

BROOKVILLE TAILWATER ANGLER AND FISHERIES SURVEY

Franklin County

2008 Fish Management Report

Jamie L. Smyth

Assistant Fisheries Biologist



Fisheries Section
Indiana Department of Natural Resources
Division of Fish and Wildlife
I.G.C. South, Room W273
402 W. Washington Street
Indianapolis, Indiana 46204

2010

EXECUTIVE SUMMARY

- An angler creel survey was conducted in 2008 to provide information on user preferences, harvest, and pressure. Additionally, a fisheries survey of the Brookville tailwater was conducted in 2008 to evaluate brown trout condition and survival.
- Anglers at Brookville tailwater fished for an estimated 19,232 hours between April 1 and December 31, 2008. An estimated 6,369 anglers fished at the tailwater in 2008. Fishing pressure was highest during the months of July (3,432 h), May (2,963 h), and April (2,903 h). An estimated 2,434 fish that weighed 3,794 lbs were harvested. Overall harvest and yield estimates were 1,217.0 fish/mi and 1,897.0 lbs/mi, respectively.
- An estimated 729 rainbow trout that weighed 612 lbs were harvested. Also, an estimated 2,896 rainbow trout were caught and released during the survey.
- Only 58 brown trout were estimated harvested at the tailwater in 2008. An estimated 2,986 browns less than 18.0 in and 90 browns 18.0 in or longer were caught and released during the survey.
- A total of 447 walleye was harvested that weighed 778 lbs. Nearly 77% of the walleye harvest occurred from April through June.
- Anglers caught and released an estimated 1,237 legal size (12.0 in or larger) smallmouth bass during the survey.
- The Brookville tailwater fisheries survey was conducted on July 21, 2008. A total of 97 brown trout was collected that weighed 58.98 lbs. Brown trout ranged in length from 8.4 to 17.4 in and averaged 11.2 in. Seventy-one percent of the brown trout collected were between 8.0 and 12.0 in, and likely represented the 2008 stocking due to the gap in length frequency. The remaining 29% of browns caught were 13.0 in or larger, and more than likely were carry-over fish.
- There were only 5 rainbow trout collected and they ranged in length from 11.3 to 17.0 in. Only one rainbow trout collected was likely a carry-over fish from a previous stocking.
- To help reduce the number of sub-legal brown trout harvested, signage regarding trout identification and regulations should be maintained and possibly some new signs added. Also, DFW should encourage conservation officers to increase enforcement of tailwater regulations, especially around the end of April and early May when trout harvest is most prevalent.

TABLE OF CONTENTS

	Page
LIST OF TABLES	iii
LIST OF FIGURES	iii
INTRODUCTION	1
METHODS	2
Angler survey	2
Fisheries survey	3
RESULTS	3
Angler survey	3
Angling Effort	3
Overall Harvest Rate	4
Harvest and Yield	4
Angler Preference	4
Composition of the Harvest	4
Economic Value of the Fishery	6
Fisheries survey	7
DISCUSSION	8
RECOMMENDATIONS	9
LITERATURE CITED	9
APPENDIX 1. Estimated number by size and estimated weight of the dominant species Harvested at Brookville tailwater, April 1 to December 31, 2008	19
APPENDIX 2. Length frequency distribution of fish collected during the fisheries survey of Brookville tailwater, July 21, 2008	26

TABLES

Table	Page
1. Monthly and seasonal estimates of fishing pressure, number of anglers, and overall harvest rates at Brookville tailwater, April 1 to December 31, 2008	10
2. Angler county or state of origin and percentage, Brookville tailwater, April 1 to December 31, 2008	11
3. Summary of estimated harvest and yield for Brookville tailwater, April 1 to December 31, 2008	12
4. Monthly estimated number of fish harvested at Brookville tailwater, April 1 to December 31, 2008	13
5. Monthly and seasonal angler preference (% of all anglers) by species, Brookville tailwater, April 1 to December 31, 2008	14
6. Monthly and seasonal harvest rates in fish per hour at Brookville tailwater, April 1 to December 31, 2008.....	15
7. Estimated number of fish caught and released, Brookville tailwater, April 1 to December 31, 2008	16
8. Monthly and seasonal preference harvest and catch rates in fish per hour for the main species at Brookville tailwater, April 1 to December 31, 2008	17

FIGURES

Figure	Page
1. Average size brown trout in the Brookville tailwater from 2002 to 2008	18
2. Brookville tailwater CPUE of brown trout from 2002 to 2008	18
3. Brookville tailwater CPUE of rainbow trout from 2002 to 2008	18

INTRODUCTION

Brookville Reservoir is a 5,260 acre Army Corps of Engineers (ACOE) flood control impoundment located in southeastern Indiana on the East Fork Whitewater River about one mi north of Brookville, Indiana. The Brookville tailwater, which is 2.0 mi in length, is the portion of the East Fork Whitewater River below the dam to its confluence with the West Fork Whitewater River.

The Division of Fish and Wildlife (DFW) stocked rainbow and brown trout in the Brookville tailwater from 1976 to 1983, primarily as a “put-and-take” fishery. Brown trout were stocked with the intention that they would carry-over from year to year and provide a higher quality fishery. Brown trout stockings ceased in 1984 since little evidence of carry-over was observed. Since then, only London strain rainbow trout have been stocked by the DFW annually (1,500 fish that are at least 7 in long).

