



New River Walleye Tagging Study 2008-2012 Popular Report

Introduction

Walleye are stocked and managed in part of the upper New River, from Fries Dam downstream to Claytor Lake Dam. This 54-mile section of the upper New River has been intensively managed for walleyes since 2000 in an effort to restore the native New River walleye stock to a self sustainable size. More than 1,000,000 New River stock walleye have been stocked into this section of the river in the past decade and regulations restricting harvest size, time of year, and creel numbers have been established to maintain a robust walleye population. In 2008, a tagging study was undertaken to better understand how the walleye population was being used by the angling public and determine how many walleye were being caught annually. The study lasted for five years and was completed in 2012. This report summarizes the annual tagging results collected from 2008-2012 and reports on trends in angler usage of the walleye fishery.

Study Design and Implementation

Plastic anchor tags stating, "REWARD VDGIF", worth \$20 each were attached to adult walleye beginning in January 2008. Each tag had an address printed on the side of the tag so anglers who caught a fish with a tag could mail it in for a reward. At the beginning of the study, flyers about the study and the rewards offered for the return of the tags were posted at access sites and boat ramps along the upper New River and placed in local fishing supply stores and bait shops. Information about the study was also posted on the VDGIF web site, along with contact information. From January 2008 to March 2012 a total of 900 walleye were tagged and released. Walleye tagging was completed in January through March of each year, so the fish would be available for anglers to catch during the spring season. Walleye were tagged in four general geographic areas of the river. Fosters Falls (river km 288) received 62% of the total tags, Ivanhoe (river km 303) received 35% of the total tags, Austinville (river km 297) received 2% of the total tags and Allisonia (river km 270) received 1% of the total tags. The following map (Figure 1) shows the study area and locations of interest, while the following chart (Figure 2) shows the numbers and locations of walleye tagged by year in the four tagging locations.

