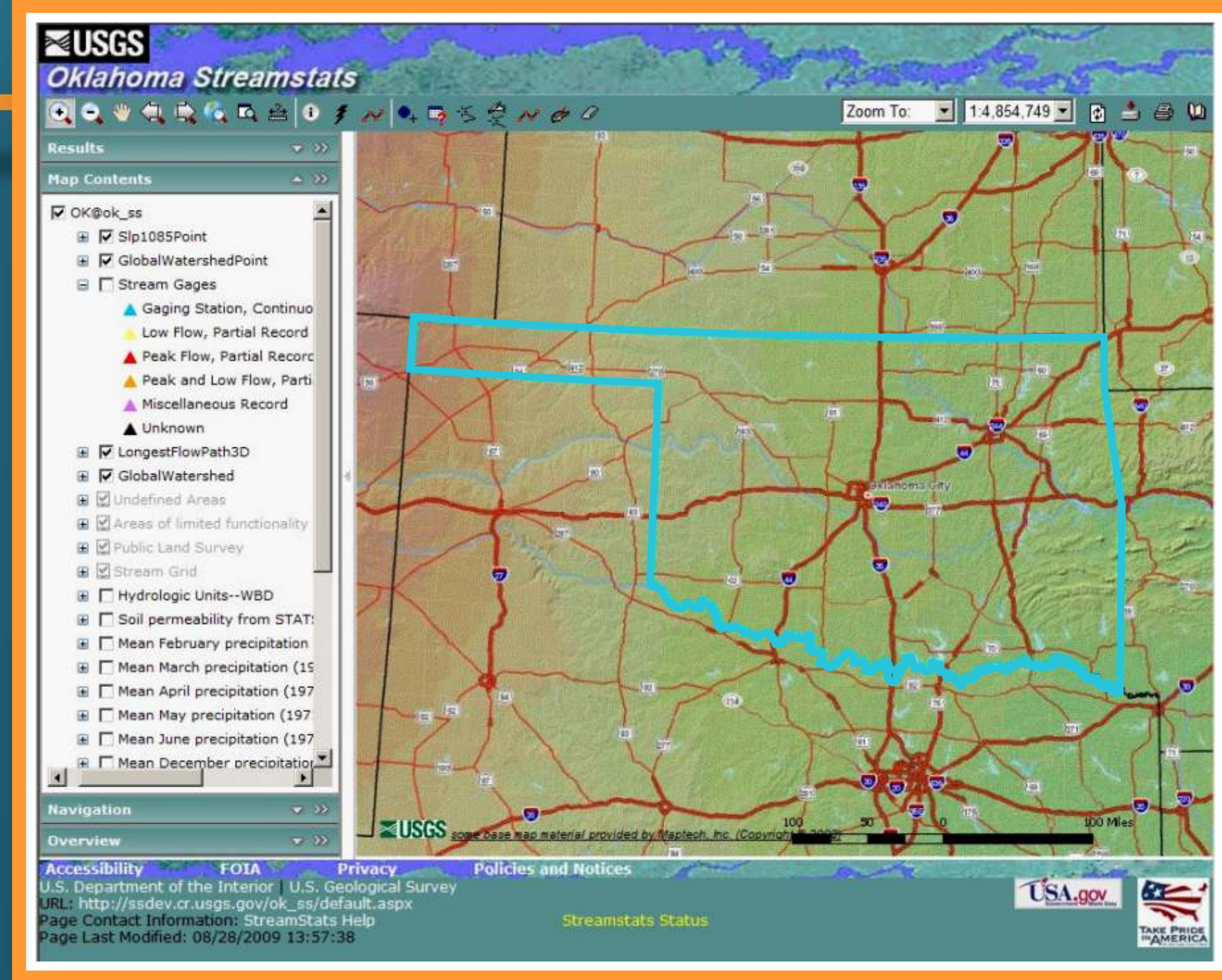


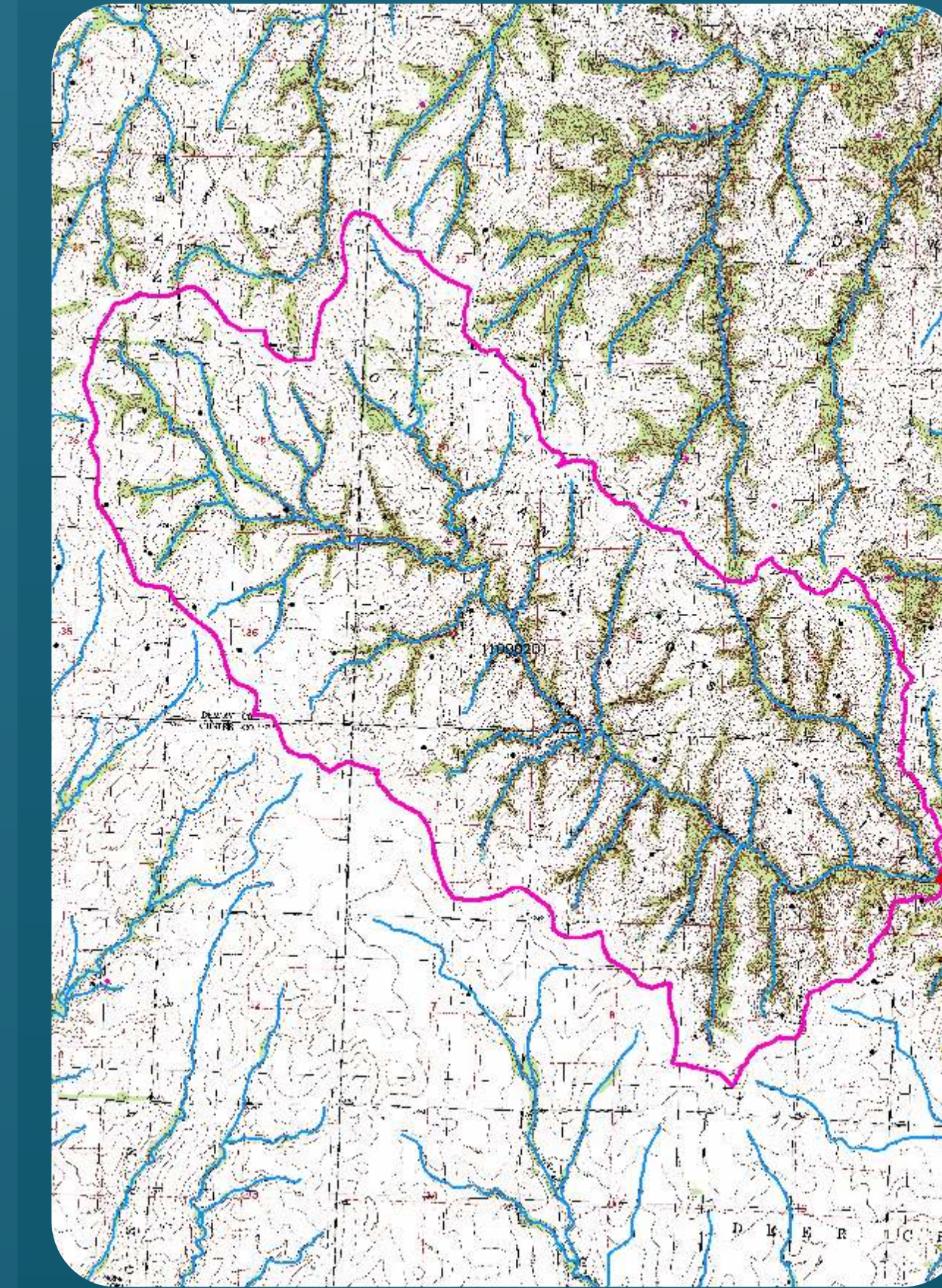
Prepared in cooperation with the Oklahoma Department of Transportation



