

Upper Black River Brook Trout Population Estimates - Springs Area

Below is a cut and paste from our fisheries software of the updated brook trout population estimate completed in 2021 (with age and growth data) for the Black River Springs station, 2400 feet. The site was first done in the 1980s, and done more recently every 4-5 years.

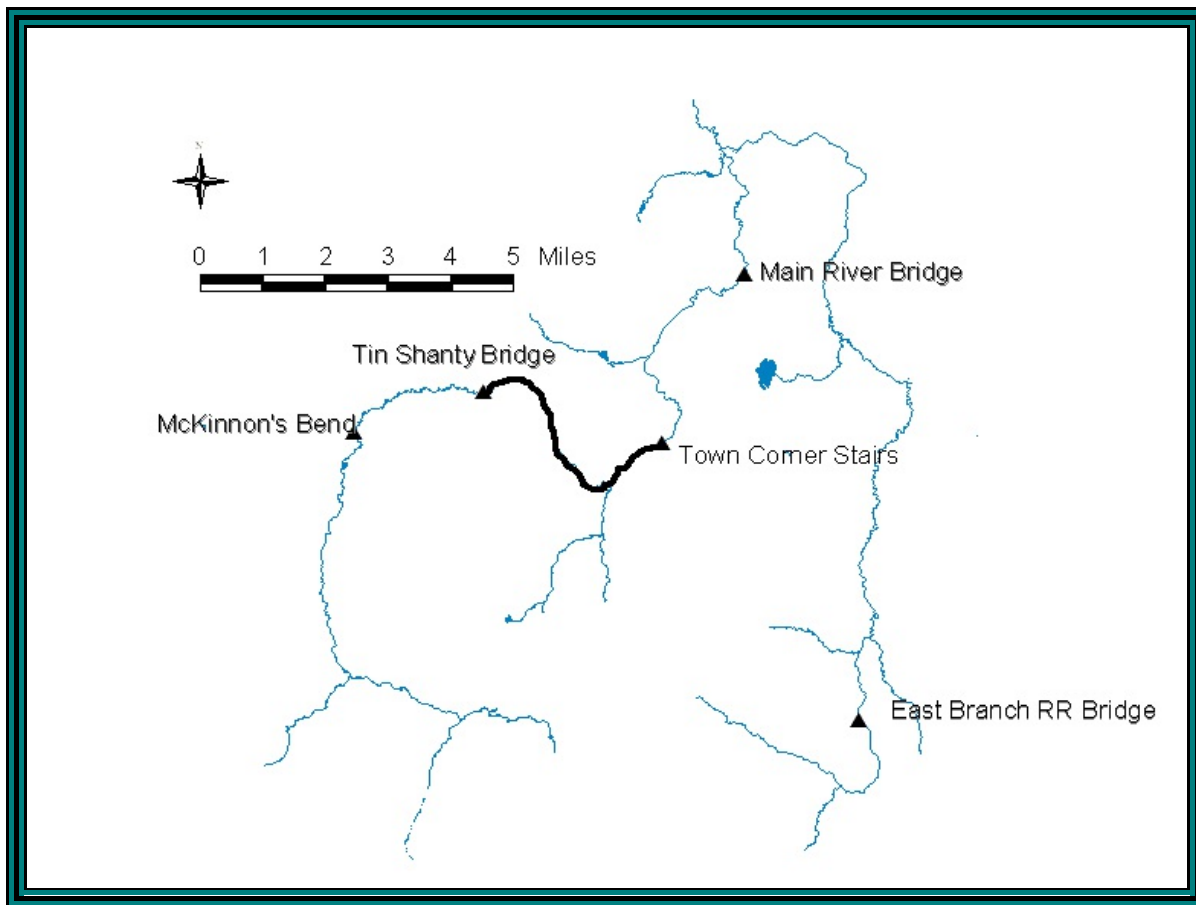
SPRINGS AREA NEAR MOUTH OF TUBBS CREEK – (2,200 – 2,400 FEET)

Trout population data for this survey site extends back to 1983. The general statewide minimum size limit for harvest of brook trout from inland streams in the Lower Peninsula of Michigan was 8 inches from 1979 through 1999. The general statewide daily creel limit for brook trout was 10 fish from 1979 through 1999. In 2000, Type 2 regulations were applied to the Black River from Tin Shanty Bridge downstream to Tower Dam. The minimum size limit (MSL) for brook trout was 10 inches under Type 2 regulations; with bait fishing permitted; the daily creel limit was 5 trout with no more than 3 over 15 inches long; and the possession season extended from the last Saturday in April through September 30. Type 1 regulations were applied to the remainder of the Black River system in 2000 (upstream of Tin Shanty Bridge). The daily creel limit was 5 trout under Type 1 regulations with a lower minimum size and all tackle could still be used.

