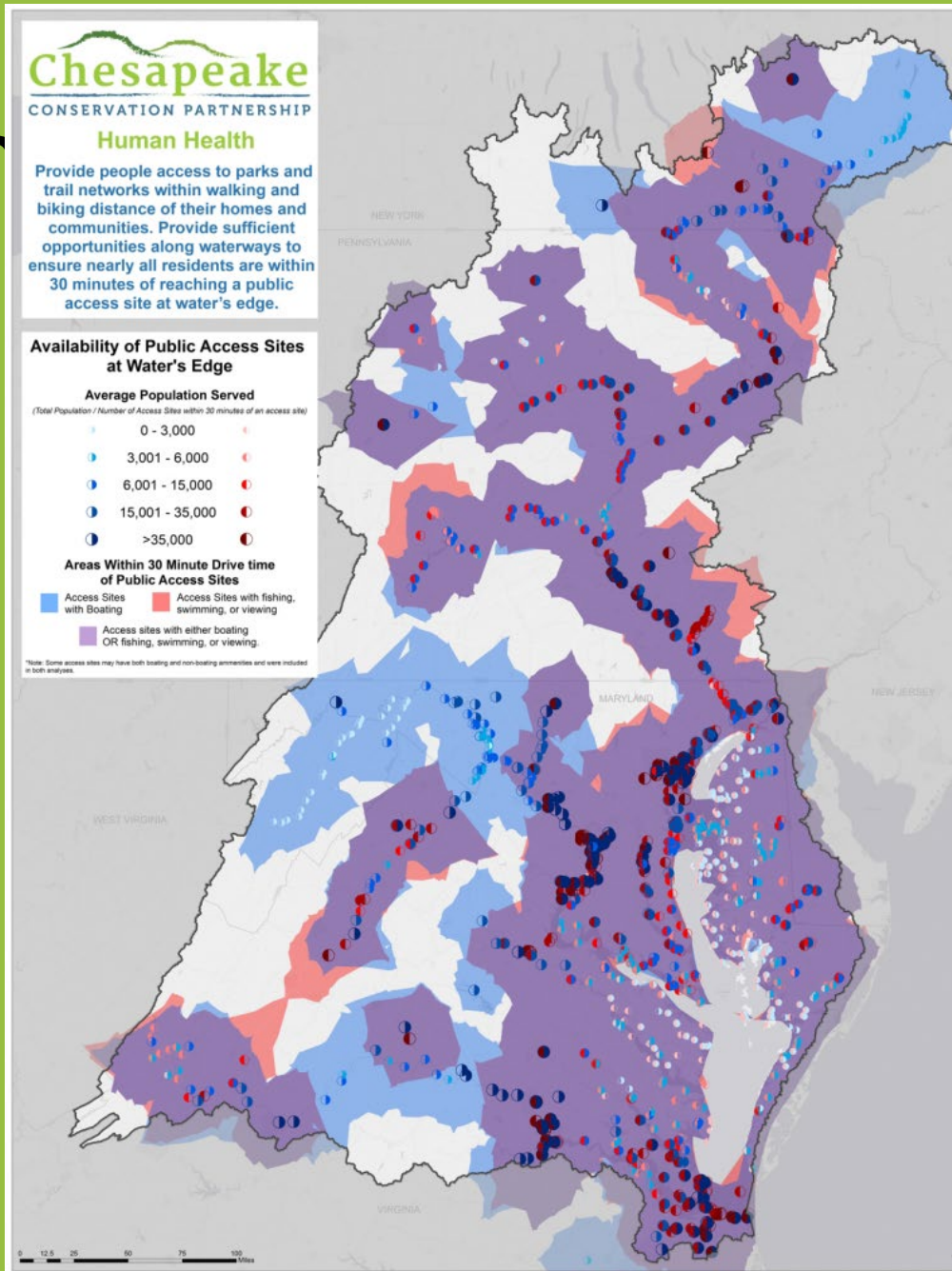


A close-up photograph of a clear glass being filled with water from a chrome faucet. The water is captured mid-pour, creating a dynamic splash and bubbles within the glass. The background is a soft-focus green, suggesting foliage. Overlaid on the image is the title text in a large, white, sans-serif font.

