



**Final Report**

**Volume I**

**THE DELAWARE RIVER**  
**CREEL SURVEY 2002**

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## **FOREWORD**

This report has been prepared by Versar, Inc. to present results of the 2002 creel survey conducted from March 17 through October 2002, under Contract No. FP22010046 (Delaware River Creel Survey) from the Pennsylvania Fish and Boat Commission, on behalf of the Delaware River Basin Fish and Wildlife Management Cooperative. The Delaware River Basin Fish and Wildlife Management Cooperative is an organization of resources agencies whose charge is to cooperatively manage the fish and wildlife resources of the Delaware River Basin. Cooperative member agencies include: the Pennsylvania Fish and Boat Commission, the New Jersey Department of Environmental Protection Division of Fish and Wildlife, the Delaware Department of Natural Resources and Environmental Control Division of Fish and Wildlife, the New York Department of Environmental Conservation, United States Fish and Wildlife Service, and the National Marine Fisheries Service.

The Pennsylvania Fish and Boat Commission, the New Jersey Department of Environmental Protection Division of Fish and Wildlife, the Delaware Department of Natural Resources and Environmental Control Division of Fish and Wildlife, and the New York Department of Environmental Conservation developed technical specifications and provided funding for this assessment initiative. The United States Fish and Wildlife Service, and the National Marine Fisheries Service provided valuable administrative and technical guidance. We acknowledge all Cooperative member Agencies for their administrative, technical, and financial contributions and recognize the National Park Service and the Delaware River Basin Commission for their valuable Cooperation.



## ABSTRACT

An access point survey in conjunction with an aerial effort survey was used to estimate effort, catch and harvest of American shad, hickory shad, river herring, striped bass, and other species targeted by anglers in the Delaware River during 2002. The study area extended from the Interstate 295 Delaware Memorial Bridge to Downsville, NY. Weekly flights were conducted from March 17 through October to count anglers, following a probability sampling design, with inclusion probabilities for the daily flight intervals being linked to the expected distribution of angler effort. Catch and harvest rates were estimated from 2,353 completed trips based on interviews of anglers at a random sample of access points over time in the tidal and non-tidal portion of the river. Precise estimates of total catch and harvest by species were obtained by expanding the respective catch and harvest rates to the total effort estimated from the aerial survey. We estimated that 120,042 angler trips took place on the Delaware River during the total study period, with close to 80,000 trips being in the non-tidal portion of the river. An estimated 35,281 American shad, 43 hickory shad, 7553 river herring, and 36,328 striped bass were caught during daytime in the total study period. Catch and effort at night was inconsequential compared to daytime estimates for most species. However, an estimated 4,454 striped bass were caught at night during the total study period, exclusively in the tidal river. A catch-and-release fishery dominated for most species. The harvest rates were low for American shad (19%), hickory shad (0), and striped bass (1%), but substantial for river herring (65%). Results show a similar catch rate for American shad but a decline in the total catch as compared to surveys in 1986 and 1995, resulting from a reduction in fishing effort.



## EXECUTIVE SUMMARY

The objectives of this survey were to determine the amount of recreational angler fishing effort that occurs on the Delaware River from mid March through October 2002, when and where it occurs, the species and numbers of fish that are caught and released, and the species and numbers of fish kept and harvested. American shad, hickory shad and river herring (which are managed in accordance with an Interstate Fisheries Management Plan), as well as striped bass received special attention, but the survey was designed to provide information on all species pursued and caught by anglers. The survey area included the tidal and non-tidal portions of the river, and extended from the Interstate 295 Delaware Memorial Bridge to Downsville, NY. To achieve the most precise and unbiased estimates, we designed and implemented a statistically rigorous and innovative survey that combines the use of airplanes to estimate the number of anglers that fish on the river, and interviews of anglers intercepted at a wide range of access sites along the river to gain data on fish catch and harvest. Estimates of the number of fishermen who are fishing at a given time were made from regular counts of fishermen that fish from boats and shore on the river during airplane flights over the river. Regular weekly flights were conducted on randomly selected days, alternating between a weekday and a weekend day, and during random time intervals within each selected day. A limited number of additional flights were conducted during the time of day with expected peak angler effort to enhance the coverage during the peak shad run in the non-tidal river. In the access survey component, estimates of the amount of time fished, the number of fish caught and the number of fish kept on average by each fisherman were made by interviewing fishermen after they had completed their fishing trips. To ensure representative estimates over time and space, the interviews were conducted by creel survey agents at access points along the river that were randomly selected, on days and times of day that were also randomly selected.

A comprehensive list of 82 access sites (primarily public) along the river were identified with input from the Delaware River Basin Fish and Wildlife Management Cooperative members and included in the survey. Based on information from prior surveys and from fisheries workers from the agencies involved, a majority of the anglers used these access sites to enter the fishery. Only a small proportion of anglers are believed to access the fishery from private docks or by walking to the water from ad-hoc parking lots along roads, close to the river, where they would not be subject to interviews. The access point survey, an on-site intercept design, was therefore particularly suitable for the Delaware River. The access sites included in this survey were categorized according to their expected level of use by anglers in 4-week periods. Access sites in the high and medium usage category were sampled more frequently than low usage sites to achieve a large number of interviews. Over-flights and interviews of fishermen were conducted more often during the peak angler season for American shad. Thus, during the beginning of the shad run, the intensity of interviews was highest in the lower non-tidal river zones, but later shifted towards the upper river zones as the peak of the run moved upstream. The survey was designed to gather information from a wide range of access sites to obtain representative estimates of the typical catch and harvest rates by species throughout the river.

Catch and harvest rates for completed trips were estimated from 2,353 interviews of anglers at a representative selection of access points over time in the tidal and non-tidal portion of the river. Precise estimates of total catch and harvest by species were obtained by expanding the respective catch and harvest rates based on interviews to the total effort estimated from the aerial survey. We estimated that 120,042 angler trips took place on the Delaware River from mid March through October 2002, with close to 80,000 trips being in the non-tidal portion of the river. An estimated 35,281 American shad and 36,328 striped bass were caught during daytime in the total study period. American shad was almost exclusively caught from March to June in the non-tidal portion of the river. Substantial catch of striped bass occurred both in the tidal and non-tidal sections of the river. The fishing effort at night appears to be low compared to daytime fishing (6%), with about 20,000 fishing trips overall, and was approximately evenly distributed between the non-tidal and tidal portions of the river. An estimated 4,454 striped bass were caught at night during the total study period, exclusively in the tidal river. Catfish and eel comprised the major species harvested at night in the non-tidal river. A catch-and-release fishery dominates for most species in the Delaware River, and only 19% of American shad and 1% of striped bass was kept (harvested). An estimated 49% of the harvested American shad were females. Results show similar catch rates, but a decline in the total catch of American shad as compared to surveys in 1986 and 1995, suggesting reduced fishing effort during the shad season. Smallmouth bass was the most commonly caught species (98,393), followed by channel catfish (58,703). Although our study indicates that only a small number of river herring were caught (7,553), it is noteworthy that 65% of these were harvested (kept). The estimated catch of hickory shad was negligible (43), and none of the anglers interviewed harvested this species.

This report documents angler effort, catch and harvest statistics for the primary target fisheries, but also details similar fisheries statistics of other sport-fish in the appendices. Total, as well as temporal estimates are provided for the non-tidal and tidal portions of the river. Results for targeted effort by species are also provided. In some cases, pooling of samples across temporal and spatial strata were required to achieve sufficient sample sizes for meaningful estimates. The rigorous statistical estimation techniques employed in this study, including new innovative methods developed here, generally produced robust and reliable estimates of angler effort and catch and harvest statistics.



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## 1.0 INTRODUCTION

Coastal states that are members of the Atlantic States Marine Fisheries Commission (ASMFC) and that support runs of anadromous shad and river herring are required by Amendment 1 of the interstate Fishery Management Plan for Shad and river herring to monitor recreational fishery catch, harvest and effort every 5 years (ASMFC 1999). In accordance with this requirement, the Pennsylvania Fish and Boat Commission (PFBC), on behalf of the Delaware River Basin Fish and Wildlife Management Cooperative (DRBFWMC), contracted Versar, Inc. to estimate temporal and spatial recreational catch and harvest of shad and river herring on the Delaware River and Estuary. In addition to addressing the shad and river herring fishery monitoring requirements, the 2002 Delaware River Creel Survey was also designed to provide recreational catch and harvest estimates for striped bass and other species caught by anglers fishing the Delaware River. The survey area extended from the tidal waters between the Interstate 295 Delaware Memorial Bridge and the fall line upstream to the Downsville, N.Y. on the East Branch.

Versar, Inc. used an access point survey in conjunction with an aerial effort survey to estimate angler trips and effort, and angler catch (the total number of fish caught, including the ones released), harvest (the number of fish kept), and catch and harvest per unit effort. The access point survey is an on-site intercept design in which creel clerks collect information on catch and effort from anglers who have completed their fishing trips during the clerk's assigned time shift (Pollock et al. 1994). The aerial survey provides the basis for estimating total angler fishing effort (total number of angler fishing hours), as well as separate effort estimates for shore-based and boat-based anglers. The estimates of effort derived from the aerial survey are independent of the effort estimated from the access point survey. The aerial survey was employed to provide the total effort estimate because an airplane can cover a large area quickly and numbers of anglers in these large areas can be documented using minimum personnel (Hoenig et al. 1993). Data of this type can substantially increase the precision in estimated total catch and effort for a fixed survey cost.

This report consists of two volumes. This volume presents methods and comprehensive results of the 2002 Delaware River angler survey. Chapter 2 provides a detailed description of the survey design and statistical estimation methods and a brief description of the field sampling schedule and protocol, as well as the complete flight schedule. Chapter 3 documents angler effort, catch and harvest statistics for the following primary target species: American shad, *Alosa sapidissima*; hickory shad, *Alosa mediocris*; alewife, *Alosa pseudoharengus*, and blue back herring, *Alosa aestivalis*, known collectively as "river herring;" and striped bass, *Morone saxatilis*. Chapter 3 also documents similar results for smallmouth bass and channel catfish. Chapter 4 evaluates the results, and compare angler effort and catch statistics for American shad with past survey results. Chapter 4 also explains why some angler fishing statistics only could be provided for pooled temporal or spatial strata.

Volume II contains five appendices that specify the sampling frame and schedule, and comprise extensive information on angler fishing statistics within and across spatial and temporal strata. Appendix A contains the spatio-temporal sampling frame for the access survey, including the list of all access sites included in this study. Appendix B provides a detailed sampling schedule for the access survey, and identifies changes in the schedule. Appendix C lists all species reported caught by anglers interviewed. Appendix D provides estimates of angler effort, catch and harvest statistics within and across temporal and spatial strata for all sports fish that were caught in appreciable numbers during this survey. Appendix D also provides similar statistics for targeted effort for American shad, river herring, striped bass and six other popular species. Appendix E contains the field data collection forms for the access survey and aerial survey.

## **2.0 MATERIAL AND METHODS**

### **2.1 ACCESS POINT SURVEY METHODS**

The access point survey (Pollock et al. 1994) is an on-site intercept design particularly suitable for the Delaware River because, based on information from prior surveys and from fisheries workers from the agencies involved, a majority of the anglers use restricted (primarily public) access sites to enter the fishery. Only a small proportion of anglers are believed to access the fishery from private docks or piers or by walking to the water from ad-hoc parking lots along roads close to the river. The access point survey provides information on the amount of time spent fishing by the anglers on each of their fishing trips (i.e., trip length), catch and harvest per unit effort (hours spent fishing) by species, and the size structure of the harvest of American shad and striped bass by gender. This is achieved by interviewing anglers that are intercepted immediately after they complete their fishing trips, at a representative sample of access points over time.

#### **2.1.1 Development of the Sampling Frame and Stratification**

The collection of data from all angler trips completed on the Delaware River from the Interstate 295 Delaware Memorial Bridge to Downsville, NY from March 17 through October would be prohibitively expensive. A more cost-effective way than a census is to collect data from a representative and sufficient number of trips to achieve reliable estimates of total catch and harvest of key species. A sampling frame was constructed to allow the representative selection of access points (clusters of anglers) from within the project area over time. We developed the sampling frame from a comprehensive list of access points (82 in total) identified from maps provided by the Delaware River Basin Commission, and with input from an expert panel identified by the Pennsylvania Fish & Boat Commission. The sampling frame was then defined by a lattice, designating days as columns and the access points as rows. In this spatio-temporal sampling frame, the primary sampling units (PSUs) are the combination of all of the times (days, part days) available for fishing during a defined period and all points of access to the fishery (Pollock et al. 1994). The primary sampling units were selected through a probabilistic design that ensured good coverage of access points geographically and over time. Data from completed angler trips were then collected from intercepts in each selected PSU.

To achieve good sampling coverage of the angler fishery across the study area, we defined four geographic strata by river mile (RM):

- The tidal portion (Estuary) – From Delaware Memorial Bridge (RM 69) to RM 133;
- Non-tidal stratum 1: From RM 133 to Delaware Watergap Bridge (Route 80), RM 212 (Zone A, B)

- Non-tidal stratum 2: From Delaware Watergap Bridge (Route 80), RM 212, to Narrowsburg RM 290 (Zone C, D);
- Non-tidal stratum 3: From Narrowsburg RM 290 to Downsville, NY, East Branch RM 348 (Zones E, F).

The zones A-E refer to the spatial strata applied in the 1986 and 1995 creel surveys on Delaware River (Miller and Lupine 1987; 1996), and were included for ease of comparison. The East Branch (Zone F) was not covered in the 1986 and 1995 surveys. The primary geographic strata for which statistics are presented in this report are the:

1. Tidal portion of the river (Estuary) and
2. Non-Tidal portions of the river (Non-tidal strata 1-3 combined), but with separate estimates provided for:
  - a. Stratum 1
  - b. Strata 2 and 3 pooled
  - c. Stratum 2
  - d. Stratum 3 (Including East Branch)
  - e. East Branch

In the scheduling of weekly access point sampling and the aerial survey we at first defined seven temporal strata to ensure good temporal coverage (Table 2-1).

Table 2-1. Original Temporal Stratification.		
<b>Temporal Strata</b>	<b>Weeks</b>	<b>Dates</b>
Original – 1	11 to 15	March 17 to April 20
Original – 2	16 to 22	April 21 to June 8
Original – 3	23 to 26	June 9 to July 6
Original – 4	27 to 30	July 7 to August 3
Original – 5	31 to 34	August 4 to August 31
Original – 6	35 to 38	September 1 to September 28
Original – 7	39 to 43	September 29 to October 31

This original temporal stratification intended to improve precision in total estimates by defining periods with relatively homogeneous effort, based on data from two previous angler surveys (Miller and Lupine 1987; 1996). Temporal stratum 2 was specifically defined to capture the peak shad fishing activity. For estimating purposes, we also post-stratified the study period into seven 4-week periods that approximately overlaps calendar months (Table 2-2).

<b>Temporal Strata</b>	<b>Weeks</b>	<b>Dates (Month)</b>
Monthly – 1	11 to 17	March 17 to May 4 (Mar/Apr)
Monthly – 2	18 to 21	May 5 to June 1 (May)
Monthly – 3	22 to 25	June 2 to June 29 (June)
Monthly – 4	26 to 30	June 30 to August 3 (July)
Monthly – 5	31 to 34	August 4 to August 31 (Aug)
Monthly – 6	35 to 38	September 1 to September 28 (Sept)
Monthly – 7	39 to 43	September 29 to October 31 (Oct)

These seven post-strata were defined to allow for estimating monthly angler catch and harvest statistics, as required in the contract specifications. Because of data limitations, however, it was necessary to pool the data from March and April (Monthly strata 1 and 2). The angler survey started on March 17, 2002, and thus we did not have sufficient sampling coverage to provide separate estimates for this month. We used 4-week time blocks to approximate calendar months because the access interviews and aerial effort counts were scheduled on a weekly basis.

The access points in each original spatio-temporal stratum (14 strata) were further classified into three groups based on their predicted angler usage levels (High, Medium, or Low). This classification was based on historic information from two previous surveys (Miller and Lupine 1987; 1996) and on expert opinion provided by the PFBC and fisheries biologists from local state and federal agencies and our team. Following recommendations from the PFBC, we assigned four sites in non-tidal stratum 1 to an “Exceptionally high usage” stratum for the period from April 21 through June 8 (Original Temporal Stratum 2):

- a) PFBC Sandts Eddy Access, along route Rt. 611 above Easton bridge (site ID 39)
- b) Phillipsburg Boat Ramp at Riverside Way by "free" bridge (site ID 41)
- c) Scott Park Boat Ramp Easton, along Rt. 611 at mouth of the Lehigh River (site ID 42)
- d) Hugh Moore Park - Easton Fish Ladder area, south side of Lehigh River opposite Front Street Park (site ID 43)

These access points were expected to represent the highest use areas by anglers fishing on the River for American shad in late April, May and early June in non-tidal stratum 1. We periodically modified the classification of usage level throughout the survey based on the most up-to-date information from the access point and aerial surveys. This was essential to achieve good interview coverage of the angler fishery to obtain reliable estimates of catch and harvest statistics. Thus, the sampling intensity at access points with minimal angler activity was in some

cases reduced, or eliminated, while the sampling at access points with medium and high usage was enhanced. The classification of usage levels for the access points remained fixed within each of the original temporal strata, but in some cases changed across weeks within the monthly strata defined for estimating purposes. The spatio-temporal sampling frame with assigned usage levels is in Appendix A.

Recreational daily angler effort on the Delaware River is typically highest on weekends, and hence we stratified the sampling days into two types: (1) weekdays; and (2) weekend days including holidays. Within each day, a daytime period was defined from 7 AM to 9 PM. On any selected sampling day, one randomly selected interview shift would either cover angler trips that were completed in the morning from 7 AM to 1 PM (Shift 1), or in the afternoon from 1 PM to 9 PM (Shift 2). Shift 2 thus included the post-sunset period with the most significant angler effort (7 PM to 9 PM). A more limited number of night shifts were allocated to high usage sites to cover trips that were completed from 9 PM to midnight. No regular sampling was conducted between midnight and sunrise; periodic verification at high usage angler sites indicated minimal fishing activity during this time. The sampling protocol for the access point survey was documented in the Training Manual (Anon. 2002).

Angler effort and fishing statistics is estimated for each of the 14 spatio-temporal strata by weekdays and weekend days, and then aggregated to produce estimates for the entire survey period in the two primary geographic strata (non-tidal and tidal). Separate estimates are produced for the original temporal stratification, and for the monthly post stratification. Estimates for individual strata within the non-tidal section of the river, and for the East Branch (which is a part of stratum 3) could generally only be produced for pooled temporal strata because of limited sample sizes.

### **2.1.2 Scheduling of the Access Point Sampling**

The primary objective of the access point survey was to collect representative data on catch and harvest rates by species, and the average length of the angler trips. The intercept sampling was designed to provide interview data that represented the angler fishery across all access points over the study period from March 17 through October. This was achieved through spatial and temporal stratification and multiple stages of selection.

In the first stage, we used the sampling frame as a mechanism for selecting a stratified random sample of access points over time. To ensure good temporal coverage in each stratum, we used restricted random sampling (Jessen 1977), with sampling of access points scheduled on random weekdays and weekend days during each calendar week from each stratum. The inclusion probability for weekend days thus was higher than for weekdays. The access points within each original spatial-temporal stratum and usage class had equal inclusion probability. Access points in the high and medium usage were sampled at a higher frequency than the low usage sites to maximize the coverage of completed angler trips. Weekly or bi-monthly sampling

on weekdays and weekend days were conducted in the medium and high usage areas in each stratum. We scheduled weekly sampling of all the “exceptionally high usage sites” from April 21 through June 8 (Time Stratum 2). The sampling effort during weekend days and holidays were relatively higher than for weekdays because the angler effort tends to be significantly higher on non-working days.

In the second stage, one AM (7 AM to 1 PM) or PM (1 PM to 9 PM) shift was selected at random within each day/site (PSU). These shifts covered the daytime fishing, as well as the time after sunset with highest fishing activity (7 PM to 9 PM). We also selected a limited number (55) of 3 hours night sampling shifts to cover the post-sunset period from 9 PM to midnight. These night shifts were conducted at a random subset of PM shifts at high usage access points.

The final sampling stage involved a census of anglers by type (shore based and boat anglers) that complete their fishing trip within the selected daily sampling period, or, if required because of large number of anglers at some sites, a random sub-sample of anglers. For these anglers, data were collected on catch and harvest in numbers by species, effort (# hours fished), size- composition of the harvest for American shad and striped bass, and other information. The total number of boat and shore-anglers was registered in both cases.

Angler interviews were collected from 396 primary sampling units (PSUs) during daytime (7 AM to 9 PM), and from 55 PSUs at night (9 PM to midnight) during the entire survey period. The times of sampling (AM or PM shifts) within daytime PSUs were randomly selected, resulting in an approximately even number of sampling shifts in the morning and afternoon (Table 2-3). In all, 401 daytime shifts were completed at the 396 PSUs (sites/days); both AM and PM shifts were completed at 5 PSUs. The schedule for sampling access points over time is in Appendix B.

Table 2-3. Number of sampling shifts that were completed in the access point survey by spatio-temporal strata. Stratum 3 includes the East Branch. \*AM and PM sampling shifts were conducted at 5 of the 396 daytime PSUs.

Temporal Strata	Sampled Shift	Spatial Strata						
		Tidal	Stratum 1	Stratum 2	Stratum 3	East Branch	All Non-Tidal	All
Monthly - 1	AM	11	12	7	4	3	23	34
	PM	15	15	4	2		21	36
	Night	3	2	2	1		5	8
Original - 1	AM	8	7	2	3	3	12	20
	PM	8	7	3	1		11	19
	Night						0	0
Monthly - 2	AM	5	14	4	2		20	25
	PM	11	7	5	4	2	16	27
	Night	3	7	2	1		10	13

Table 2-3. Continued								
Temporal Strata	Sampled Shift	Spatial Strata						
		Tidal	Stratum 1	Stratum 2	Stratum3	East Branch	All Non-Tidal	All
Original - 2	AM	8	22	13	4		39	47
	PM	21	17	6	5	2	28	49
	Night	7	10	4	2		16	23
Monthly - 3	AM	7	9	7	1		17	24
	PM	7	8	8	2		18	25
	Night	1	3	1	2		6	7
Original - 3	AM	9	8	6			14	23
	PM	5	8	9	3		20	25
	Night		2	2	2		6	6
Monthly - 4	AM	10	7	7	1		15	25
	PM	10	8	6	6		20	30
	Night	2	2	2	2		6	8
Original - 4	AM	8	5	4	1		10	18
	PM	9	6	5	5		16	25
	Night	2	2	1	2		5	7
Monthly - 5	AM	8	9	10	4		23	31
	PM	7	9	8	5		22	29
	Night	2	2	2	1		5	7
Original - 5	AM	8	9	10	4		23	31
	PM	7	9	8	5		22	29
	Night	2	2	2	1		5	7
Monthly - 6	AM	7	5	10	4	1	19	26
	PM	6	10	5	6		21	27
	Night	1	2	1	1		4	5
Original - 6	AM	7	5	10	4	1	19	26
	PM	6	10	5	6		21	27
	Night	1	2	1	1		4	5
Monthly - 7	AM	10	11	7	5		23	33
	PM	6	7	9	7		23	29
	Night	3	2	1	1		4	7
Original - 7	AM	10	11	7	5		23	33
	PM	6	7	9	7		23	29
	Night	3	2	1	1		4	7
Total Period	AM	58	67	52	21	4	140	198
	PM	62	64	45	32	2	141	203
	AM+PM	120	131	97	53	6	281	*401
	Night	15	20	11	9	0	40	55



## **2.2 AERIAL SURVEY METHODS**

### **2.2.1 Development of the Sampling Frame and Stratification**

The sampling frame for the aerial survey was constructed as a tool for scheduling counts of anglers at representative time intervals within each spatial stratum. For logistical reasons, the study area was divided into two regions that each could be covered in a 2-hours flight (effective flying time over the river):

- (1) Region 1 – The Estuary and non-tidal stratum 1; and
- (2) Region 2 – Non-tidal strata 2 and 3, including the East Branch.

The temporal sampling frame consisted of all days in the study period, stratified into weekdays and weekend days. The “weekend” days also included significant holidays with expected increased fishing effort. Each primary sampling day for the aerial survey (7 AM to 7 PM) was divided into 2-hour periods (secondary sampling units). Instantaneous angler counts were recorded separately for each of the three river strata, and for the Estuary. Anglers were counted separately for the East Branch (within non-tidal stratum 3) during four flights throughout the study period (April 21, May 1, August 11, and September 8).

### **2.2.2 Scheduling of Angler Counts**

A probability-based survey design was used to schedule the aerial effort flights. All flights were conducted on randomly selected weekdays and weekend days. On each flight, aerial observers made instantaneous counts of shore and boat anglers successively within portions of the area swept, yielding a progressive overall survey count (Pollock et al. 1994). We scheduled 32 regular flights (one flight per week) in Region 1 (Table 2-4), and 29 flights (one flight per week after April 6) in Region 2 (Table 2-5). These flights formed the core aerial survey, and represented an enhancement of sampling effort relative to the originally planned 25 flights in the non-tidal and 25 flights in the tidal portions of the river. In each region, the weekly flights were alternated systematically between weekdays and weekends, with a random start (weekday or weekend). The specific weekdays or weekend days was randomly selected for each week. The daily flight direction (upstream or downstream) also was randomized. We included contingency aerial survey days already determined using the probability sampling design (one randomly selected day every two weeks) in case bad weather forced the cancellation of a flight. The date for a flight to compensate for a lost day was generally picked from this pre-determined list. In a few cases with extended periods of bad weather, we were not able to complete the target sample size for weekdays or weekends within a 4-week period. We did not re-schedule all flights that were canceled because of the over-sampling built into the flight schedule.

We restricted the flights in the non-tidal river to stratum 1 during the first three weeks; it was determined by groundtruthing that the fishing activity occurring upstream from the

Delaware Watergap Bridge was negligible at that time. After three weeks, flights in the non-tidal river commenced in Region 2 (River Strata 2 and 3, including the East Branch). To further enhance the aerial sampling effort, we also scheduled 14 additional flights in non-tidal stratum 1 (Table 2-6) using the maximum count method (Dauk 2000; Dauk and Swartz 2001; Lockwood et al. 2001). These flights enhanced the coverage during the peak effort in angler fishing for American shad. In total, 12 maximum count flights were completed. Four of the scheduled flights were cancelled because of extended bad weather conditions or mechanical problems, and two of these were replaced.

Week	Sample Period		Scheduled				Cancelled Flights		
	From	To	Flight Date	Day	Time Interval	Flight Dir.	Reason for Cancellation	Replaced Flight	Date
11	3/17	3/23	3/17	WE	9 AM - 11 AM	D			
12	3/24	3/30	3/28	WD	11 AM - 1 PM	D			
13	3/31	4/6	3/31	WE	3 PM - 5 PM	U			
14	4/7	4/13	4/12*	WD	7 AM - 9 AM	D	Poor visibility	Y	4/13
15	4/14	4/20	4/14	WE	11 AM - 1 PM	D			
16	4/21	4/27	4/24	WD	3 PM - 5 PM	U			
17	4/28	5/4	5/4	WE	7 AM - 9 AM	D			
18	5/5	5/11	5/6	WD	5 PM - 7 PM	D			
19	5/12	5/18	5/18*	WE	1 PM - 3 PM	U	High Wind	N	
20	5/19	5/25	5/24	WD	3 PM - 5 PM	D			
21	5/26	6/1	6/1	WE	11 AM - 1 PM	U			
22	6/2	6/8	6/7	WD	9 AM - 11 AM	D			
23	6/9	6/15	6/9	WE	11 AM - 1 PM	D			
24	6/16	6/22	6/21	WD	1 PM - 3 PM	U			
25	6/23	6/29	6/29	WE	11 AM - 1 PM	D			
26	6/30	7/6	7/1	WD	9 AM - 11 AM	U			
27	7/7	7/13	7/7*	WE	7 AM - 9 AM	U			
28	7/14	7/20	7/15	WD	11 AM - 1 PM	U			
29	7/21	7/27	7/27	WE	1 PM - 3 PM	D			
30	7/28	8/3	7/30	WD	11 AM - 1 PM	U			
31	8/4	8/10	8/10	WE	7 AM - 9 AM	U			
32	8/11	8/17	8/14	WD	3 PM - 5 PM	U			
33	8/18	8/24	8/18	WE	7 AM - 9 AM	U			
34	8/25	8/31	8/28*	WD	1 PM - 3 PM	U	Poor flying condition	Y	8/30

Table 2-4. Continued

Week	Sample Period		Scheduled				Cancelled Flights		
			Flight Date	Day	Time Interval	Flight Dir.	Reason for Cancellation	Replaced Flight	Date
	From	To							
35	9/1	9/7	9/7	WE	11 AM - 1 PM	D			
36	9/8	9/14	9/9	WD	11 AM - 1 PM	D			
37	9/15	9/21	9/15*	WE	7 AM - 9 AM	D	Rain, poor visibility	Y	9/21
38	9/22	9/28	9/26	WD	9 AM - 11 AM	D			
39	9/29	10/5	9/29	WE	11 AM - 1 PM	D	Poor flying condition	N	
40	10/6	10/12	10/11*	WD	7 AM - 9 AM	U			
41	10/13	10/19	10/19	WE	9 AM - 11 AM	D			
42	10/20	10/31	10/22	WD	1 PM - 3 PM	U			

Table 2-5. Delaware River Creel Survey 2002 - Scheduled and completed flights in Strata 2 and 3 (including East Branch). \* Cancelled

Week	Sample Period		Scheduled				Flight Cancellations		
			Flight Date	Day	Time Interval	Flight Dir.	Reason for cancellation	Replaced Flight	Date
	From	To							
11	3/17	3/23					None were scheduled		
12	3/24	3/30							
13	3/31	4/6					None were scheduled		
14	4/7	4/13	4/13*	WE	11 AM - 1 PM	D			
15	4/14	4/20	4/15	WD	3 PM - 5 PM	U			
16	4/21	4/27	4/21	WE	9 AM - 11 AM	D			
17	4/28	5/4	5/1	WD	3 PM - 5 PM	D			
18	5/5	5/11	5/5	WE	11 AM - 1 PM	D			
19	5/12	5/18	5/17	WD	1 PM - 3 PM	D			
20	5/19	5/25	5/19	WE	7 AM - 9 AM	D			
21	5/26	6/1	5/31*	WD	7 AM - 9 AM	U	Technical Problem	N	
22	6/2	6/8	6/8	WE	11 AM - 1 PM	U			
23	6/9	6/15	6/13*	WD	1 PM - 3 PM	D	Poor Visibility Windy	Y	6/18
24	6/16	6/22	6/16*	WE	3 PM - 5 PM	U			
25	6/23	6/29	6/24	WD	5 PM - 7 PM	U			
26	6/30	7/6	7/4	WE	11 AM - 1 PM	U			
27	7/7	7/13	7/11	WD	7 AM - 9 AM	U	Poor flying conditions	N	
28	7/14	7/20	7/20	WE	11 AM - 1 PM	U			

Table 2-5. Continued

Week	Sample Period		Scheduled				Flight Cancellations		
	From	To	Flight Date	Day	Time Interval	Flight Dir.	Reason for cancellation	Replaced Flight	Date
29	7/21	7/27	7/22	WD	5 PM - 7 PM	U			
30	7/28	8/3	8/3	WE	9 AM - 11 AM	D			
31	8/4	8/10	8/5	WD	3 PM - 5 PM	D			
32	8/11	8/17	8/11	WE	9 AM - 11 AM	U			
33	8/18	8/24	8/20	WD	9 AM - 11 AM	U			
34	8/25	8/31	8/31	WE	7 AM - 9 AM	U			
35	9/1	9/7	9/5	WD	1 PM - 3 PM	D			
36	9/8	9/14	9/8	WE	11 AM - 1 PM	D			
37	9/15	9/21	9/18	WD	11 AM - 1 PM	U	Rain, poor visibility Scheduling Problem	Y	9/28
38	9/22	9/28	9/22*	WE	7 AM - 9 AM	D		Y	9/21
39	9/29	10/5	10/3	WD	1 PM - 3 PM	U	Poor Flying Condition	Y	10/24
40	10/6	10/12	10/12*	WE	11 AM - 1 PM	U			
41	10/13	10/19	10/17	WD	3 PM - 5 PM	U			
42	10/20	10/31	10/20	WE	9 AM - 11 AM	U			

Table. 2-6. Scheduled and completed flights for the second aerial survey in stratum 1. These flights were conducted during peak angler effort, using the Dauk and Schwarz (2001) flight scheduling method. \* Cancelled flight because of poor flying conditions; replacement flights were conducted on June 2nd and 4<sup>th</sup>.

Week	Sample Period		Flight Date	Day	Time Interval	Flight Direction
	From	To				
15	4/14	4/20	4/20	WE	10 AM - 12	D
		4/16	4/16	WD	1 PM - 3 PM	U
16	4/21	4/27	4/27	WE	10 AM - 12	D
		4/27	4/23	WD	1 PM - 3 PM	U
17	4/28	5/4	5/4	WE	10 AM - 12	U
		5/4	5/3*	WD	1 PM - 3 PM	U
18	5/5	5/11	5/11	WE	10 AM - 12	U
		5/11	5/10	WD	1 PM - 3 PM	D
19	5/12	5/18	5/12*	WE	10 AM - 12	D
		5/18	5/14*	WD	1 PM - 3 PM	U
20	5/19	5/25	5/25	WE	10 AM - 12	U
		5/25	5/22	WD	1 PM - 3 PM	U
21	5/26	6/1	6/1*	WE	10 AM - 12	D
		6/1	5/30	WD	1 PM - 3 PM	U

The timing of flights within each selected day was randomized for the core survey. The selection of flight intervals (2-hour periods) was based on non-uniform inclusion probabilities determined by the expected distribution of angler effort throughout the day (Pollock et al. 1994). The nine additional flights in non-tidal stratum 1 were scheduled to cover the 2-hour interval with expected peak angling effort, following the maximum count method proposed by Dauk and Schwartz (2001). In non-tidal stratum 1 we thus had two independent surveys that overlapped in time. This additional survey effort increased the precision in estimates of effort, and provided information that can be used to identify the most effective scheduling method for future surveys.

Both methods of selecting flight intervals were based on the observed distribution of daily effort in the 1995 and 1986 creel surveys conducted in Delaware River. During these surveys, it was observed (counts from flyovers) that the distribution of angler effort throughout a typical weekday was bell shaped, with peak effort around midday, and with lowest effort at sunset and sunrise (Figure 3-1). During weekends or holidays, the typical effort distribution in the non-tidal river observed in the historic surveys was more skewed towards morning, with peak in effort around 10 AM. In method (1), the inclusion probabilities of flight intervals during a day was proportional to the expected effort, and thus more flights (on average) was scheduled in the middle of the day (weekdays), or around 10 AM (weekends and holidays). Because of lack of data, we assumed that the same effort distribution applied in the tidal portion of the river. Using the latter selection method, flights were scheduled during intervals of expected peak effort (and not based on probabilities), and therefore a model-based approach was used to estimate effort.

## **2.3 ESTIMATING EQUATIONS**

### **2.3.1 Catch and Harvest Rates and Mean Trip Length**

This report focuses on estimates of catch (numbers kept + numbers released), harvest (numbers kept), catch rate, harvest rate, angler effort (hours), and angler trips for four key species or group of species (Table 2-7). Monthly estimates are based on post-stratification as described in section 2.1.1, and is provided for each of the spatial strata, and then aggregated to produce monthly estimates for the two primary geographic strata (non-tidal and tidal) and for the entire river. For river strata 2 and 3, the sample sizes did not support monthly estimates, and thus we pooled some temporal strata. In the East Branch, from Hancock, NY to Downsville, NY, which is part of stratum 3, only seven anglers were interviewed throughout the study period, with no catches reported. Thus, no separate estimates could be provided for this small section of the river.

We provide estimates for the total sample period (from March 17 to October 31) based on the original seven temporal strata as well as for the monthly post-strata. The estimates based on the original temporal stratification are considered the most reliable because a bias might be introduced by the post-stratification. These total estimates best represent the level of sport fishing mortality that the Delaware River Basin Fish and Wildlife Management Cooperative is required

to compile, as a component of an ASFMC compliance report. Similar statistics are provided for other species that were widely caught by anglers. Gizzard shad is another species of interest. Seining data from the Lewis Fishery indicate that the gizzard shad abundance in the Delaware River was substantial in 2002, accounting for about 38% of the numbers of shad caught by seining from April 4 to 27, and 59% of the numbers caught from April 28 to May 31 (Mark Boriek, NJ Division of Fish and Wildlife, pers. comm.). However, gizzard shad is generally not caught by anglers, and none were recorded in this survey.

Table 2-7. Focus species and their Integrated Taxonomic Information System (ITIS) taxonomic serial number (TSN), as recorded in the survey database.	
Common name	Taxonomic Serial Number (TSN)
American shad	161702
Hickory shad	161704
River herring	161700, 161706, 161701, 161703
Striped bass	167680

The following are definitions of the variables used in the estimator formulae presented below:

- $n_j$  = number of primary units (PSU) sampled in stratum  $j$
- $M_{ij}$  = number of angler trips (completed interviews) at PSU  $i$  in stratum  $j$
- $\bar{M}_j$  = mean number of trips (per half-day) across PSUs in stratum  $j$
- $y_{ijk}$  = catch (or harvest) for a given species reported in interview  $k$  at PSU  $i$  in stratum  $j$
- $\bar{y}_{ij}$  = mean catch (or harvest) per hour of a given species for completed trips at PSU  $i$  in stratum  $j$  for a species of interest
- $L_{ijk}$  = length of trip (hours) for angler  $k$  at PSU  $i$  in stratum  $j$
- $\bar{L}_{ij}$  = mean trip length (hours) for completed trips at PSU  $i$  in stratum  $j$
- $L_{ij}$  = total number of angler hours at PSU  $i$  in stratum  $j$
- $R_j$  = mean catch (or harvest) per hour in stratum  $j$  for a given species

The catch for a single angler trip is the sum of number of fish harvested (kept) and number of fish released. Each primary sampling unit in a stratum represents an access point visited during a specific date.

Mean catch-per-unit-effort (CPUE) within each PSU by fishing mode (boat or shore) is estimated as

$$(1.1) \quad \bar{y}_{ij} = \frac{\sum_k y_{ijk}}{L_{ij}}$$

where

$$L_{ij} = \sum_k L_{ijk}$$

is total angler hours across all interviews at the PSU.

An estimator for  $R_j$  is

$$(1.2) \quad \hat{R}_j = \frac{\sum_{n_j} L_{ij} \bar{y}_{ij}}{\sum_{n_j} L_{ij}}$$

with variance

$$(1.3) \quad \text{var}(\hat{R}_j) = \frac{\sum L_{ij}^2 (\bar{y}_{ij} - \hat{R}_j)^2}{n_j \bar{L}_j (n_j - 1)}$$

This approach to estimate catch-rates is equivalent to the ratio of means method (Pollock et al. 1997), and is used to provide separate estimates for boat anglers and shore anglers, based on the respective interview data.

Equations 1.1 – 1.3 were also used to estimate catch rates for targeted fishing effort, using data for the subset of anglers trips that were directed towards the specific target species only. For angler trips with multiple target species, it is not possible to estimate the exact effort for each species. In this case, we assumed that the effort (angler hours) for these trips was evenly divided between the reported target species to obtain an approximate estimate of targeted effort.

### **2.3.2 Daytime Effort**

The effort (angler hours) for daytime fishing (7AM to 9 PM) is estimated from the aerial survey, in conjunction with daily effort distributions based on the access interviews. Estimates are provided for all anglers, and for boat and shore anglers. The estimation is first done separately for weekdays and weekend days in each of the spatial strata (Estuary, non-tidal, and

non-tidal 2&3) and by month or temporal strata (7) as defined in section 2.1.1. These spatio-temporal strata (21 in all) are denoted by  $j$ . The estimates for these strata are then pooled to provide a total estimate for the total sample period, as well as separate estimates for the non-tidal and tidal portions of the river.

A model-based estimator for daily effort (angler hours) in spatio-temporal stratum  $j$  ( $j = 1, 2, 3, \dots, 21$ ) is

$$(1.4) \quad E_{ij} = \frac{e_{ij}}{\pi_{ijk}}$$

where

- $e_{ij}$  = the number of angler hours for flight  $i$  in stratum  $j$ , estimated by multiplying the instantaneous count of angler in a flight interval by the interval length (2 hours); and
- $\pi_{ijk}$  = the proportion of daily angler effort in the 2-hour time interval that the flight  $i$  in stratum  $j$  occurred in;  $k$  defines the set of expansion factors that applies to a particular portion of the river time (non-tidal, and tidal), during a particular period (March 17 to July 6, or July 7 to October 31) and during the particular time of day.

The effort expansion factors  $\pi_{ijk}$  are estimated from angler interview data, and are done separately for:

1. Weekdays and weekends,
2. The two portions of the river sections: (1) Non-Tidal River, and (2) Tidal, and
3. Two periods: (1) March 17 to July 6, and (2) July 7 to October 31 (original temporal strata 1-3 and 4-7).

A similar method of defining the expansion factor ( $\pi$ ) from daily angler activity distributions has been used in other studies (see for example Parker 1956; Fraidenburg and Bargmann 1982; McNeish and Trial 1991, Dauk 2000, Dauk and Schwarz 2001, Lockwood et al. 2001). This model-based approach assumes that the activity pattern is consistent across days in each period and geographic area.

The mean daily effort for weekdays and weekends in each spatial (3) and temporal (7) stratum is estimated as

$$(1.5) \quad \bar{E}_j = \frac{\sum E_{ij}}{n_j}$$



with variance

$$(1.6) \quad \text{var}(\bar{E}_j) = \frac{1}{n_j} \sum_{n_j} \frac{(E_{ij} - \bar{E}_j)^2}{(n_j - 1)}$$

where  $n_j$  is the number of primary sampling units (PSUs) in stratum  $j$ . Each PSU represents a flight on a particular combination of time (day and flight interval) and space (stratum).

Total effort in stratum  $j$ ,  $E_j$ , for weekends and weekdays is estimated by extrapolating the mean daily effort to total days in each category. For example, the total effort for weekdays in stratum  $j$  is

$$(1.7) \quad E_{jWD} = WD \times \bar{E}_{jWD}$$

where  $WD$  is the total number of weekdays in the period covered, and  $\bar{E}_{jWD}$  is mean daily effort (angler hours) for the weekdays in stratum  $j$  during the period. An estimator for the variance of the total effort, estimated by equation (1.7), is

$$(1.8) \quad \text{var}(E_{jWD}) = WD^2 \times \text{var}(\bar{E}_{jWD})$$

where  $\text{var}(\bar{E}_{jWD})$  is estimated from equation (1.6). The mean and total effort for weekend days and associated variances is estimated by using the same estimation approach. Because of weather conditions, only one weekend or weekday flight was completed in some months. For weekends, this happened during May in the tidal portion of the river, and during July for both the tidal portion and non-tidal stratum 1. In October, only one weekday flight was completed in non-tidal stratum 1, and in the tidal portion of the river. For these months, we used the mean variance for two neighboring months to approximate the variance of the weekend or weekday effort. Total effort for stratum  $j$  is then the sum of weekday and weekend effort,

$$(1.9) \quad E_j = E_{jWD} + E_{jWE}$$

with variance

$$(1.10) \quad \text{var}(E_j) = \text{var}(E_{jWD}) + \text{var}(E_{jWE}).$$

and relative (proportional) standard error (Jessen 1978)

$$(1.11) \quad RSE(Y_j) = \frac{\sqrt{\text{var}(E_j)}}{E_j}.$$

Targeted effort for a species was estimated approximately by adjusting the aerial effort estimate (1.9) by the proportion of effort targeted for that species (based on the access survey),

$$(1.12) \quad E_{j,T} = Q_{j,T} \times E_j$$

with variance

$$(1.13) \quad \text{var}(E_{j,T}) = \text{var}(Q_{j,T}) \times E_j^2 + Q_{j,T}^2 \times \text{var}(E_j) - \text{var}(Q_{j,T}) \times \text{var}(E_j)$$

where  $Q_{j,T}$  is the fraction of angler hours in stratum  $j$  targeting a specific species, as determined from interview data.

For logistical reasons, one flight covered either the estuary and non-tidal stratum 1, or river strata 2 and 3. Hence, the non-tidal section of the river is covered in separate, independent, flights in stratum 1 and the pooled strata 2 and 3. We therefore used a stratified estimator to estimate total effort within the non-tidal section of the river, based on two primary strata: (1) Stratum 1, and (2) strata 2 and 3, including East Branch, pooled. Separate estimates for stratum 2, stratum 3 including the East Branch, and for the East Branch alone are included, but were not a focus of this study.

Total number of angler trips by stratum is estimated by dividing the total effort in the stratum by mean trip length,

$$(1.14) \quad \hat{T}_j = \frac{\hat{E}_j}{\bar{L}_j}$$

where

$$\bar{L}_j = \frac{\sum_{n_j} M_{ij} \bar{L}_{ij}}{\sum_{n_j} M_{ij}}$$

The overall total effort (and its variance), as well as the total effort in a particular portion of the river during a time period is simply obtained by summing the efforts and variances across the respective spatio-temporal strata. The same approach was used to estimate the effort by fishing mode (Boat or Shore).

### 2.3.3 Night effort

We estimate nighttime (9 PM to midnight) fishing effort based on angler interviews from 55 nights shifts that were paired with randomly selected regular PM shifts (1 PM to 9 PM) at sites with medium or high usage levels. Because of the limited number of night samples, we estimated the night effort for the non-tidal and tidal portions of the river for temporal strata 1-3 and 4-7, and across temporal strata. For each paired PM and nigh shift  $i$  in a stratum  $j$  (geographic and temporal), we estimate the ratio

$$(1.15) \quad \hat{Q}_{ij} = \frac{H_{night}}{H_{PM}}$$

where the effort (H) is the total angler hours for each time period estimated from the completed trip interviews. An estimator for the mean ratio of night and PM effort for stratum  $j$  is

$$(1.16) \quad \hat{Q}_j = \frac{\sum Q_{ij}}{n_j}$$

where  $n_j$  is the number of paired night and PM shifts in stratum  $j$ . The variance for (1.16) is estimated by

$$(1.17) \quad \text{var}(\hat{Q}_j) = \frac{1}{n_j} \sum_{n_j} \frac{(Q_{ij} - \hat{Q}_j)^2}{n_j - 1}.$$

The total effort (angler hours) for night by stratum (non-tidal or tidal) is estimated by

$$(1.18) \quad \hat{E}_{jnight} = \hat{Q}_j \times \hat{E}_j \times \hat{p}_j$$

where  $\hat{E}_j$  is the estimated total daytime (7 AM to 9 PM) effort in stratum  $j$  based on the aerial survey, equation (1.9), and  $\hat{p}_j$  is the estimated fraction of daytime fishing effort that occurs in the PM period (1 PM to 9 PM) based on interview data. Assuming  $p_j$  is constant, an approximate variance of night effort (1.18) is based on the estimator for the variance of a product

$$(1.19) \quad \text{var}(\hat{E}_{jnight}) = \left[ \hat{E}_j^2 \text{var}(\hat{Q}_j) + \hat{Q}_j^2 \text{var}(\hat{E}_j) - \text{var}(\hat{E}_j) \text{var}(\hat{Q}_j) \right] \times p_j^2$$

with relative (proportional) standard error estimated by

$$(1.20) \quad \frac{\sqrt{\text{var}(\hat{E}_{jnight})}}{\hat{E}_{jnight}}$$

The limited sample sizes preclude estimates on a finer spatial or temporal scale.

### 2.3.4 Total Catch and Harvest Estimates

Total catch and harvest by fishing mode is estimated by combining the respective total effort estimates and the catch and harvest rates. An estimator for the daytime total catch (or harvest) for a species of interest in stratum  $j$ ,  $Y_j$ , for a given fishing mode is

$$(1.21) \quad \hat{Y}_j = \hat{E}_j \times \hat{R}_j$$

with variance

$$(1.22) \quad \text{var}(\hat{Y}_j) = \hat{E}_j^2 \text{var}(\hat{R}_j) + \hat{R}_j^2 \text{var}(\hat{E}_j) - \text{var}(\hat{E}_j) \text{var}(\hat{R}_j)$$

The relative (proportional) standard error of estimated total catch (or harvest) is

$$(1.23) \quad RSE(Y_j) = \frac{\sqrt{\text{var}(\hat{Y}_j)}}{\hat{Y}_j}$$

These equations are used for producing separate estimates for boat and shore anglers. The total catch (or harvest) for all anglers and the associated variance is obtained by pooling the catch and harvest estimates, and the variances, for boat and shore anglers. The same approach is also used to estimate total catch and harvest for night fishing, based on mean catch and harvest rates and the estimated total effort for the 9 PM to midnight.

## **3.0 RESULTS**

### **3.1 ANGLER FISHING EFFORT**

#### **3.1.1 Daytime Fishing Effort**

The estimate of daytime (7 AM to 9 PM) fishing effort was based on the aerial angler counts, in conjunction with the daily effort distribution estimated from the access survey. The number of interviews completed in the access point survey by spatio-temporal strata is in Table 3-1, and details on the aerial sampling effort (primary sampling units) by spatio-temporal strata are Table 3-2. Nearly 70% of the daytime interviews were from intercepts of anglers that completed their trips after 1 PM (Table 3-1). Overall, the aerial angler counts were evenly conducted between mornings (AM) and afternoons (PM) (Table 3-2).

The daily distribution of angler effort in the non-tidal and tidal portion of the river during weekday and weekends (based on interview data), for two periods (original temporal strata 1-3, and 4-7), is in Figures 3-1 to 3-4. Based on the original temporal stratification, the mean length of a fishing trip for boat anglers was 4.3 hours across geographic and temporal strata, while shore angler trips averaged 2.1 hours in length (Tables 3-3a and 3-4a). Tables 3-3b and 3-4b provide similar estimates based on the monthly post-strata.

We derived the expansion factors for estimating angler effort from the aerial daily counts from the effort distributions estimated from interview data. Based on this model-approach, the total effort across fishing modes (boat and shore) for daytime fishing (7 AM to 9 PM) was estimated to be 260,849 angler hours (79,854 trips) in the non-tidal section of the river, and 139,621 hours (40,192 trips) in the tidal section (Table 3-5a) based on the original temporal stratification. The total effort for the entire survey period was estimated at 400,470 hours (120,046 trips). The respective effort estimates based on monthly post-stratification were slightly higher (Table 3-5b). The above total estimates for the non-tidal portion of the river includes non-tidal stratum 3 with the East Branch. For the total sample period, the afternoon fishing (1 PM to 9 PM) accounted for 59% of the overall effort in the non-tidal as well as in the tidal portions of the river. Based on the aerial survey, we estimated that boat anglers accounted for 80% of the total effort (angler hours) in the non-tidal section, and 90% in the tidal (Figures 3-5 and 3-6; Tables 3-3 and 3-4). The comparable estimates based on the access survey showed a lower proportion of boat anglers, with boats accounting for 71% of the effort in the non-tidal river and 61% in the tidal portion of the river (Figures 3-5 and 3-6).

Separate estimates of fishing effort for river strata 2 and 3 based on the aerial surveys are in Tables 3-6a and 3-6b. The total effort across fishing modes for non-tidal stratum 2 was estimated at 49,887 hours (14,071) trips based on the original temporal stratification. The total effort across fishing modes for non-tidal stratum 3 (including the East Branch) using the original temporal stratification was 48,403 hours (13,889 trips), with the hourly effort distributed

approximately evenly among shore and boat anglers (Table 3-6b). The comparable estimates based on the access survey showed similar proportion of boat anglers overall, but exhibited more variation in the boat and shore effort ratio over time (Figure 3-7). This variation is likely due to sampling variability. Only 130 anglers were interviewed in non-tidal stratum 3 for the total sample period (35 boat anglers and 95 shore anglers), with less than 10 boat anglers interviewed in some temporal strata. Based on the original post stratification, the mean length of a fishing trip for boat anglers was 6.6 hours for the total sample period, while shore angler trips averaged 2.6 hours in length (Table 3-6a). Based on four separate aerial counts, we estimated that fishing effort in the East Branch accounted for 8% of the effort by boat anglers and 43% of the effort by shore anglers in stratum 3. Boat anglers in the East Branch fished an estimated 1,793 angler hours (299 trips), while shore anglers fished an estimated 9,976 hours (3,325 trips), totaling 11,769 angler hours (3624 trips). The aerial counts indicated that most of the fishing trips on the East Branch occurred during spring. Only about 5% of anglers counted in stratum 3 during the August and September flights were fishing in the East Branch.

Temporal Strata	Sampled Shift	Geographic Strata						All Non-Tidal	All
		Tidal	Stratum 1	Stratum 2	Stratum 3	East Branch			
Monthly - 1	AM	98	76	15	7	7	98	189	
	PM	113	201	59	13		273	386	
	Night		1	1			2	2	
Original - 1	AM	54	22	2	7	7	31	78	
	PM	41	67	28	5		100	141	
	Night						0	0	
Monthly - 2	AM	25	65	13	1		79	104	
	PM	117	126	47	6		179	296	
	Night	4	7				7	11	
Original - 2	AM	69	146	37	1		184	253	
	PM	210	274	78	14		366	576	
	Night	4	13	1			14	18	
Monthly - 3	AM	30	81	19			100	130	
	PM	58	52	54	8		114	172	
	Night		5	8	7		20	20	
Original - 3	AM	31	79	23			102	133	
	PM	44	50	84	9		143	187	
	Night			16	7		23	23	
Monthly - 4	AM	29	51	29	8		88	117	
	PM	113	95	72	29		196	309	
	Night	12	5	13	6		24	36	

Table 3-1. Continued								
Temporal Strata	Sampled Shift	Geographic Strata						
		Tidal	Stratum 1	Stratum 2	Stratum 3	East Branch	All Non-Tidal	All
Original - 4	AM	28	26	14	8		48	76
	PM	106	83	42	28		153	259
	Night	12	5	5	6		16	28
Monthly - 5	AM	21	22	32	5		59	80
	PM	52	80	57	16		153	205
	Night	8	1	2			3	11
Original - 5	AM	21	22	32	5		59	80
	PM	52	80	57	16		153	205
	Night	8	1	2			3	11
Monthly - 6	AM	23	9	17	2		28	51
	PM	36	40	20	10		70	106
	Night	2	1		1		2	4
Original - 6	AM	23	9	17	2		28	51
	PM	36	40	20	10		70	106
	Night	2	1		1		2	4
Monthly - 7	AM	3	12	4	4		20	23
	PM	34	24	33	7		64	98
	Night	3					0	3
Original - 7	AM	3	12	4	4		20	23
	PM	34	24	33	7		64	98
	Night	3					0	3
Total Period	AM	229	316	129	27	7	472	694
	PM	523	618	342	89	0	1049	1572
	AM+PM	752	934	471	116	7	1521	2266
	Night	29	20	24	14	0	58	87

Table 3-2. Aerial sampling effort (number of primary sampling units) by spatio-temporal strata. An instantaneous count was obtained for each PSU. Stratum 3 includes the East Branch.

Temporal Strata	Sampled Shift	Geographic Strata					
		Tidal	Stratum 1	Stratum 2	Stratum 3	All Non-Tidal	All Spatial Strata
Monthly - 1	AM	3	6	1	1	8	11
	PM	3	4	2	2	8	11
Original - 1	AM	2	4			4	6
	PM	3	3	1	1	5	8
Monthly - 2	AM	1	3		1	4	5
	PM	2	6	3	2	11	13
Original - 2	AM	3	7	2	2	11	14
	PM	2	8	4	4	16	18
Monthly - 3	AM	2	4	1		5	7
	PM	2	2	3	4	9	11
Original - 3	AM	2	3	1		4	6
	PM	2	1	3	4	8	10
Monthly - 4	AM	3	2	3	2	7	10
	PM	1	2	1	2	5	6
Original - 4	AM	2	1	2	2	5	7
	PM	1	2	1	1	4	5
Monthly - 5	AM	3	2	3	2	7	10
	PM	1	2	1	2	5	6
Original - 5	AM	3	2	3	2	7	10
	PM	1	2	1	2	5	6
Monthly - 6	AM	3	4	2	2	8	11
	PM	1		2	2	4	5
Original - 6	AM	3	4	2	2	8	11
	PM	1		2	2	4	5
Monthly - 7	AM	1	2	1	1	4	5
	PM	2	1	3	3	7	9
Original - 7	AM	1	2	1	1	4	5
	PM	2	1	3	3	7	9
Total Period	AM	16	23	11	9	43	59
	PM	12	17	15	17	49	61



Table 3-3a. Total daytime fishing effort for boat anglers for the non-tidal and tidal portions of the river estimated from the aerial survey, along with estimates of precision (relative standard error, RSE). Estimates based on original temporal stratification.

Strata		# PSU Aerial	Effort (Hours)	RSE	Mean Hours/rip	# Trips	# Interviews	# PSU Access
Geographic	Time							
Non-Tidal 2+3	1	2	3750	0.11	4.14	906	18	9
	2	12	16861	0.18	4.55	3708	59	28
	3	8	6196	0.13	5.09	1217	101	18
	4	6	3285	0.20	4.95	663	27	15
	5	8	5598	0.18	4.46	1256	66	27
	6	8	6339	0.34	4.38	1446	34	24
	7	8	2445	0.29	4.14	590	17	28
Non-Tidal 1	1	7	51027	0.43	4.15	12302	45	14
	2	15	51285	0.19	4.96	10340	243	37
	3	4	9282	0.14	3.47	2675	77	16
	4	3	15561	0.14	4.05	3844	71	11
	5	4	17558	0.10	3.56	4938	64	18
	6	4	13789	0.11	4.28	3225	32	15
	7	3	8466	0.58	3.71	2283	24	18
Pooled Non-Tidal	1	9	54777	0.40	4.15	13209	63	23
	2	27	68146	0.15	4.85	14049	302	65
	3	12	15478	0.10	3.98	3892	178	34
	4	9	18846	0.12	4.18	4507	98	26
	5	12	23156	0.09	3.74	6194	130	45
	6	12	20128	0.13	4.31	4671	66	39
	7	11	10911	0.46	3.80	2873	41	46
Tidal	1	5	21433	0.63	4.39	4877	41	16
	2	5	48767	0.16	4.54	10732	165	27
	3	4	10324	0.47	3.72	2778	35	14
	4	3	16574	0.17	4.32	3837	73	17
	5	4	10896	0.24	3.76	2895	31	15
	6	4	10952	0.12	3.25	3370	21	13
	7	3	7404	0.42	8.83	838	6	16
Non-Tidal	1-7	92	211442	0.12	4.28	49395	878	278
Tidal	1-7	28	126350	0.14	4.31	29327	371	118
All	1-7	120	337792	0.09	4.29	78722	1249	396

Table 3-3b. Total daytime fishing effort for boat anglers for the non-tidal and tidal portions of the river estimated from the aerial survey, along with estimates of precision (relative standard error, RSE). Estimates based on monthly temporal post-stratification.

