National Fish and Wildlife Foundation (NFWF) More Fish Partnership Grant

In 2008, the Cambria and Somerset Counties Conservancy(CSCC) / Cambria Somerset Authority (CSA) was awarded a $24,400 grant from NFWF's *More Fish Partnership Fund* to enhance fish habitat at three of its water supply reservoirs: Quemahoning, Hinckston Run, and Wilmore. Project partners included PA Fish & Boat Commission (PFBC), Somerset Conservation District, Cambria County Conservation District, conservation and sportsmen groups such as Stonycreek-Conemaugh River Improvement Project, Mountain Laurel Chapter of Trout Unlimited, Jenners Rod & Gun Club, Wilmore Sportsmen Club, Greater Johnstown Sportsmen Club, Laurel Run Rod & Gun Club, Dunlo Rod & Gun Club and interested citizens. The $109,100 project consisted of the $24,400 NFWF grant, $18,500 cash match and $66,200 in-kind match from project partners. The NFWF funds were used to design, construct, and install artificial habitat structures that will benefit black bass (largemouth and smallmouth bass) and other fish species in the three reservoirs.

The habitat conservation and community involvement objectives of the project were to:

1. Enhance fish habitat for black bass and other lake species in Hinckston Run, Wilmore, and Quemahoning Reservoirs by designing, constructing, and placing artificial habitat structures
2. Involve volunteers to construct artificial habitat structures; volunteers played a key role in the habitat project
3. Improve angling opportunities by enhancing fish habitat in the reservoirs
4. Form long-term partnerships that will play a vital role in conserving and enhancing Hinckston Run, Wilmore, and Quemahoning Reservoirs
5. Promote the benefits of watershed stewardship and community involvement

<u>Planning and Design</u>

Two project planning meetings were held with project partners that included topics related to: type(s) of habitat structures to be used, location of the habitat structures in each of the three reservoirs, and the coordination required to accomplish the project goals. A public meeting was also held to inform the public of the project and to gather public input on the proposed habitat improvement project at the three reservoirs.

Initially, PFBC Division of Habitat Management, Lake Section performed a survey to determine the quantity and quality of existing habitat at Quemahoning, Hinckston Run, and Wilmore Reservoirs and determined areas where fish habitat enhancement was needed and what habitat structures to use, based upon the physical characteristics of the area, fish species in the lake, and habitat enhancement logistics. The PFBC used the lake habitat assessments, input from project partners and the public to design a lake habitat enhancement plan for Quemahoning, Hinckston Run, and Wilmore Reservoirs. A lake habitat map was produced for each lake.

<u>Installation of Habitat Structures</u>

In 2008 and 2009, 13 work days were used to construct and place 517 habitat structures in Quemahoning, Hinckston, and Wilmore Reservoirs. Volunteers assisted on six of the 13 days. A total of 84 volunteers provided 434 hours of effort on those days. CSCC/CSA, PFBC, Somerset Conservation District, Cambria County Conservation District, and volunteers constructed and placed 62 porcupine cribs and 300 short vertical plank structures in the three reservoirs. The PFBC placed 140 tons of rock rubble humps and 15 felled shoreline trees in the three reservoirs. A total of 27 acres were enhanced with the 517 habitat structures in the three reservoirs. Results of the project are as follows:

Quemahoning Reservoir		60 Tons Rock Rubble Humps
		22 Porcupine Cribs
		100 Short Vertical Plank Structures
	Total =	182 Habitat Structures
Hinckston Run Reservoir		40 Tons Rock Rubble Humps
		20 Porcupine Cribs
		100 Short Vertical Plank Structures
		8 Felled Shoreline Trees
	Total =	168 Habitat Structures
Wilmore Dam		40 Tons Rock Rubble Humps
		20 Porcupine Cribs
		100 Short Vertical Plank Structures
		7 Felled Shoreline Trees
	Total =	167 Habitat Structures
Total in all three reservoirs		**517 Habitat Structures**

Fish Monitoring

PFBC Division of Habitat Management staff conducted fish surveys prior to and after the implementation of the habitat project using nighttime boat electrofishing. Shallow water areas enhanced with short vertical plank structures ("shorties") and control areas (no habitat enhancement) were surveyed in June 2009 and June 2010 (Figure 1). The areas sampled in 2009 and 2010 were at the same locations. Deep water areas enhanced by habitat structures were not surveyed due to boat electrofishing gear limitations. Quemahoning Reservoir was the only reservoir to receive both shallow water and deep water habitat structures. Hinckston Run and Wilmore Reservoirs only received deep water habitat structures. Therefore, the PFBC conducted their fish survey only at the Quemahoning Reservoir.

