



## PLATTE RIVER 1985-2010 FISHERIES SURVEYS

### PLATTE RIVER 1985-2010 FISHERIES SURVEYS US-31 Index Station Heather Seites

#### **Introduction:**

The Platte River watershed is located in Grand Traverse and Benzie Counties in the northwestern lower peninsula of Michigan. It originates from Long Lake (2,860 acres) in northwestern Grand Traverse County, several miles west of Traverse City. The outlet from Long Lake is a warmwater stream, which flows in and out of a number of inland lakes, the largest of which are Lake Dubonnet (an impoundment, 502 acres), Lake Ann (527 acres), and Bronson Lake (45 acres). Below Bronson Lake, the Platte River rapidly gains groundwater and becomes a trout stream within several miles. From there, the Platte River flows generally west through the Village of Honor and in and out of Platte and Loon Lakes before flowing into Platte Bay of Lake Michigan. Loon Lake and the lower several miles of the Platte River are located within the Sleeping Bear Dunes National Lakeshore. The majority of the Platte River is accessible to Great Lakes migratory fish including Pacific salmon and steelhead. The Platte River State Fish Hatchery, which raises coho and Chinook salmon, is located on the Platte River, although it uses primarily Brundage Creek water for fish-rearing purposes. The Platte River serves as the broodstock stream for all coho salmon stocked in Michigan. The only fish stocked in the Platte River are 800,000 coho salmon that are released annually at the hatchery.

Approximately two miles upstream of the mouth of the Platte River, there is a weir in place that blocks fish passage in the fall during salmon runs. As a result of a settlement agreement with the Platte Lake Improvement Association regarding phosphorous levels in the watershed, only 20,000 salmon are allowed to be passed upstream of the lower weir.

The US-31 index station is located directly downstream of the Platte River State Fish Hatchery, about five miles downstream of Bronson Lake, and about eight miles upstream from the Village of Honor. The station runs for 1000 feet upstream of the US-31 road crossing. In August of 2008, the station averaged 54.2 feet in width and 1.28 feet in depth, and discharge was measured at 71.8 cubic feet per second.

Upstream of US-31 near the Platte River State Fish Hatchery, the Platte River has been regulated as a Type 1 stream, open to all tackle types. The daily possession for Type 1 streams is five fish, with an 8 inch minimum size limit (msl) for brown and brook trout and a 10 inch msl for rainbow trout, coho and Chinook salmon. Downstream of US-31, the Platte River is a Type 4 stream, open to all tackle types. The daily possession limit for Type 4 streams is 5 fish, with no more than three fish that are 15 inches or larger. The minimum size limit for brown and rainbow trout is ten inches, for brook trout it is eight inches, and for coho and Chinook salmon it is ten inches. In Type 4 streams, brown and brook trout may only be kept during the traditional trout season, from the last Saturday in April until September 30. Rainbow trout and Pacific salmon may be possessed all year. An additional restriction on the Platte River is that it is unlawful to use other than one single-pointed unweighted hook measuring 3/8 inch or less from point to shank. Also, the Platte River is closed to fishing from the Platte River State Fish Hatchery weir downstream to Platte Lake during the months of January, February, and March. In addition, it is illegal to fish within 300 feet of either the hatchery weir or the lower weir.

#### **Methods and Materials:**

Commencing in 2002, the station was adopted as a Fixed Site in the Status and Trends Program. Per the protocol of the program (Wills et al. 2008), the station will be sampled for three consecutive years, and then not sampled for three consecutive years (unless it is sampled at the discretion of the Biologist). In one of the three "on" years, habitat data will also be collected. Temperature data should also be recorded



## PLATTE RIVER 1985-2010 FISHERIES SURVEYS

in each of the “on” years with the use of a continuous recording thermometer. This station was sampled by electrofishing in 1985-1987, 2002-2004, and 2008-2010 (Table 1). It will again be sampled from 2014-2016. Temperature data for the station was recorded in the summers of 2002, 2004, 2005, 2008, 2009, and the winters of 2003, 2005, 2006, 2009, and 2010 (Table 2). Habitat evaluation data was collected in August, 2008.

### **Results:**

See Table 1.

### **Discussion:**

The Platte River is one of the more productive salmonid streams in Michigan, with self-sustaining populations of brown trout, rainbow trout (steelhead), coho salmon, and Chinook salmon. One brook trout was also captured in 2002. This is due to the combination of excellent spawning substrates available in the Platte River, combined with suitable water temperatures. Despite this, we have received numerous comments from Platte River anglers about the steelhead fishery. They claim that it has diminished significantly over the last decade. Unfortunately, there is no creel census data of any kind for the Platte River.