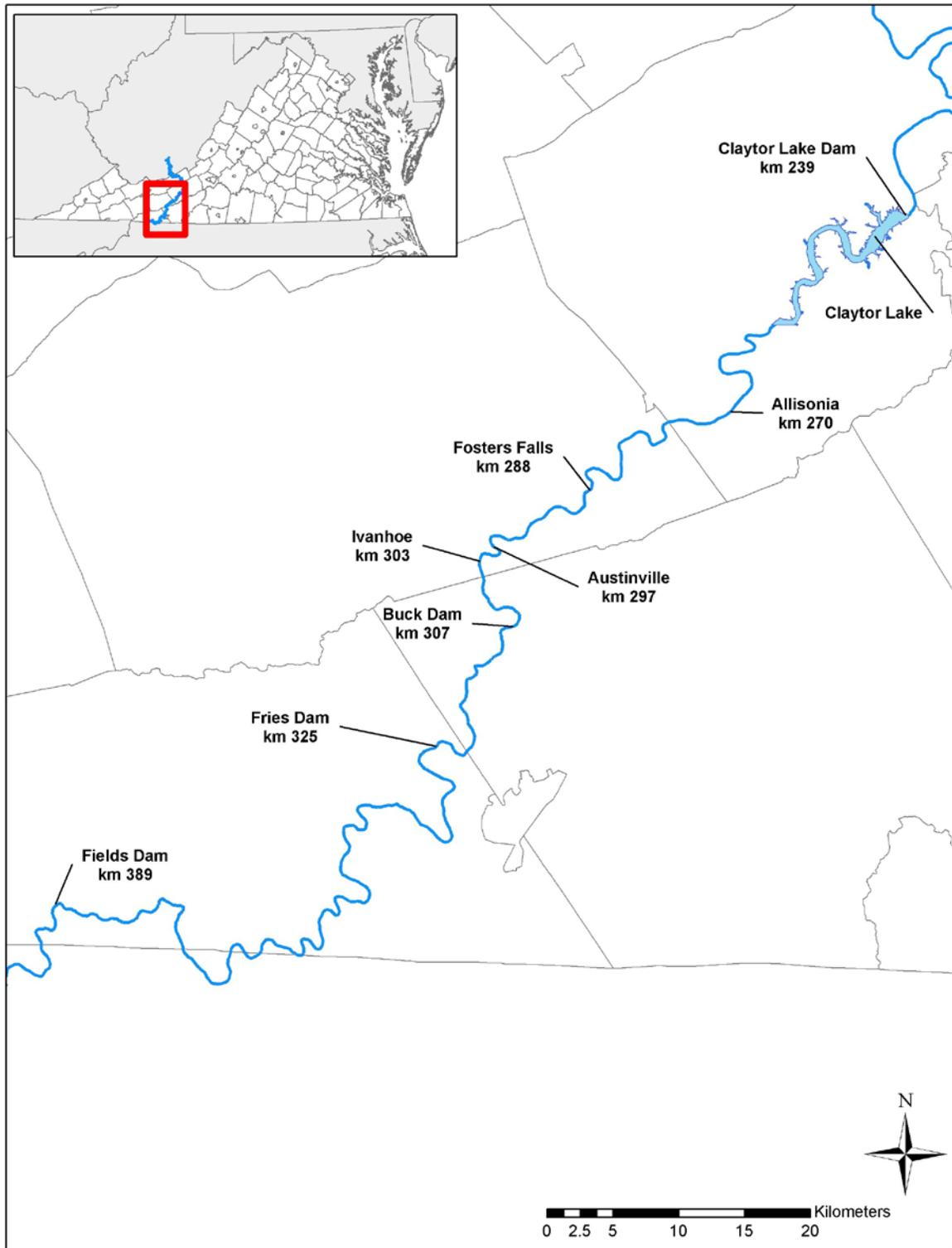


Figure 1. Claytor Lake, upper New River, and various locations with river kilometers

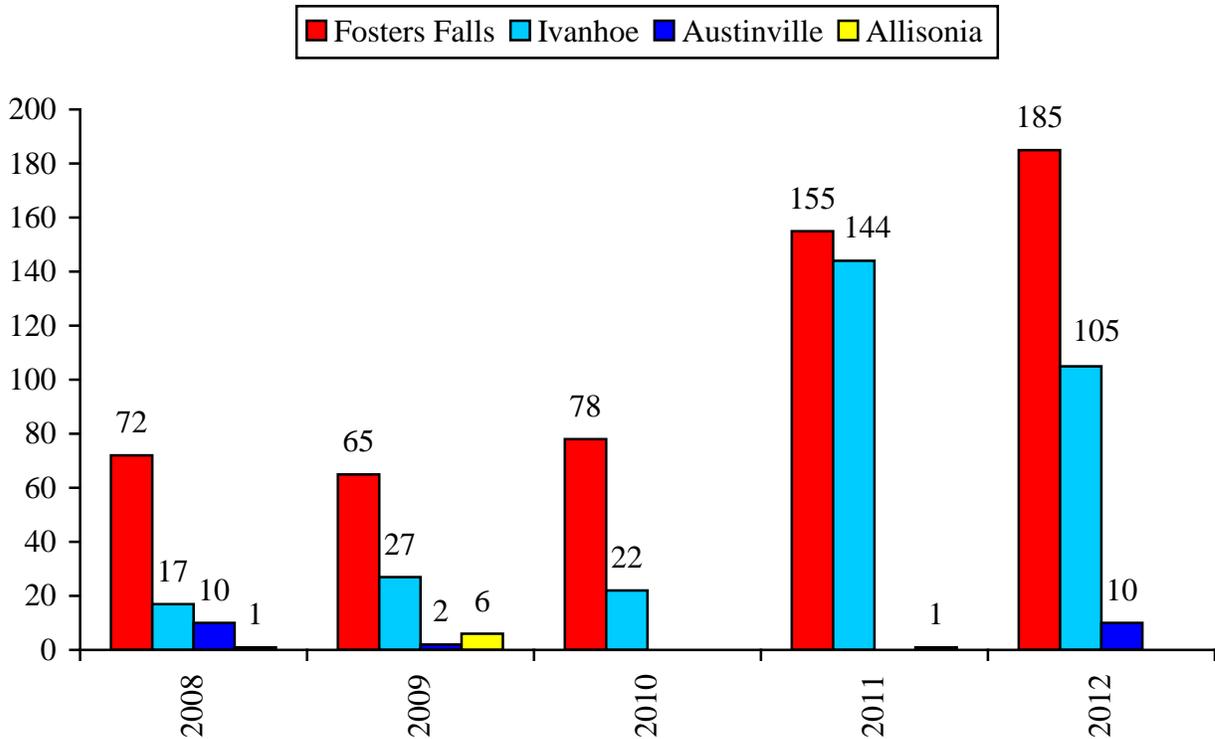


Figure 2. Numbers and locations of walleye tagged 2008-2012

In an effort to measure tag loss, 90 of the 900 walleye tagged (every tenth fish tagged) were given a second tag, meaning the double tagged walleye were worth \$40 if anglers sent in both tags. With 10% of all walleye double tagged, it was assumed that if an angler returned only one tag out of the two then there must have been tag loss. This method was used each year for the entire length of the study to generate an average tag loss for the study period.

