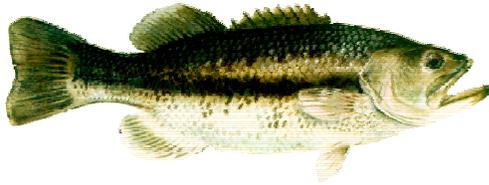


# Ohio River Black Bass

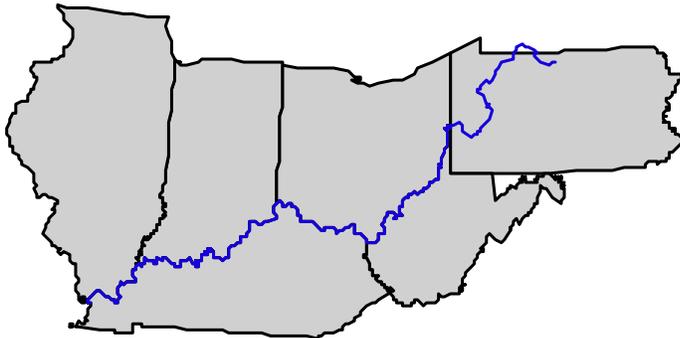
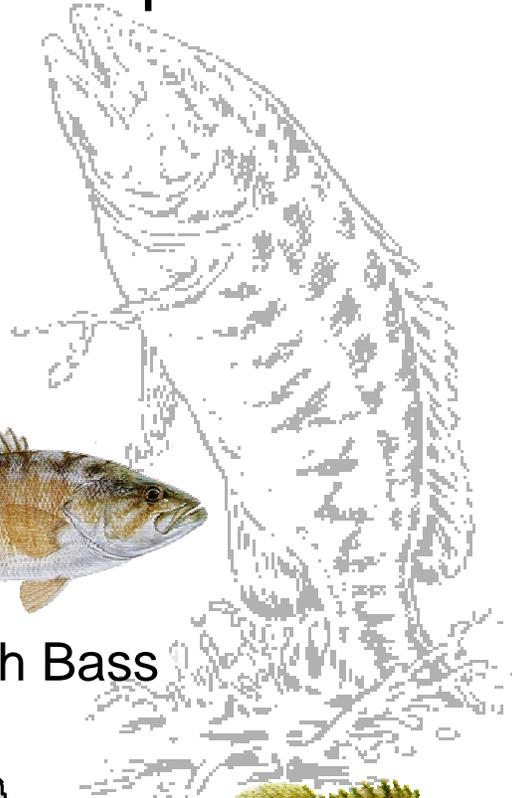
## 2003 Status Report



Largemouth Bass



Smallmouth Bass



Spotted Bass

## Ohio River Fisheries Management Team



## EXECUTIVE SUMMARY

The Ohio River Fisheries Management Team continue to monitor and manage Ohio River black bass populations, habitats, and fisheries through a coordinated sampling effort during 2001- 2003. Results provide a river-wide perspective of these important sport fishes. Key activities and findings include the following:

- ◆ SAMPLING. ORFMT states are collectively monitoring black bass populations in five study pools throughout the Ohio River.
- ◆ SPECIES COMPOSITION. Habitat is better suited for smallmouth bass in the upper Ohio River, whereas downstream areas are better suited for spotted and largemouth bass.
- ◆ ABUNDANCE. Catch rates in each of the study pools are low when compared with inland reservoirs; however, rates are consistent with those from other rivers in the region.
- ◆ GROWTH. Growth is similar among pools. Ohio River black bass continue to grow fast, reaching 12 inches or greater in three growing seasons.
- ◆ REPRODUCTION. Reproduction and survival of fish spawned in 2001 appears greater than those spawned in 2000 or 2002.
- ◆ CONDITION. Fish are in excellent condition, consistent with results of previous years.
- ◆ TOURNAMENT RESULTS. River-wide tournament catch rates (number of hours it takes to catch a 12-inch black bass) averaged 4.3 hours in 2003.
- ◆ STOCKING. WVDNR stocked largemouth bass in 2003.
- ◆ HABITAT MONITORING. ODNR continues to evaluate the effects of varying flows and temperatures on reproduction and survival in the Belleville Pool.
- ◆ HABITAT IMPROVEMENT. KDFWR initiated development of a pilot project to evaluate artificial structure on spawning in the Meldahl Pool.
- ◆ PARTNERSHIPS. The ORFMT has participated in several meetings with the U.S. Army Corps of Engineers to discuss Ohio River issues related to access, dredging, and navigation.
- ◆ CREEL SURVEY. Tailwater surveys were completed in Spring 2002. While these surveys were not designed to look target bass anglers, a small percentage of anglers (< 2% surveyed) were targeting black bass. Summaries of angler catch rates, harvest, and effort will be available in 2004 pending approval by USACOE.
- ◆ ACCESS. The ORFMT states continue to add and renovate access sites throughout the Ohio River to increase fishing opportunities.