Strata		# PSU Aerial	Effort (hours)	RSE	Mean hours/trip	# Trips	# Interviews	# PSU Access
Geographic	Month							
Non-Tidal 2+3	Mar/Apr	6	14394	0.20	3.90	3691	24	17
	May	6	10335	0.29	4.69	2205	51	15
	Jun	8	7049	0.18	5.56	1269	69	18
	Jul	8	4745	0.20	4.50	1054	61	20
	Aug	8	5598	0.18	4.46	1256	66	27
	Sep	8	6339	0.34	4.38	1446	34	24
	Oct	8	2445	0.29	4.14	590	17	28
Non-Tidal 1	Mar/Apr	10	76109	0.30	4.72	16130	158	26
	May	9	27674	0.22	5.09	5433	118	20
	Jun	6	11152	0.15	3.35	3330	73	17
	Jul	4	21327	0.10	4.09	5213	87	15
	Aug	4	17558	0.10	3.56	4938	64	18
	Sep	4	13789	0.11	4.28	3225	32	15
	Oct	3	8466	0.69	3.71	2283	24	18
Pooled Non-Tidal	Mar/Apr	16	90503	0.26	4.57	19822	182	43
	May	15	38009	0.18	4.98	7638	169	35
	Jun	14	18201	0.12	3.96	4598	142	35
	Jul	12	26072	0.09	4.16	6267	148	35
	Aug	12	23156	0.09	3.74	6194	130	45
	Sep	12	20128	0.13	4.31	4671	66	39
	Oct	11	10911	0.54	3.80	2873	41	46
Tidal	Mar/Apr	6	36933	0.55	4.25	8689	138	26
	May	3	34800	0.31	5.28	6597	50	14
	Jun	4	12689	0.59	3.99	3178	49	14
	Jul	4	21713	0.15	4.27	5080	76	20
	Aug	4	10896	0.24	3.76	2895	31	15
	Sep	4	10952	0.12	3.25	3370	21	13
	Oct	3	7404	0.34	8.83	838	6	16
Non-Tidal	Mar-Oct	92	226980	0.11	4.36	52063	878	278
Tidal	Mar-Oct	28	135386	0.18	4.42	30647	371	118
All	Mar-Oct	120	362366	0.10	4.38	82710	1249	396

Table 3-4a. Total daytime fishing effort for shore anglers for the non-tidal and tidal portions of the river estimated from the aerial survey, along with estimates of precision (relative standard error, RSE). Estimates based on original temporal stratification.

Strata		# PSU Aerial	Effort (hours)	RSE	Mean hours/trip	# Trips	# Interviews	# PSU Access
Geographic	Time							
Non-Tidal 2+3	1	2	0		1.64	0	24	9
	2	12	9532	0.31	2.11	4517	72	28
	3	8	5090	0.19	2.78	1831	38	18
	4	6	3169	0.26	2.20	1440	76	15
	5	8	2882	0.14	1.57	1836	46	27
	6	8	3086	0.47	3.01	1027	16	24
	7	8	411	0.36	4.01	102	31	28
Non-Tidal 1	1	7	3945	0.42	1.78	2214	44	14
	2	15	8388	0.20	2.31	3639	190	37
	3	4	1129	0.36	1.48	764	52	16
	4	3	2582	0.23	1.90	1362	43	11
	5	4	4189	0.13	1.85	2265	39	18
	6	4	2506	0.40	1.66	1514	18	15
	7	3	2497	0.40	1.46	1712	12	18
Pooled Non-Tidal	1	9	3945	0.42	1.78	2214	68	23
	2	27	17920	0.19	2.20	8156	262	65
	3	12	6220	0.17	2.40	2594	90	34
	4	9	5752	0.18	2.05	2801	119	26
	5	12	7071	0.10	1.72	4101	85	45
	6	12	5593	0.32	2.20	2541	34	39
	7	11	2908	0.35	1.60	1814	43	46
Tidal	1	5	4711	0.34	2.47	1904	54	16
	2	5	2440	0.73	3.01	810	119	27
	3	4	217	0.49	2.37	91	40	14
	4	3	462	1.03	3.58	129	73	17
	5	4	2215	0.05	2.20	1005	50	15
	6	4	831	0.89	2.57	323	40	13
	7	3	2396	0.31	3.18	754	34	16
Non-tidal	1-7	92	49407	0.09	2.04	24223	701	278
Tidal	1-7	28	13271	0.20	2.65	5017	410	118
All	1-7	120	62678	0.08	2.14	29240	1111	396

Table 3-4b. Total daytime fishing effort for shore anglers for the non-tidal and tidal portions of the river estimated from the aerial survey, along with estimates of precision (relative standard error, RSE). Estimates based on monthly temporal post-stratification.

Strata		# PSU Aerial	Effort (hours)	RSE	Mean hours/trip	# Trips	# Interviews	# PSU Access
Geographic	Month							
Non-Tidal 2+3	Mar/Apr	6	5419	0.50	1.90	2853	71	17
	May	6	6213	0.41	2.24	2768	16	15
	Jun	8	6131	0.25	2.50	2456	27	18
	Jul	8	4767	0.21	2.36	2024	96	20
	Aug	8	2882	0.14	1.57	1836	46	27
	Sep	8	3086	0.47	3.01	1027	16	24
	Oct	8	411	0.36	4.01	102	31	28
Non-Tidal 1	Mar/Apr	10	7931	0.26	2.36	3367	120	26
	May	9	4423	0.19	2.04	2164	80	20
	Jun	6	1543	0.24	2.10	735	65	17
	Jul	4	3559	0.16	1.44	2475	64	15
	Aug	4	4189	0.13	1.85	2265	39	18
	Sep	4	2506	0.40	1.66	1514	18	15
	Oct	3	2497	1.59	1.46	1712	12	18
Pooled Non-Tidal	Mar/Apr	16	13350	0.25	2.15	6219	191	43
	May	15	10636	0.25	2.16	4932	96	35
	Jun	14	7675	0.20	2.41	3191	92	35
	Jul	12	8326	0.14	1.85	4499	160	35
	Aug	12	7071	0.10	1.72	4101	85	45
	Sep	12	5593	0.32	2.20	2541	34	39
	Oct	11	2908	1.36	1.60	1814	43	46
Tidal	Mar/Apr	6	5441	0.36	2.64	2063	73	26
	May	3	2794	1.00	3.05	917	96	14
	Jun	4	289	0.49	2.35	123	39	14
	Jul	4	369	1.06	3.48	106	78	20
	Aug	4	2215	0.05	2.20	1005	50	15
	Sep	4	831	0.89	2.57	323	40	13
	Oct	3	2396	0.31	3.18	754	34	16
Non-tidal	Mar-Oct	92	55558	0.12	2.04	27297	701	278
Tidal	Mar-Oct	28	14335	0.25	2.71	5292	410	118
All	Mar-Oct	120	69893	0.11	2.14	32589	1111	396

Table 3-5a. Total daytime fishing effort for boat and shore anglers for the non-tidal and tidal portions of the river estimated from the aerial survey, along with estimates of precision (relative standard error, RSE). Estimates based on original temporal stratification.

Strata		# PSU Aerial	Effort (hours)	RSE	Mean hours/trip	# Trips	# Interviews	# PSU Access
Geographic	Time							
Non-Tidal 2+3	1	2	3750	0.11	2.71	1382	42	9
	2	12	26393	0.16	3.21	8229	131	28
	3	8	11286	0.11	4.46	2531	139	18
	4	6	6454	0.17	2.92	2208	103	15
	5	8	8480	0.13	3.27	2592	112	27
	6	8	9425	0.28	3.94	2390	50	24
	7	8	2856	0.26	4.06	704	48	28
Non-Tidal 1	1	7	54972	0.40	2.96	18543	89	14
	2	15	59673	0.16	3.80	15696	433	37
	3	4	10412	0.13	2.67	3904	129	16
	4	3	18144	0.12	3.24	5606	114	11
	5	4	21747	0.09	2.91	7474	103	18
	6	4	16296	0.12	3.33	4890	50	15
	7	3	10963	0.46	2.96	3706	36	18
Pooled Non-Tidal	1	9	58722	0.38	2.95	19925	131	23
	2	27	86066	0.12	3.60	23924	564	65
	3	12	21697	0.09	3.37	6435	268	34
	4	9	24598	0.10	3.15	7814	217	26
	5	12	30227	0.07	3.00	10066	215	45
	6	12	25720	0.12	3.53	7280	100	39
	7	11	13819	0.37	3.13	4410	84	46
Tidal	1	5	26143	0.52	3.30	7916	95	16
	2	5	51207	0.16	3.90	13127	284	27
	3	4	10541	0.46	3.00	3515	75	14
	4	3	17036	0.16	3.95	4314	146	17
	5	4	13111	0.20	2.80	4682	81	15
	6	4	11783	0.12	2.80	4203	61	13
	7	3	9800	0.32	4.02	2435	40	16
Non-Tidal	1-7	92	260849	0.10	3.27	79854	1579	278
Tidal	1-7	28	139621	0.12	3.47	40192	782	118
All	1-7	120	400470	0.08	3.34	120046	2361	396

Table 3-5b. Total daytime fishing effort for boat and shore anglers for the non-tidal and tidal portions of the river estimated from the aerial survey, along with estimates of precision (relative standard error, RSE). Estimates based on monthly temporal post-stratification.

Strata		# PSU Aerial	Effort (hours)	RSE	Mean hours/trip	# Trips	# Interviews	# PSU Access
Geographic	Month							
Non-Tidal 2+3	Mar/Apr	6	19813	0.25	2.40	8239	95	17
	May	6	16548	0.32	4.10	4033	67	15
	Jun	8	13180	0.19	4.70	2807	96	18
	Jul	8	9513	0.12	3.14	3030	157	20
	Aug	8	8480	0.13	3.27	2592	112	27
	Sep	8	9425	0.27	3.94	2390	50	24
	Oct	8	2856	0.29	4.06	704	48	28
Non-Tidal 1	Mar/Apr	10	84040	0.29	3.70	22715	278	26
	May	9	32097	0.21	3.87	8292	198	20
	Jun	6	12695	0.15	2.76	4600	138	17
	Jul	4	24885	0.10	2.97	8389	151	15
	Aug	4	21747	0.11	2.91	7474	103	18
	Sep	4	16296	0.14	3.33	4890	50	15
	Oct	3	10963	0.76	2.96	3706	36	18
Pooled Non-Tidal	Mar/Apr	16	103853	0.24	3.36	30954	373	43
	May	15	48646	0.18	3.95	12325	265	35
	Jun	14	25876	0.12	3.49	7407	234	35
	Jul	12	34398	0.08	3.01	11419	308	35
	Aug	12	30227	0.09	3.00	10066	215	45
	Sep	12	25720	0.13	3.53	7280	100	39
	Oct	11	13819	0.60	3.13	4410	84	46
Tidal	Mar/Apr	6	42374	0.48	3.69	11475	211	26
	May	3	37594	0.28	3.81	9868	147	14
	Jun	4	12978	0.59	3.26	3976	88	14
	Jul	4	22082	0.14	3.87	5700	154	20
	Aug	4	13111	0.20	2.80	4682	81	15
	Sep	4	11783	0.15	2.80	4203	61	13
	Oct	3	9800	0.33	4.02	2435	40	16
Non-Tidal	Mar-Oct	92	282538	0.10	3.37	83861	1579	278
Tidal	Mar-Oct	28	149721	0.16	3.54	42340	782	118
All	Mar-Oct	120	432260	0.09	3.43	126200	2361	396

Table 3-6a. Total daytime fishing effort by fishing mode in the non-tidal stratum 2 estimated from the aerial survey, along with estimates of precision (relative standard error, RSE). Based on original temporal stratification. Mode legend B= boat anglers, S= shore anglers, All = boat and shore anglers combined.								
Strata		Total						
Temporal	Mode	# PSU from Aerial Data	Total Effort (hours)	RSE	Mean hours/trip	# Trips	# Interviews	# PSU from Interview Data
<b>Original Temporal Stratification</b>								
1-2	B	7	17557	0.31	4.29	4095	74	12
3	B	4	6629	1.07	4.89	1355	89	9
4-5	B	7	6634	0.22	4.38	1516	78	23
6-7	B	8	6014	0.34	4.41	1365	46	11
All	B	26	36834	0.25	4.42	8331	287	55
1-2	S	7	5646	0.66	2.02	2796	72	12
3	S	4	2929	1.80	2.46	1193	34	9
4-5	S	7	2911	0.30	2.58	1129	74	23
6-7	S	8	1568	0.73	3.41	459	28	11
All	S	26	13053	0.51	2.34	5577	208	55
1-2	All	7	23202	0.28	3.17	7323	146	12
3	All	4	9558	0.93	4.37	2186	123	9
4-5	All	7	9545	0.18	3.56	2680	152	23
6-7	All	8	7582	0.31	4.03	1881	74	11
All	All	26	49887	0.23	3.55	14071	495	55
<b>Monthly Stratification</b>								
1-2	B	6	11963	0.33	4.27	2805	72	12
3	B	4	6049	0.35	4.90	1234	57	9
4-5	B	8	9357	0.23	4.38	2138	112	23
6-7	B	8	6014	0.34	4.41	1365	46	11
All	B	26	33384	0.16	4.43	7542	287	55
1-2	S	6	4513	0.68	1.98	2279	63	12
3	S	4	2738	0.36	2.39	1144	24	9
4-5	S	8	4076	0.25	2.58	1580	93	23
6-7	S	8	1568	0.73	3.41	459	28	11
All	S	26	12895	0.28	2.36	5463	208	55
1-2	All	6	16477	0.31	3.20	5151	135	12
3	All	4	8787	0.27	4.16	2113	81	9
4-5	All	8	13433	0.18	3.56	3772	205	23
6-7	All	8	7582	0.31	4.03	1881	74	11
All	All	26	46278	0.14	3.58	12917	495	55

Table 3-6b. Total daytime fishing effort by fishing mode in the non-tidal stratum 3 estimated from the aerial survey, along with estimates of precision (relative standard error, RSE). Based on original temporal stratification. Mode legend B= boat anglers, S= shore anglers, All = boat and shore anglers combined.								
Strata	Total							
Temporal	Mode	# PSU from Aerial Data	Total Effort (hours)	RSE	Mean hours/trip	# Trips	# Interviews	# PSU from Interview Data
<b>Original Temporal Stratification</b>								
1-2	B	7	12722	0.24	8.50	1497	3	1
3	B	4	5762	0.53	8.67	665	12	1
4-5	B	7	3091	0.13	5.25	589	15	7
6-7	B	8	3629	0.46	3.37	1078	5	3
All	B	26	25205	0.19	6.58	3828	35	12
1-2	S	7	9926	0.34	1.92	5179	24	3
3	S	4	7251	0.20	3.00	2417	4	2
4-5	S	7	3498	0.22	2.76	1267	48	12
6-7	S	8	2522	0.60	4.04	624	19	12
All	S	26	23198	0.18	2.45	9487	95	28
1-2	All	7	22648	0.20	2.65	8552	27	5
3	All	4	13014	0.26	7.25	1795	16	2
4-5	All	7	6589	0.13	3.35	1965	63	19
6-7	All	8	6152	0.37	3.90	1576	24	14
All	All	26	48403	0.13	3.49	13889	130	40
<b>Monthly Stratification</b>								
1-2	B	6	7959	0.26	8.50	936	3	1
3	B	4	8049	0.13	8.67	929	12	1
4-5	B	8	4029	0.12	5.25	767	15	7
6-7	B	8	3629	0.46	3.37	1078	5	3
All	B	26	23666	0.12	6.38	3710	35	12
1-2	S	6	5572	0.35	1.92	2907	24	4
3	S	4	9525	0.05	3.33	2858	3	1
4-5	S	8	5491	0.23	2.74	2000	49	12
6-7	S	8	2522	0.60	4.04	624	19	11
All	S	26	23110	0.12	2.75	8389	95	28
1-2	All	6	13531	0.21	2.65	5110	27	5
3	All	4	17574	0.07	7.60	2312	15	2
4-5	All	8	9519	0.14	3.33	2857	64	19
6-7	All	8	6152	0.37	3.90	1576	24	14
All	All	26	46776	0.09	3.95	11855	130	40



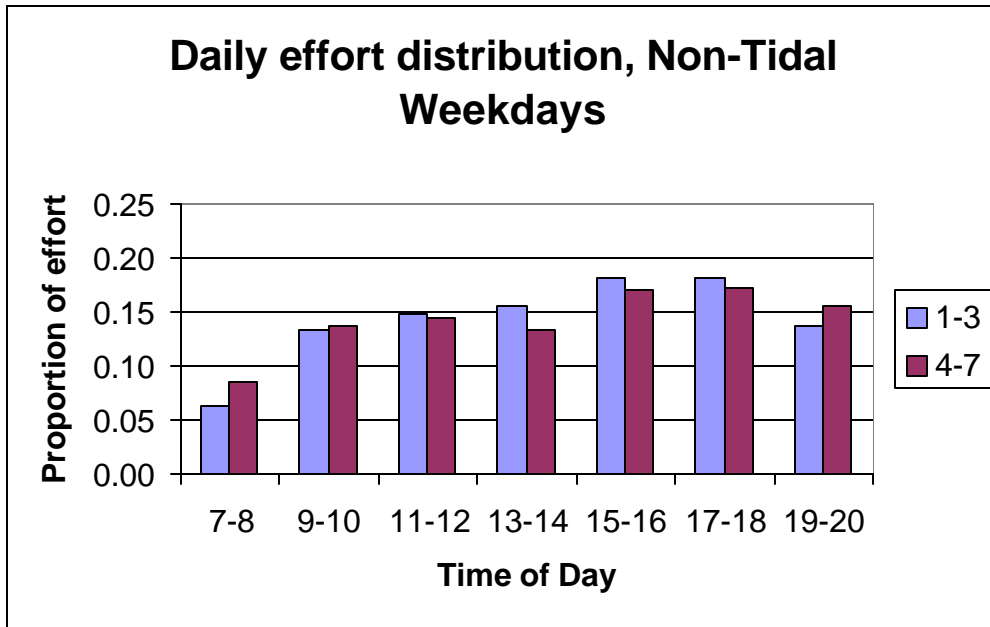


Figure 3-1. Proportion of total daily fishing effort (angler hours) by 2-hour time intervals (military time) in the non-tidal portion of the river during weekdays for the original temporal strata 1-3, and 4-7.

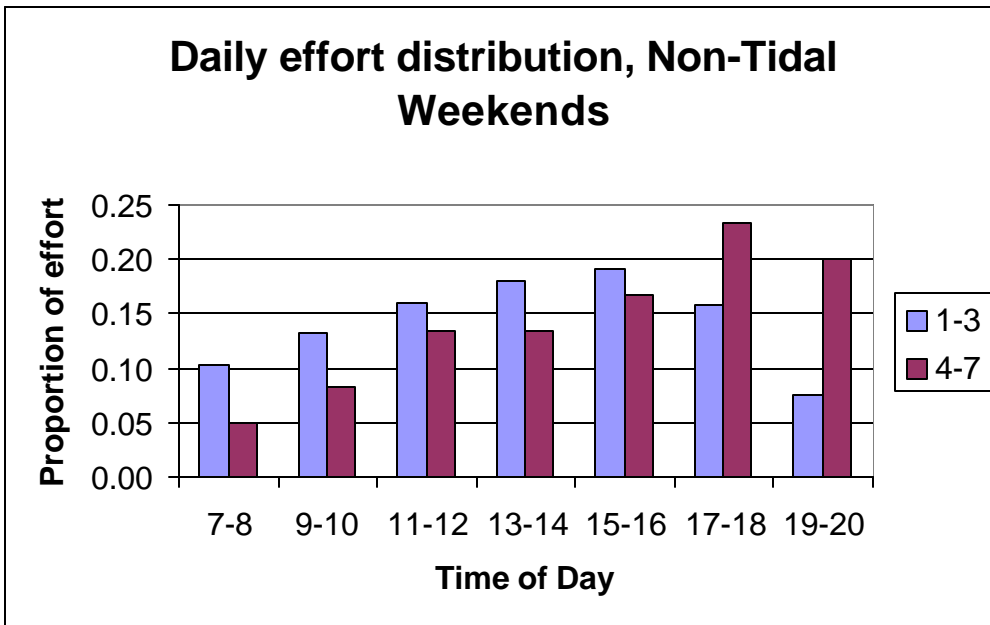


Figure 3-2. Proportion of total daily fishing effort (angler hours) by 2-hour time intervals (military time) in the non-tidal portion of the river during weekends for original temporal strata 1-3, and 4-7.

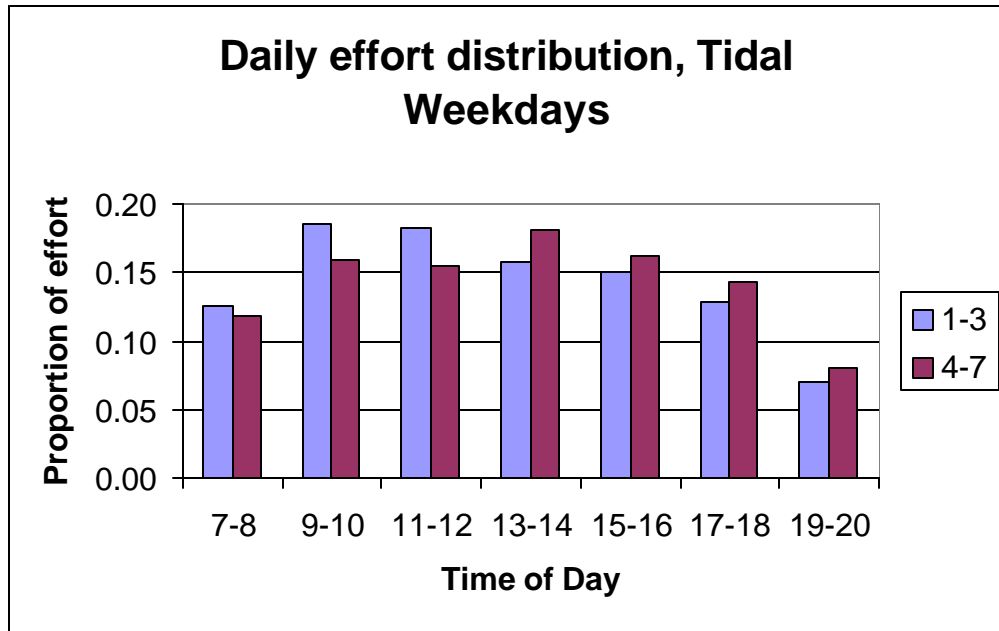


Figure 3-3. Proportion of total daily fishing effort (angler hours) by 2-hour time intervals (military time) in the tidal portion of the river during weekdays for original temporal strata 1-3, and 4-7.

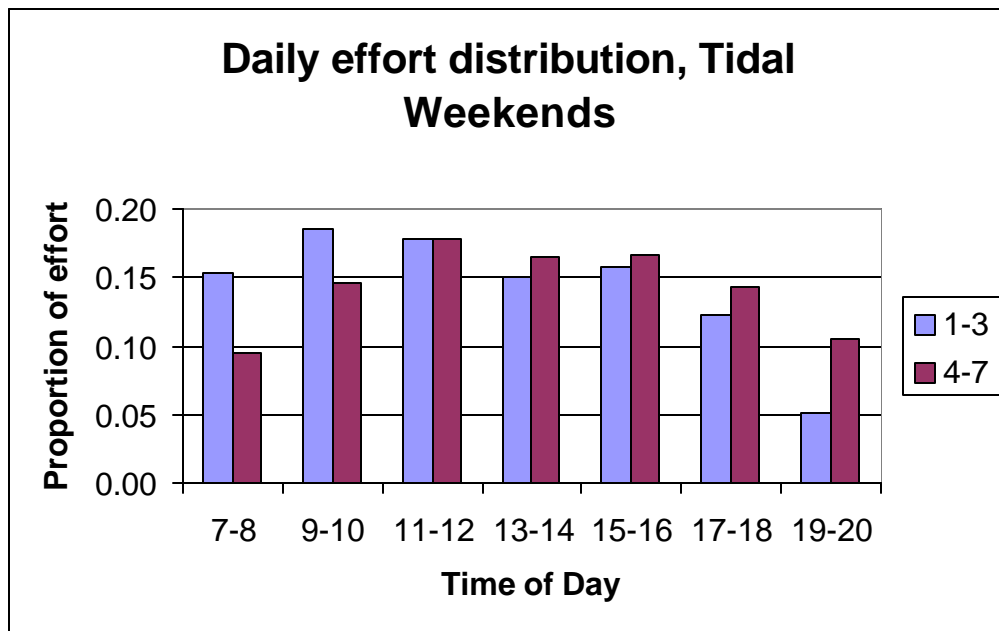


Figure 3-4. Distribution of total daily fishing effort (angler hours) by 2-hour time intervals (military time) in the tidal portion of the river during weekends and holidays for original temporal strata 1-3, and 4-7.

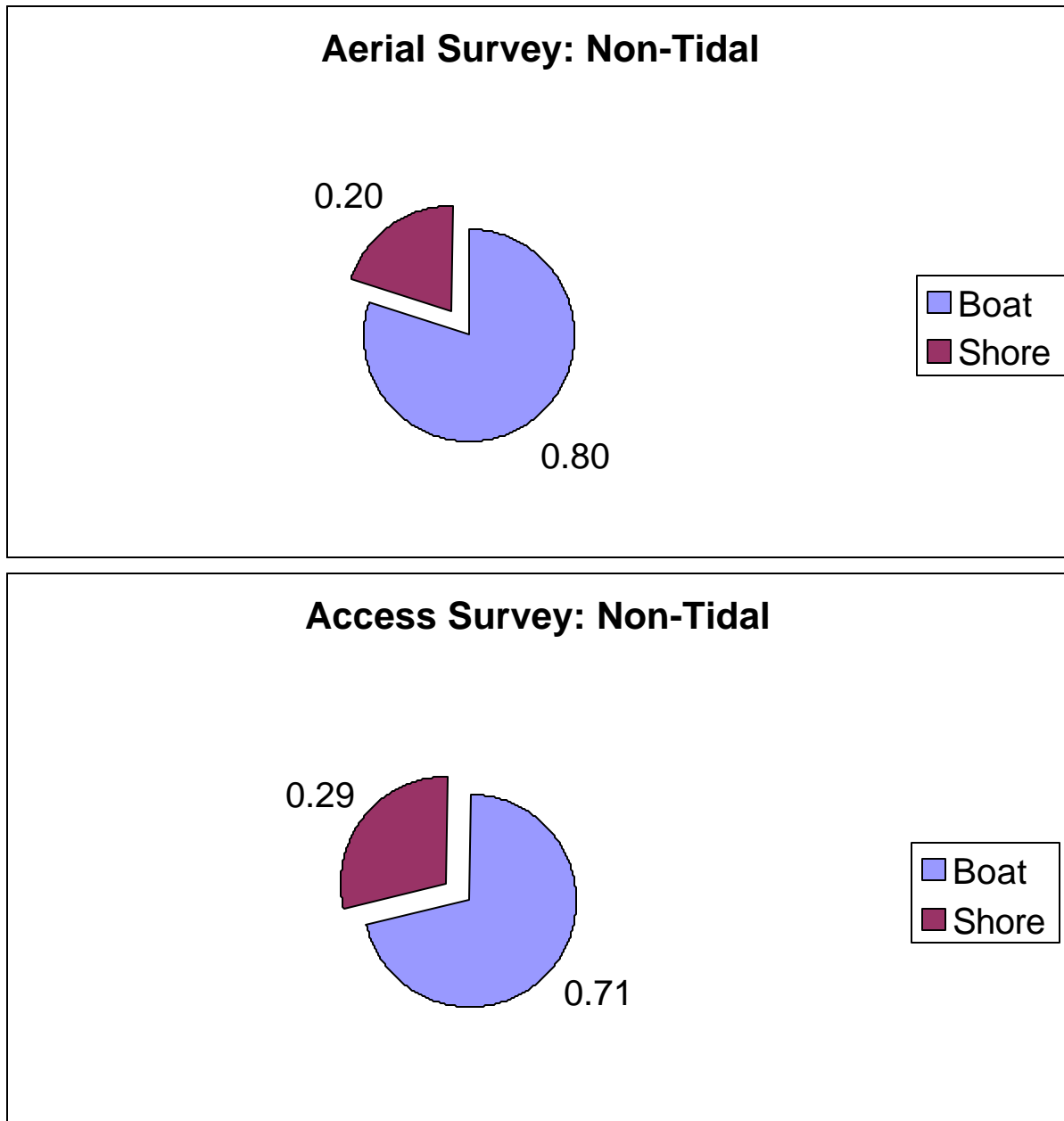


Figure 3-5. Proportion of total fishing effort (angler hours) in the non-tidal portion of the river by fishing mode, based on the aerial survey and the access survey.

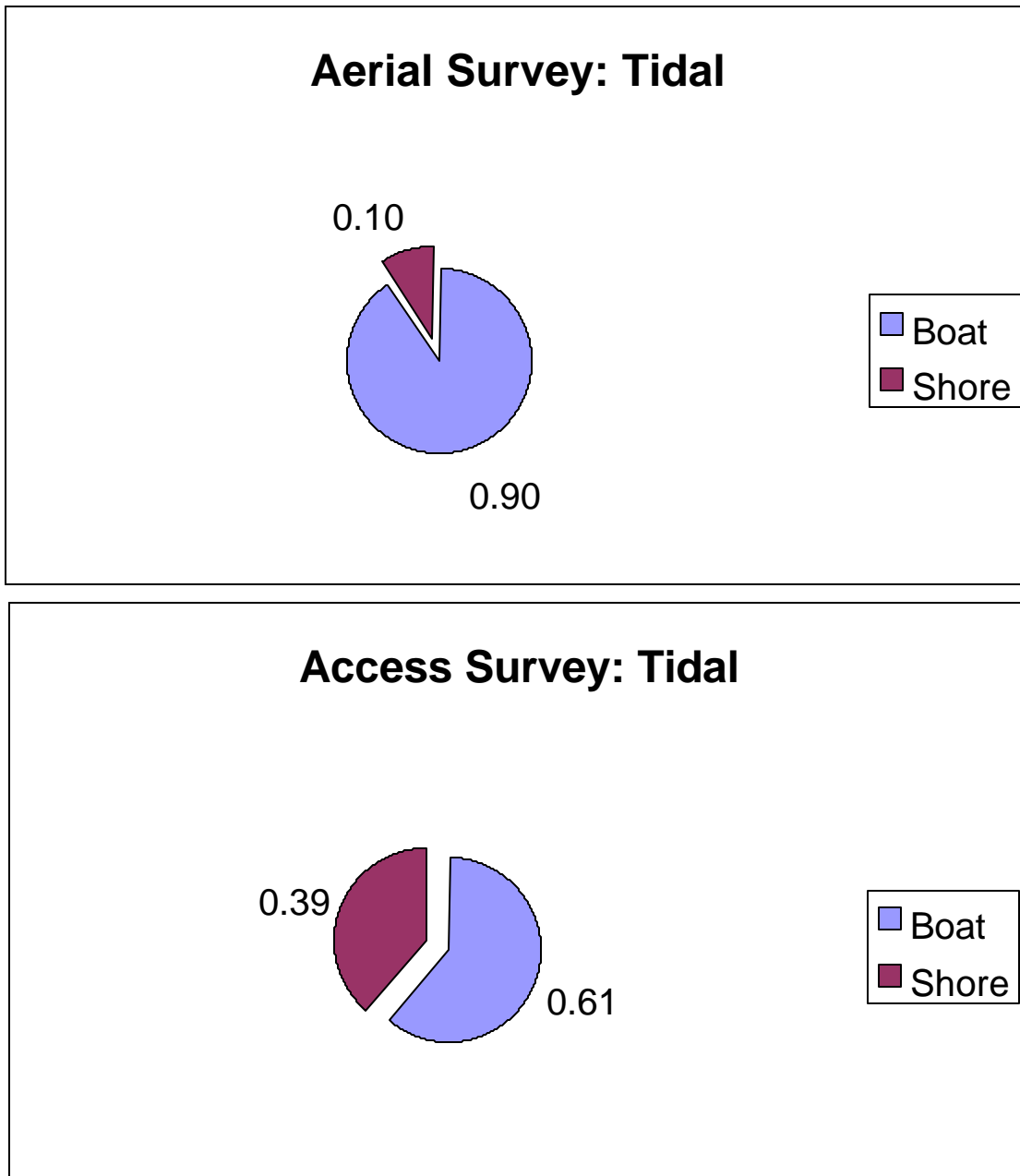


Figure 3-6. Proportion of total effort fishing (angler hours) in the tidal portion of the river by fishing mode, based on the aerial survey and the access survey.

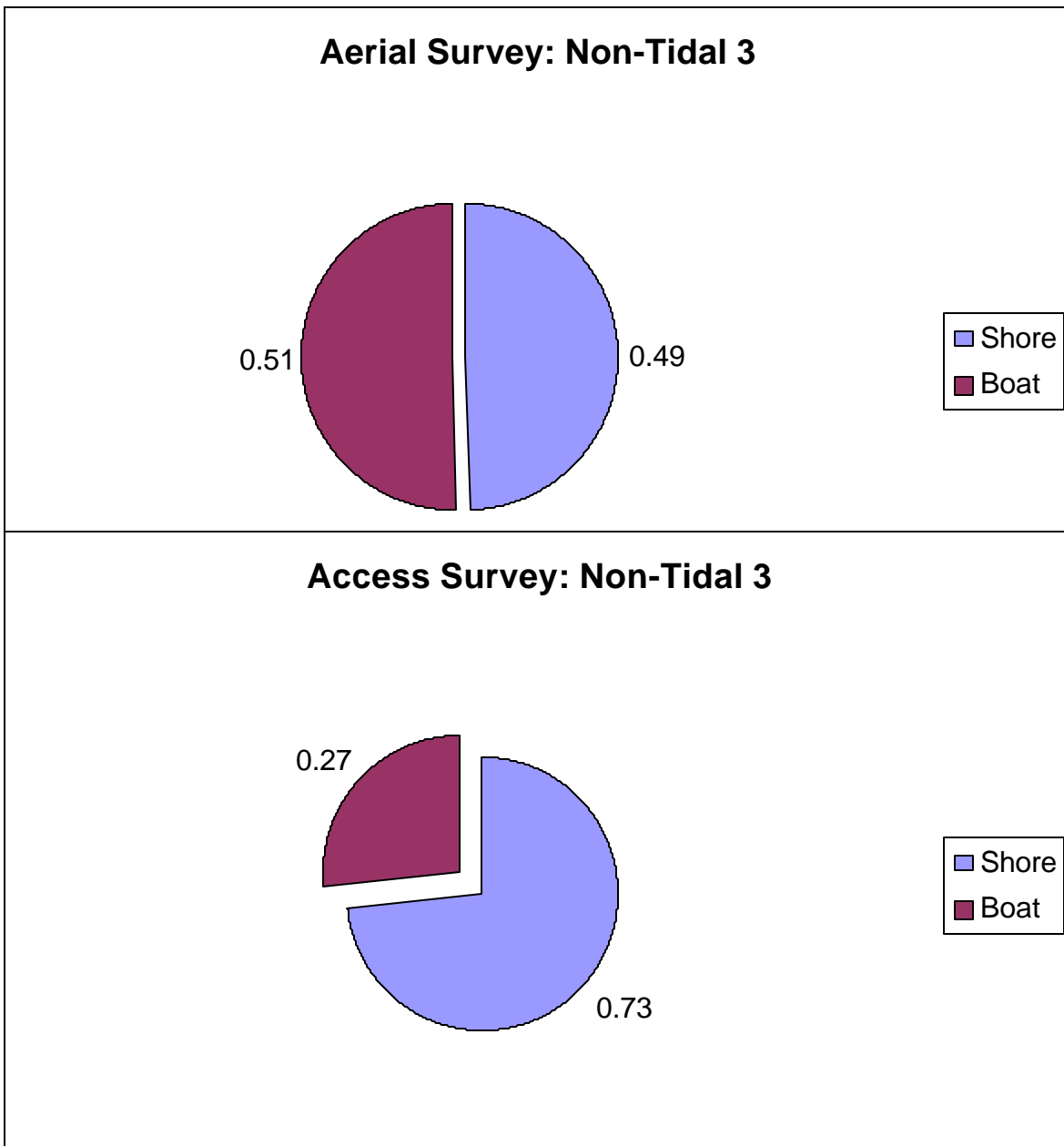


Figure 3-7. Proportion of total effort fishing (angler hours) accounted for by boat anglers in the non-tidal stratum 3, based on the aerial survey and the access survey.

### 3.1.2 Night Fishing Effort

Based on equations 1.15-1.20 we estimated that the total angler effort at night (9 PM to midnight) for the total sample period was 25,689 hours (RSE=35%) for boat and shore anglers combined (19,595 trips). The total night effort was evenly distributed between the non-tidal river (12,891 hours) and the tidal river (12,798 hours). The fishing effort at night accounts for 4% of the total effort (7 AM to midnight) in the non-tidal River, and 8% in the tidal portion of the river (Figures 3-8 and 3-9; Table 3-7). The ratio of night effort versus PM effort was estimated from interviews collected from 55 primary sampling units (sites/days) with paired PM and nightshifts. The sample sizes precluded a finer geographic or temporal stratification. The pooled monthly strata (March-June; July-October) closely overlap the original strata 1-3, and 4-7.

Table 3-7. Total night (9 PM to midnight) fishing effort (angler hours) for the non-tidal and tidal portions of the river estimated from the aerial survey, along with estimates of precision (relative standard error, RSE). Estimates based on monthly temporal stratification. Boat and shore anglers combined.						
Stratum		Night			Fraction of all effort	
Geographic	Temporal	Effort	RSE	# of Trips	Daytime	Night
Non-Tidal	Mar-Jun	6815	0.44	4638	0.96	0.04
	Jul-Oct	6076	0.77	4563	0.94	0.06
	Mar-Oct	12891	0.43	9256	0.96	0.04
Tidal	Mar-Jun	8346	0.88	23112	0.92	0.08
	Jul-Oct	4452	0.20	3263	0.93	0.07
	Mar-Oct	12798	0.58	10996	0.92	0.08
All	Mar-Oct	25689	0.36	19595	0.94	0.06

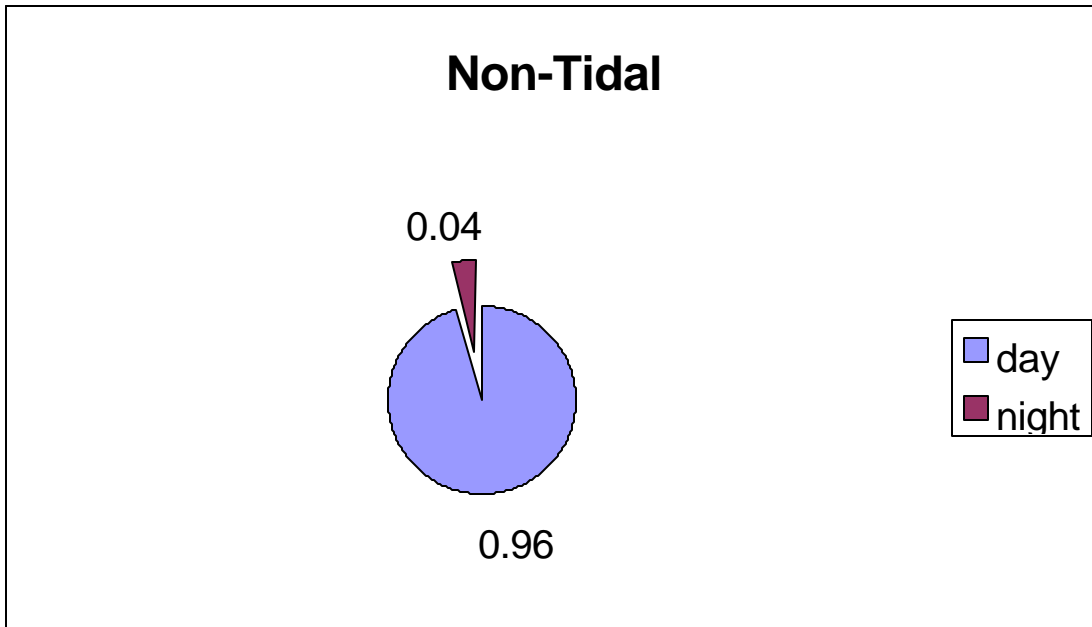


Figure 3-8. The proportion of total angler effort by daytime (7 AM to 9 PM) and night (9 PM to midnight) for the total sample period in the non-tidal portion of the River.

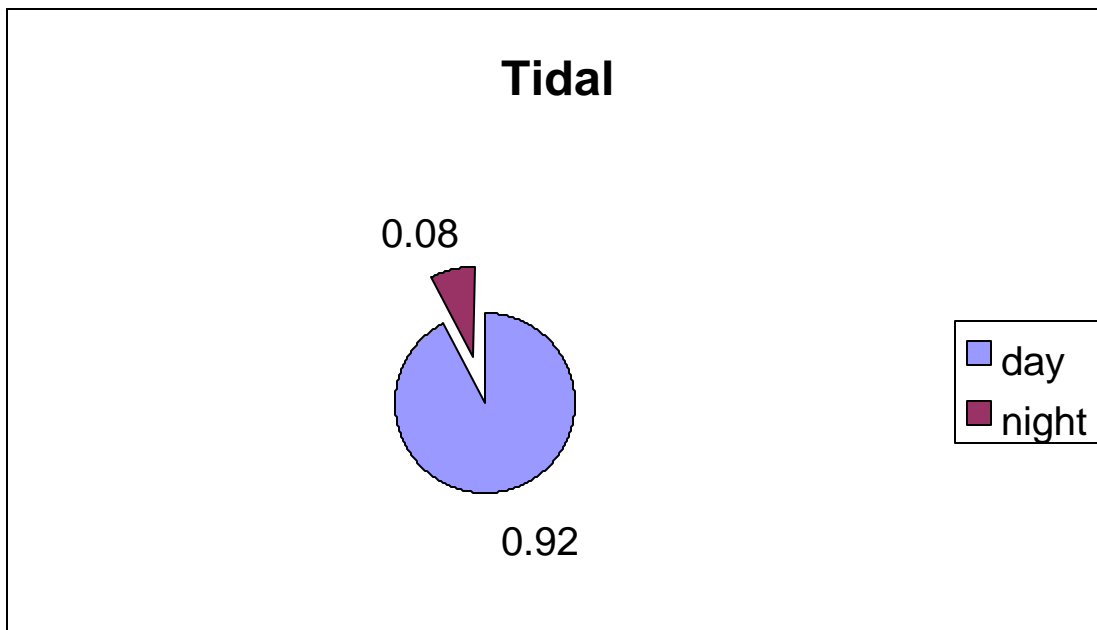


Figure 3-9. The proportion of total angler effort by daytime (7 AM to 9 PM) and night (9 PM to midnight) for the total sample period in the tidal portion of the River.

### 3.2 ANGLER CATCH AND HARVEST STATISTICS

A total number of 396 daytime PSUs were completed in the access point survey between March 17 and October 31. Data on catch and harvest were collected from 2,357 completed angler trips, averaging 6 interviews per site/day. The species composition of reported catches (by stratum) for all anglers interviewed during daytime (7 AM and 9 PM) are presented in Figures 3-10 to 3-12. The composition of catches reported by anglers interviewed at night (9 PM to midnight) for the tidal and non-tidal portions of the river are presented in Figures 3-13 and 3-14. These catch distributions are not weighted according to the temporal stratification and fishing modes, and thus may not accurately reflect the overall catch composition throughout the study period.

Table 3-8 provides the estimated total angler catch and harvest for the total sample period (March 17 through October) based on the original temporal stratification for the four key species as well as for the two species with highest catches. Table 3-9 provides the same catch and harvest statistics based on the monthly post-strata. These estimates represent boat and shore fishing combined. Estimates of catch and harvest for the total sample period are provided for the non-tidal and tidal portions of the Delaware River, and for the total study area.

No meaningful separate estimate for the East Branch could be provided because only seven anglers were interviewed in this section throughout the study period, and they reported zero catches. Only two striped bass were recorded from interviews in the entire non-tidal stratum 3, and no catches of American shad or river herring were reported by anglers interviewed in this portion of the river.

Based on the original stratification, the total catch of American shad was estimated at 35,281 fish (Table 3-8), with a relative standard error of (RSE) of 22%. The monthly post-stratification resulted in a slightly higher (but not significantly) estimate of total catch (38,363 fish), with the same precision (RSE= 22%) (Table 3-9). Estimates of catch and harvest for American shad and striped bass by temporal strata (original and monthly) are in tables 3-10 and 3-11. On average, the anglers caught 0.25 shad per hour in the non-tidal River from March through May. The catch in June was negligible, and none were caught after June (Table 3-10). In the Estuary, the catch rate was 0.02 shad per hour during March/April, while none were caught after April. Overall, only 19% of the American shad caught were kept (harvested). An estimated 49% of the harvested shad were females. In all, over 97% of American shad were caught in the non-tidal River. Catches by boat anglers represented 85% of the total catch of American shad in the non-tidal portion, and 97% in the tidal (Figures 3-15 and 16).

Based on the original stratification, an estimated 36,328 striped bass (RSE=22%) were caught during the survey period, with anglers fishing in the non-tidal portion of the river accounting for 45% of the total catch (Table 3-8). The monthly post-stratification resulted in a similar (but not significantly different) total catch estimate of 37,315 fish, with RSE = 20% (Table 3-9). The catch rate for striped bass was 0.06 fish/hour in the non-tidal River, and 0.17 in



the Estuary. Boat anglers accounted for 80% of the catch in the non-tidal river, and 83% in the tidal (Figures 3-17 and 3-18). In all, about 1% of the striped bass caught were harvested (Table 3-8).

An estimated 7,553 river herrings were caught during the entire survey period (RSE=52%), and 4,916 fish (65%) were kept (harvested). This survey indicates marginal catches of hickory shad (43 fish) and zero harvest (Table 3-8).

Smallmouth bass was the most frequently caught species, with an estimated total catch of 98,393 fish (RSE=12%) during daytime (Table 3-8). As expected, most of this catch (99%) was from the non-tidal river, and the fishery was almost exclusively catch-and-release (~1% were harvested). This species was regularly caught by angler throughout the survey period, and thus the total catch was precisely estimated. The fishery for channel catfish also was significant, with an estimated total catch of 58,703 fish (RSE=15%) throughout the river during the survey period, with 79% of the fish being caught in the Tidal River (Table 3-8). The harvest rate for this species was about 16%. Again, the total catch was precisely estimated because the catches were widely distributed both in time and space.

Table 3-12 provides separate catch and harvest estimates for selected species in non-tidal stratum 2. Smallmouth bass was the most frequently caught species in this section of the river, with an estimated total catch of 14,162 fish (RSE=32%). An estimated total number of 9,365 (RSE=39%) American shad were caught in stratum 2. Table 3-13 provides separate estimates of catch and harvest for non-tidal stratum 3 (including the East Branch) for the six most frequently caught species. Each of these species represented > 5% of the total number fish caught by the anglers interviewed in this stratum. Smallmouth bass represented the most significant catch, with an estimated 7,708 fish caught throughout the study period (RSE=18%). This fishery was almost exclusively catch and release (1% were kept). An estimated 2,230 rainbow trout (RSE=20%) were caught, and 10% were harvested. A large portion of walleyes was harvested (74%), out of a total catch of 1,813 fish (RSE=69%). No catch was recorded for the seven anglers interviewed in the East Branch.

Table 3-14 provides estimates of catch and harvest for the most frequently caught species at night, for the non-tidal and tidal portion of the river. Overall, the night catch of striped bass was 12% of the daytime catch. No American shad or river herring were caught by anglers interviewed after 9 PM.

Comprehensive results within and across spatial and temporal strata for these and other species targeted by anglers are provided in the appendices (Volume II). A list of all species recorded in the survey is in Appendix C, along with total catch by species reported by all the anglers intercepted during the total study period. Estimates of catch, harvest, catch-rates, and harvest-rates for American shad, striped bass, river herring, hickory shad and other species with significant catches are provided by spatial and temporal strata (original and monthly), and by fishing modes in Appendix D. Separate estimates of catch and harvest for strata 2 and 3 are also

provided in Appendix D. The estimates for strata 2 and 3 were provided for pooled temporal strata (usually 8-week periods) because the limited number of interviews for these small sections of the river precluded estimates for shorter time intervals.

Of all of anglers interviewed, 69% targeted specific species. The composition of target species varied with temporal and geographic stratum. For the non-tidal portion of the river, American shad was most frequently targeted from March to June (48% of targeted trips), followed by smallmouth bass (17%) (Figure 3-19). From July to October, the majority of anglers in the non-tidal portion of the river (63%) targeted smallmouth bass (Figure 3-20). In the tidal section of the river, striped bass (38%) followed by river herring (22%) were the most frequently targeted species from March to June (Figure 3-21). From July to October, channel catfish (43%) and striped bass (25%) were the most frequently targeted species in the Tidal portion of the river (Figure 3-22). The size frequency of all American shad (by sex) and striped bass measured by creel clerks throughout the study period are in Figures 3-23 and 3-24.

A majority of the anglers interviewed in this study were residents of Pennsylvania, but some anglers came from as far away as California and England. In the non-tidal section of the river, 64% of the anglers came from Pennsylvania, 28% from New Jersey, and 8% from New York (Figure 3-25). In the tidal section of the river, 71% of the anglers were from Pennsylvania, 29% from New Jersey, and 4% from Delaware (Figure 3-26). Within the state of Pennsylvania, the majority of anglers were from the following counties: Bucks (25%), Philadelphia (23%), and Northampton (18%) (Figure 3-27). A majority of all anglers interviewed were males (92%) (Figure 3-28). The largest part of anglers were adult (79%), while young and senior anglers accounted for only 13% and 8%, respectively (Figure 3-29). Volume II contains estimates of targeted effort and catch and harvest within and across spatial and temporal strata for these and other species (Appendix D). The questionnaire used in the access survey, and the field data collection from for the aerial survey is in Appendix E.

Table 3-8. Total angler catch and harvest (daytime fishing) for the four key species and two species most frequently caught throughout the study period from March 17 to October 31, based on the original temporal strata. Boat and shore fishing modes are combined. <sup>1</sup> 49 % were females

Species	Stratum	Catch		Harvest		Ratio
		# Fish	RSE	# Fish	RSE	Harvest/Catch
American shad	Non-Tidal	34091	0.23	6312	0.44	0.19
	Tidal	1190	0.69	315	0.64	0.26
	All	35281	0.22	6627 <sup>1</sup>	0.42	0.19
Striped bass	Non-Tidal	16182	0.26	294	0.66	0.02
	Tidal	20146	0.33	244	1.05	0.01
	All	36328	0.22	538	0.60	0.01
River herring	Non-Tidal	5142	0.72	3452	0.84	0.67
	Tidal	2411	0.56	1465	0.89	0.61
	All	7553	0.52	4916	0.65	0.65
Hickory shad	Non-Tidal	43	1.08	0		0
	Tidal	0		0		
	All	43	1.08	0		0
Smallmouth bass	Non-Tidal	93936	0.13	1428	0.41	0.02
	Tidal	4457	0.59	0		0.00
	All	98393	0.12	1428	0.41	0.01
Channel catfish	Non-Tidal	10151	0.22	1739	0.51	0.17
	Tidal	48552	0.18	7444	0.43	0.15
	All	58703	0.15	9183	0.36	0.16

**Table 3-9. Total angler catch and harvest (daytime fishing) for the four key species and two species most frequently caught throughout the study period from March 17 to October 31, based on the monthly post- strata. Boat and shore fishing modes are combined. <sup>1</sup> 49% were females**

Species	Stratum	Catch		Harvest		Ratio
		# Fish	RSE	# Fish	RSE	Harvest/Catch
American shad	Non-Tidal	37517	0.23	4820	0.31	0.13
	Tidal	846	0.76	280	0.84	0.33
	All	38363	0.22	5100 <sup>1</sup>	0.29	0.13
Striped bass	Non-Tidal	18907	0.24	307	1.16	0.02
	Tidal	18408	0.31	244	1.05	0.01
	All	37315	0.20	551	0.79	0.01
River herring	Non-Tidal	6391	0.61	3688	0.74	0.58
	Tidal	2328	0.71	1336	1.13	0.57
	All	8719	0.48	5025	0.62	0.58
Hickory shad	Non-Tidal	103	1.13	0		0
	Tidal	0		0		
	All	103	1.13	0		0
Smallmouth bass	Non-Tidal	100564	0.12	1392	0.44	0.01
	Tidal	5236	0.55	0		0.00
	All	105800	0.12	1392	0.44	0.01
Channel catfish	Non-Tidal	11848	0.24	2337	0.61	0.20
	Tidal	53907	0.21	7377	0.43	0.14
	All	65756	0.18	9714	0.36	0.15

**Table 3-10a. Total angler catch and harvest (daytime fishing) of American shad by original temporal strata. Boat and shore fishing modes are combined. <sup>1</sup>50% were females; <sup>2</sup> 49% were females**

Species	Temporal Strata	Catch		Harvest		Ratio
		# Fish	RSE	# Fish	RSE	Harvest/Catch
American shad	1	19324	0.37	4581 <sup>1</sup>	0.59	0.24
	2	15884	0.23	2046 <sup>2</sup>	0.31	0.13
	3	73	0.82	0		0.00
	4	0		0		
	5	0		0		
	6	0		0		
	7	0		0		

Table 3-10b. Total angler catch and harvest (daytime fishing) of American shad by monthly post-strata. Boat and shore fishing modes are combined. <sup>1</sup>50% were females; <sup>2</sup>49% were females

Species	Month	Catch		Harvest		Ratio
		# Fish	RSE	# Fish	RSE	Harvest/Catch
American shad	Mar/Apr	26576	0.27	4100 <sup>1</sup>	0.34	0.15
	May	11675	0.40	1000 <sup>2</sup>	0.53	0.09
	Jun	113	0.72	0		0.00
	Jul	0		0		
	Aug	0		0		
	Sept	0		0		
	Oct	0		0		

Table 3-11a. Total angler catch and harvest (daytime fishing) of striped bass by original temporal strata. Boat and shore fishing modes are combined.

Species	Temporal Strata	Catch		Harvest		Ratio
		# Fish	RSE	# Fish	RSE	Harvest/Catch
Striped bass	1	7715	0.70	0		0.00
	2	8766	0.38	63	0.12	0.01
	3	7905	0.38	0		0.00
	4	4629	0.45	0		0.00
	5	5045	0.56	0		0.00
	6	1385	0.29	88	0.16	0.06
	7	882	0.40	387	0.72	0.44

Table 3-11b. Total angler catch and harvest (daytime fishing) of striped bass by monthly post-strata. Boat and shore fishing modes are combined.

Species	Month	Catch		Harvest		Ratio
		# Fish	RSE	# Fish	RSE	Harvest/Catch
Striped bass	Mar/Apr	5630	0.65	0		0.00
	May	6079	0.50	76	0.61	0.01
	Jun	10731	0.35	0		0.00
	Jul	7562	0.39	0		0.00
	Aug	5045	0.56	0		0.00
	Sept	1385	0.29	88	1.25	0.06
	Oct	882	0.53	387	1.09	0.44

**Table 3-12. Total angler catch and harvest (daytime fishing) for the non-tidal stratum 2 for selected species throughout the study period from March 17 to October 31, based on the original temporal stratification.**

Species	Mode	Catch		Harvest		Ratio
		# Fish	RSE	# Fish	RSE	Harvest/Catch
American shad	Boat	8211	0.43	719	0.55	0.09
	Shore	1154	0.82	159	0.84	0.14
	All	9365	0.39	879	0.47	0.09
Striped bass	Boat	189	0.75	0		0.00
	Shore	56	0.80	0		0.00
	All	245	0.61	0		0.00
Smallmouth bass	Boat	11629	0.29	169	0.46	0.01
	Shore	2533	1.17	242	0.37	0.10
	All	14162	0.32	411	0.29	0.03
Rock bass	Boat	2241	0.84	120	0.93	0.05
	Shore	347	0.37	208	0.39	0.60
	All	2589	0.73	328	0.42	0.13

**Table 3-13. Total angler catch and harvest (daytime fishing) for the non-tidal stratum 3 for the six species with highest catch throughout the study period from March 17 to October 31, based on the original temporal stratification. No catches of any species were reported in the East Branch, from Hancock, NY, to Downsville, NY.**

Species	Mode	Catch		Harvest		Ratio
		# Fish	RSE	# Fish	RSE	Harvest/Catch
Smallmouth bass	Boat	2324	0.43	51	1.20	0.02
	Shore	5384	0.26	0		0
	All	7708	0.18	51	1.20	0.01
Rainbow trout	Boat	1503	0.21	216	1.26	0.14
	Shore	726	0.42	0		0
	All	2230	0.20	216	1.26	0.10
Walleye	Boat	1752	0.73	1294	0.56	0.75
	Shore	88	1.14	44	1.14	0.50
	All	1813	0.69	1337	0.54	0.74
Fallfish	Boat	1074	0.76	0		0
	Shore	263	0.71	0		0
	All	1337	0.63	0		0
Brown trout	Boat	51	0.65	0		0
	Shore	430	0.55	0		0
	All	481	0.55	0		0

Table 3-14. Total angler catch and harvest during night (9 PM to midnight) for the four species with highest catch throughout the study period from March 17 to October 31. Boat and shore anglers combined.