With approval from the DFW, the Central Indiana chapter of Trout Unlimited (CITU) stocked approximately 2,000 brown trout per year from 2001 to 2004. Approximately 2,600 browns were stocked by CITU in 2005 and 2006. Brown trout carry-over was documented during the 2003 Brookville tailwater survey, and in 2005 regulations were adopted to limit harvest of brown trout to one fish per day of at least 18.0 in. Following the 2006 stocking, it was determined that the Brookville tailwater was eligible to receive federally produced fish since it is a federal flood control project. Since 2007, the Wolf Creek National Fish Hatchery near Jamestown, Kentucky has annually provided approximately 3,000 brown trout for the tailwater.

Beginning in 2005, the DFW and the ACOE exchanged ideas pertaining to the water temperature regime of the Brookville tailwater. It was agreed that the tailwater release should not exceed 55°F during the spring and fall and 65°F during the summer. The ACOE has worked diligently to maintain ideal tailwater conditions for brown trout. However, since Brookville Reservoir is used for flood control, the tailwater outflow is dictated by yearly reservoir conditions.

An angler creel survey was conducted in 2008 to provide information on user preferences, harvest, and pressure. Additionally, a fisheries survey of the Brookville tailwater was conducted in 2008 to evaluate brown trout condition and survival.

METHODS

ANGLER SURVEY

A personal contact creel survey was conducted from April 1 to December 31, 2008. A total of 140 days was creeled. Seven days out of each two week period were randomly chosen to be sampled. The only stipulation was that two of those days worked were on weekends and the others weekdays so that approximately 50% of the weekdays and weekends were sampled each month.

Sampling was divided into two shifts: morning and evening. Shift length varied from month to month depending on the monthly average amount of daylight available. Morning shifts started around sunrise and lasted the first half of the day until sometime in early afternoon and the evening shift ran from immediately after the morning shift until approximately sundown. Due to variable amounts of daylight throughout the year, shift lengths ranged from 4.75 h in December to 7.5 h in June and July. The clerk would work either a morning or evening shift on a given day and like the days, shifts were also chosen randomly. However, it was believed more anglers would likely be encountered during the evening, so the probabilities assigned to each shift were as follows: morning (0.4) and evening (0.6).

Angler counts were conducted from three to five times each shift. The start time of the first count was chosen randomly and subsequent counts were conducted about every 1.5 h thereafter. To conduct counts, the clerk drove a route that consisted of four viewing areas: below the Brookville dam, through the city park, from the 252 bridge, and from the 52 bridge. From these areas, the majority of the tailwater could be seen. The number of anglers observed at each location was recorded. Counts were considered instantaneous because no interviews were conducted during the counts and on average a count took less than 15 minutes to complete.

When counts were not being conducted, the angler analyst interviewed anglers. Information recorded for each fishing party included: whether the party had completed their fishing trip or not, trip length, number of anglers in the party, and fishing preference. Harvested fish were identified, counted, and measured to the nearest 0.5 in TL. Anglers were asked to recall the numbers of sub-legal and legal smallmouth bass and brown trout released and the total number of rainbow trout released. In addition, they were asked how many times a year they fish at the Brookville tailwater.

Fishing pressure and fish harvest were estimated by month. Weights of harvested fish

were estimated using both central Indiana averages and length-weight regression. Only interviews from completed fishing trips were used to calculate catch rates and hence the total number of fish harvested and caught and released. Interviews of all parties were included in all other calculations such as preference, residency, frequency of fishing, and length-frequency of harvested fish.

FISHERIES SURVEY

The Brookville tailwater fisheries survey was conducted on July 21, 2008. Three locations were sampled from directly below the dam to near where the two forks join to form the Whitewater River. Station 1 sampling started at a side channel and continued upstream approximately 686 ft to the end of the concrete spillway. Station 2 was located inside the Brookville Town Park and started at the head of the riffle on the downstream edge of the park property and continued upstream approximately 686 ft to the first riffle where the stream was constricted. Station 3 sampling started just upstream of the highway 52 bridge and continued upstream approximately 436 ft to the first riffle.

A DC barge electrofisher was used to collect fish with a crew of four people. Only rainbow and brown trout were collected. The trout were measured to the nearest 0.1 in TL and weighed to the nearest 0.01 lb. Dissolved oxygen and water temperature were taken at each station.

RESULTS

ANGLER SURVEY

Angling Effort

Anglers at Brookville tailwater fished for an estimated 19,232 h between April 1 and December 31, 2008 (Table 1). An estimated 6,369 anglers fished at the tailwater in 2008. Fishing pressure was highest during the months of July (3,432 h), May (2,963 h), and April (2,903 h). The least amount of pressure was seen in December (795 h) and November (897 h), likely due to inclement weather.

Anglers from 43 Indiana counties (64% of all anglers) and several other states (36%) fished at Brookville Tailwater in 2008 (Table 2). Of those from Indiana, Franklin County (21%) provided the most anglers, followed by Marion (7%), Dearborn (6%), and Wayne (4%). The

largest group of anglers (30%) was from Ohio.

Less than 2% of the anglers fished the tailwater for the first time in 2008. The majority (98%) of anglers had fished the tailwater before and indicated they fished there at least once a year. Approximately half of those anglers fish the tailwater up to 10 times a year while the other half are there 11 or more times annually.

Overall Harvest Rate

The overall harvest rate at Brookville tailwater was 0.127 fish/h (Table 1). Harvest rates were highest in April (0.256 fish/h), June (0.239), and May (0.150). The lowest harvest rates were in September (0.018 fish/h) and October (0.025).