## INTRODUCTION & BACKGROUND

Black bass (largemouth, smallmouth, and spotted bass) are important Ohio River sport fishes. They provide boat- and shore-fishing opportunities from all areas of the river, making bass fishing an important recreational activity on the river and a valued source of revenue for the regional economy.

Historically, annual angling success for black bass on the Ohio River has been variable. These fluctuations are likely due to dramatic changes in water temperature and water level, particularly during the spring spawning season. To better manage this fishery, the states bordering the Ohio River have been working collectively to identify the factors which regulate reproduction and survival.

The border states formed the Ohio River Fisheries Management Team (ORFMT; Figure 1) in 1990 in response to a U.S. Supreme Court ruling on multi-state ownership of the river. Since that time, the ORFMT has pursued cooperative interstate fisheries management throughout the river.

In the Fall of 2001, the ORFMT began monitoring black bass populations river-wide. A summary of these activities during 2001-2003 is provided in this ORFMT update.

### STUDY AREA

#### STUDY POOLS

- 1 - Hannibal
- 2 - Belleville
- 3 - Meldahl
- 4 - Cannelton
- 5 - Smithland

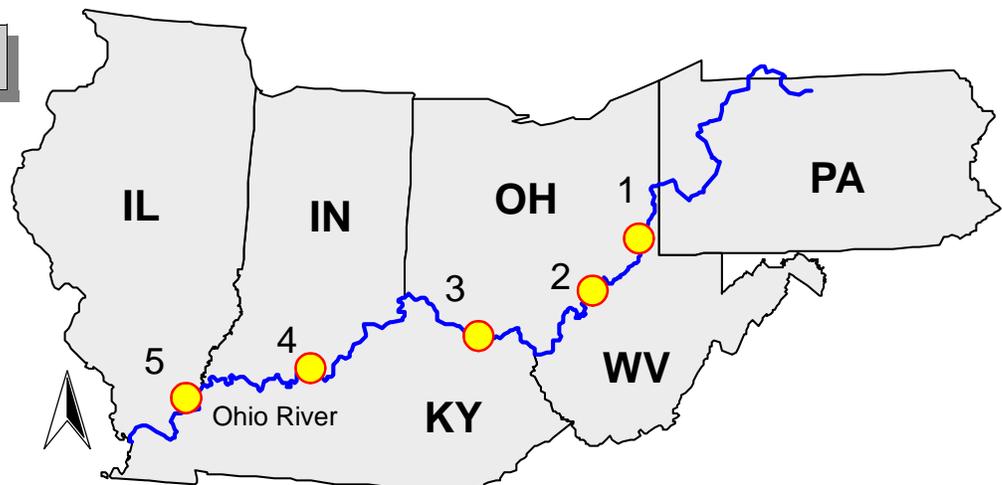


Figure 1. Ohio River Fisheries Management Team study pool locations.

Black bass were sampled with shoreline electrofishing from the five study pools during Fall 2001-2003 (Figure 1). Bass were identified, measured, weighed, and aged.

