

*Using data to estimate the prevalence and potential condition of residential septic systems used by reportable tribal homes*

*October 2023*

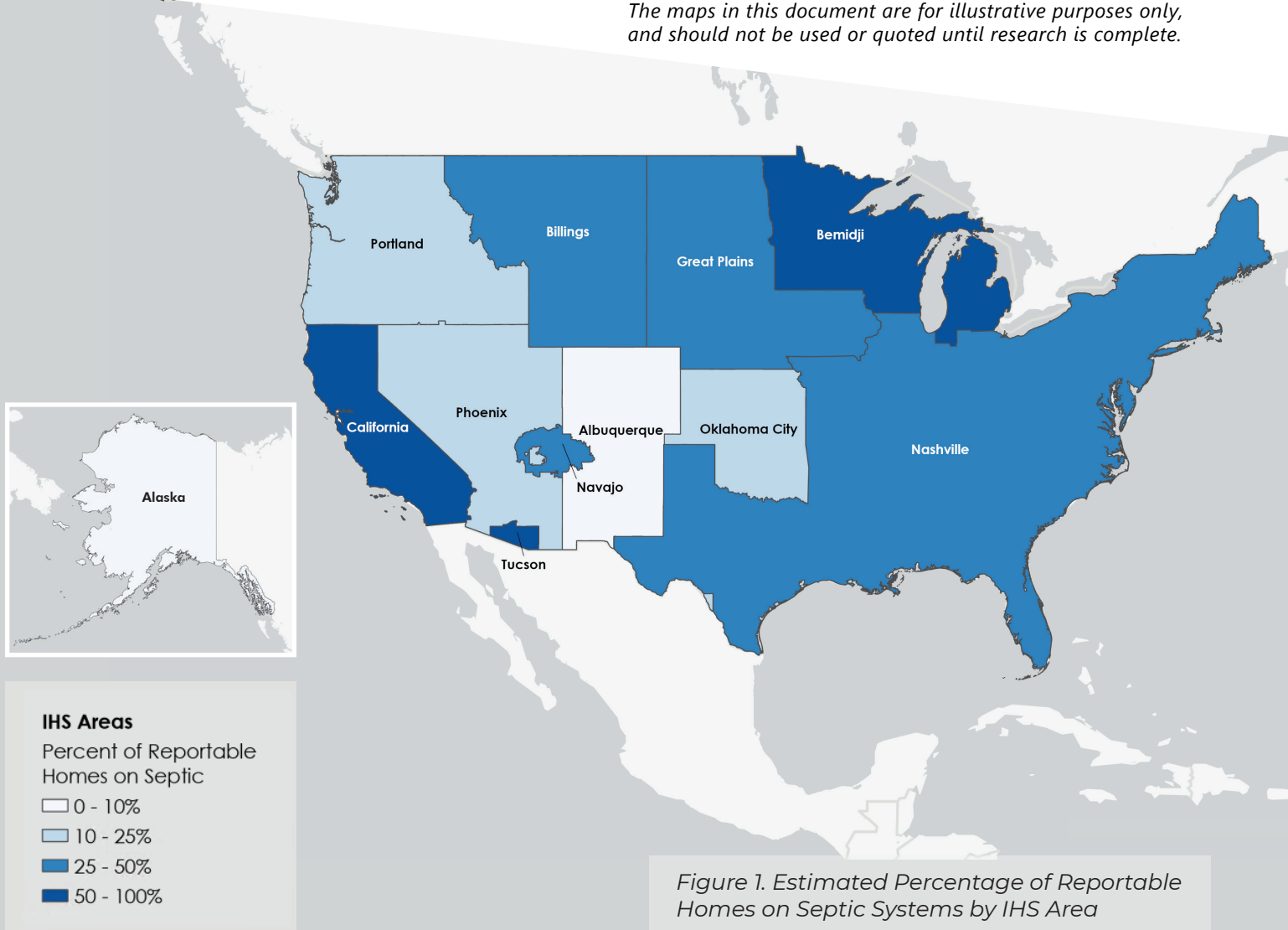
## Overview

The U.S. Environmental Protection Agency (EPA) is leading a research effort in partnership with the Indian Health Service (IHS) to address a critical data gap in locating and assessing the potential condition of residential septic systems located across federally recognized tribal areas.

The most recent data showing where septic systems are used (in tribal and non-tribal areas) come from the 1990 U.S. Census Survey.

The absence of current data presents a challenge in reaching communities relying on septic systems for sewage treatment — particularly those with economic constraints or information barriers which could limit the ability to maintain effective systems. Having a clear picture of the location of septic systems will help outreach and assistance to these communities.

