

Deep Creek Lake Fisheries

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Freshwater Fisheries Program



Deep Creek Lake supports a diverse fish assemblage, with warmwater, coolwater, coldwater species represented in the fisheries.

We documented 20 fish species in the lake including:

- largemouth bass and smallmouth bass
- northern pike and chain pickerel
- rainbow trout and brown trout
- rock bass, pumpkinseed, and bluegill
- yellow perch
- black crappie
- walleye

Warmwater Fishery



Warmwater Fish - group of fishes that thrive and reproduce in water temperatures warmer than 80 °F, preferred range 70-85 °F. Examples include the largemouth bass and bluegill. Warmwater fish populations in Deep Creek Lake are characterized by diverse age and size structure with a large portion of the population in the quality to preferred size range.

Shallow Spawning Habitat



Largemouth bass and bluegill exhibit parental care of spawning nests. Preferred nesting sites are within submerged aquatic vegetation beds in shallow water areas.

Monitoring Reproductive Success



A seine net is used for reproductive success surveys for warmwater fish species in shallow water areas.

Coolwater Fishery



Coolwater Fish – group of fishes that thrive and reproduce in water temperatures less than 80°F but warmer than 60 °F, preferred range 65-70 °F. Utilize shallow water areas for reproduction earlier in the spring. Examples include northern pike, walleye, smallmouth bass, and yellow perch. Population indices indicate that these fish species are at high abundance levels, characterized by diverse age and size structures.

Coldwater Fishery



About 4,350 rainbow trout and brown trout are stocked in Deep Creek Lake each year by DNR's Fishing and Boating Services. These fish are able to survive year-round due to the coldwater layer of the lake during summer. These fish provide a unique fishing opportunity using the down-rigging method during the summer period.

Youghiogheny River Catch and Return Trout Fishery



The History Youghiogheny River Catch and Return Trout Fishery

- 1987 – Trout Unlimited Proposal for a Special Trout Fishing Management Area.
- 1993 – Catch and Return Trout Fishing Area established between Hoyes and Sang Run (3.7 miles).
- 1995 – Temperature Enhancement Releases, Minimum Flows, and Dissolved Oxygen augmentation from the Deep Creek Hydro-station were implemented.