# **Drink Up: Land Conservation and Protecting Drinking Water**

# Public Health







# USGS Partnership

- The CCP mapping team has partnered with USGS to identify datasets, studies, and methodologies to conserve land that directly impacts the quality of drinking water. These resources are ones that are both
  - Publicly accessible
  - Related to groundwater vulnerability
- As this work continues, we will be able to utilize the expertise of USGS scientists to find priority attributes for mapping that aren't as immediately accessible publicly

## Chesapeake Conservation Partnership Vital Lands Inventory: Groundwater Vulnerability Datasets

### COVER PAGE

**Project Title:** Considerations for developing information for protection of groundwater drinking supplies in the Chesapeake Watershed

**Project Chief:** Kurt J. McCoy, Hydrologist, Virginia-West Virginia Water Science Center,  
[kjmccoy@usgs.gov](mailto:kjmccoy@usgs.gov)

**Key Project Personnel:** Jason Pope, Jack Monti, David Ladd

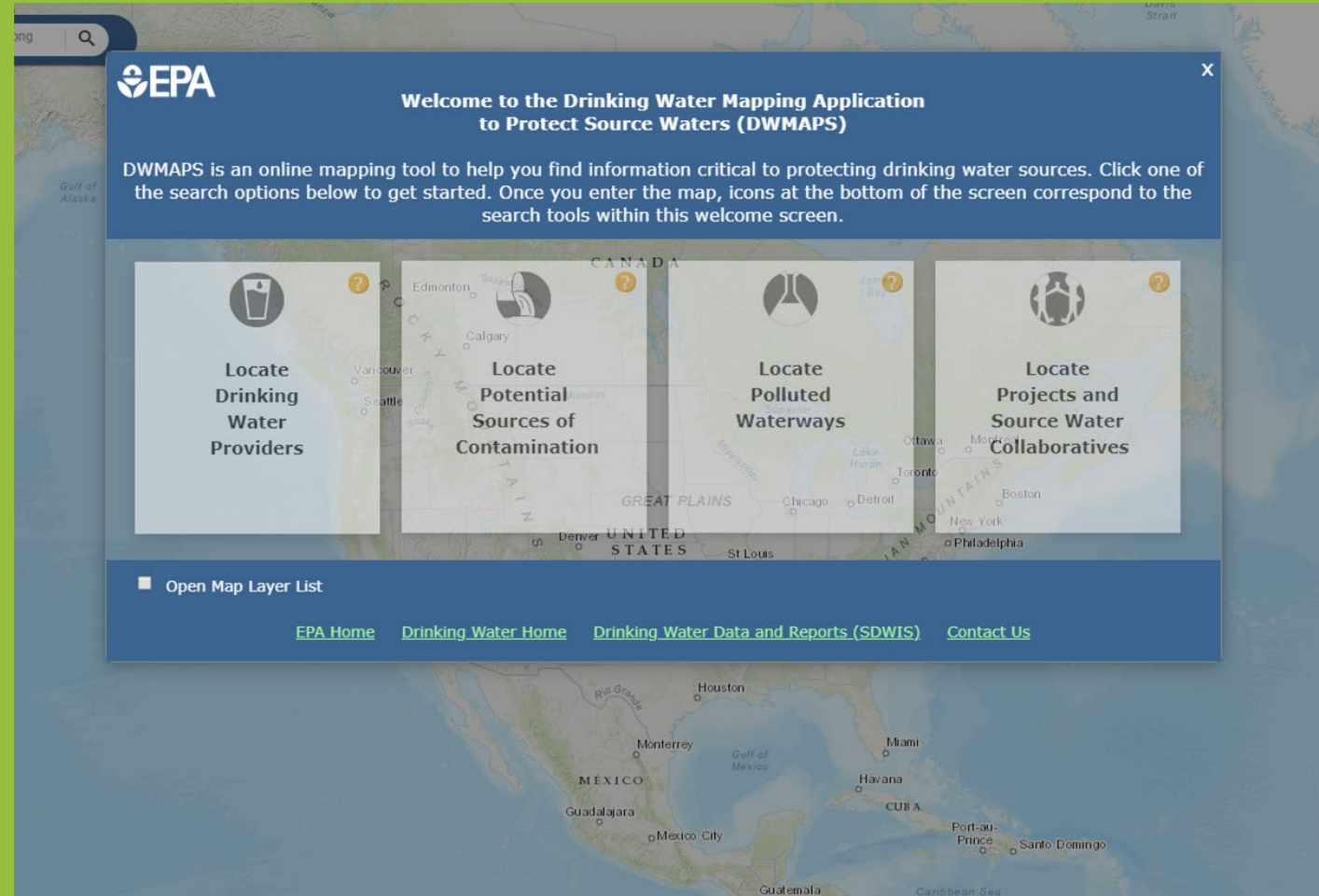
**Project Summary:** The Chesapeake Conservation Partnership (CCP), which is led by the NPS and includes federal, state, and NGO partners, is leading efforts to conserve lands in the watershed, including achieving the CBP outcome to protect an additional 2 million acres. The CCP identified vital lands based on criteria for forests, farms, habitats, heritage, and human health. For the human health topic, they are exploring available information for (1) public access to recreational opportunities and (2) drinking water. The CCP has asked USGS, states, and other federal partners about the types of information available to identify areas for drinking water protection.

