

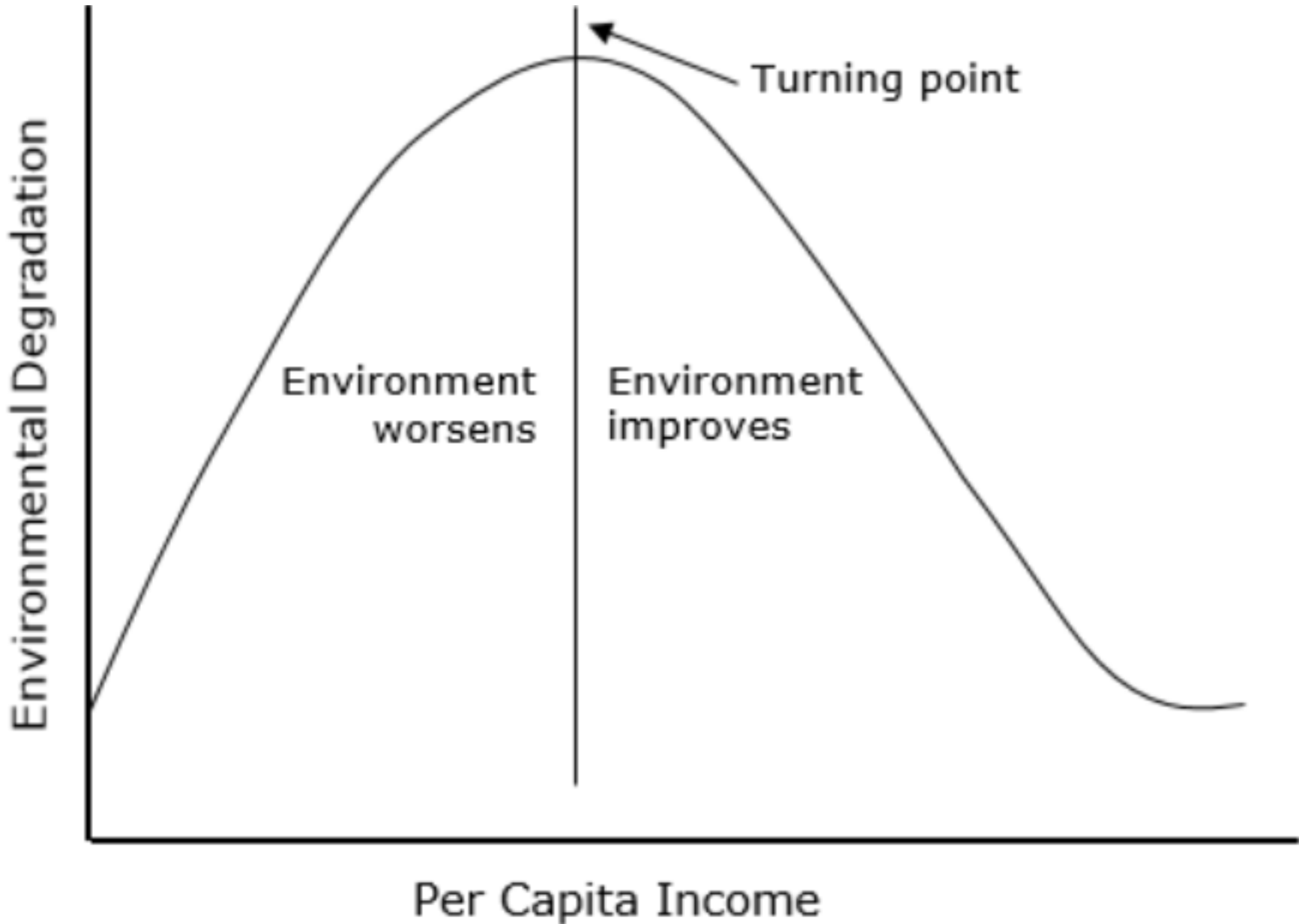
Del-economics

Sep 26, 2018

6th Annual Delaware River Watershed Forum
Cape May, NJ

Gerald J. Kauffman
University of Delaware
Water Resources Center
Newark, Del.

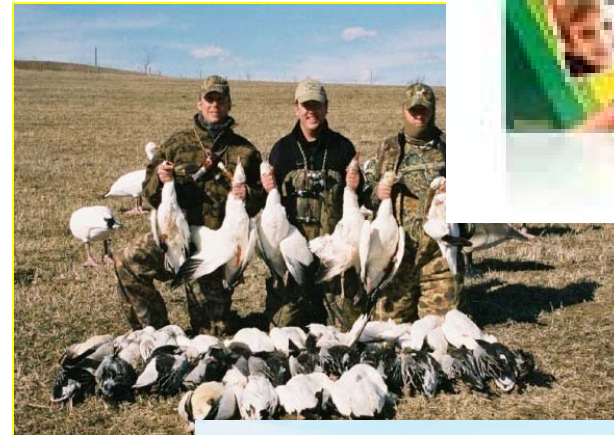




Kuznets Curve

The Delaware River watershed supports over >600,000 jobs (\$10 billion in wages)

- Marine & Water-related Construction
- Fishing & Aquaculture
- Ship/Boat Building
- Tourism/Recreation
- Marine Transportation
- Hunting/Fishing/Wildlife Recreation-related
- Farming
- Water/Wastewater Utility
- Ports
- Watershed Protection/Management



The Great American Megabasin

Chesapeake and Delaware

Gerald J. Kauffman and Carol Collier

Linked by hydrology at the crossroads of American history, the Chesapeake and Delaware megabasin stretches 400 miles along the Atlantic seaboard in the most populous watershed in the United States (Figure 1). The American Revolutionary War and Civil War were fought along its rivers and John F. Kennedy, Richard M. Nixon and Barack H. Obama adopted federal programs to protect its rivers and watersheds.

