

Anglers' Willingness to Pay for Recreational Catch Improvements in the Cape Fear River: Summary and Implications for Policy

Peter W. Schuhmann
Department of Economics and Finance, Cameron School of Business
University of North Carolina Wilmington

The report "Anglers' Willingness to Pay for Recreational Catch Improvements in the Cape Fear River" summarizes results of a study of recreational angler preferences, experience, willingness to pay for catch improvements and willingness to make a one-time donation to a special fund dedicated to improving the ability of migratory species to reach suitable spawning habitat in the Cape Fear River. Understanding the value of catch improvements in the area of the Cape Fear River upstream of the Cape Fear Memorial Bridge can help inform decisions regarding investments to improve access to spawning habitat by migratory species, including the modification of existing locks and dams located north of Wilmington, NC.

A questionnaire was designed and mailed to a random stratified sample of NC recreational fishing license holders in early 2020, eliciting a variety of information from respondents, including demographic characteristics (e.g., age, gender, education, marital status, income), fishing experience, preferences, fishing practices, and satisfaction with various aspects of fishing on the Cape Fear River. Anglers indicated the factors that would cause them to take more recreational fishing trips upstream of the Cape Fear Memorial Bridge and were asked to complete a choice experiment designed to estimate respondent preferences for different aspects of recreational fishing on the Cape Fear River and willingness to travel to fish on the Cape Fear River under different recreational fishing conditions. Respondents were also asked if they were willing to donate to a special fund administered by Cape Fear River Watch (CFRW) dedicated to improving the ability of migratory species to reach suitable spawning habitat. Approximately 400 of 8,900 successfully mailed surveys were returned and analyzed.

Key Findings

Participation in recreational fishing on the Cape Fear River upstream from the Cape Fear Memorial Bridge

- Only 17 percent of the sample indicated that they have fished on the Cape Fear River upstream from the Cape Fear Memorial Bridge in the past 12 months
- Approximately 75 percent of anglers in the sample would be willing to take more recreational fishing trips on the Cape Fear River upstream of the Cape Fear Memorial Bridge each year if conditions were improved
- The most important factors that would induce this increase in participation were knowing that it was safe to eat the fish that were caught, being able to catch more fish, being able to access fishing opportunities closer to home, and if the water were cleaner and clearer

Willingness to donate to a special fund administered by Cape Fear River Watch (CFRW) dedicated to improving the ability of migratory species to reach suitable spawning habitat

- More than 53 percent of survey respondents were willing to donate some amount of funds to improving the ability of migratory species to reach suitable spawning habitat
- Of those not willing to donate, only 6 percent of respondents suggested that they did not believe that modifying locks and dams would improve fish stocks and fishing quality

- Only 2 percent of respondents who were not willing to donate suggested that they did not believe natural resources in the Cape Fear River need additional protection
- Lower bound estimates of the average amount that respondents were willing to donate range from approximately US \$18.00 to US \$21.00
- Applied to ~136,000 holders of inland or combined coastal/inland recreational fishing license holders in NC suggests donations to CFRW could total between US \$2.5 and US \$2.8 million
- Applied to ~50,000 recreational license holders who live in one of the nine NC counties that contain the Cape Fear River suggests donations to CFRW could total more than \$900,000

Results from the choice experiment

- Recreational anglers have strong preferences for avoiding fish consumption advisories and catching more fish and are willing to travel/pay more for higher quality fishing trips
- Of the attributes examined (catch of small striped bass, catch of large striped bass, catch of shad, being able to keep the striped bass that were caught and the presence of a fish consumption advisory), anglers' willingness to pay was highest for avoiding fish consumption advisories
- Estimates of anglers' average willingness to pay for each additional large striped bass, small striped bass and shad caught per trip are roughly \$40, \$20, and \$9 respectively
- Average willingness to pay to be able to legally keep up to two striped bass per trip and to avoid fish consumption advisories are approximately \$100 and \$250 respectively
- The presence of restrictions on the number of striped bass that can legally be kept diminishes the marginal satisfaction and willingness to pay for fish caught above the legal limit

Simulations of changes in recreational fishing participation

- Even when combined with marginal improvements in catch rates, the presence of fish consumption advisories is expected to have negative impacts on recreational fishing participation
- Anglers' aversion to low quality conditions appears stronger than their preferences for high quality conditions, implying that the negative impacts of reduced fishing quality on anglers' willingness to participate will be larger in magnitude than the positive impacts of improved quality

Policy Implications

- Soliciting donations for from licensed recreational anglers in the Cape Fear Region could result in substantial revenue for habitat improvement
- Habitat improvements that lead to higher catch rates are expected to increase participation (fishing frequency) by recreational anglers on the Cape Fear River north of the Cape Fear Memorial Bridge and create positive economic impacts in the region
- The effects of higher catch rates on participation will be completely or partially offset if fish are not considered safe to eat, as indicated by the presence of fish consumption advisories
- Economic gains from improved habitat and fishing quality are less likely if fish are not safe to eat
- Further losses in fishing quality (especially as related to water quality and fish consumption safety) are likely to result in decreased recreational fishing, loss of economic value and diminished economic impacts in the region
- Maintaining status quo conditions or improving quality is essential to preserving current economic value and economic impacts