In **2008**, an artificial lures or flies regulation was applied to a 4.4-mile reach of the Black River extending from Tin Shanty Bridge downstream to Town Corner Lake Stairs (Figure 1). The MSL for brook trout remained at 10 inches; the daily creel limit was reduced to 2 fish and catch-and-release angling for brook trout was allowed when the normal April-September possession season was closed. Brook trout numbers did not increase despite the more conservative regulations. Despite this, the regulation remained intact following the study, yet the remainder of Type 2 regulations on the Black River downstream were converted to Type 1 regulations and the minimum size limit was again lowered to 7 inches. Thus, the reach between Tin Shanty Bridge and Town Corner Lake stairs is maintained under gear restrictions (10 inch MSL, 2 fish daily bag limit, bait prohibited), while the remainder of the watershed is managed with Type 1 trout regulations (7 inches MSL, 5 fish daily bag limit).

The 2400 foot “Springs” station is within this gear restricted reach and currently remains under the fishing restrictions.

This reach also received significant amounts of large woody debris in 2013 prior to the survey. This work was accomplished by the Upper Black River Council with placement locations determined by MDNR Fisheries Division.



Population estimate (Chapman-Peterson) by inch group of brook trout for the Black River at the springs area located downstream of the confluence of Tubbs Creek.

Length (in)	1983 (2300')	1991 (2200')	2006 (2400')	2007 (2400')	2008 (2400')	2009 (2400')	2010 (2400')	2013 (2400')	2017 (2400')	2021 (2400')
1	6	15								
2	968	1,297	173	371	135	241	500	226	201	329
3	1,081	66	294	314	498	521	442	571	774	546
4	49	31	36	13	17	85	25	31	83	41
5	123	182	64	55	68	91	156	99	81	49
6	341	155	88	74	121	148	138	160	104	69
7	430	56	69	54	94	78	62	54	86	53
8	174	64	29	22	28	22	19	54	52	43
9	143	21	30	11	14	12	25	31	49	51
10	132	7	16	9	5	8	6	9	18	36
11	64	5	14	5	1	1	5	3	11	13
12	22	1	5	1				2	4	8
13	12	1	2	1			1	1	2	4
14	1			1						3
15	2				1					
16							1			1
Total	3,547	1,900	820	931	981	1,208	1,380	1,241	1,466	1,244

Brook trout population estimates in various years for the Black River, springs sampling site.

Year	Month	Distance Surveyed (ft)	Width Used in Estimate (ft)	Size Limit (in)	No./ acre	Lbs/ acre	Growth (in)	Age 0/ mile	Age 1+/ mile	Trout per mile \geq 8 in	Trout per mile \geq 10 in
1983*	Aug	2,300	37.96	8	1,774	164.2	-	4,715	3,427	1,262	533
1991	July	2,200	37.00	8	1,016	38.0		3,305	1,257	238	32
2006	Aug	2,400	37.96	10	393	31.0	+0.7	1,030	781	214	79
2007	Aug	2,400	37.96	10	445	20.7	+0.5	1,505	544	110	37
2008	Aug	2,400	37.96	10	470	25.2	+0.6	1,431	750	126	21
2009	Aug	2,400	37.96	10	578	26.9	+0.5	1,763	892	95	21
2010	Aug	2,400	37.96	10	660	29.6	+0.4	2,075	966	127	26
2013	Aug	2,400	37.96	10	594	33.4	+0.1	1,753	977	220	32
2017	Aug	2,400	37.96	10	701	42.0	+0.3	2,330	898	299	77
2021	Aug	2,400	37.96	10	595	42.7	+0.5	1,995	2,734	349	143

** 2008 estimates modified by Nuhfer

Brook trout age and growth from the Black River “Springs” station in 2021.