Harvest and Yield

An estimated 2,434 fish that weighed 3,794 lbs were harvested at Brookville tailwater during the survey (Table 3). Overall harvest and yield estimates were 1,217.0 fish/mi and 1,897.0 lbs/mi, respectively. The majority of the harvest was in April (31%), June (22%), and May (18%) (Table 4).

Angler Preference

Almost half (48%) of the anglers surveyed indicated they were fishing strictly for trout (Table 5). Though angler preference for trout was substantial in all months creeded, it was highest in October (65%) and April (63%). Anglers who said they were fishing for “anything” accounted for 31% of the tailwater use. Overall, walleye was the third most sought after species (10%) with April (23%), May (17%), and June (15%) seeing the most pressure. Catfish anglers accounted for 9% of the use at the tailwater and were most prevalent from June through September. The remaining preferences accounted for less than 3%.

Composition of the Harvest

Trout

Rainbow trout was the dominant species harvested by number (30%) and ranked third in total weight harvested (16%) (Table 3). An estimated 729 rainbow trout that weighed 612 lbs were harvested between April 1 and December 31, 2008. Harvested rainbows ranged in length

from 8.0 to 20.0 in and averaged 12.0 in (Appendix 1). The overall harvest rate of rainbow trout was 0.038/h (Table 6). Sixty-nine percent of all rainbows were harvested in April (505 total) with a harvest rate of 0.174/h. An estimated 2,896 rainbow trout were caught and released during the survey (Table 7). As with harvest, most of the catch and release of rainbows occurred in April.

Only 58 brown trout were estimated harvested at the Brookville tailwater in 2008. Harvested brown trout ranged in length from 11.0 to 21.0 in and averaged 15.8 in. Fifty-nine percent of the brown trout harvested were smaller than the 18.0 in minimum size limit. The overall harvest rate of brown trout was 0.003/h. An estimated 2,986 brown trout less than 18.0 in and 90 brown trout 18.0 in or longer were caught and released during the survey.

The preference harvest rate (the rate of harvest of a species by anglers fishing specifically for that species) for all trout during the survey was 0.078/h (Table 8). Anglers had the best success in harvesting trout in April (0.189/h). The overall preference catch rate (similar to preference harvest rate but includes harvested and released fish) of rainbow trout was 0.405/h and the best month for catching rainbows was April (0.865/h). The overall preference catch rate of brown trout was 0.546/h. Anglers were most successful catching brown trout in July (0.896/h), September (0.732), and May (0.726/h). There were very few rainbow trout caught after August, however, brown trout were caught more consistently throughout the creel.

Channel catfish

There were an estimated 591 channel catfish harvested that yielded 1,426 lbs. Channels ranked second in species harvested by number (24%) and first in total weight harvested (38%). Channels ranged in length from 12.0 to 25.0 in and averaged 18.3 in. A large portion of channels (74%) harvested were 17.0 in or larger. The majority of channels (63%) were harvested in June and July. The overall preference harvest rate was 0.416/h and was highest in December (0.914/h), July (0.611/h), and June (0.545/h).

Walleye

A total of 447 walleye was harvested that weighed 778 lbs. Harvested walleye ranged in length from 12.0 to 25.0 in and averaged 16.5 in. Only 4% of the walleye harvested were smaller than the 14.0 in minimum size limit. The overall harvest rate for walleye was 0.023

fish/h while the preference harvest rate was 0.221/h. Preference harvest rates were highest in October (1.736), July (0.423/h), and August (0.334/h). Nearly 77% of the walleye harvest occurred from April through June.

White bass

Two hundred white bass that weighed 146 lbs were harvested. The overall harvest rate of white bass was 0.010/h. Eighty-three percent of white bass were harvested from April through July. White bass ranged in length from 8.0 to 13.0 in and averaged 11.4 in. More than half (58%) of the white bass harvested were 12.0 inches or larger.

Striped bass

A total of 90 striped bass was harvested that weighed 500 lbs. Stripers accounted for 13% of the yield, but only 4% of the harvest by number. Harvested stripers averaged 18.9 in, with 40% being 24.0 in or larger. The largest striper harvested was 34.0 in.

Sauger

There were 47 sauger harvested that weighed 34 lbs. Sauger ranged in length from 11.0 to 17.0 in and averaged 13.6 in. Almost half (49%) of the sauger harvested were 14.0 in or larger.

Smallmouth bass

Only 32 smallmouth bass were harvested. The largest smallmouth harvested was 12.5 in. However, an estimated 1,237 smallmouth bass 12.0 in or larger were caught and released during the survey.

Economic Value of the Fishery

The U.S. Department of the Interior, Fish and Wildlife Service (2006) determined that the average angler spent an estimated \$62.60 for each fishing trip in Indiana during 2006. This amount includes money spent on bait, tackle, food, lodging, licenses, transportation, etc. Thus, it is estimated that the 6,369 anglers that visited Brookville tailwater from April 1 to December 31, 2008 contributed \$398,700 to the economy.

Approximately 3,057 anglers were fishing strictly for trout during the survey period. Trout anglers spent an estimated \$191,368 from April 1 to December 31, 2008. In 2008, it cost the DFW approximately \$2,625 (\$1.75/fish) to stock the Brookville tailwater with 1,500 rainbow trout (Dave Welsheimer, Manager at Curtis Creek State Fish Hatchery, personal communication). The U.S. Fish and Wildlife Service spent approximately \$1,625 (\$0.54/fish) to produce the 3,009 brown trout that were stocked in the Brookville tailwater in 2008 (James Gray, Manager at Wolf Creek National Fish Hatchery, personal communication). The cost to pick up the brown trout and stock them into the tailwater was \$204 and paid for by CITU (Randy Lang, Hatchery Supervisor, personal communication). Considering the total expense of all agencies involved with stocking the tailwater (nearly \$4,500) the cost to benefit ratio of the trout fishery during the survey period was 1:43.