Species	Stratum	Catch			Harvest			Ratio Harvest/Catch
		# Fish	RSE	Rate	# Fish	RSE	Rate	
Striped bass	Non-Tidal	0		0.3480	0		0.0000	
	Tidal	4454	0.69	0.0000	0		0.0000	0.00
	All	4454	0.69	0.1734	0		0.0000	0.00
Channel catfish	Non-Tidal	1605	0.56	0.1810	344	0.83	0.0557	0.21
	Tidal	2316	0.98	0.1245	713	1.31	0.0267	0.31
	All	3921	0.62	0.1526	1057	0.92	0.0411	0.27
Eel	Non-Tidal	2522	0.72	0.0278	1376	1.12	0.0000	0.55
	Tidal	356	1.07	0.1957	0		0.1067	0.00
	All	2879	0.64	0.1121	1376	1.12	0.0536	0.48
Small-mouth bass	Non-Tidal	1147	0.74	0.0000	0		0.0000	0.00
	Tidal	0		0.0889	0		0.0000	
	All	1147	0.74	0.0446	0		0.0000	0.00

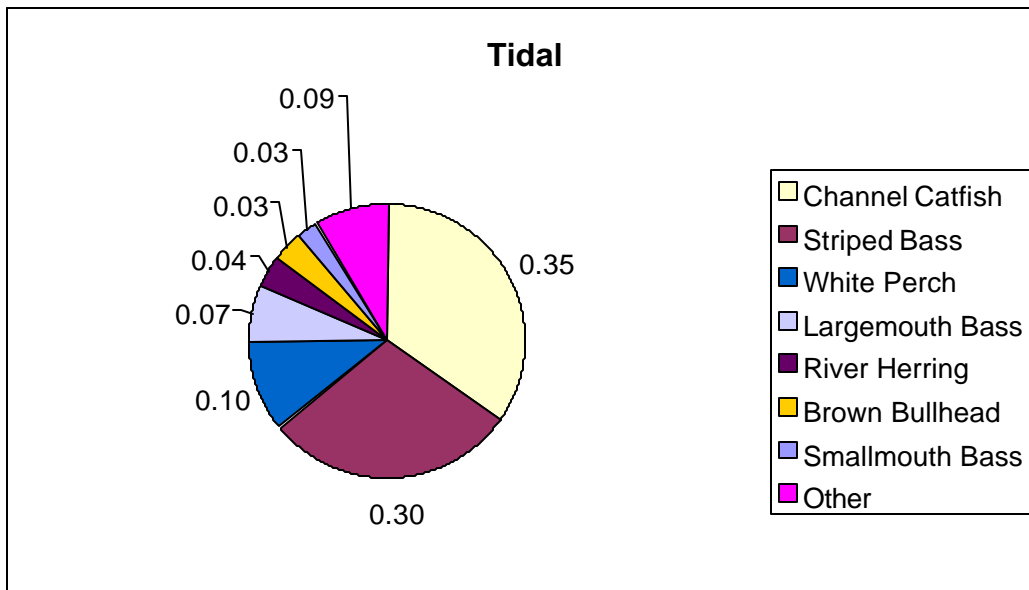


Figure 3-10. The species composition of catches (proportions) reported by anglers interviewed in the tidal portion of the river throughout the study period. Boat and shore anglers combined.

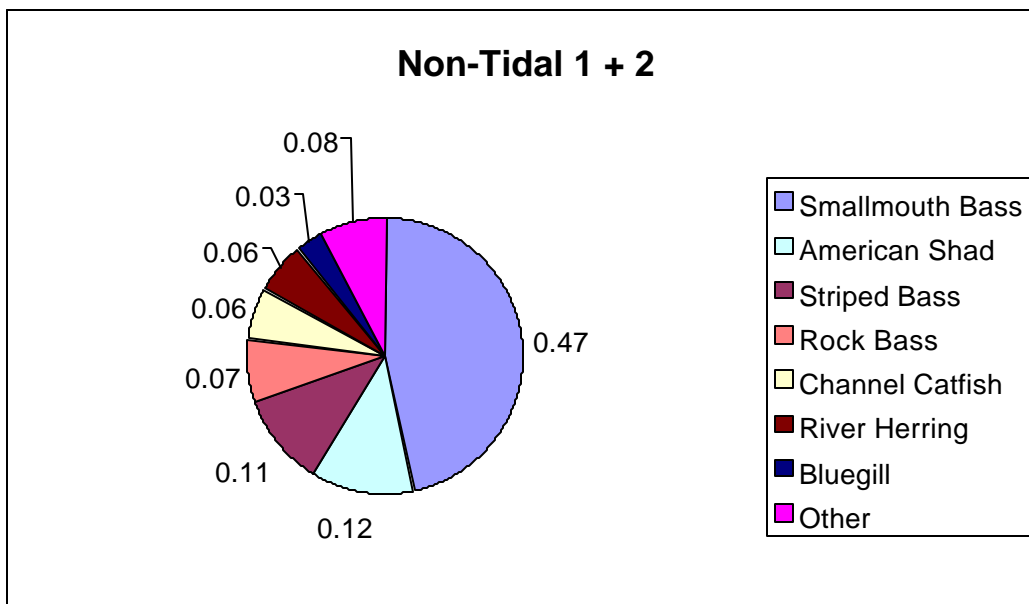


Figure 3-11. The species composition of catches (proportions) reported by anglers interviewed in the non-tidal portion of the river (Strata 1 and 2) throughout the study period. Boat and shore anglers combined. It is likely that some bluegill was misidentified by anglers, and a large portion of the reported catch may represent redbreast sunfish.



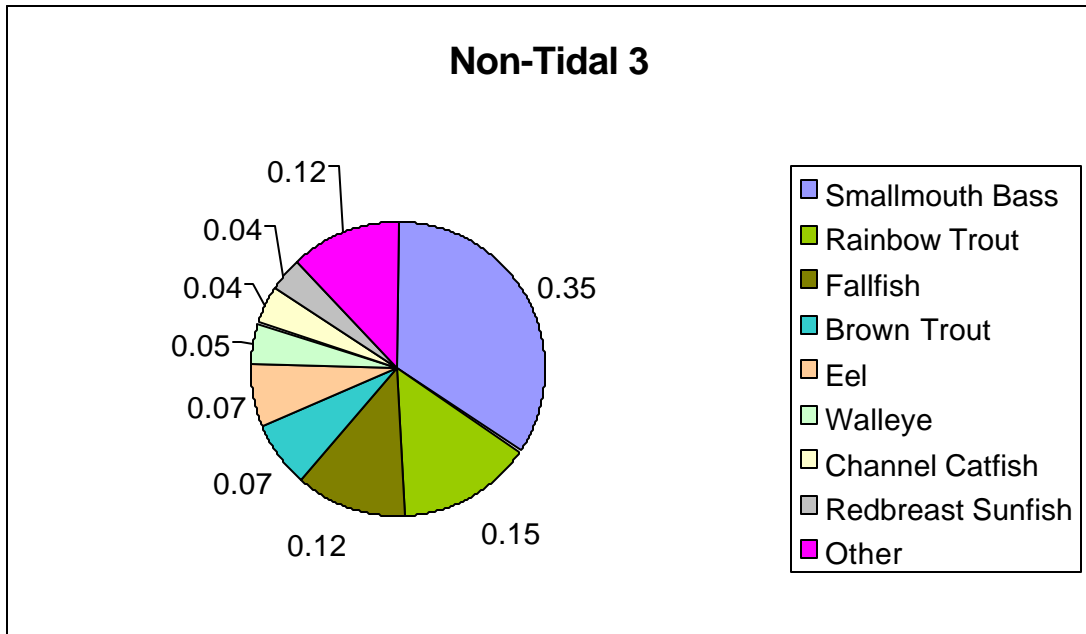


Figure 3-12. The species composition of catches (proportions) reported by anglers interviewed in the non-tidal stratum 3 throughout the study period. Boat and shore anglers combined.

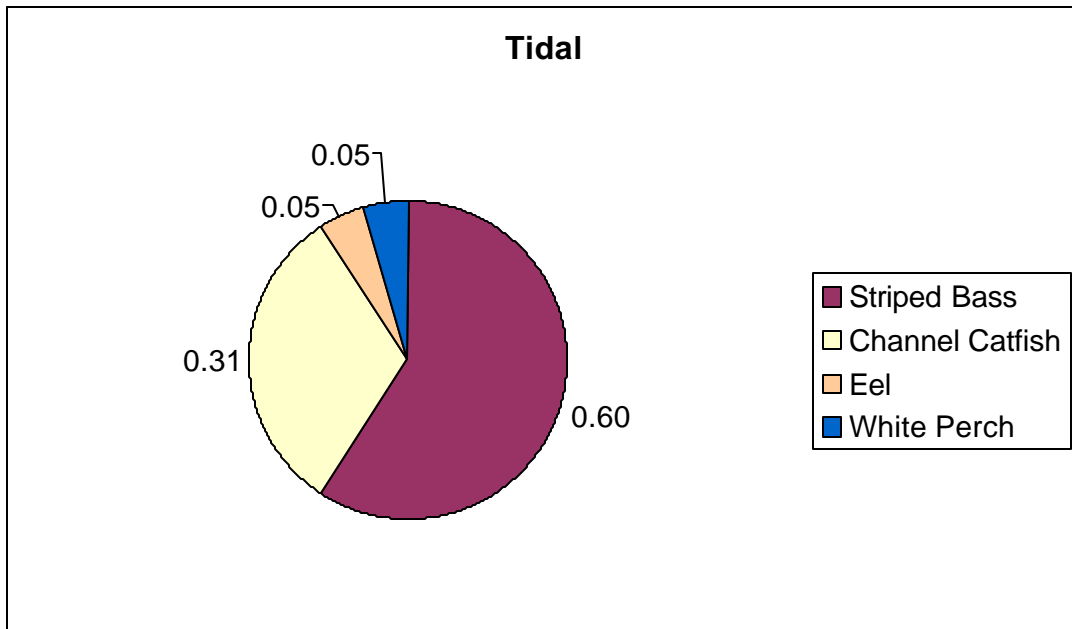


Figure 3-13. The species composition of catches (proportions) reported by anglers interviewed at night (9 PM to midnight) in the tidal portion of the river throughout the study period. Boat and shore anglers combined.

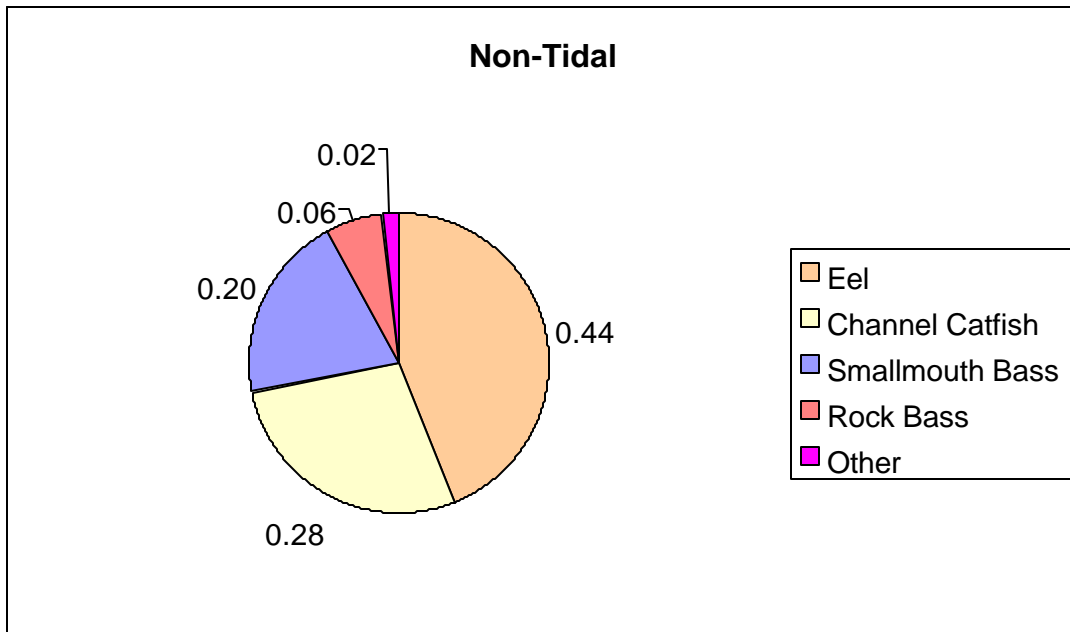


Figure 3-14. The species composition of catches (proportions) reported by anglers interviewed at night (9 PM to midnight) in the non-tidal portion of the river throughout the study period. Boat and shore anglers combined.

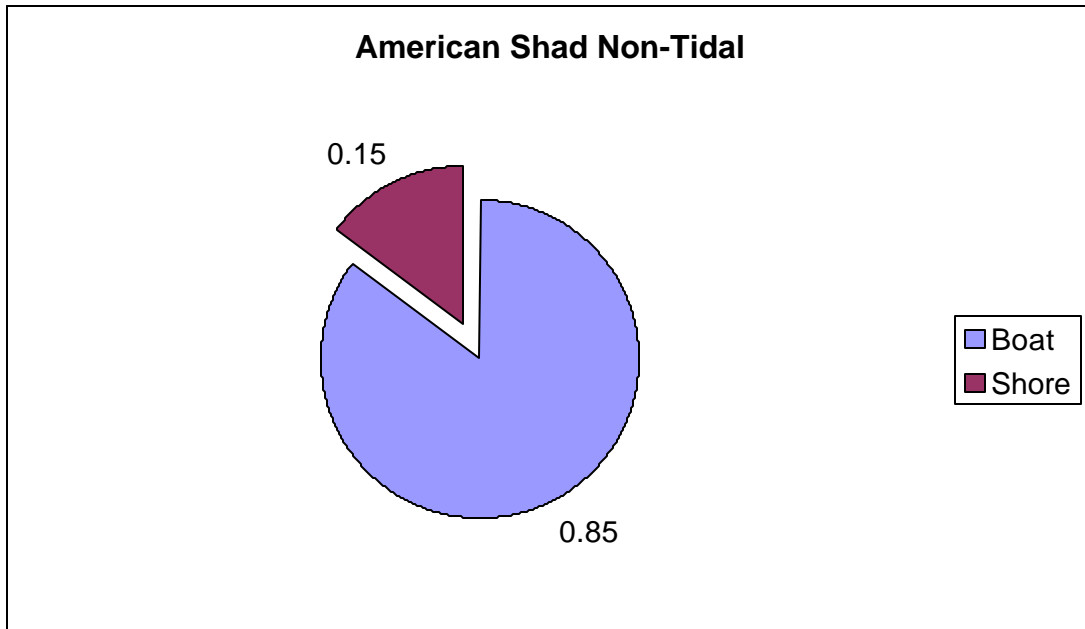


Figure 3-15. Proportion of the total catch of American shad by fishing mode in the non-tidal portion of the river

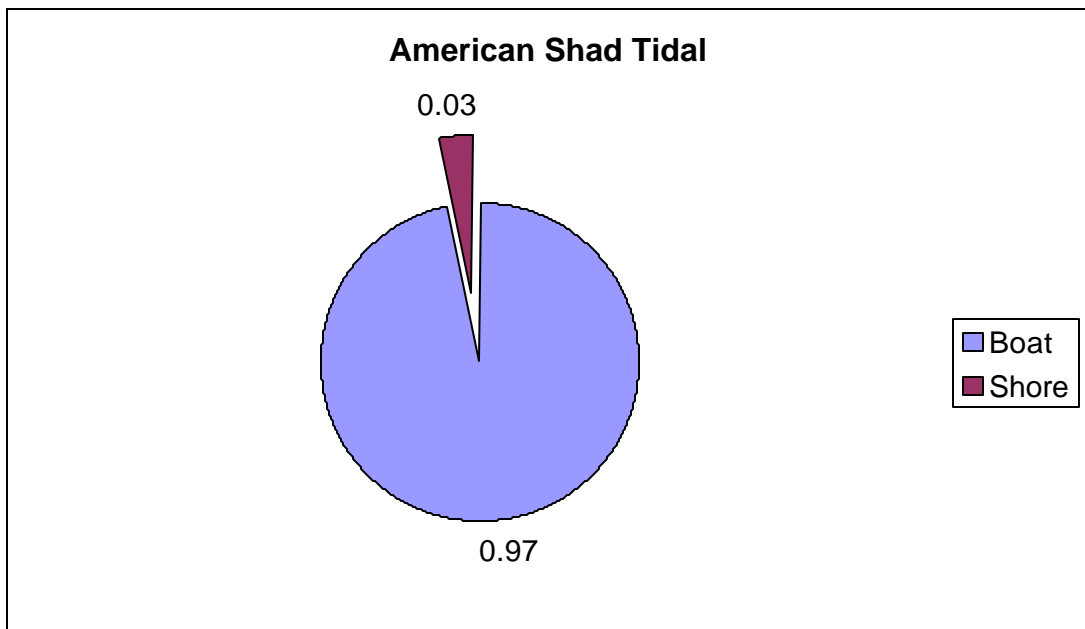


Figure 3-16. Proportion of the total catch of American shad by fishing mode in the tidal portion of the river

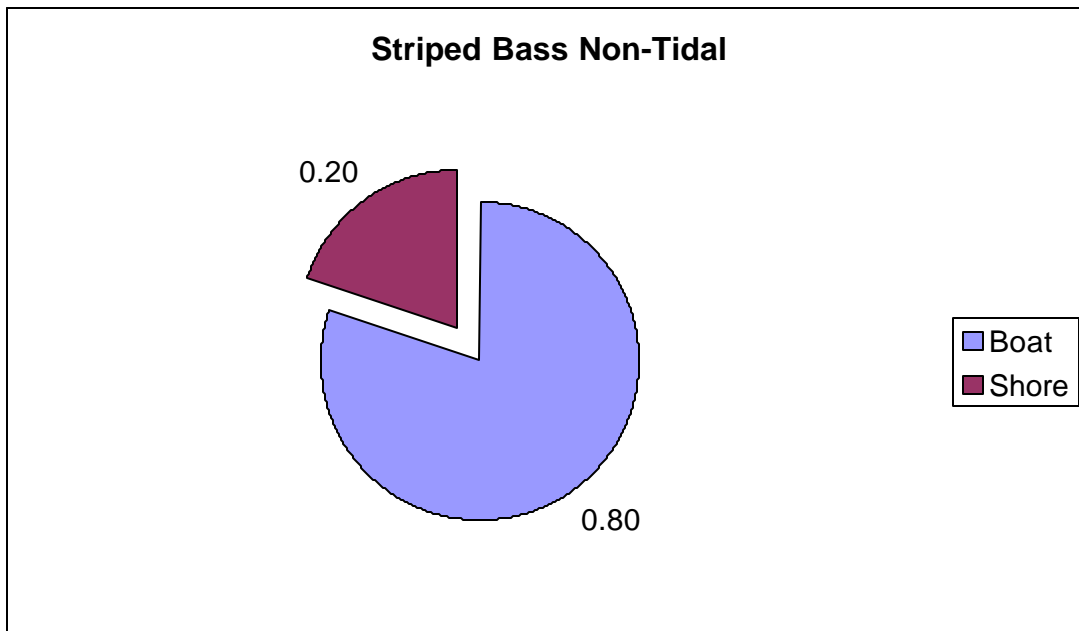


Figure 3-17. Proportion of the total catch of striped bass by fishing mode in the non-tidal portion of the river

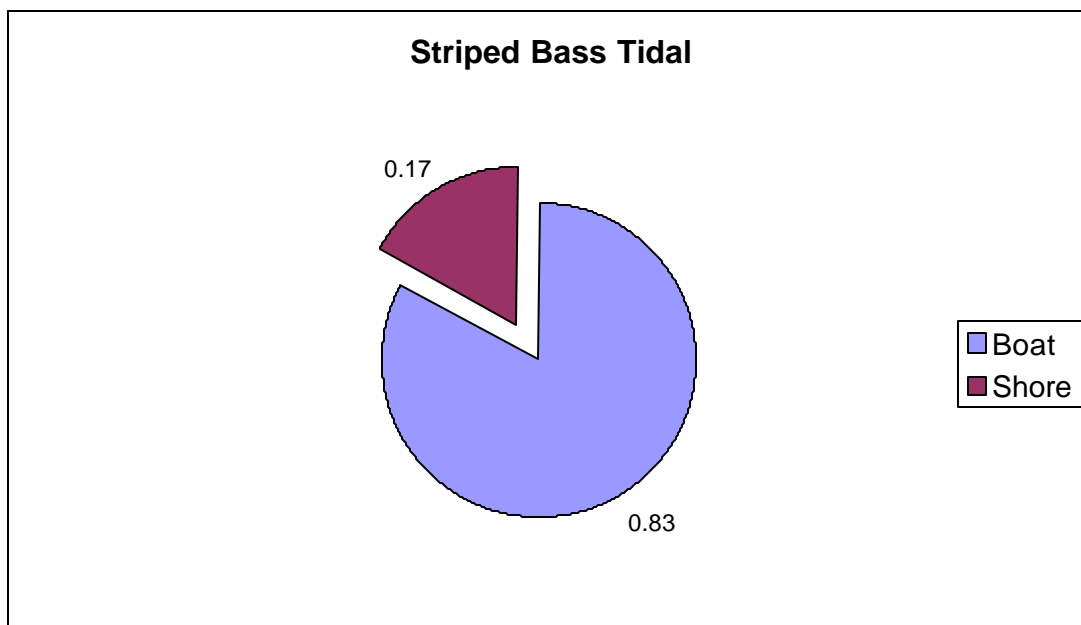


Figure 3-18. Proportion of the total catch of striped bass by fishing mode in the tidal portion of the river

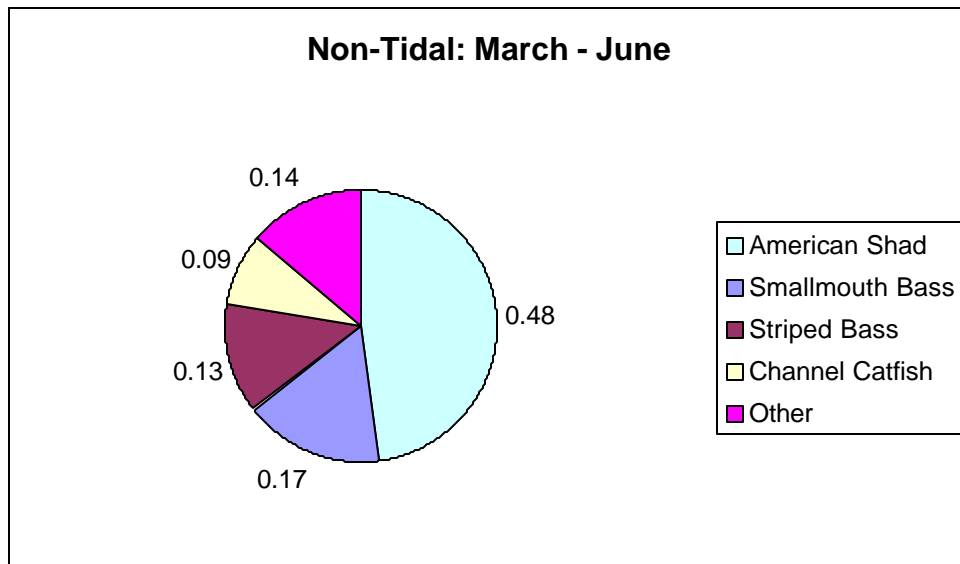


Figure 3-19. Proportion of targeted species within anglers that target specific species for the non-tidal portion of the river from March to June.

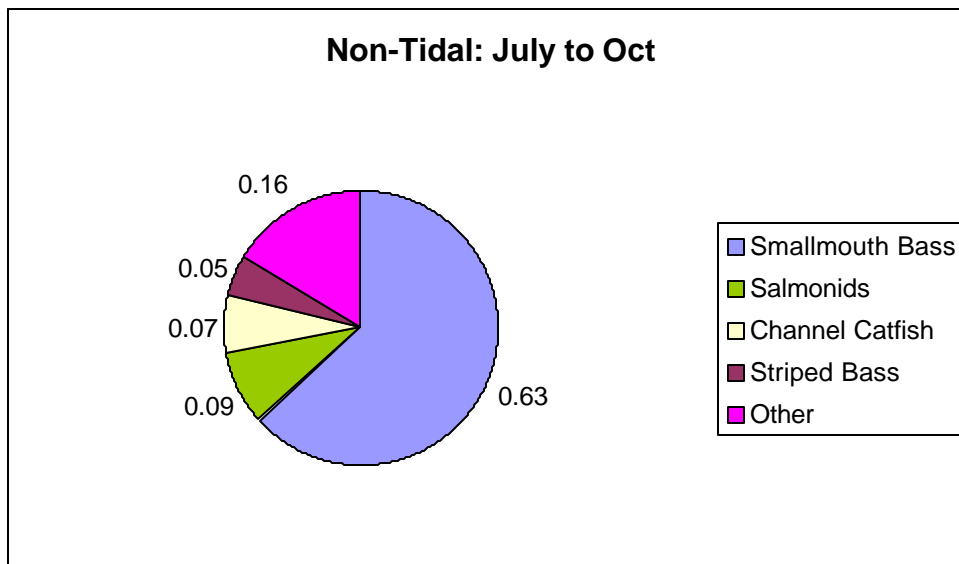


Figure 3-20. Proportion of targeted species within anglers that target specific species for the non-tidal portion of the river from July to October.

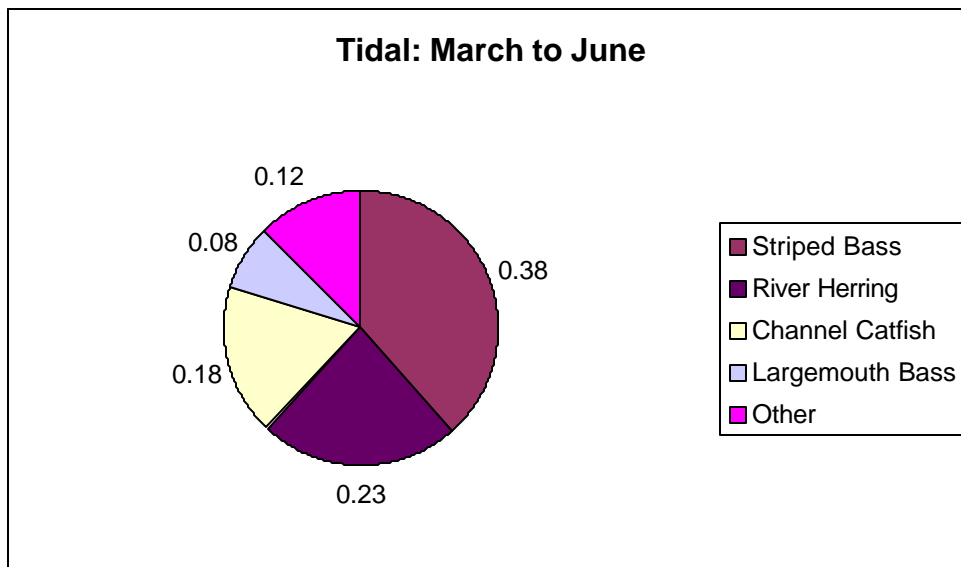


Figure 3-21. Proportion of targeted species within anglers that target specific species for the tidal portion of the river from March to June.

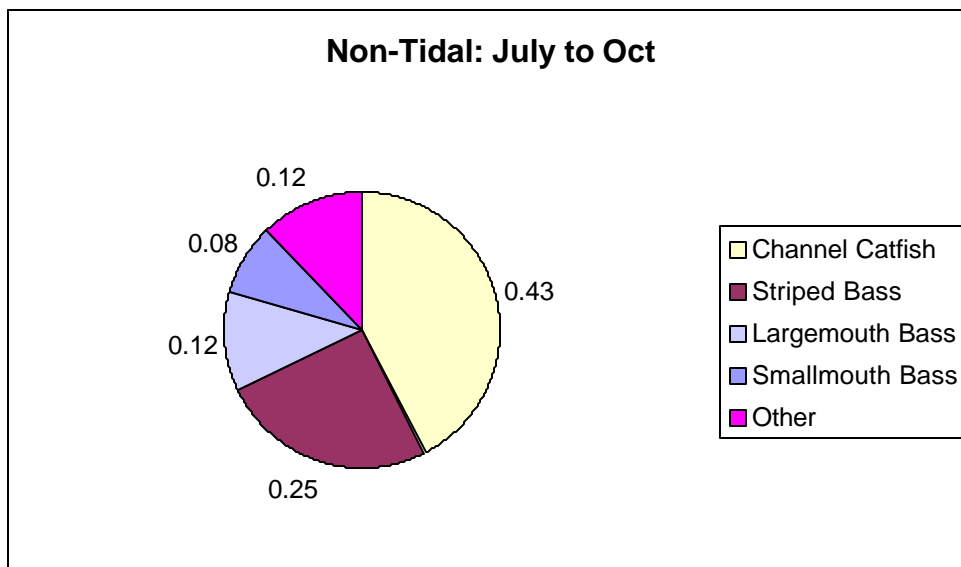


Figure 3-22. Proportion of targeted species within anglers that target specific species for the tidal portion of the river from July to October.

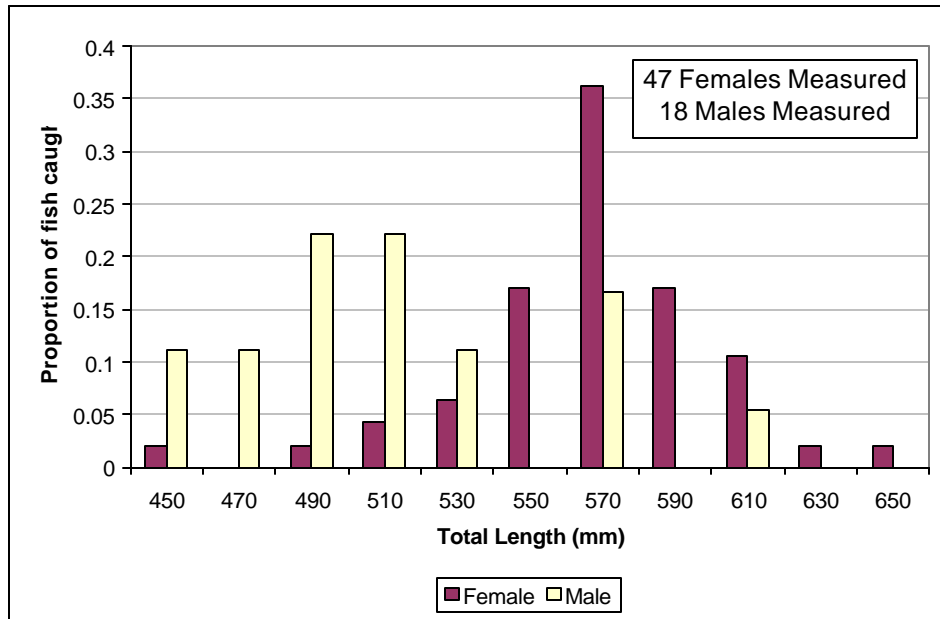


Figure 3-23. Size distribution (total length by sex) of all harvested American shad measured by creel clerks throughout the study period.

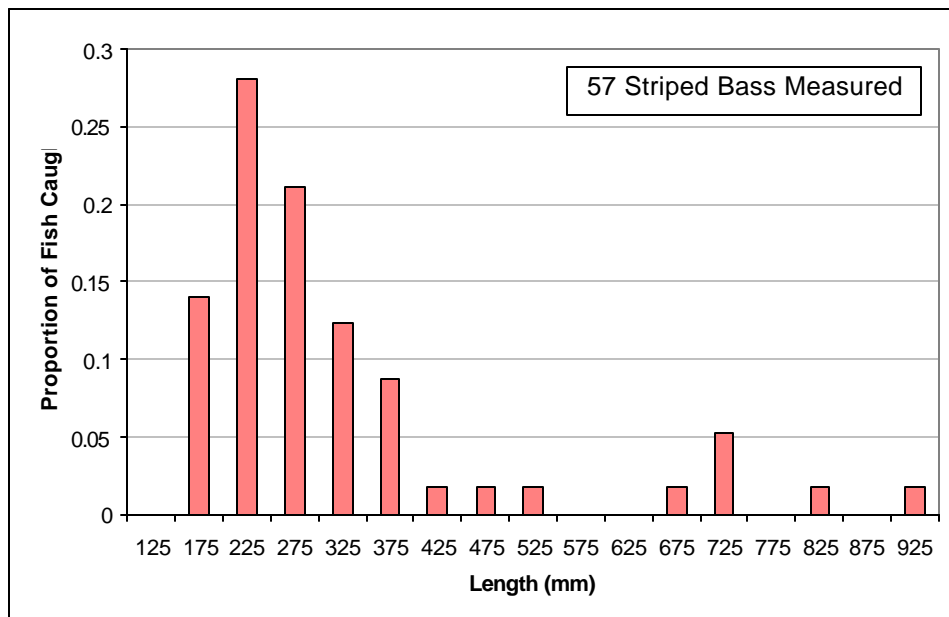


Figure 3-24. Size distribution of all striped bass measured by creel clerks throughout the study period. Specimens below minimum size limits were generally released.

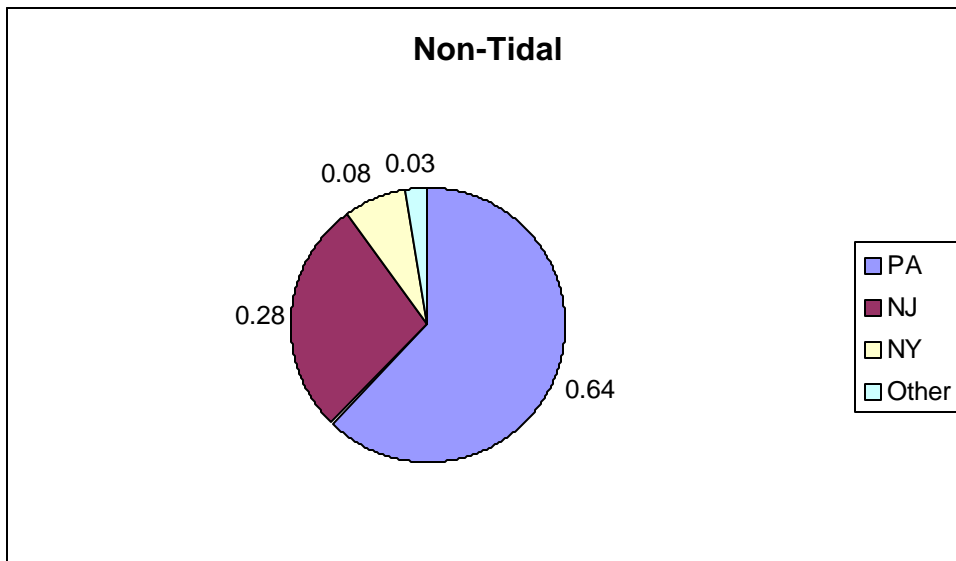


Figure 3-25. Demographic composition of state residency for anglers interviewed in the non-tidal portion of the river.

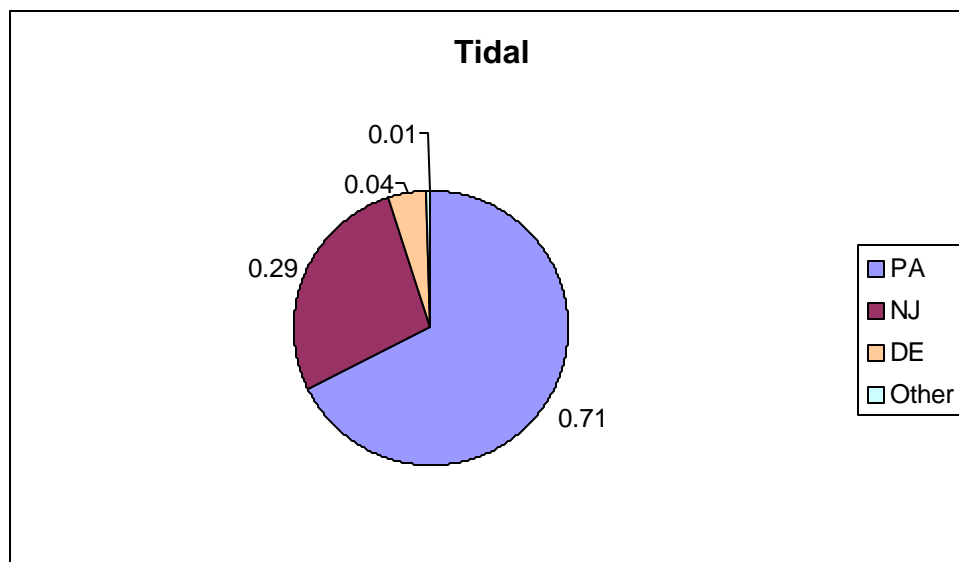


Figure 3-26. Demographic composition of state residency for anglers interviewed in the tidal portion of the river.



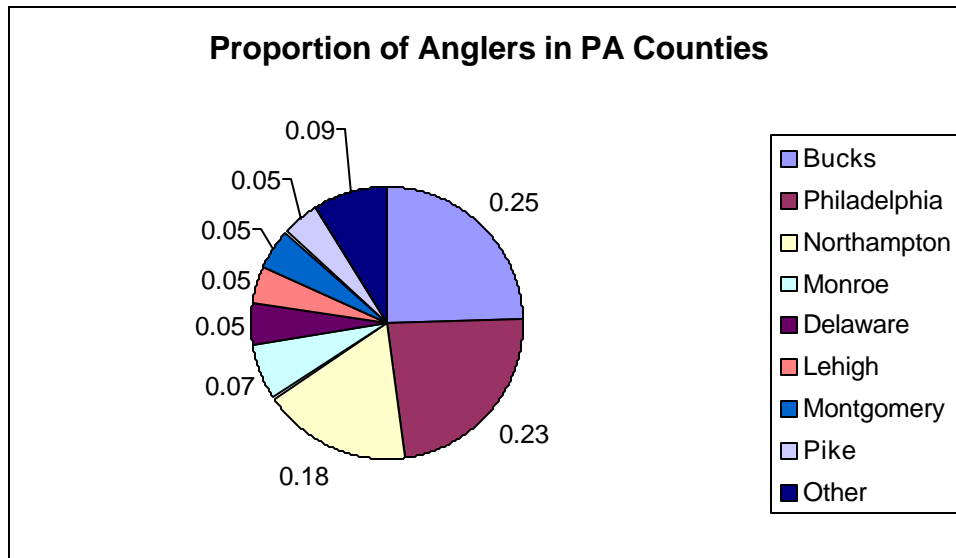


Figure 3-27. Demographic composition of Pennsylvania county residency for all anglers interviewed.

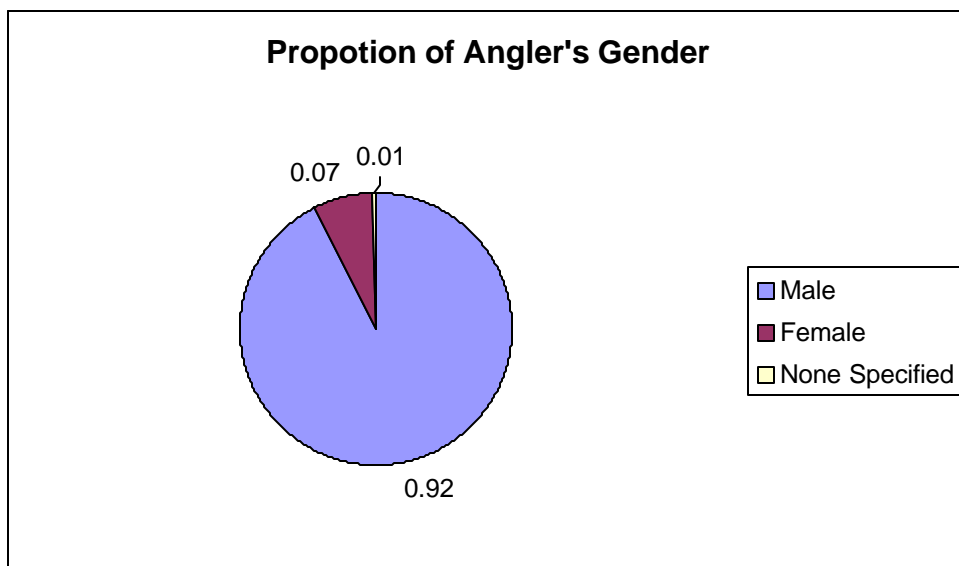


Figure 3-28. Demographic composition of gender for all anglers interviewed.

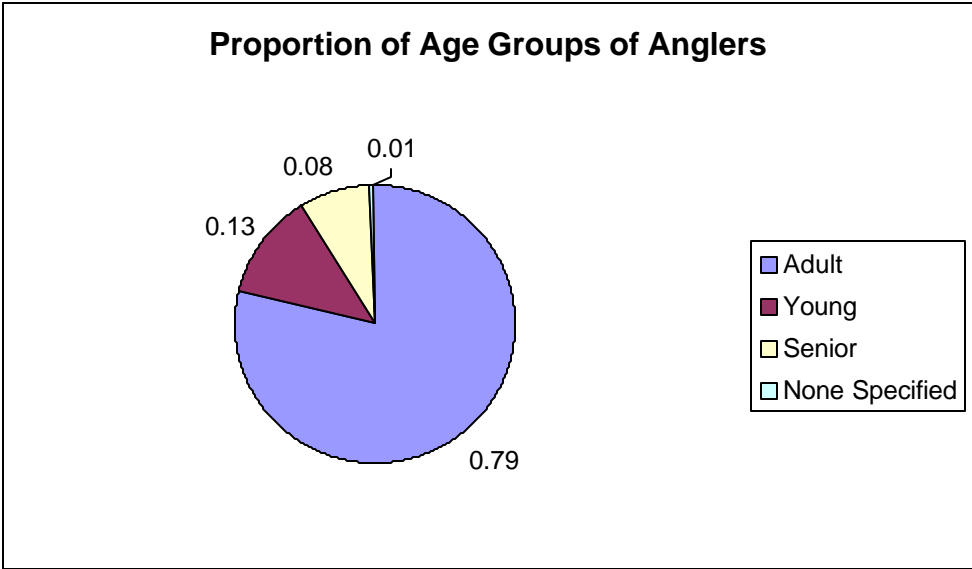


Figure 3-29. Demographic composition of age groups for all anglers interviewed.

## 4.0 DISCUSSION

Our use of an access point survey in conjunction with an aerial effort survey produced reliable estimates of daytime catch and harvest for key species targeted by anglers in the Delaware River during 2002. By extending the daytime sampling coverage to 9 PM we were able to also provide good coverage of fishing during the post-sunset period when night fishing activity was most prevalent. We used the access interviews to estimate the fraction of the daily fishing activity that was covered during the count period for the aerial surveys. This model-based approach enabled us to estimate total fishing effort for the period from 7 AM to 9 PM based on the aerial surveys. By combining this effort with the catch and harvest rates from the access survey, we achieved precise estimates of catch and harvest for all but a minor fraction of anglers fishing at night.

For American shad, the estimated total catch based on the original temporal stratification nearly achieved the target precision, with a relative (proportional) standard error (RSE) of 22%. The estimate of total catch based on the monthly post-strata was similar, and had the same precision (RSE=22%), suggesting that the minimal bias was introduced by the post-stratification for this species. By increasing the sampling effort for both the aerial and the access surveys considerably above plan, we nearly compensated for the higher variability in daily fishing effort for American shad that occurred in 2002, as compared to the effort variability found in the 1995 survey. We had used the 1995 survey results in establishing the statistical design of the 2002 aerial survey. During the peak fishing season for shad (April and May) the coefficient of variation (CV) of daily effort measured from the regular aerial counts were 90% in 2002, as compared to 76% for 1995. The original temporal stratification, based on the expected timing of the shad run, was somewhat less effective for estimating total catch of striped bass (RSE=22%). For this species, the monthly post-stratification improved precision, achieving the target precision (RSE=20%). The higher precision for striped bass is likely due to the wide distribution of this species, with catches recorded throughout the Delaware River, and throughout the total study period.

The estimates of total catch and harvest from the monthly post-strata generally were similar to the estimates based on the original temporal stratification. However, we caution that the post-stratification might introduce bias for some species. The reason is that enhanced intercept sampling as well as additional flights were conducted within one of the original temporal strata to cover the peak shad season (temporal stratum 2). The classification of usage levels for the access points, and their selection probabilities, remained constant within the original temporal strata, but not within all the monthly post-strata. It appears that the post-stratification causes little bias in catch and harvest estimates for most species, but for striped bass the sum of the monthly catch estimates was about 12% lower (but not statistically significant) than the total catch estimate based on the original time stratification. If monthly estimates are required for management purposes for this species, we recommend that the estimated monthly proportional catch be applied to the total catch estimated from the original temporal stratification.

Evaluation of effort distribution by fishing mode strongly indicates that boat anglers are under-represented in the access point survey in the tidal portion of the river. The likely reason is that many boat anglers that fish within the tidal stratum return to port below the Delaware Memorial Bridge, or to private harbors that were not included in our sampling frame. In the aerial surveys, many anglers in the tidal area of the river were observed fishing from large (>20 feet), recreational-type boats, especially on weekends. These anglers were included in the aerial count, but were generally not intercepted in the access survey since these larger boats do not use the launch ramps or access points included in the sampling frame. However, we believe that the aerial survey provided excellent coverage of all anglers, including those that were fishing in the survey area but fell outside the sampling frame for the access survey. The use of the aerial effort estimates for boat and shore anglers in the estimation of catch and harvest minimize the effects of under-coverage in the access survey. If the boat anglers that return to port within the survey area have similar catch and harvest rates as the anglers that return to sites outside our survey area, then the estimated total catch and harvest for boat anglers will have minimal, if any, bias. We conducted separate estimates for boat and shore anglers, and then pooled them to obtain total estimates across fishing mode. Pooling of anglers across fishing modes within primary sampling units, in contrast, would result in biased overall catch rates for the tidal stratum because boat anglers were under-represented in the access survey.

The zero catch estimated for the East Branch may not be reliable because it is based on very few angler interviews. In this portion of the river, many private access sites were outside our sampling frame, and the public access points to the river are not as well defined as for other portions of the river. Most of the land bordering the East Branch is privately owned, and fishermen must acquire permission from the landowners to gain access to this portion of the river. Such restricted access is likely to limit the angler effort. The approximate total angler effort estimated for the East Branch based on the 2002 survey (11,769 hours) is about half of the estimated effort from April 1 to September 30 in 1999 (20,273 angler hours), based on the Delaware River Tail Water Creel Census (Mcbride 2002). However, because confidence limits associated with these estimates could not be reliably estimated it is not possible to determine if they are statistically different. The number of angler trips could not be estimated separately for the East Branch because no information was available on the average trip length. The overall study design for the 2002 Delaware Creel Survey were optimized with respect to American shad and striped bass, with the sampling effort allocated uniformly throughout the Delaware drainage. The limited sampling coverage, and the low number of anglers intercepted preclude reliable estimates of catch rates specific for the East Branch. Because of diffuse angler access in the East Branch, a type of roving survey (Pollock et al. 1994) would be more appropriate than the access survey for estimating catch and harvest rates. The roving survey is also an on-site intercept design, and is typically conducted by boat to contact boat anglers and by foot to contact streamside anglers. In the East Branch, the use of canoes might be effective for contacting boat and shore anglers. The use of canoes would allow the counting and interviewing of anglers regardless of where their fishing trips began. Because of the many private access areas, some shore anglers may not be contacted if the roving survey is conducted by foot. The statistical analysis of roving surveys is more complex than for access surveys because interview data

mostly are taken from anglers who have not completed their fishing trips. Robson (1991) provides a summary of statistical issues related to roving surveys. Angler effort in the East Branch can be estimated from aerial surveys, as for this study, or by scheduling additional roving surveys for counting anglers.

The shifts that covered the time from 9 PM to midnight, although limited in number, suggested that the anglers fishing at night catch minimal, if any, shad and river herring. No catches of American shad, river herring or hickory shad were reported by anglers interviewed after 9 PM. The estimated total catch of striped bass during night, however, was substantial, representing about 12% of the estimated daytime catches. It is problematic to achieve reliable estimates of total catch and harvest at night (9 PM to midnight). All anglers that completed their trips after 9 PM intercepted in this study had started fishing before 9 PM. Thus, it was not feasible to obtain unbiased estimates of catch rates for the period from 9 PM to midnight. Catch rates for anglers that completed their trips after 9 PM are not necessarily representative for night fishing because a portion or all of the catches could be taken before 9 PM. Another potential source of bias is that night sampling was limited to access sites with medium and high usage levels to maximize the number of interviews for a given survey cost. It is likely that the fraction of anglers fishing after sunset is higher for access sites with high usage than for smaller, more remote access sites. Anglers were seldom encountered after sunset at low usage sites. One way to obtain accurate estimates of total catch and harvest at night in future surveys would be to extend all PM sampling to midnight. The distribution of fishing effort for the period from 7 AM to midnight based on interview data could then be used in conjunction with the aerial survey to estimate total effort for this period, using similar techniques employed in this study to cover the fishing from 7 AM to 9 PM.

While the design employed in this study is much more rigorous and comprehensive than the designs of the two prior surveys conducted in 1986 and 1995, the findings from those studies provide benchmarks against which we can evaluate the findings for 2002. Our estimate of total effort in the non-tidal section of the Delaware River for March 17 through May (152,498 angler hours) is approximately half the estimated effort for the months of April and May in the 1986 and 1995 surveys (299,597, and 337,571 angler hours, respectively; Miller and Lupine 1986; 1996) (Figure 4-1). However, the distribution of fishing effort by mode (based on aerial surveys) was similar in all three years. In 1986 and 1995, boat anglers accounted for 77% of the total effort in the non-tidal river in both years. In this survey, boat-angler hours accounted for 80% of the total effort in the non-tidal section. The mean length of an angler trip in 2002 was about 3.5 hours, as compared to 4.5 hours and 4.9 hours in 1986 and 1995, respectively. The 2002 estimates of mean trip length, and mean catch and harvest rates by species are based on a large number of interviews (2,357) from a representative sample of access points over time, including those with medium and low usage. The previous surveys were primarily conducted at access points in River Strata 1 and 2 with high usage level, and thus may not be representative of the mean trip length, and mean catch and harvest rates for all angler trips in the non-tidal river.

It is possible that the lower effort, shorter trips, and the higher variability in daily effort in the non-tidal portion during 2002, relative to 1986 and 1995, is related to differences in river flow patterns during spring among those years. As was already discussed, 1995 fishing effort was the highest of the three years in which surveys has been conducted (Figure 4-1). USGS Delaware River flow data from the gauge at Trenton, New Jersey (Figure 4-2) shows substantial differences in river flow for 1986, 1995 and 2002. In 1986, the mean daily river flow at the Trenton gauge exceeded the historical mean on 6 days in April and 7 days in May, while the 2002 mean daily river flow exceeded the historical mean one day during April and twenty days during May. The periodic increases in river flow during the spring of 2002 probably accounted for a portion of the decrease in fishing effort compared to the effort of the previous surveys for the same period. However, the aerial angler counts suggest that the 2002 fishing effort was substantially less than for the two previous surveys, even during the periods when river flows were suitable for fishing.

Our estimate of total catch of American shad in the non-tidal River from March 17 through June 2002 was also substantially lower than the 1986 and 1995 estimates, even though our estimate covers a longer fishing period, and includes fishing trips completed between 7 AM to 9 PM, as compared to 7 AM to 7 PM in previous surveys. This year's total catch of American shad during daytime (35,281 fish) represents 42% of the estimated catch for 1995 (83,141 fish), and 63% of the estimated catch for the 1986 (56,320 fish) (Figure 4-3). The lower catch of American shad in 2002 appears to be driven primarily by lower total effort, and not by lower catch rates. The 2002 catch rate (0.20 fish per hour) for American shad in the non-tidal section of the river was remarkably similar to the 1986 and 1995 catch rate estimates (0.19 and 0.25 fish per hour, respectively). Conversely, we saw substantial differences in the harvest rate among the three years. The harvest rate we documented for 2002 (19% overall) is about a third of the estimated 1986 harvest rate (49%), but is very close to the estimated harvest rate for 1995 (20%) (Figure 4-3).

The reported number of bluegill caught by anglers in the non-tidal portion of the Delaware River was nearly ten times higher than the reported catch of redbreast sunfish. This result is possibly biased because of species misidentification. It is likely that many interviewed anglers reported catch of sunfish species (*centrarchids*) as bluegill. A large portion of the reported bluegill catch was released before the species identification could be confirmed by the creel agents, and thus the reported catch is based upon the angler's best judgment and description. Review of the Pennsylvania Fish and Boat Commissions Fisheries assessment database (primarily based on electro-fishing surveys) revealed that in the non-tidal Delaware River redbreast sunfish outnumber bluegill by twenty to one. It is the feeling of some state biologists that due to the agents inability to observe fish caught and released that redbreast sunfish catch may have been misreported as bluegill because of their similar appearance. Bluegill is a common sunfish in lakes and ponds in the mid-Atlantic. However, we note that the catch of bluegill relative to redbreast sunfish in a hook-and-line fishery may significantly differ from the ratio of their absolute abundances because of gear selectivity.

Previous creel surveys on the Delaware River (Miller and Lupine 1986; 1996) focused on the American shad fishery in the non-tidal river, and did not cover the Estuary. Hence, we do not have any basis for comparing current total catch and harvest of the other target species with catches in previous years. However, this study clearly demonstrates that substantial catch of striped bass occurs both in the tidal and non-tidal sections of the river. The precise estimate of total catch for striped bass (RSE = 20%) based on monthly post-strata is likely to be a result of the wider distribution of this species throughout the river, and fishing throughout the study period. American shad are primarily caught in the non-tidal section during a limited season (none were caught after June). Hence, the number of interviews for estimating catch rates for American shad was substantially lower than for striped bass, contributing to the lower precision of the shad catch and harvest estimates. The variance in the estimated total catch for American shad and striped bass for the current sampling effort is highly influenced by the larger than normal (relative to the 1986 and 1996 surveys) variation in daily fishing effort in the non-tidal portion of the river, likely caused by the large fluctuations in mean daily river flow during the peak angler season.

The fishery for river herring appears very interesting. Comments from creel clerks suggest that only small number of fishermen target river herring. They often had elaborate means of keeping the river herring alive (e.g., re-circulating water tanks on the backs of pickup trucks) and used or sold the herring as live bait for striped bass. This is reflected in the relative high percentage of the catch that is kept as harvest (average 65%; Table 3-8).

As was observed in Section 3, very few hickory shad were reported caught. However, note that because the fishery on the Delaware River is so strongly catch-and-release, documentation of catch relies strongly on the reliability of the species identification by the angler. We did not have any means of independently verifying the species identification of released fish. We believe that the identification of harvested species by creel clerks generally were reliable, particularly for the four target species. A majority of the creel clerks were avid fishermen, and members of the Delaware River Shad Fisherman's Association, and thus had a good familiarity with the target species. In addition, a training manual was developed for this study, and all clerks received training in interview techniques and in the species identification of Delaware River sportfish (Anonymous 2002).

In general, the precision of harvest estimates for all species is lower than for catch estimates. The reason for this is that the only a small fraction of fish are harvested. Furthermore, the fraction harvested by trip exhibits large fluctuations.

The estimation of effort, catch and harvest rates by targeted species is an area that needs more research. The approximate estimates provided in the appendices should be interpreted with care, especially when produced for individual spatio-temporal strata. The reason is that the estimates for some spatio-temporal strata are based on a limited number of interviews in which anglers identified a target species. In some cases, the precision of estimates could not be

quantified because of sample size limitations. In addition, the allocation of effort to a single species is problematic for trips where multiple species were targeted.

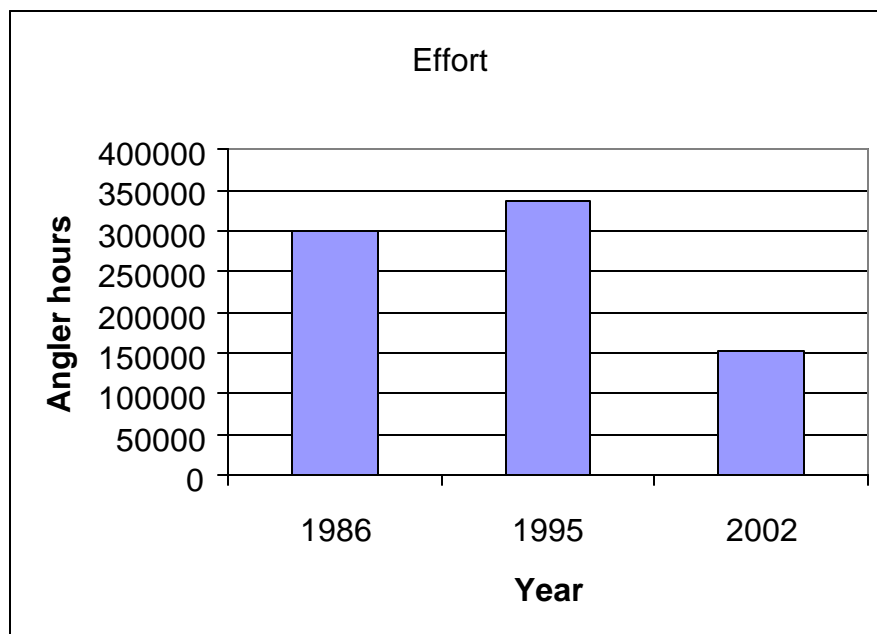


Figure 4-1. Estimated effort by boat and shore anglers in the non-tidal portion of Delaware River from March 15 to May 31.



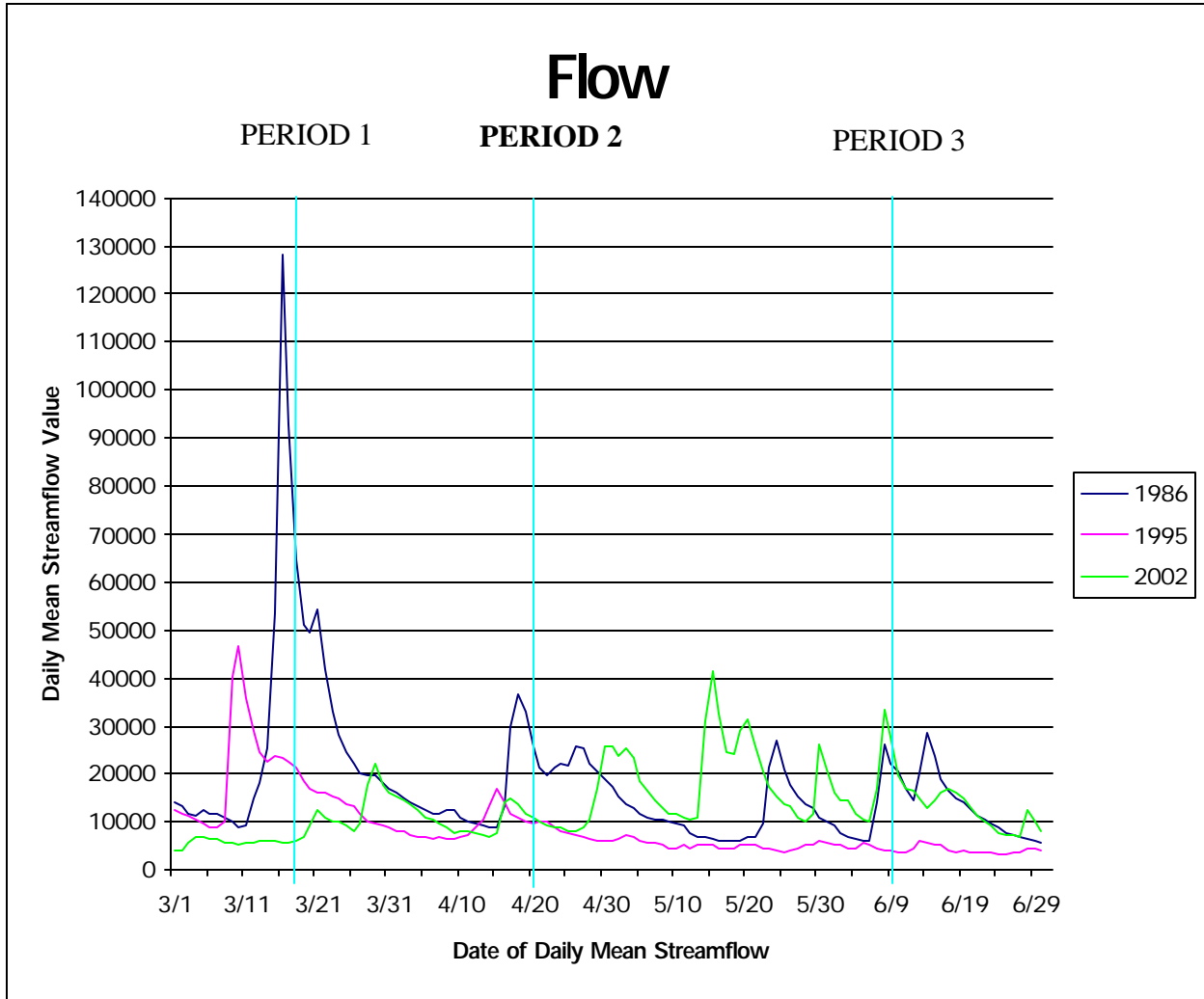


Figure 4-2. Daily mean streamflow value recorded at U.S. Geological Survey gauging station 01463500 at Trenton, NJ.

