

The Delaware River Basin

“The Economic Engine of the Delaware Valley”



What do these enterprises have in common?

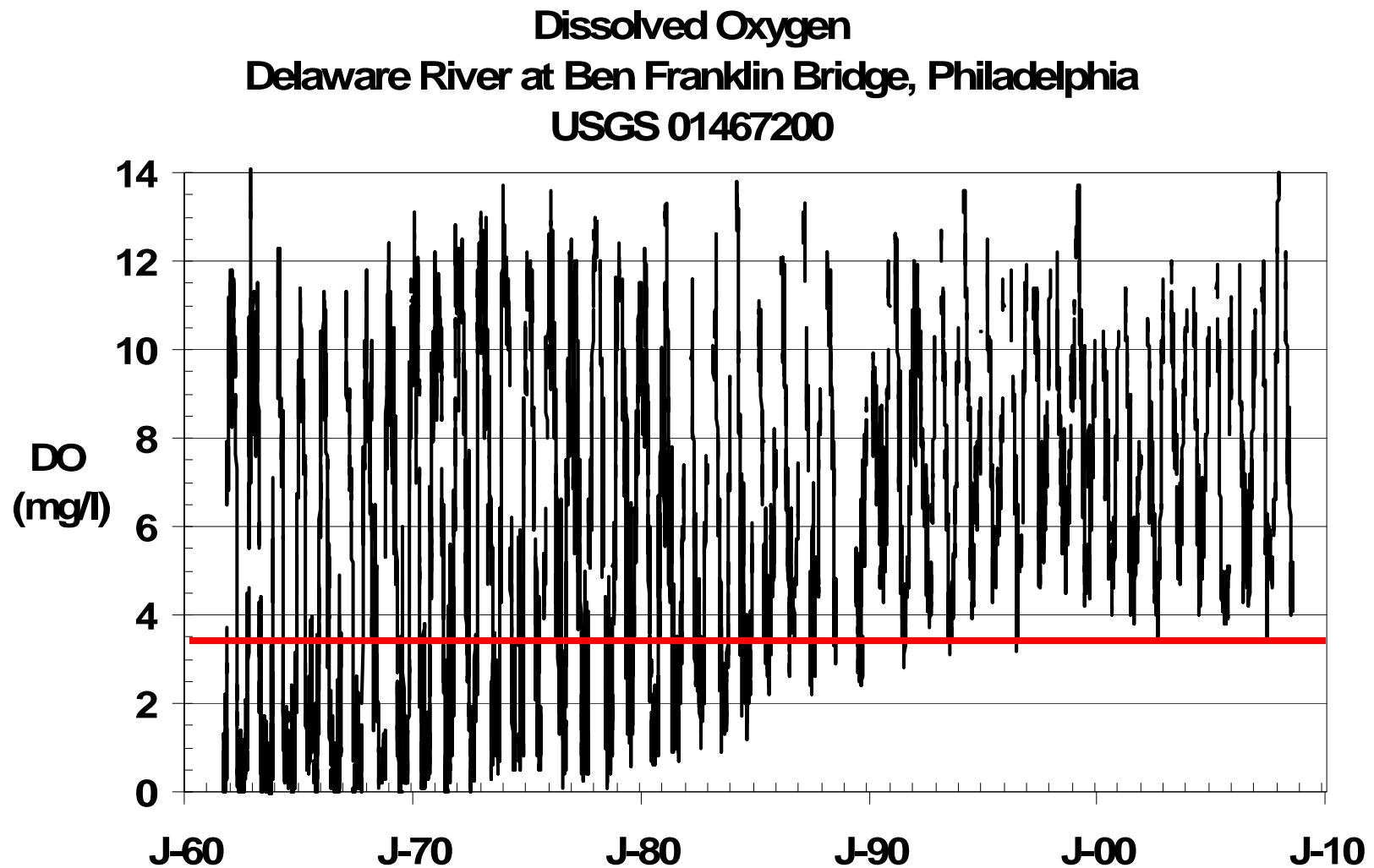
- *Boeing*
- *Camelback Ski Area*
- *Campbell's Soup*
- *DuPont*
- *Wawa*
- *Keystone Brewpub*
- *Crayola Crayons*
- *Starbucks*
- *Del. Water Gap NRA*
- *Philadelphia Eagles*
- *New York Yankees*
- *Yards Creek Hydro*
- *United States Navy*
- *Guggenheim Museum*

They all depend on the Delaware Basin!