The data inventory provided by the USGS herein is a general review of the publicly available spatial datasets available for consideration of groundwater vulnerability in the Chesapeake Bay watershed. It contains a set of aggregated groundwater-related characteristics for evaluation of regional patterns. The data inventory contains 34 datasets, divided into 10 categories. USGS made use of publicly available information found on the internet, in publications, reports and maps.

A second purpose was to assess the current potential for utilizing existing spatial data to create a seamless map of groundwater vulnerability across the entire Chesapeake Bay. In researching datasets for the inventory, we conclude two main points that should be considered: (1) many useful datasets for mapping groundwater vulnerability are either outdated or only available in pdf format. Digitizing image (map) or tabular form data stored in pdfs would be required to utilize data in a GIS environment, and (2) the type and format of available datasets vary widely by state. West Virginia is the only state that has published an aquifer vulnerability assessment. To create spatially continuous data across the Chesapeake Bay a methodology would need to be developed by dataset (ex. sinkholes) or new models of the attribute of interest would need be built (ex. irrigated areas, recharge) and compared with regional or national land use coverages to identify vital lands. A focused approach to define high-priority attributes that can be easily mapped through modeling or remote sensing at the regional scale would be useful.

# U.S. EPA Drinking Water Maps Tool

- **DWMAPS** is an online mapping tool that helps state and utility drinking water professionals in concert with other state and local mapping tools to update their source water assessments and protection plans.
- Watershed protection groups and source water collaboratives can also use DWMAPS to locate drinking water providers, potential sources of contamination, polluted waterways as well as information on protection projects and Source Water Collaborative initiatives in their area.





## Welcome to the Drinking Water Mapping Application to Protect Source Waters (DWMAPS)

DWMAPS is an online mapping tool to help you find information critical to protecting drinking water sources. Click one of the search options below to get started. Once you enter the map, icons at the bottom of the screen correspond to the search tools within this welcome screen.