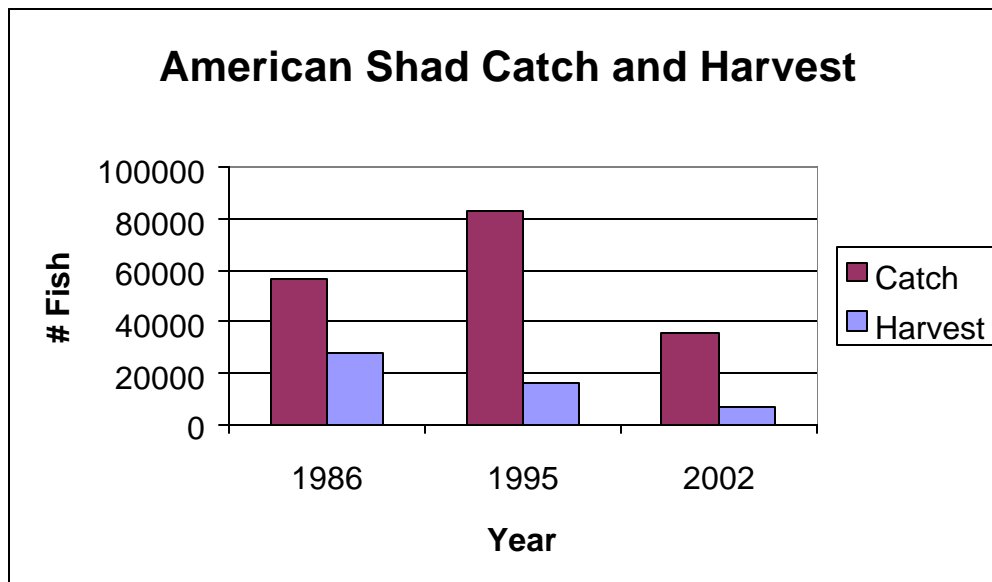


Figure 4-3. Estimated total catch and harvest of American shad in the non-tidal section of the Delaware River from March through May.

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**APPENDIX A**

**SAMPLING FRAME FOR THE  
ACCESS POINT SURVEY**



**A.1 SAMPLING FRAME AND ASSIGNED WEEKLY  
USAGE LEVEL FOR ACCESS POINTS**





Appendix Table A-1. Sampling frame and weekly usage level

State	County	Access Point	Site ID	River mile	Zone	Stratum	wk11	wk12	wk13	wk14	wk15	wk16	wk17	wk18	wk19	wk20	wk21	wk22	wk23	wk24	wk25	wk26	wk27	wk28	wk29	wk30	wk31	wk32	wk33	wk34	wk35	wk36	wk37	wk38	wk39	wk40	wk41	wk42	wk43				
NY		East Branch-1 Route 17 rest area (Shad Hole)	1		F	three	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
NY		East Branch-2 Peas Eddy Road	2		F	three	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
NY	Delaware	Hancock(at Sewer Treatment Plant???)	3	330	E	three	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
PA	Wayne	River Road access approx 1 mile north of Stockport Creek	4	328.6	E	three	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
PA	Wayne	Buckingham (approx. 2.2 miles north of Equinunk, PA off Rt. 191	5	325	E	three	L	L	L	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
PA	Wayne	Equinunk	6	322.5	E	three	L	L	L	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
NY	Delaware	Lordsville	7	321.6	E	three	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
NY	Sullivan	Long Eddy	8	315.2	E	three	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
NY	Sullivan	Basket Creek, under RT 97 viaduct	9	314	E	three	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
NY	Sullivan	Kellams Bridge	10	312.6	E	three	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
NY	Sullivan	Hankins, Red Barn Camp Ground	11	311	E	three	L	L	L	L	L	L	L	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
NY	Sullivan	Callicoon (in Hamlet of Callicoon, NY, off Rt. 97)	12	303	E	three	L	L	L	L	L	L	L	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
PA	Wayne	Callicoon (Approx. 0.5 miles south of Callicoon bridge off PA Legislative Rt. 63110; north from Rt. 371)	13	303	E	three	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
NY	Sullivan	NYDEC Cocheton access area. Off Rt. 97 upstream of highway bridge.	14	298	E	three	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
PA	Wayne	Damascus (just downstream from the PA Rt. 371 bridge off Legislative Rt. 63027)	15	298	E	three	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
NY	Sullivan	Skinnners Falls (NY side of Roebing Bridge near Milanville, PA)	16	295	E	three	L	L	L	L	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
NY	Sullivan	Narrowsburg (off Main Street, Hamlet of Narrowsburg, NY Rt. 97)	17	290	D	two	L	L	L	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
PA	Wayne	Narrowsburg (off Rt. 652 below Narrowsburg bridge)	18	290	D	two	L	L	L	L	L	L	L	M	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
NY	Sullivan	Tusten/Ten Mile R NY, NPS Access	19	284	D	two	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
PA	Pike	PFBC Zane Grey access area, at the confluence of the Lackawaxen River and the Delaware River off Pa. Route 590	20	278	D	two	L	L	L	M	M	M	M	H	H	H	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
NY	Sullivan	Highland, NY DEC	21	274	D	two	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
NY	Sullivan	NY DEC Mongaup Access	22	261.2	D	two	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
NY	Orange	Sparrowbush, NY DEC (Off RT 97 north of RT 42 junction)	23	258.1	D	two	L	L	L	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
PA	Pike	PFBC Matamoras (approx. 1.5 miles north of Matamoras/Port Jervis bridge, off Rt. 549	24	256	C	two	L	L	L	L	L	L	L	M	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
PA	Pike	DWGNRA - Milford Beach (Rt. 209, 0.2 miles north of Rt. 206 bridge)	25	246	C	two	L	L	L	M	M	M	M	H	H	H	H	H	H	H	H	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
PA	Pike	DWGNRA - Dingmans Ferry (off Route 739 at Dingman's Bridge)	26	239	C	two	L	L	L	H	H	H	H	H	H	H	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
PA	Pike	DWGNRA - Eshback (Rt. 209, between mile markers 6 & 7	27	232	C	two	L	L	L	M	M	M	M	H	H	H	H	H	H	H	H	H	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	

Appendix Table A-1. Sampling frame and weekly usage level

State	County	Access Point	Site ID	River mile	Zone	Stratum	wk11	wk12	wk13	wk14	wk15	wk16	wk17	wk18	wk19	wk20	wk21	wk22	wk23	wk24	wk25	wk26	wk27	wk28	wk29	wk30	wk31	wk32	wk33	wk34	wk35	wk36	wk37	wk38	wk39	wk40	wk41	wk42	wk43		
PA	Pike	DWGNRA - Bushkill (Rt. 209, 1 mile north of Bushkill)	28	228	C	two	L	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
NJ	Warren	DWGNRA - Depew (off Old Mine Road, 9.3 miles north of Del. Water Gap)	29	220	C	two	L	L	L	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
NJ	Warren	DWGNRA - Poxono (off Old Mine Road, 8 miles north of Del. Water Gap)	30	219	C	two	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
PA	Monroe	Smithfield Beach (off River Road Approx. 3 miles north of Shawnee, PA)	31	218	C	two	L	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	
NJ	Warren	Worthington STP (upper) (off Old Mine Road approx. 3 miles north of Delaware Water Gap)	32	217	C	two	L	L	L	H	H	H	H	H	H	H	H	H	H	H	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
NJ	Warren	DWGNRA - Kittatinny Beach (Del. Water Gap, below I-80 bridge)	33	211	B	one	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
PA	Northampton	Up River end of Arrow Island (Del. Water Gap, down river Kittatinny Beach)	34	210.75	B	one	L	L	L	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
PA	Northampton	Portland Generating Station - Reliant Energy (off River Rd., 0.8 miles below Portland-Columbia bridge)	35	206	B	one	L	L	L	H	H	H	H	H	H	H	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
PA	Northampton	Northampton County Parks - Doe Hollow (River Rd. upstream from Belvidere bridge)	36	198	B	one	M	M	M	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
NJ	Warren	NJDFW - Belvidere Access (downstream from Belviere bridge)	37	197	B	one	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
PA	Northampton	Martins Creek - PP&L (off of Rt. 611, 1 mile north of Martin's Ck)	38	194	B	one	L	L	L	H	H	H	H	H	H	H	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
PA	Northampton	PFBC - Sandts Eddy Access (Rt. 611, 5.2 miles above Easton bridge)	39	189	B	one	L	L	L	L	L	SH	SH	SH	SH	SH	SH	SH	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
PA	Northampton	Northampton County Parks - Frost Hollow Overlook (Rt. 611, 2.3 miles north of Easton)	40	186	B	one	L	L	L	H	H	H	H	H	H	H	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
NJ	Warren	Phillipsburg Boat Ramp (Riverside Way, by "free" bridge)	41	184	B	one	L	L	L	H	H	SH	SH	SH	SH	SH	SH	SH	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
PA	Northampton	Scott Park Boat Ramp Easton (Rt. 611. At mouth of the Lehigh River)	42	184	B	one	L	L	L	H	H	SH	SH	SH	SH	SH	SH	SH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	
PA	Northampton	Hugh Moore Park - Easton Fish Ladder area, south side of Lehigh River opposite Front Street Park.	43	184	B	one	M	M	M	H	H	SH	SH	SH	SH	SH	SH	SH	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
PA	Northampton	Wi-Hit-Tuk County Park (Rt. 611, 3 miles south of Easton)	44	181	B	one	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PA	Northampton	Theodore Roosevelt Rec. Area (Rt. 611, 1 mile south of Raubsville)	45	178	B	one	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PA	Northampton	Fry's Run Park (Rt. 611, 6 miles south of Easton)	46	177	B	one	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PA	Bucks	PFBC - Riegelsville Access (Rt. 611, just north of jct. With Rt. 212)	47	175	B	one	L	L	L	H	H	H	H	H	H	H	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
NJ	Hunterdon	NJDFW - Holland Church Access (off River Rd., 1 mile south of Riegelsville bridge)	48	174	B	one	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PA	Bucks	PFBC - Upper Black Eddy Access (Rt. 32, just below Milford bridge)	49	168	A	one	L	L	L	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
NJ	Hunterdon	NJDFW - Kingwood Access (Rt. 29, 2 miles below Frenchtown)	50	163	A	one	L	L	L	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
PA	Bucks	Tinicum Park (Rt. 32, Erwinna)	51	163	A	one	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
NJ	Hunterdon	D&R Canal St. Pk. - Byram (Rt. 29, 3.4 miles north of Stockton)	52	156	A	one	L	L	L	H	H	H	H	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
PA	Bucks	Lumberville Wing Dam - Pennsylvania side	53	156	A	one	H	H	H	H	H	H	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		

Appendix Table A-1. Sampling frame and weekly usage level

State	County	Access Point	Site ID	River mile	Zone	Stratum	wk11	wk12	wk13	wk14	wk15	wk16	wk17	wk18	wk19	wk20	wk21	wk22	wk23	wk24	wk25	wk26	wk27	wk28	wk29	wk30	wk31	wk32	wk33	wk34	wk35	wk36	wk37	wk38	wk39	wk40	wk41	wk42	wk43					
NJ	Hunterdon	D&R Canal St. Pk. - Bull's Island Rec. Area (off Rt. 29, 3.3 miles north of Stockton)	54	155	A	one	L	L	L	H	H	H	H	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L					
PA	Bucks	Virinia Forrest Rec. Area (Rt. 32, approx. 2 miles south of Lumberville)	55	154	A	one	L	L	L	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L				
NJ	Hunterdon	D&R Canal St. Pk. - Lambertville (off Bridge St. behind Lambertville Station)	56	149	A	one	M	M	M	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H			
NJ	Mercer	D&R Canal St. Pk. - Firemen's Eddy Access - (off Rt. 29, 1.8 miles south of Lambertville/New Hope bridge)	57	147	A	one	M	M	M	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H			
PA	Bucks	PFBC - Yardley Access (Rt. 32 & north end of Yardley Boro)	58	139	A	one	M	M	M	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H		
NJ	Mercer	Old Wharf (off Rt. 29 south of Lalor Street in the City of Trenton, NJ)	59	133	Estuary	Estuary	L	L	L	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L			
NJ	Mercer	Mercer Co. (off Rt. 29 south of Lalor Street in the City of Trenton, NY)	60	132	Estuary	Estuary	L	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H		
NJ	Mercer	City of Trenton Waterfront Park (1595 Lambert Rd., off Rt. 29, Trenton)	61	129	Estuary	Estuary	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
NJ	Burlington	Bordentown Beach (end of Park St., Bordentown)	62	128	Estuary	Estuary	M	M	M	M	M	M	M	M	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
NJ	Burlington	Curtin Marina (E. Pearl Street, Burlington City)	63	118.5	Estuary	Estuary	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
NJ	Burlington	Burlington City Boat Ramp (near mouth of Assiscunk Ck., Tathem Ave. & Pearl St., Burlington City)	64	118	Estuary	Estuary	M	M	M	M	M	M	M	M	M	M	M	H	H	H	H	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
PA	Bucks	Neshaminy State Park (Street Rd., exit off I-95, to State Rd. & Cedar Ave., Bensalem)	65	116	Estuary	Estuary	M	M	M	H	H	H	H	H	H	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
PA	Bucks	Delaware River access, county park, State Road and Station Avenue, Bensalem - 2 miles south of Neshaminy State Park	66	114	Estuary	Estuary	L	L	L	L	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
NJ	Burlington	Lightning Jacks Marina (625 Harrison St., Riverside)	67	111	Estuary	Estuary	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
NJ	Burlington	Ran-Del Marina (130 Rancocas Ave., Delanco)	68	111	Estuary	Estuary	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PA	Philadelphia	City of Philadelphia Boat Ramp (Linden Ave. Philadelphia)	69	111	Estuary	Estuary	M	M	M	H	H	H	H	H	H	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
PA	Philadelphia	Pennypack Avenue terminus at the Delaware River	70	109	Estuary	Estuary	L	L	L	L	L	L	L	M	M	M	M	M	M	M	M	M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PA	Philadelphia	Pennypack Park on the Delaware River at Pennypack Creek mouth and south	71	109	Estuary	Estuary	L	L	L	M	M	M	M	M	M	M	M	H	H	H	H	H	H	H	H	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
PA	Philadelphia	PFBC - Tacony Access (Milnor St. & Princeton Ave., Philadelphia)	72	107	Estuary	Estuary	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PA	Philadelphia	PFBC - Frankford Arsenal Access (56 hundredth block of Tacony St., Phila.)	73	106	Estuary	Estuary	M	M	M	H	H	H	H	H	H	H	M	M	M	M	M	M	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H		
NJ	Camden	NJDEF - Delair Boat Ramp (Derausse Rd., Delair)	74	105	Estuary	Estuary	L	L	L	L	L	L	L	L	L	L	M	M	M	M	M	M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NJ	Camden	Pyne Point Marina Services (North 7th St., Camden)	75	101	Estuary	Estuary	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
NJ	Gloucester	West Deptford Municipal Boat Ramp (at the end of Center Street)	76	92	Estuary	Estuary	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PA	Delaware	Hog Island Road (behind the Philadelphia airport)	77	90	Estuary	Estuary	L	L	L	M	M	M	M	M	M	M	M	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	

Appendix Table A-1. Sampling frame and weekly usage level

State	County	Access Point	Site ID	River mile	Zone	Stratum	wk11	wk12	wk13	wk14	wk15	wk16	wk17	wk18	wk19	wk20	wk21	wk22	wk23	wk24	wk25	wk26	wk27	wk28	wk29	wk30	wk31	wk32	wk33	wk34	wk35	wk36	wk37	wk38	wk39	wk40	wk41	wk42	wk43
PA	Delaware	Morrows Marine, located on Darby Creek at Swarthmore Avenue, Ridley, Park, PA	78	85	Estuary	Estuary	L	L	L	L	L	L	L	M	M	M	M	H	H	H	H	H	H	H	H	H	H	H	H	M	M	M	M	M	M	M	M	M	M
PA	Delaware	City of Chester Boat Ramp (Commodore Barry Bridge)	79	81	Estuary	Estuary	M	M	M	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
NJ	Gloucester	Bridgeport Boat Yard (on Raccoon Creek) (116 Buttonwood Lane, Bridgeport)	80	80.5	Estuary	Estuary	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
DE	Wilmington	Christina River	81	80	Estuary	Estuary	L	L	L	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
NJ		Penns Grover	82	76	Estuary	Estuary				H	H	H	H	H	H	H	H	H	H	H	H																		

**A.2 BUS ROUTES FOR LOW USAGE SITE**



### Appendix A3: BUS ROUTES (All are low usage level)

Stratum	Month	Route	Access Site	Access Site ID	State	
Estuary	March	1	Christina River and Brandywine	75	PA	
Estuary			Hog Island Road	72	PA	
Estuary			PFBC Tacony Access	67	PA	
Estuary		2	West Deptford Municipal Boat Ramp	71	NJ	
Estuary			Pyne Point Marina Services	70	NJ	
Estuary			NJDEF Delair Boat Ramp	69	NJ	
Estuary			3	Curtin Marina	61	NJ
Estuary		Lightning Jacks Marina		64	NJ	
Estuary		Ran-Del Marina		65	NJ	
Estuary				Mercer Co.	58	NJ
Estuary		April	1	West Deptford Municipal Boat Ramp	71	NJ
Estuary	Pyne Point Marina Services			70	NJ	
Estuary	NJDEF Delair Boat Ramp			69	NJ	
Estuary	2		PFBC Tacony Access	67	NJ	
Estuary			Curtin Marina	61	NJ	
Estuary			Lightning Jacks Marina	64	NJ	
Estuary			Ran-Del Marina	65	NJ	
Estuary	May	1	West Deptford Municipal Boat Ramp	71	NJ	
Estuary			Pyne Point Marina Services	70	NJ	
Estuary			NJDEF Delair Boat Ramp	69	NJ	
Estuary		2	PFBC Tacony Access	67	NJ	
Estuary			Curtin Marina	61	NJ	
Estuary			Lightning Jacks Marina	64	NJ	
Estuary			Ran-Del Marina	65	NJ	
Estuary						
1	March	1	Kittatinny Beach	33	NJ	
1			Arrow Island (upriver end)	34	PA	
1			Portland Generating Station	35	PA	
1		2	Belvidere Access NJDFW	37	NJ	
1			Martins Creek	38	PA	
1		3	Sandts Eddy Access PFBC	39	PA	
1			North Hampton County Parks - Frost Hollow	40	PA	
1			Phillipsburg Boat Ramp	41	NJ	
1			Scott Park Boat Ramp Easton	42	PA	
1			4	Wi-Hit-Tuk County Park	43	PA
1		Theodore Roosevelt Rec. Area		44	PA	
1		Riegelsville Access PRBC		46	PA	
1		5	Holland Church Access PFBC	47	NJ	
1			Upper Black Eddy Access PFBC	48	PA	
1		6	Kingwood Access NJDFW	49	NJ	
1			Tinicum Park	50	PA	



Stratum	Month	Route	Access Site	Access Site ID	State
1		7	D&R Canal St. Pk. - Byram	51	NJ
1			D&R Canal St. Pk. - Bull's Island Rec. Area	52	NJ
1			Virginia Forrest Rec. Area	53	PA
1			Old Wharf	57	NJ
1	April	1	Wi-Hit-Tuk County Park	43	PA
1			Theodore Roosevelt Rec. Area	44	PA
1			Fry's Run Park	45	PA
1			Holland Church Access PFBC	47	NJ
1	May	1	Wi-Hit-Tuk County Park	43	PA
1			Theodore Roosevelt Rec. Area	44	PA
2	March	1	Narrowsburg	17	NY
2			Narrowsburg	18	PA
2			Tusten Ten Mile R	19	NY
2			PFBC Zane Grey Access Area	20	PA
2		2	Milford Beach	25	PA
2			Dingmans Ferry DWGNRA	26	PA
2			Eshback DWEBNRA	27	PA
2			Bushkill DWGNRA	28	PA
2		3	Highland NYDEC	21	NY
2			Mongaup Access NYDEC	22	NY
2			Sparrowbush NYDEC	23	NY
2			PFBC Matamoras	24	PA
2		4	Poxono DWGNRA	30	NJ
2			Depew DWGNRA	29	NJ
2			Smithfield Beach	31	PA
2			Worthington STP	32	NJ
2	April	1	Narrowsburg	17	
2		2	PFBC Matamoras	24	PA
2	May		No Low Use Areas		
3	March	1	East Branch-1 Route 17 rest area	1	
3		2	East Branch-3 Peas Eddy Road	2	
3		1	Hancock	3	NY
3			River Road Access	4	PA
3			Buckingham	5	PA
3		2	Equinunk	6	PA
3			Lordsville	7	NY
3			Long Eddy	8	NY
3			Basket Creek	9	NY
3		3	Kellams Bridge	10	NY
3			Hankins, Red Barn Camp Ground	11	NY
3			Callicoon (Route 97)	12	NY
3			Callicoon (Route 371)	13	PA
3		4	Cocheton Access Area NYDEC	14	NY
3			Damascus	15	PA

Stratum	Month	Route	Access Site	Access Site ID	State
3			Skinner Falls	16	NY
3	April	1	East Branch-1 Route 17 rest area	1	
3			East Branch-3 Peas Eddy Road	2	
3		2	Basket Creek	9	NY
3			Hankins, Red Barn Camp Ground	11	NY
3			Callicoon (Route 97)	12	NY
3		3	Cocheton Access Area NYDEC	14	NY
3			Damascus	15	PA
3			Skinner Falls	16	NY
3	May	1	East Branch-1 Route 17 rest area	1	
3			East Branch-3 Peas Eddy Road	2	
3		2	Basket Creek	9	NY
3			Hankins, Red Barn Camp Ground	11	NY
3			Callicoon (Route 97)	12	NY
3			Callicoon (Route 371)	13	PA
3			Cocheton Access Area NYDEC	14	NY
3			Damascus	15	PA

**APPENDIX B**

**ACCESS POINT SAMPLING SCHEDULE**



## **B.1 DAYTIME SAMPLING SCHEDULE**



Table B.1.1. Access point daytime sampling schedule by stratum and usage level. Sites not sampled (NS) because of illness or scheduling problems are highlighted, with replacement sites listed in brackets.

Wk-Day	Estuary			Wk-Day	Estuary		
	High	Med	Low		High	Med	Low
11-Sun				20-Sun			3, PM
Mon				Mon			
Tues				Tue		64, PM	
Wed		64, PM	BR1, PM	Wed			
Thu				Thu	73, AM		
Fri				Fri			
Sat				Sat	79, AM	59, PM	
12-Sun		73, PM		21-Sun		61, AM	
Mon				Mon		77, PM	
Tue				Tue	65, PM		
Wed				Wed			3, PM (NS)
Thu				Thu			
Fri				Fri			
Sat			BR2, AM	Sat	79, AM		
13-Sun				22-Sun			
Mon				Mon			
Tue		71, AM		Tue		82, PM	
Wed	69, PM			Wed			
Thu				Thu	60, PM		
Fri			BR2, AM	Fri			
Sat	73, PM (NS)			Sat	64, PM	74, AM (NS)	
14-Sun			BR2, AM	23-Sun	78, AM (NS)		
Mon				Mon			
Tue				Tue	82, AM ( 79, AM)		
Wed				Wed		69, AM	
Thu				Thu			
Fri	60, AM			Fri			
Sat	73, AM	59, AM		Sat		73, PM	
15-Sun				24-Sun			
Mon		77, PM		Mon		81, AM	
Tue				Tue	78, AM		
Wed	73, PM		BR1, AM	Wed			
Thu				Thu			
Fri				Fri			
Sat	79, AM			Sat	77, AM	73, AM	
16-Sun	79, AM			25-Sun		66, AM	
Mon				Mon			
Tue				Tue			
Wed				Wed			
Thu	60, AM			Thu	60, PM	65, PM	
Fri				Fri			
Sat		77, PM	BR1, AM (NS)	Sat			
17-Sun				26-Sun		70, AM	
Mon			BR2, PM	Mon		69, PM	
Tue				Tue			
Wed		71, AM		Wed			
Thu				Thu			
Fri	65, PM			Fri	78, AM		
Sat	60, AM			Sat			
18-Sun		64, PM		27-Sun	71, PM		
Mon				Mon		60, PM	
Tue				Tue			
Wed				Wed	70, AM		
Thu	69, AM			Thu			
Fri				Fri			
Sat	73, PM		2, PM (65, AM)	Sat		66, PM	
19-Sun		77, AM		28-Sun			
Mon			1, PM	Mon			
Tue		66, PM		Tue		64, PM	
Wed		62, PM		Wed			
Thu				Thu	78, AM		
Fri	73, PM (NS)			Fri			
Sat	65, AM			Sat	77, AM	60, AM	

Table B.1.1. Continued

Wk-Day	Estuary			Wk-Day	Estuary		
	High	Med	Low		High	Med	Low
29-Sun	60, AM	81, PM		38-Sun		66, AM	76, PM
Mon				Mon			
Tue				Tue		81, PM	
Wed	77, AM			Wed	78, AM		
Thu				Thu			
Fri		64, AM		Fri			
Sat				Sat	73, PM		
30-Sun				39-Sun	77, PM		
Mon				Mon			
Tue				Tue			68, AM
Wed				Wed			
Thu	78, AM			Thu	71, AM (NS)		
Fri		66, PM		Fri		81, AM	
Sat	60, PM	69, PM		Sat		69, PM	
31-Sun	77, PM			40-Sun		81, PM	
Mon				Mon	79, AM		
Tue		66, AM		Tue			
Wed				Wed		65, AM	68, AM
Thu				Thu			
Fri	60, PM			Fri			
Sat		64, AM	74, PM	Sat	77, PM		
32-Sun				41-Sun		80, PM (NS)	
Mon				Mon			
Tue		64, AM		Tue			
Wed	77, AM			Wed	73, AM (NS)		
Thu				Thu		64, AM	
Fri				Fri			
Sat	79, AM	80, PM (NS)		Sat	79, PM		
33-Sun	78, AM (NS)			42-Sun	79, AM		
Mon			62, AM	Mon		62, AM	
Tue		81, PM		Tue			
Wed	79, PM			Wed			72, AM
Thu				Thu	77, AM		
Fri				Fri			
Sat		64, AM	58, AM	Sat		81, PM	63, AMP
34-Sun		66, AM		43-Sun	77, AM	64, AM	
Mon				Mon			
Tue				Tue	71, AM		
Wed		65, AM		Wed			
Thu				Thu		65, AM	
Fri	77, AM			Fri			
Sat	77, PM			Sat			
35-Sun		80, PM					
Mon		69, AM					
Tue							
Wed			72, AM (NS)				
Thu							
Fri	77, PM (NS)						
Sat	71, AM						
36-Sun	71, AM (NS)		53, AM (NS)				
Mon		81, AM					
Tue							
Wed							
Thu							
Fri	79, PM						
Sat		80, PM	67, AM				
37-Sun	78, PM						
Mon	73, AM (NS)						
Tue			72, PM				
Wed		80, AM					
Thu							
Fri							
Sat		66, AM					



Table B.1.1. Continued

Wk-Day	River Stratum 1			Wk-Day	River Stratum 1		
	High	Med	Low		High	Med	Low
11-Sun				20-Sun		54, AM	
Mon				Mon		52, AM	
Tues	57, AM			Tue			
Wed				Wed			
Thu				Thu	42, PM		
Fri				Fri			
Sat			BR6, PM	Sat	41, PM		
12-Sun				21-Sun			
Mon				Mon	43, AM		
Tue				Tue			
Wed				Wed			
Thu				Thu		49, AM (NS)	
Fri			BR1, PM	Fri			
Sat		43, AM		Sat	38, PM	32, AM	
13-Sun				22-Sun	57, AM		
Mon				Mon		47, PM	
Tue				Tue	58, AM		
Wed				Wed			
Thu				Thu			
Fri		33, AM		Fri			
Sat			BR1, AM	Sat		51, PM	
14-Sun		55, AM ( 35, AM)		23-Sun	57, PM	40, AM	
Mon			BR1, PM	Mon			
Tue				Tue			
Wed				Wed			
Thu	58, PM			Thu	56, PM	53, PM	
Fri				Fri			
Sat	50, AM			Sat			
15-Sun				24-Sun	56, AM	35, AM	
Mon				Mon			
Tue				Tue		37, PM	
Wed				Wed	58, PM		
Thu	56, AM	37, PM		Thu			
Fri				Fri			
Sat	52, PM		BR1, PM	Sat			
16-Sun	50, AM			25-Sun	56, AM	53, AM	
Mon				Mon			
Tue	52, PM			Tue	58, AM		
Wed				Wed		38, PM	
Thu				Thu			
Fri			BR1, AM (NS)	Fri			
Sat		55, PM		Sat			
17-Sun	35, AM		BR1, PM (NS)	26-Sun	57, AM	53, PM	
Mon	43, AM			Mon			
Tue				Tue			
Wed				Wed		40, PM	
Thu		36, PM		Thu			
Fri				Fri	56, PM		
Sat				Sat			
18-Sun				27-Sun		58, PM	
Mon	57, AM			Mon			
Tue				Tue			
Wed				Wed		53, AM	
Thu				Thu			
Fri			7, AM	Fri			
Sat	58, PM	51, AM		Sat			
19-Sun	67, AM (NS)	39, PM (43,PM)		28-Sun			
Mon				Mon			
Tue	56, AM(NS)			Tue			
Wed		37, AM		Wed			
Thu				Thu			
Fri				Fri		57, PM	
Sat				Sat	57, AM	41, AM	

Table B.1.1. Continued

Wk-Day	River Stratum 1			Wk-Day	River Stratum 1		
	High	Med	Low		High	Med	Low
29-Sun				38-Sun			49, AM
Mon	56, AM			Mon			
Tue		41, PM		Tue			
Wed				Wed			
Thu				Thu	56, PM		
Fri				Fri		39, PM	
Sat				Sat	57, PM	51, AM	
30-Sun		43,AM		39-Sun	37, PM		
Mon				Mon			
Tue		57, PM		Tue	58, AM		
Wed				Wed		43, AM	
Thu				Thu			49, AM
Fri	58, PM			Fri			
Sat	56, AM			Sat	57, AM		
31-Sun				40-Sun		53, AM	54, AM
Mon	56, AM	51, PM		Mon			
Tue				Tue	36, PM	39, PM	
Wed				Wed			
Thu				Thu			
Fri				Fri			
Sat	57, AM	39, PM		Sat	56, PM		
32-Sun		37, PM		41-Sun	42, PM	51, AM	
Mon				Mon			41, PM
Tue		39, PM		Tue	58, AM		
Wed				Wed		43, PM (NS)	
Thu	42, AM			Thu			
Fri				Fri			
Sat	58, PM		52, AM	Sat			
33-Sun				42-Sun		51, AM	
Mon		43, PM		Mon			
Tue	57, AM			Tue	56, AM		
Wed				Wed		39, AM	
Thu				Thu			
Fri				Fri			
Sat	37, AM			Sat	57, PM		34, PM
34-Sun				43-Sun	56, AM	53, AM	
Mon		37, PM		Mon			33, AM
Tue				Tue			
Wed				Wed		43, AM	
Thu				Thu	57, PM		
Fri	58, PM		52, AM	Fri			
Sat	56, AM	51, AM		Sat			
35-Sun	42, PM	51, PM					
Mon							
Tue		37, AM					
Wed			41, PM				
Thu							
Fri	58, AM						
Sat							
36-Sun	35, AM						
Mon							
Tue		39, PM					
Wed							
Thu							
Fri	42, PM						
Sat	58, PM						
37-Sun	42, PM						
Mon	57, PM (NS)	53, AM					
Tue			55, PM				
Wed							
Thu							
Fri							
Sat		51, PM					

Table B.1.1. Continued

Wk-Day	River Stratum 2			River Stratum 3		Wk-Day	River Stratum 2			River Stratum 3	
	High	Med	Low	Med	Low		High	Med	Low	Med	Low
11-Sun						20-Sun	27, PM				
Mon						Mon					
Tues						Tue					
Wed						Wed		17, PM		BR2, PM	
Thu						Thu	31, PM				
Fri						Fri				10, AM	
Sat						Sat					
12-Sun						21-Sun	32, AM (NS)				BR1, AM
Mon						Mon					
Tue						Tue		19, AM			
Wed						Wed					
Thu						Thu	31, AM				
Fri						Fri					
Sat						Sat		24, AM(NS)		7, AM	
13-Sun						22-Sun		30, AM			
Mon						Mon					
Tue						Tue					
Wed						Wed					
Thu						Thu		20, AM		13, PM	
Fri						Fri	27, AM				
Sat						Sat	28, AM			3, AM	
14-Sun	32, AM (NS)					23-Sun					
Mon	31, AM (NS)	27, PM (NS)	BR1, AM		BR1, AM	Mon				12, PM	
Tue						Tue					
Wed						Wed					
Thu				BR2, PM (NS)		Thu					
Fri						Fri	27, PM	18, PM			
Sat						Sat	31, PM	24, PM		8, PM	
15-Sun	32, PM		BR1, AM	3, PM		24-Sun		27, PM(NS)		10, PM	
Mon						Mon				16, PM	
Tue						Tue					
Wed						Wed	27, PM (25, PM)				
Thu	26, PM					Thu					
Fri						Fri		30, PM			
Sat		21, AM			BR1, AM	Sat	31, PM				
16-Sun						25-Sun	31, PM	24, PM			
Mon					8, AM (NS)	Mon		20, PM			
Tue	26, PM					Tue					
Wed		23, AM (NS)				Wed					
Thu			BR2, AM (NS)			Thu					
Fri					BR1, AM	Fri	27, AM			2, AM	
Sat	32, AM					Sat					
17-Sun			BR1, AM (NS)		BR3, AM (NS)	26-Sun					
Mon						Mon					
Tue						Tue		19			
Wed						Wed					
Thu	25, AM					Thu	25, AM				
Fri						Fri				12, PM	
Sat	32, PM	19, AM			13, PM	Sat					
18-Sun						27-Sun				12, PM	
Mon		17, AM			10, PM	Mon				9, AM	
Tue						Tue					
Wed				2, PM (NS)		Wed					
Thu	25, PM				7, PM	Thu					
Fri						Fri		19, AM			
Sat	32, AM					Sat		21, AM			
19-Sun					7, AM (NS)	28-Sun		20, PM			
Mon						Mon					
Tue						Tue					
Wed						Wed		21, PM			
Thu	32, AM		27, PM			Thu					
Fri						Fri				3, AM	
Sat	26, PM	24, AM			2, PM (NS)	Sat				12, PM(NS)	

Table B.1.1. Continued

Wk-Day	River Stratum 2			River Stratum 3		Wk-Day	River Stratum 2			River Stratum 3	
	High	Med	Low	Med	Low		High	Med	Low	Med	Low
29-Sun						38-Sun		30, AM		11, AM	
Mon						Mon				12, AM(NS)	
Tue						Tue					
Wed						Wed		20, PM			2, AM
Thu	31, AM					Thu					
Fri		20, AM		12, PM		Fri	31, AM				
Sat						Sat	31, AM				
30-Sun	31, AM	22, PM				39-Sun	31, PM	30, PM			
Mon						Mon	31, AM	32, PM			
Tue						Tue					
Wed	31, PM					Wed				4, AM	
Thu				3, AM		Thu					
Fri		26, AM				Fri					
Sat				7, AM		Sat				3, PM	
31-Sun		19, PM	27, AM	4, PM		40-Sun			29, PM	12, PM	
Mon						Mon					14, PM
Tue						Tue					
Wed		25, PM				Wed					
Thu	31, PM			9, AM		Thu					
Fri						Fri				11, PM	
Sat	31, PM					Sat	31, PM				
32-Sun	31, AM				2, AM(NS)	41-Sun		19, PM		8, PM	
Mon						Mon					
Tue						Tue			27, AM		
Wed		22, AM				Wed		22, AM(NS)			
Thu				9, PM		Thu					
Fri	31, PM					Fri	31, PM			3, AM	
Sat		21, AM		12, AM		Sat					6, AM
33-Sun	31, AM(NS)	19, PM				42-Sun		30, AM	24, PM	3, PM	
Mon	31, AM					Mon					
Tue			28, AM			Tue		25, AM			
Wed				9, PM		Wed				16, AM	
Thu		32, PM				Thu					13, AM
Fri						Fri					
Sat				8, PM		Sat	31, AM				
34-Sun	31, AM	21, PM		9, AM		43-Sun		21, AM		3, PM	
Mon	31, AM					Mon		25, PM			
Tue				16, PM		Tue				7, PM	
Wed		30, AM				Wed			27, AM		
Thu					6, AM	Thu	31, AM				
Fri						Fri					
Sat						Sat					
35-Sun	31, AM(NS)										
Mon											
Tue		25, AM									
Wed					5, AM						
Thu	31, PM										
Fri				7, AM							
Sat		30, AM	29, AM	8, PM							
36-Sun				12, PM	5, PM						
Mon											
Tue											
Wed				7, PM							
Thu	31, AM(NS)										
Fri		19, AM									
Sat	31, PM	26, PM									
37-Sun	31, AM	25, AM									
Mon		22, PM									
Tue											
Wed											
Thu			29, PM	7, PM(NS)							
Fri	31, AM										
Sat				12, PM(NS)							

## **B.2 NIGHTTIME SAMPLING SCHEDULE**



Table B.2.1. Nighttime sampling schedule

**MIDNIGHT SHIFTS (9 PM-12PM)**

<b>Date</b>	<b>Location</b>	<b>Site Code</b>
<b>ESTUARY</b>		
4/27/02	Hog Island	77
5/1/02	Mercer County	60
5/3/02	Neshaminy STP	65
5/11/02	Frankfort	73
5/15/02	Mercer County	60
5/27/02	Hog Island	77
6/6/02	Mercer County	60
7/13/02	Morrows Marina	78
7/24/02	Penneypack Park	71
8/9/02	Mercer County	60
8/31/02	Hog Island	77
9/15/02	Morrows Marina	78
9/29/02	Hog Island	77
10/12/02	Hog Island	77
10/13/02	Mercer County	60
<b>STRATUM 1</b>		
4/24/02	Scott Park	42
5/4/02	Hugh Moore Park	43
5/11/02	Yardley	58
5/11/02	Sandts Eddy	39
5/18/02	Sandts Eddy	39
5/21/02	Phillipsburg	41
5/23/02	Scott Park	42
6/1/02	Martins Creek	38
6/1/02	Scott Park	42
6/8/02	Scott Park	42
6/9/02	Firemens Eddy	57
6/19/02	Yardley	58
7/7/02	Yardley	58
7/29/02	Firemens Eddy	57
8/15/02	Scott Park	42
8/31/02	Lambertville	56
9/13/02	Scott Park	42
9/26/02	Lambertville	56
10/12/02	Lambertville	56
10/26/02	Firemens Eddy	57

Table B.2.1. Continued

<b>Date</b>	<b>Location</b>	<b>Site Code</b>
<b>STRATUM 2</b>		
4/23/02	Dingmans	26
5/4/02	Worthington	32
5/9/02	Milford	25
6/19/02	Millford	25
7/6/02	Bushkill	28
7/17/02	Highlands	21
8/10/02	Smithfield	31
8/16/02	Smithfield	31
9/25/02	Lackawaxen	20
10/18/02	Smithfield	31
<b>STRATUM 3</b>		
5/4/02	Callicoon	12
5/6/02	Kellams Bridge	10
6/15/02	Long Eddy	8
6/17/02	Skinnners Falls	16
7/7/02	Callicoon	12
7/19/02	Hancock	3
8/24/02	Long Eddy	8
9/7/02	Long Eddy	8
10/5/02	Hancock	3

55 SCHEDULED 9PM-12PM SHIFTS



**B.3 CHANGES IN SAMPLING SCHEDULE  
AND SITES ELIMINATED**



Table B.3.1. Sites eliminated from the sampling frame

<b>Site</b>	<b>Site-ID</b>	<b>Stratum</b>	<b>Reason</b>
Pine Point Marina	75	Estuary	Unsafe area
River Road	4	3	Private Land
Del Row Marina	68	Estuary	Closed down (owner passed away)
Curtin Marina	63	Estuary	Not used by anglers
Lightening jack Marina	67	Estuary	Not used by anglers

After June, the sampling at designated bus-routes for low usage sites were minimized or discontinued because few if any interviews were gained from those sites. To increase precision, the effort at low usage sites was shifted towards medium usage sites instead.

Table B.3.2. Changes in July interview schedule, replacing Low Use Interview Sites with Medium Use Sites

<b>Date</b>	<b>Low Use Sites (Deleted)</b>	<b>Medium Use Sites (Replacement)</b>
July 20	Phillipsburg Access (#41)	Hugh Moore Park (#43)
July 21	Christinia River) (7 <sup>th</sup> St. Ramp) (#81)	Penneypack Park (#71)
July 23	Phillipsburg Access (#41)	Worthington STP (#32)
August 2	Eshback(#27)	Poxono Access (#30)

**APPENDIX C**

**Species List and Number of  
Fish Caught by Anglers Interviewed**

Table C-1. List of all species reported by anglers					
Common Name	Other Vernacular Names	Scientific Name	TSN	Taxonomic Level (Rank)	Name Clerks Used
Alosid	Herrings, Shads	<i>Alosa sp.</i>	161700	Family	herring
Alewife	Alewife herring, Freshwater herring	<i>Alosa pseudoharengus</i>	161706	Species	
American Shad	Common Shad, White Shad	<i>Alosa sapidissima</i>	161702	Species	
Gizzard Shad	(American Gizzard, Eastern Gizzard, Hickory,& Mud) Shad, Skipjack	<i>Dorosoma cepedianum</i>	161737	Species	
Hickory Shad	Shad herring	<i>Alosa mediocris</i>	161704	Species	
Blueback Herring	None	<i>Alosa aestivalis</i>	161703	Species	
Blue Catfish	Blue Catfish	<i>Ictalurus furcatus</i>	163997	Species	
Channel Catfish	Channel Catfish	<i>Ictalurus punctatus</i>	163998	Species	catfish
Clupeid	River Herrings	<i>Clupeidae</i>	161701	Genus	
White Catfish	None	<i>Ameiurus catus</i>	164037	Species	
Brown Bullhead	None	<i>Ameiurus nebulosis</i>	164043	Species	bullhead catfish
Flathead Catfish	None	<i>Pylodictis olivaris</i>	164029	Species	
Striped Bass	Rockfish	<i>Morone saxatilis</i>	167680	Species	
White Perch	None	<i>Morone americana</i>	167678	Species	
Largemouth Bass	None	<i>Micropterus salmonides</i>	168160	Species	
Rock Bass	None	<i>Ambloplites rupestris</i>	168097	Species	
Smallmouth Bass	None	<i>Micropterus dolomieu</i>	168159	Species	
Yellow Perch	None	<i>Perca flavescens</i>	168469	Species	
White Crappie	None	<i>pomoxis annularis</i>	168166	Species	
Muskellunge	muskie, lunge, masinonge, great pike	<i>Esox masquinongy</i>	162144	Species	
Suckers		<i>Catostomidae</i>	163892	Family	
Rainbow Trout		<i>Oncorhynchus mykiss</i>	161989	Species	
Walleye		<i>Stizostedion vitreum</i>	168506	Species	
Brook Trout		<i>Salvelinus fontinalis</i>	162003	Species	
Sunfishes		<i>Centrarchidae</i>	168093	Family	sunny, sunfish
Bluegill		<i>Lepomis macrochirus</i>	168141	Species	
River Chub		<i>Nocomis micropogon</i>	163392	Family	chubs
Carps		<i>Cyprinidae</i>	163342		

Table C-1. Continued

Common Name	Other Vernacular Names	Scientific Name	TSN	Taxonomic Level (Rank)	Name Clerks Used
Crappie		<i>Pomoxis sp.</i>	168165	Family	
Redbreast Sunfish	None	<i>Lepomis auritus</i>	168131	Species	
Pumpkinseed	kiver	<i>Lepomis gibbosus</i>	168144	Species	
Eel		<i>Anguilliformes</i>	161123		
Brown Trout		<i>Salmo trutta</i>	161997	Species	
Bony Fishes		<i>Osteichthyes</i>	161030		
White Bass		<i>Morone chrysops</i>	167682	Species	
Fallfish		<i>Semotilus corporalis</i>	163375	Species	
Shiner perch		<i>Cymatogaster aggregata</i>	169739	Species	
Salmonids	Trouts	<i>Salmonidae</i>	161931		trout
Creek Chub		<i>Semotilus atromaculatus</i>	163376	Species	

Species	# Fish Caught from 7am to 9pm					# Fish Caught from 9pm to 12am		
	All	Tidal	Non-Tidal 1	Non-Tidal 2	Non-Tidal 3	All	Tidal	Non-Tidal
American Shad	485	14	291	180	0	0	0	0
Blue Catfish	18 <sup>1</sup>	18	0	0	0	0	0	0
Bluegill	125 <sup>2</sup>	12	79	33	1	1	0	1
Bony Fishes	14	3	4	7	0	0	0	0
Brook Trout	3	0	1	0	2	0	0	0
Brown Bullhead	98	74	23	1	0	0	0	0
Brown Trout	17	0	1	0	16	0	0	0
Carp	19	5	1	13	0	0	0	0
Channel Catfish	984	734	204	37	9	27	13	14
Chub shiner	1	0	0	0	1	0	0	0
Crappie	14	0	10	4	0	0	0	0
Creek Chub	1	0	1	0	0	0	0	0
Croakers	26	26	0	0	0	0	0	0
Eel	98	47	16	20	15	24	2	22
Fallfish	28	0	1	0	27	0	0	0
Flathead Catfish	3	3	0	0	0	0	0	0
Hickory Shad	1	0	1	0	0	0	0	0
Largemouth Bass	154	140	6	8	0	0	0	0
Muskellunge	8	2	2	3	1	0	0	0
Pickerels	1	0	0	0	1	0	0	0
Pumpkinseed	6	0	6	0	0	0	0	0
Rainbow Trout	35	0	1	2	32	0	0	0
Redbreast Sunfish	14	0	5	1	8	0	0	0
River Chub	16	0	2	7	7	0	0	0
River Herring	316	79	234	3	0	0	0	0
Rock Bass	285	0	168	111	6	3	0	3
Salmonids	6	0	0	4	2	0	0	0

<sup>1</sup> As reported. This may include white catfish, as local anglers near the Schuylkill River often refer to this species as “blue cats” (M. Kaufmann (PFBC) pers. comm..)

<sup>2</sup> It is likely that many interviewed anglers reported catch of sunfish species (*centrarchids*) as bluegill. Because of their similar appearance, it is the feeling of some state biologists that redbreast sunfish catch may have been misreported as bluegill.

Shiner perch	1	0	0	1	0	0	0	0
Smallmouth Bass	1925	55	1177	617	76	10	0	10
<b>Table C-2. Continued</b>								
Species	# Fish Caught from 7am to 9pm					# Fish Caught from 9pm to 12am		
	All	Tidal	Non-Tidal 1	Non-Tidal 2	Non-Tidal 3	All	Tidal	Non-Tidal
Spot	9	9	0	0	0	0	0	0
Striped Bass	1047	630	404	11	2	25	25	0
Suckers	9	0	5	2	2	0	0	0
Sunfishes	59	11	34	14	0	0	0	0
Turtle	5	5	0	0	0	0	0	0
Walleye	29	1	16	2	10	0	0	0
White Bass	4	3	1	0	0	0	0	0
White Catfish	9	7	2	0	0	0	0	0
White Perch	272	222	39	11	0	2	2	0
Yellow Perch	42	16	19	5	2	0	0	0



**APPENDIX D****CATCH AND HARVEST STATISTICS WITHIN AND ACROSS  
GEOGRAPHIC AND TEMPORAL STRATA**

- D.1 American shad
- D.2 Striped bass
- D.3 River Herring
- D.4 Smallmouth Bass
- D.5 Channel Catfish
- D.6 Bluegill
- D.7 Largemouth Bass
- D.8 Rock Bass
- D.9 White Perch
- D.10 River Stratum 2 Catch and Harvest
- D.11 River Stratum 3 Catch and Harvest



**D.1 AMERICAN SHAD**



### **D.1.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**



Table D.1.1.1 Catch and harvest statistics by fishing mode for American shad across the total study period, based on original stratification.

Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.1886	0.0164	8386	0.26	0.23	729	0.12	0.38	0.09
Non-Tidal 1	0.1336	0.0310	22303	0.70	0.34	5183	0.84	0.53	0.23
Pooled Non-Tidal	0.1451	0.0280	30689	0.96	0.25	5913	0.95	0.46	0.19
Tidal	0.0091	0.0022	1155	0.04	0.71	280	0.05	0.70	0.24
All	0.0943	0.0183	31844	1.00	0.25	6193	1.00	0.44	0.19
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0771	0.0106	1862	0.54	0.75	257	0.59	0.80	0.14
Non-Tidal 1	0.0610	0.0056	1540	0.45	0.46	142	0.33	0.59	0.09
Pooled Non-Tidal	0.0689	0.0081	3402	0.99	0.46	399	0.92	0.56	0.12
Tidal	0.0026	0.0026	35	0.01	1.04	35	0.08	1.04	1.00
All	0.0548	0.0069	3437	1.00	0.45	434	1.00	0.52	0.13
<b>All Anglers</b>									
Non-Tidal 2+3	0.1493	0.0144	10249	0.29	0.23	986	0.15	0.35	0.10
Non-Tidal 1	0.1240	0.0277	23842	0.68	0.32	5325	0.80	0.51	0.22
Pooled Non-Tidal	0.1307	0.0242	34091	0.97	0.23	6312	0.95	0.44	0.19
Tidal	0.0085	0.0023	1190	0.03	0.69	315	0.05	0.64	0.26
All	0.0881	0.0165	35281	1.00	0.22	6627	1.00	0.42	0.19

Table D.1.1.2. Catch and harvest statistics (boat anglers) for American shad by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.9262	0.0940	3473	0.11	0.24	352	0.06	0.24	0.10
	2	0.2870	0.0224	4840	0.15	0.36	377	0.06	0.71	0.08
	3	0.0118	0.0000	73	0.00	0.82	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.2904	0.0822	14819	0.47	0.47	4194	0.68	0.64	0.28
	2	0.1459	0.0193	7484	0.24	0.38	989	0.16	0.50	0.13
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.3339	0.0830	18292	0.57	0.39	4546	0.73	0.59	0.25
	2	0.1808	0.0201	12324	0.39	0.27	1366	0.22	0.41	0.11
	3	0.0047	0.0000	73	0.00	0.82	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0278	0.0000	595	0.02	1.25	0	0.00		0.00
	2	0.0115	0.0057	560	0.02	0.63	280	0.05	0.70	0.50
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.2478	0.0597	18887	0.59	0.38	4546	0.73	0.59	0.24
	2	0.1102	0.0141	12884	0.40	0.26	1647	0.27	0.36	0.13
	3	0.0028	0.0000	73	0.00	0.82	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0943	0.0183	31844	1.00	0.25	6193	1.00	0.44	0.19



Table D.1.1.3. Catch and harvest statistics (shore anglers) for American shad by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	0.75	0	0.00	0.80	0.14
	2	0.1954	0.0270	1862	0.54		257	0.59		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.1021	0.0000	403	0.12	0.90	0	0.00	0.59	0.00
	2	0.1356	0.0169	1137	0.33	0.53	142	0.33		
	3	0.0000	0.0000	0	0.00	0	0.00			
	4	0.0000	0.0000	0	0.00	0	0.00			
	5	0.0000	0.0000	0	0.00	0	0.00			
	6	0.0000	0.0000	0	0.00	0	0.00			
	7	0.0000	0.0000	0	0.00	0	0.00			
Pooled Non-Tidal	1	0.1021	0.0000	403	0.12	0.90	0	0.00	0.56	0.00
	2	0.1674	0.0223	3000	0.87	0.50	399	0.92		
	3	0.0000	0.0000	0	0.00	0	0.00			
	4	0.0000	0.0000	0	0.00	0	0.00			
	5	0.0000	0.0000	0	0.00	0	0.00			
	6	0.0000	0.0000	0	0.00	0	0.00			
	7	0.0000	0.0000	0	0.00	0	0.00			
Tidal	1	0.0074	0.0074	35	0.01	1.04	35	0.08	1.04	1.00
	2	0.0000	0.0000	0	0.00	0	0.00			
	3	0.0000	0.0000	0	0.00	0	0.00			
	4	0.0000	0.0000	0	0.00	0	0.00			
	5	0.0000	0.0000	0	0.00	0	0.00			
	6	0.0000	0.0000	0	0.00	0	0.00			
	7	0.0000	0.0000	0	0.00	0	0.00			
All	1	0.0505	0.0040	437	0.13	0.83	35	0.08	1.04	0.08
	2	0.1473	0.0196	3000	0.87	0.50	399	0.92		
	3	0.0000	0.0000	0	0.00	0	0.00			
	4	0.0000	0.0000	0	0.00	0	0.00			
	5	0.0000	0.0000	0	0.00	0	0.00			
	6	0.0000	0.0000	0	0.00	0	0.00			
	7	0.0000	0.0000	0	0.00	0	0.00			
All	All	0.0548	0.0069	3437	1.00	0.45	434	1.00	0.52	0.13

Table D.1.1.4. Catch and harvest statistics (all anglers) for American shad by geographic strata and months										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.9262	0.0940	3473	0.10	0.24	352	0.05	0.24	0.1014493
	2	0.2539	0.0240	6702	0.19	0.33	634	0.10	0.53	0.0945973
	3	0.0065	0.0000	73	0.00	0.82	0	0.00		0
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.2769	0.0763	15221	0.43	0.46	4194	0.63	0.64	0.2755331
	2	0.1445	0.0190	8621	0.24	0.34	1131	0.17	0.45	0.1312364
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.3184	0.0774	18695	0.53	0.38	4546	0.69	0.59	0.2431912
	2	0.1780	0.0205	15323	0.43	0.24	1765	0.27	0.34	0.1152105
	3	0.0034	0.0000	73	0.00	0.82	0	0.00		0
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0241	0.0013	630	0.02	1.18	35	0.01	1.04	0.05519
	2	0.0109	0.0055	560	0.02	0.63	280	0.04	0.70	0.5
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.2277	0.0540	19324	0.55	0.37	4581	0.69	0.59	0.2370665
	2	0.1157	0.0149	15884	0.45	0.23	2046	0.31	0.31	0.1287866
	3	0.0023	0.0000	73	0.00	0.82	0	0.00		0
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0881	0.0165	35281	1.00	0.23	6627	1.00	0.42	0.1878263

**D.1.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**



Table D.12.1. Catch and harvest statistics by fishing mode for American shad across the total study period, based on monthly post-stratification									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.2761	0.0262	14056	0.43	0.39	1336	0.28	0.43	0.10
Non-Tidal 1	0.1018	0.0177	17923	0.55	0.30	3117	0.66	0.43	0.17
Pooled Non-Tidal	0.1409	0.0196	31979	0.98	0.24	4453	0.95	0.33	0.14
Tidal	0.0060	0.0019	819	0.02	0.79	252	0.05	0.92	0.31
All	0.0905	0.0130	32798	1.00	0.24	4705	1.00	0.32	0.14
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.1280	0.0057	3699	0.66	0.91	165	0.42	0.91	0.04
Non-Tidal 1	0.0690	0.0076	1838	0.33	0.46	202	0.51	0.59	0.11
Pooled Non-Tidal	0.0997	0.0066	5538	0.99	0.63	367	0.93	0.52	0.07
Tidal	0.0020	0.0020	28	0.01	1.07	28	0.07	1.07	1.00
All	0.0796	0.0057	5566	1.00	0.63	395	1.00	0.49	0.07
<b>All Anglers</b>									
Non-Tidal 2+3	0.2225	0.0188	17755	0.46	0.36	1501	0.29	0.39	0.08
Non-Tidal 1	0.0975	0.0164	19762	0.52	0.28	3319	0.65	0.41	0.17
Pooled Non-Tidal	0.1328	0.0171	37517	0.98	0.23	4820	0.95	0.31	0.13
Tidal	0.0057	0.0019	846	0.02	0.76	280	0.05	0.84	0.33
All	0.0888	0.0118	38363	1.00	0.22	5100	1.00	0.29	0.13

Table D.1.2.2. Catch and harvest statistics (boat anglers) for American shad by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.7373	0.0748	10613	0.32	0.50	1077	0.23	0.50	0.10
	2	0.3222	0.0251	3330	0.10	0.42	259	0.06	0.75	0.08
	3	0.0160	0.0000	113	0.00	0.72	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.1768	0.0324	13459	0.41	0.35	2466	0.52	0.51	0.18
	2	0.1613	0.0235	4464	0.14	0.63	651	0.14	0.75	0.15
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.2660	0.0391	24072	0.73	0.29	3542	0.75	0.39	0.15
	2	0.2051	0.0240	7794	0.24	0.40	911	0.19	0.58	0.12
	3	0.0062	0.0000	113	0.00	0.72	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0222	0.0068	819	0.02	0.79	252	0.05	0.92	0.31
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.1953	0.0298	24890	0.76	0.28	3794	0.81	0.37	0.15
	2	0.1070	0.0125	7794	0.24	0.40	911	0.19	0.58	0.12
	3	0.0037	0.0000	113	0.00	0.72	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0905	0.0130	32798	1.00	0.24	4705	1.00	0.32	0.14

Table D.1.2.3. Catch and harvest statistics (shore anglers) for American shad by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0761	0.0304	412	0.07	0.91	165	0.42	0.91	0.40
	2	0.5290	0.0000	3287	0.59	1.02	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.1570	0.0143	1245	0.22	0.62	113	0.29	0.87	0.09
	2	0.1342	0.0201	594	0.11	0.56	89	0.23	0.78	0.15
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.1241	0.0208	1657	0.30	0.52	278	0.70	0.65	0.17
	2	0.3648	0.0084	3881	0.70	0.87	89	0.23	0.78	0.02
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0051	0.0051	28	0.01	1.07	28	0.07	1.07	1.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0897	0.0163	1685	0.30	0.51	306	0.77	0.59	0.18
	2	0.2890	0.0066	3881	0.70	0.87	89	0.23	0.78	0.02
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0796	0.0057	5566	1.00	0.63	395	1.00	0.49	0.07

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.5565	0.0627	11025	0.29	0.48	1242	0.24	0.45	0.11
	2	0.3998	0.0157	6617	0.17	0.55	259	0.05	0.75	0.04
	3	0.0086	0.0000	113	0.00	0.72	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.1750	0.0307	14704	0.38	0.32	2579	0.51	0.49	0.18
	2	0.1576	0.0231	5058	0.13	0.56	740	0.15	0.66	0.15
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.2477	0.0368	25729	0.67	0.28	3821	0.75	0.36	0.15
	2	0.2400	0.0205	11675	0.30	0.40	1000	0.20	0.53	0.09
	3	0.0044	0.0000	113	0.00	0.72	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0200	0.0066	846	0.02	0.76	280	0.05	0.84	0.33
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.1817	0.0280	26576	0.69	0.27	4100	0.80	0.34	0.15
	2	0.1354	0.0116	11675	0.30	0.40	1000	0.20	0.53	0.09
	3	0.0029	0.0000	113	0.00	0.72	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0888	0.0118	38363	1.00	0.22	5100	1.00	0.29	0.13



**D.1.3 Catch and Harvest Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for American Shad**



Table D.1.3.1. Catch and harvest statistics by fishing mode for American shad across the total study period, based on original temporal stratification and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.3544	0.0690	30249	1.41	0.28	5890	1.14	0.43	0.19
Non-Tidal 1	0.0951	0.0238	193	0.01	1.85	48	0.01	1.34	0.25
Pooled Non-Tidal	0.3484	0.0680	30442	1.42	0.28	5939	1.15	0.43	0.20
Tidal	0.5716	0.0467	8737	0.41	0.27	714	0.14	0.39	0.08
All	0.3071	0.0739	21512	1.00	0.38	5177	1.00	0.49	0.24
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.2934	0.0397	2049	2.14	0.59	277	2.18	0.52	0.14
Non-Tidal 1	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	0.2874	0.0389	2049	2.14	0.59	277	2.18	0.52	0.14
Tidal	0.3159	0.0436	1090	1.14	0.90	150	1.18	0.72	0.14
All	0.2713	0.0360	959	1.00	0.73	127	1.00	0.75	0.13
<b>All Anglers</b>									
Non-Tidal 2+3	0.3498	0.0668	32298	1.44	0.26	6168	1.16	0.41	0.19
Non-Tidal 1	0.0888	0.0222	193	0.01	1.85	48	0.01	1.34	0.25
Pooled Non-Tidal	0.3438	0.0658	32491	1.45	0.26	6216	1.17	0.41	0.19
Tidal	0.5245	0.0461	9827	0.44	0.26	864	0.16	0.35	0.09
All	0.3053	0.0721	22471	1.00	0.36	5304	1.00	0.47	0.24

Table D.1.3.2. Catch and harvest statistics (boat anglers) for American shad by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	1.0376	0.1053	3891	0.13	0.11	395	0.07	0.11	0.10
	2	0.4201	0.0276	4846	0.16	0.48	319	0.05	0.87	0.07
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.3463	0.0980	15128	0.50	0.47	4281	0.72	0.57	0.28
	2	0.2421	0.0339	6384	0.21	0.61	895	0.15	0.65	0.14
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.4010	0.0986	19019	0.62	0.38	4676	0.79	0.52	0.25
	2	0.2962	0.0320	11230	0.37	0.40	1214	0.20	0.53	0.11
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.1159	0.0290	193	0.01	1.85	48	0.01	1.34	0.25
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.3979	0.0978	19019	0.62	0.38	4676	0.79	0.52	0.25
	2	0.2886	0.0319	11423	0.38	0.40	1262	0.21	0.51	0.11
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.3484	0.0680	30442	1.00	0.28	5939	1.00	0.43	0.20

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	0.90	0	0.00	0.72	0.14
	2	0.3403	0.0469	1090	0.53		150	0.54		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.2516	0.0000	87	0.04	1.86	0	0.00	0.75	0.00 0.15
	2	0.2735	0.0399	872	0.43	0.78	127	0.46		
	3	0.0000	0.0000	0	0.00	0	0.00			
	4	0.0000	0.0000	0	0.00	0	0.00			
	5	0.0000	0.0000	0	0.00	0	0.00			
	6	0.0000	0.0000	0	0.00	0	0.00			
	7	0.0000	0.0000	0	0.00	0	0.00			
Pooled Non-Tidal	1	0.2516	0.0000	87	0.04	1.86	0	0.00	0.52	0.00 0.14
	2	0.3070	0.0434	1961	0.96	0.61	277	1.00		
	3	0.0000	0.0000	0	0.00	0	0.00			
	4	0.0000	0.0000	0	0.00	0	0.00			
	5	0.0000	0.0000	0	0.00	0	0.00			
	6	0.0000	0.0000	0	0.00	0	0.00			
	7	0.0000	0.0000	0	0.00	0	0.00			
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.1776	0.0000	87	0.04	1.86	0	0.00	0.52	0.00 0.14
	2	0.3070	0.0434	1961	0.96	0.61	277	1.00		
	3	0.0000	0.0000	0	0.00	0	0.00			
	4	0.0000	0.0000	0	0.00	0	0.00			
	5	0.0000	0.0000	0	0.00	0	0.00			
	6	0.0000	0.0000	0	0.00	0	0.00			
	7	0.0000	0.0000	0	0.00	0	0.00			
All	All	0.2874	0.0389	2049	1.00	0.59	277	1.00	0.52	0.14

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	1.0376	0.1053	3891	0.12	0.11	395	0.06	0.11	0.10
	2	0.4028	0.0318	5936	0.18	0.43	469	0.08	0.63	0.08
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.3456	0.0972	15215	0.47	0.47	4281	0.69	0.57	0.28
	2	0.2454	0.0346	7256	0.22	0.54	1022	0.16	0.57	0.14
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.3999	0.0979	19106	0.59	0.37	4676	0.75	0.52	0.24
	2	0.2978	0.0337	13191	0.41	0.35	1492	0.24	0.44	0.11
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.1159	0.0290	193	0.01	1.85	48	0.01	1.34	0.25
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.3957	0.0968	19106	0.59	0.37	4676	0.75	0.52	0.24
	2	0.2912	0.0335	13385	0.41	0.35	1540	0.25	0.43	0.12
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.3438	0.0658	32491	1.00	0.26	6216	1.00	0.41	0.19

**D.1.4 Catch and Harvest Statistics Based on Monthly Post-Stratification and Targeted Effort (Angler Hours) for American Shad**





Table D.1.4.1. Catch and harvest statistics by fishing mode for American shad across the total study period, based on monthly post-strata and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.6891	0.0633	13012	0.41	0.38	1196	0.26	0.42	0.09
Non-Tidal 1	0.2454	0.0440	18599	0.58	0.34	3331	0.72	0.41	0.18
Pooled Non-Tidal	0.3339	0.0478	31611	0.99	0.26	4527	0.99	0.32	0.14
Tidal	0.1006	0.0252	274	0.01	1.62	69	0.01	1.20	0.25
All	0.3274	0.0472	31885	1.00	0.25	4596	1.00	0.32	0.14
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.6908	0.0096	3365	0.74	0.96	47	0.23	0.36	0.01
Non-Tidal 1	0.2860	0.0390	1163	0.26	0.60	158	0.77	0.63	0.14
Pooled Non-Tidal	0.5066	0.0230	4528	1.00	0.73	205	1.00	0.50	0.05
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	0.5009	0.0227	4528	1.00	0.73	205	1.00	0.50	0.05
<b>All Anglers</b>									
Non-Tidal 2+3	0.6894	0.0523	16377	0.45	0.36	1243	0.26	0.41	0.08
Non-Tidal 1	0.2475	0.0437	19762	0.54	0.32	3490	0.73	0.39	0.18
Pooled Non-Tidal	0.3488	0.0457	36139	0.99	0.24	4732	0.99	0.31	0.13
Tidal	0.0970	0.0243	274	0.01	1.62	69	0.01	1.20	0.25
All	0.3421	0.0451	36413	1.00	0.24	4801	1.00	0.30	0.13

Table D.1.4.2. Catch and harvest statistics (boat anglers) for American shad by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.8432	0.0855	9535	0.30	0.50	967	0.21	0.48	0.10
	2	0.4590	0.0302	3477	0.11	0.44	229	0.05	0.86	0.07
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.2134	0.0403	13107	0.41	0.39	2477	0.54	0.51	0.19
	2	0.3822	0.0595	5492	0.17	0.70	854	0.19	0.63	0.16
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.3113	0.0474	22642	0.71	0.31	3444	0.75	0.39	0.15
	2	0.4087	0.0494	8969	0.28	0.46	1083	0.24	0.53	0.12
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.1006	0.0252	274	0.01	1.62	69	0.01	1.20	0.25
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.3037	0.0466	22916	0.72	0.30	3513	0.76	0.38	0.15
	2	0.4087	0.0494	8969	0.28	0.46	1083	0.24	0.53	0.12
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00	0.26	0	0.00		
	7	0.0000	0.0000	0	0.00	1.62	0	0.00		
All	All	0.3274	0.0472	31885	1.00	0.25	4596	1.00	0.32	0.14

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.1418	0.0567	117	0.03	0.36	47	0.23	0.36	0.40
	2	0.8906	0.0000	3248	0.72	1.00	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.2462	0.0259	576	0.13	1.02	61	0.30	0.96	0.11
	2	0.3399	0.0566	587	0.13	0.66	98	0.48	0.84	0.17
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.2190	0.0339	693	0.15	0.85	107	0.52	0.56	0.15
	2	0.7136	0.0182	3835	0.85	0.85	98	0.48	0.84	0.03
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.2122	0.0329	693	0.15	0.85	107	0.52	0.56	0.15
	2	0.7136	0.0182	3835	0.85	0.85	98	0.48	0.84	0.03
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.5009	0.0227	4528	1.00	0.73	205	1.00	0.50	0.05

Table D.1.4.4. Catch and harvest statistics (all anglers) for American shad by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.7956	0.0836	9652	0.27	0.49	1014	0.21	0.46	0.11
	2	0.5993	0.0204	6725	0.18	0.53	229	0.05	0.86	0.03
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.2146	0.0398	13683	0.38	0.37	2538	0.53	0.49	0.19
	2	0.3777	0.0592	6079	0.17	0.63	952	0.20	0.57	0.16
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.3075	0.0468	23335	0.64	0.30	3552	0.74	0.38	0.15
	2	0.4687	0.0432	12804	0.35	0.41	1181	0.25	0.49	0.09
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0970	0.0243	274	0.01	1.62	69	0.01	1.20	0.25
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.2999	0.0460	23609	0.65	0.30	3620	0.75	0.37	0.15
	2	0.4687	0.0432	12804	0.35	0.41	1181	0.25	0.49	0.09
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.3421	0.0451	36413	1.00	0.24	4801	1.00	0.30	0.13

**D.1.5 Targeted Effort Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for American Shad**



Strata		p of total effort	Var (p of total effort)	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	1.0000	0.0000	3750	0.11	4.16	902	16
	2	0.6842	2.6045	11536	0.42	4.52	2551	40
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.8561	0.7872	43683	0.45	4.09	10687	41
	2	0.5143	2.4424	26373	0.57	5.00	5276	147
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.8659	0.7873	47433	0.41	4.09	11589	57
	2	0.5563	2.4569	37910	0.42	4.84	7827	187
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0170	0.0013	365	1.35	5.25	69	1
	2	0.0342	0.1268	1666	1.69	6.58	253	6
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.4036	1.0016	85343	0.30	4.40	19416	244
Tidal	All	0.0161	0.0278	2031	1.41	6.30	323	7
All	All	0.2587	0.6946	87374	0.29	4.43	19739	251

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				6
	2	0.3359	0.4546	3201	0.62	2.00	1604	43
	3	0.0486	0.3831	248	2.40	3.00	83	1
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0881	0.1502	348	1.85	2.12	164	15
	2	0.3801	1.4057	3188	0.63	2.19	1453	85
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0881	0.1502	348	1.85	2.12	164	21
	2	0.3566	0.6942	6389	0.44	2.09	3057	128
	3	0.0398	0.3250	248	2.40	3.00	83	1
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0308	0.0263	145	1.81	4.00	36	1
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.1414	0.4152	6985	0.42	2.11	3303	150
Tidal	All	0.0109	0.0096	145	1.81	4.00	36	1
All	All	0.1137	0.3123	7129	0.42	2.13	3339	151



Table D.1.5.3. Targeted effort statistics by fishing mode for American shad across the total study period, based on original temporal stratification and targeted effort (all anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	1.0000	0.0000	3750	0.11	3.43	1094	22
	2	0.5584	1.5620	14738	0.36	3.21	4586	83
	3	0.0219	0.2191	248	2.40	3.00	83	1
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.8010	0.7837	44031	0.45	3.55	12400	56
	2	0.4954	2.4111	29561	0.51	3.97	7444	232
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.8137	0.7837	47781	0.41	3.54	13494	78
	2	0.5147	2.2785	44299	0.36	3.68	12030	315
	3	0.0114	0.1005	248	2.40	3.00	83	1
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0195	0.0017	510	1.09	4.63	110	2
	2	0.0325	0.1206	1666	1.69	6.58	253	6
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.3539	0.9828	92327	0.28	3.61	25606	394
Tidal	All	0.0156	0.0274	2176	1.32	5.99	363	8
All	All	0.2360	0.6833	94503	0.27	3.64	25970	402



**D.1.6 Targeted Effort Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours) for American Shad**



Table D.1.6.1. Targeted effort statistics (boat anglers) for American shad by geographic strata and monthly post-strata								
Strata		p of Total Effort of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.7856	1.5826	11308	0.25	4.09	2764	20
	2	0.7330	0.9867	7575	0.39	4.60	1647	36
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.8070	0.9030	61420	0.35	4.80	12795	130
	2	0.5192	2.0114	14368	0.61	4.81	2987	58
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.8036	0.9138	72728	0.30	4.67	15559	150
	2	0.5773	1.8194	21943	0.42	4.74	4634	94
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0738	0.0373	2727	1.43	6.39	427	7
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.4171	0.9017	94671	0.25	4.69	20192	244
Tidal	All	0.0201	0.0250	2727	1.43	6.39	427	7
All	All	0.2688	0.4733	97398	0.25	4.72	20619	251

Table D.1.6.2. Targeted effort statistics (shore anglers) for American shad by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.1519	0.0946	823	1.02	1.88	437	39
	2	0.5869	0.9387	3647	0.48	2.13	1710	10
	3	0.0654	0.3196	401	2.14	3.00	134	1
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.2951	0.9287	2340	0.84	2.32	1007	68
	2	0.3905	1.4841	1727	0.59	1.89	916	32
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.2370	0.3911	3164	0.67	2.19	1445	107
	2	0.5052	0.9914	5374	0.49	2.05	2625	42
	3	0.0522	0.3015	401	2.14	3.00	134	1
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0186	0.0115	101	2.09	4.00	25	1
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.1609	0.2943	8938	0.38	2.13	4204	150
Tidal	All	0.0071	0.0034	101	2.09	4.00	25	1
All	All	0.1293	0.2251	9040	0.38	2.14	4229	151

Table D.1.6.3. Targeted effort statistics (all anglers) for American shad by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.6123	0.8875	12131	0.31	2.63	4610	59
	2	0.6781	0.9666	11222	0.34	4.06	2762	46
	3	0.0304	0.1900	401	2.14	3.00	134	1
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.7587	0.9032	63760	0.34	3.95	16161	198
	2	0.5014	2.0022	16095	0.55	3.77	4268	90
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.7308	0.9027	75891	0.29	3.65	20772	257
	2	0.5616	1.7117	27317	0.35	3.89	7030	136
	3	0.0155	0.1072	401	2.14	3.00	134	1
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0667	0.0370	2828	1.38	6.09	464	8
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.3667	0.8519	103609	0.23	3.71	27936	394
Tidal	All	0.0189	0.0245	2828	1.38	6.09	464	8
All	All	0.2462	0.4564	106437	0.23	3.75	28400	402





## **D.2 STRIPED BASS**



**D.2.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**



Table D.2.1.1 Catch and harvest statistics by fishing mode for striped bass across the total study period, based on original stratification.									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0032	0.0000	141	0.00	0.33	0	0.00		0.00
Non-Tidal 1	0.0797	0.0003	13312	0.43	0.29	43	1.00	0.90	0.00
Pooled Non-Tidal	0.0636	0.0002	13453	0.44	0.29	43	1.00	0.90	0.00
Tidal	0.1373	0.0000	17351	0.56	0.38	0	0.00		0.00
All	0.0912	0.0001	30804	1.00	0.25	43	1.00	0.90	0.00
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0066	0.0036	159	0.03	0.84	88	0.03	1.25	0.64
Non-Tidal 1	0.1018	0.0065	2570	0.47	0.58	163	0.47	0.94	0.05
Pooled Non-Tidal	0.0552	0.0051	2729	0.49	0.54	251	0.49	0.75	0.08
Tidal	0.2106	0.0184	2795	0.51	0.35	244	0.51	1.05	0.08
All	0.0881	0.0079	5523	1.00	0.32	495	1.00	0.64	0.08
<b>All Anglers</b>									
Non-Tidal 2+3	0.0044	0.0013	300	0.01	0.47	88	0.16	1.25	0.29
Non-Tidal 1	0.0826	0.0011	15882	0.44	0.26	206	0.38	0.77	0.01
Pooled Non-Tidal	0.0620	0.0011	16182	0.45	0.26	294	0.55	0.66	0.02
Tidal	0.1443	0.0017	20146	0.55	0.33	244	0.45	1.05	0.01
All	0.0907	0.0013	36328	1.00	0.22	538	1.00	0.60	0.01

Table D.2.1.2. Catch and harvest statistics (boat anglers) for striped bass by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0166	0.0000	103	0.00	0.38	0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0069	0.0000	39	0.00	0.66	0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0055	0.0000	280	0.01	1.02	0	0.00	0.90	0.00
	2	0.0428	0.0008	2194	0.07	0.64	43	1.00		0.02
	3	0.3668	0.0000	3405	0.11	0.45	0	0.00		0.00
	4	0.2018	0.0000	3140	0.10	0.62	0	0.00		0.00
	5	0.2022	0.0000	3549	0.12	0.74	0	0.00		0.00
	6	0.0540	0.0000	744	0.02	0.38	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		0.00
Pooled Non-Tidal	1	0.0051	0.0000	280	0.01	1.02	0	0.00	0.90	0.00
	2	0.0322	0.0006	2194	0.07	0.64	43	1.00		0.02
	3	0.2266	0.0000	3507	0.11	0.44	0	0.00		0.00
	4	0.1666	0.0000	3140	0.10	0.62	0	0.00		0.00
	5	0.1550	0.0000	3588	0.12	0.73	0	0.00		0.00
	6	0.0370	0.0000	744	0.02	0.38	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		0.00
Tidal	1	0.3386	0.0000	7257	0.24	0.75	0	0.00		0.00
	2	0.1034	0.0000	5044	0.16	0.56	0	0.00		0.00
	3	0.2537	0.0000	2619	0.09	0.83	0	0.00		0.00
	4	0.0700	0.0000	1160	0.04	0.57	0	0.00		0.00
	5	0.0838	0.0000	913	0.03	1.09	0	0.00		0.00
	6	0.0328	0.0000	359	0.01	0.51	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		0.00
All	1	0.0989	0.0000	7536	0.24	0.72	0	0.00	0.90	0.00
	2	0.0619	0.0004	7237	0.23	0.44	43	1.00		0.01
	3	0.2374	0.0000	6127	0.20	0.44	0	0.00		0.00
	4	0.1214	0.0000	4300	0.14	0.48	0	0.00		0.00
	5	0.1322	0.0000	4501	0.15	0.62	0	0.00		0.00
	6	0.0355	0.0000	1103	0.04	0.31	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		0.00
All	All	0.0912	0.0001	30804	1.00	0.25	43	1.00	0.90	0.00

Table D.2.1.3. Catch and harvest statistics (shore anglers) for striped bass by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0067	0.0000	64	0.01	1.16	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0285	0.0285	88	0.02	1.25	88	0.18	1.25	1.00
	7	0.0161	0.0000	7	0.00	0.99	0	0.00		0.00
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0605	0.0024	508	0.09	0.91	20	0.04	1.05	0.04
	3	1.4434	0.0000	1630	0.30	0.85	0	0.00		0.00
	4	0.0167	0.0000	43	0.01	0.97	0	0.00		0.00
	5	0.0587	0.0000	246	0.04	0.80	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0571	0.0571	143	0.03	1.07	143	0.29	1.07	1.00
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0319	0.0011	572	0.10	0.81	20	0.04	1.05	0.04
	3	0.2621	0.0000	1630	0.30	0.85	0	0.00		0.00
	4	0.0075	0.0000	43	0.01	0.97	0	0.00		0.00
	5	0.0348	0.0000	246	0.04	0.80	0	0.00		0.00
	6	0.0157	0.0157	88	0.02	1.25	88	0.18	1.25	1.00
	7	0.0513	0.0491	149	0.03	1.02	143	0.29	1.07	0.96
Tidal	1	0.0380	0.0000	179	0.03	0.59	0	0.00		0.00
	2	0.3920	0.0000	957	0.17	0.85	0	0.00		0.00
	3	0.6854	0.0000	149	0.03	0.62	0	0.00		0.00
	4	0.6205	0.0000	286	0.05	1.22	0	0.00		0.00
	5	0.1346	0.0000	298	0.05	0.27	0	0.00		0.00
	6	0.2336	0.0000	194	0.04	0.99	0	0.00		0.00
	7	0.3056	0.1019	732	0.13	0.44	244	0.49	1.05	0.33
All	1	0.0207	0.0000	179	0.03	0.59	0	0.00		0.00
	2	0.0751	0.0010	1528	0.28	0.61	20	0.04	1.05	0.01
	3	0.2764	0.0000	1779	0.32	0.78	0	0.00		0.00
	4	0.0530	0.0000	329	0.06	1.07	0	0.00		0.00
	5	0.0586	0.0000	544	0.10	0.39	0	0.00		0.00
	6	0.0439	0.0137	282	0.05	0.78	88	0.18	1.25	0.31
	7	0.1662	0.0729	882	0.16	0.40	387	0.78	0.77	0.44
All	All	0.0881	0.0079	5523	1.00	0.32	495	1.00	0.64	0.09

Table D.2.1.4. Catch and harvest statistics (all anglers) for striped bass by geographic strata and months										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0024	0.0000	64	0.00	1.16	0	0.00		0.00
	3	0.0091	0.0000	103	0.00	0.38	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0046	0.0000	39	0.00	0.66	0	0.00		0.00
	6	0.0093	0.0093	88	0.00	1.25	88	0.16	1.25	1.00
	7	0.0023	0.0000	7	0.00	0.99	0	0.00		0.00
Non-Tidal 1	1	0.0051	0.0000	280	0.01	1.02	0	0.00		0.00
	2	0.0453	0.0011	2701	0.07	0.55	63	0.12	0.70	0.02
	3	0.4836	0.0000	5035	0.14	0.41	0	0.00		0.00
	4	0.1754	0.0000	3183	0.09	0.61	0	0.00		0.00
	5	0.1745	0.0000	3795	0.10	0.69	0	0.00		0.00
	6	0.0457	0.0000	744	0.02	0.38	0	0.00		0.00
	7	0.0130	0.0130	143	0.00	1.07	143	0.27	1.07	1.00
Pooled Non-Tidal	1	0.0048	0.0000	280	0.01	1.02	0	0.00		0.00
	2	0.0321	0.0007	2765	0.08	0.54	63	0.12	0.70	0.02
	3	0.2368	0.0000	5138	0.14	0.40	0	0.00		0.00
	4	0.1294	0.0000	3183	0.09	0.61	0	0.00		0.00
	5	0.1268	0.0000	3834	0.11	0.69	0	0.00		0.00
	6	0.0324	0.0034	832	0.02	0.36	88	0.16	1.25	0.11
	7	0.0108	0.0103	149	0.00	1.02	143	0.27	1.07	0.96
Tidal	1	0.2844	0.0000	7436	0.20	0.73	0	0.00		0.00
	2	0.1172	0.0000	6000	0.17	0.49	0	0.00		0.00
	3	0.2626	0.0000	2768	0.08	0.79	0	0.00		0.00
	4	0.0849	0.0000	1446	0.04	0.52	0	0.00		0.00
	5	0.0924	0.0000	1211	0.03	0.82	0	0.00		0.00
	6	0.0469	0.0000	553	0.02	0.48	0	0.00		0.00
	7	0.0747	0.0249	732	0.02	0.44	244	0.45	1.05	0.33
All	1	0.0909	0.0000	7715	0.21	0.70	0	0.00		0.00
	2	0.0639	0.0005	8766	0.24	0.38	63	0.12	0.70	0.01
	3	0.2452	0.0000	7905	0.22	0.38	0	0.00		0.00
	4	0.1112	0.0000	4629	0.13	0.45	0	0.00		0.00
	5	0.1164	0.0000	5045	0.14	0.56	0	0.00		0.00
	6	0.0369	0.0023	1385	0.04	0.29	88	0.16	1.25	0.06
	7	0.0373	0.0164	882	0.02	0.40	387	0.72	0.77	0.44
All	All	0.0907	0.0013	36328	1.00	0.22	538	1.00	0.60	0.01



**D.2.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**



Table D.2.2.1. Catch and harvest statistics by fishing mode for striped bass across the total study period, based on monthly post-stratification									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0037	0.0000	189	0.01	0.37	0	0.00		0.00
Non-Tidal 1	0.0853	0.0003	15015	0.49	0.26	47	1.00	0.78	0.00
Pooled Non-Tidal	0.0670	0.0002	15204	0.50	0.26	47	1.00	0.78	0.00
Tidal	0.1128	0.0000	15271	0.50	0.37	0	0.00		0.00
All	0.0841	0.0001	30475	1.00	0.23	47	1.00	0.78	0.00
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0093	0.0030	268	0.04	0.78	88	0.17	1.25	0.33
Non-Tidal 1	0.1289	0.0065	3435	0.50	0.61	172	0.34	1.95	0.05
Pooled Non-Tidal	0.0666	0.0047	3703	0.54	0.57	260	0.52	1.36	0.07
Tidal	0.2188	0.0170	3137	0.46	0.43	244	0.48	1.05	0.08
All	0.0979	0.0072	6840	1.00	0.37	504	1.00	0.87	0.07
<b>All Anglers</b>									
Non-Tidal 2+3	0.0057	0.0011	457	0.01	0.48	88	0.16	1.25	0.19
Non-Tidal 1	0.0910	0.0011	18451	0.49	0.24	219	0.40	1.54	0.01
Pooled Non-Tidal	0.0669	0.0011	18907	0.51	0.24	307	0.56	1.16	0.02
Tidal	0.1229	0.0016	18408	0.49	0.31	244	0.44	1.05	0.01
All	0.0863	0.0013	37315	1.00	0.20	551	1.00	0.79	0.01

Table D.2.2.2. Catch and harvest statistics (boat anglers) for striped bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0160	0.0000	113	0.00	0.52	0	0.00		0.00
	4	0.0078	0.0000	37	0.00	0.74	0	0.00		0.00
	5	0.0069	0.0000	39	0.00	0.66	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0054	0.0000	411	0.01	0.75	0	0.00	0.78	0.00
	2	0.0622	0.0017	1721	0.06	0.76	47	1.00		0.03
	3	0.4586	0.0000	5115	0.17	0.31	0	0.00		0.00
	4	0.1630	0.0000	3475	0.11	0.59	0	0.00		0.00
	5	0.2022	0.0000	3549	0.12	0.74	0	0.00		0.00
	6	0.0540	0.0000	744	0.02	0.38	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0045	0.0000	411	0.01	0.75	0	0.00	0.78	0.00
	2	0.0453	0.0012	1721	0.06	0.76	47	1.00		0.03
	3	0.2872	0.0000	5228	0.17	0.30	0	0.00		0.00
	4	0.1347	0.0000	3513	0.12	0.59	0	0.00		0.00
	5	0.1550	0.0000	3588	0.12	0.73	0	0.00		0.00
	6	0.0370	0.0000	744	0.02	0.38	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.1313	0.0000	4848	0.16	0.75	0	0.00		0.00
	2	0.0885	0.0000	3080	0.10	0.79	0	0.00		0.00
	3	0.3220	0.0000	4086	0.13	0.80	0	0.00		0.00
	4	0.0914	0.0000	1985	0.07	0.49	0	0.00		0.00
	5	0.0838	0.0000	913	0.03	1.09	0	0.00		0.00
	6	0.0328	0.0000	359	0.01	0.51	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0413	0.0000	5259	0.17	0.70	0	0.00	0.78	0.00
	2	0.0659	0.0006	4801	0.16	0.57	47	1.00		0.01
	3	0.3015	0.0000	9313	0.31	0.39	0	0.00		0.00
	4	0.1151	0.0000	5498	0.18	0.41	0	0.00		0.00
	5	0.1322	0.0000	4501	0.15	0.62	0	0.00		0.00
	6	0.0355	0.0000	1103	0.04	0.31	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0841	0.0001	30475	1.00	0.23	47	1.00	0.78	0.00

Table D.2.2.3. Catch and harvest statistics (shore anglers) for striped bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0278	0.0000	173	0.03	1.02	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0285	0.0285	88	0.01	1.25	88	0.17	1.25	1.00
	7	0.0161	0.0000	7	0.00	0.99	0	0.00		0.00
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0067	0.0067	30	0.00	0.96	30	0.06	0.96	1.00
	3	0.7778	0.0000	1200	0.18	0.72	0	0.00		0.00
	4	0.5104	0.0000	1816	0.27	1.03	0	0.00		0.00
	5	0.0587	0.0000	246	0.04	0.80	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0571	0.0571	143	0.02	2.34	143	0.28	2.34	1.00
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0191	0.0028	203	0.03	0.88	30	0.06	0.96	0.15
	3	0.1564	0.0000	1200	0.18	0.72	0	0.00		0.00
	4	0.2182	0.0000	1816	0.27	1.03	0	0.00		0.00
	5	0.0348	0.0000	246	0.04	0.80	0	0.00		0.00
	6	0.0157	0.0157	88	0.01	1.25	88	0.17	1.25	1.00
	7	0.0513	0.0491	149	0.02	2.24	143	0.28	2.34	0.96
Tidal	1	0.0682	0.0000	371	0.05	0.59	0	0.00		0.00
	2	0.3851	0.0000	1076	0.16	1.14	0	0.00		0.00
	3	0.7534	0.0000	218	0.03	0.66	0	0.00		0.00
	4	0.6714	0.0000	248	0.04	1.22	0	0.00		0.00
	5	0.1346	0.0000	298	0.04	0.27	0	0.00		0.00
	6	0.2336	0.0000	194	0.03	0.99	0	0.00		0.00
	7	0.3056	0.1019	732	0.11	0.44	244	0.48	1.05	0.33
All	1	0.0198	0.0000	371	0.05	0.59	0	0.00		0.00
	2	0.0952	0.0022	1279	0.19	0.97	30	0.06	0.96	0.02
	3	0.1781	0.0000	1418	0.21	0.62	0	0.00		0.00
	4	0.2374	0.0000	2064	0.30	0.92	0	0.00		0.00
	5	0.0586	0.0000	544	0.08	0.39	0	0.00		0.00
	6	0.0439	0.0137	282	0.04	0.78	88	0.17	1.25	0.31
	7	0.1662	0.0729	882	0.13	0.53	387	0.77	1.09	0.44
All	All	0.0979	0.0072	6840	1.00	0.37	504	1.00	0.87	0.07

Table D.2.2.4. Catch and harvest statistics (all anglers) for striped bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0105	0.0000	173	0.00	1.02	0	0.00		0.00
	3	0.0086	0.0000	113	0.00	0.52	0	0.00		0.00
	4	0.0039	0.0000	37	0.00	0.74	0	0.00		0.00
	5	0.0046	0.0000	39	0.00	0.66	0	0.00		0.00
	6	0.0093	0.0093	88	0.00	1.25	88	0.16	1.25	1.00
	7	0.0023	0.0000	7	0.00	0.99	0	0.00		0.00
Non-Tidal 1	1	0.0049	0.0000	411	0.01	0.75	0	0.00		0.00
	2	0.0545	0.0024	1750	0.05	0.74	76	0.14	0.61	0.04
	3	0.4974	0.0000	6315	0.17	0.29	0	0.00		0.00
	4	0.2126	0.0000	5292	0.14	0.52	0	0.00		0.00
	5	0.1745	0.0000	3795	0.10	0.69	0	0.00		0.00
	6	0.0457	0.0000	744	0.02	0.38	0	0.00		0.00
	7	0.0130	0.0130	143	0.00	2.34	143	0.26	2.34	1.00
Pooled Non-Tidal	1	0.0040	0.0000	411	0.01	0.75	0	0.00		0.00
	2	0.0395	0.0016	1923	0.05	0.68	76	0.14	0.61	0.04
	3	0.2484	0.0000	6428	0.17	0.28	0	0.00		0.00
	4	0.1549	0.0000	5329	0.14	0.52	0	0.00		0.00
	5	0.1268	0.0000	3834	0.10	0.69	0	0.00		0.00
	6	0.0324	0.0034	832	0.02	0.36	88	0.16	1.25	0.11
	7	0.0108	0.0103	149	0.00	2.24	143	0.26	2.34	0.96
Tidal	1	0.1232	0.0000	5219	0.14	0.70	0	0.00		0.00
	2	0.1105	0.0000	4156	0.11	0.66	0	0.00		0.00
	3	0.3316	0.0000	4303	0.12	0.76	0	0.00		0.00
	4	0.1011	0.0000	2233	0.06	0.45	0	0.00		0.00
	5	0.0924	0.0000	1211	0.03	0.82	0	0.00		0.00
	6	0.0469	0.0000	553	0.01	0.48	0	0.00		0.00
	7	0.0747	0.0249	732	0.02	0.44	244	0.44	1.05	0.33
All	1	0.0385	0.0000	5630	0.15	0.65	0	0.00		0.00
	2	0.0705	0.0009	6079	0.16	0.50	76	0.14	0.61	0.01
	3	0.2762	0.0000	10731	0.29	0.35	0	0.00		0.00
	4	0.1339	0.0000	7562	0.20	0.39	0	0.00		0.00
	5	0.1164	0.0000	5045	0.14	0.56	0	0.00		0.00
	6	0.0369	0.0023	1385	0.04	0.29	88	0.16	1.25	0.06
	7	0.0373	0.0164	882	0.02	0.53	387	0.70	1.09	0.44
All	All	0.0863	0.0013	37315	1.00	0.20	551	1.00	0.79	0.01

**D.2.3 Catch and Harvest Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Striped Bass**





Table D.2.3.1. Catch and harvest statistics by fishing mode for striped bass across the total study period, based on original temporal stratification and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.1996	0.0000	56	0.00	2.62	0	0.00		0.00
Non-Tidal 1	0.2722	0.0052	2807	0.21	1.16	53	1.00	1.31	0.02
Pooled Non-Tidal	0.2703	0.0050	2863	0.21	1.14	53	1.00	1.31	0.02
Tidal	0.3084	0.0000	10640	0.79	0.55	0	0.00		0.00
All	0.2995	0.0012	13503	1.00	0.49	53	1.00	1.31	0.00
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0706	0.0000	39	0.02		0			0.00
Non-Tidal 1	0.7175	0.0000	1384	0.66	1.51	0			0.00
Pooled Non-Tidal	0.5722	0.0000	1424	0.68	1.47	0			0.00
Tidal	0.5741	0.0000	659	0.32	0.55	0			0.00
All	0.5728	0.0000	2083	1.00	1.02	0			0.00
<b>All Anglers</b>									
Non-Tidal 2+3	0.1135	0.0000	95	0.01	1.53	0	0.00		0.00
Non-Tidal 1	0.3424	0.0043	4191	0.27	0.93	53	1.00	1.31	0.01
Pooled Non-Tidal	0.3278	0.0041	4286	0.28	0.91	53	1.00	1.31	0.01
Tidal	0.3170	0.0000	11300	0.72	0.52	0	0.00		0.00
All	0.3199	0.0011	15586	1.00	0.45	53	1.00	1.31	0.00

Table D.2.3.2. Catch and harvest statistics (boat anglers) for striped bass by geographic strata and original temporal strata, based on targeted effort (angler hours)

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.2625	0.0000	56	0.00	2.62	0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.1371	0.0000	209	0.02		0	0.00	1.31	0.00
	2	0.3250	0.0074	2338	0.17	1.39	53	1.00		0.02
	3	0.2053	0.0000	222	0.02	1.24	0	0.00		0.00
	4	0.1481	0.0000	39	0.00		0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.1371	0.0000	209	0.02		0	0.00	1.31	0.00
	2	0.3250	0.0074	2338	0.17	1.39	53	1.00		0.02
	3	0.2147	0.0000	277	0.02	1.12	0	0.00		0.00
	4	0.1181	0.0000	39	0.00		0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.2952	0.0000	3362	0.25	0.89	0	0.00		0.00
	2	0.2356	0.0000	3899	0.29	1.02	0	0.00		0.00
	3	1.3836	0.0000	2716	0.20	1.06	0	0.00		0.00
	4	0.5118	0.0000	663	0.05	1.34	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.2766	0.0000	3571	0.26	0.83	0	0.00	1.31	0.00
	2	0.2627	0.0022	6236	0.46	0.82	53	1.00		0.01
	3	0.9198	0.0000	2994	0.22	0.97	0	0.00		0.00
	4	0.4320	0.0000	701	0.05	1.26	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.2995	0.0012	13503	1.00	0.49	53	1.00	1.31	0.00

Table D.2.3.3. Catch and harvest statistics (shore anglers) for striped bass by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0			0.00
	2	0.3333	0.0000	39	0.02		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0			0.00 0.00 0.00
	2	0.9796	0.0000	1063	0.51	1.91	0			
	3	1.8776	0.0000	244	0.12	1.86	0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.2609	0.0000	75	0.04	2.03	0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0			0.00 0.00 0.00
	2	0.9160	0.0000	1103	0.53	1.84	0			
	3	0.6298	0.0000	244	0.12	1.86	0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.2609	0.0000	75	0.04	2.03	0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Tidal	1	0.4000	0.0000	31	0.01	1.79	0			0.00 0.00 0.00 0.00 0.00 0.00 0.00
	2	0.4232	0.0000	288	0.14	0.87	0			
	3	2.9721	0.0000	154	0.07	1.21	0			
	4	0.7845	0.0000	23	0.01	4.07	0			
	5	0.4706	0.0000	12	0.01	1.65	0			
	6	0.6406	0.0000	143	0.07	1.03	0			
	7	0.1159	0.0000	6	0.00	1.75	0			
All	1	0.0745	0.0000	31	0.01	1.79	0			0.00 0.00 0.00 0.00 0.00 0.00 0.00
	2	0.7380	0.0000	1391	0.67	1.47	0			
	3	0.9057	0.0000	398	0.19	1.23	0			
	4	0.2026	0.0000	23	0.01	4.07	0			
	5	0.2789	0.0000	88	0.04	1.75	0			
	6	0.3527	0.0000	143	0.07	1.03	0			
	7	0.1159	0.0000	6	0.00	1.75	0			
All	All	0.5728	0.0000	2083	1.00	1.02	0			0.00

Table D.2.3.4. Catch and harvest statistics (all anglers) for striped bass by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.3333	0.0000	39	0.00		0	0.00		0.00
	3	0.1182	0.0000	56	0.00	2.62	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.1122	0.0000	209	0.01		0	0.00		0.00
	2	0.4109	0.0064	3402	0.22	1.13	53	1.00	1.31	0.02
	3	0.3855	0.0000	466	0.03	1.14	0	0.00		0.00
	4	0.1121	0.0000	39	0.00		0	0.00		0.00
	5	0.2609	0.0000	75	0.00	2.03	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.1122	0.0000	209	0.01		0	0.00		0.00
	2	0.4098	0.0063	3441	0.22	1.12	53	1.00	1.31	0.02
	3	0.3107	0.0000	522	0.03	1.06	0	0.00		0.00
	4	0.0940	0.0000	39	0.00		0	0.00		0.00
	5	0.2609	0.0000	75	0.00	2.03	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.2959	0.0000	3393	0.22	0.88	0	0.00		0.00
	2	0.2430	0.0000	4187	0.27	0.95	0	0.00		0.00
	3	1.4245	0.0000	2871	0.18	1.01	0	0.00		0.00
	4	0.5179	0.0000	686	0.04	1.30	0	0.00		0.00
	5	0.0258	0.0000	13	0.00	1.65	0	0.00		0.00
	6	0.0468	0.0000	143	0.01	1.03	0	0.00		0.00
	7	0.1159	0.0000	7	0.00	1.75	0	0.00		0.00
All	1	0.2702	0.0000	3602	0.23	0.83	0	0.00		0.00
	2	0.2977	0.0021	7628	0.49	0.73	53	1.00	1.31	0.01
	3	0.9181	0.0000	3393	0.22	0.87	0	0.00		0.00
	4	0.4170	0.0000	724	0.05	1.23	0	0.00		0.00
	5	0.1125	0.0000	88	0.01	1.75	0	0.00		0.00
	6	0.0410	0.0000	143	0.01	1.03	0	0.00		0.00
	7	0.1159	0.0000	7	0.00	1.75	0	0.00		0.00
All	All	0.3199	0.0011	15586	1.00	0.45	53	1.00	1.31	0.00

**D.2.4 Catch and Harvest Statistics Based on Monthly Post-Stratification and Targeted Effort (Angler Hours) for Striped Bass**



Table D.2.4.1. Catch and harvest statistics by fishing mode for Striped bass across the total study period, based on monthly post-strata and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.1947	0.0000	52	0.00	2.32	0	0.00		0.00
Non-Tidal 1	0.2613	0.0038	2285	0.22	0.74	33	1.00	1.19	0.01
Pooled Non-Tidal	0.2593	0.0037	2337	0.22	0.72	33	1.00	1.19	0.01
Tidal	0.2428	0.0000	8249	0.78	0.53	0	0.00		0.00
All	0.2463	0.0008	10586	1.00	0.44	33	1.00	1.19	0.00
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0903	0.0000	83	0.04		0			0.00
Non-Tidal 1	0.5891	0.0000	1220	0.54	1.14	0			0.00
Pooled Non-Tidal	0.4358	0.0000	1303	0.58	1.06	0			0.00
Tidal	0.4632	0.0000	961	0.42	0.51	0			0.00
All	0.4470	0.0000	2264	1.00	0.65	0			0.00
<b>All Anglers</b>									
Non-Tidal 2+3	0.1137	0.0000	135	0.01	0.89	0	0.00		0.00
Non-Tidal 1	0.3241	0.0031	3505	0.27	0.62	33	1.00	1.19	0.01
Pooled Non-Tidal	0.3033	0.0028	3640	0.28	0.60	33	1.00	1.19	0.01
Tidal	0.2555	0.0000	9210	0.72	0.48	0	0.00		0.00
All	0.2674	0.0007	12850	1.00	0.38	33	1.00	1.19	0.00

Table D.2.4.2. Catch and harvest statistics (boat anglers) for striped bass by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.2625	0.0000	52	0.00	2.32	0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.1094	0.0000	246	0.02	1.46	0	0.00	1.19	0.00
	2	0.3311	0.0107	1023	0.10	1.20	33	1.00		0.03
	3	0.3579	0.0000	975	0.09	1.11	0	0.00		0.00
	4	0.0952	0.0000	41	0.00	1.80	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.1094	0.0000	246	0.02	1.46	0	0.00	1.19	0.00
	2	0.3311	0.0107	1023	0.10	1.20	33	1.00		0.03
	3	0.3515	0.0000	1027	0.10	1.06	0	0.00		0.00
	4	0.0822	0.0000	41	0.00	1.80	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.2383	0.0000	3383	0.32	0.79	0	0.00		0.00
	2	0.0584	0.0000	618	0.06	2.02	0	0.00		0.00
	3	0.7509	0.0000	2957	0.28	0.95	0	0.00		0.00
	4	0.6615	0.0000	1291	0.12	1.23	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.2207	0.0000	3629	0.34	0.74	0	0.00	1.19	0.00
	2	0.1200	0.0024	1642	0.16	1.07	33	1.00		0.02
	3	0.5808	0.0000	3983	0.38	0.76	0	0.00		0.00
	4	0.5432	0.0000	1332	0.13	1.19	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.2463	0.0008	10586	1.00	0.44	33	1.00	1.19	0.00



Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0			0.00
	2	0.3333	0.0000	83	0.04		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0			0.00
	2	0.0000	0.0000	0	0.00		0			
	3	2.4258	0.0000	830	0.37	1.41	0			
	4	0.6957	0.0000	314	0.14	2.32	0			
	5	0.2609	0.0000	75	0.03	2.03	0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0			0.00
	2	0.1519	0.0000	83	0.04		0			
	3	1.0920	0.0000	830	0.37	1.41	0			
	4	0.6957	0.0000	314	0.14	2.32	0			
	5	0.2609	0.0000	75	0.03	2.03	0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Tidal	1	0.1397	0.0000	129	0.06	1.36	0			0.00
	2	0.6366	0.0000	488	0.22	0.76	0			
	3	2.9721	0.0000	166	0.07	1.33	0			
	4	0.7845	0.0000	15	0.01	1.17	0			
	5	0.4706	0.0000	13	0.01	1.65	0			
	6	0.6406	0.0000	143	0.06	1.03	0			
	7	0.1159	0.0000	7	0.00	1.75	0			
All	1	0.0767	0.0000	129	0.06	1.36	0			0.00
	2	0.4349	0.0000	571	0.25	0.65	0			
	3	1.2208	0.0000	997	0.44	1.19	0			
	4	0.6993	0.0000	330	0.15	2.22	0			
	5	0.2789	0.0000	88	0.04	1.75	0			
	6	0.3527	0.0000	143	0.06	1.03	0			
	7	0.1159	0.0000	7	0.00	1.75	0			
All	All	0.4470	0.0000	2264	1.00	0.65	0			0.00

Table D.2.4.4. Catch and harvest statistics (all anglers) for striped bass by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	2.32	0	0.00		0.00
	2	0.3333	0.0000	83	0.01		0	0.00		
	3	0.0842	0.0000	52	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0837	0.0000	246	0.02	1.46	0	0.00	1.19	0.00
	2	0.3021	0.0097	1023	0.08	1.20	33	1.00		
	3	0.5888	0.0000	1805	0.14	0.88	0	0.00		
	4	0.4022	0.0000	355	0.03	2.07	0	0.00		
	5	0.2609	0.0000	75	0.01	2.03	0	0.00		
	6	0.0000	0.0000	0	0.00	0	0.00	0.00		
	7	0.0000	0.0000	0	0.00	0	0.00	0.00		
Pooled Non-Tidal	1	0.0817	0.0000	246	0.02	1.46	0	0.00	1.19	0.00
	2	0.3042	0.0091	1106	0.09	1.11	33	1.00		
	3	0.5044	0.0000	1857	0.14	0.86	0	0.00		
	4	0.3731	0.0000	355	0.03	2.07	0	0.00		
	5	0.2609	0.0000	75	0.01	2.03	0	0.00		
	6	0.0000	0.0000	0	0.00	0	0.00	0.00		
	7	0.0000	0.0000	0	0.00	0	0.00	0.00		
Tidal	1	0.2323	0.0000	3512	0.27	0.76	0	0.00		0.00
	2	0.0974	0.0000	1106	0.09	1.18	0	0.00		
	3	0.7820	0.0000	3123	0.24	0.90	0	0.00		
	4	0.6627	0.0000	1306	0.10	1.21	0	0.00		
	5	0.0258	0.0000	13	0.00	1.65	0	0.00		
	6	0.0468	0.0000	143	0.01	1.03	0	0.00		
	7	0.1159	0.0000	7	0.00	1.75	0	0.00		
All	1	0.2073	0.0000	3758	0.29	0.72	0	0.00	1.19	0.00
	2	0.1476	0.0022	2213	0.17	0.81	33	1.00		
	3	0.6488	0.0000	4980	0.39	0.65	0	0.00		
	4	0.5684	0.0000	1661	0.13	1.05	0	0.00		
	5	0.1125	0.0000	88	0.01	1.75	0	0.00		
	6	0.0410	0.0000	143	0.01	1.03	0	0.00		
	7	0.1159	0.0000	7	0.00	1.75	0	0.00		
All	All	0.2674	0.0007	12850	1.00	0.38	33	1.00	1.19	0.00

**D.2.5 Targeted Effort Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Striped Bass**



Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0342	0.3983	212	2.47	5.12	41	5
	4	0.0203	0.0594	67	2.43	9.25	7	4
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0299	0.0115	1524	1.56	3.55	429	5
	2	0.1403	1.0650	7193	1.38	5.78	1244	47
	3	0.1163	0.9108	1080	1.16	2.80	386	19
	4	0.0169	0.0614	262	1.98	4.50	58	3
	5	0.0000	0.0000	0				0
	6	0.0183	0.1018	252	2.00	3.73	68	6
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0278	0.0115	1524	1.56	3.55	429	5
	2	0.1056	0.9698	7193	1.38	5.78	1244	47
	3	0.0834	0.7652	1291	1.05	3.02	427	24
	4	0.0175	0.0612	329	1.66	5.02	66	7
	5	0.0000	0.0000	0				0
	6	0.0125	0.0358	252	2.00	3.73	68	6
	7	0.0000	0.0000	0				0
Tidal	1	0.5314	0.4831	11390	0.83	3.99	2858	17
	2	0.3393	3.2113	16548	0.86	5.66	2926	47
	3	0.1902	0.1150	1963	0.85	2.67	736	10
	4	0.0781	0.3290	1294	1.22	4.09	316	17
	5	0.0429	0.1491	468	2.18	4.00	117	3
	6	0.2588	12.9955	2834	1.61	3.10	914	5
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0501	0.1679	10590	0.98	4.74	2234	89
Tidal	All	0.2730	1.0812	34498	0.52	4.38	7867	99
All	All	0.1335	0.4559	45088	0.46	4.46	10101	188

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				4
	2	0.0124	0.0125	118	2.76	3.00	39	1
	3	0.0507	0.4172	258	2.40	1.00	258	1
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0591	0.0421	182	1.65	2.67	68	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0860	0.1457	339	1.87	1.00	339	2
	2	0.1295	1.1184	1086	1.66	2.18	499	14
	3	0.1154	0.3133	130	1.74	2.86	46	18
	4	0.0326	0.0656	84	1.83	4.25	20	2
	5	0.0690	0.8898	289	1.79	2.56	113	3
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0860	0.1457	339	1.87	1.00	339	6
	2	0.0672	0.2910	1205	1.52	2.24	538	15
	3	0.0625	0.4014	389	1.70	1.28	304	19
	4	0.0147	0.0224	84	1.83	4.25	20	2
	5	0.0409	0.5849	289	1.79	2.56	113	3
	6	0.0326	0.0285	182	1.65	2.67	68	1
	7	0.0000	0.0000	0				0
Tidal	1	0.0165	0.0051	78	1.49	2.50	31	2
	2	0.2793	0.0908	682	0.79	3.29	207	30
	3	0.2395	0.3147	52	1.15	2.11	25	8
	4	0.0636	0.0586	29	0.78	3.97	7	17
	5	0.0122	0.1077	27	1.26	1.06	26	4
	6	0.2692	0.0815	224	0.94	2.66	84	12
	7	0.0239	0.0176	57	1.70	3.88	15	4
Non-Tidal	All	0.2036	1.0210	2488	0.86	1.80	1382	46
Tidal	All	0.0865	0.0526	1149	0.53	2.91	395	77
All	All	0.0580	0.1751	3637	0.61	2.05	1777	123

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				4
	2	0.0045	0.0061	118	2.76	3.00	39	1
	3	0.0416	0.4091	470	1.72	4.43	106	6
	4	0.0103	0.0231	67	2.43	9.25	7	4
	5	0.0000	0.0000	0				0
	6	0.0194	0.0134	182	1.65	2.67	68	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0339	0.0123	1863	1.32	2.82	660	7
	2	0.1387	1.0667	8279	1.22	4.95	1671	61
	3	0.1162	0.8591	1210	1.05	2.83	428	37
	4	0.0191	0.0617	347	1.57	4.40	79	5
	5	0.0133	0.0733	289	1.79	2.56	113	3
	6	0.0155	0.0721	252	2.00	3.73	68	6
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0317	0.0123	1863	1.32	2.82	660	11
	2	0.0976	0.9011	8398	1.20	4.91	1710	62
	3	0.0774	0.6527	1680	0.90	3.15	534	43
	4	0.0168	0.0543	413	1.37	4.81	86	9
	5	0.0096	0.0557	289	1.79	2.56	113	3
	6	0.0169	0.0335	435	1.35	3.20	136	7
	7	0.0000	0.0000	0				0
Tidal	1	0.4386	0.4764	11468	0.82	3.83	2995	19
	2	0.3365	3.0590	17230	0.82	4.73	3641	77
	3	0.1912	0.1151	2015	0.83	2.42	832	18
	4	0.0777	0.3196	1324	1.19	4.03	329	34
	5	0.0377	0.0002	495	2.06	2.32	213	7
	6	0.2595	9.7210	3058	1.49	2.79	1096	17
	7	0.0059	0.0015	57	1.70	3.88	15	4
Non-Tidal	All	0.0501	0.1695	13078	0.81	4.04	3240	135
Tidal	All	0.2553	1.0567	35646	0.50	3.91	9121	176
All	All	0.1217	0.4476	48724	0.43	3.94	12361	311





**D.2.6 Targeted Effort Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours) for Striped Bass**



Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0280	0.1161	197	2.16	5.12	39	5
	4	0.0145	0.0422	69	2.81	9.25	7	4
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0295	0.0183	2246	1.38	6.18	364	10
	2	0.1117	0.3522	3091	1.19	5.97	518	32
	3	0.2442	3.0280	2724	1.08	3.06	891	27
	4	0.0202	0.1243	432	1.66	4.20	103	5
	5	0.0000	0.0000	0				0
	6	0.0183	0.1018	252	2.00	3.73	68	6
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0248	0.0180	2246	1.38	6.18	364	10
	2	0.0813	0.2862	3091	1.19	5.97	518	32
	3	0.1605	1.9940	2921	1.02	3.14	930	32
	4	0.0192	0.1098	501	1.48	4.54	110	9
	5	0.0000	0.0000	0				0
	6	0.0125	0.0358	252	2.00	3.73	68	6
	7	0.0000	0.0000	0				0
Tidal	1	0.3843	0.2716	14194	0.74	4.80	2956	36
	2	0.3043	2.5332	10588	1.64	6.18	1714	17
	3	0.3103	0.2176	3938	0.89	4.06	970	19
	4	0.0899	0.4791	1951	1.13	3.94	495	19
	5	0.0429	0.3297	468	3.24	4.00	117	3
	6	0.2588	12.9955	2834	1.61	3.10	914	5
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0397	0.0516	9011	0.64	4.53	1990	89
Tidal	All	0.2509	0.7424	33972	0.63	4.74	7167	99
All	All	0.1186	0.3891	42984	0.51	4.69	9156	188

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	69	2.63	1.50	46	4
	2	0.0401	0.0303	249	1.77	3.00	83	1
	3	0.0682	0.3480	418	2.14	1.00	418	1
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0591	0.0421	182	1.65	2.67	68	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0871	0.3250	690	1.67	2.46	281	6
	2	0.0672	0.8489	297	2.57	0.67	446	4
	3	0.2218	1.4969	342	1.33	2.66	129	18
	4	0.1269	1.9318	452	1.80	3.41	133	8
	5	0.0690	0.8898	289	1.79	2.56	113	3
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0569	0.1184	760	1.54	2.32	327	10
	2	0.0514	0.1094	546	1.62	1.03	529	5
	3	0.0991	0.4133	760	1.32	1.39	547	19
	4	0.0542	0.4892	452	1.80	3.41	133	8
	5	0.0409	0.5849	289	1.79	2.56	113	3
	6	0.0326	0.0285	182	1.65	2.67	68	1
	7	0.0000	0.0000	0				0
Tidal	1	0.1701	0.3162	926	1.20	3.36	276	14
	2	0.2744	0.0405	766	0.74	3.14	244	18
	3	0.1935	0.2519	56	1.28	2.11	26	8
	4	0.0530	0.0003	20	0.35	3.97	5	17
	5	0.0122	0.1077	27	1.26	1.06	26	4
	6	0.2692	0.0815	224	0.94	2.66	84	12
	7	0.0239	0.0176	57	1.70	3.88	15	4
Non-Tidal	All	0.0538	0.0998	2990	0.68	1.74	1717	46
Tidal	All	0.1448	0.1240	2076	0.61	3.07	676	77
All	All	0.0725	0.1056	5066	0.48	2.12	2393	123