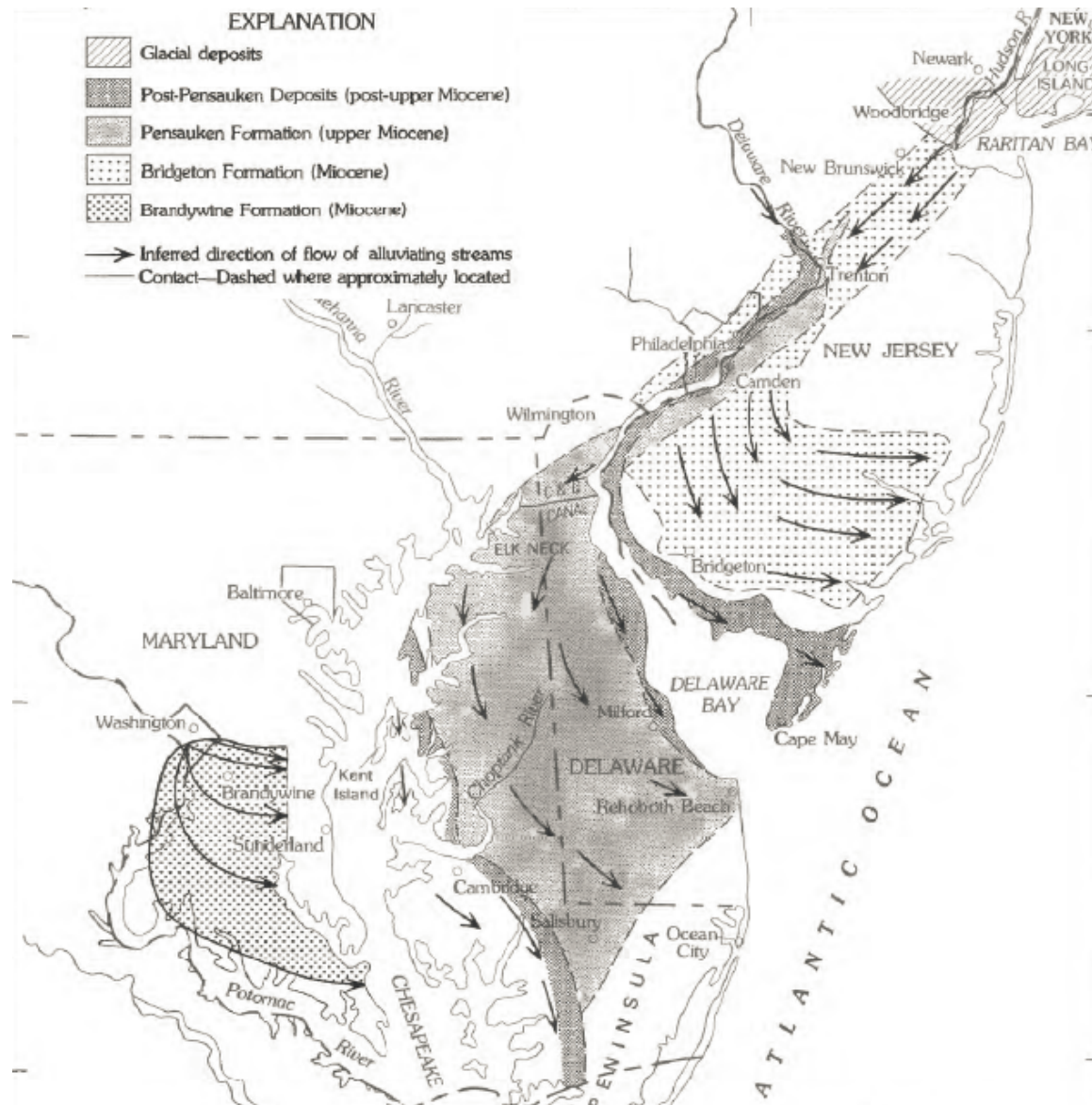
While sharing similar geography and climate, these contiguous mid-Atlantic basins have contrasting demographic characteristics (see Table 1 on page 9). The Chesapeake and Delaware megabasin covers just 2% of the contiguous United States, yet is home to 8% of the nation's population and the nation's fifth- and seventh-largest metropolitan economies, the U.S. Capitol and five state capitals.

The Chesapeake watershed (64,000 square miles) is four times larger than the Delaware watershed (13,500 square miles), which suggests the challenges of governing the nation's largest estuary are correspondingly complex. The Chesapeake is home to 16 million people — twice that of the Delaware basin — but the Chesapeake's population density (250 people per square mile) is less than the

Delaware basin (590 people per square mile), which suggests less pressure per unit area from human pollution and water withdrawals.

