LC

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: April 10, 2008 FILE REF: 3600

TO: Gloria McCutcheon, SER Director

FROM: John E. Nelson, Plymouth

SUBJECT: Reclassification of the Onion River, Ben Nutt Creek and Mill Creek, Sheboygan County as Class I Trout Water

An extensive effort has been underway over the past 10 years to restore good trout habitat in the Upper Onion River watershed. The restoration effort was successful and wild trout are once again abundant in many sections of the watershed. With this memo, I am requesting that the Department reclassify the entire 5.2 miles of the Onion River, 6.0 miles of Ben Nutt Creek and 2.2 miles of Mill Creek in Sheboygan County as Class I trout waters. The three streams are currently classified as Class II water.

Department action to acquire much of the stream frontage in the Upper Onion River watershed and to improve habitat conditions there for brown and brook trout has resulted in substantially greater natural reproduction of trout in the above streams. Stocking of trout in the upper watershed is no longer needed to sustain the fishery. More than two age groups of trout are also present due to consistent natural reproduction within the watershed. Thus, all of Mill Creek, all of Ben Nutt Creek and the upper 4.0 miles of the Onion River (upstream of CTH "N") meet the criteria for classification as Class I trout water.

Therefore, I request that the Department take formal action through public notice to reclassify the entire 2.2miles of Mill Creek, 6.0 miles of Ben Nutt Creek and the upstream 5.2 miles of the Onion River in Sheboygan County as Class I trout water.

NOTED AND APPROVED:

Susan Beyler, Inland Fisheries Supervisor — Date: 8-6-08

E. Randy Schumacher, SER Fisheries Supervisor — Date: 8/13/08

James McNelly, SER Water Leader — Date: 12 Aug 08

Gloria McCutcheon, SER Director — Date: 8-13-08

Printed on Recycled Paper

Onion River, Sheboygan County
WBIC 51200
Trout Population Surveys
John E. Nelson

ABSTRACT

The purpose of this report is to provide documentation related to the proper classification of the Onion River in Sheboygan County as trout water. We electrofished Stations 1 – 4 on the Onion River during the summer of 2006. Catch rates ranged from 254 brown trout/mile at Stations 1 & 2 to 1,041 brown trout/mile at Station 4. Brown trout lengths ranged from 2.5" – 16.4". We observed at least 5 year classes of trout and a sustainable wild population of brown trout. I recommend that the entire 5.2 mile reach of the Onion River be reclassified as Class I trout water.

INTRODUCTION

The purpose of this report is to provide documentation related to the proper classification of the Onion River in Sheboygan County as trout water. The Onion River from its beginning at the confluence of Mill and Ben Nutt Creeks downstream 5.2 miles to CTH "N" is currently classified as Class II trout water. The data presented here are intended to justify the reclassification of the entire 5.2 mile reach as Class I trout water.

The upper Onion River and its tributaries were likely brook trout water prior to settlement of the area. The Onion was once considered the premier trout stream in southeastern Wisconsin and drew anglers from a broad area. Farming, logging and fish pond development in the watershed slowly degraded the stream to the point where stocking was required to support the fishery. Limited natural reproduction existed through that period yet, it was not sufficient to support angling.

The effort to restore the Onion River and its tributaries to high quality trout water began in the late 1980's with the acquisition of 68.45 acres on Ben Nutt Creek. Since that time, the Department has acquired approximately 900 additional acres of land plus several easements to allow habitat restoration to take place. With the acquisition, over 15 small to large (7 acre) ponds have been removed from tributaries with free-flow restored in those areas. The pond removals significantly improved water temperatures in downstream areas and provided adult trout access to high quality spawning habitat. Instream habitat improvements along more than 1.5 miles of the stream, stocking of wild strain trout and restrictive fishing regulations have added to the restoration effort.

The watershed restoration efforts have proven to significantly improve trout populations in the Onion River and its tributaries. The most dramatic improvements have been observed at Station 3 (Figure 1) where we documented electrofishing catch rates increasing by 1,327% from 1997 to 2006. Natural reproduction has likewise exploded in habitat restoration areas further upstream. At one former pond site where no trout survived before 2000, we documented the catch of 3,971 brown trout/mile. The sample consisted of 91.5% young of the year fish. No stocking of the Onion River with brown trout has been needed since 2000. We have stocked some rainbow trout annually for the opening weekend rush of anglers but, intend to cease that stocking in the near future.