Table D.2.6.3. Targeted effort statistics (all anglers) for striped bass by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0035	0.0021	69	2.63	1.50	46	4
	2	0.0150	0.0127	249	1.77	3.00	83	1
	3	0.0467	0.2540	616	1.61	4.43	139	6
	4	0.0072	0.0197	69	2.81	9.25	7	4
	5	0.0000	0.0000	0				0
	6	0.0194	0.0134	182	1.65	2.67	68	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0349	0.0207	2936	1.13	4.78	614	16
	2	0.1056	0.3609	3388	1.11	5.38	630	36
	3	0.2415	2.9570	3066	0.97	2.90	1059	45
	4	0.0355	0.2624	884	1.22	3.71	238	13
	5	0.0133	0.0733	289	1.79	2.56	113	3
	6	0.0155	0.0721	252	2.00	3.73	68	6
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0289	0.0201	3006	1.10	4.55	660	20
	2	0.0748	0.2632	3637	1.04	5.10	713	37
	3	0.1423	1.4318	3682	0.85	3.07	1198	51
	4	0.0277	0.1902	952	1.15	3.88	245	17
	5	0.0096	0.0557	289	1.79	2.56	113	3
	6	0.0169	0.0335	435	1.35	3.20	136	7
	7	0.0000	0.0000	0				0
Tidal	1	0.3568	0.2720	15120	0.70	4.40	3439	50
	2	0.3020	0.4450	11354	1.53	4.62	2460	35
	3	0.3077	0.2176	3994	0.88	3.48	1146	27
	4	0.0892	0.4721	1971	1.12	3.95	499	36
	5	0.0377	0.0002	495	3.07	2.32	213	7
	6	0.2595	9.7210	3058	1.49	2.79	1096	17
	7	0.0059	0.0014	57	1.70	3.88	15	4
Non-Tidal	All	0.0425	0.0546	12001	0.51	3.91	3066	135
Tidal	All	0.2408	0.7294	36048	0.59	4.07	8868	176
All	All	0.1112	0.3772	48049	0.46	4.03	11934	311



### **D.3 RIVER HERRING**





**D.3.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**



Table D.3.1.1 Catch and harvest statistics by fishing mode for river herring across the total study period, based on original stratification.									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0008	0.0000	37	0.00	0.97	0	0.00		0.00
Non-Tidal 1	0.0303	0.0207	5064	0.68	0.73	3452	0.70	0.84	0.68
Pooled Non-Tidal	0.0241	0.0163	5101	0.69	0.72	3452	0.70	0.84	0.68
Tidal	0.0183	0.0115	2311	0.31	0.58	1447	0.30	0.90	0.63
All	0.0219	0.0145	7412	1.00	0.53	4898	1.00	0.65	0.66
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0016	0.0000	41	0.29	0.84	0	0.00		0.00
Pooled Non-Tidal	0.0008	0.0000	41	0.29	0.84	0	0.00		0.00
Tidal	0.0076	0.0013	101	0.71	0.48	18	1.00	1.06	0.18
All	0.0023	0.0003	141	1.00	0.42	18	1.00	1.06	0.13
<b>All Anglers</b>									
Non-Tidal 2+3	0.0005	0.0000	37	0.00	0.97	0	0.00		0.00
Non-Tidal 1	0.0266	0.0180	5105	0.68	0.72	3452	0.70	0.84	0.68
Pooled Non-Tidal	0.0197	0.0132	5142	0.68	0.72	3452	0.70	0.84	0.67
Tidal	0.0173	0.0105	2411	0.32	0.56	1465	0.30	0.89	0.61
All	0.0189	0.0123	7553	1.00	0.52	4916	1.00	0.65	0.65

Table D.3.1.2. Catch and harvest statistics (boat anglers) for river herring by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	0.97	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0112	0.0000	37	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0027	0.0027	140	0.02	1.02	140	0.03	1.02	1.00
	2	0.0960	0.0646	4925	0.66	0.75	3312	0.68	0.87	0.67
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0026	0.0026	140	0.02	1.02	140	0.03	1.02	1.00
	2	0.0723	0.0486	4925	0.66	0.75	3312	0.68	0.87	0.67
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0020	0.0000	37	0.00	0.97	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0083	0.0000	178	0.02	1.25	0	0.00	0.90	0.00
	2	0.0396	0.0297	1929	0.26	0.68	1447	0.30		0.75
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0186	0.0000	203	0.03	0.76	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0042	0.0018	318	0.04	0.83	140	0.03	1.02	0.44
	2	0.0586	0.0407	6854	0.92	0.57	4759	0.97	0.67	0.69
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0010	0.0000	37	0.00	0.97	0	0.00		0.00
	5	0.0060	0.0000	203	0.03	0.76	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0219	0.0145	7412	1.00	0.53	4898	1.00	0.65	0.66

Table D.3.1.3. Catch and harvest statistics (shore anglers) for river herring by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0048	0.0000	41	0.29	0.84	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0023	0.0000	41	0.29	0.84	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0038	0.0038	18	0.13	1.06	18	1.00	1.06	1.00
	2	0.0158	0.0000	39	0.27	0.84	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0185	0.0000	44	0.31	0.68	0	0.00		0.00
All	1	0.0021	0.0021	18	0.13	1.06	18	1.00	1.06	1.00
	2	0.0039	0.0000	79	0.56	0.59	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0084	0.0000	44	0.31	0.68	0	0.00		0.00
All	All	0.0023	0.0003	141	1.00	0.42	18	1.00	1.06	0.13

Table D.3.1.4. Catch and harvest statistics (all anglers) for river herring by geographic strata and months										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	0.97	0	0.00	0.00	0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0057	0.0000	37	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0025	0.0025	140	0.02	1.02	140	0.03	1.02	1.00
	2	0.0832	0.0555	4965	0.66	0.74	3312	0.67	0.87	0.67
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0024	0.0024	140	0.02	1.02	140	0.03	1.02	1.00
	2	0.0577	0.0385	4965	0.66	0.74	3312	0.67	0.87	0.67
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0015	0.0000	37	0.00	0.97	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0075	0.0007	196	0.03	1.14	18	0.00	1.06	0.09
	2	0.0384	0.0283	1968	0.26	0.67	1447	0.29	0.90	0.74
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0155	0.0000	203	0.03	0.76	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0045	0.0000	44	0.01	0.68	0	0.00		0.00
All	1	0.0040	0.0019	336	0.04	0.79	158	0.03	0.91	0.47
	2	0.0505	0.0347	6933	0.92	0.56	4759	0.97	0.67	0.69
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0009	0.0000	37	0.00	0.97	0	0.00		0.00
	5	0.0047	0.0000	203	0.03	0.76	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0019	0.0000	44	0.01	0.68	0	0.00		0.00
All	All	0.0189	0.0123	7553	1.00	0.52	4916	1.00	0.65	0.65

**D.3.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**





Table D.3.2.1. Catch and harvest statistics by fishing mode for river herring across the total study period, based on monthly post-stratification									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0005	0.0000	28	0.00	1.08	0	0.00		0.00
Non-Tidal 1	0.0358	0.0209	6304	0.74	0.61	3688	0.74	0.74	0.59
Pooled Non-Tidal	0.0279	0.0162	6332	0.74	0.61	3688	0.74	0.74	0.58
Tidal	0.0162	0.0098	2196	0.26	0.75	1322	0.26	1.14	0.60
All	0.0235	0.0138	8528	1.00	0.49	5011	1.00	0.62	0.59
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0022	0.0000	59	0.31	0.83	0	0.00		0.00
Pooled Non-Tidal	0.0011	0.0000	59	0.31	0.83	0	0.00		0.00
Tidal	0.0092	0.0010	132	0.69	0.52	14	1.00	1.09	0.11
All	0.0027	0.0002	190	1.00	0.44	14	1.00	1.09	0.07
<b>All Anglers</b>									
Non-Tidal 2+3	0.0003	0.0000	28	0.00	1.08	0	0.00		0.00
Non-Tidal 1	0.0314	0.0182	6363	0.73	0.61	3688	0.73	0.74	0.58
Pooled Non-Tidal	0.0226	0.0131	6391	0.73	0.61	3688	0.73	0.74	0.58
Tidal	0.0156	0.0089	2328	0.27	0.71	1336	0.27	1.13	0.57
All	0.0202	0.0116	8719	1.00	0.48	5025	1.00	0.62	0.58

Table D.3.2.2. Catch and harvest statistics (boat anglers) for river herring by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	1.08	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0059	0.0000	28	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0229	0.0020	1747	0.20	1.00	154	0.03	0.89	0.09
	2	0.1647	0.1277	4557	0.53	0.76	3534	0.71	0.77	0.78
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0193	0.0017	1747	0.20	1.00	154	0.03	0.89	0.09
	2	0.1199	0.0930	4557	0.53	0.76	3534	0.71	0.77	0.78
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0011	0.0000	28	0.00	1.08	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0477	0.0358	1763	0.21	0.92	1322	0.26	1.14	0.75
	2	0.0066	0.0000	231	0.03	1.03	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0186	0.0000	203	0.02	0.76	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0275	0.0116	3510	0.41	0.68	1476	0.29	1.02	0.42
	2	0.0658	0.0485	4788	0.56	0.72	3534	0.71	0.77	0.74
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0006	0.0000	28	0.00	1.08	0	0.00		0.00
	5	0.0060	0.0000	203	0.02	0.76	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0235	0.0138	8528	1.00	0.49	5011	1.00	0.62	0.59

Table D.3.2.3. Catch and harvest statistics (shore anglers) for river herring by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0018	0.0000	14	0.07	0.98	0	0.00		0.00
	2	0.0101	0.0000	45	0.23	1.05	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0011	0.0000	14	0.07	0.98	0	0.00		0.00
	2	0.0042	0.0000	45	0.23	1.05	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0079	0.0026	43	0.22	0.82	14	1.00	1.09	0.33
	2	0.0160	0.0000	45	0.23	1.13	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0185	0.0000	44	0.23	0.68	0	0.00		0.00
All	1	0.0030	0.0008	57	0.30	0.66	14	1.00	1.09	0.25
	2	0.0066	0.0000	89	0.47	0.77	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0084	0.0000	44	0.23	0.68	0	0.00		0.00
All	All	0.0027	0.0002	190	1.00	0.44	14	1.00	1.09	0.07

Table D.3.2.4. Catch and harvest statistics (all anglers) for river herring by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	1.08	0	0.00	0.89	0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0029	0.0000	28	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0210	0.0018	1761	0.20	1.00	154	0.03	0.77	0.09
	2	0.1434	0.1101	4602	0.53	0.75	3534	0.70	0.77	0.77
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0170	0.0015	1761	0.20	1.00	154	0.03	0.89	0.09
	2	0.0946	0.0727	4602	0.53	0.75	3534	0.70	0.77	0.77
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0008	0.0000	28	0.00	1.08	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0426	0.0315	1806	0.21	0.90	1336	0.27	1.13	0.74
	2	0.0073	0.0000	275	0.03	0.88	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0155	0.0000	203	0.02	0.76	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0045	0.0000	44	0.01	0.68	0	0.00		0.00
All	1	0.0244	0.0102	3567	0.41	0.67	1491	0.30	1.01	0.42
	2	0.0566	0.0410	4877	0.56	0.71	3534	0.70	0.77	0.72
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0005	0.0000	28	0.00	1.08	0	0.00		0.00
	5	0.0047	0.0000	203	0.02	0.76	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0019	0.0000	44	0.01	0.68	0	0.00		0.00
All	All	0.0202	0.0116	8719	1.00	0.48	5025	1.00	0.62	0.58

**D.3.3 Catch and Harvest Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for River Herring**



Table D.3.3.1. Catch and harvest statistics by fishing mode for river herring across the total study period, based on original temporal stratification and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	2.1923	1.5208	5687	0.82	1.52	3945	0.77	1.50	0.69
Pooled Non-Tidal	2.1923	1.5208	5687	0.82	1.52	3945	0.77	1.50	0.69
Tidal	0.2127	0.2066	1233	0.18	1.48	1198	0.23	1.02	0.97
All	0.8247	0.6129	6920	1.00	1.27	5143	1.00	1.17	0.74
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.1766	0.0000	35	0.40	2.46	0	0.00		0.00
Pooled Non-Tidal	0.1635	0.0000	35	0.40	2.46	0	0.00		0.00
Tidal	0.0754	0.0525	52	0.60		36	1.00		0.70
All	0.0964	0.0400	87	1.00	1.00	36	1.00		0.41
<b>All Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	2.0480	1.4119	5722	0.82	1.51	3945	0.76	1.50	0.69
Pooled Non-Tidal	2.0363	1.4039	5722	0.82	1.51	3945	0.76	1.50	0.69
Tidal	0.1981	0.1902	1285	0.18	1.42	1234	0.24	0.99	0.96
All	0.7538	0.5571	7007	1.00	1.26	5179	1.00	1.16	0.74

Table D.3.3.2. Catch and harvest statistics (boat anglers) for river herring by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	2.1923	1.5208	5687	0.82	1.52	3945	0.77	1.50	0.69
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	2.1923	1.5208	5687	0.82	1.52	3945	0.77	1.50	0.69
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.2127	0.2066	1233	0.18	1.48	1198	0.23	1.02	0.97
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.8247	0.6129	6920	1.00	1.27	5143	1.00	1.17	0.74
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.8247	0.6129	6920	1.00	1.27	5143	1.00	1.17	0.74



Table D.3.3.3. Catch and harvest statistics (shore anglers) for river herring by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.1766	0.0000	35	0.40	2.46	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.1766	0.0000	35	0.40	2.46	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0533	0.0533	36	0.41		36	1.00		1.00
	2	1.5000	0.0000	16	0.18		0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0533	0.0533	36	0.41		36	1.00		1.00
	2	0.2255	0.0000	51	0.59	1.70	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0964	0.0400	87	1.00	1.00	36	1.00		0.41

Table D.3.3.4. Catch and harvest statistics (all anglers) for river herring by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	2.0480	1.4119	5722	0.82	1.51	3945	0.76	1.50	0.69
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	2.0363	1.4039	5722	0.82	1.51	3945	0.76	1.50	0.69
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0533	0.0533	36	0.01		36	0.01		1.00
	2	0.2150	0.2063	1249	0.18	1.46	1198	0.23	1.02	0.96
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0533	0.0533	36	0.01		36	0.01		1.00
	2	0.8090	0.5968	6971	0.99	1.26	5143	0.99	1.17	0.74
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.7538	0.5571	7007	1.00	1.26	5179	1.00	1.16	0.74

**D.3.4 Catch and Harvest Statistics Based on Monthly Post-Stratification and Targeted Effort (Angler Hours) for River Herring**



Table D.3.4.1. Catch and harvest statistics by fishing mode for river herring across the total study period, based on monthly post-strata and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	2.1754	1.1677	10051	0.89	1.07	5395	0.82	1.17	0.54
Pooled Non-Tidal	2.1754	1.1677	10051	0.89	1.07	5395	0.82	1.17	0.54
Tidal	0.1080	0.1049	1198	0.11	1.45	1163	0.18	1.00	0.97
All	0.7160	0.4174	11248	1.00	0.97	6558	1.00	0.98	0.58
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.1924	0.0000	57	0.43	1.87	0	0.00		0.00
Pooled Non-Tidal	0.1858	0.0000	57	0.43	1.87	0	0.00		0.00
Tidal	0.1494	0.0498	77	0.57	2.27	26	1.00	1.91	0.33
All	0.1630	0.0311	134	1.00	1.52	26	1.00	1.91	0.19
<b>All Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	2.0552	1.0969	10108	0.89	1.06	5395	0.82	1.17	0.53
Pooled Non-Tidal	2.0508	1.0946	10108	0.89	1.06	5395	0.82	1.17	0.53
Tidal	0.1098	0.1025	1274	0.11	1.37	1189	0.18	0.98	0.93
All	0.6884	0.3982	11383	1.00	0.96	6584	1.00	0.98	0.58

Table D.3.4.2. Catch and harvest statistics (boat anglers) for river herring by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	2.1273	0.1636	3435	0.31	2.03	264	0.04	0.79	0.08
	2	2.2012	1.7071	6616	0.59	1.24	5131	0.78	1.23	0.78
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	2.1273	0.1636	3435	0.31	2.03	264	0.04	0.79	0.08
	2	2.2012	1.7071	6616	0.59	1.24	5131	0.78	1.23	0.78
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.2376	0.2308	1198	0.11	1.45	1163	0.18	1.00	0.97
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.6962	0.2145	4633	0.41	1.55	1428	0.22	0.83	0.31
	2	0.7305	0.5665	6616	0.59	1.24	5131	0.78	1.23	0.78
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.7160	0.4174	11248	1.00	0.97	6558	1.00	0.98	0.58

Table D.3.4.3. Catch and harvest statistics (shore anglers) for river herring by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.2297	0.0000	57	0.43	1.87	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.2297	0.0000	57	0.43	1.87	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.1494	0.0498	77	0.57	2.27	26	1.00	1.91	0.33
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.1365	0.0455	77	0.57	2.27	26	1.00	1.91	0.33
	2	0.2297	0.0000	57	0.43	1.87	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.1652	0.0315	134	1.00	1.52	26	1.00	1.91	0.19

Table D.3.4.4. Catch and harvest statistics (all anglers) for river herring by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	2.0654	0.1589	3435	0.30	2.03	264	0.04	0.79	0.08
	2	2.0500	1.5762	6673	0.59	1.23	5131	0.78	1.23	0.77
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	2.0524	0.1579	3435	0.30	2.03	264	0.04	0.79	0.08
	2	2.0500	1.5762	6673	0.59	1.23	5131	0.78	1.23	0.77
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.2295	0.2141	1274	0.11	1.37	1189	0.18	0.98	0.93
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.6516	0.2011	4709	0.41	1.53	1453	0.22	0.81	0.31
	2	0.7171	0.5513	6673	0.59	1.23	5131	0.78	1.23	0.77
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.6884	0.3982	11383	1.00	0.96	6584	1.00	0.98	0.58



**D.3.5 Targeted Effort Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for River Herring**



Table D.3.5.1. Targeted effort statistics by fishing mode for river herring across the total study period, based on original temporal stratification and targeted effort (boat anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0506	0.1659	2594	1.51	6.88	377	29
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0381	0.1511	2594	1.51	6.88	377	29
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.1189	0.7236	5796	1.16	3.65	1590	56
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0123	0.0242	2594	1.51	6.88	377	29
Tidal	All	0.0459	0.1541	5796	1.16	3.65	1590	56
All	All	0.0248	0.0652	8390	0.93	4.27	1967	85

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0	2.76	1.25	13	0
	2	0.0017	0.0002	16				1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0	2.35	2.43	82	0
	2	0.0238	0.0764	200				7
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0	2.19	2.27	95	0
	2	0.0883	0.6314	216				8
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.1442	0.5779	679	1.81	1.88	362	10
	2	0.0043	0.0000	11	1.00	4.00	3	1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0339	0.1459	216	2.19	2.27	95	8
Tidal	All	0.0520	0.2117	690	1.78	1.89	365	11
All	All	0.0352	0.1474	906	1.46	1.97	460	19

Table D.3.5.3. Targeted effort statistics by fishing mode for river herring across the total study period, based on original temporal stratification and targeted effort (all anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0	2.76	1.25	13	0
	2	0.0006	0.0001	16				1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0	1.41	6.02	464	0
	2	0.0468	0.1632	2794				36
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0	1.41	5.89	477	0
	2	0.0327	0.1377	2810				37
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0260	0.0081	679	1.81	1.88	362	10
	2	0.1134	0.6883	5807	1.16	3.65	1590	57
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0108	0.0238	2810	1.41	5.89	477	37
Tidal	All	0.0465	0.1555	6486	1.05	3.32	1952	67
All	All	0.0232	0.0651	9296	0.85	3.83	2429	104



**D.3.6 Targeted Effort Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours) for River Herring**





Table D.3.6.1. Targeted effort statistics (boat anglers) for river herring by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0212	0.0175	1615	1.88	6.33	255	4
	2	0.1086	0.3567	3006	1.24	6.97	431	25
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0178	0.0172	1615	1.88	6.33	255	4
	2	0.0791	0.2899	3006	1.24	6.97	431	25
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.1365	0.0718	5040	1.07	3.56	1415	51
	2	0.1739	0.6269	6051	1.43	4.50	1345	5
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0204	0.0361	4620	1.04	6.73	686	29
Tidal	All	0.0819	0.1704	11091	0.92	4.02	2759	56
All	All	0.0434	0.1017	15711	0.72	4.56	3446	85

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0020	0.0001	11	2.63	1.25	8	1
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0061	0.0026	48	2.12	2.62	18	1
	2	0.0564	0.2736	250	1.74	2.40	104	6
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0044	0.0010	48	2.12	1.79	27	2
	2	0.0235	0.0264	250	1.74	2.40	104	6
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0945	0.2494	514	1.92	2.07	249	11
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0595	0.0461	298	1.50	2.28	131	8
Tidal	All	0.0359	0.0749	514	1.92	2.07	249	11
All	All	0.0578	0.0467	812	1.34	2.14	380	19

Table D.3.6.3. Targeted effort statistics (all anglers) for river herring by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0005	0.0000	11	2.63	1.25	8	1
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0198	0.0174	1663	1.82	5.59	298	5
	2	0.1014	0.3553	3255	1.15	6.09	535	31
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0161	0.0169	1674	1.81	5.47	306	6
	2	0.0669	0.2556	3255	1.15	6.09	535	31
	3	0.0000	0.0000	0			0	0
	4	0.0000	0.0000	0			0	0
	5	0.0000	0.0000	0			0	0
	6	0.0000	0.0000	0			0	0
	7	0.0000	0.0000	0			0	0
Tidal	1	0.1311	0.0735	5554	0.99	3.30	1685	62
	2	0.1610	0.0000	6051	1.43	4.50	1345	5
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0174	0.0342	4929	0.98	5.86	841	37
Tidal	All	0.0775	0.1684	11605	0.88	3.83	3029	67
All	All	0.0382	0.0983	16534	0.68	4.27	3870	104



## **D.4 SMALLMOUTH BASS**



**D.4.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**





Table D.4.1.1 Catch and harvest statistics by fishing mode for smallmouth bass across the total study period, based on original stratification.									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.3224	0.0048	14339	0.16	0.16	212	0.25	0.39	0.01
Non-Tidal 1	0.4128	0.0038	68932	0.79	0.17	627	0.75	0.80	0.01
Pooled Non-Tidal	0.3938	0.0040	83271	0.95	0.14	839	1.00	0.61	0.01
Tidal	0.0351	0.0000	4430	0.05	0.59	0	0.00		0.00
All	0.2596	0.0025	87700	1.00	0.14	839	1.00	0.61	0.01
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.1927	0.0209	4658	0.44	0.30	505	0.86	0.55	0.11
Non-Tidal 1	0.2380	0.0033	6007	0.56	0.26	84	0.14	1.11	0.01
Pooled Non-Tidal	0.2159	0.0119	10665	1.00	0.20	589	1.00	0.49	0.06
Tidal	0.0021	0.0000	28	0.00	1.06	0	0.00		0.00
All	0.1706	0.0094	10693	1.00	0.20	589	1.00	0.49	0.06
<b>All Anglers</b>									
Non-Tidal 2+3	0.2768	0.0104	18997	0.19	0.14	716	0.50	0.40	0.04
Non-Tidal 1	0.3899	0.0037	74938	0.76	0.16	711	0.50	0.72	0.01
Pooled Non-Tidal	0.3601	0.0055	93936	0.95	0.13	1428	1.00	0.41	0.02
Tidal	0.0319	0.0000	4457	0.05	0.59	0	0.00		0.00
All	0.2457	0.0036	98393	1.00	0.12	1428	1.00	0.41	0.01

Table D.4.1.2. Catch and harvest statistics (boat anglers) for smallmouth bass by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.1074	0.0000	403	0.00	0.24	0	0.00		0.00
	2	0.0596	0.0000	1006	0.01	0.43	0	0.00		0.00
	3	0.3737	0.0071	2316	0.03	0.34	44	0.05	0.43	0.02
	4	0.5009	0.0075	1646	0.02	0.40	25	0.03	1.18	0.01
	5	0.6930	0.0104	3879	0.04	0.24	58	0.07	0.66	0.02
	6	0.7647	0.0134	4847	0.06	0.38	85	0.10	0.74	0.02
	7	0.0994	0.0000	243	0.00	0.61	0	0.00		0.00
Non-Tidal 1	1	0.0438	0.0000	2237	0.03	1.24	0	0.00		0.00
	2	0.1644	0.0000	8430	0.10	0.48	0	0.00		0.00
	3	0.6812	0.0000	6323	0.07	0.28	0	0.00		0.00
	4	0.8455	0.0244	13156	0.15	0.26	379	0.45	1.15	0.03
	5	0.7647	0.0000	13426	0.15	0.40	0	0.00		0.00
	6	1.2596	0.0180	17368	0.20	0.33	248	0.30	1.02	0.01
	7	0.9438	0.0000	7991	0.09	0.71	0	0.00		0.00
Pooled Non-Tidal	1	0.0482	0.0000	2639	0.03	1.05	0	0.00		0.00
	2	0.1385	0.0000	9436	0.11	0.43	0	0.00		0.00
	3	0.5581	0.0028	8639	0.10	0.22	44	0.05	0.43	0.01
	4	0.7854	0.0214	14802	0.17	0.23	404	0.48	1.08	0.03
	5	0.7473	0.0025	17306	0.20	0.31	58	0.07	0.66	0.00
	6	1.1037	0.0166	22215	0.25	0.27	333	0.40	0.78	0.01
	7	0.7546	0.0000	8234	0.09	0.69	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0115	0.0000	560	0.01	0.86	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0315	0.0000	522	0.01	0.76	0	0.00		0.00
	5	0.3072	0.0000	3347	0.04	0.76	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0346	0.0000	2639	0.03	1.05	0	0.00		0.00
	2	0.0855	0.0000	9996	0.11	0.41	0	0.00		0.00
	3	0.3348	0.0017	8639	0.10	0.22	44	0.05	0.43	0.01
	4	0.4326	0.0114	15324	0.17	0.23	404	0.48	1.08	0.03
	5	0.6065	0.0017	20653	0.24	0.29	58	0.07	0.66	0.00
	6	0.7148	0.0107	22215	0.25	0.27	333	0.40	0.78	0.01
	7	0.4496	0.0000	8234	0.09	0.69	0	0.00		0.00
All	All	0.2596	0.0025	87700	1.00	0.14	839	1.00	0.61	0.01

Table D.4.1.3. Catch and harvest statistics (shore anglers) for smallmouth bass by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0067	0.0000	64	0.01	1.11	0	0.00		0.00
	3	0.5263	0.0819	2679	0.25	0.42	417	0.71	0.60	0.16
	4	0.2937	0.0000	931	0.09	0.51	0	0.00		0.00
	5	0.2771	0.0000	798	0.07	0.85	0	0.00		0.00
	6	0.0570	0.0285	176	0.02	0.91	88	0.15	1.34	0.50
	7	0.0241	0.0000	10	0.00	0.60	0	0.00		0.00
Non-Tidal 1	1	0.0510	0.0000	201	0.02	1.23	0	0.00		0.00
	2	0.0557	0.0000	467	0.04	0.56	0	0.00		0.00
	3	0.2471	0.0000	279	0.03	0.82	0	0.00		0.00
	4	0.3498	0.0000	903	0.08	0.38	0	0.00		0.00
	5	0.6167	0.0000	2584	0.24	0.48	0	0.00		0.00
	6	0.5705	0.0336	1430	0.13	0.52	84	0.14	1.11	0.06
	7	0.0571	0.0000	143	0.01	1.33	0	0.00		0.00
Pooled Non-Tidal	1	0.0510	0.0000	201	0.02	1.23	0	0.00		0.00
	2	0.0296	0.0000	531	0.05	0.51	0	0.00		0.00
	3	0.4756	0.0670	2958	0.28	0.39	417	0.71	0.60	0.14
	4	0.3189	0.0000	1834	0.17	0.32	0	0.00		0.00
	5	0.4783	0.0000	3382	0.32	0.42	0	0.00		0.00
	6	0.2871	0.0308	1606	0.15	0.47	172	0.29	0.87	0.11
	7	0.0525	0.0000	153	0.01	1.24	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0029	0.0000	7	0.00	1.50	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0114	0.0000	5	0.00	1.75	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0187	0.0000	16	0.00	1.66	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0233	0.0000	201	0.02	1.23	0	0.00		0.00
	2	0.0264	0.0000	538	0.05	0.50	0	0.00		0.00
	3	0.4596	0.0647	2958	0.28	0.39	417	0.71	0.60	0.14
	4	0.2960	0.0000	1839	0.17	0.32	0	0.00		0.00
	5	0.3642	0.0000	3382	0.32	0.42	0	0.00		0.00
	6	0.2524	0.0268	1621	0.15	0.47	172	0.29	0.87	0.11
	7	0.0288	0.0000	153	0.01	1.24	0	0.00		0.00
All	All	0.1706	0.0094	10693	1.00	0.20	589	1.00	0.49	0.06

Table D.4.1.4. Catch and harvest statistics (all anglers) for smallmouth bass by geographic strata and months										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.1074	0.0000	403	0.00	0.24	0	0.00		0.00
	2	0.0405	0.0000	1070	0.01	0.41	0	0.00		0.00
	3	0.4426	0.0408	4995	0.05	0.28	461	0.32	0.54	0.09
	4	0.3992	0.0038	2576	0.03	0.31	25	0.02	1.18	0.01
	5	0.5517	0.0069	4678	0.05	0.25	58	0.04	0.66	0.01
	6	0.5329	0.0184	5023	0.05	0.37	173	0.12	0.77	0.03
	7	0.0886	0.0000	253	0.00	0.58	0	0.00		0.00
Non-Tidal 1	1	0.0444	0.0000	2438	0.02	1.15	0	0.00		0.00
	2	0.1491	0.0000	8897	0.09	0.46	0	0.00		0.00
	3	0.6341	0.0000	6602	0.07	0.27	0	0.00		0.00
	4	0.7749	0.0209	14060	0.14	0.24	379	0.27	1.15	0.03
	5	0.7362	0.0000	16010	0.16	0.34	0	0.00		0.00
	6	1.1536	0.0204	18798	0.19	0.31	332	0.23	0.81	0.02
	7	0.7419	0.0000	8133	0.08	0.70	0	0.00		0.00
Pooled Non-Tidal	1	0.0484	0.0000	2841	0.03	0.98	0	0.00		0.00
	2	0.1158	0.0000	9967	0.10	0.41	0	0.00		0.00
	3	0.5345	0.0212	11597	0.12	0.19	461	0.32	0.54	0.04
	4	0.6763	0.0164	16636	0.17	0.21	404	0.28	1.08	0.02
	5	0.6844	0.0019	20688	0.21	0.27	58	0.04	0.66	0.00
	6	0.9262	0.0196	23821	0.24	0.26	505	0.35	0.59	0.02
	7	0.6069	0.0000	8386	0.09	0.68	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0111	0.0000	567	0.01	0.85	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0309	0.0000	527	0.01	0.75	0	0.00		0.00
	5	0.2553	0.0000	3347	0.03	0.76	0	0.00		0.00
	6	0.0013	0.0000	16	0.00	1.66	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0335	0.0000	2841	0.03	0.98	0	0.00		0.00
	2	0.0767	0.0000	10534	0.11	0.39	0	0.00		0.00
	3	0.3597	0.0143	11597	0.12	0.19	461	0.32	0.54	0.04
	4	0.4122	0.0097	17163	0.17	0.21	404	0.28	1.08	0.02
	5	0.5546	0.0013	24035	0.24	0.26	58	0.04	0.66	0.00
	6	0.6356	0.0135	23837	0.24	0.26	505	0.35	0.59	0.02
	7	0.3551	0.0000	8386	0.09	0.68	0	0.00		0.00
All	All	0.2457	0.0036	98393	1.00	0.12	1428	1.00	0.41	0.01

**D.4.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**



Table D.4.2.1. Catch and harvest statistics by fishing mode for smallmouth bass across the total study period, based on monthly post- stratification									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.3030	0.0044	15426	0.16	0.16	226	0.25	0.36	0.01
Non-Tidal 1	0.4164	0.0038	73312	0.78	0.16	668	0.75	0.79	0.01
Pooled Non-Tidal	0.3910	0.0039	88738	0.94	0.14	893	1.00	0.60	0.01
Tidal	0.0385	0.0000	5207	0.06	0.55	0	0.00		0.00
All	0.2593	0.0025	93945	1.00	0.13	893	1.00	0.60	0.01
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.1745	0.0143	5046	0.43	0.35	414	0.83	0.71	0.08
Non-Tidal 1	0.2544	0.0032	6780	0.57	0.26	84	0.17	1.11	0.01
Pooled Non-Tidal	0.2128	0.0090	11825	1.00	0.21	498	1.00	0.62	0.04
Tidal	0.0020	0.0000	29	0.00	1.11	0	0.00		0.00
All	0.1696	0.0071	11855	1.00	0.21	498	1.00	0.62	0.04
<b>All Anglers</b>									
Non-Tidal 2+3	0.2565	0.0080	20472	0.19	0.15	640	0.46	0.48	0.03
Non-Tidal 1	0.3951	0.0037	80092	0.76	0.15	752	0.54	0.71	0.01
Pooled Non-Tidal	0.3559	0.0049	100564	0.95	0.12	1392	1.00	0.44	0.01
Tidal	0.0350	0.0000	5236	0.05	0.55	0	0.00		0.00
All	0.2448	0.0032	105800	1.00	0.12	1392	1.00	0.44	0.01

Table D.4.2.2. Catch and harvest statistics (boat anglers) for smallmouth bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0855	0.0000	1230	0.01	0.50	0	0.00		0.00
	2	0.0544	0.0000	562	0.01	0.53	0	0.00		0.00
	3	0.3367	0.0064	2373	0.03	0.45	45	0.05	0.61	0.02
	4	0.4827	0.0078	2290	0.02	0.29	37	0.04	0.63	0.02
	5	0.6930	0.0104	3879	0.04	0.24	58	0.07	0.66	0.02
	6	0.7647	0.0134	4847	0.05	0.38	85	0.10	0.74	0.02
	7	0.0994	0.0000	243	0.00	0.61	0	0.00		0.00
Non-Tidal 1	1	0.0216	0.0000	1644	0.02	0.72	0	0.00		0.00
	2	0.3159	0.0000	8743	0.09	0.49	0	0.00		0.00
	3	0.4292	0.0000	4786	0.05	0.39	0	0.00		0.00
	4	0.9075	0.0197	19354	0.21	0.22	419	0.47	1.11	0.02
	5	0.7647	0.0000	13426	0.14	0.40	0	0.00		0.00
	6	1.2596	0.0180	17368	0.18	0.33	248	0.28	1.02	0.01
	7	0.9438	0.0000	7991	0.09	0.82	0	0.00		0.00
Pooled Non-Tidal	1	0.0318	0.0000	2874	0.03	0.46	0	0.00		0.00
	2	0.2448	0.0000	9305	0.10	0.46	0	0.00		0.00
	3	0.3934	0.0025	7160	0.08	0.30	45	0.05	0.61	0.01
	4	0.8302	0.0175	21645	0.23	0.20	457	0.51	1.02	0.02
	5	0.7473	0.0025	17306	0.18	0.31	58	0.07	0.66	0.00
	6	1.1037	0.0166	22215	0.24	0.27	333	0.37	0.78	0.01
	7	0.7546	0.0000	8234	0.09	0.79	0	0.00		0.00
Tidal	1	0.0017	0.0000	63	0.00	1.31	0	0.00		0.00
	2	0.0326	0.0000	1135	0.01	1.12	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0305	0.0000	662	0.01	0.75	0	0.00		0.00
	5	0.3072	0.0000	3347	0.04	0.76	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0230	0.0000	2937	0.03	0.46	0	0.00		0.00
	2	0.1434	0.0000	10440	0.11	0.43	0	0.00		0.00
	3	0.2318	0.0015	7160	0.08	0.30	45	0.05	0.61	0.01
	4	0.4668	0.0096	22306	0.24	0.19	457	0.51	1.02	0.02
	5	0.6065	0.0017	20653	0.22	0.29	58	0.07	0.66	0.00
	6	0.7148	0.0107	22215	0.24	0.27	333	0.37	0.78	0.01
	7	0.4496	0.0000	8234	0.09	0.79	0	0.00		0.00
All	All	0.2593	0.0025	93945	1.00	0.13	893	1.00	0.60	0.01



Table D.4.2.3. Catch and harvest statistics (shore anglers) for smallmouth bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.4006	0.0334	2456	0.21	0.61	205	0.41	1.19	0.08
	4	0.3368	0.0255	1605	0.14	0.40	122	0.24	0.96	0.08
	5	0.2771	0.0000	798	0.07	0.85	0	0.00		0.00
	6	0.0570	0.0285	176	0.01	0.91	88	0.18	1.34	0.50
	7	0.0241	0.0000	10	0.00	0.60	0	0.00		0.00
Non-Tidal 1	1	0.0178	0.0000	141	0.01	0.94	0	0.00		0.00
	2	0.1342	0.0000	594	0.05	0.53	0	0.00		0.00
	3	0.0467	0.0000	72	0.01	0.66	0	0.00		0.00
	4	0.5104	0.0000	1816	0.15	0.48	0	0.00		0.00
	5	0.6167	0.0000	2584	0.22	0.48	0	0.00		0.00
	6	0.5705	0.0336	1430	0.12	0.52	84	0.17	1.11	0.06
	7	0.0571	0.0000	143	0.01	2.72	0	0.00		0.00
Pooled Non-Tidal	1	0.0106	0.0000	141	0.01	0.94	0	0.00		0.00
	2	0.0558	0.0000	594	0.05	0.53	0	0.00		0.00
	3	0.3294	0.0267	2528	0.21	0.60	205	0.41	1.19	0.08
	4	0.4110	0.0146	3422	0.29	0.32	122	0.24	0.96	0.04
	5	0.4783	0.0000	3382	0.29	0.42	0	0.00		0.00
	6	0.2871	0.0308	1606	0.14	0.47	172	0.35	0.87	0.11
	7	0.0525	0.0000	153	0.01	2.55	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0035	0.0000	10	0.00	1.86	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0107	0.0000	4	0.00	1.77	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0187	0.0000	16	0.00	1.66	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0075	0.0000	141	0.01	0.94	0	0.00		0.00
	2	0.0449	0.0000	604	0.05	0.53	0	0.00		0.00
	3	0.3174	0.0257	2528	0.21	0.60	205	0.41	1.19	0.08
	4	0.3940	0.0140	3426	0.29	0.32	122	0.24	0.96	0.04
	5	0.3642	0.0000	3382	0.29	0.42	0	0.00		0.00
	6	0.2524	0.0268	1621	0.14	0.47	172	0.35	0.87	0.11
	7	0.0288	0.0000	153	0.01	2.55	0	0.00		0.00
All	All	0.1696	0.0071	11855	1.00	0.21	498	1.00	0.62	0.04

Table D.4.2.4. Catch and harvest statistics (all anglers) for smallmouth bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0621	0.0000	1230	0.01	0.50	0	0.00		0.00
	2	0.0340	0.0000	562	0.01	0.53	0	0.00		0.00
	3	0.3664	0.0190	4829	0.05	0.38	250	0.18	0.98	0.05
	4	0.4095	0.0167	3896	0.04	0.23	159	0.11	0.75	0.04
	5	0.5517	0.0069	4678	0.04	0.25	58	0.04	0.66	0.01
	6	0.5329	0.0184	5023	0.05	0.37	173	0.12	0.77	0.03
	7	0.0886	0.0000	253	0.00	0.58	0	0.00		0.00
Non-Tidal 1	1	0.0212	0.0000	1785	0.02	0.67	0	0.00		0.00
	2	0.2909	0.0000	9336	0.09	0.46	0	0.00		0.00
	3	0.3827	0.0000	4858	0.05	0.39	0	0.00		0.00
	4	0.8507	0.0169	21171	0.20	0.20	419	0.30	1.11	0.02
	5	0.7362	0.0000	16010	0.15	0.34	0	0.00		0.00
	6	1.1536	0.0204	18798	0.18	0.31	332	0.24	0.81	0.02
	7	0.7419	0.0000	8133	0.08	0.80	0	0.00		0.00
Pooled Non-Tidal	1	0.0290	0.0000	3016	0.03	0.45	0	0.00		0.00
	2	0.2035	0.0000	9899	0.09	0.43	0	0.00		0.00
	3	0.3744	0.0097	9688	0.09	0.27	250	0.18	0.98	0.03
	4	0.7287	0.0168	25067	0.24	0.17	578	0.42	0.83	0.02
	5	0.6844	0.0019	20688	0.20	0.27	58	0.04	0.66	0.00
	6	0.9262	0.0196	23821	0.23	0.26	505	0.36	0.59	0.02
	7	0.6069	0.0000	8386	0.08	0.78	0	0.00		0.00
Tidal	1	0.0015	0.0000	63	0.00	1.31	0	0.00		0.00
	2	0.0304	0.0000	1145	0.01	1.11	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0301	0.0000	666	0.01	0.74	0	0.00		0.00
	5	0.2553	0.0000	3347	0.03	0.76	0	0.00		0.00
	6	0.0013	0.0000	16	0.00	1.66	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0211	0.0000	3079	0.03	0.44	0	0.00		0.00
	2	0.1281	0.0000	11043	0.10	0.40	0	0.00		0.00
	3	0.2493	0.0064	9688	0.09	0.27	250	0.18	0.98	0.03
	4	0.4556	0.0102	25732	0.24	0.17	578	0.42	0.83	0.02
	5	0.5546	0.0013	24035	0.23	0.26	58	0.04	0.66	0.00
	6	0.6356	0.0135	23837	0.23	0.26	505	0.36	0.59	0.02
	7	0.3551	0.0000	8386	0.08	0.78	0	0.00		0.00
All	All	0.2448	0.0032	105800	1.00	0.12	1392	1.00	0.44	0.01

**D.4.3 Catch and Harvest Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Smallmouth Bass**



Table D.4.3.1. Catch and harvest statistics by fishing mode for smallmouth bass across the total study period, based on original temporal stratification and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.7585	0.0116	7080	0.09	0.38	108	0.14	0.49	0.02
Non-Tidal 1	1.1515	0.0118	67181	0.86	0.26	686	0.86	0.79	0.01
Pooled Non-Tidal	1.0973	0.0117	74261	0.95	0.24	794	1.00	0.69	0.01
Tidal	0.6995	0.0000	3699	0.05	0.75	0	0.00		0.00
All	1.0684	0.0109	77960	1.00	0.23	794	1.00	0.69	0.01
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.7861	0.0318	3272	0.38	0.59	132	1.00	1.05	0.04
Non-Tidal 1	0.7262	0.0000	5383	0.62	0.43	0	0.00		0.00
Pooled Non-Tidal	0.7477	0.0114	8654	1.00	0.35	132	1.00	1.05	0.02
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	0.7473	0.0114	8654	1.00	0.35	132	1.00	1.05	0.02
<b>All Anglers</b>									
Non-Tidal 2+3	0.7670	0.0178	10352	0.12	0.32	240	0.26	0.62	0.02
Non-Tidal 1	1.1035	0.0104	72564	0.84	0.24	686	0.74	0.79	0.01
Pooled Non-Tidal	1.0462	0.0117	82916	0.96	0.22	926	1.00	0.61	0.01
Tidal	0.6987	0.0000	3699	0.04	0.75	0	0.00		0.00
All	1.0245	0.0110	86614	1.00	0.21	926	1.00	0.61	0.01

Table D.4.3.2. Catch and harvest statistics (boat anglers) for smallmouth bass by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		0.00
	2	0.2628	0.0000	308	0.00	1.35	0	0.00		0.00
	3	0.6180	0.0062	1057	0.01	0.93	11	0.01	0.88	0.01
	4	0.8000	0.0000	246	0.00	1.03	0	0.00		0.00
	5	0.8177	0.0151	2333	0.03	0.65	43	0.05	0.81	0.02
	6	1.0085	0.0177	3107	0.04	0.63	55	0.07	0.72	0.02
	7	0.1432	0.0000	30	0.00	1.14	0	0.00		0.00
Non-Tidal 1	1	1.1053	0.0000	3288	0.04		0	0.00		0.00
	2	1.4038	0.0000	8370	0.11	1.60	0	0.00		0.00
	3	0.8960	0.0000	4739	0.06	0.58	0	0.00		0.00
	4	1.2090	0.0362	14280	0.18	0.28	427	0.54	1.13	0.03
	5	0.8863	0.0000	11458	0.15	0.53	0	0.00		0.00
	6	1.5827	0.0226	18105	0.23	0.36	259	0.33	0.96	0.01
	7	0.8742	0.0000	6942	0.09	0.64	0	0.00		0.00
Pooled Non-Tidal	1	1.1053	0.0000	3288	0.04	0.00	0	0.00		0.00
	2	1.2165	0.0000	8678	0.11	1.54	0	0.00		0.00
	3	0.8281	0.0015	5795	0.07	0.51	11	0.01	0.88	0.00
	4	1.1987	0.0353	14526	0.19	0.28	427	0.54	1.13	0.03
	5	0.8739	0.0027	13790	0.18	0.45	43	0.05	0.81	0.00
	6	1.4608	0.0216	21212	0.27	0.32	313	0.39	0.80	0.01
	7	0.8552	0.0000	6972	0.09	0.64	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0333	0.0000	24	0.00	2.31	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.4046	0.0000	594	0.01	1.26	0	0.00		0.00
	5	1.8162	0.0000	3081	0.04	0.87	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	1.1053	0.0000	3288	0.04		0	0.00		0.00
	2	1.1077	0.0000	8702	0.11	1.54	0	0.00		0.00
	3	0.7952	0.0014	5795	0.07	0.51	11	0.01	0.88	0.00
	4	1.1129	0.0314	15119	0.19	0.27	427	0.54	1.13	0.03
	5	0.9654	0.0025	16871	0.22	0.40	43	0.05	0.81	0.00
	6	1.4608	0.0216	21212	0.27	0.32	313	0.39	0.80	0.01
	7	0.7525	0.0000	6972	0.09	0.64	0	0.00		0.00
All	All	1.0684	0.0109	77960	1.00	0.23	794	1.00	0.69	0.01

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.7225	0.0628	1521	0.18	0.93	132	1.00	1.05	0.09
	4	1.0314	0.0000	1076	0.12	1.04	0	0.00		0.00
	5	0.7742	0.0000	609	0.07	1.14	0	0.00		0.00
	6	0.3871	0.0000	58	0.01	1.91	0	0.00		0.00
	7	0.0892	0.0000	7	0.00	2.07	0	0.00		0.00
Non-Tidal 1	1	0.4364	0.0000	130	0.01	2.15	0	0.00		0.00
	2	0.6569	0.0000	223	0.03	1.98	0	0.00		0.00
	3	0.5526	0.0000	181	0.02	1.61	0	0.00		0.00
	4	0.6349	0.0000	538	0.06	0.92	0	0.00		0.00
	5	0.9756	0.0000	2353	0.27	0.76	0	0.00		0.00
	6	0.8481	0.0000	1451	0.17	0.66	0	0.00		0.00
	7	0.3429	0.0000	506	0.06	1.64	0	0.00		0.00
Pooled Non-Tidal	1	0.0000	0.0000	130	0.01	2.15	0	0.00		0.00
	2	0.6569	0.0000	223	0.03	1.98	0	0.00		0.00
	3	0.6997	0.0544	1702	0.20	0.85	132	1.00	1.05	0.08
	4	0.8537	0.0000	1615	0.19	0.76	0	0.00		0.00
	5	0.9261	0.0000	2962	0.34	0.65	0	0.00		0.00
	6	0.8108	0.0000	1509	0.17	0.64	0	0.00		0.00
	7	0.3305	0.0000	513	0.06	1.61	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	130	0.01	2.15	0	0.00		0.00
	2	0.6569	0.0000	223	0.03	1.98	0	0.00		0.00
	3	0.6997	0.0544	1702	0.20	0.85	132	1.00	1.05	0.08
	4	0.8532	0.0000	1615	0.19	0.76	0	0.00		0.00
	5	0.9261	0.0000	2962	0.34	0.65	0	0.00		0.00
	6	0.8087	0.0000	1509	0.17	0.64	0	0.00		0.00
	7	0.3305	0.0000	513	0.06	1.61	0	0.00		0.00
All	All	0.7473	0.0114	8654	1.00	0.35	132	1.00	1.05	0.02

Table D.4.3.4. Catch and harvest statistics (all anglers) for smallmouth bass by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.2628	0.0000	308	0.00	1.35	0	0.00		0.00
	3	0.6757	0.0374	2578	0.03	0.67	143	0.15	0.98	0.06
	4	0.9788	0.0000	1322	0.02	0.87	0	0.00		0.00
	5	0.8083	0.0118	2942	0.03	0.57	43	0.05	0.81	0.01
	6	0.9795	0.0169	3165	0.04	0.62	55	0.06	0.72	0.02
	7	0.1290	0.0000	37	0.00	1.01	0	0.00		0.00
Non-Tidal 1	1	1.0445	0.0000	3418	0.04	0.08	0	0.00		0.00
	2	1.3635	0.0000	8593	0.10	1.56	0	0.00		0.00
	3	0.8760	0.0000	4919	0.06	0.56	0	0.00		0.00
	4	1.1706	0.0337	14818	0.17	0.27	427	0.46	1.13	0.03
	5	0.9003	0.0000	13810	0.16	0.46	0	0.00		0.00
	6	1.4871	0.0197	19556	0.23	0.33	259	0.28	0.96	0.01
	7	0.7909	0.0000	7448	0.09	0.61	0	0.00		0.00
Pooled Non-Tidal	1	1.0445	0.0000	3418	0.04	0.08	0	0.00		0.00
	2	1.1910	0.0000	8901	0.10	1.51	0	0.00		0.00
	3	0.7950	0.0151	7497	0.09	0.44	143	0.15	0.98	0.02
	4	1.1521	0.0305	16141	0.19	0.26	427	0.46	1.13	0.03
	5	0.8827	0.0023	16752	0.19	0.39	43	0.05	0.81	0.00
	6	1.3870	0.0191	22721	0.26	0.30	313	0.34	0.80	0.01
	7	0.7712	0.0000	7485	0.09	0.61	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0333	0.0000	24	0.00	2.31	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.4043	0.0000	594	0.01	1.26	0	0.00		0.00
	5	1.8162	0.0000	3081	0.04	0.87	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	1.0445	0.0000	3418	0.04	0.08	0	0.00		0.00
	2	1.0890	0.0000	8925	0.10	1.50	0	0.00		0.00
	3	0.7713	0.0147	7497	0.09	0.44	143	0.15	0.98	0.02
	4	1.0812	0.0276	16734	0.19	0.26	427	0.46	1.13	0.03
	5	0.9593	0.0021	19834	0.23	0.36	43	0.05	0.81	0.00
	6	1.3866	0.0191	22721	0.26	0.30	313	0.34	0.80	0.01
	7	0.6919	0.0000	7485	0.09	0.61	0	0.00		0.00
All	All	1.0245	0.0110	86614	1.00	0.21	926	1.00	0.61	0.01



**D.4.4 Catch and Harvest Statistics Based on Monthly Post-Stratification and Targeted Effort (Angler Hours) for Smallmouth Bass**



Table D.4.4.1. Catch and harvest statistics by fishing mode for smallmouth bass across the total study period, based on monthly post-strata and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.7346	0.0113	7150	0.09	0.40	110	0.13	0.49	0.02
Non-Tidal 1	1.1197	0.0126	66175	0.86	0.21	743	0.87	0.79	0.01
Pooled Non-Tidal	1.0653	0.0124	73325	0.95	0.20	852	1.00	0.69	0.01
Tidal	0.6305	0.0000	3797	0.05	0.70	0	0.00		0.00
All	1.0303	0.0114	77122	1.00	0.19	852	1.00	0.69	0.01
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.4926	0.0221	4044	0.42	0.65	181	1.00	1.05	0.04
Non-Tidal 1	0.7195	0.0000	5552	0.58	0.43	0	0.00		0.00
Pooled Non-Tidal	0.6025	0.0114	9596	1.00	0.37	181	1.00	1.05	0.02
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	0.6023	0.0114	9596	1.00	0.37	181	1.00	1.05	0.02
<b>All Anglers</b>									
Non-Tidal 2+3	0.6239	0.0162	11194	0.13	0.35	291	0.28	0.68	0.03
Non-Tidal 1	1.0735	0.0111	71727	0.83	0.20	743	0.72	0.79	0.01
Pooled Non-Tidal	0.9783	0.0122	82921	0.96	0.18	1033	1.00	0.60	0.01
Tidal	0.6300	0.0000	3797	0.04	0.70	0	0.00		0.00
All	0.9552	0.0114	86718	1.00	0.17	1033	1.00	0.60	0.01

Table D.4.4.2. Catch and harvest statistics (boat anglers) for smallmouth bass by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		0.00
	2	0.2951	0.0000	291	0.00	1.52	0	0.00		0.00
	3	0.6731	0.0071	1159	0.02	1.15	12	0.01	1.03	0.01
	4	0.6174	0.0000	230	0.00	1.04	0	0.00		0.00
	5	0.8177	0.0151	2333	0.03	0.65	43	0.05	0.81	0.02
	6	1.0085	0.0177	3107	0.04	0.63	55	0.06	0.72	0.02
	7	0.1432	0.0000	30	0.00	1.14	0	0.00		0.00
Non-Tidal 1	1	0.7224	0.0000	1482	0.02	2.05	0	0.00		0.00
	2	1.7309	0.0000	4332	0.06	1.70	0	0.00		0.00
	3	0.6584	0.0000	3533	0.05	0.74	0	0.00		0.00
	4	1.2047	0.0287	20324	0.26	0.24	484	0.57	1.10	0.02
	5	0.8863	0.0000	11458	0.15	0.53	0	0.00		0.00
	6	1.5827	0.0226	18105	0.23	0.36	259	0.30	0.96	0.01
	7	0.8742	0.0000	6942	0.09	0.76	0	0.00		0.00
Pooled Non-Tidal	1	0.5793	0.0000	1482	0.02	2.05	0	0.00		0.00
	2	1.3248	0.0000	4623	0.06	1.60	0	0.00		0.00
	3	0.6620	0.0017	4692	0.06	0.63	12	0.01	1.03	0.00
	4	1.1920	0.0281	20554	0.27	0.24	484	0.57	1.10	0.02
	5	0.8739	0.0027	13790	0.18	0.45	43	0.05	0.81	0.00
	6	1.4608	0.0216	21212	0.28	0.32	313	0.37	0.80	0.01
	7	0.8552	0.0000	6972	0.09	0.75	0	0.00		0.00
Tidal	1	0.0333	0.0000	36	0.00	2.20	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.4046	0.0000	680	0.01	1.36	0	0.00		0.00
	5	1.8162	0.0000	3081	0.04	0.81	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.4165	0.0000	1518	0.02	2.00	0	0.00		0.00
	2	1.3248	0.0000	4623	0.06	1.60	0	0.00		0.00
	3	0.6227	0.0016	4692	0.06	0.63	12	0.01	1.03	0.00
	4	1.1221	0.0256	21234	0.28	0.24	484	0.57	1.10	0.02
	5	0.9654	0.0025	16871	0.22	0.40	43	0.05	0.81	0.00
	6	1.4608	0.0216	21212	0.28	0.32	313	0.37	0.80	0.01
	7	0.7525	0.0000	6972	0.09	0.75	0	0.00		0.00
All	All	1.0303	0.0114	77122	1.00	0.19	852	1.00	0.69	0.01

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.7819	0.0680	2084	0.22	0.97	181	1.00	1.05	0.09
	4	0.9723	0.0000	1286	0.13	1.18	0	0.00		0.00
	5	0.7742	0.0000	609	0.06	1.14	0	0.00		0.00
	6	0.3871	0.0000	58	0.01	1.91	0	0.00		0.00
	7	0.0892	0.0000	7	0.00	2.07	0	0.00		0.00
Non-Tidal 1	1	0.3175	0.0000	120	0.01	2.30	0	0.00		0.00
	2	0.9415	0.0000	296	0.03	1.53	0	0.00		0.00
	3	0.1846	0.0000	64	0.01	1.77	0	0.00		0.00
	4	0.7053	0.0000	762	0.08	0.83	0	0.00		0.00
	5	0.9756	0.0000	2353	0.25	0.76	0	0.00		0.00
	6	0.8481	0.0000	1451	0.15	0.66	0	0.00		0.00
	7	0.3429	0.0000	506	0.05	1.85	0	0.00		0.00
Pooled Non-Tidal	1	0.0334	0.0000	120	0.01	2.30	0	0.00		0.00
	2	0.9415	0.0000	296	0.03	1.53	0	0.00		0.00
	3	0.7135	0.0602	2147	0.22	0.94	181	1.00	1.05	0.08
	4	0.8522	0.0000	2048	0.21	0.80	0	0.00		0.00
	5	0.9261	0.0000	2962	0.31	0.65	0	0.00		0.00
	6	0.8108	0.0000	1509	0.16	0.64	0	0.00		0.00
	7	0.3305	0.0000	513	0.05	1.83	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0334	0.0000	120	0.01	2.30	0	0.00		0.00
	2	0.9415	0.0000	296	0.03	1.53	0	0.00		0.00
	3	0.7135	0.0602	2147	0.22	0.94	181	1.00	1.05	0.08
	4	0.8519	0.0000	2048	0.21	0.80	0	0.00		0.00
	5	0.9261	0.0000	2962	0.31	0.65	0	0.00		0.00
	6	0.8087	0.0000	1509	0.16	0.64	0	0.00		0.00
	7	0.3305	0.0000	513	0.05	1.83	0	0.00		0.00
All	All	0.6023	0.0114	9596	1.00	0.37	181	1.00	1.05	0.02

Table D.4.4.4. Catch and harvest statistics (all anglers) for smallmouth bass by geographic strata and monthly post-strata, based on targeted effort (angler hours)

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.2951	0.0000	291	0.00	1.52	0	0.00		0.00
	3	0.7392	0.0441	3242	0.04	0.75	193	0.19	0.98	0.06
	4	0.8942	0.0000	1516	0.02	1.01	0	0.00		0.00
	5	0.8083	0.0118	2942	0.03	0.57	43	0.04	0.81	0.01
	6	0.9795	0.0169	3165	0.04	0.62	55	0.05	0.72	0.02
	7	0.1290	0.0000	37	0.00	1.01	0	0.00		0.00
Non-Tidal 1	1	0.6595	0.0000	1601	0.02	1.91	0	0.00		0.00
	2	1.6428	0.0000	4628	0.05	1.60	0	0.00		0.00
	3	0.6298	0.0000	3597	0.04	0.73	0	0.00		0.00
	4	1.1746	0.0270	21086	0.24	0.23	484	0.47	1.10	0.02
	5	0.9003	0.0000	13810	0.16	0.46	0	0.00		0.00
	6	1.4871	0.0197	19556	0.23	0.33	259	0.25	0.96	0.01
	7	0.7909	0.0000	7448	0.09	0.72	0	0.00		0.00
Pooled Non-Tidal	1	0.2607	0.0000	1601	0.02	1.91	0	0.00		0.00
	2	1.2932	0.0000	4919	0.06	1.50	0	0.00		0.00
	3	0.6773	0.0192	6839	0.08	0.52	193	0.19	0.98	0.03
	4	1.1504	0.0246	22602	0.26	0.23	484	0.47	1.10	0.02
	5	0.8827	0.0023	16752	0.19	0.39	43	0.04	0.81	0.00
	6	1.3870	0.0191	22721	0.26	0.30	313	0.30	0.80	0.01
	7	0.7712	0.0000	7485	0.09	0.71	0	0.00		0.00
Tidal	1	0.0333	0.0000	36	0.00	2.20	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.4044	0.0000	680	0.01	1.36	0	0.00		0.00
	5	1.8162	0.0000	3081	0.04	0.81	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.2265	0.0000	1637	0.02	1.86	0	0.00		0.00
	2	1.2932	0.0000	4919	0.06	1.50	0	0.00		0.00
	3	0.6486	0.0183	6839	0.08	0.52	193	0.19	0.98	0.03
	4	1.0916	0.0227	23282	0.27	0.23	484	0.47	1.10	0.02
	5	0.9593	0.0021	19834	0.23	0.35	43	0.04	0.81	0.00
	6	1.3866	0.0191	22721	0.26	0.30	313	0.30	0.80	0.01
	7	0.6919	0.0000	7485	0.09	0.71	0	0.00		0.00
All	All	0.9552	0.0114	86718	1.00	0.17	1033	1.00	0.60	0.01