Though each river is more than 300 miles long, the Chesapeake/Susquehanna and Delaware are merely the 42nd and 55th longest rivers in the United States. The Chesapeake is the longest estuary in the country (194 miles) and the Delaware estuary (96 miles) is the nation's third-longest navigable tidal river. Both estuaries are drowned river systems that evolved from rising sea levels that began 20,000 years ago during the end of the last ice age. While both estuaries have similar ratios of watershed to estuary surface area (18:1), the hydraulic retention time (HRT), measured by volume divided by median flow, is quite different. The approximate HRT of the Chesapeake is 812 days and that of the Delaware Bay is 443 days.

Alluviating Streams 8000 BC





Swedes settle at mouth of Christinakill
1638 AD

DuPont Mills along the Brandywine 1802 AD

Lee, Mass. Nov. 3-1905



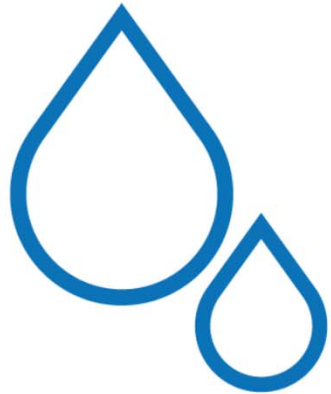
Powder Mill on Brandywine near Wilmington, Del.

*These blow
up occasion-
ally and
then?*



JFK signs DRBC Compact 1961 AD





Clean Water

A Bi-State Solution

May 3, 2018 | Mendenhall, PA

1967



BRANDYWINE
CONSERVANCY

1945



Brandywine
Red Clay Alliance

1953



Natural
Lands



The Nature
Conservancy

1951



STROUD
WATER RESEARCH CENTER

1967



UNIVERSITY OF
DELAWARE

1743

Socioeconomic Value of the Delaware Estuary Watershed

Watershed

Total Estuary: 5,931 sq mi

- DE: 977 sq mi (17%)
- NJ: 1,942 sq mi (33%)
- PA: 3,011 sq mi (50%)

Population

Estuary: 5.2 million

- DE: 539,035 (10%)
- NJ: 1.3 million (25%)
- PA: 3.4 million (65%)

Economic Benefits

- Water Quality (wastewater treatment): \$1.5 B
- Water Supply: \$1.3 B
- Fishing: \$0.33 B
- Wildlife/Bird watching: \$0.31 B
- Forests (Carbon storage): \$0.63B
- Port Activity: \$2.4 B



Map courtesy of the Partnership for the Delaware Estuary

Ecosystem Goods & Services (2010)

Total Estuary: \$16.5 B; Net Present Value (NPV): \$536 B

- DE: \$3.5 B; NPV \$114 B
- NJ: \$7.0 B; NPV \$227 B
- PA: \$6.0 B; NPV \$195 B

Jobs and Salaries

Direct & Indirect Jobs

Estuary: 692,000

- DE: 67,000
- NJ: 170,000
- PA: 440,000

Direct & Indirect Wages

Estuary: \$11 B

- DE: \$1.1 B
- NJ: \$2.9 B
- PA: \$7.0 B

Gulftainer Signs 50-Year, \$600 Million Concession Agreement to Operate and Expand Port of Wilmington in Delaware

- *\$600 million expected investment in expansion will turn port into one of largest gateways on the East Coast, including a new 1.2 million TEU container terminal at former DuPont Corp. facility*
- *Port becomes the largest ever operation by a UAE company in the United States*



Table 1. Economic value of agricultural operations in Chester County, Pennsylvania.
 (Chester County Agricultural Development Council, USDA National Agricultural Statistics Service)

Industry	Economic Value	Rank
Dairy farming	\$73 million	6 th in PA
Horse farming	\$5.2 million	22 nd in U.S.
Nursery, greenhouse, floriculture	\$79 million	1 st in U.S.
Row crops	\$8.7 million	7 th in PA
Mushroom farming	\$412 million	1 st in U.S.



Occasional Shop Keeper

Dogfish Head Companies

Milton, DE

via Jobvite

🕒 Over 1 month ago



Off-Centered Occasional Experience Guide

Dogfish Head Companies

Milton, DE

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"Delicious Deliberate Craft Beer..."
Oct. 14, 2014



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144 **Delaware Beer jobs** available on Indeed.com. Apply to Senior Assistant, Analyst, Senior Customer Support Representative and more!

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<https://www.indeed.com/q-Dogfish-Head-Craft-Brewery-l-Milton,-DE-jobs.html> ▼

8 Dogfish Head **Craft Brewery jobs** available in Milton, DE on Indeed.com. Apply to Occasional Shop Keeper, Maintenance Supervisor, Production and more!

Future Looks Promising For Petty's Island

By David Madden July 29, 2017 at 10:00 pm Filed Under: David Madden, Delaware River, KYW Newsradio

