

RECREATIONAL FISHERIES

CONTRACT NUMBER C004005



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**ASSESSMENT OF HUDSON RIVER
RECREATIONAL FISHERIES**

CONTRACT NUMBER C004005

Prepared for

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ENVIRONMENTAL CONSERVATION**

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and

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FOREWORD AND ACKNOWLEDGMENT

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EXECUTIVE SUMMARY

The Hudson River estuary recreational fishery was surveyed from March 2001 through March 2002 to determine the amount of angler effort that occurs, when and where that effort was distributed, the kinds of fish that were caught and kept and where catches occurred, and the characteristics of the fishery participants. Several species targeted by anglers, including American shad, river herring, American eel, and striped bass, are managed by Interstate Fisheries Management Plans that require regular reporting of harvest (mortality) data. The survey was designed to acquire such information about each of these species, as well as all other species available to sport anglers. Foremost among angler characteristics of interest was fish harvest relative to Hudson River estuary contaminant issues.

The tidal Hudson River and tidal tributaries from George Washington Bridge to Troy Dam comprised the survey area. Separate survey designs assessed the “open water” fishery from mid-March through November, and the winter fishery from December through mid-March. A survey design that combined fixed-wing aircraft counts of shore anglers and fishing boats with angler interviews at nearly 200 access points estimated effort, catch, harvest, and angler attributes during the open water period. Count flights were allocated evenly among five 6 to 9 week “seasons” (Early and Late Spring, Early and Late Summer, and Fall) and randomly by daytype and from among four flight paths to describe angler distribution and develop precise effort estimates. Ground interviews were allocated among access sites within three river “sections” according to expected and observed use and randomly between daytypes to gather comprehensive catch and angler attribute data. A roving-roving ground-based design with randomly chosen travel routes estimated the same parameters for the winter fishery. Additional survey components estimated effort, catch, harvest, and angler attributes for night fishing and the tributary fishery for river herring, plus tournament fishing for striped bass and black bass. A follow up mail survey acquired data to estimate angler expenditures.

Overall effort plus catch, harvest, and angler attributes were determined from count flights combined with interviews of 4,825 anglers from mid-March through November. Fifteen to 25 counting flights occurred each season. Angler distribution during the spring mirrored the upriver movement of striped bass. Early Spring angling by boat and shore anglers was focused in the survey reach south of Bear Mountain Bridge. Late Spring boat angling occurred mainly north of the Mid-Hudson Bridge, whereas shore angling continued south of Bear Mountain Bridge and was also consistent at Troy Dam. Fishing activity in Summer and Fall largely reflected boat anglers seeking black bass in the estuary north of the Mid-Hudson Bridge, and shore anglers seeking catfish, bluefish, and blue crabs south of Bear Mountain Bridge.

Angler effort from mid-March through November was estimated at 446,621 angler-hours, or 86,622 trips. Spring effort (mid-March to June 15) accounted for 78% of angler-hours and trips. Boat fishing represented 72.6% of total estimated effort, and was focused north of the Bear Mountain Bridge. Shore-based fishing predominated south of the Bear Mountain Bridge. Anglers caught an estimated 212,426 fish representing 35 species and harvested 44,479. More than two-thirds of fish caught and 63% of fish harvested occurred in spring. An estimated 45,689 striped bass, 34,778 river herring, and 19,772 American shad were mostly or entirely caught in the spring. Few American shad were kept, but 12,235 river herring and 7,229 striped bass were harvested. Largemouth and smallmouth bass, blue crabs, white catfish, and bluefish were caught primarily in summer and fall. More than 99% of largemouth bass and smallmouth bass caught were released. Other species for which harvest was more of a preference included blue crabs, white catfish, and bluefish.

Striped bass harvested by spring tournament anglers were larger (mean length = 836 mm TL) than those harvested by other spring anglers (781 mm TL). Fourteen age classes were represented in the striped bass harvest, with two age class peaks. Ages 5 and 6 (pooled) and Age 9 formed 28% and 18%, respectively, of all striped bass harvested in 2001. Lengths of black bass caught were primarily determined from tournaments. The modal lengths of largemouth bass retained for weigh-ins were 382-432 mm TL (15-17 in) compared to 305-355 mm TL (12-14 in) for smallmouth bass. Age groups 5, 6, and 7 dominated both bass species brought to weigh-in. Most blue crabs harvested were 128-177 mm (5-7 in) carapace width.

Overall Hudson River shore angler catch-per-unit-of-effort (CPUE: 0.69 fish/h) exceeded that of boat anglers (0.44 fish/h), and the total HPUE (harvest-per-unit-of-effort) of shore anglers (0.22 fish/h) was more than 10 times that of boat anglers (0.02 fish/h). Catch and harvest rates for individual species were determined for the primary targeted species. Although 19 species or species groups were targeted by Hudson River anglers, more than two-thirds of anglers interviewed sought black bass or striped bass, which accounted for 72.7% of all fishing trips.

