An Accessible ArcGIS Experience Builder Site for Indiana's Watershed Information

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Purpose

- Access to relevant geospatial data is essential for effective watershed management and local decision-making.
- IndianaMap (indianamap.org) provides hundreds of data layers but accessing it may overwhelm community stakeholders without GIS training.
- To enable these users to engage with the data e developed a public-facing web application using ArcGIS Experience Builder with curated data layers, an intuitive interface, and simplified pop-up windows.

Methodology

1. We compiled a list of 50 water and pollutant source data layers from Indiana Map.

2. We created a Web Map with ArcGIS Online

3. We added the selected map layers from the ArcGIS online database

IndianaMap GIO
IndianaMap

4. We edited the symbology, pop-up window layout, and display fields, with the inexperienced audience in mind.

5. We created a user-friendly interface with ArcGIS Experience Builder, that includes tools and resources for users

6. We met with two outside parties for feedback on the application and help with the map layers.

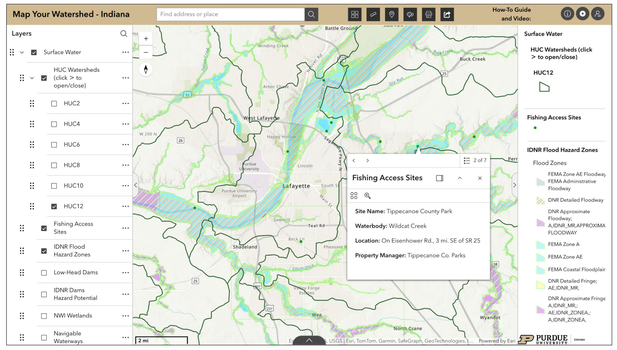


Figure 1: Surface Water Layers in the Greater Lafayette area: Flood Hazard Zones, HUC12 Watersheds, and Fishing Access Sites.

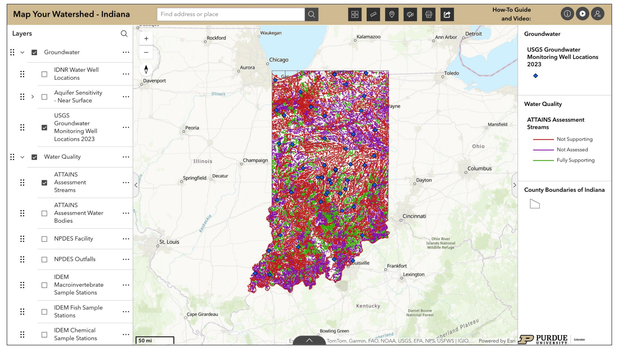


Figure 2: USEPA ATTAINS water quality data and USGS Groundwater Monitoring Wells.

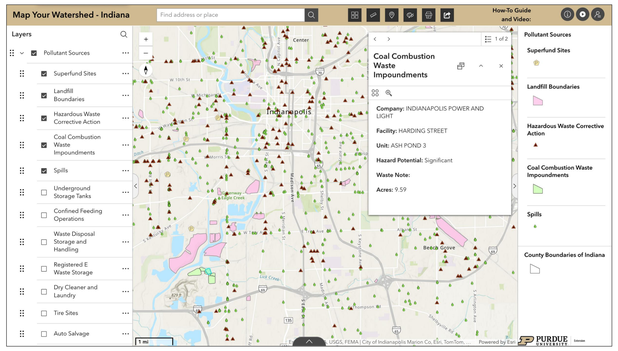


Figure 3: Pollutant Source layers in Indianapolis, with a formatted pop-up window.