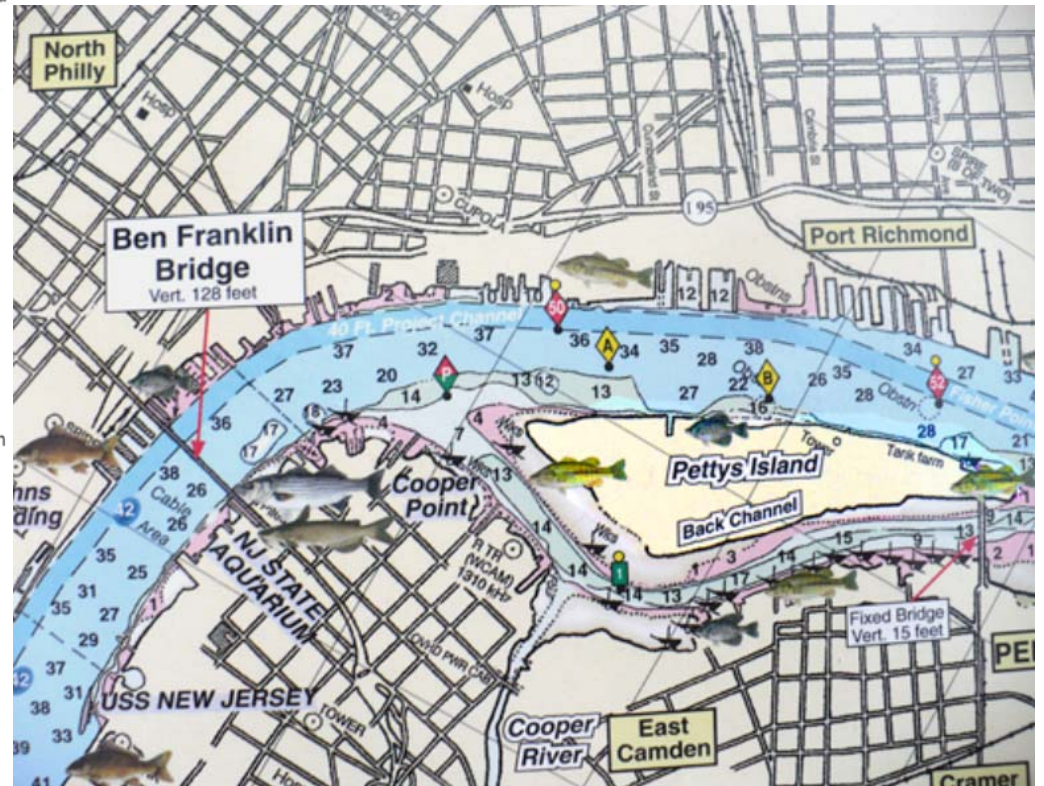
PENNSAUKEN, NJ (CBS) — Petty's Island, in the middle of the Delaware River, could be our area's Central Park in a few years. That is, assuming a plan to clean it up and turn it over to a public land trust proceeds on schedule.

There have been many owners, and more than a few controversies over what to do with the 400 acre parcel just off Pennsauken.

Citgo, the Venezuelan-owned oil company, currently owns it. They have agreed to give the island to the New Jersey Natural Lands Trust, and put up 3 million dollars towards its new mission. But trust Board Chairman Michael Catania says a couple things have to happen first.

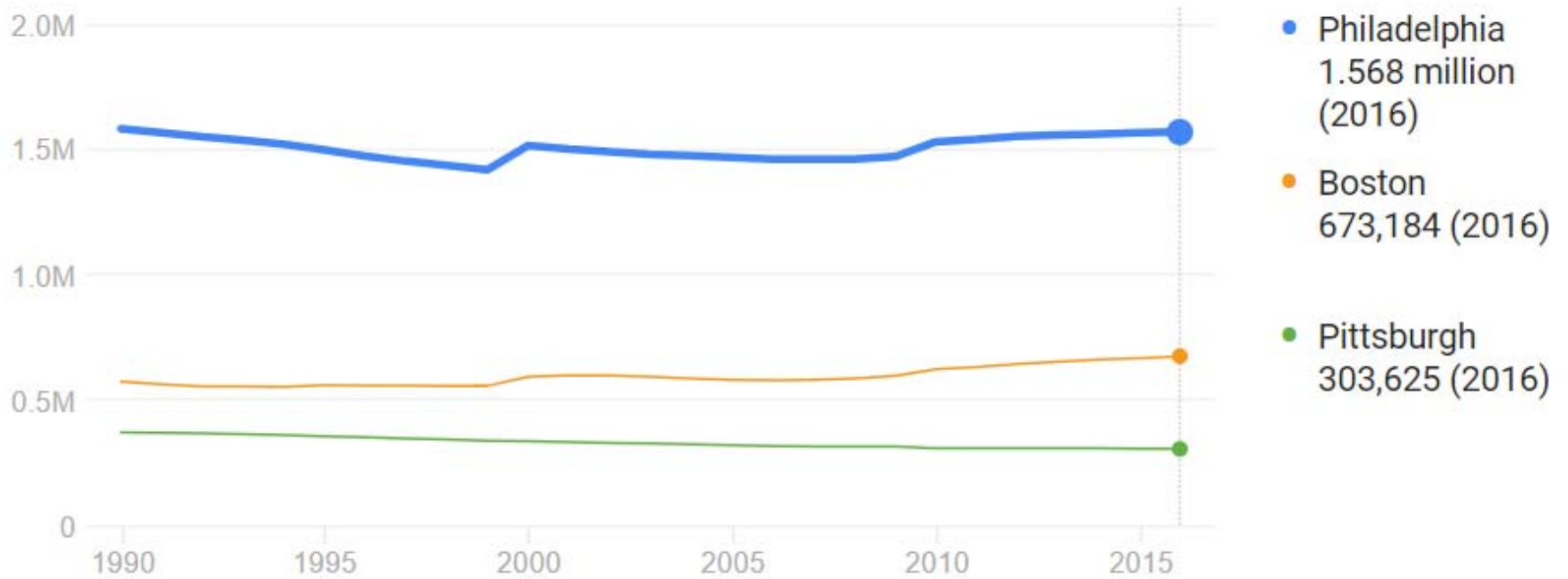
Catania told KYW Newsradio, "When the Crowley Marine Terminal finishes their operations and moves out, which is going to start happening this December and when Citgo finishes the cleanup under their consent order with DEP and the island has been determined by DEP to clean, then it'll be turned over to the trust and it'll become an urban nature preserve."