The black bass catch-per-unit-effort (CPUE), which is the number of fish collected per hour of electrofishing, increased dramatically in the treatment areas ("shorties") after the shorties were placed in the treatment area but decreased in the control areas (Figure 2). Black bass total CPUE in the treatment areas almost doubled from 63 bass/hr to 116/hr. Black bass total CPUE in the control areas declined from 90/hr to 68/hr. The CPUE of bass $\geq$ 12 inches and $\geq$ 15 inches also improved after the shorties were placed in the treatment area, while quality size black bass CPUEs decreased in the control areas. Based upon the initial findings, the short vertical plank structures improved the black bass relative abundance in the treatment area. Panfish also used the short vertical plank structures. Monitoring of the habitat enhancement project will continue in the future.

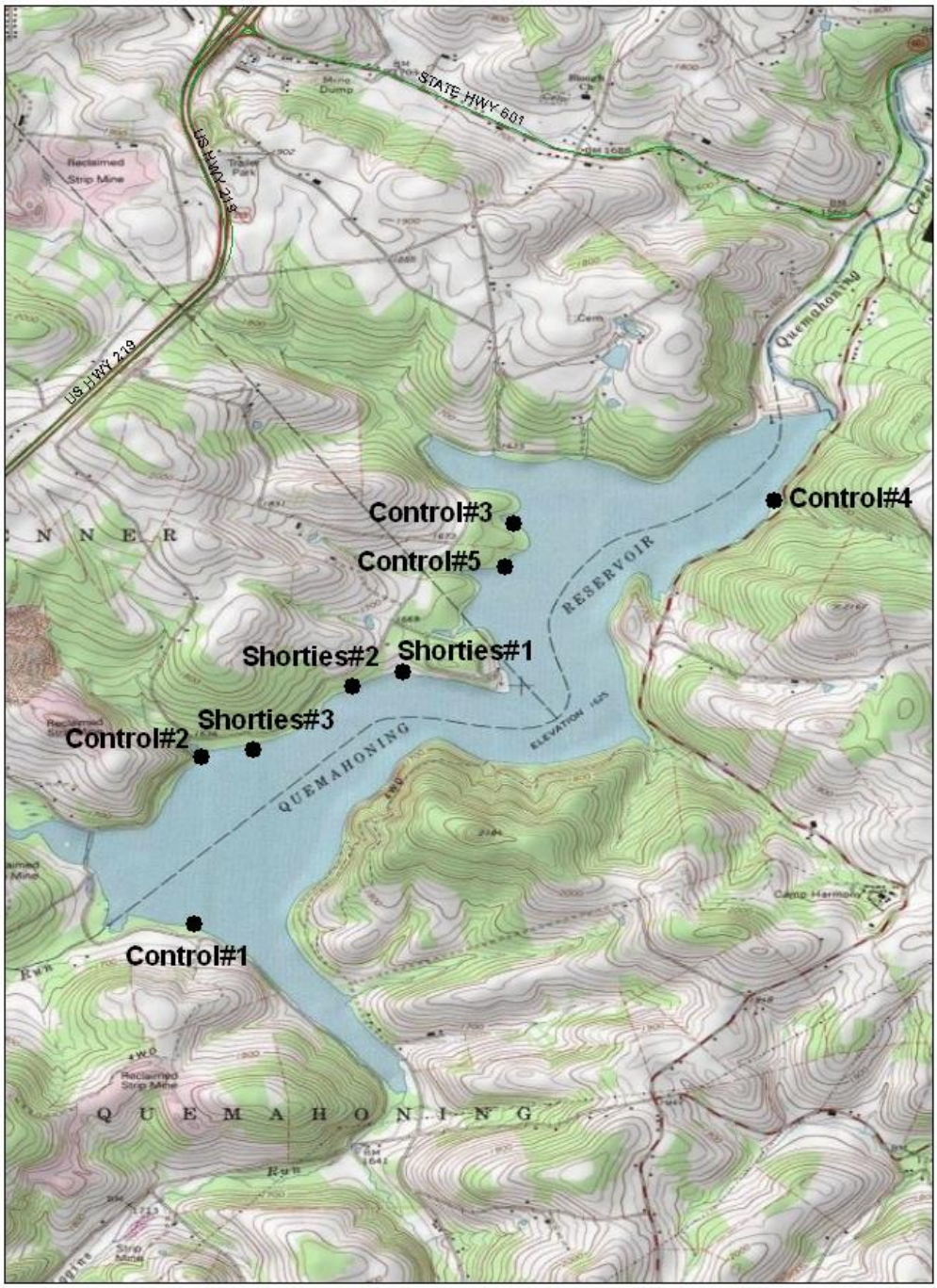

Figure 1. Nighttime boat electrofishing locations at Quemahoning Reservoir, Somerset County on June 2 and 3, 2009 and June 1 and 2, 2010.