*The maps in this document are for illustrative purposes only, and should not be used or quoted until research is complete.*



*Figure 1. Estimated Percentage of Reportable Homes on Septic Systems by IHS Area*

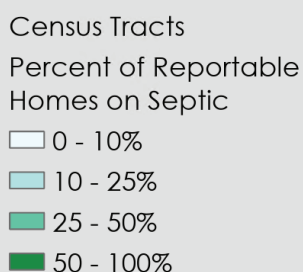
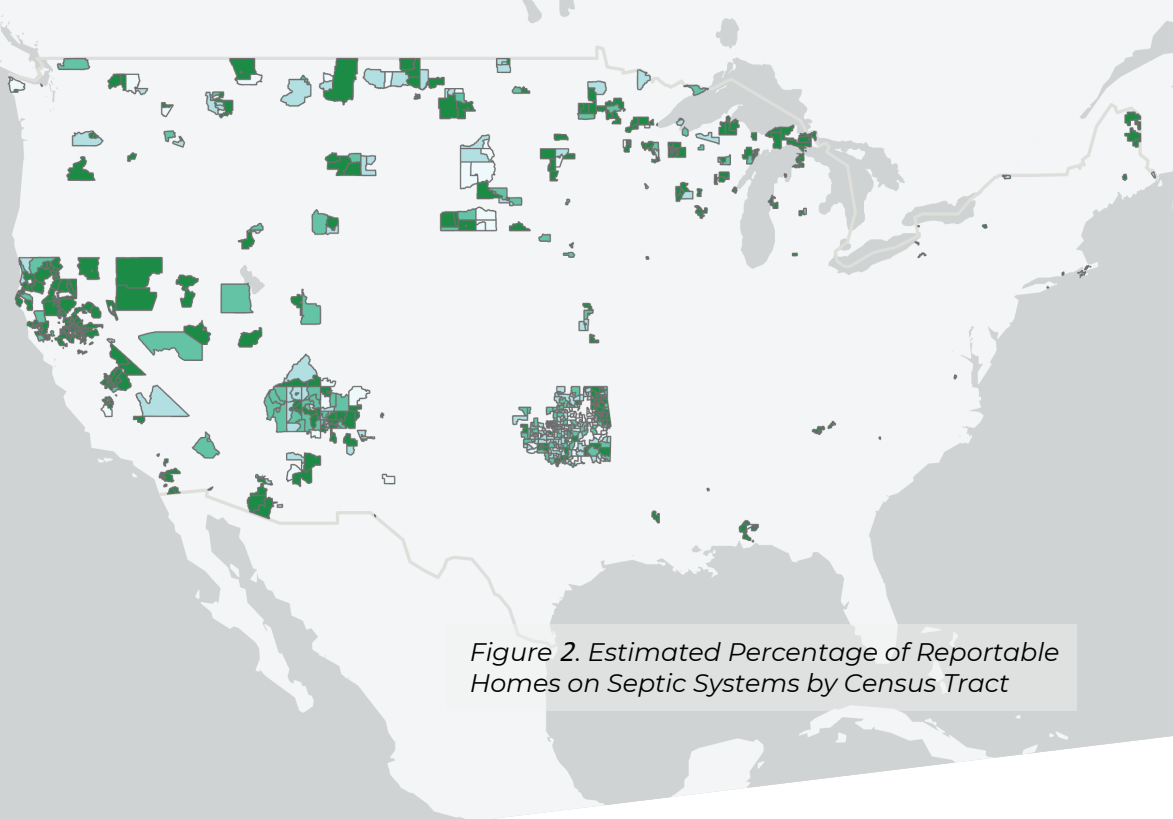
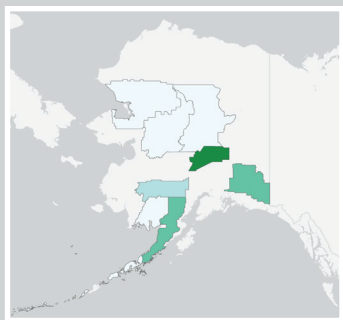


Figure 2. Estimated Percentage of Reportable Homes on Septic Systems by Census Tract

## Data & Limitations

### Estimating Septic System Location

This research uses data from the Indian Health Service's Sanitation Tracking and Reporting System (STARS) and, when available, GIS data showing the location of sewer mains and laterals. These data are used to assign a system type at the household level (e.g., sewer vs. septic). While these data enable valuable estimates of the prevalence of septic systems across tribal areas, not all tribal homes are included in this analysis due to data availability. Only reportable homes included in STARS are included in the analysis.

### Estimating Septic System Condition

To estimate septic system condition, this research uses socioeconomic data from the 2020 American Community Survey to help identify communities potentially experiencing constraints that could influence proper use or maintenance of systems. Socioeconomic proxies were selected by conducting a literature review of factors associated with financial and information barriers to septic system use or maintenance. Other factors (e.g., environmental factors, resources made available by IHS, access to septic system services) not included in this study may influence septic system condition.

## Research Applications & Products

Applications of this research include:

1. Enabling outreach and assistance to areas with a prevalence of septic systems or areas with higher potential for septic system failure;
2. Combining the locations of septic systems from this research with other datasets, such as data showing areas prone to floods, drought, or located close to sensitive or strained waterbodies;
3. Refining the methodology and approach used to discern where septic systems are located within tribal areas; and
4. Empowering communities, community-based organizations, or other stakeholders to advocate for increased support to communities relying on septic systems.

To support these activities, EPA is developing the following products that will be released on EPA's website for public use:

- Interactive maps to explore where septic systems are located;
- Detailed research report; and
- Downloadable data files.

These materials will be available online at:

<https://www.epa.gov/small-and-rural-wastewater-systems/clean-water-indian-set-aside-program>