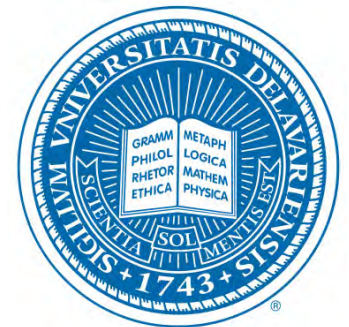


Climate Change, Diversity, and Resilience: Three Great Challenges of our Watershed.

Dec 15, 2020

Water Resources Association for the Delaware River Basin
Annual Fall Technical Event

Gerald McAdams Kauffman
University of Delaware
Water Resources Center
Biden School of Public Policy & Administration
Newark, Del.



UD Panelists

- Kelly Slabicki, Wilmington Water Dept., Wilmington, Del.
- Anna Singer, Environmental Studies, Burlington, VT.
- Hayley Rost, Public Administration, Lafayette Hill, PA.
- Sophie Phillips, Energy & Environ Policy Katonah, NY.
- Karmyn Pasquariello, Environ. Eng'g. Pompton Lakes, NJ.
- Jady Young Perez, Environ. Eng'g. Panama City, Panama.
- Sitlaly Avelino, Environ. Eng'g. Santa Ana, CA
- Emily Jimenez, Environ. Eng'g. Ellicott City, MD.



University of Delaware Joseph R. Biden, Jr. School of Public Policy & Administration



Watershed Ecology

GERALD McADAMS KAUFFMAN

THE WATER STATE

Delaware is a water state. Sitting on the Delmarva Peninsula and surrounded on three sides by water, it is one of just three *peninsular* states, and with the 1829 cutting of the C&D Canal, many consider it to be technically an *island*. At a mean elevation of only sixty feet above sea level, the First State is also the lowest state in the United States, with a beautiful and bounteous coastline along the Atlantic Ocean. But this profile also leaves the state vulnerable to worsening coastal storms and accelerating sea level rise—perhaps more so than most other places. It is fortuitously situated by geography and hydrology between two great estuary systems in America, the Chesapeake and the Delaware, that support abundant ecology and economy. In 2010, more than three hundred million gallons per day of drinking water and industrial water supplies were drawn from the rivers, streams, and aquifers in Delaware’s watersheds to sustain the state’s domestic, commercial, and industrial economy. But more than 90 percent of Delaware water is also so polluted it does not pass federal standards, largely due to a high population density in the metropolitan corridor to the north and the substantial agricultural economy to the south. While only the second smallest state in the Union, almost a million people in Delaware draw drinking water from just four small streams that originate upstream in the Appalachian Piedmont of Pennsylvania, and from Atlantic Coastal Plain aquifers that reach a mile down to bedrock. Delaware is diminutive, but its waters run deep.

The state owes its history and formative years to the waters that surround it. About fifteen thousand years ago, the North American glaciers melted and the sea rose to form more or less the watershed geography of present-day Delaware. Before the last ice age, ocean waters covered most of what is now Delaware. Over time, as the polar ice caps grew and continental glaciers drifted southward, sea level dropped significantly to a point about four hundred feet lower than present-day sea level. Since then, with increasing

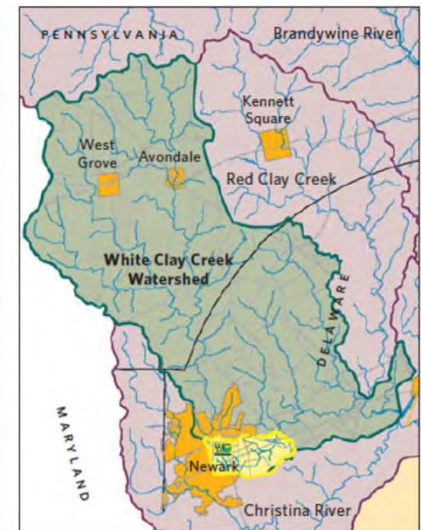
FIGURE 3.1.
Nested watersheds in the Delaware River Basin. (Courtesy of the University of Delaware Water Resources Center.)