To measure the amount of tags not returned by anglers, (non-response rate), a total of 134 self-addressed post cards were handed out to anglers fishing in the study area during the five year study. The post cards contained information about the study and stated that a \$20 reward would be given to the angler if they returned the card. When the cards were handed out the anglers were verbally informed about the study and told about the reward for sending in the card. It was assumed that the percentage of people who did not return the card would most likely represent the same percentage of people who did not return tags when they caught a tagged fish.

Anglers who returned tags were asked to provide information about when and where they caught the tagged walleye. They were also asked if they kept or released the tagged walleye, whether they were specifically targeting walleye, and if they had caught other walleye on the fishing trip. When anglers failed to provide the required information they were contacted by VDGIF biologist and asked for the catch information. Anglers who returned tags or survey cards generally received a \$20 check in the mail from the Commonwealth of Virginia within 2-3 weeks of mailing in the tag.

Study Results and Discussion

Anglers returned tags from 147 walleye caught during the five year study period from 2008-2012. The majority of these walleye (80%) were caught during the months of February-April of each of the study years. The remaining (20%) were caught during the May-January period. The February-April period is the peak spawning time for New River walleye and they are congregated in different areas of the river. The following chart shows the general locations of where the 147 walleyes were caught by anglers during the study. As indicated in the chart below, the majority of tagged walleye caught

