

Brook Trout (*Salvelinus fontinalis*)

General Information

The only salmonid species native to New Jersey, and designated the state fish. Reproducing brook trout populations are found in streams, primarily in the northern region of the state. Brook trout are tolerant of low pH conditions. Hatchery reared "brookies" are stocked by the NJDFW throughout the state.



Native Range

Eastern Canada northward to the Arctic Circle, the new England States, and southward through Pennsylvania, along the crest of the Appalachian Mountains to northeastern Georgia. Western limits include Manitoba south through the Great Lake States (Raleigh, 1982).

Habitat Description

River: Clear, cold spring-fed water, silt free rocky substrate, 1:1 pool-riffle ratio. Tend to occupy headwater stream areas, especially when brown and rainbow trout are also present. Can tolerate lower pH than other salmonids (4.0 – 9.5). Prefer moderate flows compared to brown and rainbow trout. Base flows \geq 55% of average annual daily flow is excellent, while base flows 25 – 50% is considered fair.

Lake: Clear, cold lakes that are typically oligotrophic. Presence in lakes is very temperature dependent.

Optimum Habitat Requirements

Dissolved Oxygen	\geq 5 mg/l
Temperature	4.5 – 10°C
pH	6.5 – 8.0
Turbidity	0 – 30 JTU's
Current	7 – 11 cm/sec

Diet

Fry	Terrestrial and aquatic insects
Juveniles	Terrestrial and aquatic insects
Adults	Fish, terrestrial and aquatic insects
Notes: opportunistic sight feeders, alter diet according to food availability	

Reproduction

Time of Year	Mid September into November	Age Males Mature	0
Temperature Range	4.5 – 10°C	Age Females Mature	1
Water Depth		Nest	Built by female
Substrate	Gravel	Egg Type	Demersal
Time of Day	Mid-day	Parental Care	None
Critical pH		Days to Hatching	32 – 105 (temperature dependent)
Velocity Range	1 – 92 cm/sec	Oxygen Level	> 50% saturation

Notes: Spawn repeatedly throughout the fall season. Spawning success is greatly reduced in the presence of fine sediment, which reduces inter-gravel oxygen concentration. Females dig redds in gravel and fertilized eggs are then covered with substrate. Life history information taken from Raleigh, 1982.