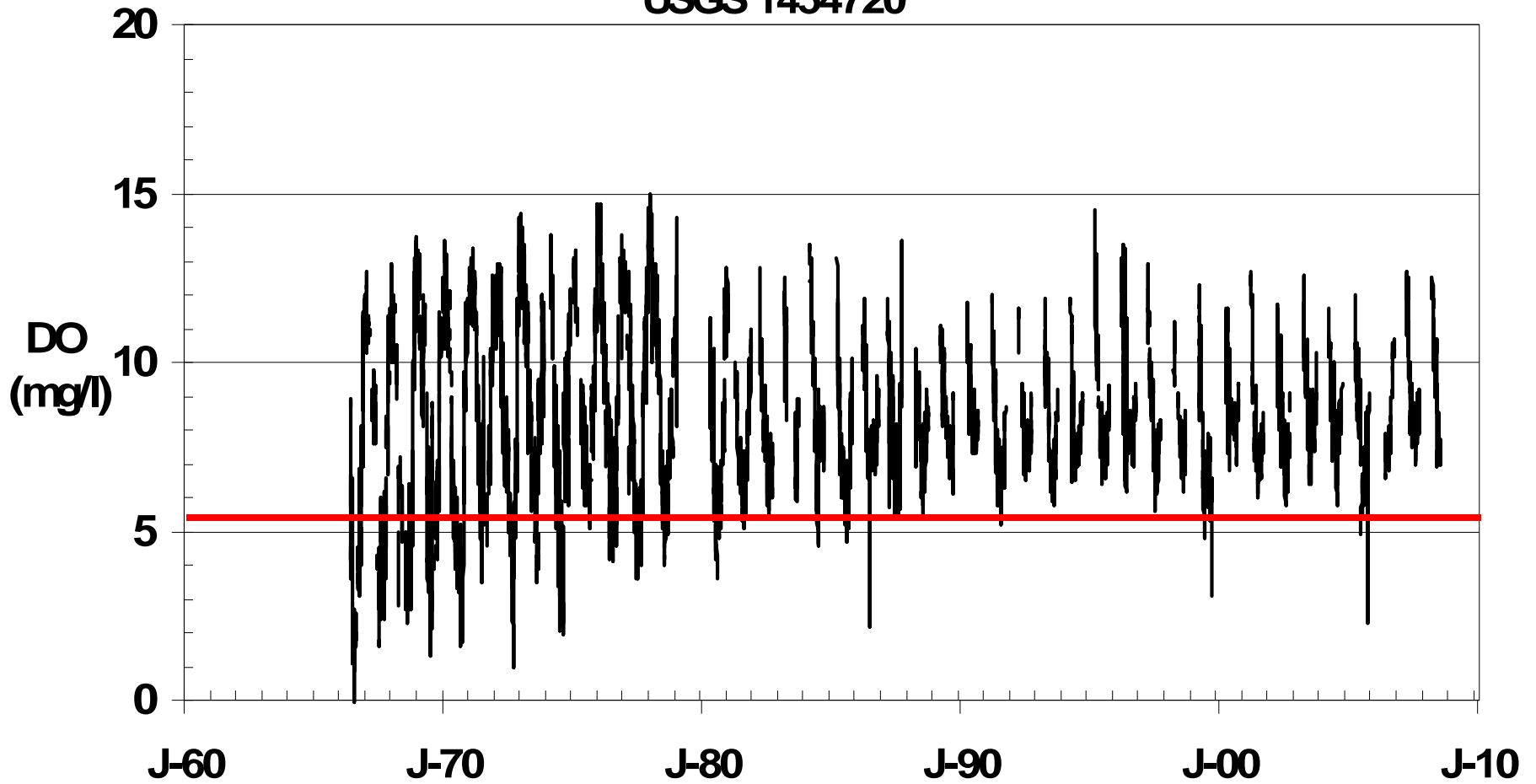
Table 1. Jobs and salaries created by watershed restoration work
(Great Lakes Coalition (2010) from U. S. Bureau of Labor Statistics)

Job	Mean Salary	Job	Mean Salary
Wetland scientist	\$45,730	Fisheries Biologist	\$60,670
Research scientist	\$45,730	Archeologist	\$57,230
Construction manager	\$93,290	Operating Engineer	\$44,180
Biologist	\$69,430	Environmental Engineer	\$80,750
Toxicologist	\$70,000	Hydrogeologist	\$92,710
Chemist	\$72,740	Environmental Planner	\$64,680
Geologist	\$58,000	Plumber/Pipefitter	\$69,870
Helicopter Pilot	\$90,000	Carpenter	\$43,640
Information Technology	\$70,930	Electrician	\$50,850
Admin. Staff	\$32,990	Truck Driver	\$39,260
Mechanics	\$37,000	Concrete Workers	\$39,410
Excavator	\$38,540	Dredge Operator	\$38,330
Landscape Architect	\$65,910	Conservation Scientist	\$61,180
Civil Engineer	\$81,180	Biological technician	\$41,140
General Laborer	\$33,190	Pile Drive Operator	\$51,410

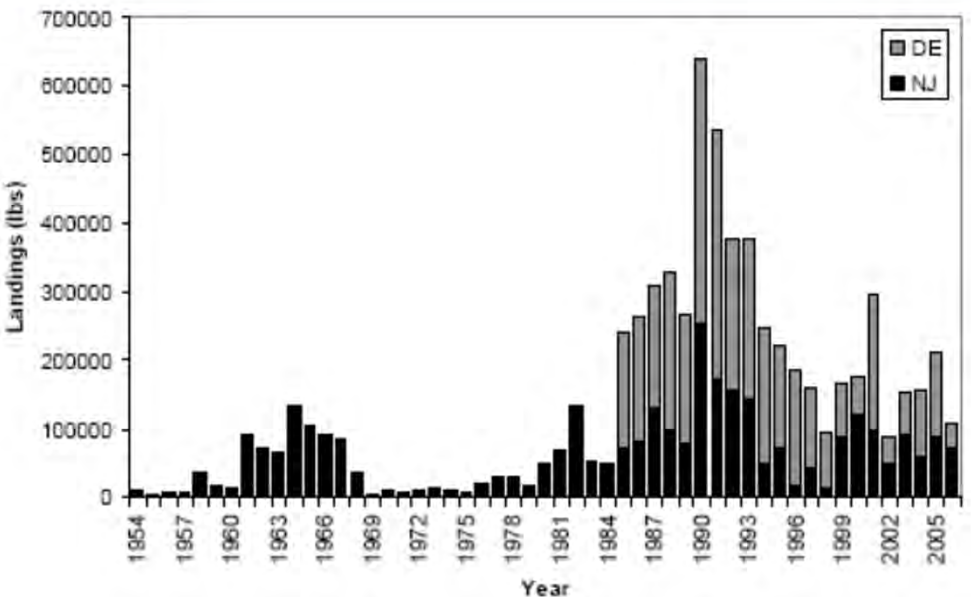
- 1961: JFK signs DRBC Compact.
- 1965: Congress authorizes Delaware Water Gap NRA.
- 1996: Congress adds Del. Estuary to National Estuary Program.
- 2011: Delaware River revival is underway.