It's thought that'll happen no later than 2021. The trust will be raising money to turn one of the buildings now on site into a nature center, but not until they put in some new trails.



Philadelphia / Population

1.568 million (2016)



 [Explore more](#)

Sources include: United States Census Bureau

[Feedback](#)

Ground Broken for K&T Trail Along the Delaware River

The new trail segment will provide recreational and transportation alternatives for Northeast residents and eventually connect to the East Coast Greenway.

by **ESTHER YOON** • 6/9/2016, 4:33 p.m.



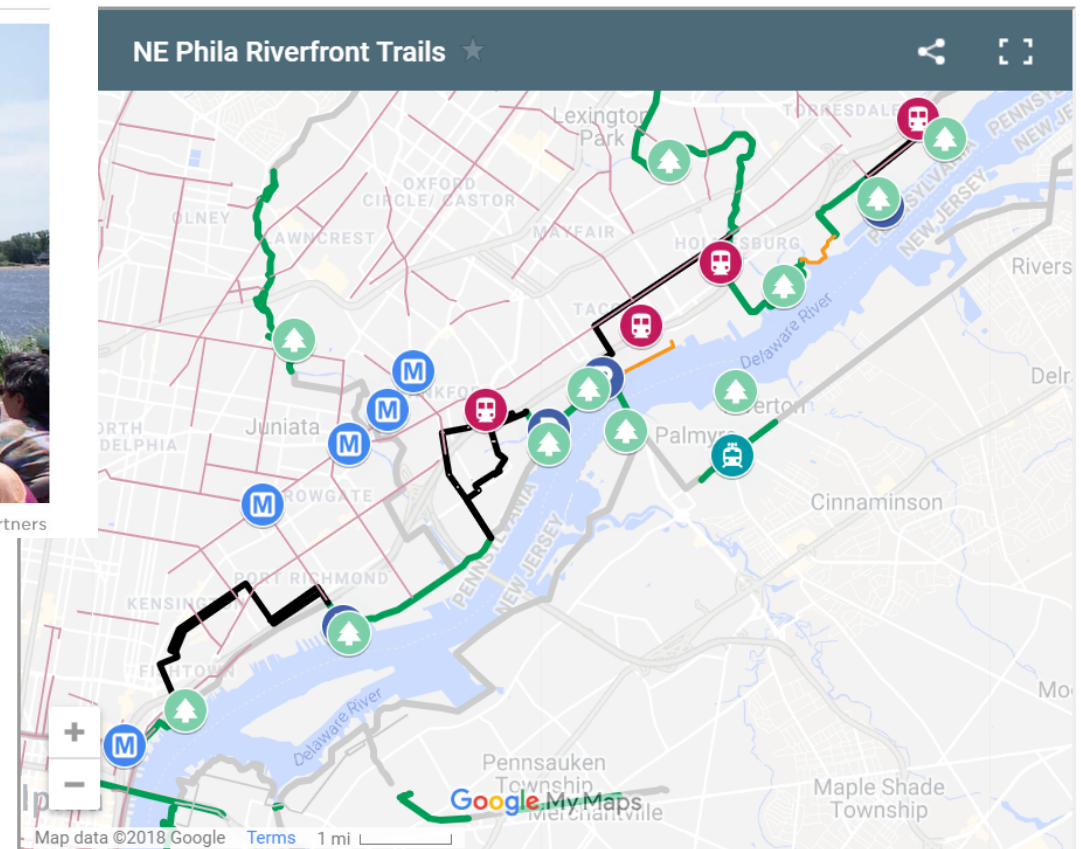
Sign up for our weekly home and property newsletter, featuring homes for sale, neighborhood happenings, and more.

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Mayor Kenney along with dignitaries at Lardner's Point Park. | Photo courtesy Devine + Partners





Crayola Salaries

110 salaries (for 84 job titles) Updated Sep 4, 2018

How much do Crayola employees make? Glassdoor has salaries, wages, tips, bonuses, and hourly pay based upon employee reports and estimates.