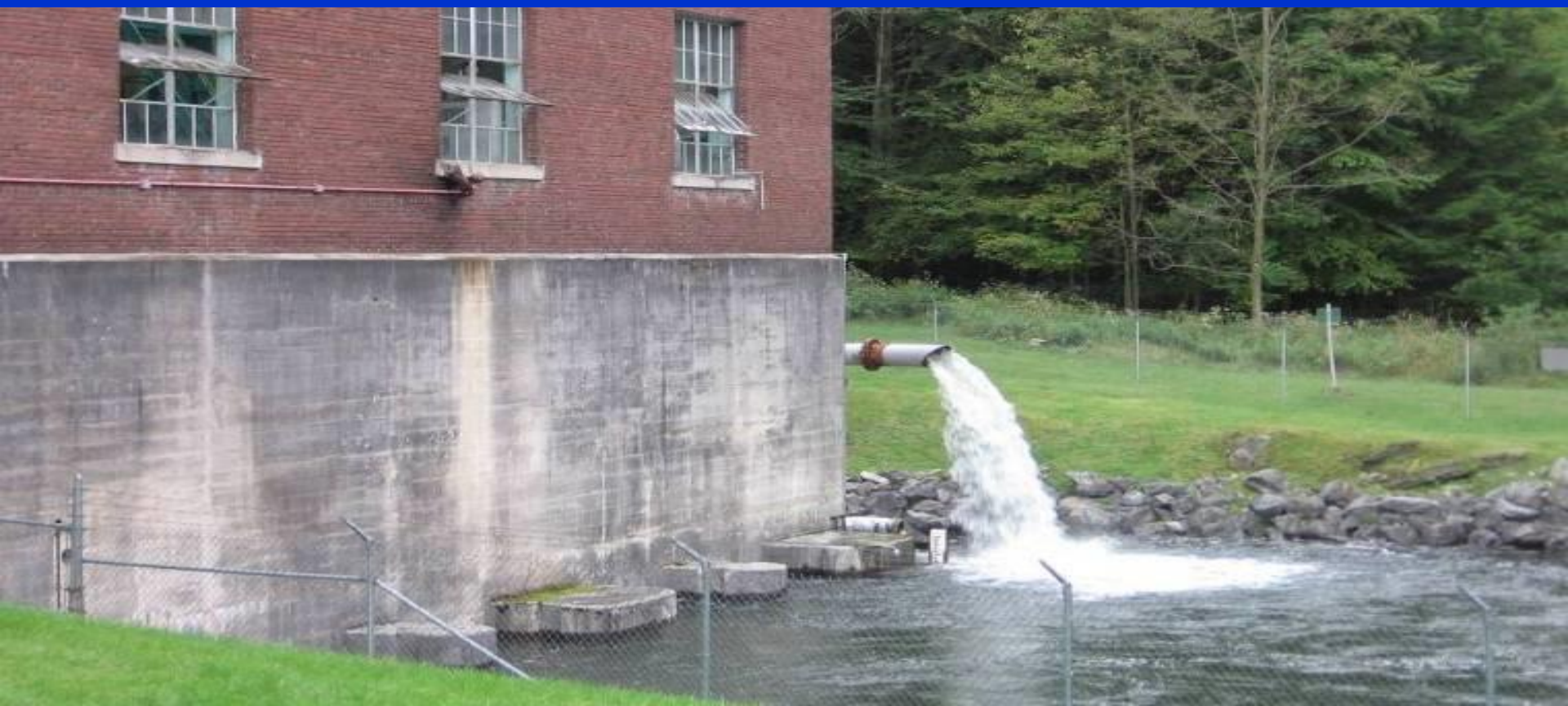


Youghiogheny River Catch and Return Trout Fishery



Deep Creek Lake Hydro-Electric Power Station's Water Appropriation Permit Conditions to enhance the trout fishery:

- **Maintains water temperatures in the river <77 °F (25 °C) Fat the lower boundary Sang Run Bridge (< 4 miles downstream) through temperature enhancement releases (TER) during the critical summer period.**
- **Maintains minimum river flow of 40 cubic foot per second at Hoyes Run.**
- **Maintains dissolved oxygen at ≥ 6.0 mg/l at the end of the tailrace during release.**



Youghiogheny River Catch and Return Trout Fishery



DNR's Fishing and Boating Services: fingerling rainbow trout and brown trout stocked each year (management objective 10,000 of each species). "Put and Grow" fingerling stockings result in beautifully colored naturalize trout. Adult trout are also stocked to supplement the fishery.

Youghiogheny River Catch and Return Trout Fishery



Great public access:

- Parking areas at Hoyes and Sang Run.
- Angler trail along public lands bordering river.
- Paddle craft float fishing opportunities between Hoyes and Sang Run.

Youghiogheny River Catch and Return Trout Fishery



The Youghiogheny River along with the Savage River are the most popular trout fishing destinations in Garrett County (Knoche 2017).

Youghiogheny River Catch and Return Trout Fishery - Monitoring



Two sample stations are monitored annually (Hoyes and Sang Run Areas) to estimate the trout populations using standardized methods. These field surveys are part of Garrett College's Fisheries Management Class curriculum.