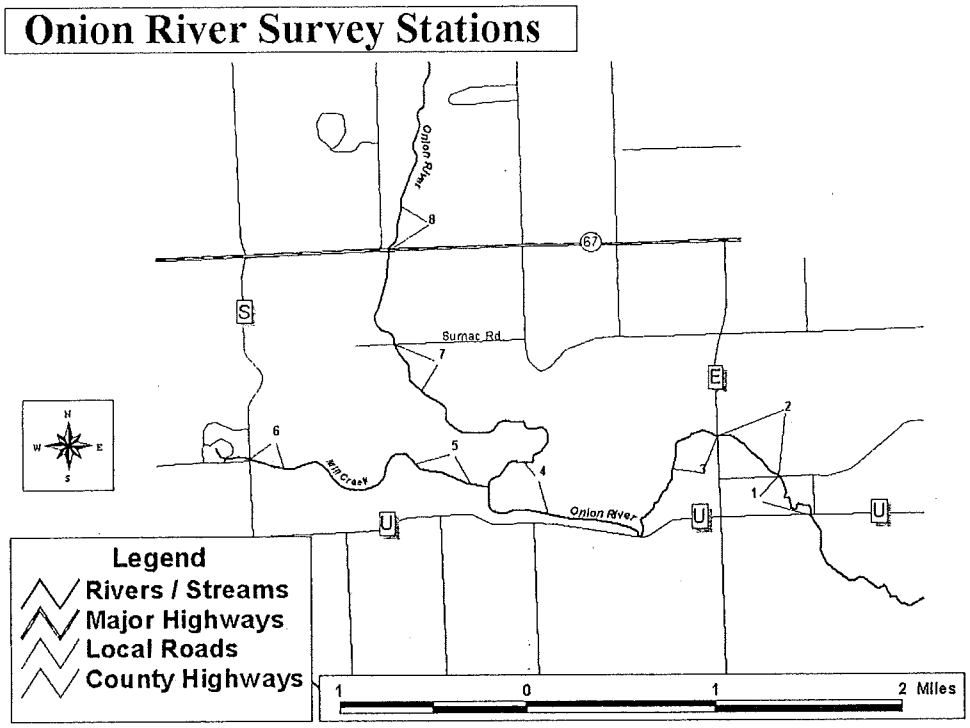


Figure 1. Fish sample sites in the upper Onion River watershed, Sheboygan County.

METHODS

For the purpose of this document, I will report only on the electrofishing we conducted at stations 1 – 4 in the summer of 2006. We used the standard tow barge stream electrofishing unit with two probes to capture fish at each station. The data from Stations 1 & 2 were combined due to an accidental combination of the data in the field. Stations 1 & 2 were electrofished on August 9th. Station 3 was electrofished on July 14th and Station 4 was electrofished on August 21st. Each sample was from a single run effort.. Only trout were sampled.

RESULTS AND DISCUSSION

Stations 1 & 2 -Onion River from CTH "U" to CTH "E"

We caught 248 brown trout and 24 rainbow trout in the CTH "U" to "E" reach . The catch per effort (CPE) rates were 254 brown trout/mile and 25 rainbow trout/mile. The catch rates have increased steadily over time as management actions in the watershed took effect. The catch rate has increased 379% since 1997.

The size structure of brown trout at Stations 1 & 2 was dominated by yearling trout in the 6" – 7" range (Figure 2). The average size of browns was 8.2" with a range in size of 2.7" – 16.0" in that reach. The PSD was 37.3% and the RSD_{12} was 9.4%. The PSD for Stations 1 & 2 was lower than those calculated for upstream stations on the Onion River (Stations 3 & 4). The probable reason for the lower PSD value for Stations 1 & 2 was that the size limit there is a 9" minimum size versus a 15" minimum size at Stations 3 & 4. Still, the size structure is good at Stations 1 & 2 despite heavy angling pressure.

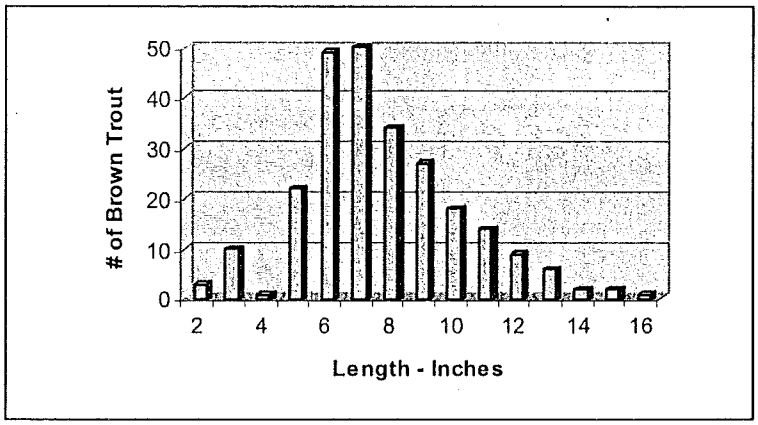


Figure 2. Length frequency distribution of brown trout at Stations 1 & 2, Onion River in 2006.

