Geospatial Discovery Services

ScienceBase includes capabilities to search and discover items in ScienceBase from their geospatial footprint information. Currently, this capacity is limited to a bounding box search using only the representational point aspect of item footprints based on the need for a rapid search and retrieval mechanism. Future work includes extending the capability for more complex geospatial searches using full item footprints and additional service interfaces such as OGC-CSW.

Geospatial Search

The REST API for item search (https://www.sciencebase.gov/catalog/items) supports simple bounding box search functionality that locates items based on their footprint. This may be combined with other search operators for a composite search.

The parameter is called `searchExtent` and requires a parameter of the format `[xmin, ymin, xmax, ymax]` where `xmin, ymin, xmax, and ymax` are replaced by geographic coordinates representing a bounding box. For instance, the following image of a bounding box may result in the parameter `searchExtent=[-109.75, 37.59, -100.44, 41.51]`.

![Bounding Box Example](image)

Warning: This searches by points, not polygons.

Suppose we have an item with the following footprint.
This footprint encompasses almost all of Utah, Arizona, Colorado, and New Mexico. However, since our search index only supports searching by points, this item is indexed as being a point near four corners.

Then, if I were to do a spatial search on a bounding box around Utah, this item would not be returned, even though its footprint contains Utah.