United States
▼

Search

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	Average Base Salaries in (USD)	Low	High
Associate Product Manager 5 salaries	\$82,798/yr	\$75K	\$93K
Product Manager 5 salaries	\$115,000/yr	\$94K	\$124K
Intern - Hourly 3 salaries	\$11/hr	\$11	\$12



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PRESS RELEASE | Apr 22, 2015

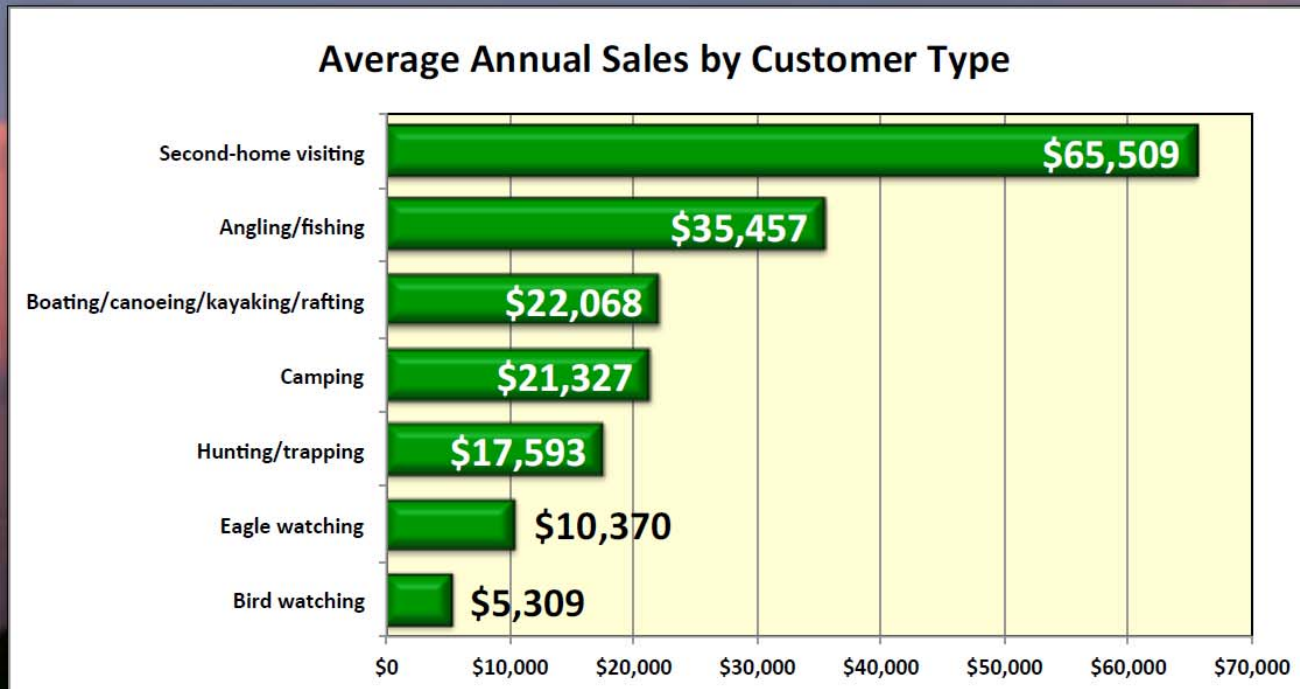
New Report Highlights Economic Value and Quality of Life Benefits of Delaware Water Gap National Recreation Area

Key report findings include:

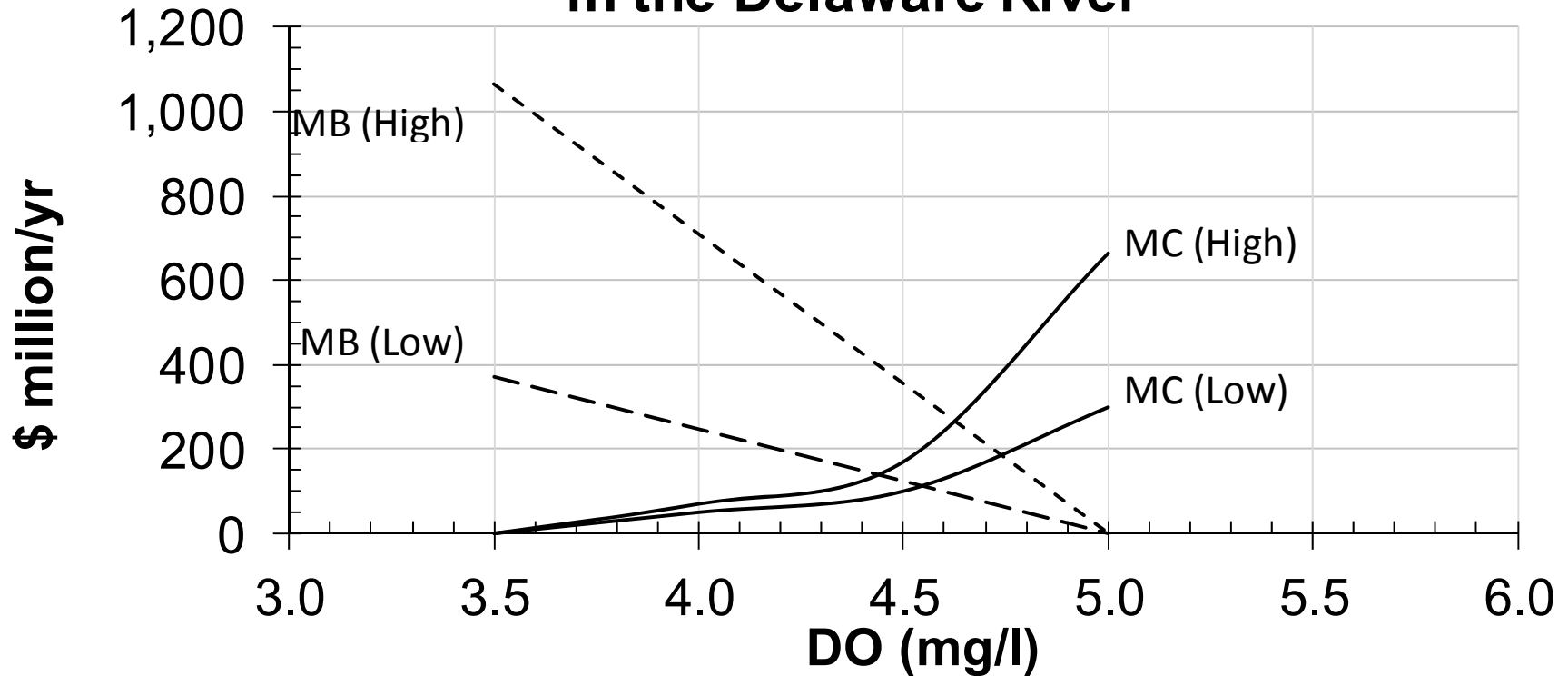
- The national park's total economic impact supports 2,232 local jobs, \$219 million in sales at local businesses, and \$97 million in local wages and salaries.
- Every federal dollar invested into the park generates \$24 in sales at local businesses.
- Volunteer efforts in every area of park operations add up to the equivalent of 53 full-time employees, efforts valued at \$2.6 million.
- The ecosystem services (like pollution filters, flood control, excellent fish and wildlife habitat, carbon storage) provided by the park's wetlands, forests, and other natural areas would cost over \$159 million each year to replace, if it even were possible to replace these natural benefits.

