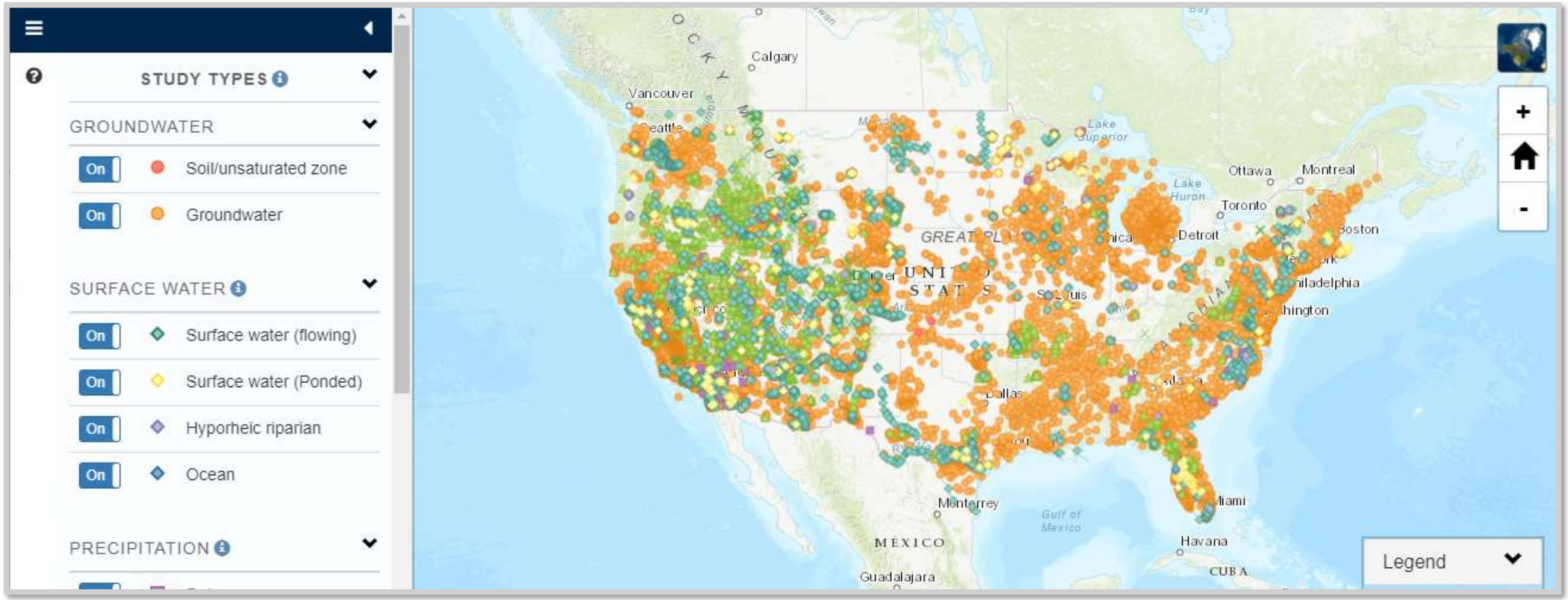
USGS

	StudyClass	DrawOrder	Symbol	SymbolSize
1	Surface Water	pane3	diamond	3.5
2	Groundwater	pane4	circle	2.5
3	Precipitation	pane2	square	3
4	Spring	pane1	triangle	3.5
5	Other	pane3	X	7



USGS

	StudyClass	DrawOrder	Symbol	SymbolSize
1	Surface Water	pane4	diamond	3.5
2	Groundwater	pane1	circle	2.5
3	Precipitation	pane3	square	3
4	Spring	pane3	triangle	3.5
5	Other	pane2	X	7