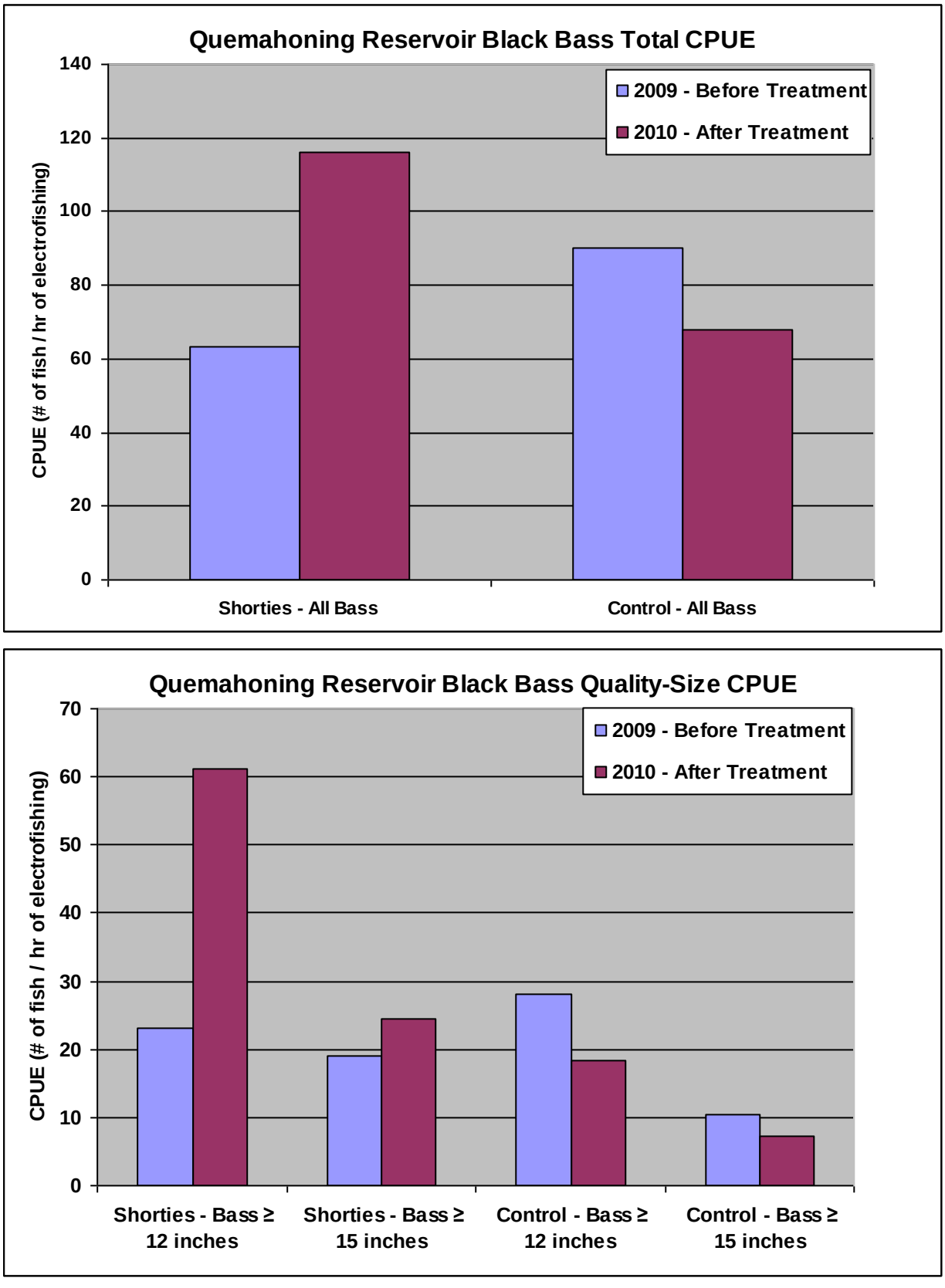

Figure 2. Quemahoning Reservoir black blass (largemouth and smallmouth bass) CPUE at the treatment ("shorties") and control sites in early June 2009 (before treatment) and June 2010 (after treatment). Short vertical plank structures ("shorties") were placed in the treatment areas in late June 2009. Control sites had no habitat enhancement.