Station 3

We caught 258 brown trout in Station 3 (above CTH "E") at a rate of 528/mile. We also caught 12 rainbow trout at a rate of 25/mile. The CPE increased 34.0% since 2004 and 1,327.0% since 1997 at Station 3. The phenomenal CPE increases are likely due to both habitat improvements and the more restrictive harvest regulations at Station 3. The restrictive regulations were initiated in 2004.

Brown trout at Station 3 ranged in size from 3.0" – 16.3" with an average of 9.0". They had a favorable PSD of 51.3% and an RSD_{12} of 14.3%, indicating that the restrictive regulations are resulting in an enhanced size structure of the trout in that reach of the Onion River. Length modes were evident at the 7", 10" and 12" length groups indicating age 1, 2 and 3 brown trout, respectively (Figure 3). Under the standard 9" minimum size limit, age 2 and 3 trout would have faced significant harvest pressure and their numbers would have been much lower.

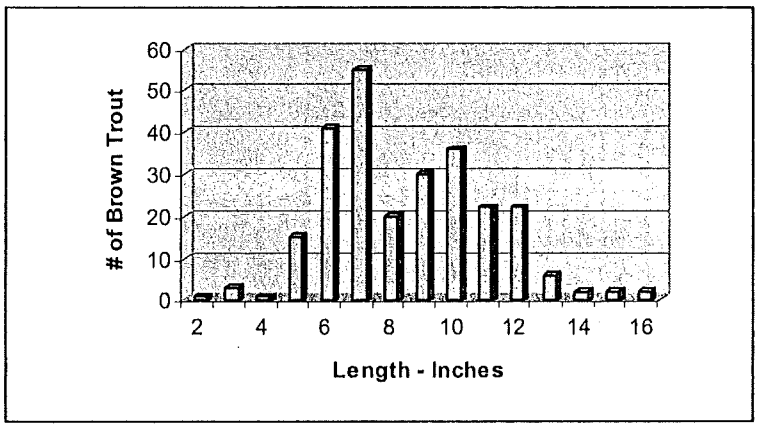


Figure 3. Length frequency distribution of brown trout at Station 3, Onion River in 2006.

Station 4

We caught 418 brown trout at Station 4 in 2006 with a CPE of 1,041 browns/mile. We also caught 3 brook trout (7/mile). The CPE increased 50.0% at Station 4 from 2004 to 2006. It increased 846.4% from 1997 to 2006. Station 4 is also within the restrictive regulation portion of the Onion River watershed and habitat improvements have been significant over the period of 1997 to 2006.

The average size of brown trout captured at Station 4 was 7.9" with a range in size from 2.5" – 16.4" (Figure 4). The average size was lower than that for Station 3 because a higher percentage of young of year

browns were present at Station 4 than Station 3. The PSD for Station 4 was 45.6%. The RSD_{12} for 2006 was 10.3%. Both indicate a desirable structure for that reach of the Onion River.

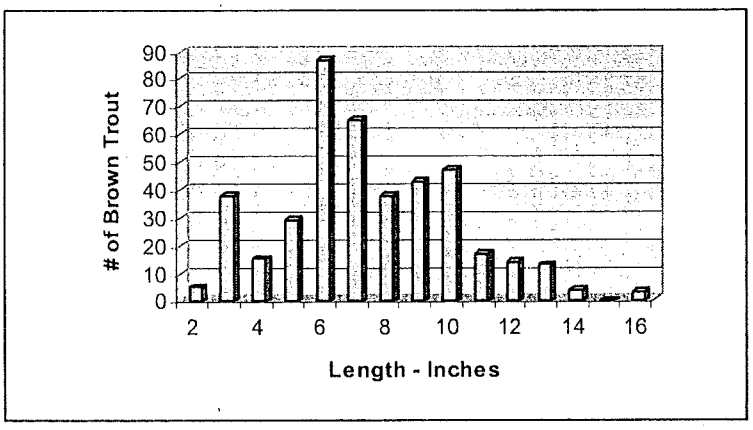


Figure 4. Length frequency distribution of brown trout at Station 4, Onion River in 2006.

All Stations

Clearly, trout densities throughout the surveyed reaches of the Onion River contain suitable numbers and year classes of trout to be classified as Class I trout water. Young of the year trout were captured at each site as were at least four additional year classes of fish.

RECOMMENDATIONS

Considering the results of the 2006 survey, I recommend reclassifying the entire 5.2 miles of the Onion River as Class I trout water. The presence of a sustainable population of brown trout and at least 5 year classes of trout meets the criteria for Class I status.