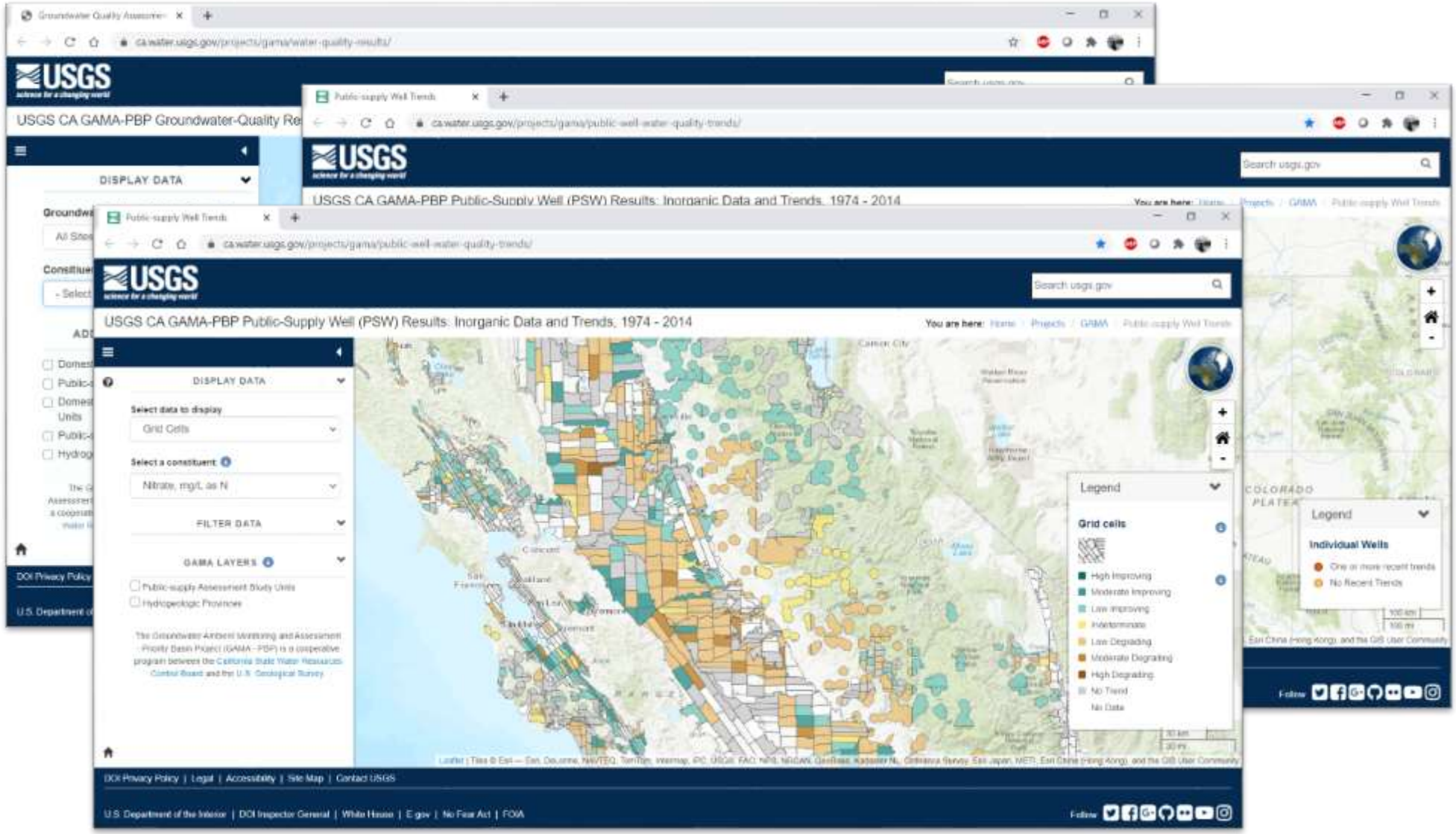


```
function ajaxFillSidebar() {
    console.log("ajaxFillSidebar();");
    $.ajax({
        type: "post",
        url: 'services/GetPointFile.asmx/GetLegend',
        contentType: "application/json; charset=utf-8",
        dataType: "json",
        beforeSend: function () {
            $(".sk-wave").show();
        },
        success: function (data) {
            $.each(data.d, function (index, item) {
                innerHTML = buildSidebarHTML(item);
                //console.log(innerHTML);
                if (item.StudyClass == 'Groundwater') {
                    $("#tableGroundwater").append(innerHTML);
                }
                else if (item.StudyClass == 'Surface Water') {
                    $('#tableSurfaceWater').append(innerHTML)
                }
                else if (item.StudyClass == 'Precipitation') {
                    $('#tablePrecipitation').append(innerHTML)
                }
                else if (item.StudyClass == 'Spring') {
                    $('#tableSpring').append(innerHTML)
                }
                else if (item.StudyClass == 'Other') {
                    $('#tableOther').append(innerHTML)
                }
                else if (item.StudyClass == 'Unknown') {
                    $('#tableOther').append(innerHTML)
                }

            });
```

```
function buildSidebarHTML(item)
{
    var html = '';

    if (item.Symbol.toLowerCase() == 'circle') {
        html += '<tr><td style="width: 60px;"><input id="' + item.StudyID + 'toggle" type="checkbox" ' +
            'checked data-toggle="toggle" onclick="toggleLayers()" data-size="mini"></td><td  style="width: 30px;">' +
            '<svg class="legend-svg" height="12" width="12"><circle cx="6" cy="6" r="5" stroke-with="2" stroke="' +
            item.OutlineColor + '" fill="' + item.ColorCode + '"></circle></svg></td><td>' + item.StudyType +
            '</td></tr>';
    }
    else if (item.Symbol.toLowerCase() == 'triangle') {
        html += '<tr><td style="width: 60px;"><input id="' + item.StudyID +'toggle" type="checkbox" checked data-toggle=
    }
    else if (item.Symbol.toLowerCase() == 'square') {
        html += '<tr><td style="width: 60px;"><input id="' + item.StudyID +'toggle" type="checkbox" checked data-toggle=
    }
```

USGS

USGS


USGS
USGS CA GAMA-PBP Groundwater-Quality Re
DISPLAY DATA
ca.water.usgs.gov/projects/gama/water-quality-results/
USGS CA GAMA-PBP Public-Supply Well (PSW) Results: Inorganic Data and Trends, 1974 - 2014
ca.water.usgs.gov/projects/gama/public-well-water-quality-trends/
Search usgs.gov
You are here: Home / Projects / GAMA / Public-supply Well Trends
DISPLAY DATA
Select data to display
Grid Cells
Select a constituent:
Nitrate, mg/L as N
FILTER DATA
GAMA LAYERS
Public-supply Assessment Study Units
Hydrogeologic Provinces
The Groundwater Ambient Monitoring and Assessment - Priority Basin Project (GAMA - PBP) is a cooperative program between the California State Water Resources Control Board and the U.S. Geological Survey
Legend
Grid cells
High Improving
Moderate Improving
Low Improving
Indeterminate
Low Degrading
Moderate Degrading
High Degrading
No Trend
No Data
Individual Wells
One or more recent trends
No Recent Trends
DOI Privacy Policy | Legal | Accessibility | Site Map | Contact USGS
U.S. Department of the Interior | DOI Inspector General | White House | E.gov | No Fear Act | FOIA
Follow

USGS