1 Delineate your drainage basin

2 Report basin characteristics

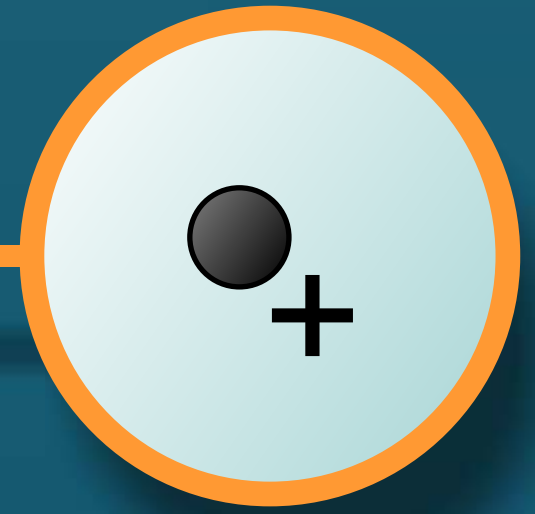
- Contributing drainage area (A)
- Percent of contributing area that is regulated by NRCS floodwater retarding structures
- Main-channel 10-85 stream slope (S)
- Mean annual/seasonal/monthly precipitation (P) at basin outlet (from PRISM)
- Mean basin hillslope
- Percent impervious cover (from 2001 National Land Cover Database)
- Percent forest canopy (from 2001 National Land Cover Database)
- Mean soil permeability (from STATSGO)