**Dissolved Oxygen
Lehigh River at Easton, PA
USGS 1454720**

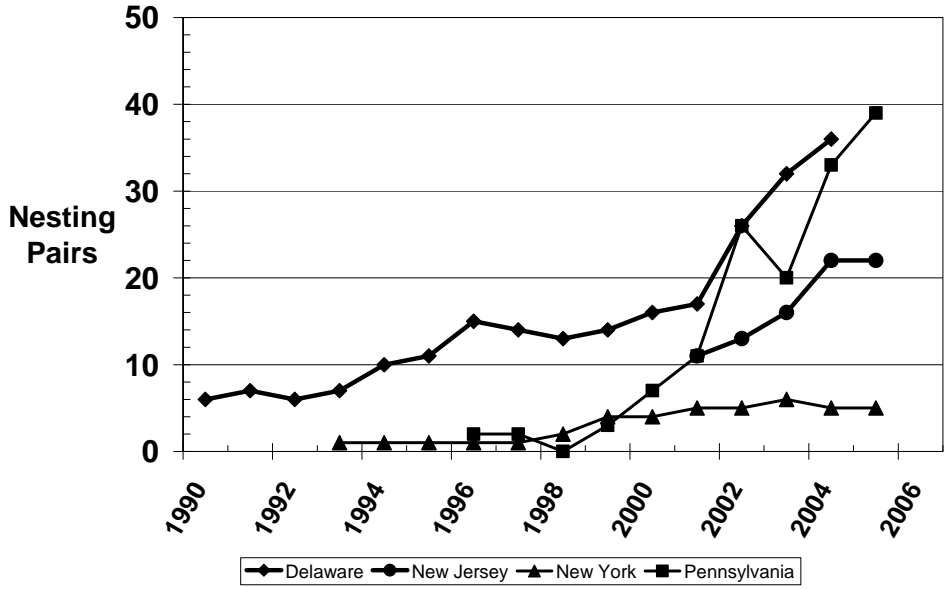


American shad



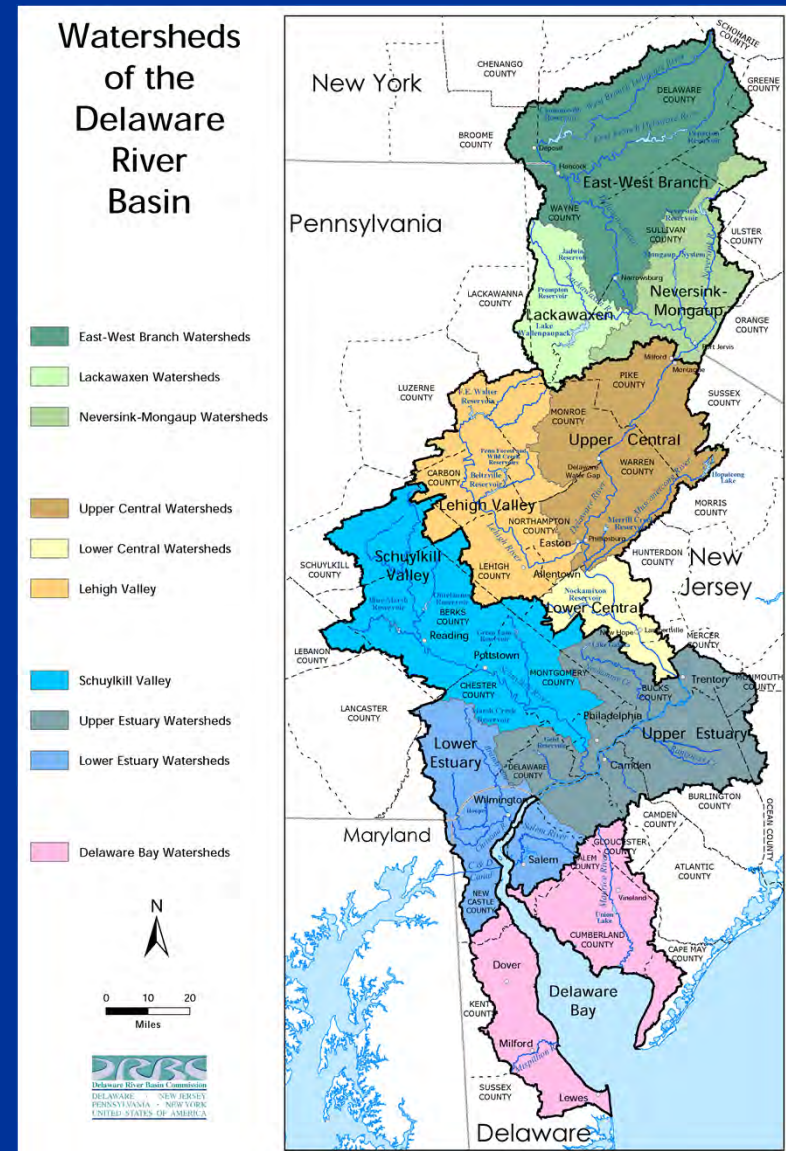
Bald Eagles

Bald Eagle Nesting Pairs in the Delaware River Basin

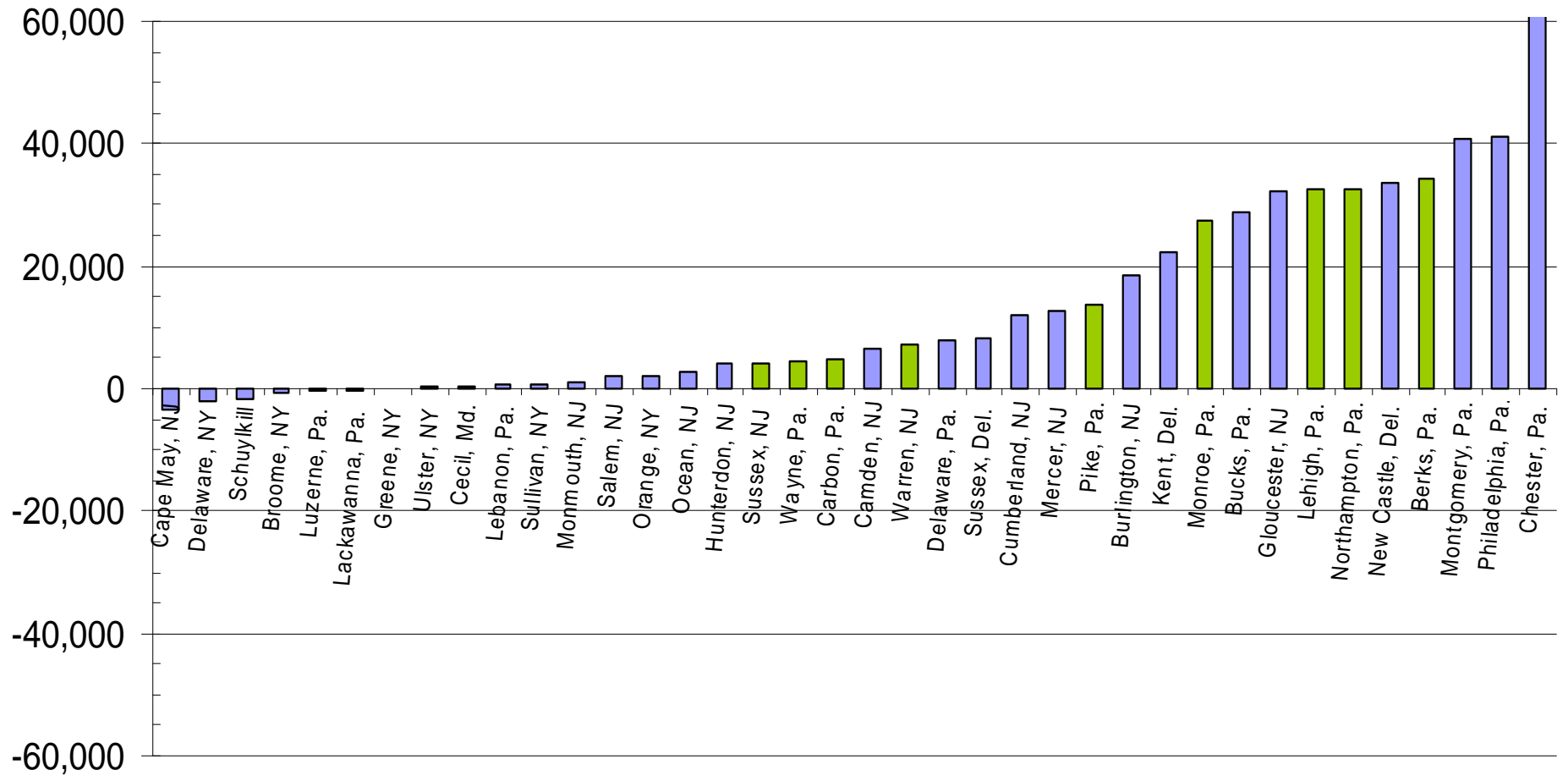


The Delaware River Basin

- 13,000 sq mi
- 8.2 million people
- 11th most populous state
- Drinking water: 5% of U.S.
- 1st, 7th largest metro. economies
- Del. (74% of pop.)
- NJ (35% of pop.)
- NY (55% of pop.)
- Pa. (43% of pop.)



Population Change by County Delaware Basin, 2000-2010



Annual Economic Activity

- Ports – \$2.6 billion
- Agriculture – \$3.4 billion
- Water Supply – \$3.8 billion
- Fish/Wildlife – \$1.5 billion
- Recreation - \$1.2 billion



American shad - *Alosa sapidissima*
averages 14-29 inches



Annual Economic Activity

- Property Value - \$256 million
- Water Quality - \$2.5 billion
- Forests - \$5.1 billion
- Parks – \$1.8 billion



Skiing

- \$325 million