FISHERIES SURVEY

Water temperature was 71.8° F at station 1, 73.8° F at station 2, and 75.0° F at station 3. Dissolved oxygen measured 7.8 ppm at station 1, 9.5 ppm at station 2, and 10.4 ppm at station 3. The tailwater discharge was 65 cfs at the time sampling occurred (US Army Corps of Engineers 2009).

A total of 97 brown trout was collected that weighed 58.98 lbs (Appendix 2). There were 187 brown trout collected in 2007 (Smyth 2008). Brown trout ranged in length from 8.4 to 17.4 in and averaged 11.2 in, compared to 11.0 in in 2007 (Figure 1). Seventy-one percent of the brown trout collected were between 8.0 and 12.0 in, and likely represented the 2008 stocking due to the gap in length frequency. The remaining 29% of browns caught were 13.0 in or larger, and more than likely were carry-over fish. The CPUE of brown trout was 161.5/mi at station 1, 215.4/mi at station 2, and 600.0/mi at station 3 (Figure 2). The overall CPUE of brown trout was 283.3/mi, compared to 550.0/mi in 2007.

There were only 5 rainbow trout collected, compared to 38 rainbows collected in 2007 and 46 collected in 2006. Rainbow trout ranged in length from 11.3 to 17.0 in. Only one rainbow trout collected was likely a carry-over fish from a previous stocking. There were no rainbow trout collected at station 1, whereas in the past a good portion of the rainbows caught were found there. The CPUE of rainbow trout was 15.4/mi at station 2 and 37.5/mi at station 3 (Figure 3). The overall CPUE of rainbow trout was only 14.6/mi, compared to 111.8/mi in 2007.

DISCUSSION

The 2008 Brookville tailwater creel survey was the first time the 2.0 mi tailwater has been creeled. Despite heavy fishing pressure, most anglers were relatively successful in catching their target species.

Rainbow trout accounted for 30% of all fish harvested during the creel. The annual rainbow trout stocking typically occurs during the week of the trout opener (the last Saturday in April). With no trout harvest allowed prior to the opener, there were only five days in April for anglers to harvest trout. The majority of the rainbow harvest (69%) occurred during those five days in April. The preference catch rate for rainbows in April was a staggering 0.865/h. There were close to 2,900 rainbows caught and released during the survey.

The majority of anglers who caught brown trout in the tailwater were practicing catch and release. Anglers who targeted browns were successful throughout most of the season. July was the best month for catching browns, despite the fact that July had the most fishing pressure. There were only 58 browns harvested during the creel survey, but 59% of those were sub-legal fish. To help reduce the number of sub-legal brown trout harvested, signage regarding trout identification and regulations should be maintained and possibly some new signs added. Also, DFW should encourage conservation officers to increase enforcement of tailwater regulations, especially around the end of April and early May, when trout harvest is most prevalent.

It is suspected that the cooler water temperatures maintained by the ACOE to ensure trout survival have led to more species using the tailwater during warm summer months. Channel catfish and walleye made a significant contribution to the total number of fish harvested. Anglers who harvested channels took home some nice fish, as they averaged 18.3 in. The best time to harvest channels during the creel was June and July. Walleye accounted for 18% of the total fish harvested during the creel. Walleye preference harvest rates were highest during October, July, and August.

Other quality angling opportunities provided by the tailwater included white bass, striped bass, and smallmouth bass. White bass and striped bass are fairly common in the tailwater. More than half of the white bass harvested were greater than 12.0 in and stripers were found up to 34.0 in. There were not many smallmouth bass harvested during the creel survey. However, just over 1,200 smallies 12.0 in or larger were caught and released.

Brown trout have exhibited carry-over for several years in the tailwater. Approximately

29% of the browns collected during the survey were carry-over fish. Although the overall CPUE of brown trout was lower than 2007, it was still higher than any year from 2002 to 2006 (Figure 2). The brown trout stocked in 2009 were the first fish to receive a fin clip. The clip will change annually so that year classes are distinctly marked. This should occur for a minimum of three years to provide growth and mortality data on multiple year classes. The ongoing project should enable biologists to determine mortality and growth rates on some of the carry-over browns in the next few years. Information from this study will allow more informed management decisions to be made in regards to stocking rates and possible regulation changes.

RECOMMENDATIONS

- To help reduce the number of sub-legal brown trout harvested, signage regarding trout identification and regulations should be maintained and possibly some new signs added. Also, DFW should encourage conservation officers to increase enforcement of tailwater regulations, especially around the end of April and early May when trout harvest is most prevalent.

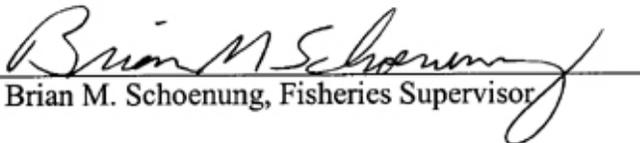
LITERATURE CITED

Smyth, J.L. 2008. Brookville Tailwater, 2007 Fish Management Report. Indiana Department of Natural Resources. Indianapolis, Indiana. 8pp.