Targeted striped bass CPUE was higher for shore than boat anglers (0.260 vs 0.148 fish/h), however targeted HPUE was higher for boat anglers (0.035 vs 0.028 fish/h). The targeted CPUE of largemouth bass (0.298 fish/h) and smallmouth bass (0.260 fish/h) by the predominant boat fishery was comparable between species; HPUE of either species was negligible. Among other species sought by boat and shore anglers, CPUE was highest for American shad and blue crab, although only the HPUE for fishers seeking blue crabs was substantial.

New York residents formed 71.2% of the anglers interviewed. Although out-of-state anglers were rare north of Kingston in the spring, they comprised nearly 62% of anglers in this reach during summer and fall due to pursuit of black bass during tournaments. Less than three out of five anglers interviewed possessed a New York license, but the proportion of licensed boat anglers (81%) greatly exceeded that of shore anglers (32%), primarily due to license requirements by black bass tournaments. Hudson River anglers were predominantly (76%) Caucasian. The next two largest groups, Hispanic anglers (9%) and African-American anglers (7%), mainly fished south of the Bear Mountain Bridge.

Recreation was the main purpose of fishing trips seeking most species. Food was the main purpose of trips seeking only blue crabs and catfishes, but was secondary among anglers targeting striped bass, bluefish, and carp. A high percentage of anglers that had harvested a variety of species intended to eat their catch. In contrast, more than 80% of black bass anglers fished the Hudson River to participate in or practice for tournaments where all fish were released.

Angler awareness of fish consumption advisories resulting from contaminant issues was higher north of the Bear Mountain Bridge (95%) than south of the bridge (62%). The discrepancy was mainly due to New York City residents that tended to fish primarily south of the Bear Mountain Bridge.

Striped bass tournaments in spring and black bass tournaments in summer and fall were popular with Hudson River anglers. At least nine striped bass tournaments were held over three weekends in May, three of which attracted 200-300 entrants. We documented at least 67 black bass tournaments during summer and fall. Most were small local events with 20 or fewer participants but larger regional events attracted up to 288 anglers. The Dutchman's Landing ramp in Catskill and Charles Rider Park north of Kingston hosted most tournaments. Informal tournaments targeting catfish were also identified. The striped bass fishery also stimulated a spring charter boat fishery with 30 to 40 boats, as well as fishing by one party boat.

Night fishing and herring fishing in tidal Hudson River tributaries represented smaller fisheries with mainly local participation. Night fishing effort estimated from late April through June accounted for 12,238 angler-hours and 3,098 trips but the estimate was imprecise. Most night anglers sought striped bass, but American eel formed most of the catch. Estimated effort for river herring in tributaries was 4,061 angler-hours and 3,442 trips but both estimates were imprecise. Estimated herring harvest by the tributary fishery ranged from 17,300 to as many as 38,539 fish.

Winter fishing on the lower Hudson River estuary occurred mainly from Piermont Pier and bulkheads at several sites in Palisades Park, New Jersey. Large tributary mouths supported winter fishing in the upper estuary from Kingston to Catskill. Estimated effort for the December to mid-March period was 12,539 angler-hours during 5,915 trips, mostly occurring in the lower estuary. Most of the winter catch occurred in upper estuary tributaries and consisted primarily of yellow perch, although eight species were caught. Lower estuary anglers caught striped bass throughout the mild winter of 2001-02, and also caught white catfish as spring approached. The winter fishery for Atlantic tomcod in the lower estuary failed to develop.

Hudson River anglers spent an average of \$76.72 per person per day. Black bass anglers and non-residents spent the most per person per day, mostly in Hudson Valley counties. Expenses for these angler groups were highest at gas stations/mini-marts, and for lodging and restaurants. In comparison, resident anglers or those seeking striped bass or other species spent less per day, and most of their expenditures occurred at sporting goods, boat/marine, or grocery stores.

In conclusion, the survey documented that the availability of spawning striped bass in spring and consistent black bass fishing in summer through fall stimulated most angling effort in the Hudson River estuary. However, a wide variety of smaller fisheries occurred, some focused on anadromous species such as American shad and river herring in the spring, others such as catfish and carp occurring throughout the year, and still others for blue crab and bluefish mainly in summer and fall. Estimated fishing effort in spring 2001, the largest proportion of annual effort, was less than the amount of effort estimated in spring 1997, possibly due to poor weather in spring 2001, or other unknown factors. The preponderance of black bass tournament fishing in the upper estuary confirmed previous observations. Black bass tournaments were actively promoted and delivered substantial, direct economic benefits to Hudson Valley economies.