- 1,753 jobs
- 9 ski areas
- 1,005 acres
- 1 mgd
- 1.9 million ski visits

source: PSAA 2010



Paddling

- **\$362 million**
- **4,226 jobs**
- Gear: \$66 mil
- Trips: \$296 mil
- 620,860 paddlers



source: Outdoor Industry Assoc. 2006

Upper Del. & Del. Water Gap NRA

- **\$41.2 million**
- **448 jobs**
- 367,000 visitors
- 113 miles Natl. Wild & Scenic River
- Over 70,000 acres

source: Cordet et al. USNPS, USFS
1990



Canoe/Kayak/Rafting

- \$9 million
- 225 jobs
- 37 liveries
- 225,000 visits



source: Canoe Liveries in Del., NJ, NY, Pa.

Powerboating

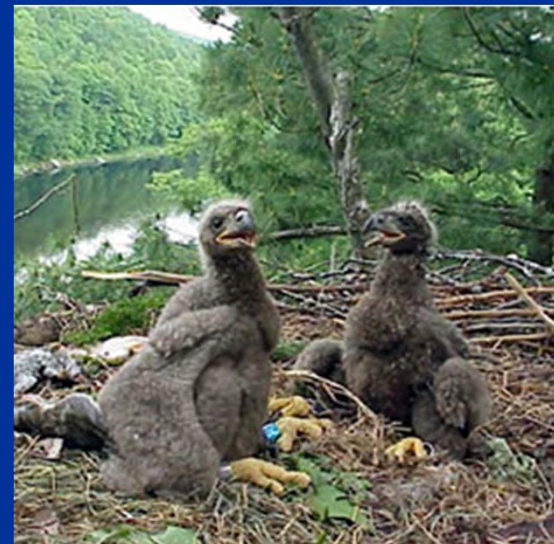
- **\$395 million**
- 232,000 registrations
- NY, Del., Pa., NJ
ranked 3rd, 7th, 17th, and 23rd in sales



- source: National Marine Manufacturers Assoc. 2010

Fishing, Hunting, Bird Watching

- Fishing **\$576 million**
(18 trips/angler, \$53/trip)
- Hunting **\$340 million**
(16 trips/hunter, \$50/trip)
- Bird Watching **\$561 million**
(13/trips/yr, \$27 trip)