U.S. Department of the Interior, Fish and Wildlife Service and U.S. Department of Commerce, U.S. Census Bureau. 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Submitted by: Jamie L. Smyth, Assistant Fisheries Biologist
Date: January 29, 2010

Approved by: J. Rhett Wisener, Fisheries Biologist

Approved by: 
Brian M. Schoenung, Fisheries Supervisor

Date: February 19, 2010

Table 1. Monthly and seasonal estimates of fishing pressure, number of anglers, and overall harvest rates at Brookville tailwater, April 1 to December 31, 2008.

	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>TOTALS</u>
Fishing Pressure (hours)	2,903	2,963	2,272	3,432	2,702	1,773	1,495	897	795	19,232
Number of Anglers	927	951	801	1,102	998	481	425	279	405	6,369
Number of Fish Harvested	743	444	544	336	196	32	37	63	39	2,434
Harvest Rate (fish/hour)	0.256	0.150	0.239	0.098	0.073	0.018	0.025	0.070	0.049	0.127

Table 2. Angler county or state of origin and percentage, Brookville tailwater, April 1 to December 31, 2008.

<u>County Name</u>	<u>Number of Anglers</u>	<u>Percentage</u>
Franklin	220	20.6
Marion	77	7.2
Dearborn	65	6.1
Wayne	45	4.2
Delaware	30	2.8
Fayette	23	2.1
Hamilton	23	2.1
Harrison	18	1.7
Ripley	15	1.4
Hancock	14	1.3
Boone	13	1.2
Rush	12	1.1
Johnson	8	0.7
Madison	8	0.7
Shelby	8	0.7
Decatur	7	0.7
Clinton	6	0.7
Henry	6	0.7
Lake	6	0.7
Monroe	6	0.7
Porter	6	0.7
Lawrence	5	0.5
Union	5	0.5
Adams	4	0.4
Jackson	4	0.4
Tippecanoe	4	0.4
Crawford	3	0.3
Grant	3	0.3
Jefferson	3	0.3
LaPort	3	0.3
Brown	2	0.2
Clark	2	0.2
Hendricks	2	0.2
Howard	2	0.2
Huntington	2	0.2
Jennings	2	0.2
Randolph	2	0.2
Scott	2	0.2
Switzerland	2	0.2
4 counties with 1 angler		
<u>Out of State</u>		
Ohio	321	30.0
Kentucky	40	3.7
Illinois	14	1.3
Other State	10	0.9
TOTAL ANGLERS	1,070	

Table 3. Summary of estimated harvest and yield for Brookville tailwater, April 1 to December 31, 2008.

	<u>Harvest</u>			<u>Yield</u>		
	<u>No.</u>	<u>%</u>	<u>Fish/ Mile</u>	<u>Lbs.</u>	<u>%</u>	<u>Lbs./ Mile</u>
Rainbow trout	729	30.0	364.5	612	16.1	306.0
Channel catfish	591	24.3	295.5	1,426	37.6	713.0
Walleye	447	18.4	223.5	778	20.5	389.0
White bass	200	8.2	100.0	146	3.8	73.0
Sunfish	191	7.9	95.5	64	1.7	32.0
Striped bass	90	3.7	45.0	500	13.2	250.0
Brown trout	58	2.4	29.0	148	3.9	74.0
Sauger	47	1.9	23.5	34	0.9	17.0
Other	34	1.4	17.0	56	1.5	28.0
Smallmouth bass	32	1.3	16.0	26	0.7	13.0
Rock bass	15	0.6	7.5	4	0.1	2.0
TOTAL	2,434		1,217.0	3,794		1,897.0

Table 4. Monthly estimated number of fish harvested at Brookville tailwater, April 1 to December 31, 2008.

<u>Species</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>TOTAL</u>
Rainbow trout	505	75	34	56	56	0	0	3	0	729
Channel catfish	0	83	227	143	56	5	9	40	28	591
Walleye	178	75	91	41	35	16	4	7	0	447
White bass	30	45	45	46	21	0	0	13	0	200
Sunfish	0	120	34	20	0	0	17	0	0	191
Striped bass	0	0	68	10	7	5	0	0	0	90
Brown trout	30	0	23	5	0	0	0	0	0	58
Sauger	0	8	11	0	21	0	7	0	0	47
Other	0	23	11	0	0	0	0	0	0	34
Smallmouth bass	0	0	0	15	0	6	0	0	11	32
Rock bass	0	15	0	0	0	0	0	0	0	15
TOTAL	743	444	544	336	196	32	37	63	39	
PERCENT	30.5	18.2	22.4	13.8	8.1	1.3	1.5	2.6	1.6	

Table 5. Monthly and seasonal angler preference (% of all anglers) by species, Brookville tailwater, April 1 to December 31, 2008.

<u>Preference</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>TOTALS</u>
Trout	63.1	45.1	49.6	39.2	30.9	51.7	64.8	46.9	53.9	48.0
Anything	9.5	32.3	18.0	41.2	49.6	29.7	29.6	31.3	28.4	31.3
Walleye	22.6	16.9	15.1	2.9	4.9	5.9	0.9	12.5	12.7	9.6
Catfish	0.0	4.0	13.7	12.7	11.4	11.0	3.7	9.4	4.9	8.6
Walleye/other	4.8	1.6	1.4	0.5	1.6	--	--	--	--	1.0
Smallmouth bass	--	--	--	2.0	--	1.7	0.9	--	--	0.7
Striped bass	--	--	0.7	1.5	1.6	--	--	--	--	0.6
Largemouth bass	--	--	1.4	--	--	--	--	--	--	0.2

Table 6. Monthly and seasonal harvest rates in fish per hour at Brookville tailwater, April 1 to December 31, 2008.