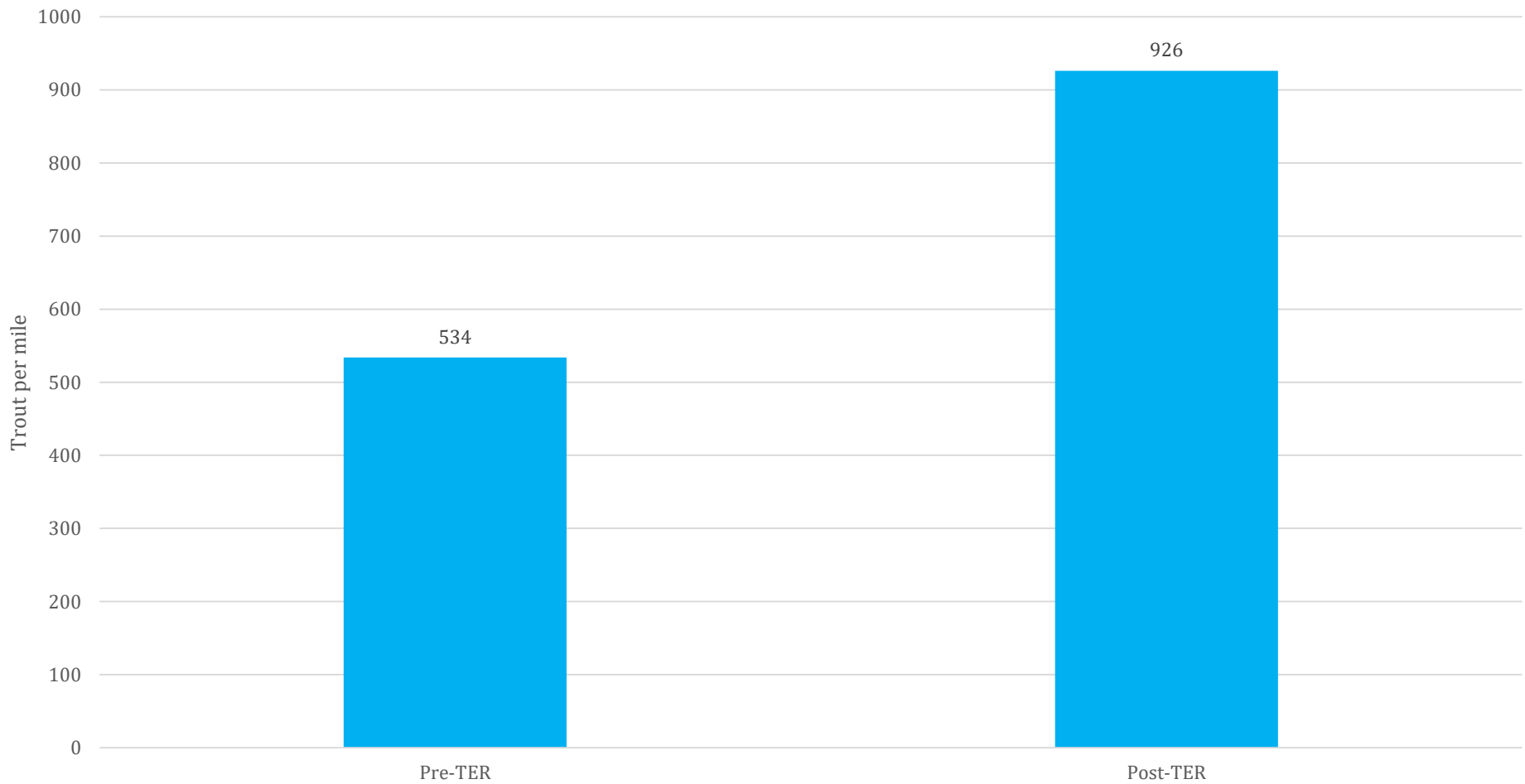
The Fishing and Boating Service invests about ~ **\$55,200** annually to manage the Youghiogheny River C&R Trout Fishing Area including trout stocking, temperature monitoring, trout population sampling, routine maintenance, and report writing.