**Locate  
Drinking  
Water  
Providers**



**Locate  
Potential  
Sources of  
Contamination**



**Locate  
Polluted  
Waterways**



**Locate  
Projects and  
Source Water  
Collaboratives**

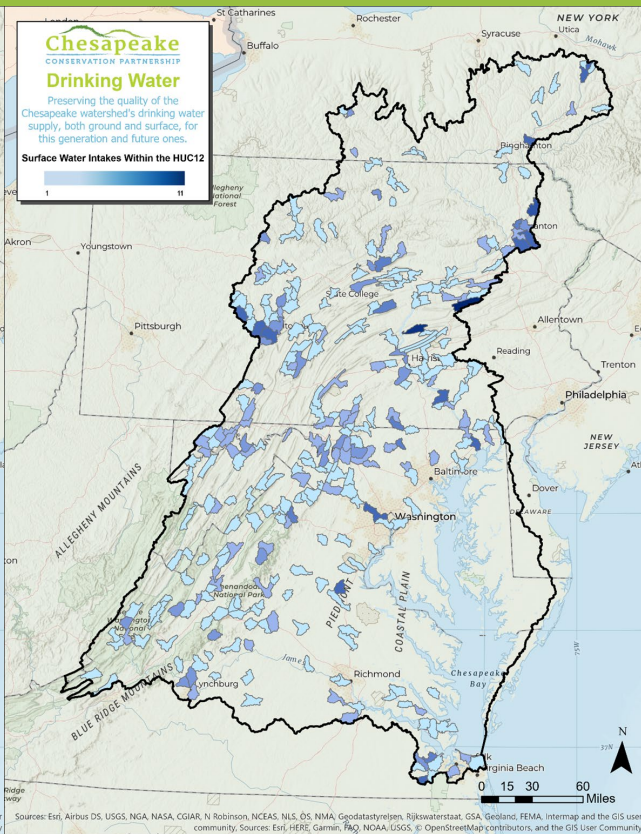
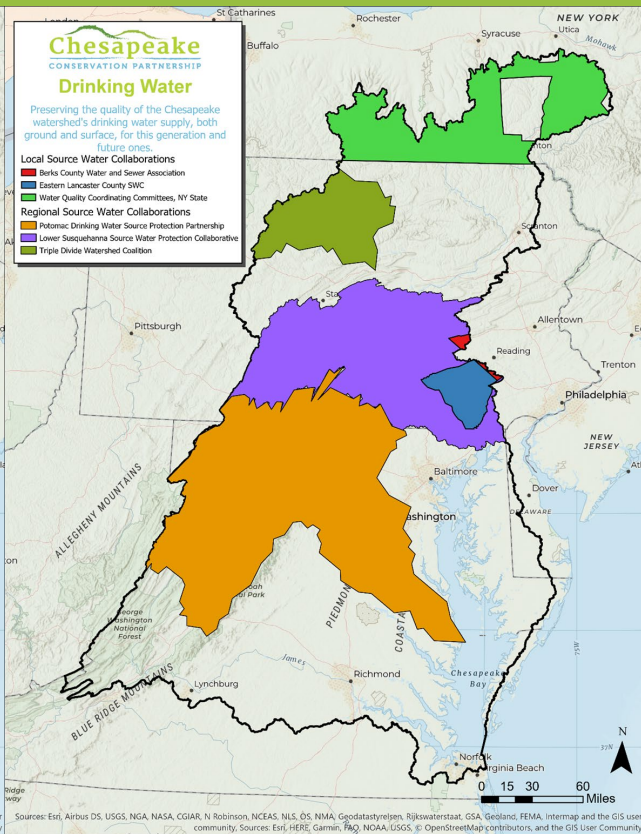
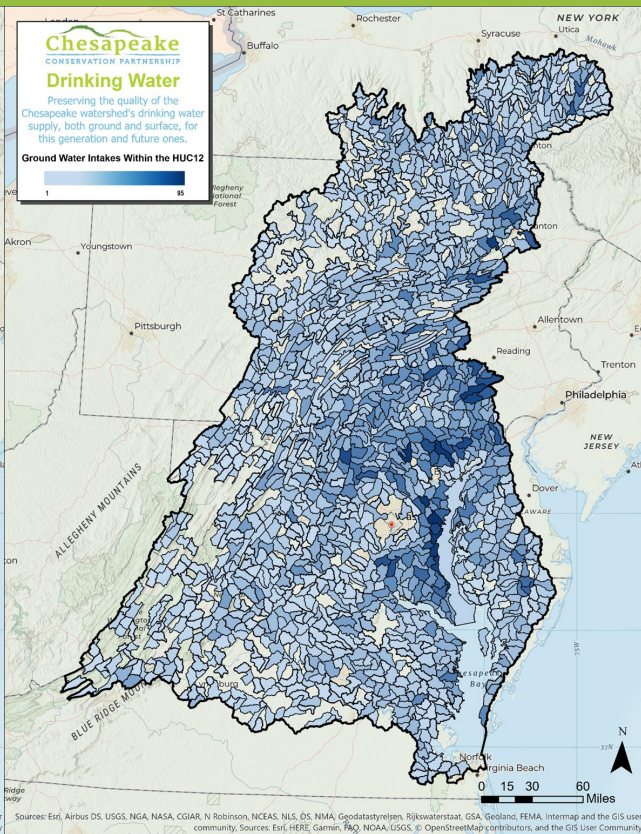
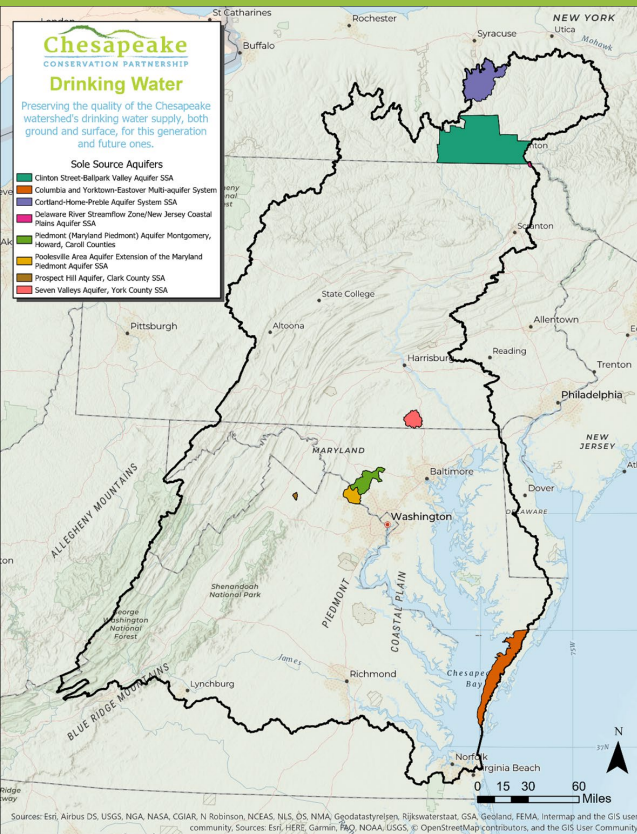
☐ Open Map Layer List