- Abundance was estimated by catch per effort of all sizes of bass.
- Average length at each age was determined to estimate growth.
- Bass health was examined by relating lengths and weights of individual fish to estimate body condition.
- Reproductive success was determined by relative percentage of age 1 fish present in electrofishing samples.
- Results were compared with 2001 and 2002 data.



# ABUNDANCE

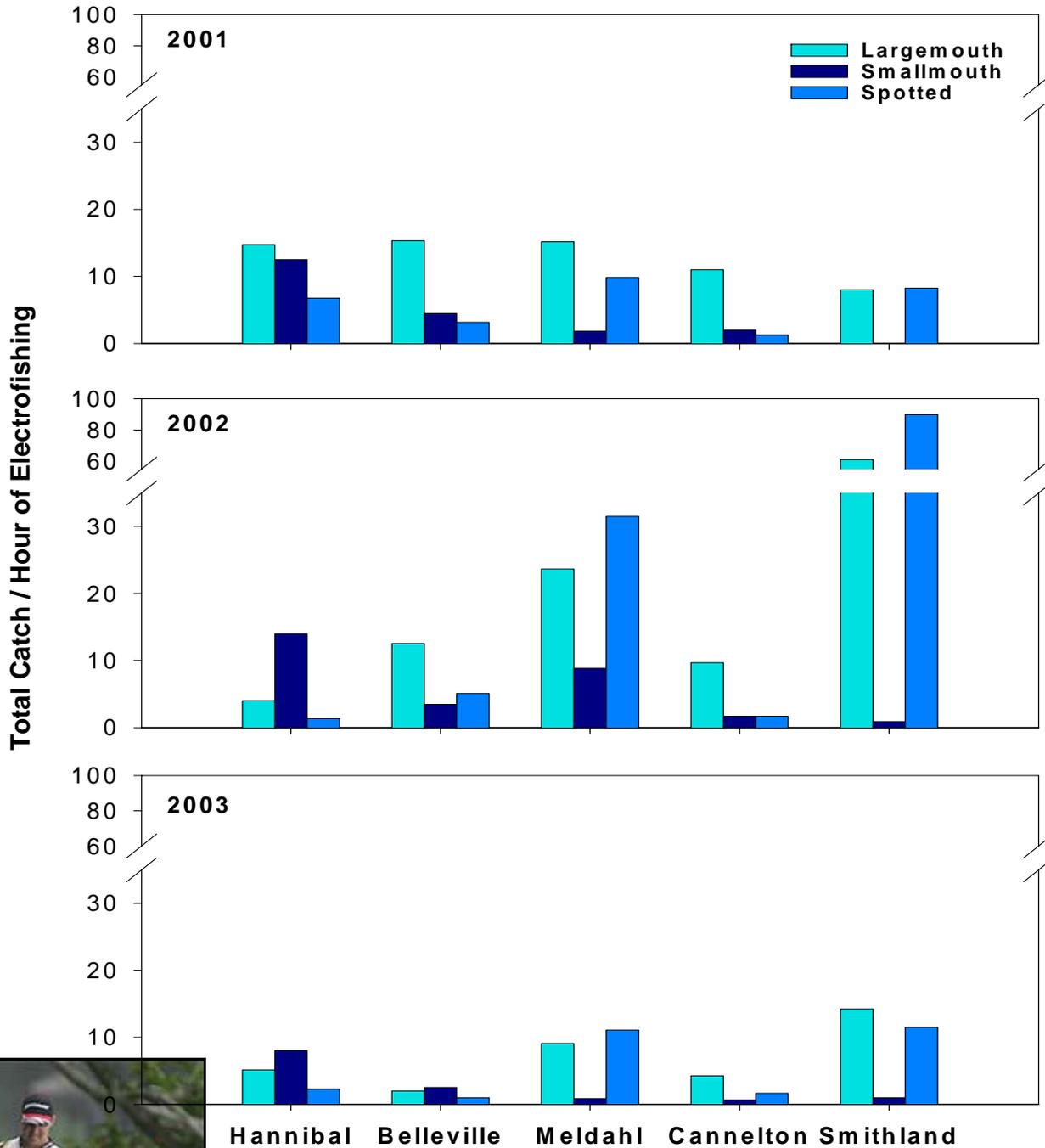


Figure 2. Ohio River black bass catch rates per hour of electrofishing