Youghiogheny River Catch and Return Trout Fishery - Monitoring



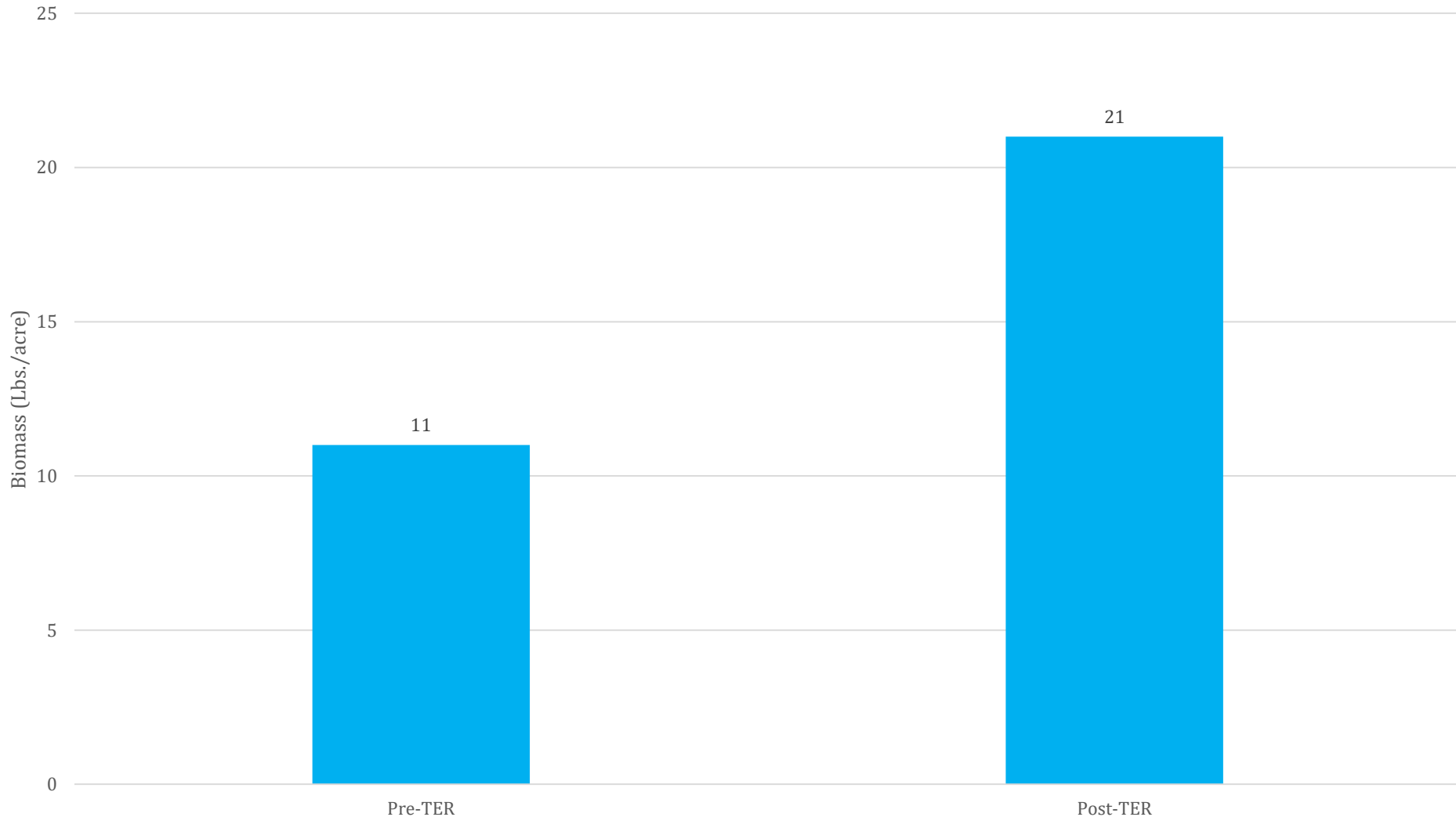
Youghiogheny River Catch and Return Trout Fishing Area Trout Densities 1988 - 2017



Youghiogheny River Catch and Return Trout Fishery - Monitoring



Youghiogheny River Catch and Return Trout Fishing Area Trout Biomass 1988 - 2017.