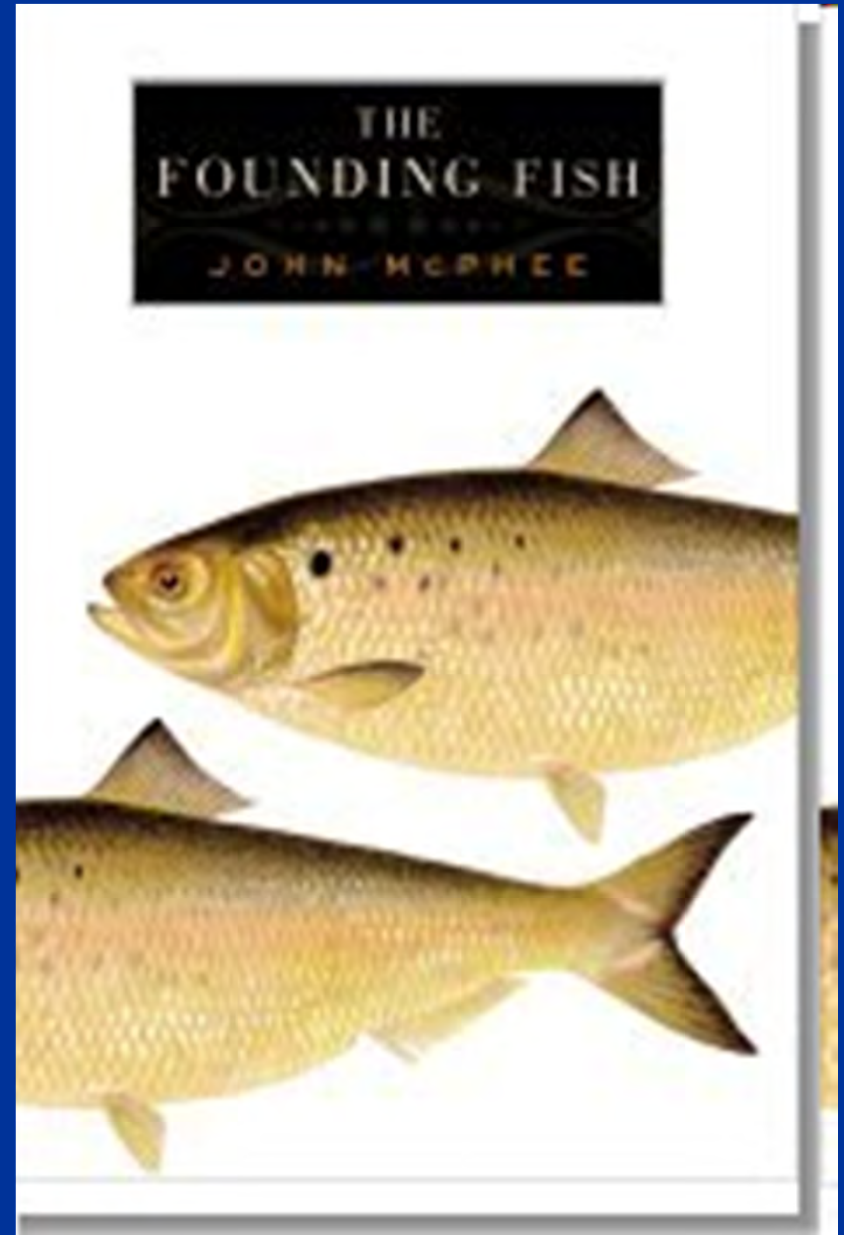


Source: USFWS 2006

Shad Fishing

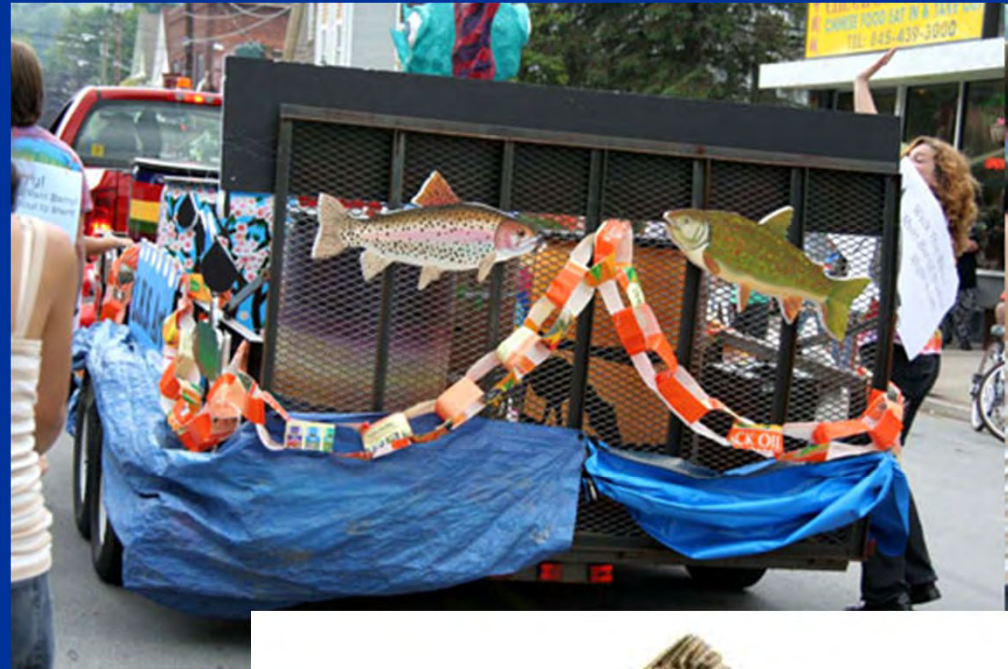
- \$6.5 million
- 63,000 trips
- \$102/trip

Pa. Fish & Boat Commission, 2011



Wild Trout Fishing

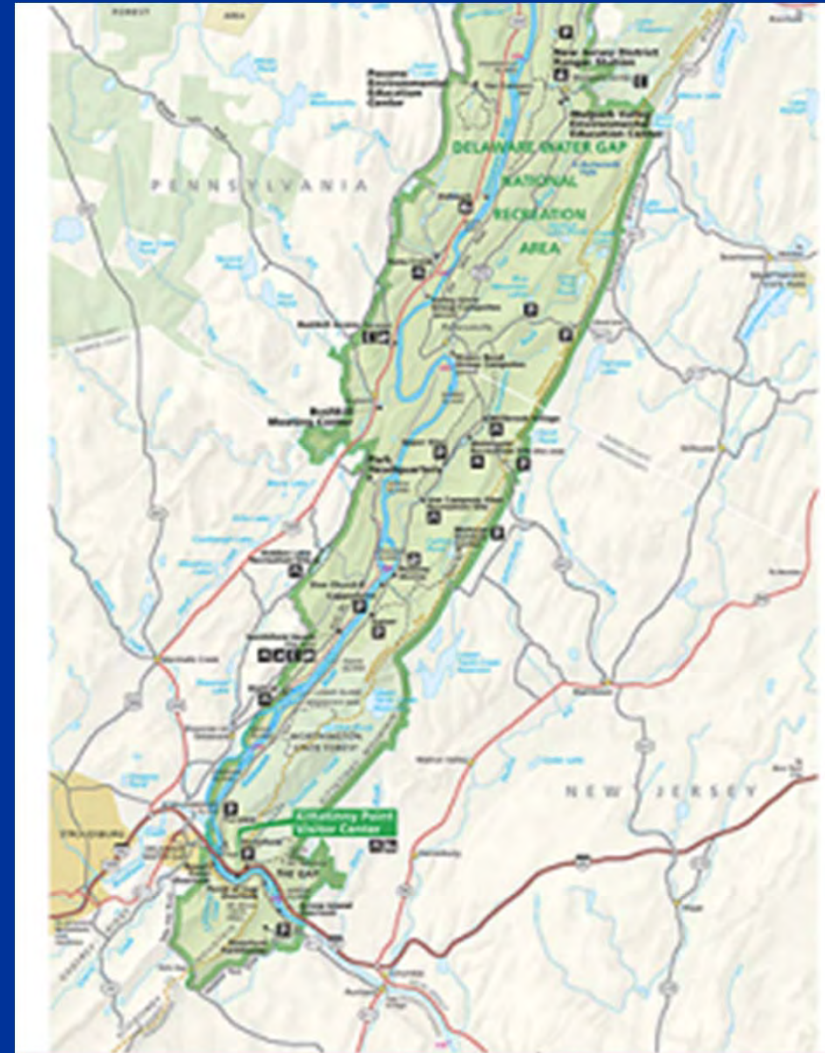
- \$29 million
- 350 jobs



(Maharaj, McGurrin, and Carpenter, 1998)