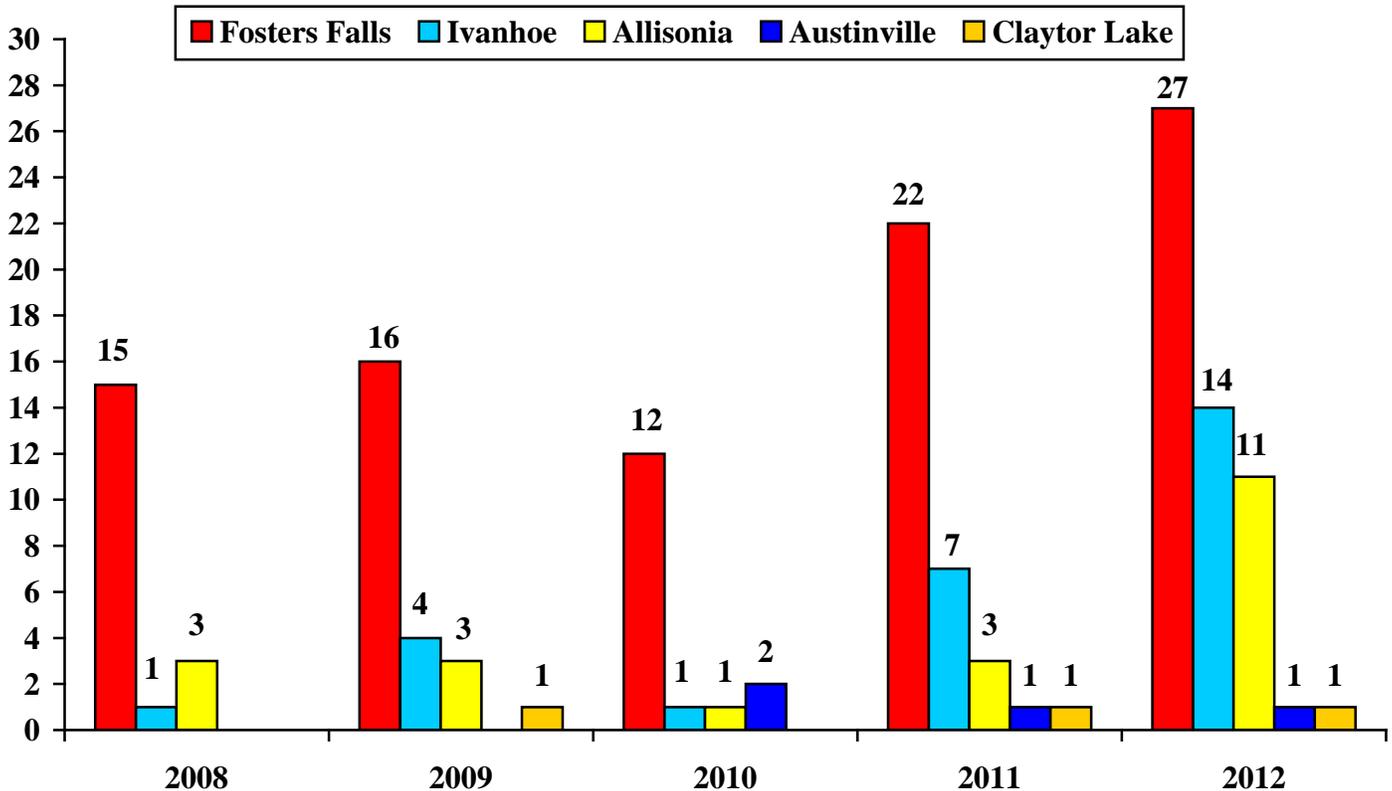


Figure 3. Tag returns from various locations 2008-2012

by anglers came from the Fosters Falls area 63%, followed by Ivanhoe at 18%, Allisonia at 14%, Austinville at 3%, and Claytor Lake at 2%. One hundred eighteen tags returned were from male walleye with an average size of 18 inches. Twenty nine tags returned were from female walleye with an average size of 21 inches. Of the 147 walleye tags returned, anglers reported harvesting 25 (17%) and releasing 122 (83%). Our records indicate that 4 of the 25 walleye reported as harvested were not legal size to be kept at the time the fish was caught. Ninety-four percent of anglers who returned tags were targeting walleye and only 6% reported catching tagged walleye while fishing for other fish like smallmouth bass. Anglers who returned tags also reported that 82% of the time they caught a tagged walleye, they also caught other walleyes on the same trip, indicating anglers were having good success fishing for walleye on the upper New River.

Some tagged walleyes lost their tags in the river environment, and tag loss was estimated to average 9% over the five year study period. Not all anglers who caught tagged walleye returned the tags. We attempted to measure this by handing out 134 self addressed post cards to anglers fishing during the study period and see how many were returned. We estimated a 75% return rate. By applying this return rate annually to the exploitation rate that has been adjusted for tag loss we come up with an adjusted exploitation rate for each year of the study. This final adjusted exploitation rate represents the amount or percent of walleye caught by anglers for each year of the study. This allows us to approximate the amount of “catch pressure” anglers put on the walleye population each year and by repeating this over five years we are able to calculate an average exploitation rate. The graph that follows shows the percentage of tags returned and the adjusted exploitation rate that includes tag loss and non-response rate which

