

# Exposing Complex Selection Capabilities Using the ESRI Web Framework

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# Acknowledgement

- **The Complex Selection strategy was created by the Advanced Application team at the National Wetlands Research Center while working with the Coastal Protection and Restoration Authority.**

# Problem

- **The ArcGIS API for JavaScript provides Feature Layers which can be used for simple selections in the Web Browser**
- **High Record count Feature Layers cause performance issues in the Web Browser.**
- **The performance issues are even greater when user interaction is added to those high record count Feature Layers.**

# Solution

- **The Advanced Applications Team at the USGS National Wetlands Research Center came up with a client-side strategy to:**
  - **Show high record count feature layers**
  - **Enable multi-select functionality**
- **While not sacrificing Web Browser performance**

# Implementation

- The Map will contain two layers for each Selection Capable Layer:
  - A Feature Layer (“esri/layers/FeatureLayer”)
    - Invisible/not shown
    - For queries
  - A Visualization Layer
    - Dynamic Map Service Layer (“esri/layers/ArcGISDynamicMapServiceLayer”)
    - Image Service Layer (“esri/layers/ArcGISImageServiceLayer”)

# Selection

- **Selection uses the Draw API (“esri/toolbars/draw”)**
  - **The Draw API lets us draw a shape on the map using mouse drag events**
    - **For my example, we will be using a rectangle (“extent”)**
  - **The rectangle’s coordinates (“geometry”) are used to select features from the invisible Feature Layer using a Query**

# Query

- A Query (“esri/tasks/query”) is created using the geometry from the Draw Tool
  - This query is used to select features using the “selectFeatures” method on the Feature Layer
    - The resulting features are drawn on the Graphics Layer

# Results

- **The resulting dataset can then be used however it is needed**
- **For the example, we will just be showing the Primary ID which is unique for every feature**



# Demo

The code is Open Source and will be available on the USGS Github account.

<https://github.com/usgs>