CHRISTINA RIVER BASIN



WHITE CLAY CREEK WATERSHED



Territories Languages Treaties

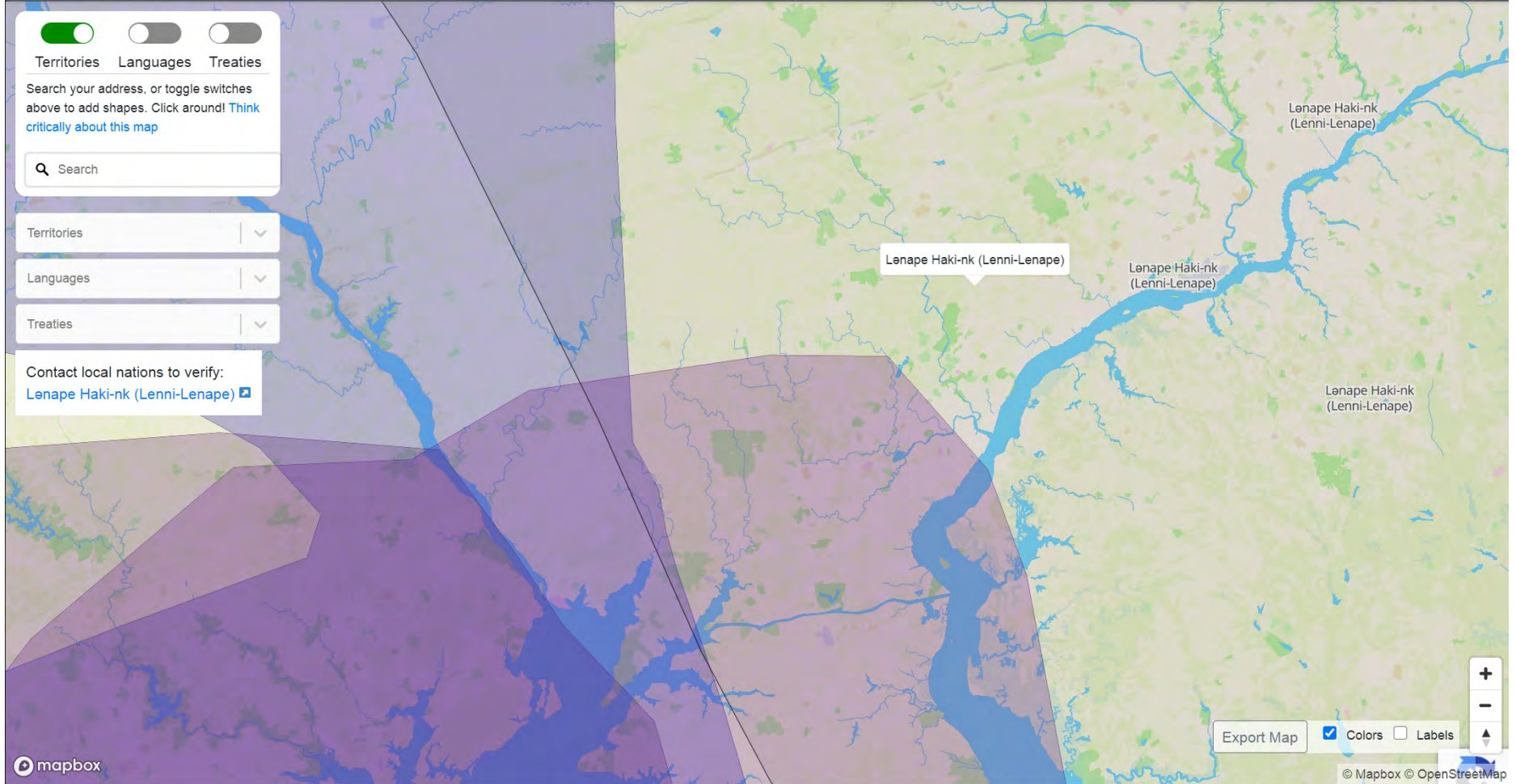
Search your address, or toggle switches above to add shapes. Click around! [Think critically about this map](#)

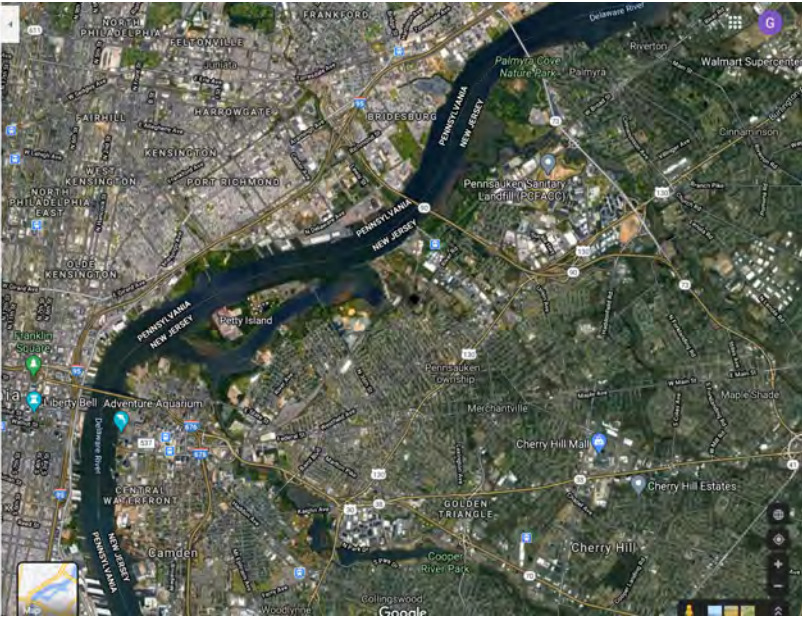
Territories

Languages

Treaties

Contact local nations to verify:
[Lenape Haki-nk \(Lenni-Lenape\)](#)





1. Climate Change



2. Diversity



3. Resilience

Climate Change, Diversity, and Resilience: Three Great Challenges of our Watershed.

- Q1 Climate Change: If President Biden appointed you the new Climate Czar what would your first step be on your first day in office?
- Q2 Diversity: If you were the New EPA administrator, what would do to provide more diversity in race, creed, color, gender, and mobility among the nation's environmental workforce?
- Q3 Resilience i.e. Health and Safety: If you were elected Governor, what environmental actions would you take to fight and end and help the Earth recover from the Global Pandemic?

Questions?