What's A River Worth?

Sales, allocated by the proportions business respondents attribute to various types of recreation, indicated the following average expenditures per year, fishing and boating accounting for an average total of \$57,525 of spending at each business



Optimal Water Quality in the Delaware River



- Marginal Cost (Low) Median 32% N Reduction
- Marginal Cost (High) 75th Percentile
- - Marginal Benefits (Low)
- - Marginal Benefits (High)

Yankees

FIFTY CENTS

YANKEES VS GIANTS	YANKEES VS CARDINALS	YANKEES VS PIRATES	YANKEES VS CUBS	YANKEES VS REDS	YANKEES VS DODGERS
1921	1926	1927	1932	1939	1941
1922	1928		1938		1947
1923	1942				1949
1936	1943				
1937					

1950 WORLD SERIES

YANKEE STADIUM

Phillies

AMERICAN LEAGUE CHAMPIONS

WORLD SERIES

20 09

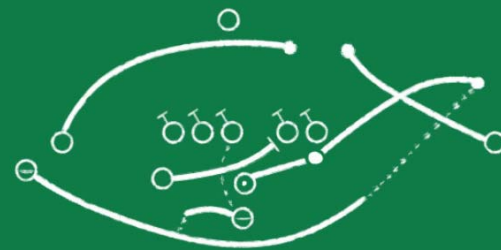
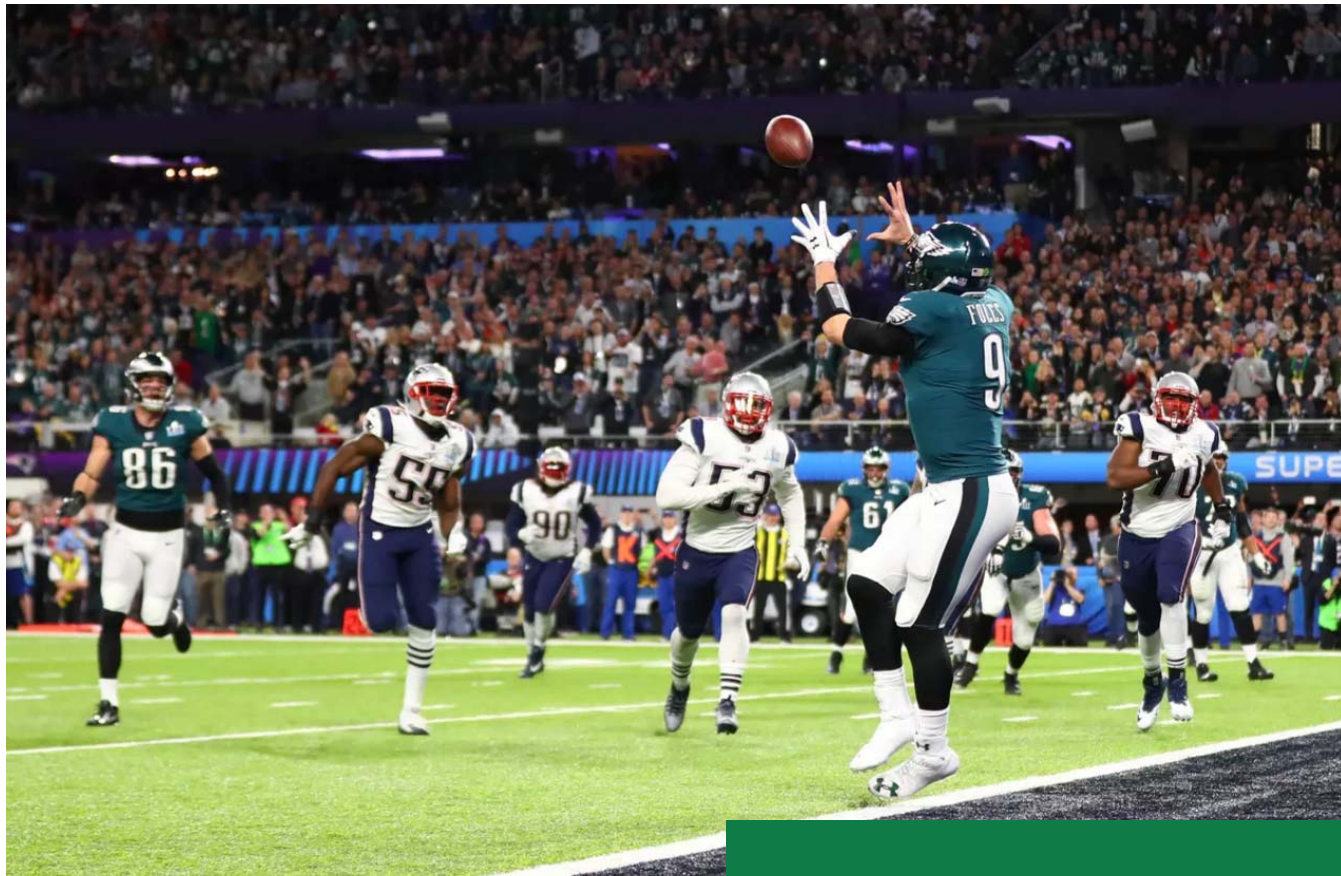
Fall Classic