<u>Species</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>TOTALS</u>
Rainbow trout	0.174	0.025	0.015	0.016	0.021	--	--	0.003	--	0.038
Channel catfish	--	0.028	0.100	0.042	0.021	0.003	0.006	0.045	0.035	0.031
Walleye	0.061	0.025	0.040	0.012	0.013	0.009	0.003	0.008	--	0.023
White bass	0.010	0.015	0.020	0.013	0.008	--	--	0.014	--	0.010
Sunfish	--	0.041	0.015	0.006	--	--	0.011	--	--	0.010
Striped bass	0.000	--	0.030	0.003	0.003	0.003	--	--	--	0.005
Brown trout	0.010	--	0.010	0.001	--	--	--	--	--	0.003
Sauger	--	0.003	0.005	--	0.008	--	0.005	--	--	0.002
Other	--	0.008	0.005	--	--	--	--	--	--	0.001
Smallmouth bass	--	--	--	0.004	--	0.003	--	--	0.014	0.002
Rock bass	--	0.005	--	--	--	--	--	--	--	0.001

Table 7. Estimated number of fish caught and released, Brookville tailwater, April 1 to December 31, 2008.

	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>TOTALS</u>
Rainbow trout of any size	2004	294	284	159	126	16	4	3	6	2,896
Release rate	0.690	0.099	0.125	0.046	0.047	0.009	0.003	0.003	0.008	0.151
Brown trout < 18 in	312	633	601	429	573	291	67	30	50	2,986
Release rate	0.107	0.214	0.265	0.125	0.212	0.164	0.045	0.033	0.063	0.155
Brown trout ≥ 18 in	45	0	0	20	0	11	9	0	6	90
Release rate	0.015	0.000	0.000	0.006	0.000	0.006	0.006	0.000	0.008	0.005
Smallmouth bass ≥ 12 in	1188	15	34	0	0	0	0	0	0	1,237
Release rate	0.409	0.005	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.064

Table 8. Monthly and seasonal preference harvest and catch rates in fish per hour for the main species at Brookville tailwater, April 1 to December 31, 2008.

<u>Species</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>TOTALS</u>
Brown trout (catch)	0.131	0.726	0.614	0.896	0.316	0.732	0.398	0.305	0.275	0.546
Rainbow trout (catch)	0.865	0.458	0.278	0.386	0.318	0.015	0.024	0.038	0.028	0.405
All trout (harvest)	0.189	0.060	0.035	0.073	0.071	0.000	0.000	0.000	0.000	0.078
Channel catfish (harvest)	0.000	1.121	0.545	0.611	0.240	0.070	0.211	0.380	0.914	0.416
Walleye (harvest)	0.132	0.239	0.190	0.423	0.334	0.000	1.736	0.286	0.000	0.221

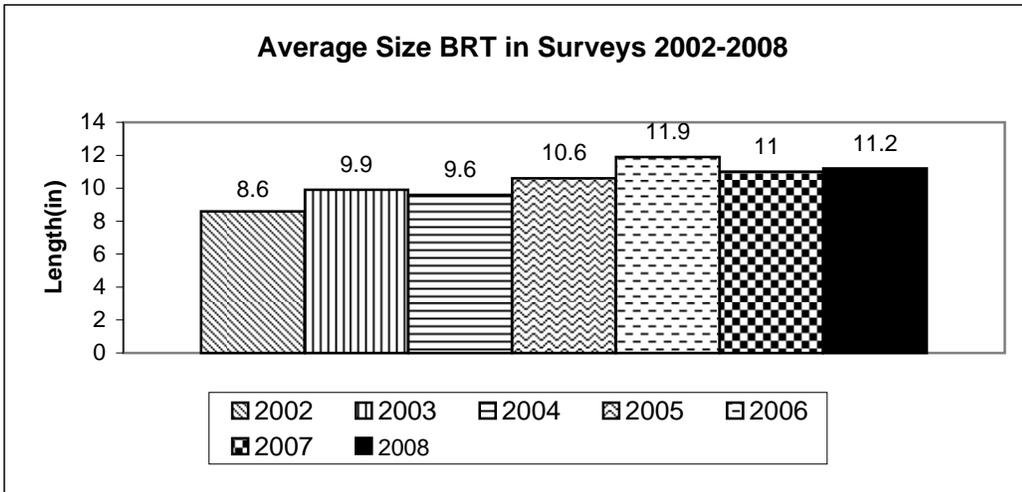


Figure 1. Average size brown trout in the Brookville tailwater from 2002 to 2008.

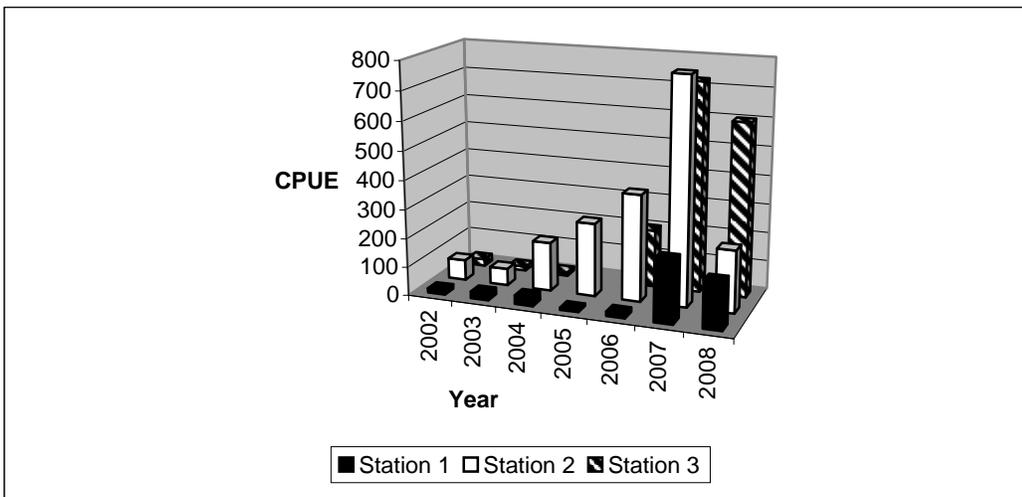


Figure 2. Brookville tailwater CPUE of brown trout 2002 to 2008.