Download basin as a shapefile



Obtain USGS stream gage information



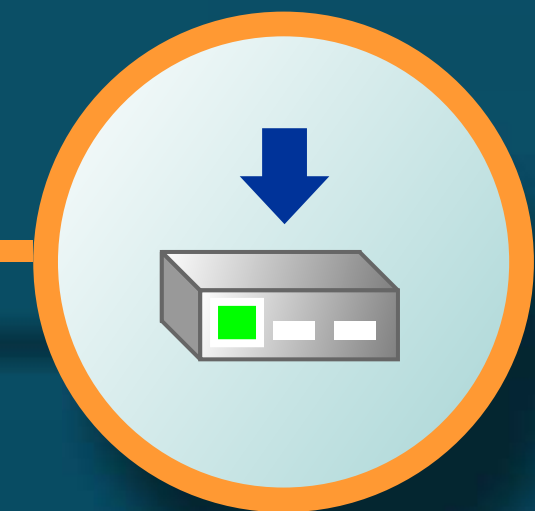
Delineate a user-defined drainage basin



Compute basin characteristics



Estimate streamflow statistics for ungaged streams

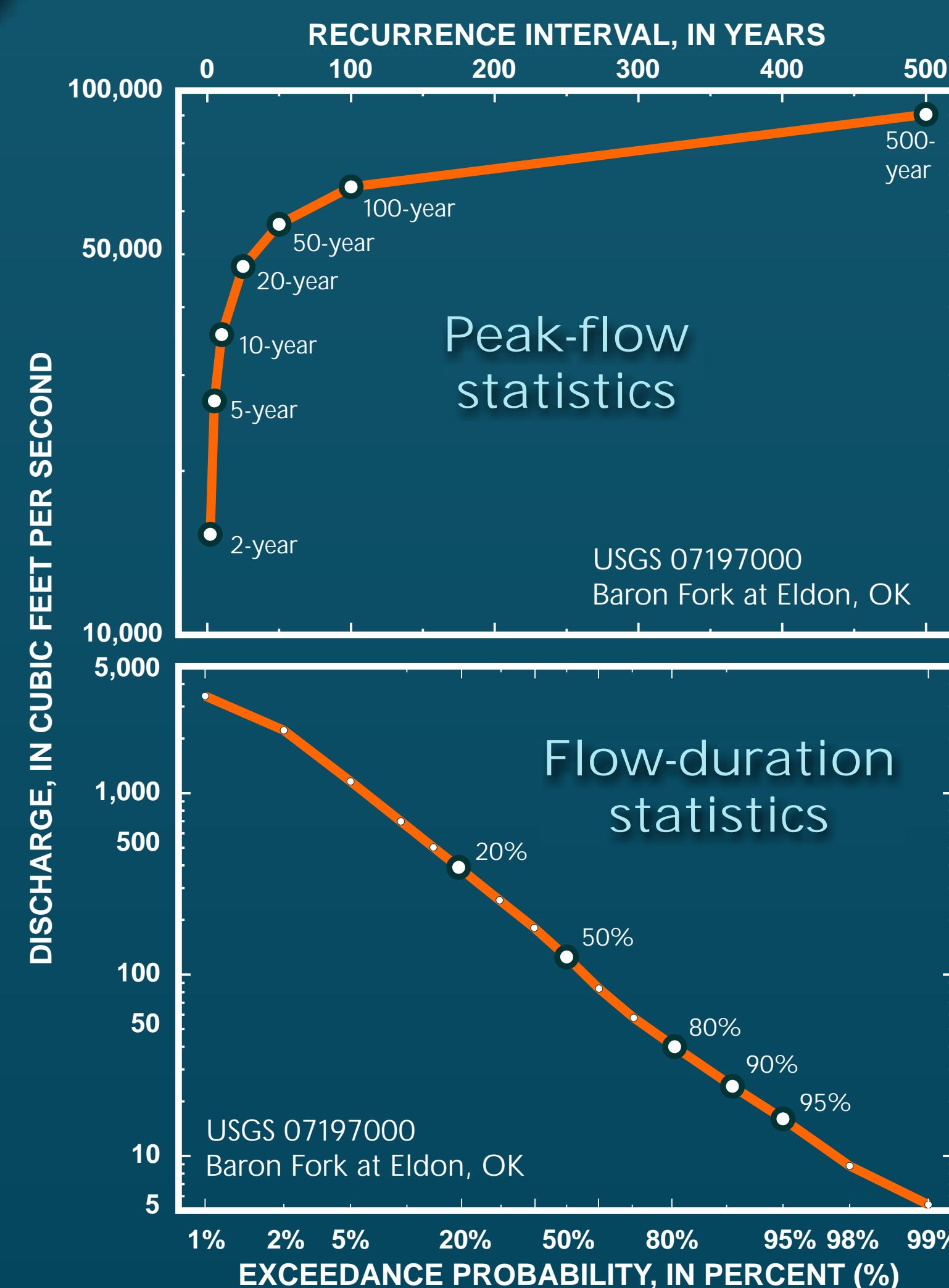


Download data as a drainage basin shapefile



Print the current view as a map

3 Estimate selected streamflow statistics



- Peak flow at 2-, 5-, 10-, 25-, 50-, 100-, and 500-year recurrence intervals for:
 - Rural, unregulated streams
 - Rural streams regulated by NRCS floodwater retarding structures
- Tortorelli (1997) provides methods for adjusting peak-flow statistics for some urbanization effects
- Coming in 2010: Flow-duration and annual-mean-flow statistics in cooperation with the Oklahoma Water Resources Board

The U.S. Geological Survey (USGS) periodically publishes streamflow statistics, such as flood-frequency (peak-flow), flow-duration, and annual-mean-flow statistics, for gaged sites with long-term record. Regionalized regression methods have been developed for estimating many of these streamflow statistics at ungaged sites as a function of measured physical and climatic drainage basin characteristics.

The USGS Streamflow Statistics (StreamStats) Program was developed, in cooperation with ESRI, to make estimation of basin characteristics and streamflow statistics at ungaged sites easier, faster, and more consistent than previously employed manual techniques. Manual measurement of drainage basin characteristics is prone to error, and can take hours or days for large basins. Geographic Information System (GIS) techniques can produce drainage basin characteristics in seconds with greater accuracy and reproducibility.

The StreamStats user-interface is an Internet-based GIS application that allows users to easily obtain streamflow statistics, basin characteristics, and other information for user-selected USGS data-collection stations and ungaged sites of interest. To estimate streamflow statistics at ungaged sites, the StreamStats application relies on the data collected at USGS streamflow gages, on-the-fly measurements of physical and climatic drainage basin characteristics, and published regionalized regression equations.

With the cooperation of the Oklahoma Department of Transportation, StreamStats has now been implemented for Oklahoma. The foundation of the Oklahoma StreamStats application is a raster-based topographic model that integrates three publicly available national datasets - the USGS National Elevation Dataset (NED), the Natural Resources Conservation Service Watershed Boundary Dataset (WBD), and the USGS National Hydrography Dataset (NHD) - into a hydrologically correct, 1:24,000-scale topographic representation of the Oklahoma landscape. The topographic model is represented and displayed as a series of topographic base maps in the StreamStats application.

The Oklahoma StreamStats application covers most areas within the state of Oklahoma. Basin characteristics and streamflow statistics cannot be computed for locations within playa basins (mostly in the Oklahoma Panhandle) and along main stems of the largest river systems in the state, namely the Arkansas, Canadian, Cimarron, Neosho, Red, and Verdigris Rivers.