Youghiogheny River Catch and Return Trout Fishery - Monitoring

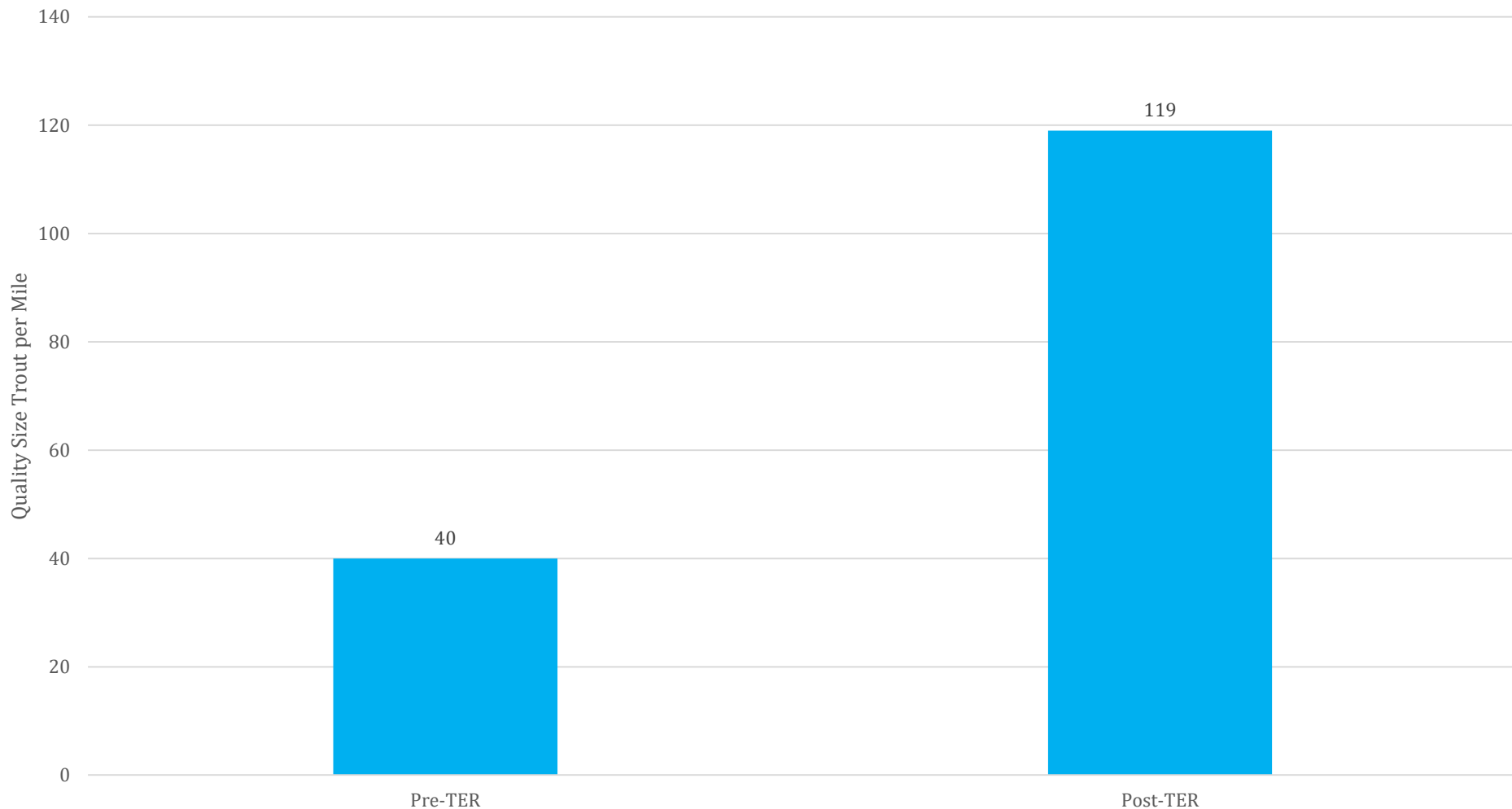


A "quality-sized trout" is greater than or equal to 12 inches.

Youghiogheny River Catch and Return Trout Fishery - Monitoring



Youghiogheny River Catch and Return Trout Fishing Area Quality Size Trout Per Mile
1988 - 2017.