NOTED AND APPROVED

Sue Beyler, Inland Fisheries Team Supervisor

8-6-08
Date

Ben Nutt Creek (Onion River), Sheboygan County
WBIC 51200
Trout Population Surveys
John E. Nelson

ABSTRACT

Surveys were conducted on Ben Nutt Creek in 2006 to document the development of trout populations in the stream following land acquisition and habitat development. The stream is currently classified as Class II trout water with brown trout being the dominant trout species present. The 2006 survey documented an increase in trout density at one location (upstream of STH 67) from no trout in 1997 to 182 trout/mile in 2006. We caught 3,971 trout/mile at one of the restoration sites where dam removal and habitat restoration took place. The results indicated that several year classes of trout were present and that natural reproduction was sufficient to sustain a wild trout fishery in the stream. The findings support upgrading the classification of the stream to Class I trout water.

INTRODUCTION

The section of the Onion River locally known as Ben Nutt Creek includes that portion of the river upstream of the confluence with Mill Creek (Figure 1). The stream is currently classified as Class II trout water along its 6.0 mile course. The stream includes first and second order reaches. It originates from numerous spring discharges throughout the valley where it lies. Most of the springs enter from the west along the base of an edge moraine.

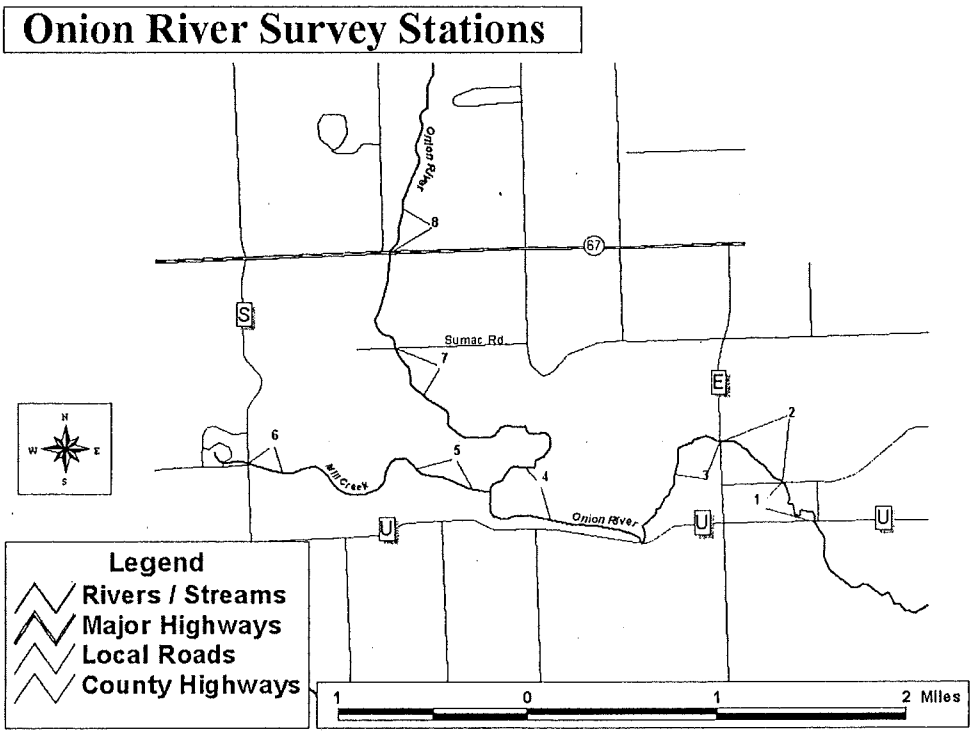


Figure 1. Fish sample sites in the upper Onion River watershed, including Mill Creek, Sheboygan County.

Ben Nutt Creek was impacted by farming and development of artificial ponds on its spring sources. The ponds were largely developed for recreation and for fish rearing. Most of the ponds in the watershed

remain and negatively impact the stream by warming the waters. The ponds are located on tributaries to the main channel. Portions of the stream near the upstream end were channelized to facilitate better drainage for farming. Habitat in those sections remains poor and considerable runoff from farming practices has some negative effects as well.

Restoration of the trout resources of Ben Nutt Creek started in the 1980's with the purchase of stream frontage south of Sumac Road (Figure 1). Since that time, several other significant purchases have been made which facilitated habitat restoration. One purchase, the Kamrath property, allowed the Department to drain two large ponds and restore a free flowing channel through the property. That restoration resulted in significant improvement in water temperatures and gave adult trout access to high quality spawning and nursery habitat. Instream habitat improvements have been made south of Sumac Road since the early 1990's.

Ben Nutt Creek was stocked with domestic strains of brown trout through 1995. Feral brown trout were stocked from 1996 – 2000. No brown trout have been stocked into the stream since that time. The goal of the feral trout stocking was to establish wild strains of browns in the stream and to rely entirely on natural reproduction to sustain the fishery.

Substantial improvements in the trout population of Ben Nutt Creek have been documented through surveys as recent as 2006. We caught no trout at Station 8 (Figure 1), north of HWY 67 in 1997. In 2006, we documented catches of brown trout of 182 trout/mi at that location. We caught 3,971 brown trout/mi at the Kamrath property, upstream of Station 8, in 2006 as well. Most of those trout were young of the year (YOY) fish.