[EPA Home](#) [Drinking Water Home](#) [Drinking Water Data and Reports \(SDWIS\)](#) [Contact Us](#)

**DWMAPS** includes several search tools that, when used together with state and locally available mapping tools and data, can help users:

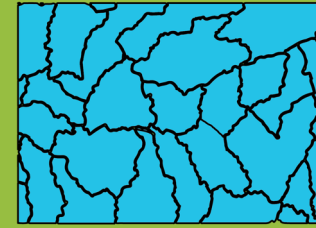
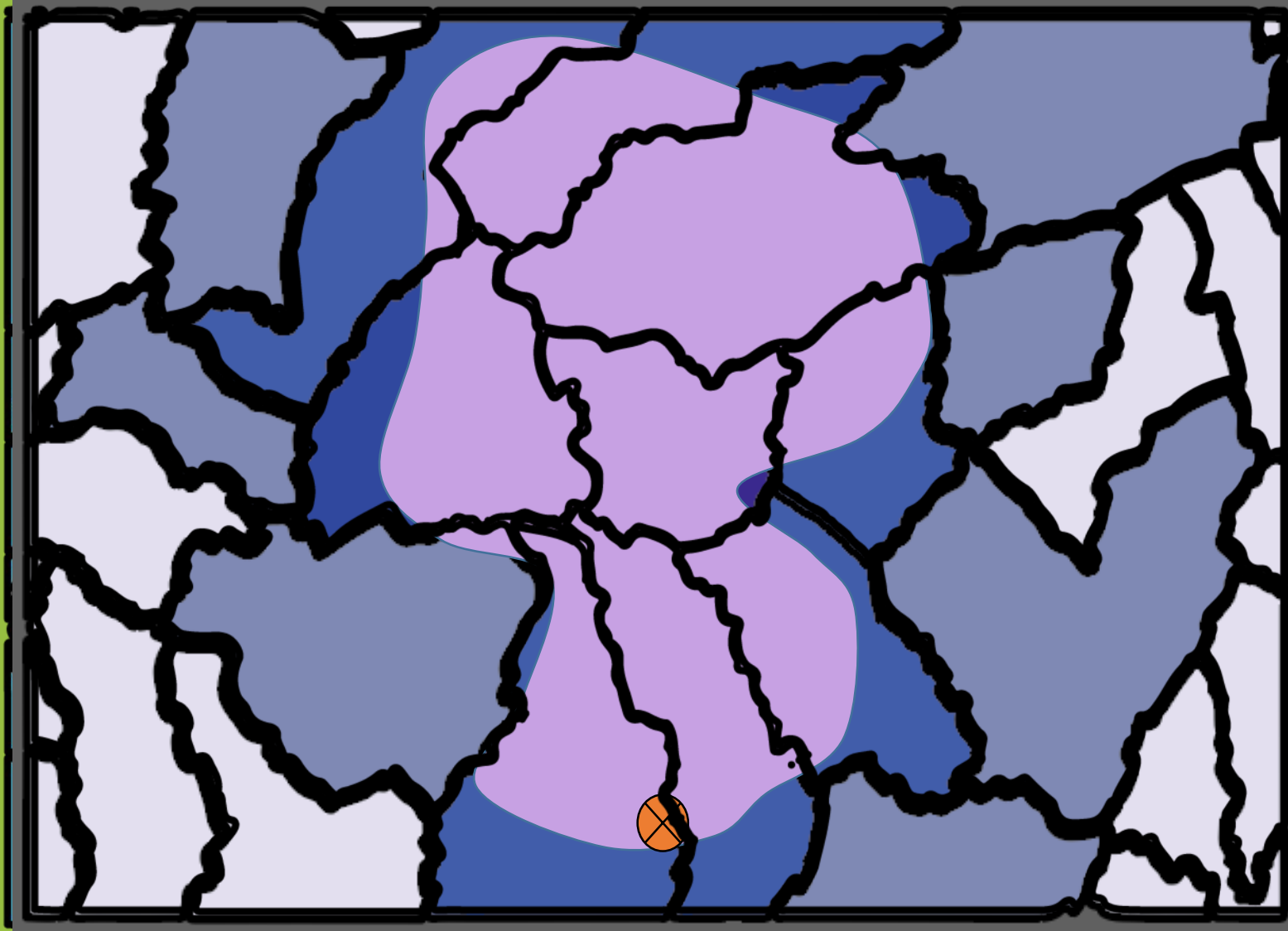
- Identify potential sources of contamination;
- find data to support source water assessments and plans to manage potential sources of contamination;
- evaluate accidental spills and releases, identifying where emergency response resources for accidental releases must be readily available;
- promote integration of drinking water protection activities with other environmental programs at the EPA, state, and local levels;
- identify source water protection partnerships and watershed projects