NATIONAL LEAGUE CHAMPIONS

Phillie Phanatic

THOMAS M. LEOPOLD 2009



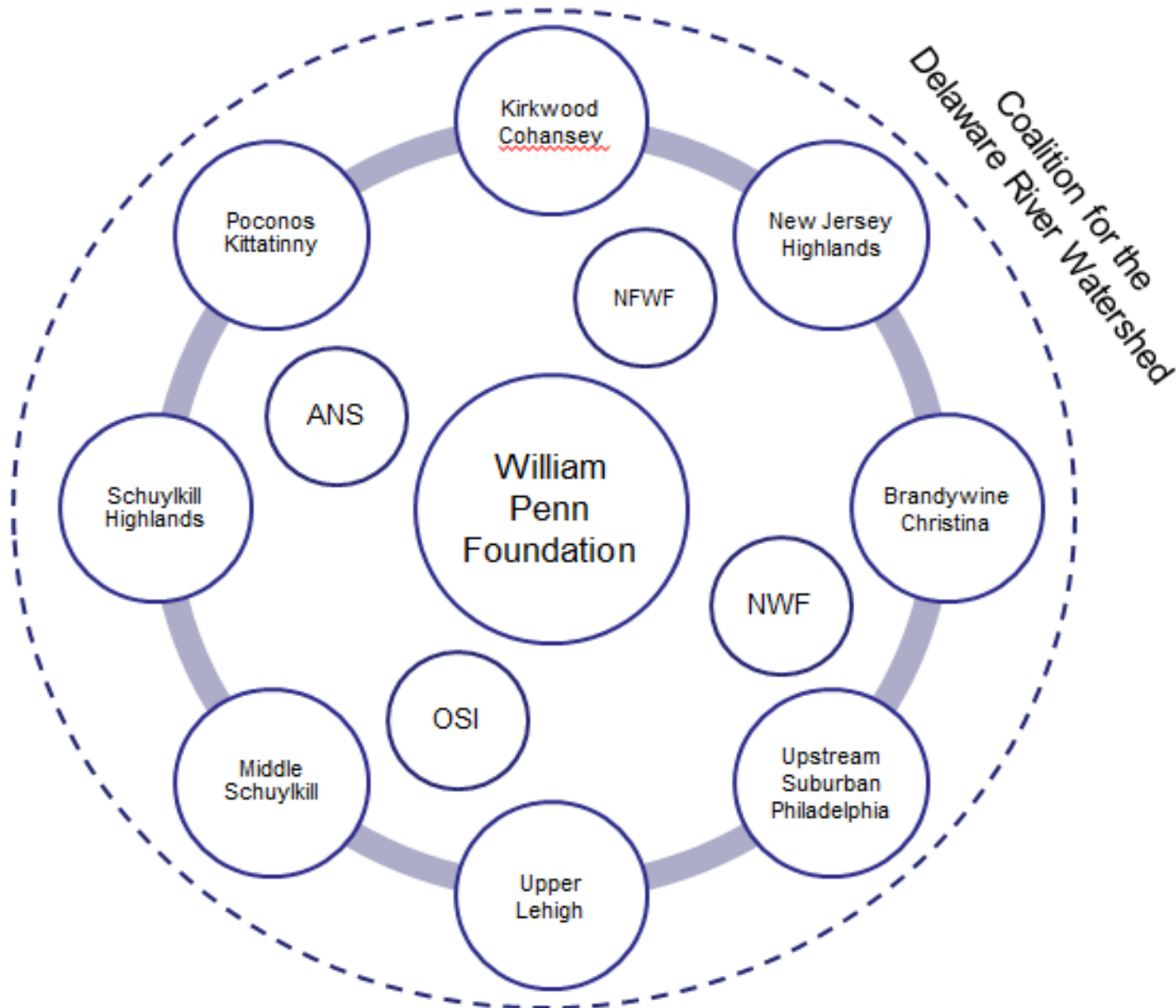


PHILLY SPECIAL
"PHILLY PHILLY"



© Getty Images





William Penn Foundation unveils
Delaware River Watershed Initiative
2013 AD