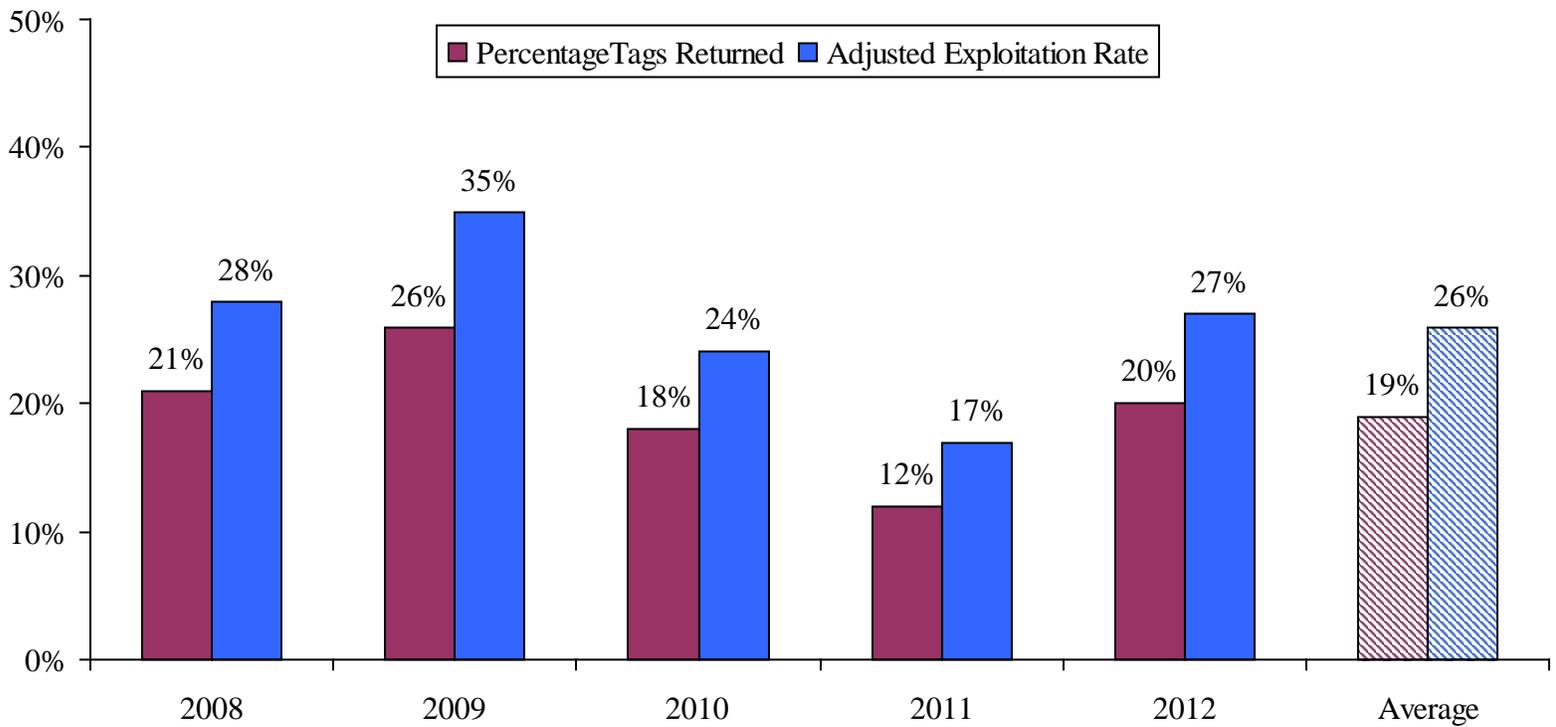


Figure 4. Percentage of tag returns and adjusted exploitation rate from 2008-2012

was measured at 25% annually. The average adjusted exploitation rate equals 26%. This rate offers a lot of information about the use of fishery and leads to better management of the upper New River walleye population. If we applied this rate to the entire population we could conclude that anglers could catch up to 26% of the adult population in a given year. However, this does not mean that the entire 26% caught leave the population. As noted above, anglers reported only harvesting 25 of the 147 walleye caught that had tags. This shows that many anglers are practicing catch and release and only taking a few of what they catch.

Management Implications

Biologists will use these study results to improve and sustain the walleye fishery in the upper New River. Prior to the study managers could only guess about exploitation. There is now a measured percentage of fishing usage or exploitation associated with this walleye population. With exploitation rates approximately 26% annually, managers will need to insure that young walleye are recruiting to the adult population every year. This can be done by supplemental stocking and population monitoring. Additionally, anglers reported catching 80% of all the tagged walleye during the months of February-April during the peak spawning period. This could present a problem if anglers were to harvest the larger females before they could reproduce. With that in mind, managers changed the walleye size and creel regulations beginning in 2011, about half way through the study. Prior to 2011, anglers could take 5 walleye a day that were 20 inches or larger. In 2011, the regulation was changed to address the focused fishing pressure and protect the spawning stock. The new regulation requires anglers to release any walleye caught in February-May that was 19 -28 inches long and only to keep 2 walleye during this period that are under 19 inches or over 28 inches. After the peak spawning period, when the walleye are less congregated, anglers can keep 5 walleye per day that are 20 inches or larger. This study also indicates that there is an increasing number of anglers that want to fish for walleye. Anglers reported that 94% of the time that a tagged walleye was caught they were fishing specifically for walleye. Anglers are coming to the river just to catch walleye, and this fishery is becoming more of an interest to the angling public, which means managers need to focus more time to this resource. Finally, biologists were able to make contact with many walleye anglers and develop relationships that will allow for the exchange of information leading to the best management practices for this fishery.

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