

Cold Brook Rainbow Trout Spawning Migration Assessment 2017 (Survey # 817009)

Brad Hammers, Region 8 Fisheries

11/7/18

Cold Brook is main source of naturally produced rainbow trout for Keuka Lake. It originates north of Bath and flows in a northeasterly direction for approximately seven miles to the Village of Hammondsport, where it enters the southern end of Keuka Lake. The Bath Fish Hatchery is located near its headwaters. Past stream alterations, low stream gradient, and significant beaver activity have resulted in stream bed aggradation in the lower reaches of the Cold Brook stream bed. In recent years, stream banks have been breached and significant percentage of the discharge flowed into the adjacent wetland areas. These events, while not eliminating trout spawning runs, may have limited migrations.

Table 1. Summary of catch and size statistics from adult rainbow trout spawning run assessments in Cold Brook from 1998-2017.

| Year | Sampling date | Number collected | Average length-in (mm) | Range | Maximum weight-lb (g) |
|------|---------------|------------------|------------------------|---------------------|-----------------------|
| 1998 | March 25 | 43 | 19.0 (482) | 13.2-27.0 (335-685) | 2.9 (1,310) |
| 1999 | March 26 | 77 | 19.4 (492) | 12.0-26.8 (306-680) | 3.0 (1,345) |
| 2000 | March 24 | 41 | 19.6 (499) | 10.6-24.0 (270-610) | 2.7 (1,243) |
| 2001 | March 23 | 28 | 21.5 (546) | 14.8-28.0 (375-710) | 4.3 (1,933) |
| 2002 | March 22 | 13 | 18.7 (476) | 14.1-24.8 (357-630) | 2.7 (1,232) |
| 2003 | March 26 | 19 | 21.8 (553) | 18.3-25.8 (465-655) | 3.8 (1,723) |
| 2004 | March 25 | 15 | 21.7 (550) | 12.4-27.0 (315-685) | 5.0 (2,264) |
| 2005 | March 23 | 23 | 16.9 (428) | 9.6-25.8 (245-655) | 2.2 (1,013) |
| 2006 | March 24 | 12 | 19.4 (493) | 15.4-24.6 (391-625) | 2.8 (1,282) |
| 2007 | March 23 | 3 | 15.3 (389) | 12.0-20.5 (306-520) | 1.5 (695) |
| 2008 | March 21 | 7 | 18.7 (474) | 14.4-22.3 (365-567) | 2.9 (1,309) |
| 2009 | March 20 | 10 | 16.2 (412) | 11.0-24.7 (280-628) | 2.3 (1,025) |
| 2010 | March 26 | 31 | 18.7 (476) | 13.1-27.6 (332-700) | 6.9 (3,133) |
| 2011 | March 25 | 36 | 19.4 (492) | 10.3-25.0 (261-634) | 6.7 (3,042) |
| 2012 | March 23 | 19 | 22.0 (558) | 18.1-25.4 (460-644) | 6.3 (2,860) |
| 2013 | March 22 | 11 | 20.2 (514) | 11.5-27.0 (293-686) | 8.4 (3,814) |
| 2014 | March 21 | 9 | 21.6 (549) | 11.3-25.5 (286-648) | 5.9 (2,679) |
| 2015 | March 20 | 3 | 19.5 (495) | 15.6-25.4 (396-646) | 7.0 (3,178) |
| 2016 | March 26 | 19 | 21.8 (553) | 10.2-25.3 (259-642) | 5.9 (2,690) |
| 2017 | March 24 | 17 | 22.1 (562) | 11.7-25.8 (297-656) | 7.5 (3,405) |

Public access is excellent with the majority of the stream enrolled in the Public Fishing Rights program. The stream provides a popular springtime fishery for lake run rainbow trout. Recent management actions to protect and enhance the population of rainbow trout include fingerling stocking and more restrictive harvest regulations.

The spring rainbow trout run in Cold Brook was sampled using backpack electrofishing gear on March 24, 2017. Similar surveys have occurred on Cold Brook since the 1950's, although effort and location may have changed over the years. A total of 17 adult

rainbow trout were collected ranging in size from 11.7 – 25.8 inches (Table 1). The largest fish collected was a female that weighed 7.5 pounds. Results have fluctuated throughout the years (Table 1). Water temperature was 34 F.

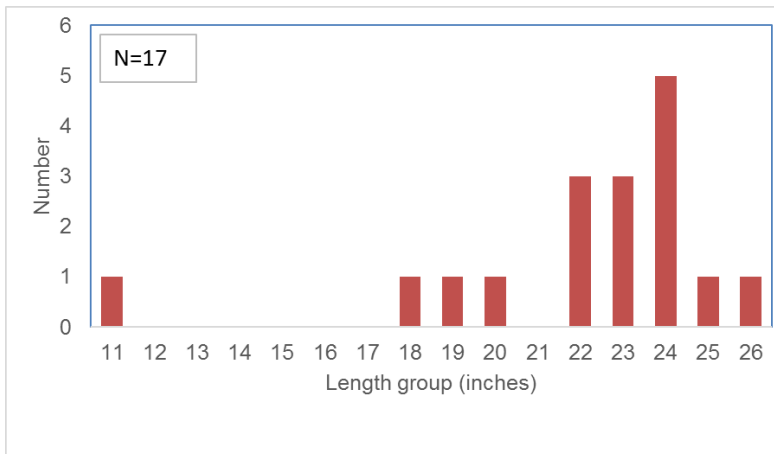


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Figure 1. Number of adult rainbow trout collected during spring spawning migration from Coldbrook, March 24, 2017.



Age of rainbow trout ranged from 3-9 with age 6 rainbow trout comprising 40% of the sample. Rainbow trout reached harvestable size (15 inches) between ages 3 and 4. Ninety-five percent of the total sample were legal size. (Figure 1). Four thousand Finger Lakes strain rainbow trout fingerlings were stocked in 2010 and 5,000 have been stocked annually since 2011. In 2017, 5% of the total sample was of stocked origin.

In 2017, a significant breach in the stream bank occurred in the lower portion of the creek resulting in the diversion of approximately 80% of the

flow through a wetland to the west before being intercepted by a downstream tributary and eventually reentering Cold Brook. Some limited work was done by hand to redirect a slight majority of the flow back down the mainstem of the channel prior to the anticipated spawning migration.

Adult rainbow trout populations may have been impacted by abundant lake predators, stream blockages and mainstem flow issues in Cold Brook periodically inhibiting adult spawning population from reaching adequate spawning habitat. Additionally, resident brown trout in the stream may be negatively impacting young-of-year and yearling rainbow trout through predation. However, sample timing has been based on April 1 season opener and not peak of spawning run. Results may not adequately reflect population trends. Fingerling stocking does not appear to be successful under current stream and lake conditions. Stocking of larger yearling rainbow trout may minimize in-stream and lake predation impacts. Additionally, staff should continue to monitor downstream blockages and breaches and investigate long-term solutions for these issues.

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**Department of
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