

Lake Erie Steelhead: A Hatchery Success Story

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The Pennsylvania Fish & Boat Commission (PFBC) annually stocks over one million steelhead into Lake Erie and its tributaries. These stockings continue to support a world-class fishery that attracts thousands of anglers from throughout the United States and around the world. This fishery would not be possible without the dedicated effort of PFBC steelhead hatcheries and the Cooperative Nursery Program. The steelhead caught in Lake Erie and its tributaries are non-native to Lake Erie, and in Pennsylvania, the population is maintained almost entirely by the rearing and stocking of hatchery fish.

This extremely popular program had its humble beginning in 1961 when PFBC introduced 15,000 steelhead fingerlings into Lake Erie. Steelhead stocking was sporadic from 1961 to 1974 as PFBC was determining if the fishery had the potential to become a valuable asset to Pennsylvania anglers. The PFBC utilized steelhead eggs from the West Coast from 1974 until 1980, but the numbers available were inconsistent, and the potential to introduce fish diseases was recognized. In 1979, PFBC decided to increase steelhead stockings into Lake Erie as the popularity of steelhead with anglers grew. Arrangements were made to obtain eggs from the successful Michigan Steelhead Program. The PFBC decided to develop a feral broodstock capable of annually supplying 500,000 steelhead smolts for Lake Erie in 1990. Smolts are juvenile steelhead that are undergoing a developmental process of physiological changes that enables and compels them to enter Lake Erie, grow to maturity and return to the tributaries to spawn.



Feral broodstock means that eggs are reared to smolts at the hatchery, released into the wild and the returning adults (feral brood) are captured and used as a source for the next generation of hatchery eggs.

Once the decision to utilize a broodstock was made, the program began to flourish. Currently, PFBC captures about 2,000 adult steelhead annually from Trout Run and Godfrey Run to be spawned for production. These tributaries to Lake Erie are designated as nursery waters, therefore, fishing is prohibited. Adult steelhead provide PFBC with about 2.3 million eggs each year for hatchery and cooperative nursery steelhead production. In the Lake Erie Drainage Basin, 3C.U. Trout Association, Erie County, under the guidance of PFBC's Cooperative Nursery Unit, works in conjunction with PFBC hatcheries to raise steelhead for introduction into Lake Erie and its tributaries.



Mark Haffley, PFBC Fisheries Technician, collecting steelhead brood from Trout Run nursery waters for spawning.



The eggs from a female steelhead are spawned into a colander. Each production year, 2.3 million eggs are needed.



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Adult steelhead begin entering the Lake Erie tributaries in late September as weather patterns change and the drainage begins to receive heavy fall rains. Preparations for the upcoming steelhead spawning season begin in early November when 12 to 15 fish culturists from PFBC northwestern hatcheries converge on Trout Run to begin the long and arduous task of collecting brood steelhead from the

stream to be transferred to the Fairview State Fish Hatchery for spawning. Maintaining genetic diversity and encouraging the run of adults to continue each year into April requires that six steelhead collections be scheduled beginning in November and finishing in February. The goal of each collection is to gather the freshest, or latest, fish to enter the tributary from the lake. These fish are genetically inclined to



Linesville State Fish Hatchery Fish Culturist Glen Scovil battles the Lake Erie winter to prepare steelhead brood for spawning.



The steelhead undergo viral testing to maintain the health of the fishery.



Pictured are two average, female steelhead brood captured for spawning.

enter the tributaries and spawn later, which will assist in prolonging the run for the benefit of the anglers.

When the wild brood are collected, they are handled gently to keep the stressors minimized. Fish are stressed by being netted, loaded onto trucks, hauled to the hatchery and unloaded. As with any wild animal, removal from their natural environment is extremely stressful. Stress alone can be fatal to an adult steelhead, and it can lower their natural immunities and make them more susceptible to infections and parasites.

Six steelhead spawns are required annually to support the program. The eggs and milt are removed from the steelhead by applying gentle pressure to the abdomen. Once fertilization takes place, the eggs are packaged in water from the Tionesta State Fish Hatchery for the return trip to Tionesta for incubation and hatching. The fish undergo viral testing to maintain the health of the fishery. The eggs are hatched, and the fry are fed dry feed at Tionesta State Fish Hatchery. Eventually, some fingerlings are dispersed to the Erie area cooperative nurseries, Linesville State Fish Hatchery and Fairview State Fish Hatchery for rearing. The adult brood fish, which were harvested from the nursery waters, are later released into Lake Erie tributaries that are open to harvest for anglers to enjoy.

The process of raising a steelhead from egg to release takes about 18 months. The PFBC stocks about one million steelhead, and the Cooperative Nursery Unit stocks another 100,000 into Lake Erie and its tributaries each year. These fish thrive in the lake and return by the thousands to the tributaries as adults, providing a real world-class steelhead fishery right here in Pennsylvania. ☐