The purpose of this report is to provide documentation regarding the current brown trout population in Ben Nutt Creek as it relates to the proper classification of the stream. The results reported here have been summarized in previous reports on the entire upper Onion River watershed.

METHODS

We used the standard tow barge stream electrofishing unit with two probes to capture fish in a 1200' habitat restoration reach downstream of Sumac Road on July 25, 2006. The station was located immediately downstream of Station 7 (Figure 1) in an area where we installed trout habitat structures in 2006. We used the same unit to capture trout at the 1220' long reach of Station 8 on September 13, 2006. Both efforts were single run surveys using two people netting fish.

RESULTS AND DISCUSSION

The sampling south of the 1200' of stream south of Station 7 resulted in the catch of 118 brown trout at an overall CPE of 519 browns/mile (Table 1). The CPE was 413/mile immediately downstream of the habitat work and 556/mile within the habitat restoration zone. Overhead cover was very limited in the unimproved reach of stream.

The average size of brown trout in the Ben Nutt reach was 8.1" (Table 1). They ranged in size from 2.6" – 18.7". Length modes were evident at 6", 10" and 13", representing age 1, 2, and 3 brown trout (Figure 2). The Ben Nutt population is also protected by the 15" minimum size limit. The PSD was 36.8% and the RSD_{12} was 9.5%. Surprisingly, relatively low numbers of young-of-year trout were caught in the Ben Nutt Creek reach.

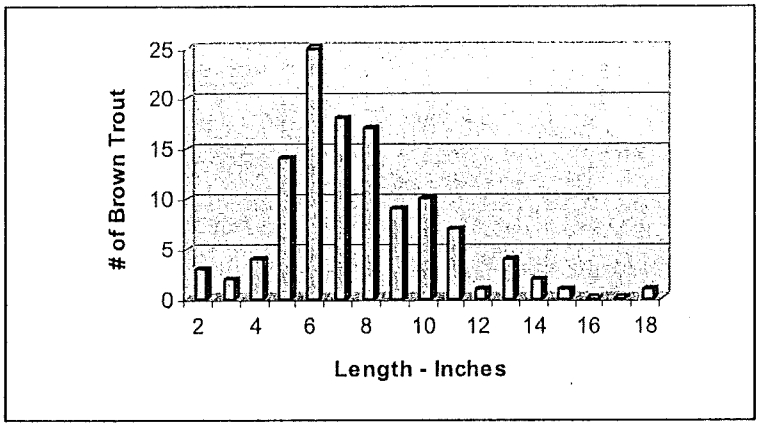


Figure 2. Length frequency distribution of brown trout at Ben Nutt Creek in 2006.

We caught 42 brown trout at Station 8 with a CPE of 182/mile (Table 1). No trout were caught at Station 8 in 1997. The CPE in 2004 was 112 trout/mile. The CPE therefore, increased 62.5% from 2004 to 2006. Improvements in water temperature and natural reproduction in the Kamrath reach are though to be responsible for the increased number of trout in the Station 8 reach.

Most of the brown trout caught at Station 8 were yearling trout in the 5" – 6" size range (Figure 3). The catch had an average size of 6.5" and a range of 2.2" – 16.6" (Table 1). The PSD was 31.6%.

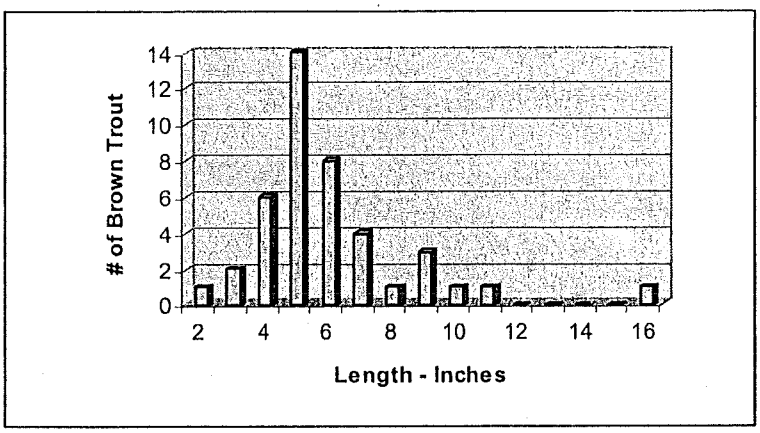


Figure 3. Length frequency distribution of brown trout at Station 8, Onion River in 2006.

RECOMMENDATIONS

I recommend that the entire 6.0 miles of Ben Nutt Creek be reclassified as Class I trout water. The criteria for Class I water include the presence of a sustainable trout fishery along with several year classes of trout being present. Both criteria were met in our samples and Class I designation is therefore justified.