Standardized sampling began in 2001. Largemouth and spotted bass catch rates are seemingly random in the first year of sampling; however, catch rates in 2002 and 2003 are directly related to upstream and downstream habitat. Smallmouth bass catch rates are higher in the upper river pools; whereas, spotted bass and largemouth bass catch rates are higher in the lower river pools.



## Reproduction

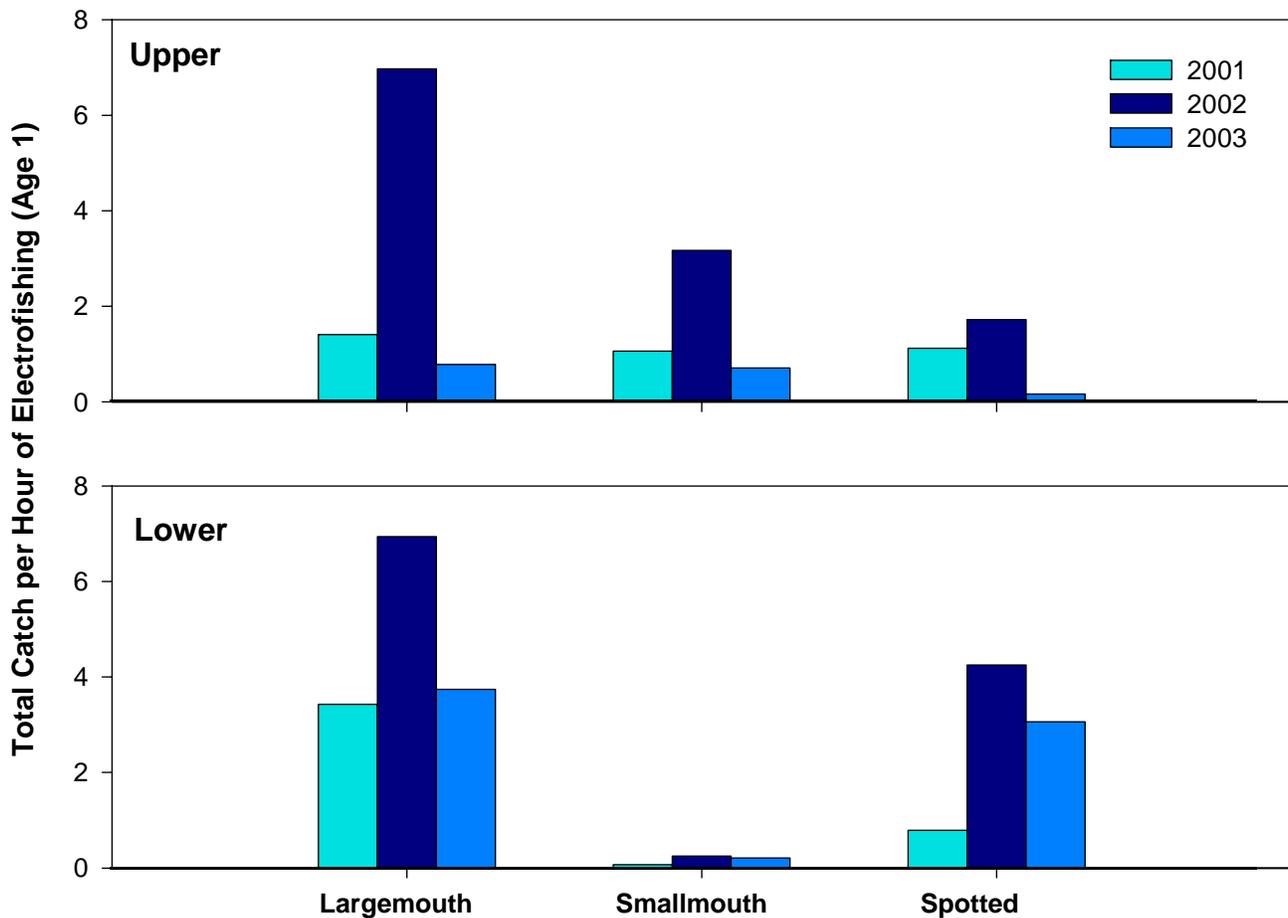
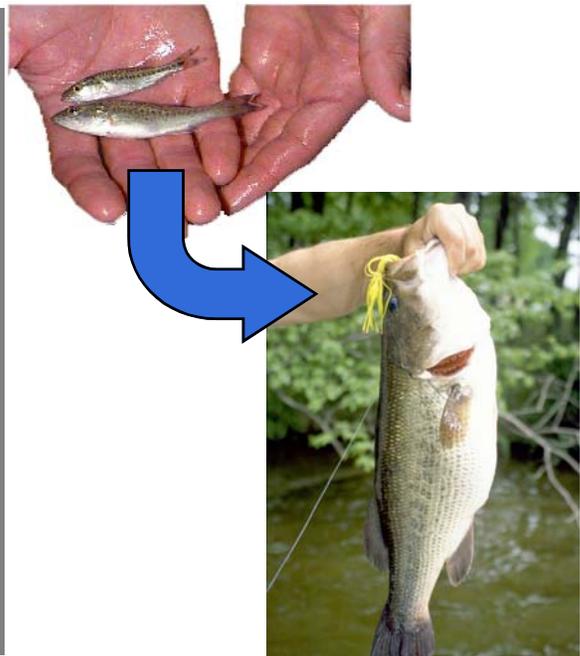