# Water Protection Areas



HUC12 Watersheds



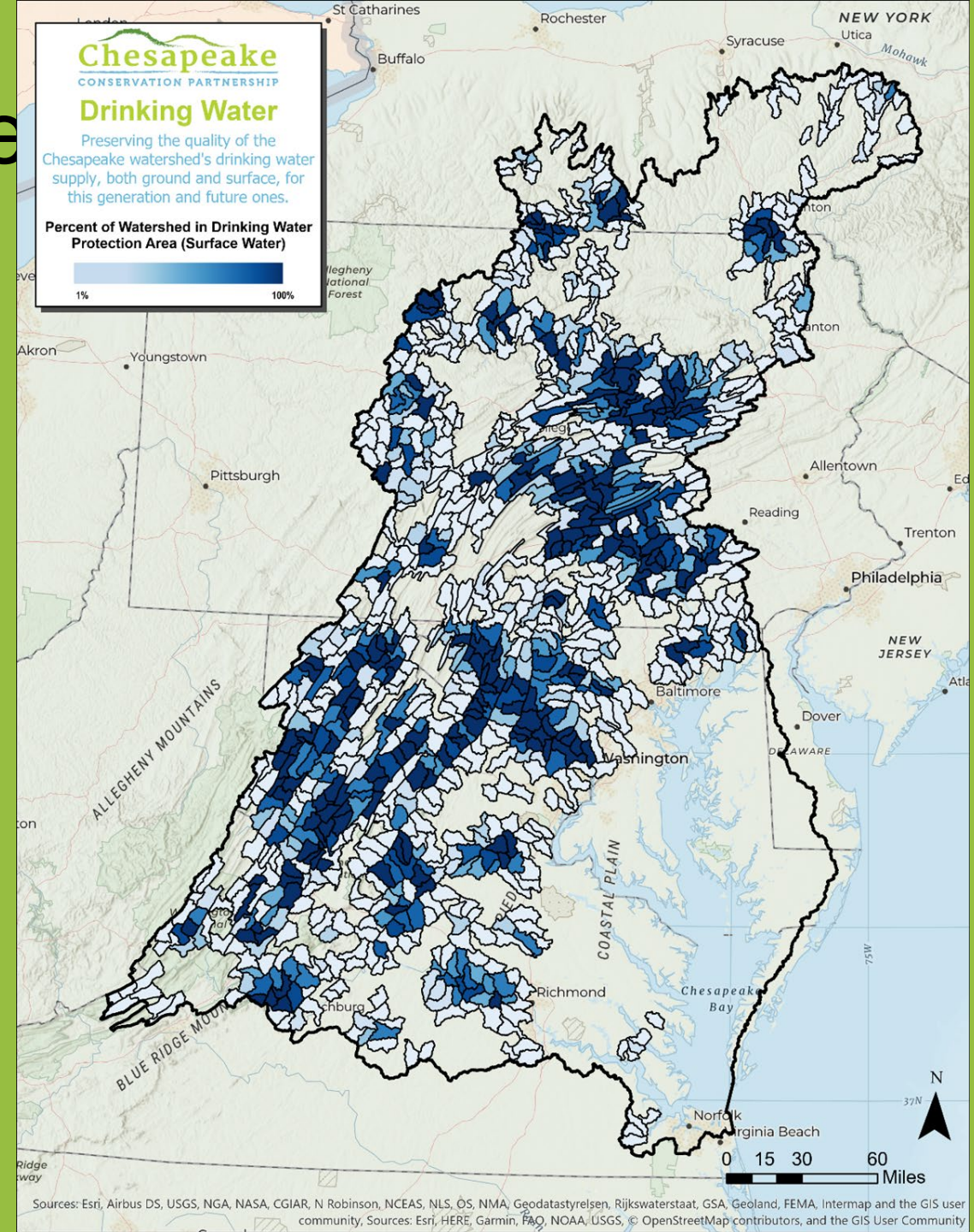
Georeferenced  
surface water source  
facilities (i.e., active  
intakes, reservoirs,  
infiltration galleries,  
and springs).



NHDPlus version  
2.1 catchments  
located 24-hour  
time of travel  
upstream of water  
source facility.