Age	Number aged	Length range (in)	Average Length at age (in)	Growth index*
0	28	2.2 – 4.4	3.2	+0.5
I	33	4.5 – 8.5	6.4	
II	27	7.3 – 10.9	9.2	
III	23	9.0 – 13.5	11.4	
IV	4	14.3 – 16.0	15.0	

*the growth index is the average length at age across ages in this sample compared to statewide brook trout growth and is expressed in inches (positive growth is expressed with a positive sign)

Notes and observations:

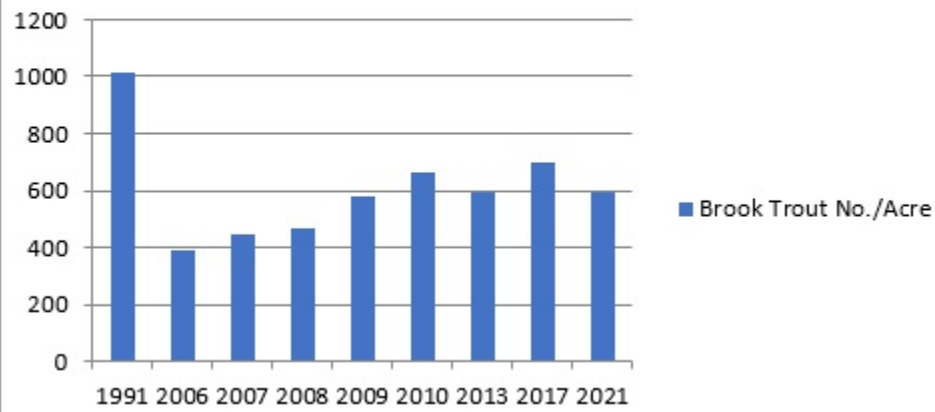
- This station continues to hold quality brook trout numbers and sizes while growth rates remain good. The Black River continues to produce larger brook trout that have the ability to live to older ages (3, 4) when compared to many other Michigan trout streams.
- It should be noted that extremely high densities of trout in 1983 were surveyed during a period of extremely high temperatures and brook trout were congregated in this cooler reach of water (according to past reports).
- Current regulations for the Black River seem very appropriate. Many anglers are appreciative that most of the river was placed back in Type 1 regulations where minimum harvest sizes of brook trout are lower (7”). This is consistent with much of the rest of the watershed

(Canada Creek, East Branch Black River) with the exception of the 4.4 mile gear restricted reach.

- The “Springs” site has been surveyed on occasion dating back to 1983 when regulations on brook trout were liberal. This reach has been under a more conservative 10” minimum size limit since 2000, and a reduced harvest limit (2 fish) since 2008. Catches of brook trout 8 inch and larger, and 10 inch and larger have increased in recent years with the exception of comparison to the 1983 data. Data, however, should be interpreted with caution since other factors are involved (year class strength differences, possible fishing pressure, addition of in-stream habitat structures, etc.)
- The gear restricted reach is a popular area for anglers to fish in the fall for catch and release fishing opportunity. Thus, having a small reach of gear restricted waters on the Black River among the majority of Type 1 regulations seems appropriate. We have heard very few complaints on catches of trout or regulations within this river system in the past two decades.
- This site should continue to be surveyed every 3-4 years as a population estimate and indicator of trends in brook trout in the Black River. Other shorter survey reaches (McKinnons Bend, Tin Shanty Bridge) can also be surveyed periodically in balance with the “Springs” site.
- The “Springs” survey station (2,400 ft) is one of a handful of historical sampling stations on the Black River (Sids Drive 3,200 ft; McKinnons Bend (1,000 ft), Tin Shanty Bridge (1,500 ft), and Blue Lakes Road (which has ranged from 1,000-2,500 ft). However, the Springs may best represent the most typical habitat of the upper Black River when compared to these other stations, and thus was chosen years ago as the infrequent sampling station.

An experiment was conducted at this 2,400 foot survey reach in 2021. We ran separate estimates of brook trout within the station, including the first 1,000 ft and separately for the second 1,400 foot, and then compared each to the overall 2,400 foot station. Brook trout biomass estimates were very similar between station reaches, and both were similar to the complete 2,400 foot reach. While density estimates (measured in brook trout per mile or per acre) were significantly different among stations, this is not unexpected with the amount of deep pools typically holding fewer, larger fish in the upstream section. If it is deemed problematic to continue sampling the full 2,400 ft station in the future, the 1,000 ft downstream section would be an adequate surrogate.

Black River Springs Reach 2,400 feet



Black River Springs Reach 2,400 feet