**D.4.5 Targeted Effort Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Smallmouth Bass**





Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0695	0.2369	1171	1.26	4.28	274	8
	3	0.2759	2.8875	1710	0.82	4.75	360	39
	4	0.0936	0.2125	307	1.00	6.10	50	10
	5	0.5096	3.2656	2853	0.63	4.77	598	43
	6	0.4860	0.7230	3081	0.59	4.76	648	25
	7	0.0869	0.0995	212	1.07	4.71	45	10
Non-Tidal 1	1	0.0583	0.0440	2975	1.56	6.33	470	1
	2	0.1163	0.9653	5962	1.59	4.33	1378	33
	3	0.5697	4.9887	5288	0.56	3.93	1346	44
	4	0.7590	1.1834	11811	0.19	4.17	2835	50
	5	0.7363	6.8378	12928	0.37	3.45	3744	50
	6	0.8296	2.8147	11440	0.23	4.44	2574	21
	7	0.9379	0.8514	7940	0.56	4.61	1724	22
Pooled Non-Tidal	1	0.0543	0.0440	2975	1.56	6.33	470	1
	2	0.1047	0.9001	7134	1.34	4.32	1651	41
	3	0.4521	4.3917	6998	0.47	4.10	1706	83
	4	0.6430	1.0949	12118	0.19	4.20	2885	60
	5	0.6815	6.0179	15781	0.33	3.63	4343	93
	6	0.7214	1.4582	14520	0.22	4.51	3222	46
	7	0.7472	0.8353	8153	0.55	4.61	1769	32
Tidal	1	0.0000	0.0000	0				0
	2	0.0148	0.0242	722	1.70	5.73	126	10
	3	0.0281	0.0084	290	1.54	6.13	47	2
	4	0.0885	0.4160	1467	1.21	4.00	367	11
	5	0.1557	0.3120	1696	0.87	4.53	374	5
	6	0.0000	0.0000	0				0
	7	0.1503	0.3911	1113	1.34	15.00	74	1
Non-Tidal	All	0.3201	0.2923	67679	0.20	4.22	16045	356
Tidal	All	0.0418	0.0316	5288	0.58	5.35	988	29
All	All	0.2160	0.2101	72966	0.19	4.28	17033	385

Table D.4.5.2. Targeted effort statistics by fishing mode for smallmouth bass across the total study period, based on original temporal stratification and targeted effort (shore anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.4136	3.7373	2105	0.88	2.89	728	13
	4	0.3293	1.5096	1044	0.98	2.11	494	21
	5	0.2731	4.6360	787	1.09	2.07	381	10
	6	0.0488	0.0195	151	1.36	1.29	117	2
	7	0.1843	0.8676	76	1.80	1.65	46	9
Non-Tidal 1	1	0.0753	0.1482	297	2.15	3.06	97	3
	2	0.0406	0.1530	340	1.96	2.20	155	9
	3	0.2897	1.5314	327	1.53	2.19	150	13
	4	0.3283	1.5897	848	0.89	1.50	566	17
	5	0.5757	5.9524	2412	0.56	2.56	941	20
	6	0.6828	1.1276	1711	0.63	1.72	998	11
	7	0.5916	1.7388	1477	0.89	1.46	1013	2
Pooled Non-Tidal	1	0.0753	0.1482	297	2.15	3.06	97	3
	2	0.0190	0.0385	340	1.96	2.20	155	9
	3	0.3911	3.4027	2433	0.79	2.77	877	26
	4	0.3288	1.5369	1891	0.67	1.78	1060	38
	5	0.4523	5.5013	3199	0.50	2.42	1322	30
	6	0.3329	0.3791	1862	0.59	1.67	1114	13
	7	0.5340	1.7204	1553	0.85	1.47	1059	11
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0026	0.0000	1	1.00	1.00	1	1
	5	0.0000	0.0000	0				0
	6	0.0057	0.0000	5	1.00	3.50	1	2
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0856	0.0580	11574	0.29	2.04	5685	130
Tidal	All	0.0004	0.0000	6	0.82	2.31	3	3
All	All	0.1848	0.4132	11580	0.29	2.04	5687	133

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0444	0.1220	1171	1.26	4.28	274	8
	3	0.3380	3.3735	3815	0.61	4.34	879	52
	4	0.2093	1.0052	1351	0.79	3.44	393	31
	5	0.4292	3.4517	3640	0.55	4.26	855	53
	6	0.3429	0.4998	3231	0.57	4.50	718	27
	7	0.1009	0.1303	288	0.92	3.26	88	19
Non-Tidal 1	1	0.0595	0.0446	3272	1.43	3.88	844	4
	2	0.1056	0.9407	6302	1.51	3.87	1628	42
	3	0.5394	4.6893	5616	0.53	3.53	1590	57
	4	0.6977	1.2141	12659	0.19	3.49	3628	67
	5	0.7053	6.7648	15339	0.32	3.20	4796	70
	6	0.8070	2.3225	13151	0.22	3.51	3751	32
	7	0.8590	0.8874	9417	0.50	4.34	2168	24
Pooled Non-Tidal	1	0.0557	0.0445	3272	1.43	3.88	844	4
	2	0.0868	0.8129	7474	1.28	3.93	1901	50
	3	0.4346	4.0860	9430	0.40	3.82	2469	109
	4	0.5695	1.1739	14010	0.19	3.48	4020	98
	5	0.6279	5.9687	18979	0.28	3.36	5651	123
	6	0.6369	1.1253	16382	0.21	3.67	4469	59
	7	0.7024	0.8712	9706	0.48	4.30	2256	43
Tidal	1	0.0000	0.0000	0				0
	2	0.0141	0.0231	722	1.70	5.73	126	10
	3	0.0275	0.0084	290	1.54	6.13	47	2
	4	0.0862	0.4039	1468	1.21	3.75	392	12
	5	0.1294	0.0000	1696	0.87	4.53	374	5
	6	0.0004	0.0000	5	1.00	3.50	1	2
	7	0.1135	0.3571	1113	1.34	15.00	74	1
Non-Tidal	All	0.3038	0.3007	79253	0.18	3.67	21611	486
Tidal	All	0.0379	0.0308	5293	0.57	5.22	1015	32
All	All	0.2111	0.2161	84546	0.17	3.74	22626	518



**D.4.6 Targeted Effort Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours) for Smallmouth Bass**



Table D.4.6.1. Targeted effort statistics (boat anglers) for smallmouth bass by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0352	0.0568	507	1.37	1.88	270	2
	2	0.0955	0.2119	987	1.39	5.08	194	6
	3	0.2442	2.0539	1721	1.04	4.72	365	34
	4	0.0786	0.1550	373	0.99	5.71	65	15
	5	0.5096	3.2656	2853	0.63	4.77	598	43
	6	0.4860	0.7230	3081	0.59	4.76	648	25
	7	0.0869	0.0995	212	1.07	4.71	45	10
Non-Tidal 1	1	0.0269	0.0314	2051	1.98	2.60	789	5
	2	0.0904	0.4644	2503	1.69	5.02	499	22
	3	0.4812	4.4821	5366	0.67	3.70	1449	40
	4	0.7910	2.2465	16870	0.18	4.24	3976	61
	5	0.7363	6.8378	12928	0.37	3.45	3744	50
	6	0.8296	2.8147	11440	0.23	4.44	2574	21
	7	0.9379	0.8793	7940	0.69	4.61	1724	22
Pooled Non-Tidal	1	0.0283	0.0318	2558	1.61	2.41	1059	7
	2	0.0918	0.4171	3490	1.28	5.04	693	28
	3	0.3894	3.6198	7088	0.56	3.91	1813	74
	4	0.6614	1.8768	17243	0.18	4.27	4041	76
	5	0.6815	6.0179	15781	0.33	3.63	4343	93
	6	0.7214	1.4582	14520	0.22	4.51	3222	46
	7	0.7472	0.8677	8153	0.67	4.61	1769	32
Tidal	1	0.0294	0.0070	1086	1.55	5.73	189	10
	2	0.0000	0.0000	0				0
	3	0.0352	0.0035	447	1.00	6.13	73	2
	4	0.0774	0.4760	1680	1.31	4.00	420	11
	5	0.1557	0.2722	1696	0.81	4.53	374	5
	6	0.0000	0.0000	0				0
	7	0.1503	0.3406	1113	1.34	15.00	74	1
Non-Tidal	All	0.3033	0.2027	68832	0.17	4.06	16940	356
Tidal	All	0.0445	0.0197	6022	0.58	5.32	1131	29
All	All	0.2066	0.1133	74854	0.16	4.14	18071	385

Table D.4.6.2. Targeted effort statistics (shore anglers) for smallmouth bass by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.5921	0.9883	3208	0.85	1.59	2012	3
	2	0.0000	0.0000	0				0
	3	0.4346	2.6202	2665	0.92	3.27	815	9
	4	0.2773	2.1949	1322	1.12	2.03	651	22
	5	0.2731	4.6360	787	1.09	2.07	381	10
	6	0.0488	0.0195	151	1.36	1.29	117	2
	7	0.1843	0.8676	76	1.80	1.65	46	9
Non-Tidal 1	1	0.0476	0.1795	377	2.28	2.63	144	6
	2	0.0711	0.3325	314	1.52	2.20	143	6
	3	0.2232	2.6544	344	1.76	1.81	191	6
	4	0.3037	2.1262	1081	0.79	1.79	603	24
	5	0.5757	5.9524	2412	0.56	2.56	941	20
	6	0.6828	1.1276	1711	0.63	1.72	998	11
	7	0.5916	0.2146	1477	1.24	1.46	1013	2
Pooled Non-Tidal	1	0.2686	0.0638	3585	0.79	1.66	2156	9
	2	0.0296	0.0321	314	1.52	2.20	143	6
	3	0.3921	2.6222	3009	0.84	2.99	1006	15
	4	0.2886	2.1775	2403	0.71	1.92	1254	46
	5	0.4523	5.5013	3199	0.50	2.42	1322	30
	6	0.3329	0.3791	1862	0.59	1.67	1114	13
	7	0.5340	0.2155	1553	1.19	1.47	1059	11
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0022	0.0000	1	1.00	1.00	1	1
	5	0.0000	0.0000	0				0
	6	0.0057	0.0000	5	1.00	3.50	1	2
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.2866	0.5926	15925	0.31	1.98	8054	130
Tidal	All	0.0004	0.0000	6	0.87	2.56	2	3
All	All	0.2279	0.4515	15931	0.31	1.98	8056	133



Table D.4.6.3. Targeted effort statistics (all anglers) for smallmouth bass by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.1875	0.4920	3715	0.75	1.71	2177	5
	2	0.0596	0.1231	987	1.39	5.08	194	6
	3	0.3328	2.3906	4386	0.69	4.42	993	43
	4	0.1782	1.2401	1695	0.90	3.52	481	37
	5	0.4292	3.4517	3640	0.55	4.26	855	53
	6	0.3429	0.4998	3231	0.57	4.50	718	27
	7	0.1009	0.1303	288	0.92	3.26	88	19
Non-Tidal 1	1	0.0289	0.0326	2428	1.71	2.61	929	11
	2	0.0878	0.4621	2817	1.51	4.41	638	28
	3	0.4498	4.3973	5711	0.64	3.46	1652	46
	4	0.7214	2.2373	17951	0.18	3.55	5055	85
	5	0.7053	6.7648	15339	0.32	3.20	4796	70
	6	0.8070	2.3225	13151	0.22	3.51	3751	32
	7	0.8590	0.6699	9417	0.61	4.34	2168	24
Pooled Non-Tidal	1	0.0592	0.0460	6143	0.82	1.98	3106	16
	2	0.0782	0.3670	3804	1.18	4.57	832	34
	3	0.3902	3.2650	10097	0.47	3.82	2645	89
	4	0.5711	1.9405	19646	0.18	3.55	5536	122
	5	0.6279	5.9687	18979	0.28	3.36	5651	123
	6	0.6369	1.1253	16382	0.21	3.67	4469	59
	7	0.7024	0.6641	9706	0.60	4.30	2256	43
Tidal	1	0.0256	0.0069	1086	1.55	5.73	189	10
	2	0.0000	0.0000	0				0
	3	0.0344	0.0035	447	1.00	6.13	73	2
	4	0.0761	0.4690	1681	1.31	3.75	448	12
	5	0.1294	0.2717	1696	0.81	4.53	374	5
	6	0.0004	0.0000	5	1.00	3.50	1	2
	7	0.1135	0.3145	1113	1.34	15.00	74	1
Non-Tidal	All	0.3000	0.2267	84757	0.15	3.46	24496	486
Tidal	All	0.0403	0.0193	6028	0.57	5.19	1161	32
All	All	0.2100	0.1276	90785	0.14	3.54	25656	518



## **D.5 CHANNEL CATFISH**



**D.5.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**



Table D.5.1.1 Catch and harvest statistics by fishing mode for channel catfish across the total study period, based on original stratification.									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0079	0.0000	353	0.01	0.55	0	0.00		0.00
Non-Tidal 1	0.0428	0.0018	7153	0.14	0.28	301	0.05	0.73	0.04
Pooled Non-Tidal	0.0355	0.0014	7506	0.14	0.26	301	0.05	0.73	0.04
Tidal	0.3588	0.0470	45338	0.86	0.19	5943	0.95	0.52	0.13
All	0.1564	0.0185	52844	1.00	0.17	6244	1.00	0.50	0.12
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0371	0.0278	898	0.15	0.95	672	0.23	1.06	0.75
Non-Tidal 1	0.0692	0.0303	1747	0.30	0.42	766	0.26	0.65	0.44
Pooled Non-Tidal	0.0535	0.0291	2645	0.45	0.43	1438	0.49	0.60	0.54
Tidal	0.2422	0.1131	3214	0.55	0.31	1501	0.51	0.40	0.47
All	0.0935	0.0469	5859	1.00	0.26	2939	1.00	0.36	0.50
<b>All Anglers</b>									
Non-Tidal 2+3	0.0182	0.0098	1250	0.02	0.70	672	0.07	1.06	0.54
Non-Tidal 1	0.0463	0.0056	8901	0.15	0.24	1067	0.12	0.51	0.12
Pooled Non-Tidal	0.0389	0.0067	10151	0.17	0.22	1739	0.19	0.51	0.17
Tidal	0.3477	0.0533	48552	0.83	0.18	7444	0.81	0.43	0.15
All	0.1466	0.0229	58703	1.00	0.15	9183	1.00	0.36	0.16

Table D.5.1.2. Catch and harvest statistics (boat anglers) for channel catfish by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0095	0.0000	59	0.00	0.61	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0069	0.0000	39	0.00	1.07	0	0.00		0.00
	6	0.0402	0.0000	255	0.00	0.73	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0110	0.0000	559	0.01	1.02	0	0.00		0.00
	2	0.0403	0.0059	2064	0.04	0.56	301	0.05	0.73	0.15
	3	0.1385	0.0000	1285	0.02	0.44	0	0.00		0.00
	4	0.1705	0.0000	2653	0.05	0.50	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0360	0.0000	496	0.01	0.73	0	0.00		0.00
	7	0.0112	0.0000	95	0.00	1.59	0	0.00		0.00
Pooled Non-Tidal	1	0.0102	0.0000	559	0.01	1.02	0	0.00		0.00
	2	0.0303	0.0044	2064	0.04	0.56	301	0.05	0.73	0.15
	3	0.0868	0.0000	1344	0.03	0.42	0	0.00		0.00
	4	0.1408	0.0000	2653	0.05	0.50	0	0.00		0.00
	5	0.0017	0.0000	39	0.00	1.07	0	0.00		0.00
	6	0.0373	0.0000	751	0.01	0.54	0	0.00		0.00
	7	0.0087	0.0000	95	0.00	1.59	0	0.00		0.00
Tidal	1	0.0777	0.0000	1665	0.03	0.92	0	0.00		0.00
	2	0.1767	0.0330	8616	0.16	0.46	1611	0.26	0.54	0.19
	3	0.5689	0.0692	5873	0.11	0.58	714	0.11	1.08	0.12
	4	0.3079	0.0350	5103	0.10	0.30	580	0.09	1.03	0.11
	5	0.5306	0.0000	5782	0.11	0.26	0	0.00		0.00
	6	1.3934	0.0000	15261	0.29	0.38	0	0.00		0.00
	7	0.4103	0.4103	3037	0.06	0.93	3037	0.49	0.93	1.00
All	1	0.0292	0.0000	2225	0.04	0.74	0	0.00		0.00
	2	0.0914	0.0164	10681	0.20	0.39	1912	0.31	0.47	0.18
	3	0.2797	0.0277	7217	0.14	0.48	714	0.11	1.08	0.10
	4	0.2190	0.0164	7756	0.15	0.26	580	0.09	1.03	0.07
	5	0.1709	0.0000	5821	0.11	0.26	0	0.00		0.00
	6	0.5152	0.0000	16012	0.30	0.36	0	0.00		0.00
	7	0.1710	0.1658	3133	0.06	0.91	3037	0.49	0.93	0.97
All	All	0.1564	0.0185	52844	1.00	0.17	6244	1.00	0.50	0.12



Table D.5.1.3. Catch and harvest statistics (shore anglers) for channel catfish by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0809	0.0674	771	0.13	1.11	642	0.22	1.11	0.83
	3	0.0117	0.0000	60	0.01	0.79	0	0.00		0.00
	4	0.0067	0.0000	21	0.00	1.06	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.1126	0.0724	46	0.01	0.85	30	0.01	0.98	0.64
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0169	0.0048	142	0.02	0.74	41	0.01	0.76	0.29
	3	0.3381	0.0780	382	0.07	1.05	88	0.03	1.34	0.23
	4	0.1333	0.0333	344	0.06	0.80	86	0.03	1.05	0.25
	5	0.1077	0.0294	451	0.08	0.63	123	0.04	0.95	0.27
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.1714	0.1714	428	0.07	1.07	428	0.15	1.07	1.00
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0509	0.0381	913	0.16	0.94	683	0.23	1.04	0.75
	3	0.0710	0.0142	441	0.08	0.91	88	0.03	1.34	0.20
	4	0.0635	0.0150	365	0.06	0.75	86	0.03	1.05	0.24
	5	0.0638	0.0174	451	0.08	0.63	123	0.04	0.95	0.27
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.1631	0.1574	474	0.08	0.97	458	0.16	1.00	0.97
Tidal	1	0.0684	0.0380	322	0.05	0.67	179	0.06	1.04	0.56
	2	0.2178	0.0962	532	0.09	0.99	235	0.08	1.09	0.44
	3	0.1476	0.0105	32	0.01	0.77	2	0.00	1.22	0.07
	4	0.1879	0.0285	87	0.01	1.09	13	0.00	1.70	0.15
	5	0.3542	0.1133	785	0.13	0.51	251	0.09	0.94	0.32
	6	0.2044	0.0000	170	0.03	1.08	0	0.00		0.00
	7	0.5371	0.3426	1287	0.22	0.53	821	0.28	0.56	0.64
All	1	0.0372	0.0207	322	0.05	0.67	179	0.06	1.04	0.56
	2	0.0709	0.0451	1444	0.25	0.70	918	0.31	0.83	0.64
	3	0.0736	0.0140	473	0.08	0.85	90	0.03	1.31	0.19
	4	0.0727	0.0160	452	0.08	0.64	99	0.03	0.94	0.22
	5	0.1331	0.0403	1236	0.21	0.40	374	0.13	0.70	0.30
	6	0.0264	0.0000	170	0.03	1.08	0	0.00		0.00
	7	0.3321	0.2411	1761	0.30	0.46	1279	0.44	0.51	0.73
All	All	0.0935	0.0469	5859	1.00	0.26	2939	1.00	0.36	0.50

Table D.5.1.4. Catch and harvest statistics (all anglers) for channel catfish by geographic strata and months										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0292	0.0243	771	0.01	1.11	642	0.07	1.11	0.83
	3	0.0105	0.0000	118	0.00	0.50	0	0.00		0.00
	4	0.0033	0.0000	21	0.00	1.06	0	0.00		0.00
	5	0.0046	0.0000	39	0.00	1.07	0	0.00		0.00
	6	0.0271	0.0000	255	0.00	0.73	0	0.00		0.00
	7	0.0162	0.0104	46	0.00	0.85	30	0.00	0.98	0.64
Non-Tidal 1	1	0.0102	0.0000	559	0.01	1.02	0	0.00		0.00
	2	0.0370	0.0057	2207	0.04	0.52	342	0.04	0.65	0.15
	3	0.1601	0.0085	1667	0.03	0.41	88	0.01	1.34	0.05
	4	0.1652	0.0047	2997	0.05	0.45	86	0.01	1.05	0.03
	5	0.0207	0.0057	451	0.01	0.63	123	0.01	0.95	0.27
	6	0.0305	0.0000	496	0.01	0.73	0	0.00		0.00
	7	0.0477	0.0390	523	0.01	0.92	428	0.05	1.07	0.82
Pooled Non-Tidal	1	0.0095	0.0000	559	0.01	1.02	0	0.00		0.00
	2	0.0346	0.0114	2977	0.05	0.48	984	0.11	0.76	0.33
	3	0.0823	0.0041	1786	0.03	0.39	88	0.01	1.34	0.05
	4	0.1227	0.0035	3018	0.05	0.45	86	0.01	1.05	0.03
	5	0.0162	0.0041	490	0.01	0.59	123	0.01	0.95	0.25
	6	0.0292	0.0000	751	0.01	0.54	0	0.00		0.00
	7	0.0412	0.0331	569	0.01	0.85	458	0.05	1.00	0.80
Tidal	1	0.0760	0.0068	1988	0.03	0.78	179	0.02	1.04	0.09
	2	0.1786	0.0360	9148	0.16	0.44	1846	0.20	0.49	0.20
	3	0.5602	0.0680	5905	0.10	0.58	717	0.08	1.07	0.12
	4	0.3046	0.0348	5190	0.09	0.30	593	0.06	1.01	0.11
	5	0.5008	0.0191	6566	0.11	0.24	251	0.03	0.94	0.04
	6	1.3096	0.0000	15431	0.26	0.38	0	0.00		0.00
	7	0.4413	0.3937	4324	0.07	0.67	3859	0.42	0.74	0.89
All	1	0.0300	0.0021	2547	0.04	0.65	179	0.02	1.04	0.07
	2	0.0883	0.0206	12125	0.21	0.35	2830	0.31	0.41	0.23
	3	0.2386	0.0250	7691	0.13	0.46	805	0.09	0.97	0.10
	4	0.1971	0.0163	8208	0.14	0.25	679	0.07	0.89	0.08
	5	0.1628	0.0086	7056	0.12	0.22	374	0.04	0.70	0.05
	6	0.4315	0.0000	16182	0.28	0.36	0	0.00		0.00
	7	0.2072	0.1827	4894	0.08	0.60	4316	0.47	0.67	0.88
All	All	0.1466	0.0229	58703	1.00	0.15	9183	1.00	0.36	0.16

**D.5.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**



Table D.5.2.1. Catch and harvest statistics by fishing mode for channel catfish across the total study period, based on monthly post-stratification									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0073	0.0000	372	0.01	0.52	0	0.00		0.00
Non-Tidal 1	0.0438	0.0018	7710	0.13	0.27	326	0.05	0.70	0.04
Pooled Non-Tidal	0.0356	0.0014	8082	0.14	0.25	326	0.05	0.70	0.04
Tidal	0.3729	0.0429	50488	0.86	0.23	5806	0.95	0.53	0.12
All	0.1616	0.0169	58570	1.00	0.20	6132	1.00	0.50	0.10
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0458	0.0364	1323	0.18	0.80	1053	0.29	0.84	0.80
Non-Tidal 1	0.0917	0.0359	2443	0.34	0.67	958	0.27	1.13	0.39
Pooled Non-Tidal	0.0678	0.0362	3766	0.52	0.52	2011	0.56	0.69	0.53
Tidal	0.2385	0.1096	3420	0.48	0.37	1571	0.44	0.44	0.46
All	0.1028	0.0512	7186	1.00	0.32	3582	1.00	0.44	0.50
<b>All Anglers</b>									
Non-Tidal 2+3	0.0212	0.0132	1695	0.03	0.64	1053	0.11	0.84	0.62
Non-Tidal 1	0.0501	0.0063	10153	0.15	0.26	1283	0.13	0.86	0.13
Pooled Non-Tidal	0.0419	0.0083	11848	0.18	0.24	2337	0.24	0.61	0.20
Tidal	0.3601	0.0493	53907	0.82	0.21	7377	0.76	0.43	0.14
All	0.1521	0.0225	65756	1.00	0.18	9714	1.00	0.36	0.15

Table D.5.2.2. Catch and harvest statistics (boat anglers) for channel catfish by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0032	0.0000	23	0.00	0.72	0	0.00		0.00
	4	0.0118	0.0000	56	0.00	0.74	0	0.00		0.00
	5	0.0069	0.0000	39	0.00	1.07	0	0.00		0.00
	6	0.0402	0.0000	255	0.00	0.73	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0027	0.0000	205	0.00	1.12	0	0.00		0.00
	2	0.0471	0.0118	1302	0.02	0.46	326	0.05	0.70	0.25
	3	0.2398	0.0000	2675	0.05	0.42	0	0.00		0.00
	4	0.1377	0.0000	2936	0.05	0.52	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0360	0.0000	496	0.01	0.73	0	0.00		0.00
	7	0.0112	0.0000	95	0.00	1.70	0	0.00		0.00
Pooled Non-Tidal	1	0.0023	0.0000	205	0.00	1.12	0	0.00		0.00
	2	0.0343	0.0086	1302	0.02	0.46	326	0.05	0.70	0.25
	3	0.1482	0.0000	2697	0.05	0.42	0	0.00		0.00
	4	0.1148	0.0000	2992	0.05	0.51	0	0.00		0.00
	5	0.0017	0.0000	39	0.00	1.07	0	0.00		0.00
	6	0.0373	0.0000	751	0.01	0.54	0	0.00		0.00
	7	0.0087	0.0000	95	0.00	1.70	0	0.00		0.00
Tidal	1	0.0614	0.0375	2267	0.04	0.66	1385	0.23	0.79	0.61
	2	0.3028	0.0000	10537	0.18	0.66	0	0.00		0.00
	3	0.5622	0.0511	7133	0.12	0.79	648	0.11	1.17	0.09
	4	0.2980	0.0339	6470	0.11	0.29	735	0.12	1.02	0.11
	5	0.5306	0.0000	5782	0.10	0.26	0	0.00		0.00
	6	1.3934	0.0000	15261	0.26	0.38	0	0.00		0.00
	7	0.4103	0.4103	3037	0.05	0.88	3037	0.50	0.88	1.00
All	1	0.0194	0.0109	2472	0.04	0.61	1385	0.23	0.79	0.56
	2	0.1626	0.0045	11839	0.20	0.59	326	0.05	0.70	0.03
	3	0.3182	0.0210	9831	0.17	0.58	648	0.11	1.17	0.07
	4	0.1980	0.0154	9462	0.16	0.26	735	0.12	1.02	0.08
	5	0.1709	0.0000	5821	0.10	0.26	0	0.00		0.00
	6	0.5152	0.0000	16012	0.27	0.36	0	0.00		0.00
	7	0.1710	0.1658	3133	0.05	0.86	3037	0.50	0.88	0.97
All	All	0.1616	0.0169	58570	1.00	0.20	6132	1.00	0.50	0.10

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.2003	0.1669	1228	0.17	0.86	1023	0.29	0.86	0.83
	4	0.0102	0.0000	49	0.01	0.67	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.1126	0.0724	46	0.01	0.85	30	0.01	0.98	0.64
Non-Tidal 1	1	0.0036	0.0000	28	0.00	0.87	0	0.00		0.00
	2	0.0067	0.0067	30	0.00	1.07	30	0.01	1.07	1.00
	3	0.0933	0.0156	144	0.02	0.53	24	0.01	0.71	0.17
	4	0.3828	0.0992	1362	0.19	0.92	353	0.10	1.09	0.26
	5	0.1077	0.0294	451	0.06	0.63	123	0.03	0.95	0.27
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.1714	0.1714	428	0.06	2.34	428	0.12	2.34	1.00
Pooled Non-Tidal	1	0.0021	0.0000	28	0.00	0.87	0	0.00		0.00
	2	0.0028	0.0028	30	0.00	1.07	30	0.01	1.07	1.00
	3	0.1788	0.1365	1372	0.19	0.78	1047	0.29	0.84	0.76
	4	0.1695	0.0424	1411	0.20	0.89	353	0.10	1.09	0.25
	5	0.0638	0.0174	451	0.06	0.63	123	0.03	0.95	0.27
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.1631	0.1574	474	0.07	2.12	458	0.13	2.19	0.97
Tidal	1	0.0682	0.0315	371	0.05	0.55	171	0.05	0.91	0.46
	2	0.2506	0.1114	700	0.10	1.33	311	0.09	1.43	0.44
	3	0.1092	0.0218	32	0.00	0.88	6	0.00	0.97	0.20
	4	0.2041	0.0269	75	0.01	1.11	10	0.00	1.73	0.13
	5	0.3542	0.1133	785	0.11	0.51	251	0.07	0.94	0.32
	6	0.2044	0.0000	170	0.02	1.08	0	0.00		0.00
	7	0.5371	0.3426	1287	0.18	0.53	821	0.23	0.56	0.64
All	1	0.0213	0.0091	399	0.06	0.52	171	0.05	0.91	0.43
	2	0.0543	0.0254	730	0.10	1.27	341	0.10	1.31	0.47
	3	0.1762	0.1323	1404	0.20	0.76	1054	0.29	0.84	0.75
	4	0.1709	0.0418	1486	0.21	0.85	363	0.10	1.06	0.24
	5	0.1331	0.0403	1236	0.17	0.40	374	0.10	0.70	0.30
	6	0.0264	0.0000	170	0.02	1.08	0	0.00		0.00
	7	0.3321	0.2411	1761	0.25	0.69	1279	0.36	0.86	0.73
All	All	0.1028	0.0512	7186	1.00	0.32	3582	1.00	0.44	0.50

Table D.5.2.4. Catch and harvest statistics (all anglers) for channel catfish by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0949	0.0776	1251	0.02	0.85	1023	0.11	0.86	0.82
	4	0.0110	0.0000	105	0.00	0.51	0	0.00		0.00
	5	0.0046	0.0000	39	0.00	1.07	0	0.00		0.00
	6	0.0271	0.0000	255	0.00	0.73	0	0.00		0.00
	7	0.0162	0.0104	46	0.00	0.85	30	0.00	0.98	0.64
Non-Tidal 1	1	0.0028	0.0000	234	0.00	0.99	0	0.00		0.00
	2	0.0415	0.0111	1332	0.02	0.45	355	0.04	0.64	0.27
	3	0.2220	0.0019	2819	0.04	0.40	24	0.00	0.71	0.01
	4	0.1727	0.0142	4298	0.07	0.46	353	0.04	1.09	0.08
	5	0.0207	0.0057	451	0.01	0.63	123	0.01	0.95	0.27
	6	0.0305	0.0000	496	0.01	0.73	0	0.00		0.00
	7	0.0477	0.0390	523	0.01	1.94	428	0.04	2.34	0.82
Pooled Non-Tidal	1	0.0023	0.0000	234	0.00	0.99	0	0.00		0.00
	2	0.0274	0.0073	1332	0.02	0.45	355	0.04	0.64	0.27
	3	0.1573	0.0405	4069	0.06	0.38	1047	0.11	0.84	0.26
	4	0.1280	0.0103	4403	0.07	0.45	353	0.04	1.09	0.08
	5	0.0162	0.0041	490	0.01	0.59	123	0.01	0.95	0.25
	6	0.0292	0.0000	751	0.01	0.54	0	0.00		0.00
	7	0.0412	0.0331	569	0.01	1.79	458	0.05	2.19	0.80
Tidal	1	0.0623	0.0367	2638	0.04	0.57	1556	0.16	0.71	0.59
	2	0.2989	0.0083	11237	0.17	0.63	311	0.03	1.43	0.03
	3	0.5521	0.0505	7165	0.11	0.78	655	0.07	1.16	0.09
	4	0.2964	0.0337	6545	0.10	0.29	745	0.08	1.00	0.11
	5	0.5008	0.0191	6566	0.10	0.24	251	0.03	0.94	0.04
	6	1.3096	0.0000	15431	0.23	0.38	0	0.00		0.00
	7	0.4413	0.3937	4324	0.07	0.64	3859	0.40	0.71	0.89
All	1	0.0196	0.0106	2872	0.04	0.53	1556	0.16	0.71	0.54
	2	0.1457	0.0077	12569	0.19	0.56	666	0.07	0.75	0.05
	3	0.2891	0.0438	11234	0.17	0.52	1702	0.18	0.69	0.15
	4	0.1938	0.0194	10948	0.17	0.25	1098	0.11	0.76	0.10
	5	0.1628	0.0086	7056	0.11	0.22	374	0.04	0.70	0.05
	6	0.4315	0.0000	16182	0.25	0.36	0	0.00		0.00
	7	0.2072	0.1827	4894	0.07	0.60	4316	0.44	0.67	0.88
All	All	0.1521	0.0225	65756	1.00	0.18	9714	1.00	0.36	0.15



**D.5.3 Catch and Harvest Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Channel Catfish**



Table D.5.3.1. Catch and harvest statistics by fishing mode for channel catfish across the total study period, based on original temporal stratification and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.2365	0.0000	132	0.00	1.00	0	0.00		0.00
Non-Tidal 1	0.5314	0.0511	2477	0.08	0.89	238	0.06	1.70	0.10
Pooled Non-Tidal	0.4999	0.0457	2609	0.08	0.85	238	0.06	1.70	0.09
Tidal	1.1945	0.1527	29801	0.92	0.58	3809	0.94	0.74	0.13
All	1.0743	0.1342	32410	1.00	0.54	4048	1.00	0.70	0.12
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0003	0.0000	0	0.00		0	0.00		0.00
Non-Tidal 1	0.2319	0.0850	585	0.19	0.90	215	0.14	0.67	0.37
Pooled Non-Tidal	0.1965	0.0720	585	0.19	0.90	215	0.14	0.67	0.37
Tidal	0.6433	0.3305	2464	0.81	0.53	1266	0.86	0.45	0.51
All	0.4477	0.2174	3049	1.00	0.46	1481	1.00	0.40	0.49
<b>All Anglers</b>									
Non-Tidal 2+3	0.1303	0.0000	132	0.00	1.00	0	0.00		0.00
Non-Tidal 1	0.4261	0.0630	3062	0.09	0.74	453	0.08	0.95	0.15
Pooled Non-Tidal	0.3896	0.0553	3194	0.09	0.71	453	0.08	0.95	0.14
Tidal	1.1211	0.1764	32265	0.91	0.54	5075	0.92	0.57	0.16
All	0.9589	0.1495	35459	1.00	0.49	5528	1.00	0.53	0.16

Table D.5.3.2. Catch and harvest statistics (boat anglers) for channel catfish by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.5818	0.0000	132	0.00	1.00	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.6316	0.0000	418	0.01		0	0.00		0.00
	2	0.5333	0.1436	885	0.03	2.17	238	0.06	1.70	0.27
	3	0.6067	0.0000	740	0.02	1.37	0	0.00		0.00
	4	0.3544	0.0000	229	0.01	1.88	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.4317	0.0000	205	0.01		0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.6316	0.0000	418	0.01		0	0.00		0.00
	2	0.5333	0.1436	885	0.03	2.17	238	0.06	1.70	0.27
	3	0.4815	0.0000	740	0.02	1.37	0	0.00		0.00
	4	0.3544	0.0000	229	0.01	1.88	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.4801	0.0000	337	0.01	0.39	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	1.4470	0.4341	6160	0.19	1.68	1848	0.46	1.49	0.30
	3	0.8308	0.0554	2430	0.07	0.91	162	0.04	1.09	0.07
	4	0.6109	0.1091	3328	0.10	0.76	594	0.15	1.01	0.18
	5	1.0307	0.0000	5696	0.18	0.54	0	0.00		0.00
	6	2.7329	0.0000	10983	0.34	1.19	0	0.00		0.00
	7	0.8125	0.8125	1205	0.04	0.00	1205	0.30		1.00
All	1	0.2140	0.0000	418	0.01	0.00	0	0.00		0.00
	2	1.1907	0.3526	7045	0.22	1.49	2086	0.52	1.33	0.30
	3	0.7104	0.0363	3170	0.10	0.77	162	0.04	1.09	0.05
	4	0.5838	0.0975	3557	0.11	0.72	594	0.15	1.01	0.17
	5	1.0307	0.0000	5696	0.18	0.54	0	0.00		0.00
	6	2.3981	0.0000	11320	0.35	0.85	0	0.00	1.70	0.00
	7	0.8052	0.8052	1205	0.04	0.58	1205	0.30	0.74	1.00
All	All	1.0743	0.1342	32410	1.00	0.54	4048	1.00	0.70	0.12

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.2759	0.0000	0	0.00		0	0.00		0.00
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0725	0.0000	51	0.02	1.87	0	0.00		0.00
	3	0.2323	0.1161	149	0.05	1.02	74	0.05	0.89	0.50
	4	1.4237	0.4068	343	0.11	1.43	98	0.07	1.22	0.29
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.6000	0.6000	42	0.01	1.00	42	0.03	1.00	1.00
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0725	0.0000	51	0.02	1.87	0	0.00		0.00
	3	0.1675	0.0838	149	0.05	1.02	74	0.05	0.89	0.50
	4	1.4237	0.4068	343	0.11	1.43	98	0.07	1.22	0.29
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.5974	0.5952	42	0.01	1.00	42	0.03	1.00	1.00
Tidal	1	0.3810	0.0000	368	0.12	1.73	0	0.00		0.00
	2	0.2187	0.1093	104	0.03	1.00	52	0.04	0.91	0.50
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.3961	0.1165	61	0.02	1.25	18	0.01	1.16	0.29
	5	1.0173	0.6474	410	0.13	1.72	261	0.18	1.10	0.64
	6	1.0756	0.0000	71	0.02	0.87	0	0.00		0.00
	7	0.8346	0.5385	1450	0.48	0.62	935	0.63	0.53	0.65
All	1	0.2255	0.0000	368	0.12	1.73	0	0.00		0.00
	2	0.1315	0.0442	155	0.05	0.91	52	0.04	0.91	0.34
	3	0.1624	0.0812	149	0.05	1.02	74	0.05	0.89	0.50
	4	1.0251	0.2942	404	0.13	1.23	116	0.08	1.05	0.29
	5	0.6714	0.4273	410	0.13	1.72	261	0.18	1.10	0.64
	6	0.2659	0.0000	71	0.02	0.90	0	0.00	0.67	0.00
	7	0.8253	0.5407	1492	0.49	0.53	977	0.66	0.45	0.66
All	All	0.4477	0.2174	3049	1.00	0.46	1481	1.00	0.40	0.49

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.5818	0.0000	132	0.00	1.00	0	0.00		0.00
	7	0.0112	0.0000	0	0.00		0	0.00		0.00
Non-Tidal 1	1	0.3147	0.0000	418	0.01		0	0.00		0.00
	2	0.3960	0.1008	936	0.03	2.05	238	0.04	1.70	0.25
	3	0.4778	0.0400	889	0.03	1.16	74	0.01	0.89	0.08
	4	0.6454	0.1107	572	0.02	1.14	98	0.02	1.22	0.17
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.3029	0.0000	205	0.01		0	0.00		0.00
	7	0.6000	0.6000	42	0.00	1.00	42	0.01	1.00	1.00
Pooled Non-Tidal	1	0.3147	0.0000	418	0.01		0	0.00		0.00
	2	0.3960	0.1008	936	0.03	2.05	238	0.04	1.70	0.25
	3	0.3665	0.0307	889	0.03	1.16	74	0.01	0.89	0.08
	4	0.6454	0.1107	572	0.02	1.14	98	0.02	1.22	0.17
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.3729	0.0000	337	0.01	0.39	0	0.00		0.00
	7	0.5018	0.4999	42	0.00	1.00	42	0.01	1.00	1.00
Tidal	1	0.1630	0.0000	368	0.01	1.73	0	0.00		0.00
	2	1.3232	0.4014	6264	0.18	1.65	1900	0.34	1.44	0.30
	3	0.8230	0.0549	2430	0.07	0.91	162	0.03	1.09	0.07
	4	0.6050	0.1093	3389	0.10	0.75	612	0.11	0.98	0.18
	5	1.0298	0.0440	6105	0.17	0.52	261	0.05	1.10	0.04
	6	2.7060	0.0000	11054	0.31	1.18	0	0.00		0.00
	7	0.8244	0.6647	2655	0.07	0.34	2140	0.39	0.23	0.81
All	1	0.2192	0.0000	786	0.02	0.81	0	0.00		0.00
	2	1.0143	0.3012	7201	0.20	1.46	2138	0.39	1.30	0.30
	3	0.6171	0.0440	3318	0.09	0.73	236	0.04	0.80	0.07
	4	0.6106	0.1095	3961	0.11	0.66	710	0.13	0.86	0.18
	5	0.9949	0.0425	6105	0.17	0.52	261	0.05	1.10	0.04
	6	2.2835	0.0000	11391	0.32	0.71	0	0.00	0.95	0.00
	7	0.8162	0.6605	2697	0.08	0.54	2183	0.39	0.57	0.81
All	All	0.9589	0.1495	35459	1.00	0.49	5528	1.00	0.53	0.16

**D.5.4 Catch and Harvest Statistics Based on Monthly Post-Stratification and Targeted Effort (Angler Hours) for Channel Catfish**





Table D.5.4.1. Catch and harvest statistics by fishing mode for channel catfish across the total study period, based on monthly post-strata and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.2568	0.0000	132	0.00	0.01	0	0.00		0.00
Non-Tidal 1	0.4941	0.0496	2235	0.06	0.89	224	0.05	1.71	0.10
Pooled Non-Tidal	0.4699	0.0446	2367	0.06	0.84	224	0.05	1.71	0.09
Tidal	1.2897	0.1512	35718	0.94	0.62	4188	0.95	0.76	0.12
All	1.1636	0.1348	38084	1.00	0.58	4413	1.00	0.72	0.12
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0003	0.0000	0	0.00		0	0.00		0.00
Non-Tidal 1	0.1771	0.0531	530	0.19	0.79	159	0.11	0.79	0.30
Pooled Non-Tidal	0.1472	0.0441	530	0.19	0.79	159	0.11	0.79	0.30
Tidal	0.6397	0.3547	2308	0.81	0.53	1280	0.89	0.45	0.55
All	0.3937	0.1995	2838	1.00	0.45	1439	1.00	0.41	0.51
<b>All Anglers</b>									
Non-Tidal 2+3	0.1176	0.0000	132	0.00	0.01	0	0.00		0.00
Non-Tidal 1	0.3679	0.0510	2765	0.07	0.73	383	0.07	1.05	0.14
Pooled Non-Tidal	0.3354	0.0444	2897	0.07	0.70	383	0.07	1.05	0.13
Tidal	1.2148	0.1747	38026	0.93	0.58	5468	0.93	0.59	0.14
All	1.0246	0.1465	40923	1.00	0.54	5851	1.00	0.55	0.14

Table D.5.4.2. Catch and harvest statistics (boat anglers) for channel catfish by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.5818	0.0000	132	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.1437	0.0000	106	0.00		0	0.00		0.00
	2	0.6842	0.1842	834	0.02	1.74	224	0.05	1.71	0.27
	3	0.6067	0.0000	839	0.02	1.48	0	0.00		0.00
	4	0.3544	0.0000	251	0.01	2.14	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.4317	0.0000	205	0.01		0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.1437	0.0000	106	0.00		0	0.00		0.00
	2	0.6842	0.1842	834	0.02	1.74	224	0.05	1.71	0.27
	3	0.5196	0.0000	839	0.02	1.48	0	0.00		0.00
	4	0.3349	0.0000	251	0.01	2.14	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.4801	0.0000	337	0.01		0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.5840	0.5840	2025	0.05	1.38	2025	0.46	1.38	1.00
	2	3.8919	0.0000	6640	0.17	2.50	0	0.00		0.00
	3	1.0701	0.0459	5006	0.13	0.71	215	0.05	0.70	0.04
	4	0.6109	0.1091	4163	0.11	1.03	743	0.17	0.86	0.18
	5	1.0307	0.0000	5696	0.15	0.54	0	0.00		0.00
	6	2.7329	0.0000	10983	0.29	1.14	0	0.00		0.00
	7	0.8125	0.8125	1205	0.03	1.75	1205	0.27	1.34	1.00
All	1	0.5067	0.4815	2131	0.06	1.31	2025	0.46	1.38	0.95
	2	2.5555	0.0767	7474	0.20	2.23	224	0.05		0.03
	3	0.9288	0.0341	5845	0.15	0.64	215	0.05	0.70	0.04
	4	0.5836	0.0983	4414	0.12	0.98	743	0.17	0.86	0.17
	5	1.0307	0.0000	5696	0.15	0.54	0	0.00		0.00
	6	2.3981	0.0000	11320	0.30	0.84	0	0.00	1.71	0.00
	7	0.8052	0.8052	1205	0.03	0.62	1205	0.27	0.76	1.00
All	All	1.1636	0.1348	38084	1.00	0.58	4413	1.00	0.72	0.12

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.2759	0.0000	0	0.00		0	0.00		0.00
Non-Tidal 1	1	0.0261	0.0000	30	0.01	1.58	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.4552	0.0414	305	0.11	1.12	28	0.02	0.98	0.09
	4	0.2933	0.1711	153	0.05	1.51	89	0.06	1.30	0.58
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.6000	0.6000	42	0.01	1.00	42	0.03	1.00	1.00
Pooled Non-Tidal	1	0.0261	0.0000	30	0.01	1.58	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.2848	0.0259	305	0.11	1.12	28	0.02	0.98	0.09
	4	0.2933	0.1711	153	0.05	1.51	89	0.06	1.30	0.58
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.5974	0.5952	42	0.01	1.00	42	0.03	1.00	1.00
Tidal	1	0.2746	0.0549	332	0.12	1.28	66	0.05	1.00	0.20
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0637	0.0637	5	0.00	1.44	5	0.00	1.00	1.00
	4	0.3961	0.1165	40	0.01	1.01	12	0.01	1.00	0.29
	5	1.0173	0.6474	410	0.14	1.72	261	0.18	1.10	0.64
	6	1.0756	0.0000	71	0.03	0.87	0	0.00		0.00
	7	0.8346	0.5385	1450	0.51	0.62	935	0.65	0.53	0.65
All	1	0.1526	0.0280	362	0.13	1.18	66	0.05	1.00	0.18
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.2685	0.0287	310	0.11	1.10	33	0.02	0.83	0.11
	4	0.3101	0.1621	193	0.07	1.21	101	0.07	1.15	0.52
	5	0.6714	0.4273	410	0.14	1.72	261	0.18	1.10	0.64
	6	0.2659	0.0000	71	0.03	0.79	0	0.00	0.79	0.00
	7	0.8253	0.5407	1492	0.53	0.53	977	0.68	0.45	0.66
All	All	0.3937	0.1995	2838	1.00	0.45	1439	1.00	0.41	0.51

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.5818	0.0000	132	0.00		0	0.00		0.00
	7	0.0112	0.0000	0	0.00	7.80	0	0.00		0.00
Non-Tidal 1	1	0.0717	0.0000	137	0.00	0.35	0	0.00		0.00
	2	0.5264	0.1417	834	0.02	1.74	224	0.04	1.71	0.27
	3	0.5573	0.0135	1144	0.03	1.12	28	0.00		0.02
	4	0.3285	0.0724	404	0.01	1.45	89	0.02	1.30	0.22
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.3029	0.0000	205	0.01		0	0.00		0.00
	7	0.6000	0.6000	42	0.00	1.00	42	0.01	1.00	1.00
Pooled Non-Tidal	1	0.0717	0.0000	137	0.00	0.35	0	0.00		0.00
	2	0.5264	0.1417	834	0.02	1.74	224	0.04	1.71	0.27
	3	0.4260	0.0103	1144	0.03	1.12	28	0.00		0.02
	4	0.3179	0.0701	404	0.01	1.45	89	0.02	1.30	0.22
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.3729	0.0000	337	0.01		0	0.00		0.00
	7	0.5018	0.4999	42	0.00	1.00	42	0.01	1.00	1.00
Tidal	1	0.5041	0.4473	2357	0.06	1.20	2091	0.36	1.33	0.89
	2	3.8752	0.0000	6640	0.16	2.50	0	0.00		0.00
	3	1.0522	0.0462	5011	0.12	0.71	220	0.04	0.69	0.04
	4	0.6077	0.1092	4203	0.10	1.02	755	0.13	0.84	0.18
	5	1.0298	0.0440	6105	0.15	0.52	261	0.04	2.26	0.04
	6	2.7060	0.0000	11054	0.27	1.13	0	0.00		0.00
	7	0.8244	0.6647	2655	0.06	0.86	2140	0.37	0.79	0.81
All	1	0.3790	0.3179	2493	0.06	1.13	2091	0.36	1.33	0.84
	2	2.2667	0.0681	7474	0.18	2.23	224	0.04		0.03
	3	0.8264	0.0332	6155	0.15	0.61	248	0.04	0.61	0.04
	4	0.5628	0.1031	4607	0.11	0.94	844	0.14	0.77	0.18
	5	0.9949	0.0425	6105	0.15	0.52	261	0.04	2.26	0.04
	6	2.2835	0.0000	11391	0.28	0.70	0	0.00	1.05	0.00
	7	0.8162	0.6605	2697	0.07	0.58	2183	0.37	0.59	0.81
All	All	1.0246	0.1465	40923	1.00	0.54	5851	1.00	0.55	0.14

**D.5.5 Targeted Effort Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Channel Catfish**



Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0512	0.2550	317	1.32	4.55	70	5
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0357	0.0108	227	0.99	3.69	61	4
	7	0.0055	0.0018	14	2.24	2.92	5	3
Non-Tidal 1	1	0.0130	0.0022	662	1.56	3.17	209	3
	2	0.0324	0.1347	1660	2.13	4.75	349	19
	3	0.1314	1.4345	1219	1.29	3.17	385	10
	4	0.0414	0.2953	645	1.77	4.98	130	7
	5	0.0000	0.0000	0				0
	6	0.0345	0.1798	475	1.41	2.78	171	5
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0121	0.0022	662	1.56	3.17	209	3
	2	0.0244	0.1227	1660	2.13	4.75	349	19
	3	0.0993	1.0994	1537	1.06	3.38	455	15
	4	0.0342	0.2684	645	1.77	4.98	130	7
	5	0.0000	0.0000	0				0
	6	0.0349	0.0702	702	1.01	3.02	232	9
	7	0.0012	0.0000	14	2.24	2.92	5	3
Tidal	1	0.0603	0.0237	1292	1.62	2.50	517	2
	2	0.0873	0.7905	4257	1.65	5.02	849	15
	3	0.2833	0.2386	2925	0.82	3.96	738	15
	4	0.3287	2.1911	5448	0.75	4.14	1317	25
	5	0.5072	1.2547	5526	0.54	3.58	1545	13
	6	0.3669	13.1363	4019	1.14	2.78	1445	8
	7	0.2003	0.6953	1483	1.34	7.50	198	4
Non-Tidal	All	0.0247	0.0283	5219	0.81	3.78	1380	56
Tidal	All	0.1975	0.3744	24949	0.42	3.78	6608	82
All	All	0.0893	0.1374	30168	0.37	3.78	7988	138

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0486	0.3831	248	2.40	1.50	165	2
	4	0.0000	0.0000	0				0
	5	0.0720	2.6927	208	3.14	0.75	277	1
	6	0.0000	0.0000	0				0
	7	0.0014	0.0000	1	1.00	7.25	0	1
Non-Tidal 1	1	0.1689	0.2429	666	1.23	1.63	408	10
	2	0.0840	0.4648	705	1.65	5.36	131	15
	3	0.5669	1.9303	640	0.88	4.81	133	11
	4	0.0934	0.2921	241	1.35	2.21	109	9
	5	0.0000	0.0000	0				0
	6	0.0805	0.0470	202	1.09	1.30	155	2
	7	0.0282	0.0049	70	1.00	5.00	14	1
Pooled Non-Tidal	1	0.1689	0.2429	666	1.23	1.63	408	10
	2	0.0393	0.1171	705	1.65	5.36	131	15
	3	0.1427	0.6179	888	0.92	2.98	298	13
	4	0.0419	0.0998	241	1.35	2.21	109	9
	5	0.0293	0.9227	208	3.14	0.75	277	1
	6	0.0361	0.0153	202	1.09	1.30	155	2
	7	0.0244	0.0048	71	0.99	5.01	14	2
Tidal	1	0.2051	0.8509	966	1.55	1.75	552	3
	2	0.1956	0.0479	477	0.82	2.03	235	11
	3	0.1278	0.0569	28	0.92	2.36	12	6
	4	0.3311	0.1584	153	1.24	2.07	74	24
	5	0.1818	38.7975	403	1.61	1.58	254	15
	6	0.0798	0.0058	66	0.85	1.79	37	7
	7	0.7248	1.0511	1737	0.43	3.73	466	12
Non-Tidal	All	0.1493	0.3420	2980	0.61	2.14	1393	52
Tidal	All	0.2886	0.4767	3830	0.48	2.35	1630	78
All	All	0.1087	0.2369	6810	0.38	2.25	3023	130



Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0500	0.3283	565	1.29	3.68	154	7
	4	0.0000	0.0000	0				0
	5	0.0245	0.3657	208	3.14	0.75	277	1
	6	0.0240	0.0074	227	0.99	3.69	61	4
	7	0.0049	0.0017	14	2.15	4.00	4	4
Non-Tidal 1	1	0.0242	0.0035	1328	0.99	1.99	668	13
	2	0.0396	0.1447	2365	1.57	5.02	471	34
	3	0.1786	1.4775	1860	0.90	4.03	462	21
	4	0.0488	0.2951	886	1.34	3.42	259	16
	5	0.0000	0.0000	0				0
	6	0.0415	0.1411	677	1.04	2.36	287	7
	7	0.0064	0.0002	70	1.00	5.00	14	1
Pooled Non-Tidal	1	0.0226	0.0035	1328	0.99	1.99	668	13
	2	0.0275	0.1221	2365	1.57	5.02	471	34
	3	0.1117	0.9505	2425	0.75	3.94	615	28
	4	0.0360	0.2383	886	1.34	3.42	259	16
	5	0.0069	0.0879	208	3.14	0.75	277	1
	6	0.0351	0.0533	904	0.82	2.59	349	11
	7	0.0061	0.0002	84	0.91	4.80	18	5
Tidal	1	0.0864	0.0352	2258	1.14	2.05	1101	5
	2	0.0925	0.7543	4734	1.49	3.75	1261	26
	3	0.2801	0.2385	2952	0.81	3.50	843	21
	4	0.3288	2.1307	5601	0.73	3.12	1793	49
	5	0.4522	0.7319	5929	0.51	2.51	2363	28
	6	0.3467	9.8070	4085	1.12	2.32	1763	15
	7	0.3286	0.7263	3220	0.66	4.67	689	16
Non-Tidal	All	0.0314	0.0324	8199	0.56	3.09	2657	108
Tidal	All	0.2061	0.3633	28779	0.37	2.93	9814	160
All	All	0.0923	0.1361	36978	0.31	2.97	12470	268



**D.5.6 Targeted Effort Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours) for Channel Catfish**



Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0329	0.0769	232	1.50	5.14	45	3
	4	0.0087	0.0151	41	2.81	3.67	11	2
	5	0.0000	0.0000	0				0
	6	0.0357	0.0108	227	0.99	3.69	61	4
	7	0.0055	0.0018	14	2.24	2.92	5	3
Non-Tidal 1	1	0.0097	0.0031	738	1.73	6.20	119	5
	2	0.0440	0.1123	1218	1.71	4.13	295	15
	3	0.1240	1.0000	1383	1.44	3.21	431	12
	4	0.0332	0.4818	708	1.99	4.98	142	7
	5	0.0000	0.0000	0				0
	6	0.0345	0.1798	475	1.41	2.78	171	5
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0082	0.0031	738	1.73	6.20	119	5
	2	0.0321	0.0913	1218	1.71	4.13	295	15
	3	0.0887	0.9186	1615	1.25	3.39	476	15
	4	0.0288	0.3993	750	1.89	4.88	154	9
	5	0.0000	0.0000	0				0
	6	0.0349	0.0702	702	1.01	3.02	232	9
	7	0.0012	0.0000	14	2.24	2.92	5	3
Tidal	1	0.0939	0.0560	3468	1.38	4.99	695	12
	2	0.0490	0.1527	1706	2.49	4.58	372	2
	3	0.3687	0.1912	4678	0.70	3.93	1192	18
	4	0.3138	2.9287	6814	0.80	4.14	1647	25
	5	0.5072	1.2575	5526	0.54	3.58	1545	13
	6	0.3669	13.1363	4019	1.14	2.78	1445	8
	7	0.2003	0.6056	1483	1.34	7.50	198	4
Non-Tidal	All	0.0222	0.0197	5037	0.70	3.93	1281	56
Tidal	All	0.2046	0.1897	27694	0.39	3.90	7094	82
All	All	0.0903	0.1028	32731	0.35	3.91	8375	138

Table D.5.6.2. Targeted effort statistics (shore anglers) for channel catfish by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0654	0.3196	401	2.14	1.50	267	2
	4	0.0000	0.0000	0				0
	5	0.0720	2.6927	208	3.14	0.75	277	1
	6	0.0000	0.0000	0				0
	7	0.0014	0.0000	1	1.00	7.25	0	1
Non-Tidal 1	1	0.1469	0.4549	1165	1.17	3.00	389	13
	2	0.0826	0.6864	365	1.88	4.93	74	10
	3	0.4339	1.0000	670	1.08	2.54	263	10
	4	0.1462	1.0000	520	1.33	4.66	112	12
	5	0.0000	0.0000	0				0
	6	0.0805	0.0470	202	1.09	1.30	155	2
	7	0.0282	0.0003	70	1.00	5.00	14	1
Pooled Non-Tidal	1	0.0873	0.1617	1165	1.17	3.00	389	13
	2	0.0343	0.0664	365	1.88	4.93	74	10
	3	0.1395	0.5140	1070	1.05	2.02	531	12
	4	0.0625	0.3552	520	1.33	4.66	112	12
	5	0.0293	0.9227	208	3.14	0.75	277	1
	6	0.0361	0.0153	202	1.09	1.30	155	2
	7	0.0244	0.0003	71	0.99	5.01	14	2
Tidal	1	0.2220	0.4919	1208	1.15	2.23	543	10
	2	0.0026	0.0000	7	1.79	0.33	22	1
	3	0.2933	0.3503	85	0.99	2.13	40	9
	4	0.2759	0.0675	102	0.99	2.07	49	24
	5	0.1818	1.0000	403	1.61	1.58	254	15
	6	0.0798	0.0058	66	0.85	1.79	37	7
	7	0.7248	1.0000	1737	0.43	3.73	466	12
Non-Tidal	All	0.1514	0.1501	3601	0.59	0.59	1551	52
Tidal	All	0.2517	0.2261	3608	0.48	0.48	1411	78
All	All	0.1031	0.1367	7209	0.38	0.38	2962	130

Table D.5.6.3. Targeted effort statistics (all anglers) for channel catfish by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0480	0.2212	633	1.46	3.68	172	5
	4	0.0043	0.0071	41	2.81	3.67	11	2
	5	0.0245	0.3657	208	3.14	0.75	277	1
	6	0.0240	0.0074	227	0.99	3.69	61	4
	7	0.0049	0.0017	14	2.15	4.00	4	4
Non-Tidal 1	1	0.0226	0.0066	1903	0.98	3.89	490	18
	2	0.0493	0.1223	1584	1.39	4.45	356	25
	3	0.1617	1.4914	2053	1.03	2.91	706	22
	4	0.0494	0.5522	1229	1.28	4.78	257	19
	5	0.0000	0.0000	0				0
	6	0.0415	0.1411	677	1.04	2.36	287	7
	7	0.0064	0.0001	70	1.00	5.00	14	1
Pooled Non-Tidal	1	0.0183	0.0064	1903	0.98	3.89	490	18
	2	0.0326	0.0880	1584	1.39	4.45	356	25
	3	0.1038	0.7747	2685	0.86	3.06	878	27
	4	0.0369	0.3900	1270	1.24	4.73	268	21
	5	0.0069	0.0879	208	3.14	0.75	277	1
	6	0.0351	0.0533	904	0.82	2.59	349	11
	7	0.0061	0.0001	84	0.91	4.80	18	5
Tidal	1	0.1103	0.0601	4676	1.06	3.73	1253	22
	2	0.0456	0.0142	1713	0.78	3.17	541	3
	3	0.3670	0.1913	4763	0.69	3.33	1432	27
	4	0.3132	2.8867	6916	0.79	3.12	2214	49
	5	0.4522	0.7319	5929	0.38	2.51	2363	28
	6	0.3467	9.8070	4085	1.12	2.32	1763	15
	7	0.3286	0.6398	3220	0.66	4.67	689	16
Non-Tidal	All	0.0306	0.0252	8638	0.48	3.28	2635	108
Tidal	All	0.2091	0.1905	31302	0.32	3.05	10255	160
All	All	0.0924	0.1042	39940	0.27	3.10	12890	268





## D.6 BLUEGILL<sup>1</sup>

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<sup>1</sup> The estimated catch of bluegill is possibly biased because of misidentification, and should be interpreted with care. It is likely that many interviewed anglers reported catch of sunfish species (*centrarchids*) as bluegill. It is the feeling of some state biologists that due to the agents inability to observe fish caught and released that redbreast sunfish catch may have been misreported as bluegill because of their similar appearance.