### **Recommendations:**

1. Since the Platte River is a naturally reproducing trout, salmon, and steelhead stream, and since it serves as the broodstock stream for Chinook salmon and steelhead, it should be diligently protected. It should be protected from uncontrolled development and land-use practices by working with MDNRE Land and Water Mgt. Division to evaluate permit applications. In addition, it should be designated as a Natural River.
2. Although fisheries habitat in the Platte River is very good, the population of larger trout could likely be increased by adding additional woody material to the river, in the forms of artificial log jams, sweepers, and platform structures. The goals of such work should be to narrow and deepen the stream, in addition to providing overhead cover for larger, adult trout.
3. To support the production of a secondary steelhead broodstock facility and improve the steelhead fishery in the Platte River, 20,000 yearling Little Manistee strain steelhead will be stocked annually. If yearling are not available, 100,000 fall fingerling Little Manistee strain steelhead should be stocked annually.

### **References:**

Wills, Todd C., T. G. Zorn, A. J. Nuhfer, and D. M. Infante. 2008 Draft. Stream Status and Trends Program sampling protocols. Chapter 26 in Manual of fisheries survey methods. Michigan Department of Natural Resources, Fisheries internal document, Ann Arbor.



**PLATTE RIVER 1985-2010 FISHERIES SURVEYS**

Table 1. MDNR Salmonid population estimates for the Platte River at US-31 below the Platte River State Fish Hatchery from 1985-2009.

Year	BNT		RBT		COS		CHS		BKT	
	#/acre	lbs/acre	#/acre	lbs/acre	#/acre	lbs/acre	#/acre	lbs/acre	#/acre	lbs/acre
1985	207	109.65	355*	35.77*	^	^	^	^		
1986	122*	60.4*	427*	41.00*	832	6.67	88	1.10		
1987	127	44.68	657*	48.77*	^	^	^	^		
2002	373	108.25	1,890	29.58	231	1.5	4	0.09		
2003	333	100.82	664	19.20	706	4.35			2	0.11
2004	296	68.88	2,611	17.15	1,504	14.61				
2008	292	38.75	2,429	18.18	1,332	8.06	1	0.04		
2009	325	30.23	2,777	27.24	622	5.78	2	0.06		
2010	275	50.95	2,722	38.73	973	7.56	4	0.06		

Station length = 1000 feet

Station area 1985-1987 = 1.11 acres

Station area 2002-2004 = 1.13 acres

Station area 2008-1010 = 1.24 Acres

1985\*: Rainbow trout less than 5 inches in length not counted.

1985^: Juvenile salmon noted but not counted.

1986\*: Brown and rainbow trout less than 4 inches in length not counted.

1987\*: Rainbow trout less than 4 inches in length not counted.

1987^: Juvenile salmon noted but not counted.

Chapman-Peterson estimates



**PLATTE RIVER 1985-2010 FISHERIES SURVEYS**

Table 2. Platte River temperature data from the US-31 station.

	2002	2003	2004	2005	2006	2008	2009	2010
January Average		34.9		35.3	38.0		34.3	36.5
January Maximum		39.4		39.2	40.9		36.9	40.4
January Minimum		32.3		53.4	34.3		32.3	32.8
February Average		34.6		36.9	36.1		36.3	36.8
February Maximum		41.1		40.6	40.8		42.7	40.7
February Minimum		32.0		33.0	32.0		32.4	32.6
June Average	61.5		61.5	63.9		62.3	61.2	
June Maximum	72.9		70.8	72.9		71.2	74.2	
June Minimum	51.7		53.9	55.00		55.90	51.2	
July Average	66.9		63.3	64.8		64.5	61.8	
July Maximum	76.0		71.0	73.2		71.9	69.7	
July Minimum	60.4		56.7	56.0		56.3	55.9	
August Average	64.6		61.2	61.2		58.7	62.2	
August Maximum	70.5		69.3	69.3		67.8	70.1	
August Minimum	58.4		53.4	53.4		52.7	54.0	
December Ave.	37.3		37.2	37.7		34.3	37.3	
December Max.	41.4		41.6	40.0		39.3	43.6	
December Min.	34		32.2	35.2		32.4	32.7	