Delaware Water Gap Natl. Rec. Area

- **\$100 million**
- **7,563 jobs**
- 4,867,272 visits
- 487,727 local trips
- 3,650,455 non-local trips
- 486,727 motel visits
- 243,364 camp overnights



Stynes and Sun (2002)

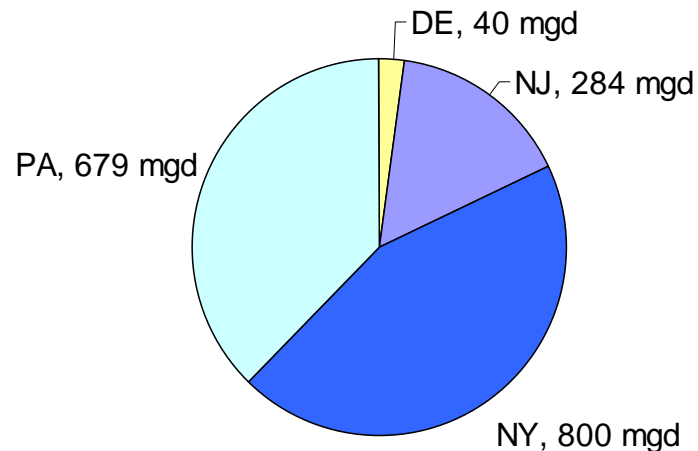
Public Water Supply

State	Supply (mgd)	Value (\$4.78/1000 gal)
Del.	40	\$70
NJ	284	\$495
NY	800	\$1,396
Pa.	<u>679</u>	<u>\$1,185</u>