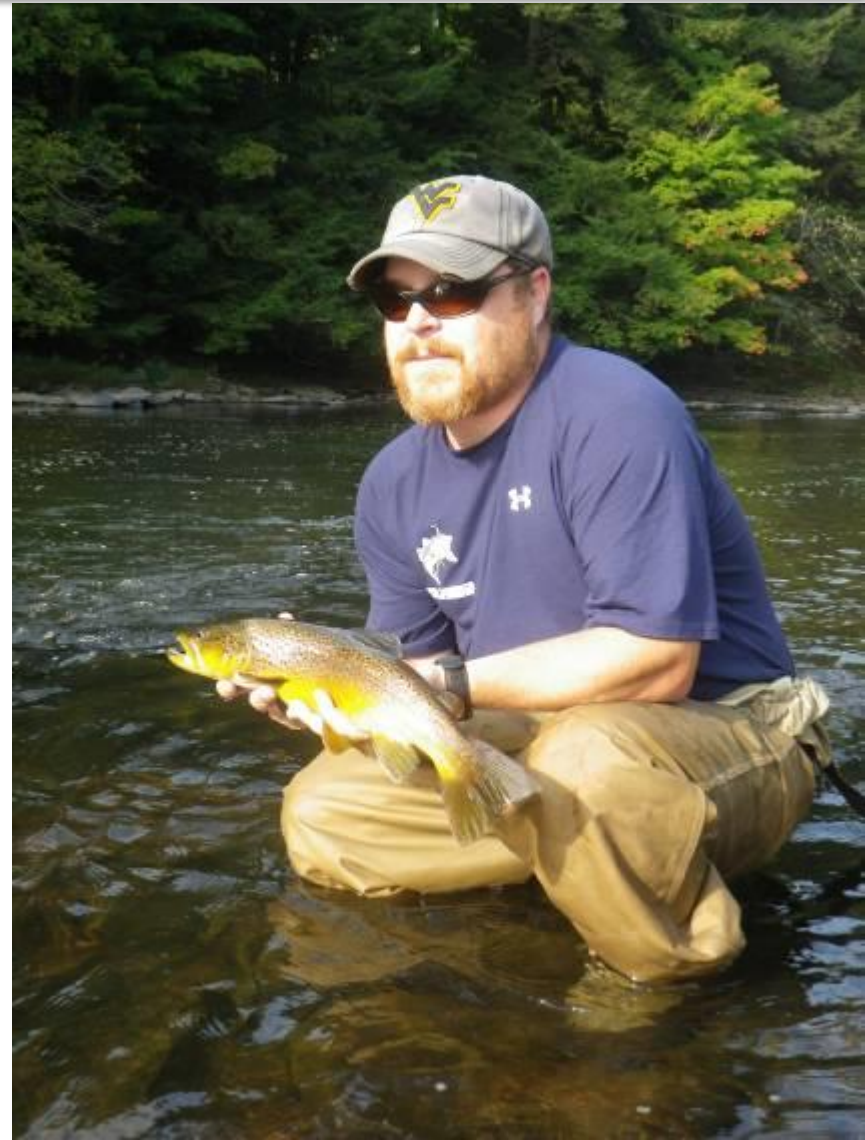


Youghiogheny River Catch and Return Trout Fishery - Monitoring



Summary: Catch and Return Trout Fishing regulations coupled with TERs, minimum flow maintenance, and dissolved oxygen augmentation has resulted in:

- an increase in trout biomass.
- an increase in trout densities.
- an increase in quality-sized trout.
- an expansion of trout fishing opportunities in the Sang Run to Friendsville area of the river.



Youghiogheny River Catch and Return Trout Fishery



Whitewater recreation also benefits
from the temperature enhancement releases

Youghiogheny River Catch and Return Trout Fishery - Monitoring



2017 Youghiogheny River Trout Survey

Youghiogheny River Catch and Return Trout Fishery – Trophy Trout





2016 Maryland Non-Tidal Angler Survey



Scott Knoche, Director, Morgan State University PEARL
(in cooperation with Maryland DNR)

Survey Objective & Development



- **Objective** - Cost-effectively collect management-relevant information on MD non-tidal anglers, to draw scientifically-defensible, population-level conclusions while minimizing sources of error
- Worked closely with MD DNR Fishing and Boating Services personnel to develop and refine survey structure & content
- **Rigorous Survey Pretesting to ensure comprehension**
 - Hour-long cognitive interviews (N= 18)
 - Using screen sharing software, investigator monitored individuals taking web survey
 - Afterwards, in-depth discussion on survey comprehension
 - No major issues identified, some minor changes made