Figure 3. Ohio River catch rates per hour of electrofishing of age-1 black bass from the upper (Hannibal and Belleville Pool) and lower (Meldahl, Cannelton, and Smithland Pools) study pools, 2001-2003.

Small fish grow to become large fish. In an effort to predict numbers of fish entering the fishery, we are monitoring numbers of young fish. Based on our length-at-age data, these fish will enter the fishery within the next two years.

Pools with similar habitat were grouped into an upper region (Hannibal and Belleville Pools) and a lower region (Meldahl, Cannelton, and Smithland Pools) to improve sampling accuracy.

Results suggest that abundance of fish spawned in 2001 was greater than those spawned in 2000 and 2002.



## Habitat

Water levels or water stability affects reproduction and ultimately fishing success. In figure 4, red arrows highlight dramatic water level fluctuations. Stable water levels in spring 2001 enabled black bass to produce a relatively strong year class as illustrated by 2002 catch rates in figure 3.

While age-0 fish are not fully susceptible to our sampling gear, relatively few fish were captured in our 2003 samples. Fluctuating water levels in spring 2004 lead us to believe that low numbers of black bass are likely to occur in our fall samples this year as well.

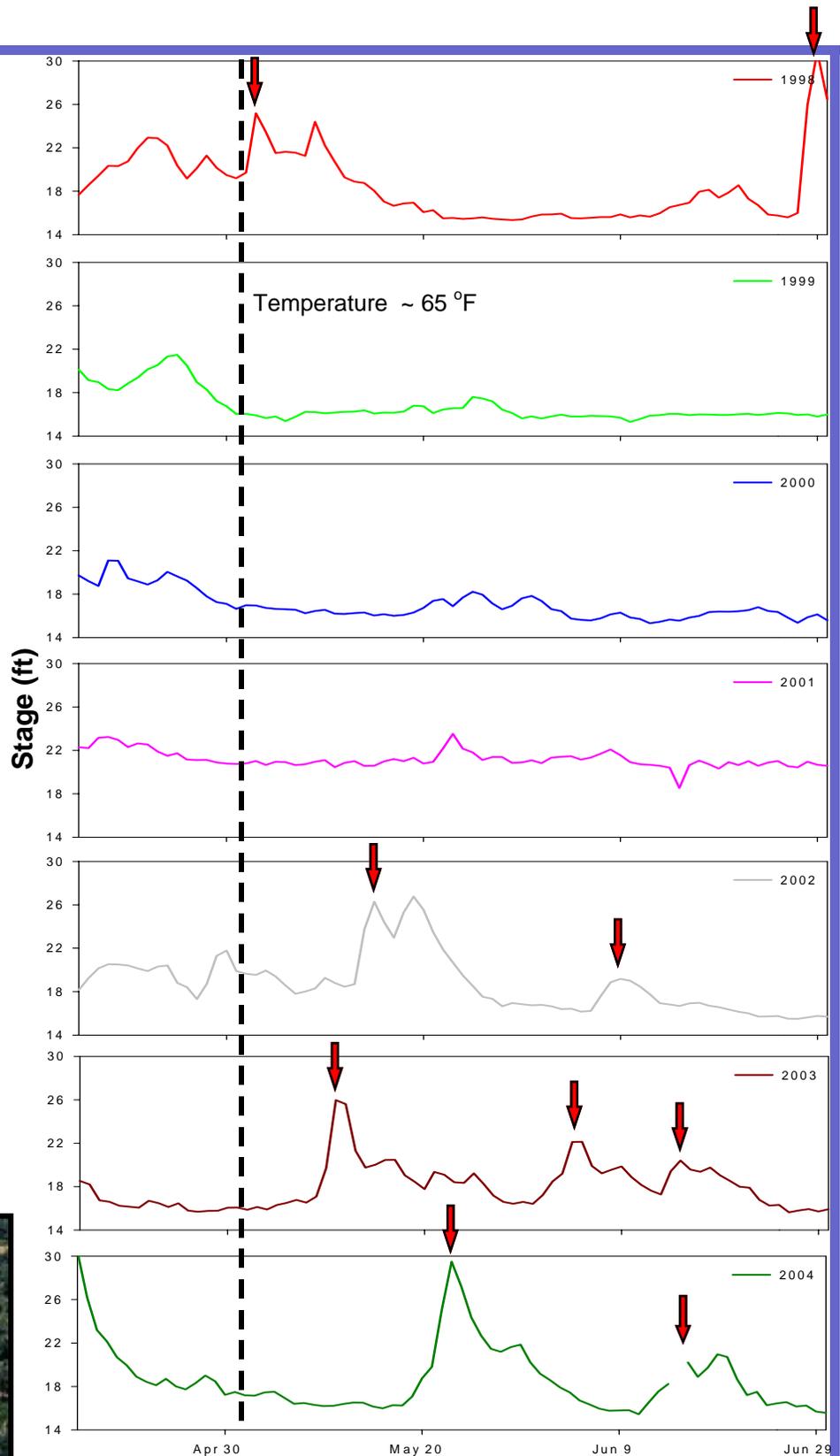


Figure 4. Ohio River water stage recorded near Marietta, OH during April 15 – June 30 for years 1998-2004. The hashed line represents the approximate date when temperatures average 65 °F (spawning temperature for black bass).

## HABITAT

Deterioration of habitat in the Meldahl Pool embayments led the Kentucky Department of Fish and Wildlife Resources (KDFWR) to initiate a study to enhance bass spawning opportunities. “Christmas Trees” and 50 supplemental spawning structures (Henley Hatcheries; Figure 5) were placed in Big Snag and Bracken creek embayments in February and March 2004 to evaluate black bass use of artificial structures, while Locust and Big Turtle creeks are being monitored as controls (Figure 6).



Figure 5. Photograph of “Henley Hatchery”.