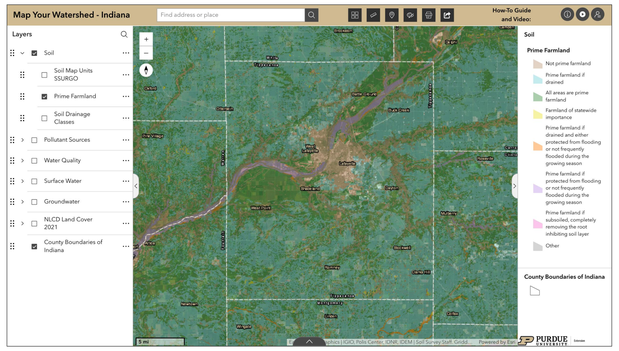


Figure 4: Prime farmland in Tippecanoe County, developed by symbolizing the SSURGO soil data

Map Layers

The layers were grouped into five categories:

- **Surface Water** includes watersheds (HUC2 to HUC12), waterbodies, dams, and flood hazard zones (Figure 1).
- **Water Quality** includes statewide water monitoring efforts including the ATTAINS Assessment layer, which represents the EPA's system for accessing information about the conditions in the Nation's surface waters (Figure 2).
- **Pollutant Sources** includes features that may be a water quality concern, including superfund sites, concentrated feeding operations, wastes, and more. (Example in Figure 3)
- **Groundwater** includes aquifers, water well locations, and USGS Groundwater Monitoring Wells (Figure 2).
- **Soil** includes the USDA SSURGO soil data symbolized by various fields, such as natural drainage class and prime farmland, to provide access to this important information (Figure 4).

The National Land Cover Data is also included because of land use influence on water quality.

Users can obtain more information about features in several ways:

- Click on any location for pop-up windows containing selected fields from the layers displayed.
- Select "Details" for any layer to see the IndianaMap ArcGIS Online webpage.
- Click the upward arrow at the bottom of the map to see the attribute tables of the map layers.

Functionality

The Layers list is located on the left sidebar, and the legend of the activated layers is located on the right sidebar. Boxes next to the layer name allow the user to control which layers are visible and hidden. Users can choose to see multiple layers at once or to focus on a single layer.

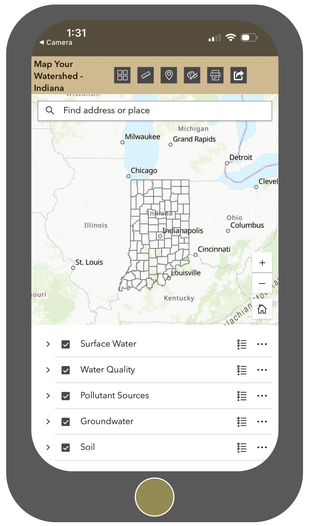
- The Basemap Gallery allows users to change the foundational map underneath the layers. Options include topographic, satellite imagery, and light gray canvas.
- The Measure Tool lets the user calculate the distance between two points or the area of a specific section of land. This can be used to measure the area affected by a certain pollutant source, for example.
- The Insert Point Tool is a simple way to add temporary points to places of interest. An example is to mark your home as a point to see its relation to other features on the map.
- The Draw Tool allows the user to add temporary markings. This can be used to sketch shapes, lines, or place markers on the map to highlight an area of interest for the user or for printing.
- The Print Tool saves the map exactly as it appears on the screen as a high-quality PDF or image file.
- The Share Tool generates a unique web link (URL) of the current view window, including the specific map layers turned on. This provides an easy way for users to share their custom map.

Informing and Empowering Users

In the top-right corner of the application, there are various guides and resources to aid the user.

- The info button describes the functionality of the app to the user, by explaining the layout and tools available.
- The tutorial button directs users to a written and video tutorial of the map application.
- The credits button directs users to credits and where to get more information if needed.

Responsive web design provides good usability on all screen sizes and resolutions.



A mobile view of the map is available for use. The tools and layers are consistent with the desktop view, and the user can share or print the map if desired.

The site is available at https://arcg.is/0zf0TG0 or https://tinyurl.com/mapyourwatershed

Scan this QR Code to try the map yourself!

This tool supports Purdue Extension's mission by translating complex scientific data into an accessible format, fostering greater public engagement and informed stewardship of Indiana's water resources.

It will be used in our statewide watershed leader training program.

Indiana Watershed Leadership Academy
Cultivating Leaders ♦ Connecting People and Water ♦ Creating Solutions

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