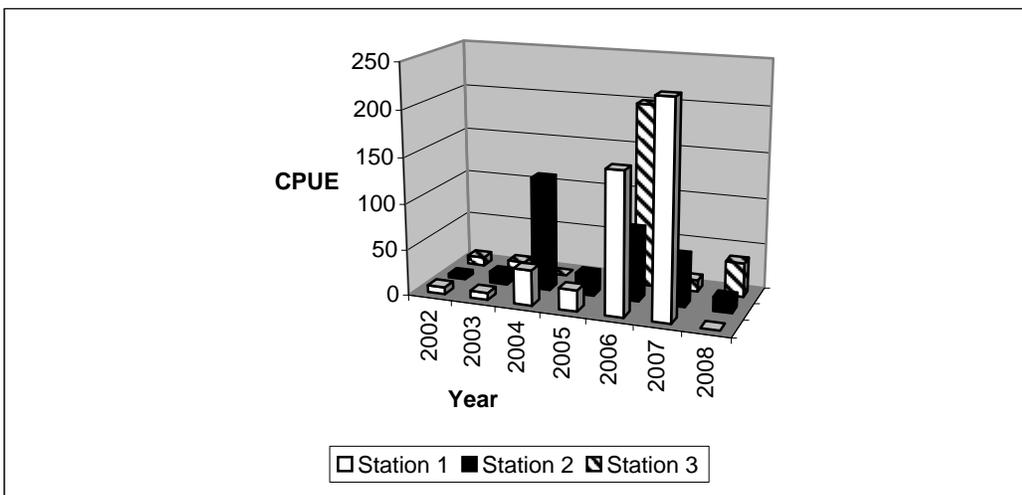


Figure 3. Brookville tailwater CPUE of rainbow trout from 2002 to 2008.

APPENDIX 1.

Estimated number by size and estimated weight of the dominant species harvested at Brookville tailwater, April 1 to December 31, 2008.

Rainbow trout

<u>Total length (inches)</u>	<u>Number</u>	<u>Percentage</u>	<u>Estimated Avg Weight</u>	<u>Total Wt (lbs)</u>
8.0	11	1.5	0.26	2.86
8.5	44	6.0	0.30	13.20
9.0	11	1.5	0.35	3.85
10.0	87	11.9	0.42	36.54
10.5	33	4.5	0.55	18.15
11.0	98	13.4	0.62	60.76
11.5	54	7.4	0.65	35.10
12.0	141	19.3	0.69	97.29
12.5	33	4.5	0.77	25.41
13.0	87	11.9	0.93	80.91
13.5	11	1.5	1.02	11.22
14.0	44	6.0	1.13	49.72
15.0	11	1.5	1.25	13.75
16.0	11	1.5	1.70	18.70
16.5	11	1.5	1.80	19.80
17.5	11	1.5	2.24	24.64
18.0	11	1.5	2.75	30.25
20.0	20	2.7	3.50	70.00
Total	729			612.15

Channel catfish

<u>Total length (inches)</u>	<u>Number</u>	<u>Percentage</u>	<u>Esitmated Avg Weight</u>	<u>Total Wt (lbs)</u>
12.0	13	2.2	0.49	6.37
12.5	20	3.4	0.56	11.20
13.0	13	2.2	0.67	8.71
14.0	27	4.6	0.83	22.41
14.5	7	1.2	0.94	6.58
15.0	20	3.4	1.03	20.60
15.5	7	1.2	1.17	8.19
16.0	20	3.4	1.33	26.60
16.5	27	4.6	1.50	40.50
17.0	66	11.2	1.66	109.56
17.5	27	4.6	1.81	48.87
18.0	80	13.5	2.02	161.60
18.5	20	3.4	2.20	44.00
19.0	40	6.8	2.46	98.40
19.5	27	4.6	2.70	72.90
20.0	93	15.7	2.94	273.42
22.0	13	2.2	3.98	51.74
22.5	7	1.2	4.53	31.71
24.0	51	8.6	5.83	297.33
25.0	13	2.2	6.58	85.54
Total	591			1,426

Walleye

<u>Total length (inches)</u>	<u>Number</u>	<u>Percentage</u>	<u>Estimated Avg Weight</u>	<u>Total Wt (lbs)</u>
12.0	18	4.0	0.54	9.72
14.0	63	14.1	0.90	56.70
14.5	45	10.1	1.00	45.00
15.0	63	14.1	1.13	71.19
15.5	45	10.1	1.25	56.25
16.0	27	6.0	1.34	36.18
16.5	18	4.0	1.47	26.46
17.0	27	6.0	1.66	44.82
17.5	9	2.0	1.83	16.47
18.0	18	4.0	2.02	36.36
18.5	18	4.0	2.17	39.06
19.0	9	2.0	2.37	21.33
20.0	33	7.4	2.87	94.71
21.0	18	4.0	3.15	56.70
21.5	9	2.0	3.57	32.13
22.0	9	2.0	3.78	34.02
23.0	9	2.0	4.54	40.86
25.0	9	2.0	6.64	59.76
Total	447			777.72