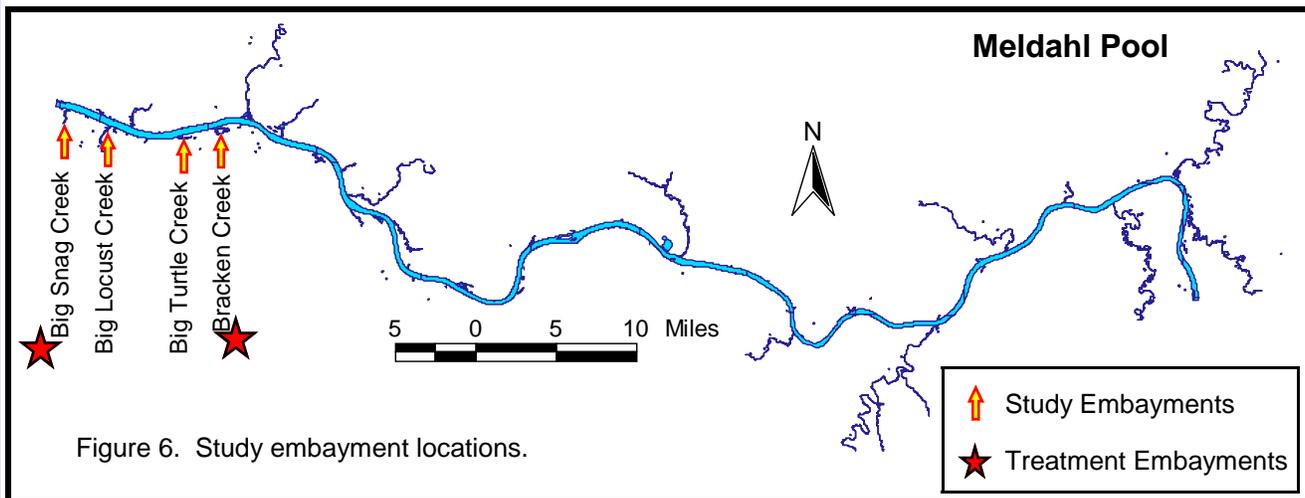


Figure 6. Study embayment locations.

High water levels in the spring lead to many spawning structures being placed in water too deep for bass to use. These structures were rearranged in late April. Some were manually cleaned in May, as vast amounts of silt had accumulated (Figures 7 and 8). To date, no activity was observed on any of the artificial spawning structures.

Largemouth bass were captured near spawning areas in late April and May by electrofishing. These fish ranged from 6 to 19 inches long (average 11 inches). Neither males nor females appeared ready to spawn when collected. High water levels during mid-April continued through May and we could not determine whether these fish successfully spawned during 2004.



Figure 7. Moving “Henley Hatchery”.

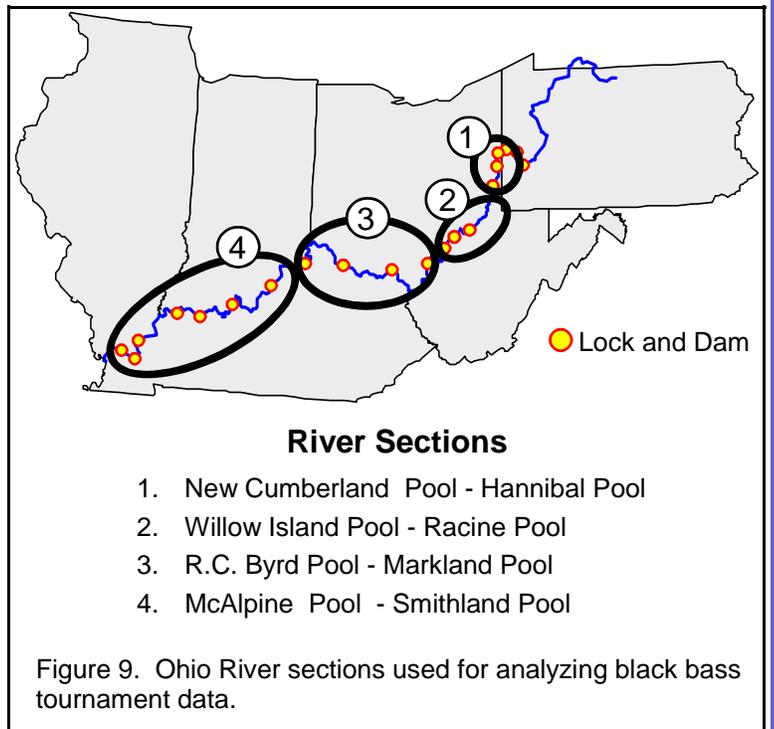


Figure 8. Silt accumulation on “Henley Hatchery”.