1,803 mgd

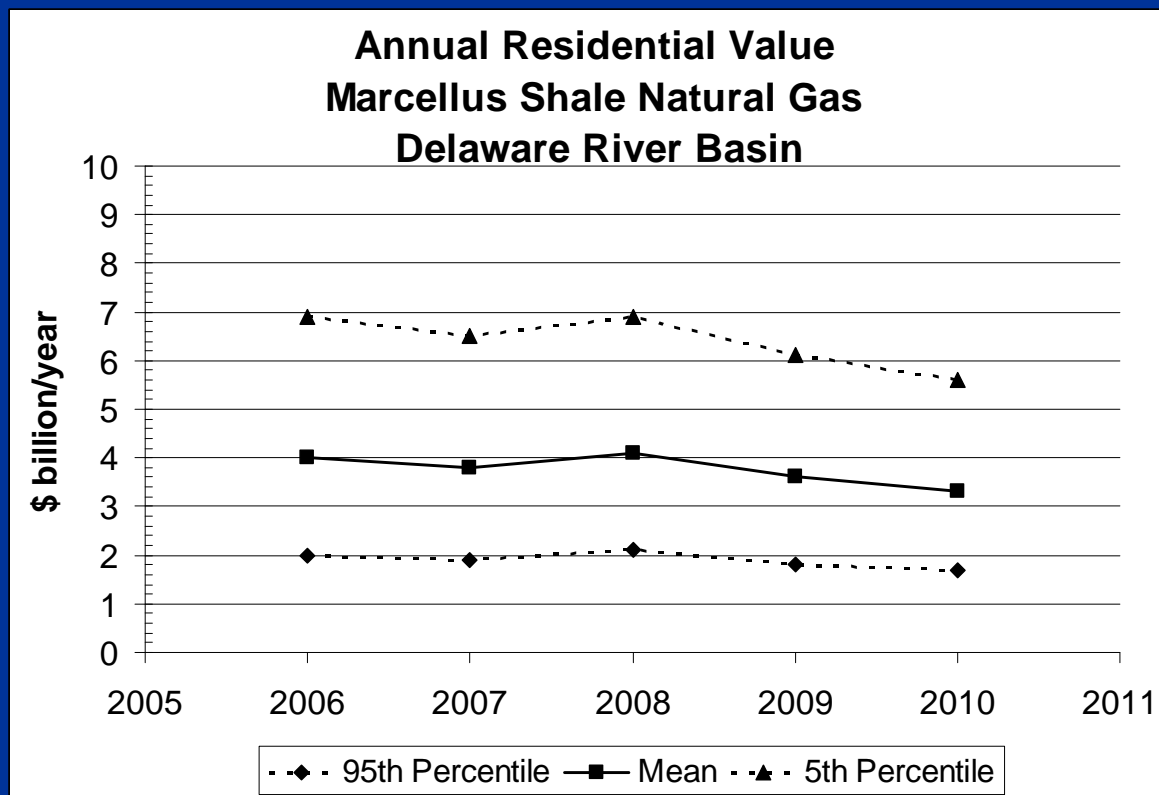
\$3,146 million

**Public Water Supply Withdrawals
Delaware River Basin**



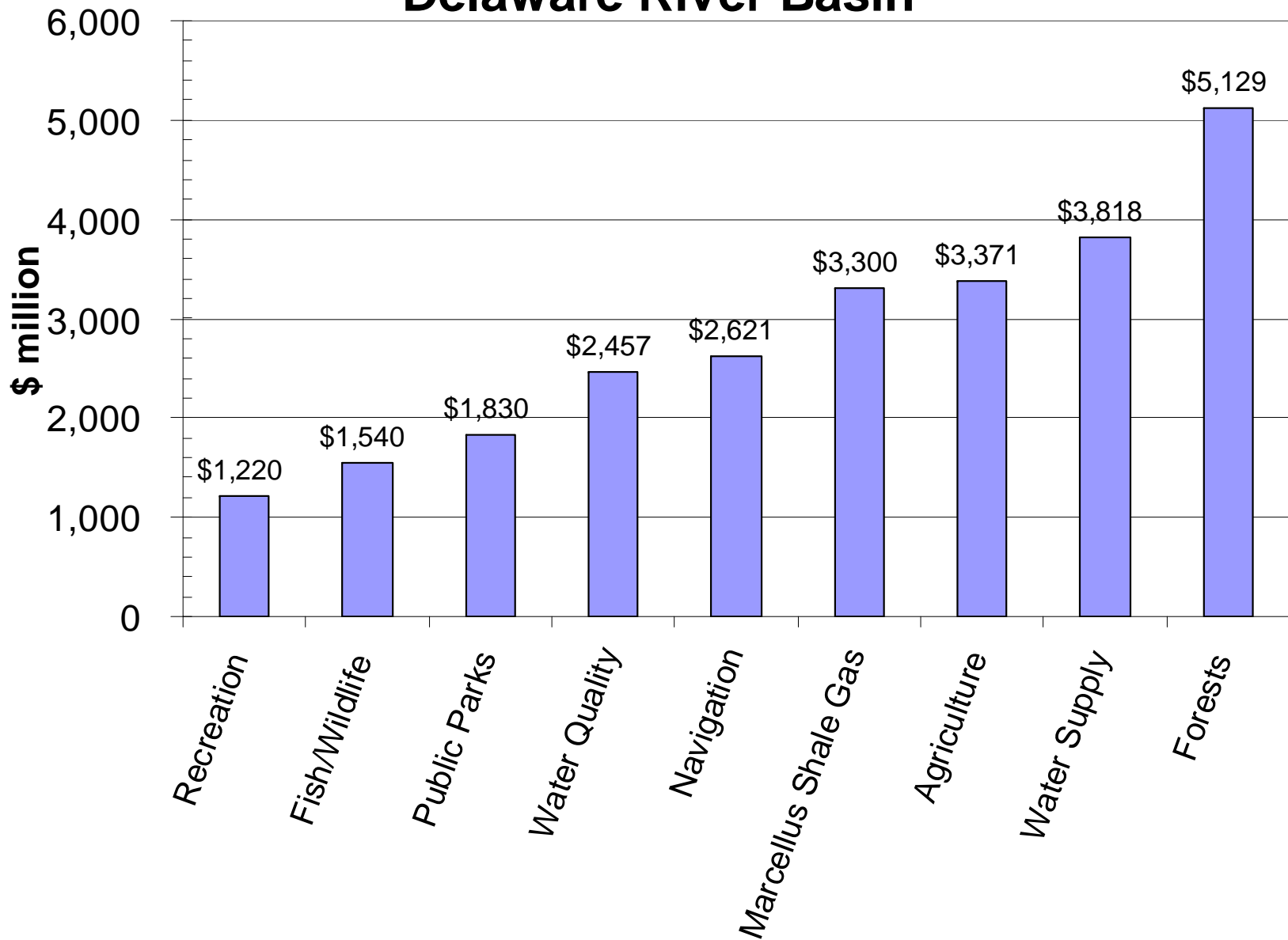
Marcellus Shale (potential)

- \$3.3 billion/yr (residential), \$1.2 billion/yr (wellhead)
- 84 tcf total, 7 tcf in DRB (mean)
- \$11.21/1000 cf (residential), \$4.16/1000 cf (wellhead)
- 4,700 sq mi (36% of DRB), 8.7% total Marcellus in DRB
- Assumes 25 year extraction period