# Percent HUC12 in Source Water Protection Area (surface)

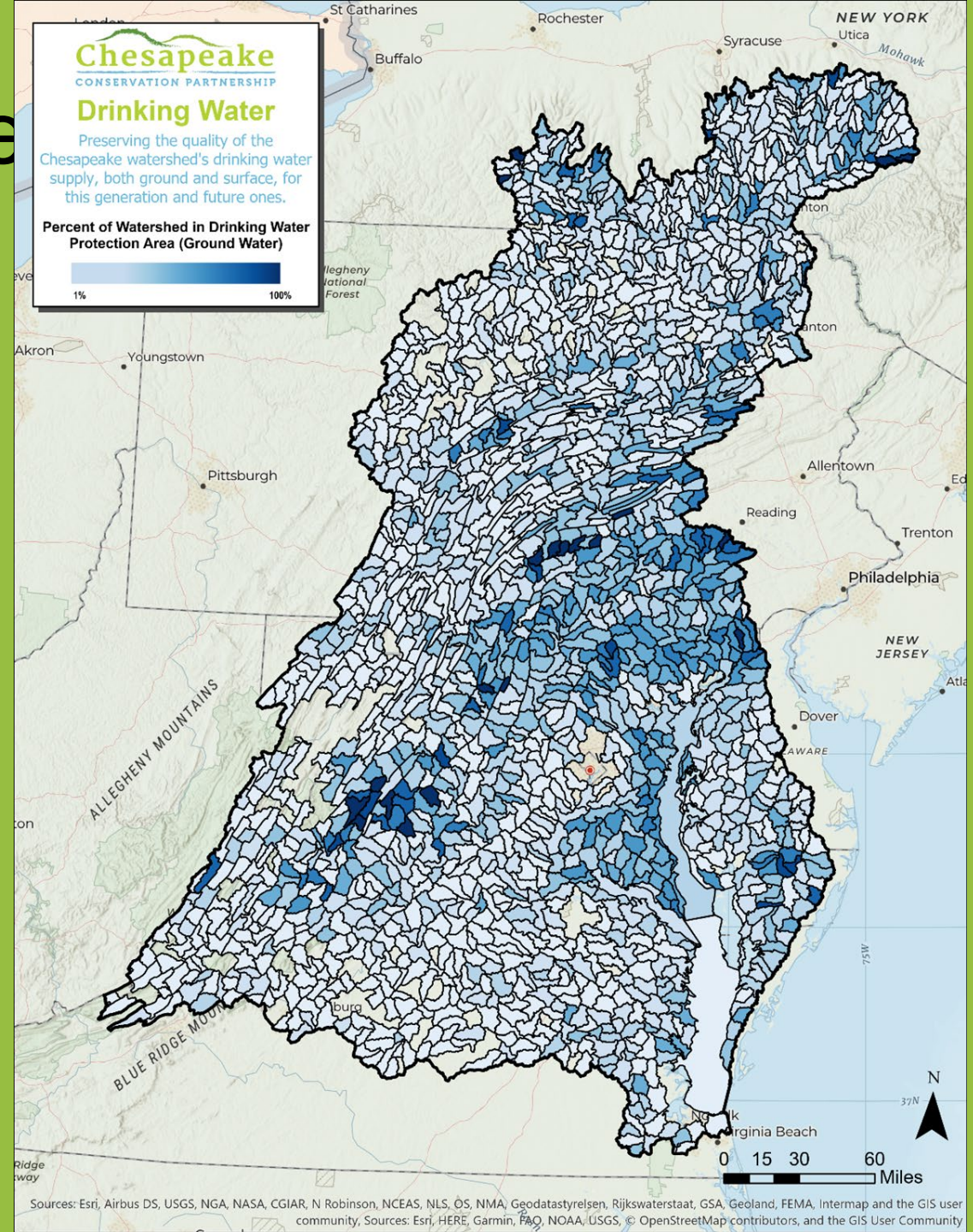
This map service/dataset provides the HUC12 percent area located in a surface water Source Protection Area (SPA) for each HUC12. Surface water SPA delineations are composed of NHDPlus version 2.1 catchments located 24-hour time of travel upstream of all georeferenced surface water source facilities (i.e., active intakes, reservoirs, infiltration galleries, and springs). Percent SPA area was calculated by dividing the HUC12 area located within a SPA by the total area of the HUC12. Drinking water system surface water source facility location data were obtained from the Safe Drinking Water Information System/Federal Version (SDWIS/FED). Exact locations of drinking water facilities, SPAs, and Public Water System IDs are not provided. This map layer is intended to show areas of interest for the protection of surface water sources of drinking water.





# Percent HUC12 in Wellhead Protection Area

This map service provides the HUC12 percent area in a groundwater Source Protection Area (SPA) for each HUC12. Ground water SPAs are composed of NHDPlus V 2.1 catchments that intersect ground water source facilities (wells). Percent SPA area was calculated by dividing the HUC12 area located within a SPA by the total area of the HUC12. Exact locations of drinking water facilities, SPAs, and Public Water System IDs are not provided. This map layer is intended to show areas of interest for the protection of surface water sources of drinking water.



A hand is shown pouring water from a clear plastic bottle into several clear glasses. The glasses are arranged on a light blue surface. The background is a soft, out-of-focus blue. The text is overlaid on a semi-transparent white box in the center of the image.

**For more information or to help  
support this work further,  
please contact Jake Leizear at  
[jleizear@chesapeakeconservancy.org](mailto:jleizear@chesapeakeconservancy.org)**