## TOURNAMENT RESULTS

In 1999, the ORFMT began collecting standardized black bass tournament data river-wide. This allowed states to evaluate the success of competitive angling and track populations.

Results are reported as the number of hours it took to catch a 12-inch largemouth bass, smallmouth bass, or spotted bass. Species composition is not uniform throughout the 981-mile length of the Ohio River. To allow for a river-wide evaluation, the Ohio River was divided into four sections (Figure 9).



River-wide catch rates (number of hours it takes to catch a 12-inch black bass) varied from 4.2 in 1999 to 7.1 in 2001. Generally, it took fewer hours to catch a 12-inch black bass in the upstream sections. This can be partially attributed to the presence of smallmouth bass in the upstream river, consequently the greater opportunity to catch a multi-species complex of the black basses.

Table 1. Ohio River black bass tournament results for each river section, 1999 - 2003. Number of tournaments is included in parentheses.

Location	Hours to Catch a 12-inch Black Bass (Largemouth Bass, Smallmouth Bass, Spotted Bass)				
	1999	2000	2001	2002	2003
Ohio River	4.2	4.5	7.1	5.6	4.3(213)
Section 1	3.8	3.6	6.7	5.3	3.8(60)
Section 2	3.6	5.3	8.3	4.0	5.3(63)
Section 3	3.7	5.9	7.1	8.3	3.4(26)
Section 4	6.7	5.9	7.1	7.7	4.3(64)

## ACCESS

Table 2. Ohio River access improvements and additions.

STATE	IMPROVEMENTS	NEW RAMPS
<b>West Virginia</b>	Handicapped access being added at the Williamstown, WV ramp (Belleville Pool); Other improvements have been discussed for a Racine Pool site.	
<b>Ohio</b>	Routine maintenance conducted throughout the year.	<ul style="list-style-type: none"> <li>•Plans for a ramp at river-mile 241.2 (Racine Pool) still in design phase. Progress slowed due to significant pre-historic artifact findings.</li> <li>•One ODNR grant was awarded to fund a 2-lane ramp at Ice Creek in Lawrence County.</li> </ul>
<b>Kentucky</b>	Routine maintenance conducted throughout the year.	Transfer of COE ramps to KDFWR is pending.
<b>Indiana</b>	Routine maintenance conducted throughout the year.	
<b>Illinois</b>	Routine maintenance conducted throughout the year.	Boat ramp and dock at Fort Massic State Park (near Metropolis, IL)



## SUMMARY

- Catch rates in 2002 and 2003 are directly related to upstream and downstream habitat. Smallmouth bass catch rates are higher in the upper river pools while spotted bass and largemouth bass catch rates are higher in the lower river pools.
- Growth was similar among pools in all study years. Smithland Pool black bass grow as fast as Hannibal Pool black bass. All three species reach 12 inches by their third growing year.
- Catch rates of age-1 black bass suggest that survival of young fish spawned in 2001 was greater than those spawned in 2000 or 2002.
- Ohio River black bass are in excellent condition, indicating that a good supply of food is available.

## ONGOING ACTIVITIES: 2004

- Sample black bass in the five study pools of the Ohio River.
- Monitor and analyze water monitoring data from the Belleville Pool.
- Evaluate “Henley Hatcheries” in the Meldahl Pool study embayments to determine their influence on black bass populations.
- Summarize results of largemouth bass stocking in Belleville and Hannibal Pools.
- Summarize 2004 tournament data.
- Partnering with the U.S. Army Corps of Engineers.
- Summarize results from ORMSS angler survey.
- Report university findings on ORMSS fish habitat use study.
- Report tagging results associated with ORMSS fish passage study.