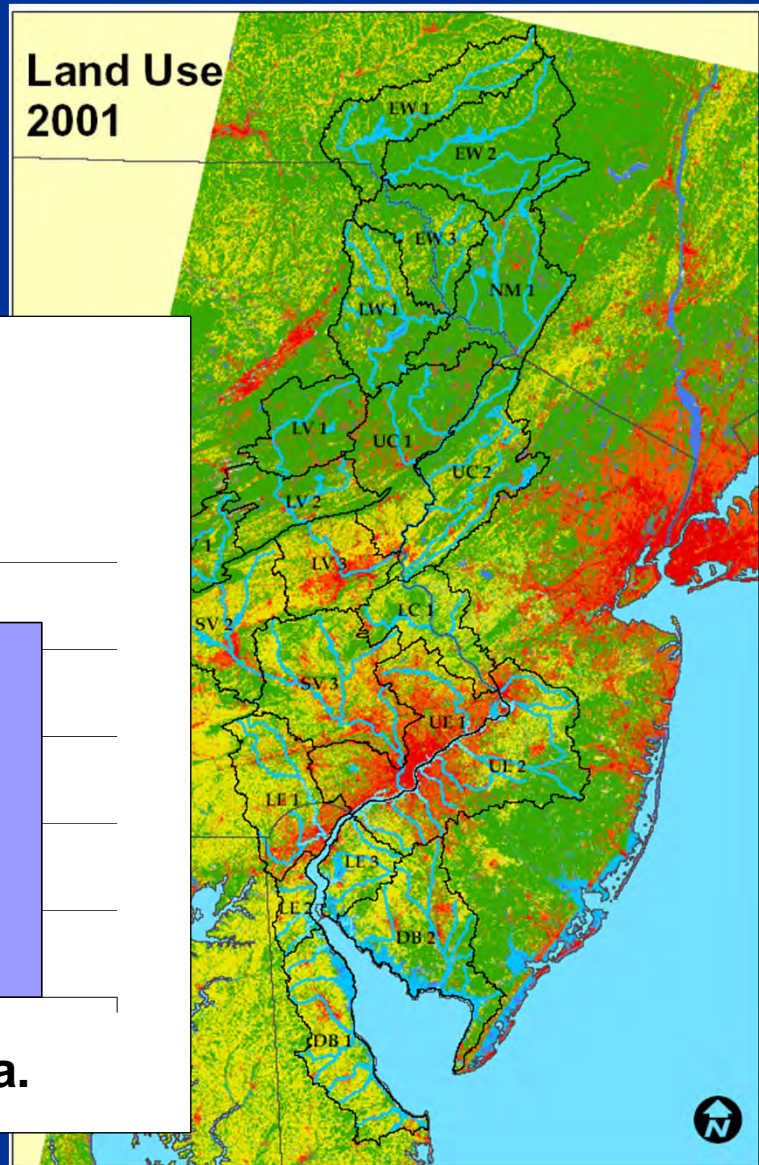
USGS 2011,
EIA 2010

Annual Economic Benefits Delaware River Basin

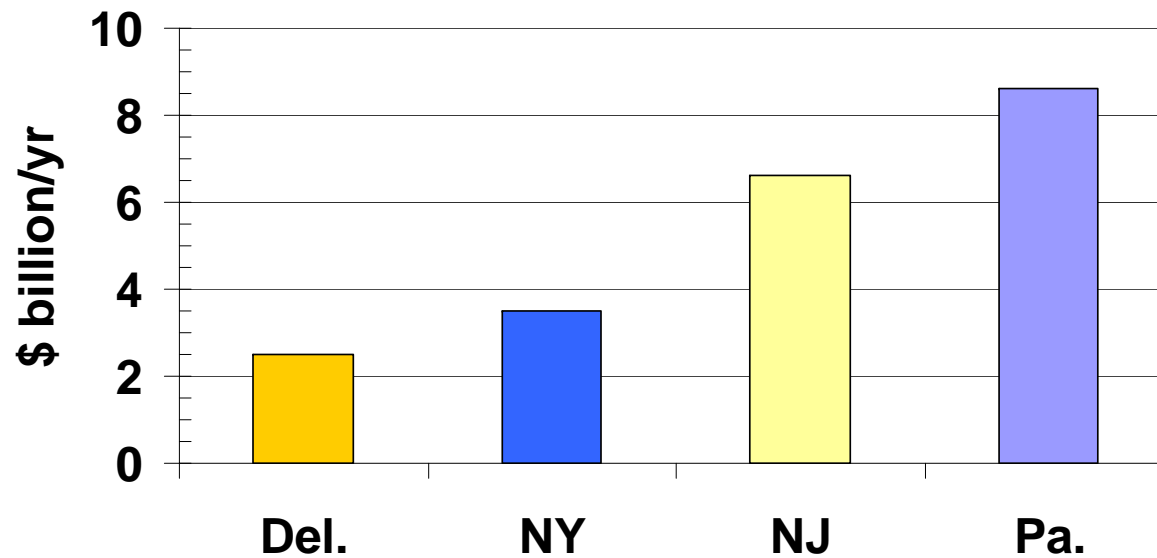


Ecosystem Goods and Services

- Wetlands - \$6.8 billion
- Farms - \$4.8 billion
- Forests – \$8.6 billion



**Ecosystem Services Value
Delaware River Basin**



>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

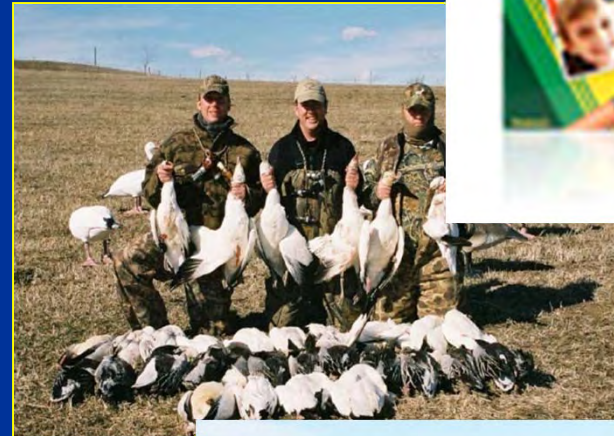


Table 55. Direct and indirect jobs and wages related to the Delaware River Basin

Sector	Jobs	Wages (\$ million)	Data Source
Direct Basin Related	240,621	4,900	U.S. Bureau of Labor Statistics, 2009
Indirect Basin Related	288,745	4,000	U.S. Census Bureau, 2009
Coastal	44,658	947	National Coastal Economics Program, 2009
Farm	45,865	1,880	USDA Census of Agriculture, 2007
Fishing/Hunting/Birding	44,941	1,476	U.S. Fish and Wildlife Service, 2008
Water Supply Utilities	8,750	485	UDWRA and DRBC, 2010
Wastewater Utilities	1,298	61	UDWRA and DRBC, 2010
Watershed Organizations	201	10	UDWRA and DRBC, 2010
Ski Area Jobs	1,753	\$88	Penna. Ski Areas Association
Paddling-based Recreation	4,226		Outdoor Industry Association (2006
River Recreation	448	\$9	U. S. Forest Service/Nat'l. Park Service, 1990
Canoe/Kayak/Rafting	225		Canoe Liveries and UDWRA, 2010
Wild Trout Fishing	350	\$4	Maharaj, McGurrin, and Carpenter, 1998
Del. Water Gap Nat'l. Rec. Area	7,563	101	Stynes and Sun, 2002
Port Jobs	12,121	772	Economy League of Greater Phila., 2008
Delaware Basin Total	> 600,000	>\$10 billion	

The Delaware River Basin in Del., NJ, NY, and Pa. contributes:

1. **\$25 billion** in annual economic value from recreation, water quality, water supply, ecotourism, forest, agriculture, open space, and port benefits.
2. Ecosystem goods and services worth **\$21 billion** per year, net present value (NPV) = **\$683 billion**.
3. Over **600,000 jobs** with **\$10 billion** in wages.

HOUSE APPROVES DELAWARE PACT

**Federal - State Agreement
on Basin Development
Passes After Debate**

POWER ISSUE IS RAISED

**Action by Senate Is Only
Remaining Obstacle
to New Agency**

Special to The New York Times.

WASHINGTON, June 29—

DELAWARE COMPACT APPROVED IN SENATE

WASHINGTON, Sept. 15 (AP)—The Senate unanimously passed today a bill to create a four-state compact for the development of Delaware River Basin water resources. Differences with the House bill, passed on June 29, were expected to be ironed out promptly.

The only major change in the Senate version stipulates that any project undertaken by the interstate agency to be set up by the compact must have authorization of Congress if Federal funds are involved.

After House and Senate agreement the measure will go to President Kennedy for signing, ending a generation of study, negotiation and planning for the compact.

FOUR STATES SIGN DELAWARE PACT

**President Joins in Approving
Vast Program for Basin
Backed by Governors**

COMMISSION IS SET UP

**Developing of River Valley
Will Use, Conserve and
Protect Vital Supply**

By **RUSSELL BAKER**

Special to The New York Times.

FRIDAY, NOVEMBER 3, 1961.

The New York Times.