NOTED AND APPROVED

Sue Beyler, Inland Fisheries Team Supervisor

8-6-08
Date

Mill Creek, Sheboygan County
WBIC 52700
Trout Population Surveys 2001 – 2005
John E. Nelson

ABSTRACT

Land acquisition by Wisconsin DNR and subsequent habitat restoration has successfully restored wild trout populations in Mill Creek. Fish surveys on sections of Mill Creek in 2001, 2004 and 2005 confirmed the presence of at least three year classes of wild trout throughout the course of the stream. Brown trout catch rates varied throughout the survey periods but, ranged up to 1,064 brown trout/mile and reaching sizes up to 13.3" long. Brown trout were the dominant trout species in the stream. A few brook trout were also present and efforts are being made to restore more wild brook trout in the stream through stocking of wild fingerling for several years. Mill Creek is currently classified as Class II trout water. Our findings support the change of that designation to Class I trout water status.

INTRODUCTION

Mill Creek is a spring fed first and second order stream in west-central Sheboygan County that is currently classified as Class II trout water. The stream originates in Section 1 of the Town of Mitchell on a property known locally as Silver Springs. It flows easterly approximately 2.2 miles to its confluence with Ben Nutt Creek, forming the Onion River (Figure 1). Numerous springs form the main branch of the stream on the former Silver Springs Hatchery. Several small tributaries, also originating from spring sources, join the stream as it flows easterly.

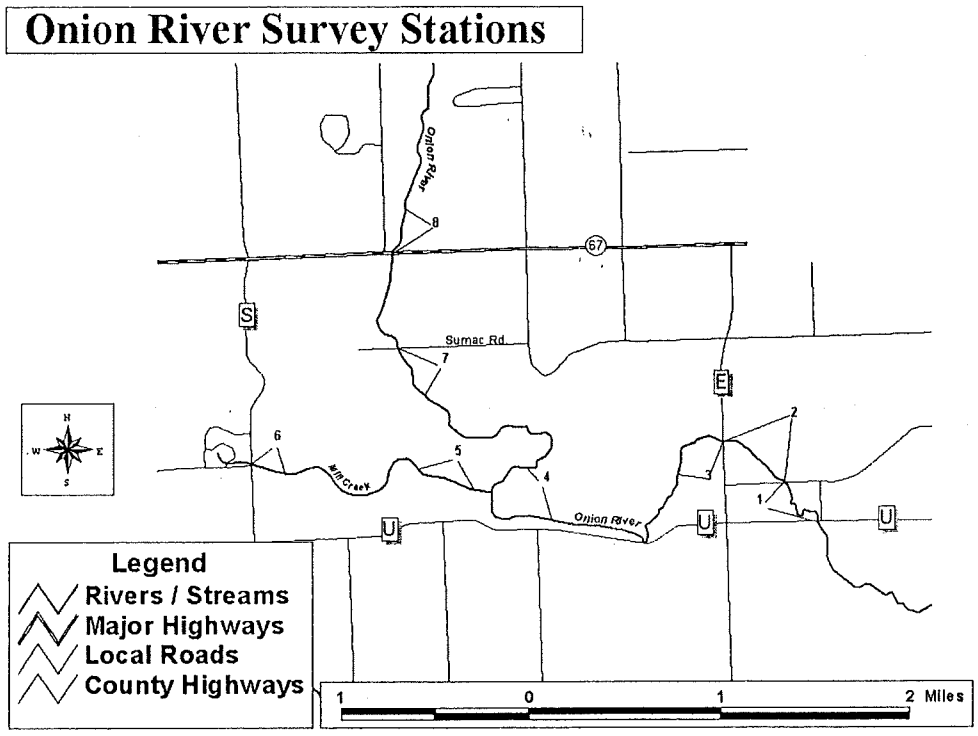


Figure 1. Fish sample sites in the upper Onion River watershed, including Mill Creek, Sheboygan County.

Since the mid 1980's, the Department has acquired most of the stream frontage along the course of Mill Creek. The purchase of the Silver Springs property in 2001 had the greatest impact on restoration of the stream. Following acquisition, the hatchery ponds were transformed into free flowing stream channels. That action alleviated many of the temperature problems created by the ponds and allowed adult trout access to high quality spawning habitat. The change significantly increased natural reproduction of brown trout in the system.

The purpose of the several surveys summarized in this report was to document the development of the trout population in Mill Creek. Brown trout were the dominant species in the stream. Brook trout were occasionally captured as well, indicating that a remnant population of brook trout is present. The purpose of this summary is to provide documentation related to the appropriate classification of the stream as a Class I trout water.

