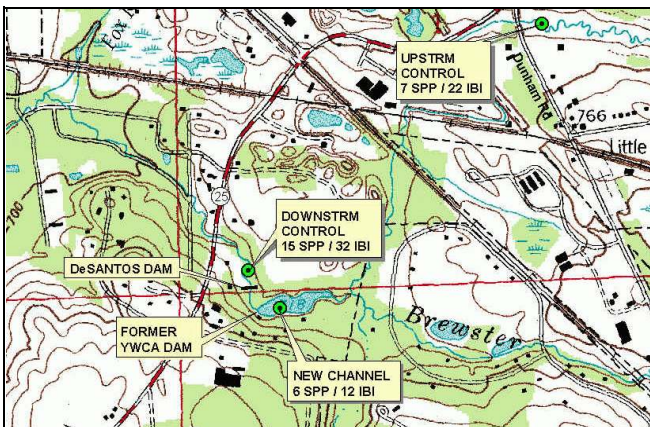


Illinois Department of Natural Resources - Division of Fisheries
Effects of YWCA Dam Removal on Fish Communities of Brewster Creek: Interim Report - January 2005

SUMMARY: Post-construction fish sampling indicates no downstream effects resulting from the YWCA dam removal. Fish were present in the newly forming channel, which still exhibited signs of instability. A small dam downstream of the removal site appears to be limiting movement of species into the restored channel.

The YWCA Dam on Brewster Creek was removed as a part of a multi-agency effort to eliminate safety hazards and restore biological integrity in the watershed. (For a complete summary of the project see <http://www.co.kane.il.us/kcstorm/brewster>) An important goal of the project was to evaluate effects of the dam removal on physical, chemical, and biological features of the stream, particularly in the downstream areas. Pre- and post-project monitoring will also provide information on project success regarding restoration of upstream biological communities. This report summarizes the interim results of fish community evaluation following completion of dam removal in February 2004.

Fish community samples were taken at 3 sites on



25 August 2004 using a backpack electrofishing unit. The downstream control site was located downstream of the DeSantos Dam, the upstream control was upstream of Dunham road; the third site was located in the new channel formed within the former lake bed, upstream of the YWCA dam removal site. The two control stations were also sampled prior to construction in 2002. Each station was approximately 450 feet in length.

Results at the control stations were similar in 2002 and 2004, which indicate no effects from the dam removal. Habitat was essentially unchanged at the downstream control in 2004. Number of species, total abundance, and Index of Biotic Integrity (IBI) were also

very similar for pre- and post-construction samples, suggesting little impact resulting from sediment movement.

Common name	DOWNSTRM CONTROL		UPSTREAM CONTROL		NEW CHANNEL
	2002	2004	2002	2004	2004
Central mudminnow	0	0	0	1	0
Grass pickerel	1	1	0	4	1
Carp	2	0	0	0	10
Golden shiner	0	9	0	0	0
Creek chub	2	7	11	6	0
Hornyhead chub	55	34	0	0	0
Striped shiner	0	3	0	0	0
Spotfin shiner	43	68	0	0	0
Bluntnose minnow	73	64	28	0	0
White sucker	2	0	3	0	0
Channel catfish	1	0	0	0	0
Yellow bullhead	3	8	3	7	2
Stonecat	17	29	0	0	0
Largemouth bass	2	3	2	1	6
Smallmouth bass	4	4	0	0	0
Green sunfish	92	57	23	19	9
Sunfish hybrid	3	9	0	0	2
Bluegill	122	36	6	0	1
Pumpkinseed	2	5	0	0	0
Johnny darter	0	3	0	0	0
Fantail darter	0	0	5	10	0
Total fish	424	340	81	48	31
Total species	15	15	8	7	6
IBI	27	32	20	22	12

Habitat in the newly formed channel consisted of well-defined riffles, pools, runs and minimal sediment. However, in some areas the substrate was loose and unconsolidated, generally becoming less stable in the upstream segment closer to the headcut. Channel instability may account in part for the low IBI score in the new channel by limiting colonization of macroinvertebrates, an important food source for the fish. Another critical limiting factor appears to be the presence of the DeSantos Dam, a small structure downstream of YWCA removal site. Stream species such as smallmouth bass, channel catfish, stonecat, hornyhead chub and other minnows totaling nine species, occurred only at the downstream control. Without connection to downstream sources, recruitment into the new channel area appears to be coming only from the upstream areas, consisting primarily of tolerant species.

Monitoring of fish communities in Brewster Creek will continue over the next few years in order to evaluate effects of the YWCA Dam removal and other planned restoration efforts such as providing fish passage at downstream dams. For more information contact: spescitelli@dnrmail.state.il.us.