White bass

<u>Total length (inches)</u>	<u>Number</u>	<u>Percentage</u>	<u>Estimated Avg Weight</u>	<u>Total Wt (lbs)</u>
8.0	7	3.5	0.22	1.54
8.5	7	3.5	0.29	14.21
9.0	7	3.5	0.32	2.24
10.0	43	21.5	0.42	18.06
11.0	7	3.5	0.57	3.99
11.5	14	7.0	0.64	8.96
12.0	58	29.0	0.74	42.92
12.5	14	7.0	0.86	12.04
13.0	43	21.5	0.97	41.71
Total	200			145.67

Miscellaneous sunfish

<u>Total length (inches)</u>	<u>Number</u>	<u>Percentage</u>	<u>Estimated Avg Weight</u>	<u>Total Wt (lbs)</u>
7.5	6	3.1	0.22	1.32
8.0	111	58.1	0.26	28.26
9.0	37	19.4	0.38	14.06
10.0	31	16.2	0.53	16.43
11.0	6	3.1	0.71	4.26
Total	191			64.33

Striped bass

<u>Total length (inches)</u>	<u>Number</u>	<u>Percentage</u>	<u>Estimated Avg Weight</u>	<u>Total Wt (lbs)</u>
10.5	9	10.0	0.50	4.50
12.0	9	10.0	0.71	6.39
12.5	9	10.0	0.79	7.11
13.0	9	10.0	0.89	8.01
16.5	9	10.0	1.73	15.57
18.0	9	10.0	2.13	19.17
24.0	9	10.0	5.91	53.19
27.0	9	10.0	8.85	79.65
34.0	18	20.0	17.00	306.00
Total	90			499.59

Brown trout

<u>Total length (inches)</u>	<u>Number</u>	<u>Percentage</u>	<u>Estimated Avg Weight</u>	<u>Total Wt (lbs)</u>
11.0	12	20.7	0.57	6.84
13.5	22	37.9	1.07	23.54
20.0	12	20.7	4.57	54.84
21.0	12	20.7	5.25	63.00
Total	58			148.22

Sauger

<u>Total length (inches)</u>	<u>Number</u>	<u>Percentage</u>	<u>Estimated Avg Weight</u>	<u>Total Wt (lbs)</u>
11.0	6	12.8	0.42	2.52
12.5	6	12.8	0.57	3.42
13.0	12	25.5	0.60	7.20
14.0	17	36.2	0.75	12.75
17.0	6	12.8	1.43	8.58
Total	47			34.47

Smallmouth bass

<u>Total length (inches)</u>	<u>Number</u>	<u>Percentage</u>	<u>Estimated Avg Weight</u>	<u>Total Wt (lbs)</u>
12.0	27	84.4	0.79	21.33
12.5	5	15.6	0.92	4.60
Total	32			25.93

Rock bass

<u>Total length (inches)</u>	<u>Number</u>	<u>Percentage</u>	<u>Estimated Avg Weight</u>	<u>Total Wt (lbs)</u>
7.0	15	100	0.26	3.90
Total	15			3.90

APPENDIX 2.

Length frequency distribution of fish collected during the fisheries survey of Brookville tailwater, July 21, 2008.

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF RAINBOW TROUT

TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5					19.5				
2.0					20.0				
2.5					20.5				
3.0					21.0				
3.5					21.5				
4.0					22.0				
4.5					22.5				
5.0					23.0				
5.5					23.5				
6.0					24.0				
6.5					24.5				
7.0					25.0				
7.5					25.5				
8.0					26.0				
8.5					TOTAL	5			
9.0									
9.5									
10.0									
10.5									
11.0	1	20.0	0.61	not aged					
11.5									
12.0	1	20.0	0.74						
12.5	1	20.0	0.77						
13.0	1	20.0	0.93						
13.5									
14.0									
14.5									
15.0									
15.5									
16.0									
16.5									
17.0	1	20.0	1.97						
17.5									
18.0									
18.5									

ELECTROFISHING CATCH	14.6 / mi	GILL NET CATCH	N/A	TRAP NET CATCH	N/A
----------------------	-----------	----------------	-----	----------------	-----

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF BROWN TROUT

TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5					19.5				
2.0					20.0				
2.5					20.5				
3.0					21.0				
3.5					21.5				
4.0					22.0				
4.5					22.5				
5.0					23.0				
5.5					23.5				
6.0					24.0				
6.5					24.5				
7.0					25.0				
7.5					25.5				
8.0	1	1.0	0.25	not aged	26.0				
8.5	4	4.1	0.25		TOTAL	97			
9.0	14	14.4	0.30						
9.5	19	19.6	0.34						
10.0	17	17.5	0.39						
10.5	7	7.2	0.46						
11.0	2	2.1	0.53						
11.5	3	3.1	0.56						
12.0	2	2.1	0.68						
12.5									
13.0	6	6.2	0.95						
13.5	6	6.2	0.96						
14.0	5	5.2	1.06						
14.5	3	3.1	1.19						
15.0	4	4.1	1.36						
15.5	1	1.0	1.57						
16.0	1	1.0	1.71						
16.5	1	1.0	1.84						
17.0	1	1.0	2.17						
17.5									
18.0									
18.5									

ELECTROFISHING CATCH	283.3 / mi	GILL NET CATCH	N/A	TRAP NET CATCH	N/A
----------------------	------------	----------------	-----	----------------	-----