



Lower Returns of Walleyes From Trawling Than From Other Methods

Recapture of tagged walleyes (*Stizostedion vitreum*) that were caught initially in trawls was lower than recapture of walleyes initially caught by electroshocking, fyke nets, and trap nets in the Lake Winnebago, Wisconsin, system. Various studies of animal populations involve capture, marking, and release of animals for subsequent recapture. Investigators often use the most convenient or efficient method to catch animals for marking. However, if that method harms the animals, subsequent recaptures may be reduced. Comparison of returns of the marked individuals from different initial methods of capture may indicate that some capture methods reduce the recapture rate.

Walleyes Caught for Tagging by Four Methods

The Lake Winnebago system in west-central Wisconsin comprises four lakes totaling 66,850 ha and two large inflowing rivers, the Wolf and the Fox. The Wisconsin Department of Natural Resources caught and tagged walleyes in the system: 5,089 by boomshocking (220 V, DC, 1–2 amps) in 1986–91, 548 by fyke nets and trap nets in 1986–88, and 736 by trawling in 1988 (Table). The

10-m bottom trawl with a 6.7-m head rope, main bag mesh of 32 mm, and cod end mesh of 4 mm was towed for 5-min intervals in depths of 4.5–6 m.

Walleyes were tagged below the posterior end of the first dorsal fin with consecutively numbered anchor tags. Voluntary tag returns by anglers were grouped into intervals of the first year and the first 2 years after tagging (Table).

Lower Returns for Walleyes Initially Caught by Trawling

Angler returns for walleyes caught in the trawl were significantly lower ($P < 0.01$) than for fish caught by the other methods (Table). Anglers returned less than 3% of the tags from walleyes originally captured by the trawl in the first year after tagging and returned about 4% through the second year. Return rates for walleyes tagged from electroshocking, fyke nets, and trap nets were about 6 to 7% for the first year and 7 to 9% through the second year. Returns did not differ among the fish captured by boomshocker, fyke net, and trap net.

Walleyes released from trawls had a lower survival rate than those released from electrofishing, fyke nets, and trap nets. Percent returns from trawling were 43% (first year) to 48%

Research Information Bulletins (RIBs) are internal National Biological Survey documents whose purpose is to provide information on research activities. Because RIBs are not subject to peer review, they may not be cited. Use of trade names does not imply U.S. Government endorsement of commercial products.

(2 years) of the mean percent return rate of the other three kinds of gear.

We have had little success finding comparable information on this subject in the literature and would appreciate readers informing us of such information.

For more information contact:

D. W. Coble or Steve Czajkowski
 Wisconsin Cooperative Fishery Research Unit
 College of Natural Resources
 University of Wisconsin
 Stevens Point, WI 54481
 (715) 346-2178

Table. Number of walleyes (*Stizostedion vitreum*) tagged and number and percent recaptured by anglers that were initially caught by one of four methods in the Lake Winnebago, Wisconsin, system, March 1986 to November 1991.

Capture method	Number tagged	Recaptured in 365 days	Percent of tagged	Recaptured in 730 days	Percent of tagged
Boomshocker	5,089	310	6.09	374	7.35
Fyke net	438	32	7.31	39	8.90
Trap net	110	7	6.36	9	8.18
Trawl	736	21 ^a	2.85	29 ^a	3.94
Total	6,373	370		451	
Mean			5.81		7.08

^a Significantly lower (χ^2 test, 1 df, $P < 0.01$) than the recaptures of the other three methods combined.