Survey Sampling & Mailing



- Random sample of 4,285 individuals
 - Sample Population: Individuals licensed to fish in non-tidal Maryland waterways during 2015
- Up to four mail contacts
 - Letter & Post Card Web Survey Solicitation (Mailings 1 – 3)
 1. Letter introducing survey w/ survey web address
 2. Reminder postcard 1 w/ survey web address
 3. Reminder postcard 2 w/ survey web address
 - Hard Copy Survey (Mailing 4)
 4. Survey booklet with Business Reply Mail envelope
- Response rate
 - 962 responses / 3829 valid addresses = 25.1%

Survey Content



- **General fishing effort**
 - For up to 6 non-tidal fishing locations 2015, asked anglers to provide:
 - Name of Waterbody, County fished, # of trips, and species targeted (multiple)
- **Trip-specific information**
 - Asked anglers to recall details about **specific** fishing trip in 2015
 - # of people, # of nights away, fishing method, satisfaction measures, expenditures...
- **Trout-specific questions**
 - Factors influencing trout fishing site choice
 - Regulations, catch rate and size, distance from home, species preference (stocked vs. wild)
- **Participation question**
 - Changes in what factors would increase the number of fishing trips taken
 - Increased leisure time, improved access, less crowding, catch more fish,...
- **Angler Demographics**

Deep Creek Lake

2015 Effort: An estimated 19,400 individuals took 86,700 fishing trips to Deep Creek Lake

2015 Trip Expenditures: \$731 mean; \$300 median; Estimated Total 2015 = \$63,000,000

Trip Duration

62% overnight trips
21% weekend trips
31% extended stay
(4 or more nights)

Trip Purpose

Fishing was the *primary purpose* on 52% of trips

Species Targeted (% of trips)

Bass: 42%
Yellow Perch: 42%
Walleye: 35%
Anything: 27%
Smallmouth Bass : 21%
Largemouth Bass : 19%
Bluegill/Sunfish: 16%
Crappie: 11%
Northern Pike: 10%



*trip calculations (expenditures, duration, purpose, species) based on n = 60 sample

Youghiogheny River



2015 Effort: An estimated 3,600 individuals took 19,800 fishing trips to Youghiogheny River

2015 Trip Expenditures: \$162 mean; \$35 median; Estimated Total 2015 = \$3,200,000



Trip Duration

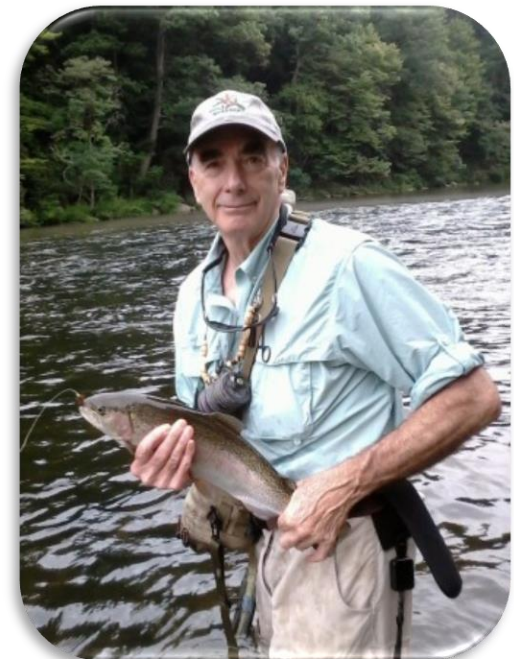
33% were overnight trips (stay \geq 1 night)

Trip Purpose

Fishing was the *primary purpose* on 78% of trips

Species Targeted (% of trips)

Trout (any): 89% of trips
Stocked Trout: 44%
Smallmouth Bass : 33%
Brown Trout: 22%



*Trip calculations (mean/median expenditures, duration, purpose, species targeted) based on n = 9 sample.