GABBs: Geospatial Extensions for HUBzero Science Gateways

PURDUE UNIVERSITY

https://mygeohub.org/groups/gabbs

What is GABBs

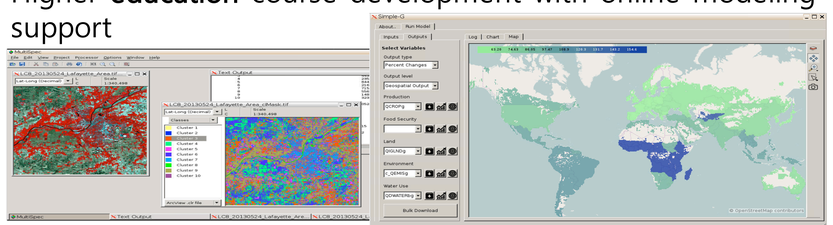
GABBs is an NSF DIBBs Implementation project to develop **G**eospatial **D**ata **A**nalysis **B**uilding **B**locks for the HUBzero Science Gateway Platform. GABBs allows researchers, who are not GIS experts, to **create, manage, curate, analyze** and **share** geospatial datasets and GIS-enabled tools in a DIY style. This opens the way for rapid development of a variety of web-enabled tools for probing and presenting geospatial data.

- **Any combination** of GABBs building blocks can be deployed to **any HUBzero science gateway**
- GABBs building blocks enable **interoperation with non-HUBzero gateways** via service APIs

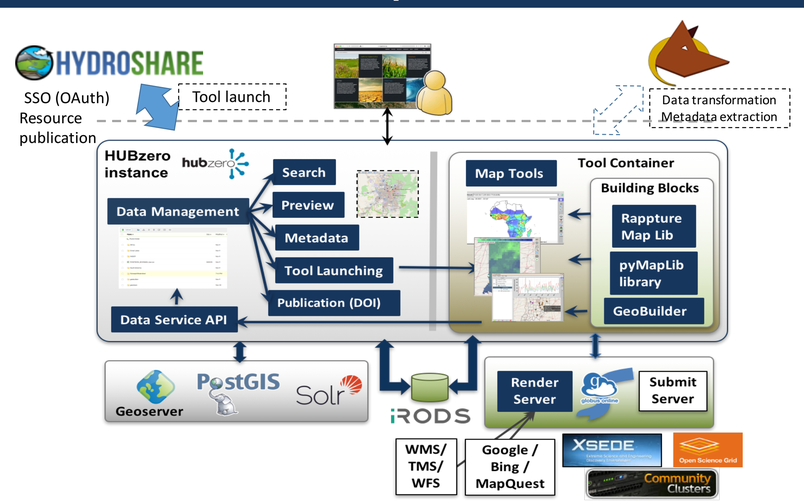
Science Use Cases

GABBs software development is driven by the requirements from multiple user communities, including:

- **Hydrologic** modeling and data sharing
- Applied **economics** modeling workflow
- **Meteorological** data management and visualization
- **Remote sensing** data processing and analysis
- **K-12** education tools
- Higher **education** course development with online modeling support



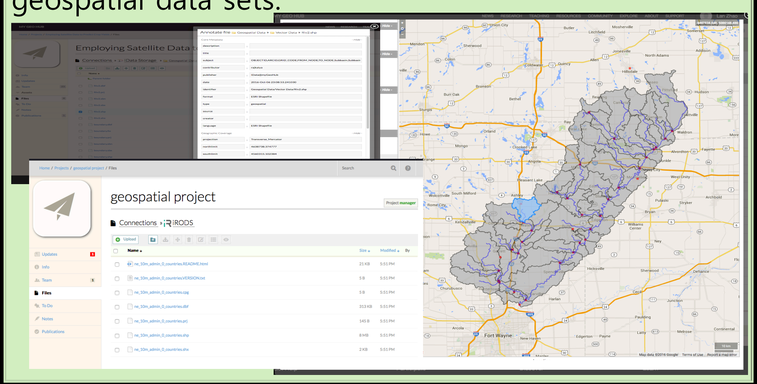
Built on Open Source



GABBs Capabilities

Geospatial Data Management

iRODS based spatial data management functions are integrated into HUBzero Project. In addition to **automatic metadata extraction**, it allows users to easily **upload**, **share**, **annotate**, **preview**, **and search** geospatial data sets.

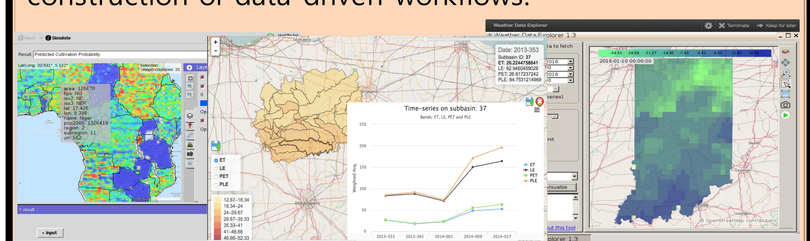


Tool and Data Integration

- Software and hardware based **mapping libraries, map viewer widgets** and **builder tools** help researchers quickly create geospatial data analysis tools.

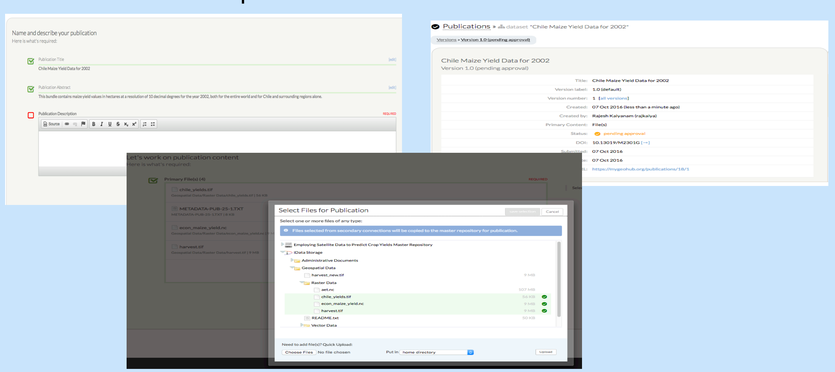
- Resource intensive simulations can be submitted to both **local** and **XSEDE** resources using HUBzero *submit*.

- HUBzero projects can function as both input source and output destination for hub tools, enabling construction of data-driven workflows.



Data Publication

- Any subset of project files can be **published**
- **Versioned** copy of selected files created for posterity
- Extracted **metadata** for selected files saved to publication as RDF document
- **DOI** created for publication to enable citation



Availability

- **MyGeoHub** [Primary GABBs Science Gateway]
- **Open-source GABBs Packages** [Install on any HUBzero Gateway]
- **Amazon Web Services** [Complete GABBs Gateway in 40 minutes]

hubzero

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