METHODS

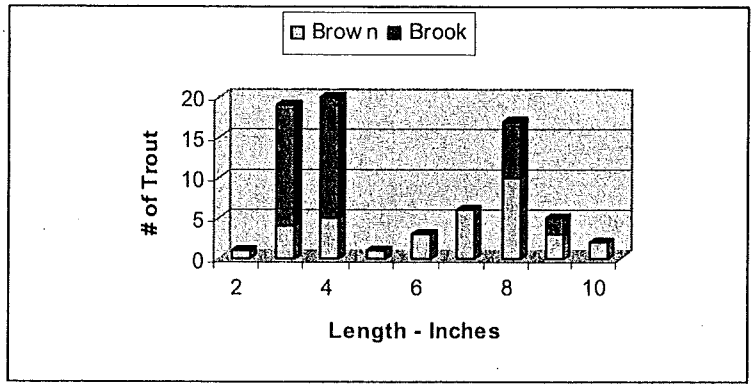
Both back-pack and tow barge stream shockers were used to collect trout during the various surveys on Mill Creek. Back-pack units were used to electrofish a 300' reach at Station 6 (Figure 1) on September 27, 2004 and June 8, 2005. The back pack unit was used to sample the 780' reach immediately upstream of Station 6 on June 8, 2005 as well. Station 5 was electrofished with the tow barge on August 24, 2001 and September 22, 2004. A total of 880' was sampled there in 2001 and 650' was sampled in 2004. In most instances, the sampling efficiency was poor due to the narrowness of the stream and the amount of overhanging vegetation which shielded fish while netting

RESULTS AND DISCUSSION

Downstream Samples (Station 5)

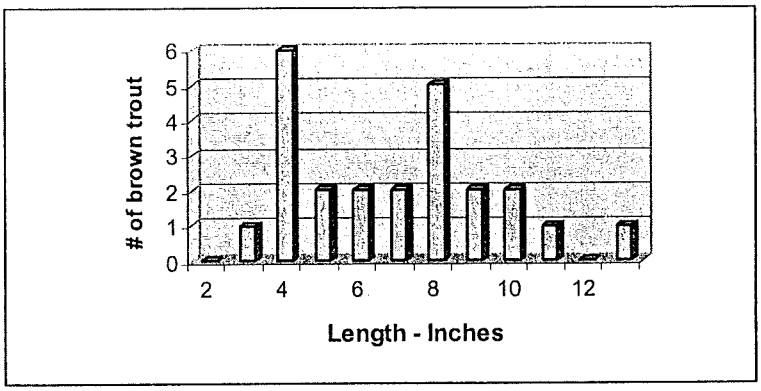
We caught 35 brown trout and 42 brook trout at Station 5 on August 24, 2001 at rates of 210/mi and 252/mi, respectively. The brown trout ranged in size from 2.7" – 10.1" long while the brook trout ranged from 3.6" – 9.9" long (Figure 2). At least two year classes of each species were present in the sample.

Figure 2. Trout Length frequency distribution at Mill Creek Station 5 on August 24, 2001



We caught 24 brown trout and 3 brook trout on September 22, 2004 at rates of 195/mi and 24/mi, respectively. The brown trout ranged in size from 3.6" – 13.3" (Figure 3). The three brook trout were 9.4", 10.3" and 12.1" long. No fingerling brook trout were observed in 2004. At least three year classes of brown trout were present in the sample.

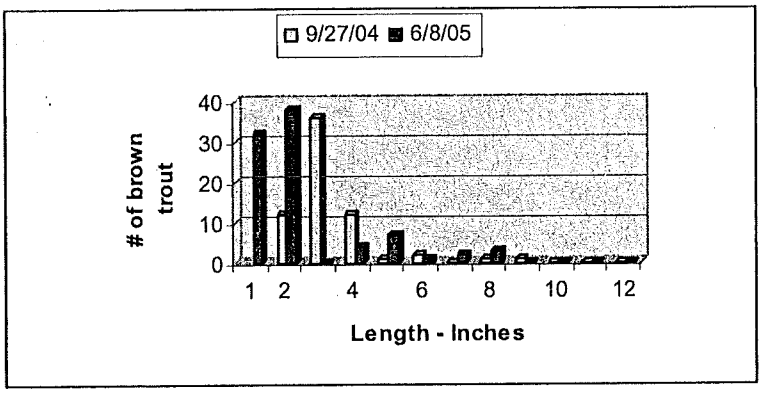
Figure 3. Brown trout length frequency distribution at Mill Creek Station 5 on September 22, 2004.



Headwaters Samples (Station 6)

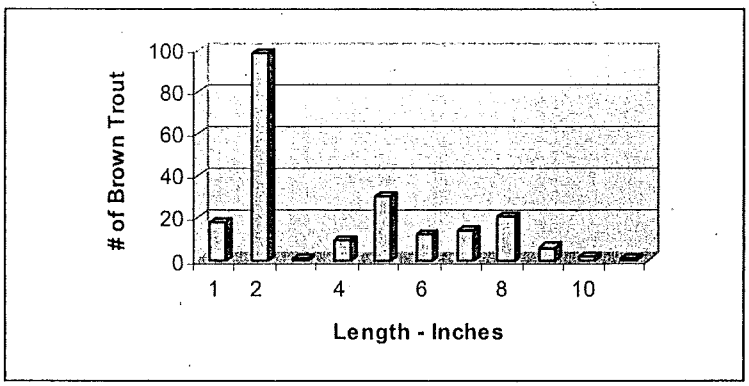
A total of 66 brown trout were captured at Station 6 downstream of CTH "S" on September 27, 2004 at a rate of 1064/mi. On June 8, 2005 the catch rate at the same location was 919/mi. The size range in 2004 was 2.6" – 9.5". It was 1.2" – 8.5" in 2005. The smaller size in 2005 was due to the sample being collected at an earlier date in the year. The size structure was dominated by young of the year fish during both 2004 and 2005 (Figure 4). A few one and two year old fish were caught represented by fish in the 6" and 8" length groups.

Figure 4. Length frequency distribution of brown trout caught at Station 6 on 9/27/2004 and 6/6/2005.



A 780' reach of Mill Creek upstream of CTH "S" sampled on June 6, 2005 yielded a first run catch of 151 brown trout at a catch rate of 1022/mi. The fish ranged in size from 1.4" – 11.7" (Figure 5) with most the fish in the 1" – 2" range representing young of the year parr. Three year classes were also obvious in that sample.

Figure 5. Length frequency distribution of brown trout caught upstream of Station 6 on 6/6/2005.



The most obvious difference between the upstream and downstream reaches of Mill Creek was the dominance of YOY fish in upstream areas as expected. The upstream area appeared to be the primary spawning and nursery area on the stream.

RECOMMENDATIONS

The results of these surveys provide the evidence necessary to classify the entire 2.2 mile length of Mill Creek as Class I trout water. The population is supported entirely by natural reproduction within the system and several year classes of trout are present. Therefore, I recommend that the reclassification be made as soon as possible.

Brown trout were and will likely be the dominant trout species in the stream. However, we will attempt to establish a wild brook trout population in the stream through the stocking of wild fingerling for several years. The first stocking of wild brook trout fingerling took place in 2007.

NOTED AND APPROVED

Sue Beyler, Inland Fisheries Team Supervisor

8-6-08
Date

Pursuant to NR1.02(7)©, Wis. Adm. Code, the Department of Natural Resources gives public notice of the classification of 5.2 miles of the Onion river, in Sheboygan County as Class I Trout water. The subject portion of the Onion River is located in Sections 4, 5, 8, 9, 10 and 11 of the Town of Lyndon.

This classification is based upon a survey which indicates this portion of stream contains a sustainable population of trout and includes more than two year classes of trout present.

The Department shall waive any hearing requirement on this classification unless a written request for hearing is received before _____, 2008. Requests should be sent to John Nelson, WDNR, 1155 Pilgrim Road, Plymouth, WI 53073.

Classification of trout waters is a Type IV action under NR 150, Wis. Adm. Code and does not require that an Environmental Assessment or Environmental Impact Statement be prepared.

Pursuant to NR1.02(7)©, Wis. Adm. Code, the Department of Natural Resources gives public notice of the classification of 6.0 miles of Ben Nutt Creek, in Sheboygan County as Class I Trout water. Ben Nutt Creek is located in Sections 5 and 6 of the Town of Lyndon and Sections 20, 29, 30, and 31 of the Town of Plymouth.

This classification is based upon a survey which indicates this portion of stream contains a sustainable population of trout and includes more than two year classes of trout present.

The Department shall waive any hearing requirement on this classification unless a written request for hearing is received before _____, 2008. Requests should be sent to John Nelson, WDNR, 1155 Pilgrim Road, Plymouth, WI 53073.

Classification of trout waters is a Type IV action under NR 150, Wis. Adm. Code and does not require that an Environmental Assessment or Environmental Impact Statement be prepared.

Pursuant to NR1.02(7)©, Wis. Adm. Code, the Department of Natural Resources gives public notice of the classification of 2.2 miles of Mill Creek, in Sheboygan County as Class I Trout water. Mill Creek is located in Sections 5 and 6 of the Town of Lyndon and Section 1 of the Town of Mitchell.

This classification is based upon a survey which indicates this portion of stream contains a sustainable population of trout and includes more than two year classes of trout present.

The Department shall waive any hearing requirement on this classification unless a written request for hearing is received before _____, 2008. Requests should be sent to John Nelson, WDNR, 1155 Pilgrim Road, Plymouth, WI 53073.

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