**D.6.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**



Table D.6.1.1 Catch and harvest statistics by fishing mode for bluegill across the total study period, based on original stratification.									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0113	0.0036	502	0.15	0.46	161	1.00	0.82	0.32
Non-Tidal 1	0.0121	0.0000	2018	0.61	0.56	0	0.00		0.00
Pooled Non-Tidal	0.0119	0.0008	2520	0.76	0.46	161	1.00	0.82	0.06
Tidal	0.0064	0.0000	810	0.24	0.88	0	0.00		0.00
All	0.0099	0.0005	3330	1.00	0.41	161	1.00	0.82	0.05
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0208	0.0073	504	0.14	0.76	176	0.32	1.34	0.35
Non-Tidal 1	0.1176	0.0149	2967	0.85	0.62	377	0.68	0.99	0.13
Pooled Non-Tidal	0.0702	0.0112	3471	1.00	0.54	553	1.00	0.80	0.16
Tidal	0.0011	0.0000	14	0.00	1.49	0	0.00		0.00
All	0.0556	0.0088	3485	1.00	0.54	553	1.00	0.80	0.16
<b>All Anglers</b>									
Non-Tidal 2+3	0.0146	0.0049	1006	0.15	0.45	337	0.47	0.80	0.34
Non-Tidal 1	0.0259	0.0020	4985	0.73	0.43	377	0.53	0.99	0.08
Pooled Non-Tidal	0.0230	0.0027	5991	0.88	0.37	714	1.00	0.65	0.12
Tidal	0.0059	0.0000	824	0.12	0.87	0	0.00		0.00
All	0.0170	0.0018	6815	1.00	0.34	714	1.00	0.65	0.10

Table D.6.1.2. Catch and harvest statistics (boat anglers) for bluegill by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0473	0.0260	293	0.09	0.41	161	1.00	0.82	0.55
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0069	0.0000	39	0.01	0.60	0	0.00		0.00
	6	0.0268	0.0000	170	0.05	1.14	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0050	0.0000	258	0.08	0.62	0	0.00		0.00
	3	0.0037	0.0000	35	0.01	1.09	0	0.00		0.00
	4	0.0244	0.0000	379	0.11	0.64	0	0.00		0.00
	5	0.0571	0.0000	1003	0.30	1.05	0	0.00		0.00
	6	0.0180	0.0000	248	0.07	0.99	0	0.00		0.00
	7	0.0112	0.0000	95	0.03	1.01	0	0.00		0.00
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0038	0.0000	258	0.08	0.62	0	0.00		0.00
	3	0.0212	0.0104	328	0.10	0.39	161	1.00	0.82	0.49
	4	0.0201	0.0000	379	0.11	0.64	0	0.00		0.00
	5	0.0450	0.0000	1042	0.31	1.01	0	0.00		0.00
	6	0.0208	0.0000	418	0.13	0.75	0	0.00		0.00
	7	0.0087	0.0000	95	0.03	1.01	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0129	0.0000	630	0.19	1.10	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0164	0.0000	180	0.05	1.02	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0076	0.0000	889	0.27	0.80	0	0.00		0.00
	3	0.0127	0.0062	328	0.10	0.39	161	1.00	0.82	0.49
	4	0.0107	0.0000	379	0.11	0.64	0	0.00		0.00
	5	0.0306	0.0000	1042	0.31	1.01	0	0.00		0.00
	6	0.0192	0.0000	598	0.18	0.61	0	0.00		0.00
	7	0.0052	0.0000	95	0.03	1.01	0	0.00		0.00
All	All	0.0099	0.0005	3330	1.00	0.41	161	1.00	0.82	0.05

Table D.6.1.3. Catch and harvest statistics (shore anglers) for bluegill by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0351	0.0000	179	0.05	0.79	0	0.00		0.00
	4	0.0067	0.0000	21	0.01	0.95	0	0.00		0.00
	5	0.0139	0.0000	40	0.01	1.25	0	0.00		0.00
	6	0.0855	0.0570	264	0.08	1.34	176	0.32	1.34	0.67
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0097	0.0048	81	0.02	0.64	41	0.07	0.90	0.50
	3	0.0910	0.0000	103	0.03	0.95	0	0.00		0.00
	4	0.1333	0.0000	344	0.10	0.95	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.9732	0.1342	2439	0.70	0.74	336	0.61	1.11	0.14
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0045	0.0023	81	0.02	0.64	41	0.07	0.90	0.50
	3	0.0452	0.0000	281	0.08	0.61	0	0.00		0.00
	4	0.0635	0.0000	365	0.10	0.90	0	0.00		0.00
	5	0.0056	0.0000	40	0.01	1.25	0	0.00		0.00
	6	0.4833	0.0916	2703	0.78	0.68	512	0.93	0.86	0.19
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0057	0.0000	14	0.00	1.49	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0047	0.0020	95	0.03	0.59	41	0.07	0.90	0.43
	3	0.0437	0.0000	281	0.08	0.61	0	0.00		0.00
	4	0.0588	0.0000	365	0.10	0.90	0	0.00		0.00
	5	0.0043	0.0000	40	0.01	1.25	0	0.00		0.00
	6	0.4208	0.0798	2703	0.78	0.68	512	0.93	0.86	0.19
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0556	0.0088	3485	1.00	0.54	553	1.00	0.80	0.16

Table D.6.1.4. Catch and harvest statistics (all anglers) for bluegill by geographic strata and months										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0418	0.0143	472	0.07	0.39	161	0.23	0.82	0.34
	4	0.0033	0.0000	21	0.00	0.95	0	0.00		0.00
	5	0.0093	0.0000	79	0.01	0.70	0	0.00		0.00
	6	0.0460	0.0187	434	0.06	0.93	176	0.25	1.34	0.41
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0057	0.0007	339	0.05	0.50	41	0.06	0.90	0.12
	3	0.0132	0.0000	138	0.02	0.76	0	0.00		0.00
	4	0.0399	0.0000	723	0.11	0.56	0	0.00		0.00
	5	0.0461	0.0000	1003	0.15	1.05	0	0.00		0.00
	6	0.1649	0.0206	2687	0.39	0.67	336	0.47	1.11	0.13
	7	0.0087	0.0000	95	0.01	1.01	0	0.00		0.00
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0039	0.0005	339	0.05	0.50	41	0.06	0.90	0.12
	3	0.0281	0.0074	609	0.09	0.35	161	0.23	0.82	0.26
	4	0.0303	0.0000	744	0.11	0.55	0	0.00		0.00
	5	0.0358	0.0000	1082	0.16	0.98	0	0.00		0.00
	6	0.1213	0.0199	3121	0.46	0.60	512	0.72	0.86	0.16
	7	0.0069	0.0000	95	0.01	1.01	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0126	0.0000	644	0.09	1.08	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0152	0.0000	180	0.03	1.02	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0072	0.0003	984	0.14	0.73	41	0.06	0.90	0.04
	3	0.0189	0.0050	609	0.09	0.35	161	0.23	0.82	0.26
	4	0.0179	0.0000	744	0.11	0.55	0	0.00		0.00
	5	0.0250	0.0000	1082	0.16	0.98	0	0.00		0.00
	6	0.0880	0.0137	3301	0.48	0.57	512	0.72	0.86	0.16
	7	0.0040	0.0000	95	0.01	1.01	0	0.00		0.00
All	All	0.0170	0.0018	6815	1.00	0.34	714	1.00	0.65	0.10



**D.6.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**



Table D.6.2.1. Catch and harvest statistics by fishing mode for bluegill across the total study period, based on monthly post-stratification									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0124	0.0049	633	0.18	0.45	249	1.00	0.72	0.39
Non-Tidal 1	0.0119	0.0000	2092	0.60	0.54	0	0.00		0.00
Pooled Non-Tidal	0.0120	0.0011	2725	0.78	0.43	249	1.00	0.72	0.09
Tidal	0.0056	0.0000	763	0.22	1.08	0	0.00		0.00
All	0.0096	0.0007	3488	1.00	0.41	249	1.00	0.72	0.07
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0139	0.0061	401	0.11	0.91	176	0.31	1.34	0.44
Non-Tidal 1	0.1156	0.0147	3081	0.87	0.60	393	0.69	0.96	0.13
Pooled Non-Tidal	0.0627	0.0102	3482	0.98	0.54	569	1.00	0.78	0.16
Tidal	0.0040	0.0000	57	0.02	1.11	0	0.00		0.00
All	0.0506	0.0081	3539	1.00	0.53	569	1.00	0.78	0.16
<b>All Anglers</b>									
Non-Tidal 2+3	0.0130	0.0053	1034	0.15	0.45	425	0.52	0.70	0.41
Non-Tidal 1	0.0255	0.0019	5173	0.74	0.42	393	0.48	0.96	0.08
Pooled Non-Tidal	0.0220	0.0029	6207	0.88	0.36	818	1.00	0.59	0.13
Tidal	0.0055	0.0000	820	0.12	1.01	0	0.00		0.00
All	0.0163	0.0019	7027	1.00	0.34	818	1.00	0.59	0.12

Table D.6.2.2. Catch and harvest statistics (boat anglers) for bluegill by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0417	0.0353	294	0.08	0.63	249	1.00	0.72	0.85
	4	0.0275	0.0000	130	0.04	0.74	0	0.00		0.00
	5	0.0069	0.0000	39	0.01	0.60	0	0.00		0.00
	6	0.0268	0.0000	170	0.05	1.14	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0101	0.0000	279	0.08	0.70	0	0.00		0.00
	3	0.0042	0.0000	47	0.01	1.08	0	0.00		0.00
	4	0.0197	0.0000	419	0.12	0.63	0	0.00		0.00
	5	0.0571	0.0000	1003	0.29	1.05	0	0.00		0.00
	6	0.0180	0.0000	248	0.07	0.99	0	0.00		0.00
	7	0.0112	0.0000	95	0.03	1.11	0	0.00		0.00
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0073	0.0000	279	0.08	0.70	0	0.00		0.00
	3	0.0187	0.0137	341	0.10	0.56	249	1.00	0.72	0.73
	4	0.0211	0.0000	550	0.16	0.51	0	0.00		0.00
	5	0.0450	0.0000	1042	0.30	1.01	0	0.00		0.00
	6	0.0208	0.0000	418	0.12	0.75	0	0.00		0.00
	7	0.0087	0.0000	95	0.03	1.11	0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0460	0.0000	584	0.17	1.38	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0164	0.0000	180	0.05	1.02	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0038	0.0000	279	0.08	0.70	0	0.00		0.00
	3	0.0299	0.0080	924	0.27	0.90	249	1.00	0.72	0.27
	4	0.0115	0.0000	550	0.16	0.51	0	0.00		0.00
	5	0.0306	0.0000	1042	0.30	1.01	0	0.00		0.00
	6	0.0192	0.0000	598	0.17	0.61	0	0.00		0.00
	7	0.0052	0.0000	95	0.03	1.11	0	0.00		0.00
All	All	0.0096	0.0007	3488	1.00	0.41	249	1.00	0.72	0.07

Table D.6.2.3. Catch and harvest statistics (shore anglers) for bluegill by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0204	0.0000	97	0.03	0.72	0	0.00		0.00
	5	0.0139	0.0000	40	0.01	1.25	0	0.00		0.00
	6	0.0855	0.0570	264	0.07	1.34	176	0.31	1.34	0.67
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0071	0.0071	57	0.02	0.87	57	0.10	0.87	1.00
	2	0.0134	0.0000	59	0.02	0.96	0	0.00		0.00
	3	0.0467	0.0000	72	0.02	1.00	0	0.00		0.00
	4	0.1276	0.0000	454	0.13	0.94	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.9732	0.1342	2439	0.69	0.74	336	0.59	1.11	0.14
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0042	0.0042	57	0.02	0.87	57	0.10	0.87	1.00
	2	0.0056	0.0000	59	0.02	0.96	0	0.00		0.00
	3	0.0094	0.0000	72	0.02	1.00	0	0.00		0.00
	4	0.0662	0.0000	551	0.16	0.78	0	0.00		0.00
	5	0.0056	0.0000	40	0.01	1.25	0	0.00		0.00
	6	0.4833	0.0916	2703	0.76	0.68	512	0.90	0.86	0.19
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0105	0.0000	57	0.02	1.11	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0060	0.0030	114	0.03	0.70	57	0.10	0.87	0.50
	2	0.0044	0.0000	59	0.02	0.96	0	0.00		0.00
	3	0.0090	0.0000	72	0.02	1.00	0	0.00		0.00
	4	0.0634	0.0000	551	0.16	0.78	0	0.00		0.00
	5	0.0043	0.0000	40	0.01	1.25	0	0.00		0.00
	6	0.4208	0.0798	2703	0.76	0.68	512	0.90	0.86	0.19
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0506	0.0081	3539	1.00	0.53	569	1.00	0.78	0.16

Table D.6.2.4. Catch and harvest statistics (all anglers) for bluegill by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0223	0.0189	294	0.04	0.63	249	0.30	0.72	0.85
	4	0.0239	0.0000	228	0.03	0.52	0	0.00		0.00
	5	0.0093	0.0000	79	0.01	0.70	0	0.00		0.00
	6	0.0460	0.0187	434	0.06	0.93	176	0.22	1.34	0.41
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0007	0.0007	57	0.01	0.87	57	0.07	0.87	1.00
	2	0.0105	0.0000	338	0.05	0.60	0	0.00		0.00
	3	0.0094	0.0000	119	0.02	0.74	0	0.00		0.00
	4	0.0351	0.0000	874	0.12	0.57	0	0.00		0.00
	5	0.0461	0.0000	1003	0.14	1.05	0	0.00		0.00
	6	0.1649	0.0206	2687	0.38	0.67	336	0.41	1.11	0.13
	7	0.0087	0.0000	95	0.01	1.11	0	0.00		0.00
Pooled Non-Tidal	1	0.0005	0.0005	57	0.01	0.87	57	0.07	0.87	1.00
	2	0.0070	0.0000	338	0.05	0.60	0	0.00		0.00
	3	0.0160	0.0096	413	0.06	0.50	249	0.30	0.72	0.60
	4	0.0320	0.0000	1101	0.16	0.47	0	0.00		0.00
	5	0.0358	0.0000	1082	0.15	0.98	0	0.00		0.00
	6	0.1213	0.0199	3121	0.44	0.60	512	0.63	0.86	0.16
	7	0.0069	0.0000	95	0.01	1.11	0	0.00		0.00
Tidal	1	0.0013	0.0000	57	0.01	1.11	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0450	0.0000	584	0.08	1.38	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0152	0.0000	180	0.03	1.02	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0008	0.0004	114	0.02	0.70	57	0.07	0.87	0.50
	2	0.0039	0.0000	338	0.05	0.60	0	0.00		0.00
	3	0.0256	0.0064	996	0.14	0.84	249	0.30	0.72	0.25
	4	0.0195	0.0000	1101	0.16	0.47	0	0.00		0.00
	5	0.0250	0.0000	1082	0.15	0.98	0	0.00		0.00
	6	0.0880	0.0137	3301	0.47	0.57	512	0.63	0.86	0.16
	7	0.0040	0.0000	95	0.01	1.11	0	0.00		0.00
All	All	0.0163	0.0019	7027	1.00	0.34	818	1.00	0.59	0.12

**D.6.3 Catch and Harvest Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Bluegill**





Table D.6.3.1. Catch and harvest statistics by fishing mode for bluegill across the total study period, based on original temporal stratification and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	4.0000	0.0000	242	0.88		0			0.00
Non-Tidal 1	0.3519	0.0000	33	0.12		0			0.00
Pooled Non-Tidal	1.7841	0.0000	275	1.00		0			0.00
Tidal	0.0000	0.0000	0	0.00		0			
All	1.7841	0.0000	275	1.00		0			0.00
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0			0			
Non-Tidal 1	0.0000	0.0000	0			0			
Pooled Non-Tidal	0.0000	0.0000	0			0			
Tidal	0.0000	0.0000	0			0			
All	0.0000	0.0000	0			0			
<b>All Anglers</b>									
Non-Tidal 2+3	4.0000	0.0000	242	0.88		0			0.00
Non-Tidal 1	0.3519	0.0000	33	0.12		0			0.00
Pooled Non-Tidal	1.7841	0.0000	275	1.00		0			0.00
Tidal	0.0000	0.0000	0	0.00		0			
All	1.7841	0.0000	275	1.00		0			0.00

Table D.6.3.2. Catch and harvest statistics (boat anglers) for bluegill by geographic strata and original temporal strata, based on targeted effort (angler hours)

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.88		0			
	7	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0			
	2	1.4371	0.0000	17	0.06		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.1905	0.0000	16	0.06		0			
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0			
	2	1.4371	0.0000	17	0.06		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.88		0			
	7	0.1905	0.0000	16	0.06		0			
Tidal	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
All	1	0.0000	0.0000	0	0.00		0			
	2	1.4371	0.0000	17	0.06		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.88		0			
	7	0.1905	0.0000	16	0.06		0			
All	All	1.7841	0.0000	275	1.00		0			

Table D.6.3.3. Catch and harvest statistics (shore anglers) for bluegill by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0			0			
	2	0.0000	0.0000	0			0			
	3	0.0000	0.0000	0			0			
	4	0.0000	0.0000	0			0			
	5	0.0000	0.0000	0			0			
	6	0.0000	0.0000	0			0			
	7	0.0000	0.0000	0			0			
Non-Tidal 1	1	0.0000	0.0000	0			0			
	2	0.0000	0.0000	0			0			
	3	0.0000	0.0000	0			0			
	4	0.0000	0.0000	0			0			
	5	0.0000	0.0000	0			0			
	6	0.0000	0.0000	0			0			
	7	0.0000	0.0000	0			0			
Pooled Non-Tidal	1	0.0000	0.0000	0			0			
	2	0.0000	0.0000	0			0			
	3	0.0000	0.0000	0			0			
	4	0.0000	0.0000	0			0			
	5	0.0000	0.0000	0			0			
	6	0.0000	0.0000	0			0			
	7	0.0000	0.0000	0			0			
Tidal	1	0.0000	0.0000	0			0			
	2	0.0000	0.0000	0			0			
	3	0.0000	0.0000	0			0			
	4	0.0000	0.0000	0			0			
	5	0.0000	0.0000	0			0			
	6	0.0000	0.0000	0			0			
	7	0.0000	0.0000	0			0			
All	1	0.0000	0.0000	0			0			
	2	0.0000	0.0000	0			0			
	3	0.0000	0.0000	0			0			
	4	0.0000	0.0000	0			0			
	5	0.0000	0.0000	0			0			
	6	0.0000	0.0000	0			0			
	7	0.0000	0.0000	0			0			
All	All	0.0000	0.0000	0			0			

Table D.6.3.4. Catch and harvest statistics (all anglers) for bluegill by geographic strata and original temporal strata, based on targeted effort (angler hours)

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0			0.00
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.88		0			
	7	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0			0.00
	2	1.4371	0.0000	17	0.06		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.1905	0.0000	16	0.06		0			
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0			0.00
	2	1.4371	0.0000	17	0.06		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.88		0			
	7	0.1905	0.0000	16	0.06		0			
Tidal	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
All	1	0.0000	0.0000	0	0.00		0			0.00
	2	1.4371	0.0000	17	0.06		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.88		0			
	7	0.1905	0.0000	16	0.06		0			
All	All	1.7841	0.0000	275	1.00		0			0.00

**D.6.4 Catch and Harvest Statistics Based on Monthly Post-Stratification and Targeted Effort (Angler Hours) for Bluegill**



Table D.6.4.1. Catch and harvest statistics by fishing mode for bluegill across the total study period, based on monthly post-strata and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	4.0000	0.0000	242	0.89		0			
Non-Tidal 1	0.3263	0.0000	30	0.11		0			
Pooled Non-Tidal	1.7890	0.0000	272	1.00		0			
Tidal	0.0000	0.0000	0	0.00		0			
All	1.7890	0.0000	272	1.00		0			
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0			0			
Non-Tidal 1	0.0000	0.0000	0			0			
Pooled Non-Tidal	0.0000	0.0000	0			0			
Tidal	0.0000	0.0000	0			0			
All	0.0000	0.0000	0			0			
<b>All Anglers</b>									
Non-Tidal 2+3	4.0000	0.0000	242	0.89		0			
Non-Tidal 1	0.3263	0.0000	30	0.11		0			
Pooled Non-Tidal	1.7890	0.0000	272	1.00		0			
Tidal	0.0000	0.0000	0	0.00		0			
All	1.7890	0.0000	272	1.00		0			

Table D.6.4.2. Catch and harvest statistics (boat anglers) for bluegill by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.89		0			0
	7	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0			
	2	1.4371	0.0000	14	0.05		0			0
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.1905	0.0000	16	0.06		0			0
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0			
	2	1.4371	0.0000	14	0.05		0			0
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.89		0			0
	7	0.1905	0.0000	16	0.06		0			0
Tidal	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
All	1	0.0000	0.0000	0	0.00		0			
	2	1.4371	0.0000	14	0.05		0			0
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.89		0			0
	7	0.1905	0.0000	16	0.06		0			0
All	All	1.7890	0.0000	272	1.00		0			0



Table D.6.4.3. Catch and harvest statistics (shore anglers) for bluegill by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0			0			
	2	0.0000	0.0000	0			0			
	3	0.0000	0.0000	0			0			
	4	0.0000	0.0000	0			0			
	5	0.0000	0.0000	0			0			
	6	0.0000	0.0000	0			0			
	7	0.0000	0.0000	0			0			
Non-Tidal 1	1	0.0000	0.0000	0			0			
	2	0.0000	0.0000	0			0			
	3	0.0000	0.0000	0			0			
	4	0.0000	0.0000	0			0			
	5	0.0000	0.0000	0			0			
	6	0.0000	0.0000	0			0			
	7	0.0000	0.0000	0			0			
Pooled Non-Tidal	1	0.0000	0.0000	0			0			
	2	0.0000	0.0000	0			0			
	3	0.0000	0.0000	0			0			
	4	0.0000	0.0000	0			0			
	5	0.0000	0.0000	0			0			
	6	0.0000	0.0000	0			0			
	7	0.0000	0.0000	0			0			
Tidal	1	0.0000	0.0000	0			0			
	2	0.0000	0.0000	0			0			
	3	0.0000	0.0000	0			0			
	4	0.0000	0.0000	0			0			
	5	0.0000	0.0000	0			0			
	6	0.0000	0.0000	0			0			
	7	0.0000	0.0000	0			0			
All	1	0.0000	0.0000	0			0			
	2	0.0000	0.0000	0			0			
	3	0.0000	0.0000	0			0			
	4	0.0000	0.0000	0			0			
	5	0.0000	0.0000	0			0			
	6	0.0000	0.0000	0			0			
	7	0.0000	0.0000	0			0			
All	All	0.0000	0.0000	0			0			

Table D.6.4.4. Catch and harvest statistics (all anglers) for bluegill by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0			0.00
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.89		0			
	7	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0			0.00
	2	1.4371	0.0000	14	0.05		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.1905	0.0000	16	0.06		0			
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0			0.00
	2	1.4371	0.0000	14	0.05		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.89		0			
	7	0.1905	0.0000	16	0.06		0			
Tidal	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
All	1	0.0000	0.0000	0	0.00		0			0.00
	2	1.4371	0.0000	14	0.05		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	4.0000	0.0000	242	0.89		0			
	7	0.1905	0.0000	16	0.06		0			
All	All	1.7890	0.0000	272	1.00		0			0.00

**D.6.5 Targeted Effort Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Bluegill**



Table D.6.5.1. Targeted effort statistics by fishing mode for bluegill across the total study period, based on original temporal stratification and targeted effort (boat anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0096	0.0022	61	1.64	3.00	20	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0002	0.0000	12	3.59	2.78	4	1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0096	0.0014	82	2.22	10.50	8	1
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0002	0.0000	12	3.59	2.78	4	1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0030	0.0014	61	1.64	3.00	20	1
	7	0.0075	0.0014	82	2.22	10.50	8	1
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0007	0.0001	154	1.37	4.77	32	3
Tidal	All	0.0000	0.0000	0			0	0
All	All	0.0005	0.0000	154	1.37	4.77	32	3

Table D.6.5.2. Targeted effort statistics by fishing mode for bluegill across the total study period, based on original temporal stratification and targeted effort (shore anglers)

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0000	0.0000	0				0
Tidal	All	0.0000	0.0000	0				0
All	All	0.0000	0.0000	0				0

Table D.6.5.3. Targeted effort statistics by fishing mode for bluegill across the total study period, based on original temporal stratification and targeted effort (all anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0096	0.0022	61	1.64	3.00	20	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0002	0.0000	12	3.59	2.78	4	1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0096	0.0014	82	2.22	10.50	8	1
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0002	0.0000	12	3.59	2.78	4	1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0030	0.0014	61	1.64	3.00	20	1
	7	0.0075	0.0014	82	2.22	10.50	8	1
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0007	0.0001	154	1.37	4.77	32	3
Tidal	All	0.0000	0.0000	0			0	0
All	All	0.0005	0.0000	154	1.37	4.77	32	3





**D.6.6 Targeted Effort Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours) for Bluegill**



Table D.6.6.1. Targeted effort statistics (boat anglers) for bluegill by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0096	0.0022	61	1.64	3.00	20	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0004	0.0000	10	2.64	2.78	4	1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0096	0.0000	82	0.25	10.50	8	1
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0003	0.0000	10	2.64	2.78	4	1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0030	0.0014	61	1.64	3.00	20	1
	7	0.0075	0.0000	82	0.25	10.50	8	1
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0007	0.0000	152	0.69	4.82	32	3
Tidal	All	0.0000	0.0000	0			0	0
All	All	0.0004	0.0000	152	0.69	4.82	32	3

Table D.6.6.2. Targeted effort statistics (shore anglers) for bluegill by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0000	0.0000	0				0
Tidal	All	0.0000	0.0000	0				0
All	All	0.0000	0.0000	0				0

Table D.6.6.3. Targeted effort statistics (all anglers) for bluegill by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0064	0.0015	61	1.64	3.00	20	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0003	0.0000	10	2.64	2.78	4	1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0074	0.0000	82	0.25	10.50	8	1
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0002	0.0000	10	2.64	2.78	4	1
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0024	0.0010	61	1.64	3.00	20	1
	7	0.0059	0.0000	82	0.25	10.50	8	1
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0005	0.0000	152	0.69	4.82	32	3
Tidal	All	0.0000	0.0000	0			0	0
All	All	0.0004	0.0000	152	0.69	4.82	32	3



## **D.7 LARGEMOUTH BASS**





**D.7.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**



Table D.7.1.1 Catch and harvest statistics by fishing mode for largemouth bass across the total study period, based on original stratification.									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0003	0.0000	15	0.00	1.02	0	0.00		0.00
Non-Tidal 1	0.0016	0.0000	260	0.03	0.75	0	0.00		0.00
Pooled Non-Tidal	0.0013	0.0000	274	0.03	0.71	0	0.00		0.00
Tidal	0.0798	0.0078	10086	0.97	0.34	981	1.00	0.91	0.10
All	0.0307	0.0029	10360	1.00	0.33	981	1.00	0.91	0.09
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0028	0.0029	69	0.29	0.69	0			0.00
Non-Tidal 1	0.0022	0.0017	43	0.18	1.10	0			0.00
Pooled Non-Tidal	0.0025	0.0023	112	0.47	0.60	0			0.00
Tidal	0.0092	0.0097	128	0.53	0.73	0			0.00
All	0.0038	0.0038	241	1.00	0.48	0			0.00
<b>All Anglers</b>									
Non-Tidal 2+3	0.0012	0.0000	84	0.01	0.60	0	0.00		0.00
Non-Tidal 1	0.0016	0.0000	303	0.03	0.66	0	0.00		0.00
Pooled Non-Tidal	0.0015	0.0000	387	0.04	0.53	0	0.00		0.00
Tidal	0.0732	0.0070	10214	0.96	0.34	981	1.00	0.91	0.10
All	0.0265	0.0024	10601	1.00	0.33	981	1.00	0.91	0.09

Table D.7.1.2. Catch and harvest statistics (boat anglers) for largemouth bass by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	1.02	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0024	0.0000	15	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00	0.90	0	0.00		0.00
	2	0.0008	0.0000	43	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0139	0.0000	217	0.02		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00	0.90	0	0.00		0.00
	2	0.0006	0.0000	43	0.00		0	0.00		
	3	0.0009	0.0000	15	0.00		0	0.00		
	4	0.0115	0.0000	217	0.02		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0111	0.0000	238	0.02	1.55	0	0.00	0.91	0.00
	2	0.0804	0.0201	3923	0.38	0.53	981	1.00		0.25
	3	0.1614	0.0000	1667	0.16	0.82	0	0.00		0.00
	4	0.0595	0.0000	986	0.10	0.65	0	0.00		0.00
	5	0.0465	0.0000	507	0.05	0.75	0	0.00		0.00
	6	0.1311	0.0000	1436	0.14	0.88	0	0.00		0.00
	7	0.1795	0.0000	1329	0.13	1.40	0	0.00		0.00
All	1	0.0031	0.0000	238	0.02	1.55	0	0.00	0.91	0.00
	2	0.0339	0.0084	3966	0.38	0.53	981	1.00		0.25
	3	0.0652	0.0000	1681	0.16	0.81	0	0.00		0.00
	4	0.0339	0.0000	1202	0.12	0.56	0	0.00		0.00
	5	0.0149	0.0000	507	0.05	0.75	0	0.00		0.00
	6	0.0462	0.0000	1436	0.14	0.88	0	0.00		0.00
	7	0.0726	0.0000	1329	0.13	1.40	0	0.00		0.00
All	All	0.0307	0.0029	10360	1.00	0.33	981	1.00	0.91	0.09

Table D.7.1.3. Catch and harvest statistics (shore anglers) for largemouth bass by geographic strata and original temporal strata											
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio	
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C	
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	0.79	0			0.00	
	2	0.0000	0.0000	0	0.00		0				
	3	0.0117	0.0000	60	0.25		0				
	4	0.0000	0.0000	0	0.00		0				
	5	0.0000	0.0000	0	0.00		0				
	6	0.0000	0.0000	0	0.00		0				
	7	0.0241	0.0000	10	0.04		1.03	0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00	1.10	0			0.00	
	2	0.0000	0.0000	0	0.00		0				
	3	0.0000	0.0000	0	0.00		0				
	4	0.0167	0.0000	43	0.18		0				
	5	0.0000	0.0000	0	0.00		0				
	6	0.0000	0.0000	0	0.00		0				
	7	0.0000	0.0000	0	0.00		0				
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00	0.79	0			0.00	
	2	0.0000	0.0000	0	0.00		0				
	3	0.0096	0.0000	60	0.25		0				
	4	0.0075	0.0000	43	0.18		1.10	0			
	5	0.0000	0.0000	0	0.00		0				
	6	0.0000	0.0000	0	0.00		0				
	7	0.0034	0.0000	10	0.04		1.03	0			
Tidal	1	0.0000	0.0000	0	0.00	1.19	0			0.00	
	2	0.0172	0.0000	42	0.17		1.22	0			
	3	0.0316	0.0000	7	0.03		1.43	0			
	4	0.0512	0.0000	24	0.10		1.08	0			
	5	0.0071	0.0000	16	0.07		1.71	0			
	6	0.0487	0.0000	40	0.17		0				
	7	0.0000	0.0000	0	0.00		0				
All	1	0.0000	0.0000	0	0.00	1.19	0			0.00	
	2	0.0021	0.0000	42	0.17		0.72	0			
	3	0.0103	0.0000	66	0.28		0.87	0			
	4	0.0107	0.0000	67	0.28		1.08	0			
	5	0.0017	0.0000	16	0.07		1.71	0			
	6	0.0063	0.0000	40	0.17		1.03	0			
	7	0.0019	0.0000	10	0.04		0				
All	All	0.0038	0.0000	241	1.00	0.48	0			0.00	

Table D.7.1.4. Catch and harvest statistics (all anglers) for largemouth bass by geographic strata and months										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	0.66	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0066	0.0000	74	0.01		0	0.00		
	4	0.0000	0.0000	0	0.00	0	0.00			
	5	0.0000	0.0000	0	0.00	0	0.00			
	6	0.0000	0.0000	0	0.00	0	0.00			
	7	0.0035	0.0000	10	0.00	1.03	0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00	0.90	0	0.00		0.00
	2	0.0007	0.0000	43	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0143	0.0000	260	0.02	0.76	0	0.00		
	5	0.0000	0.0000	0	0.00	0	0.00			
	6	0.0000	0.0000	0	0.00	0	0.00			
	7	0.0000	0.0000	0	0.00	0	0.00			
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00	0.90	0	0.00		0.00
	2	0.0005	0.0000	43	0.00		0	0.00		
	3	0.0034	0.0000	74	0.01		0.66	0		
	4	0.0106	0.0000	260	0.02	0.76	0	0.00		
	5	0.0000	0.0000	0	0.00	0	0.00			
	6	0.0000	0.0000	0	0.00	0	0.00			
	7	0.0007	0.0000	10	0.00	1.03	0	0.00		
Tidal	1	0.0091	0.0000	238	0.02	1.55	0	0.00	0.91	0.00
	2	0.0774	0.0192	3965	0.37	0.53	981	1.00		
	3	0.1588	0.0000	1674	0.16	0.82	0	0.00		
	4	0.0593	0.0000	1009	0.10	0.64	0	0.00		
	5	0.0399	0.0000	523	0.05	0.73	0	0.00		
	6	0.1253	0.0000	1477	0.14	0.85	0	0.00		
	7	0.1356	0.0000	1329	0.13	1.40	0	0.00		
All	1	0.0028	0.0000	238	0.02	1.55	0	0.00	0.91	0.00
	2	0.0292	0.0071	4008	0.38	0.52	981	1.00		
	3	0.0542	0.0000	1748	0.16	0.78	0	0.00		
	4	0.0305	0.0000	1269	0.12	0.53	0	0.00		
	5	0.0121	0.0000	523	0.05	0.73	0	0.00		
	6	0.0394	0.0000	1477	0.14	0.85	0	0.00		
	7	0.0567	0.0000	1339	0.13	1.39	0	0.00		
All	All	0.0265	0.0024	10601	1.00	0.33	981	1.00	0.91	0.09

**D.7.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**





Table D.7.2.1. Catch and harvest statistics by fishing mode for largemouth bass across the total study period, based on monthly post-stratification									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0004	0.0000	23	0.00	1.02	0	0.00		0.00
Non-Tidal 1	0.0016	0.0000	286	0.02	0.72	0	0.00		0.00
Pooled Non-Tidal	0.0014	0.0000	309	0.02	0.67	0	0.00		0.00
Tidal	0.1013	0.0160	13714	0.98	0.33	2170	1.00	0.81	0.16
All	0.0387	0.0060	14023	1.00	0.32	2170	1.00	0.81	0.15
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0012	0.0000	34	0.15	0.75	0			0.00
Non-Tidal 1	0.0019	0.0000	50	0.22	1.13	0			0.00
Pooled Non-Tidal	0.0015	0.0000	85	0.37	0.74	0			0.00
Tidal	0.0099	0.0000	143	0.63	0.81	0			0.00
All	0.0033	0.0000	227	1.00	0.58	0			0.00
<b>All Anglers</b>									
Non-Tidal 2+3	0.0007	0.0000	57	0.00	0.61	0	0.00		0.00
Non-Tidal 1	0.0017	0.0000	337	0.02	0.64	0	0.00		0.00
Pooled Non-Tidal	0.0014	0.0000	393	0.03	0.55	0	0.00		0.00
Tidal	0.0925	0.0145	13856	0.97	0.32	2170	1.00	0.81	0.16
All	0.0330	0.0050	14250	1.00	0.31	2170	1.00	0.81	0.15

Table D.7.2.2. Catch and harvest statistics (boat anglers) for largemouth bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	1.02	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0032	0.0000	23	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00	0.78	0	0.00		0.00
	2	0.0017	0.0000	47	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0112	0.0000	240	0.02		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00	0.78	0	0.00		0.00
	2	0.0012	0.0000	47	0.00		0	0.00		
	3	0.0012	0.0000	23	0.00		0	0.00		
	4	0.0092	0.0000	240	0.02		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0290	0.0017	1070	0.08	0.93	63	0.03	1.20	0.06
	2	0.1910	0.0606	6647	0.47	0.53	2107	0.97	0.83	0.32
	3	0.0409	0.0000	519	0.04	1.19	0	0.00		0.00
	4	0.1016	0.0000	2206	0.16	0.52	0	0.00		0.00
	5	0.0465	0.0000	507	0.04	0.75	0	0.00		0.00
	6	0.1311	0.0000	1436	0.10	0.88	0	0.00		0.00
	7	0.1795	0.0000	1329	0.09	1.35	0	0.00		0.00
All	1	0.0084	0.0005	1070	0.08	0.93	63	0.03	1.20	0.06
	2	0.0919	0.0289	6693	0.48	0.52	2107	0.97	0.83	0.31
	3	0.0175	0.0000	541	0.04	1.14	0	0.00		0.00
	4	0.0512	0.0000	2445	0.17	0.48	0	0.00		0.00
	5	0.0149	0.0000	507	0.04	0.75	0	0.00		0.00
	6	0.0462	0.0000	1436	0.10	0.88	0	0.00		0.00
	7	0.0726	0.0000	1329	0.09	1.35	0	0.00		0.00
All	All	0.0387	0.0060	14023	1.00	0.32	2170	1.00	0.81	0.15

Table D.7.2.3. Catch and harvest statistics (shore anglers) for largemouth bass by geographic strata and monthly post-strata											
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio	
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C	
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	0.96	0			0.00	
	2	0.0000	0.0000	0	0.00		0				
	3	0.0000	0.0000	0	0.00		0				
	4	0.0051	0.0000	24	0.11		0				
	5	0.0000	0.0000	0	0.00		0				
	6	0.0000	0.0000	0	0.00		0				
	7	0.0241	0.0000	10	0.04		1.03	0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00	1.13	0			0.00	
	2	0.0000	0.0000	0	0.00		0				
	3	0.0000	0.0000	0	0.00		0				
	4	0.0142	0.0000	50	0.22		0				
	5	0.0000	0.0000	0	0.00		0				
	6	0.0000	0.0000	0	0.00		0				
	7	0.0000	0.0000	0	0.00		0				
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00	0.82	0			0.00	
	2	0.0000	0.0000	0	0.00		0				
	3	0.0000	0.0000	0	0.00		0				
	4	0.0090	0.0000	75	0.33		0				
	5	0.0000	0.0000	0	0.00		0				
	6	0.0000	0.0000	0	0.00		0				
	7	0.0034	0.0000	10	0.04		1.03	0			
Tidal	1	0.0000	0.0000	0	0.00	1.47	0			0.00	
	2	0.0212	0.0000	59	0.26		1.21	0			
	3	0.0328	0.0000	9	0.04		1.45	0			
	4	0.0483	0.0000	18	0.08		1.08	0			
	5	0.0071	0.0000	16	0.07		1.71	0			
	6	0.0487	0.0000	40	0.18		0				
	7	0.0000	0.0000	0	0.00		0				
All	1	0.0000	0.0000	0	0.00	1.47	0			0.00	
	2	0.0044	0.0000	59	0.26		1.21	0			
	3	0.0012	0.0000	9	0.04		1.45	0			
	4	0.0107	0.0000	93	0.41		1.08	0			
	5	0.0017	0.0000	16	0.07		1.71	0			
	6	0.0063	0.0000	40	0.18		0				
	7	0.0019	0.0000	10	0.04		1.03	0			
All	All	0.0033	0.0000	227	1.00	0.58	0			0.00	

Table D.7.2.4. Catch and harvest statistics (all anglers) for largemouth bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0017	0.0000	23	0.00	1.02	0	0.00		0.00
	4	0.0026	0.0000	24	0.00	0.96	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0035	0.0000	10	0.00	1.03	0	0.00		0.00
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0014	0.0000	47	0.00	0.78	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0117	0.0000	290	0.02	0.73	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0010	0.0000	47	0.00	0.78	0	0.00		0.00
	3	0.0009	0.0000	23	0.00	1.02	0	0.00		0.00
	4	0.0091	0.0000	314	0.02	0.67	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0007	0.0000	10	0.00	1.03	0	0.00		0.00
Tidal	1	0.0253	0.0015	1070	0.08	0.93	63	0.03	1.20	0.06
	2	0.1784	0.0561	6706	0.47	0.52	2107	0.97	0.83	0.31
	3	0.0407	0.0000	528	0.04	1.17	0	0.00		0.00
	4	0.1007	0.0000	2224	0.16	0.52	0	0.00		0.00
	5	0.0399	0.0000	523	0.04	0.73	0	0.00		0.00
	6	0.1253	0.0000	1477	0.10	0.85	0	0.00		0.00
	7	0.1356	0.0000	1329	0.09	1.35	0	0.00		0.00
All	1	0.0073	0.0004	1070	0.08	0.93	63	0.03	1.20	0.06
	2	0.0783	0.0244	6752	0.47	0.52	2107	0.97	0.83	0.31
	3	0.0142	0.0000	551	0.04	1.12	0	0.00		0.00
	4	0.0449	0.0000	2538	0.18	0.46	0	0.00		0.00
	5	0.0121	0.0000	523	0.04	0.73	0	0.00		0.00
	6	0.0394	0.0000	1477	0.10	0.85	0	0.00		0.00
	7	0.0567	0.0000	1339	0.09	1.34	0	0.00		0.00
All	All	0.0330	0.0050	14250	1.00	0.31	2170	1.00	0.81	0.15

**D.7.3 Catch and Harvest Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Largemouth Bass**



Table D.7.3.1. Catch and harvest statistics by fishing mode for largemouth bass across the total study period, based on original temporal stratification and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	0.0000	0.0000	0	0.00		0			
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0			
Tidal	0.5837	0.0171	9249	1.00	0.50	271	1.00	1.00	0.03
All	0.5132	0.0150	9249	1.00	0.50	271	1.00	1.00	0.03
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	0.0000	0.0000	0	0.00		0			
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0			
Tidal	0.1216	0.0000	5	1.00	2.22	0			0.00
All	0.0701	0.0000	5	1.00	2.22	0			0.00
<b>All Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	0.0000	0.0000	0	0.00		0			
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0			
Tidal	0.5824	0.0170	9254	1.00	0.50	271	1.00	1.00	0.03
All	0.5113	0.0149	9254	1.00	0.50	271	1.00	1.00	0.03

Table D.7.3.2. Catch and harvest statistics (boat anglers) for largemouth bass by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.4187	0.0739	1533	0.17	1.04	271	1.00	1.00	0.18
	3	0.7778	0.0000	3278	0.35	0.94	0	0.00		0.00
	4	0.4950	0.0000	1091	0.12	1.17	0	0.00		0.00
	5	0.2564	0.0000	342	0.04	1.30	0	0.00		0.00
	6	0.5926	0.0000	1967	0.21	1.42	0	0.00		0.00
	7	0.9333	0.0000	1038	0.11		0	0.00		0.00
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.2730	0.0482	1533	0.17	1.04	271	1.00	1.00	0.18
	3	0.7778	0.0000	3278	0.35	0.94	0	0.00		0.00
	4	0.4950	0.0000	1091	0.12	1.17	0	0.00		0.00
	5	0.2564	0.0000	342	0.04	1.30	0	0.00		0.00
	6	0.5553	0.0000	1967	0.21	1.42	0	0.00		0.00
	7	0.9333	0.0000	1038	0.11		0	0.00		0.00
All	All	0.5132	0.0150	9249	1.00	0.50	271	1.00	1.00	0.03



Table D.7.3.3. Catch and harvest statistics (shore anglers) for largemouth bass by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Tidal	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.1250	0.0000	5	1.00	2.22	0			0.00
	6	10.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
All	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0712	0.0000	5	1.00	2.22	0			0.00
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
All	All	0.0701	0.0000	5	1.00	2.22	0			0.00

Table D.7.3.4. Catch and harvest statistics (all anglers) for largemouth bass by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.4187	0.0739	1533	0.17	1.04	271	1.00	1.00	0.18
	3	0.7778	0.0000	3278	0.35	0.94	0	0.00		0.00
	4	0.4947	0.0000	1091	0.12	1.17	0	0.00		0.00
	5	0.2523	0.0000	348	0.04	1.28	0	0.00		0.00
	6	0.5926	0.0000	1967	0.21	1.42	0	0.00		0.00
	7	0.9333	0.0000	1038	0.11		0	0.00		0.00
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.2730	0.0482	1533	0.17	1.04	271	1.00	1.00	0.18
	3	0.7778	0.0000	3278	0.35	0.94	0	0.00		0.00
	4	0.4947	0.0000	1091	0.12	1.17	0	0.00		0.00
	5	0.2464	0.0000	348	0.04	1.28	0	0.00		0.00
	6	0.5553	0.0000	1967	0.21	1.42	0	0.00		0.00
	7	0.9333	0.0000	1038	0.11		0	0.00		0.00
All	All	0.5113	0.0149	9254	1.00	0.50	271	1.00	1.00	0.03

**D.7.4 Catch and Harvest Statistics Based on Monthly Post-Stratification and Targeted Effort (Angler Hours) for Largemouth Bass**



Table D.7.4.1. Catch and harvest statistics by fishing mode for largemouth bass across the total study period, based on monthly post-strata and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0	0.00		
Tidal	0.5658	0.0282	9177	1.00	0.51	458	1.00	1.06	0.05
All	0.5085	0.0254	9177	1.00	0.51	458	1.00	1.06	0.05
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	0.0000	0.0000	0	0.00		0			
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0			
Tidal	0.1216	0.0000	5	1.00		0			0.00
All	0.0701	0.0000	5	1.00		0			0.00
<b>All Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0	0.00		
Tidal	0.5646	0.0281	9183	1.00	0.51	458	1.00	1.06	0.05
All	0.5066	0.0252	9183	1.00	0.51	458	1.00	1.06	0.05

Table D.7.4.2. Catch and harvest statistics (boat anglers) for largemouth bass by geographic strata and monthly post-strata, based on targeted effort (angler hours)

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.2788	0.0000	582	0.06	1.22	0	0.00	1.06	0.00
	2	0.6452	0.1935	1525	0.17	1.12	458	1.00	1.06	0.30
	3	0.3975	0.0000	835	0.09	1.49	0	0.00	1.06	0.00
	4	0.7398	0.0000	2888	0.31	1.00	0	0.00	1.06	0.00
	5	0.2564	0.0000	342	0.04	2.20	0	0.00	1.06	0.00
	6	0.5926	0.0000	1967	0.21	1.42	0	0.00	1.06	0.00
	7	0.9333	0.0000	1038	0.11		0	0.00	1.06	0.00
All	1	0.2788	0.0000	582	0.06	1.22	0	0.00	1.06	0.00
	2	0.3841	0.1152	1525	0.17	1.12	458	1.00	1.06	0.30
	3	0.3975	0.0000	835	0.09	1.49	0	0.00	1.06	0.00
	4	0.7398	0.0000	2888	0.31	1.00	0	0.00	1.06	0.00
	5	0.2564	0.0000	342	0.04	2.20	0	0.00	1.06	0.00
	6	0.5553	0.0000	1967	0.21	1.42	0	0.00	1.06	0.00
	7	0.9333	0.0000	1038	0.11		0	0.00	1.06	0.00
All	All	0.5085	0.0254	9177	1.00	0.51	458	1.00	1.06	0.05

Table D.7.4.3. Catch and harvest statistics (shore anglers) for largemouth bass by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
Tidal	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.1250	0.0000	5	1.00	2.22	0			0.00
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
All	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0712	0.0000	5	1.00	2.22	0			0.00
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
All	All	0.0701	0.0000	5	1.00	2.22	0			0.00

Table D.7.4.4. Catch and harvest statistics (all anglers) for largemouth bass by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.2788	0.0000	582	0.06	1.22	0	0.00		0.00
	2	0.6452	0.1935	1525	0.17	1.12	458	1.00	1.06	0.30
	3	0.3975	0.0000	835	0.09	1.49	0	0.00		0.00
	4	0.7396	0.0000	2888	0.31	1.00	0	0.00		0.00
	5	0.2523	0.0000	348	0.04	2.16	0	0.00		0.00
	6	0.5926	0.0000	1967	0.21	1.42	0	0.00		0.00
	7	0.9333	0.0000	1038	0.11		0	0.00		0.00
All	1	0.2788	0.0000	582	0.06	1.22	0	0.00		0.00
	2	0.3841	0.1152	1525	0.17	1.12	458	1.00	1.06	0.30
	3	0.3975	0.0000	835	0.09	1.49	0	0.00		0.00
	4	0.7396	0.0000	2888	0.31	1.00	0	0.00		0.00
	5	0.2464	0.0000	348	0.04	2.16	0	0.00		0.00
	6	0.5553	0.0000	1967	0.21	1.42	0	0.00		0.00
	7	0.9333	0.0000	1038	0.11		0	0.00		0.00
All	All	0.5066	0.0252	9183	1.00	0.51	458	1.00	1.06	0.05



**D.7.5 Targeted Effort Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Largemouth Bass**



Table D.7.5.1. Targeted effort statistics by fishing mode for largemouth bass across the total study period, based on original temporal stratification and targeted effort (boat anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0381	0.5306	1954	3.59	3.92	499	2
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0162	0.0780	223	1.98			0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0287	0.4831	1954	3.59	3.92	499	2
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0111	0.0274	223	1.98			0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0751	0.2233	3662	1.02	6.03	608	18
	3	0.4082	0.4755	4214	0.80	4.47	943	8
	4	0.1329	0.8143	2203	1.13	3.78	583	15
	5	0.1225	0.4157	1334	1.28	4.50	297	5
	6	0.3031	12.7303	3319	1.36	4.50	738	3
	7	0.1503	0.3911	1113	1.34	15.00	74	1
Non-Tidal	All	0.0103	0.0777	2177	3.23	4.36	499	2
Tidal	All	0.1254	0.1945	15846	0.47	4.89	3241	50
All	All	0.0534	0.1145	18023	0.57	4.82	3740	52

Table D.7.5.2. Targeted effort statistics by fishing mode for largemouth bass across the total study period, based on original temporal stratification and targeted effort (shore anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0078	0.0176	33	2.23	0.50	65	1
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0046	0.0116	33	2.23	0.50	65	1
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0026	0.0000	1	1.00			1
	5	0.0195	0.8493	43	2.22	8.00	5	1
	6	0.0000	0.0000	0				1
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0007	0.0003	33	2.23	0.50	65	1
Tidal	All	0.0034	0.0013	45	0.15	8.23	5	3
All	All	0.0012	0.0005	77	0.95	1.09	71	4

Table D.7.5.3. Targeted effort statistics by fishing mode for largemouth bass across the total study period, based on original temporal stratification and targeted effort (all anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0328	0.5146	1954	3.59	3.92	499	2
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0015	0.0015	33	2.23	0.50	65	1
	6	0.0137	0.0553	223	1.98			0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0227	0.4342	1954	3.59	3.92	499	2
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0011	0.0011	33	2.23	0.50	65	1
	6	0.0087	0.0190	223	1.98			0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0	0.47			0
	2	0.0715	0.2124	3662	0.47	6.03	608	18
	3	0.3998	0.4752	4214	0.47	4.47	943	8
	4	0.1294	0.7907	2204	0.47	3.61	611	16
	5	0.1051	0.1049	1378	0.47	5.08	271	6
	6	0.2817	9.5024	3319	0.47	3.63	916	4
	7	0.1135	0.3571	1113	0.47	15.00	74	1
Non-Tidal	All	0.0085	0.0752	2210	3.18	3.92	564	3
Tidal	All	0.1138	0.1826	15890	0.47	4.64	3422	53
All	All	0.0452	0.1089	18100	0.56	4.54	3987	56



**D.7.6 Targeted Effort Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours) for Largemouth Bass**





Table D.7.6.1. Targeted effort statistics (boat anglers) for largemouth bass by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0581	0.4670	1607	2.64	3.92	410	2
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0162	0.0780	223	1.98			0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0423	0.3795	1607	2.64	3.92	410	2
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0111	0.0274	223	1.98			0
	7	0.0000	0.0000	0				0
Tidal	1	0.0565	0.0151	2086	1.19	5.54	377	14
	2	0.0679	0.0541	2364	1.07	7.75	305	4
	3	0.1655	0.1153	2099	1.22	5.25	400	5
	4	0.1798	1.3219	3904	0.94	3.68	1061	18
	5	0.1225	1.2123	1334	2.18	4.50	297	5
	6	0.3031	12.7303	3319	1.36	4.50	738	3
	7	0.1503	0.3406	1113	1.34	15.00	74	1
Non-Tidal	All	0.0081	0.0287	1829	2.34	4.46	410	2
Tidal	All	0.1198	0.1047	16220	0.46	4.99	3251	50
All	All	0.0498	0.0658	18049	0.48	4.93	3661	52

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0078	0.0176	33	2.23	0.50	65	1
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0046	0.0116	33	2.23	0.50	65	1
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0022	0.0000	1	1.00	1.00	1	1
	5	0.0195	0.8493	43	2.22	8.00	5	1
	6	0.0000	0.0000	0		1.00	0	1
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0006	0.0001	33	2.23	0.50	65	1
Tidal	All	0.0031	0.0007	45	0.15	7.15	6	3
All	All	0.0011	0.0003	77	0.95	1.08	72	4

Table D.7.6.3. Targeted effort statistics (all anglers) for largemouth bass by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0501	0.4588	1607	2.64	3.92	410	2
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0015	0.0015	33	2.23	0.50	65	1
	6	0.0137	0.0553	223	1.98			0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0330	0.3301	1607	2.64	3.92	410	2
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0011	0.0011	33	2.23	0.50	65	1
	6	0.0087	0.0190	223	1.98			0
	7	0.0000	0.0000	0				0
Tidal	1	0.0492	0.0150	2086	1.19	5.54	377	14
	2	0.0629	0.0508	2364	1.07	7.75	305	4
	3	0.1618	0.1153	2099	1.22	5.25	400	5
	4	0.1769	1.3025	3905	0.94	3.54	1104	19
	5	0.1051	0.1049	1378	2.11	5.08	271	6
	6	0.2817	9.5024	3319	1.36	3.63	916	4
	7	0.1135	0.3145	1113	1.34	15.00	74	1
Non-Tidal	All	0.0066	0.0269	1862	2.29	3.92	476	3
Tidal	All	0.1086	0.1025	16264	0.46	4.72	3446	53
All	All	0.0419	0.0630	18126	0.48	4.62	3922	56



**D.8 ROCK BASS**



**D.8.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**





Table D.8.1.1 Catch and harvest statistics by fishing mode for rock bass across the total study period, based on original stratification.									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0353	0.0018	1568	0.36	0.36	78	1.00	0.66	0.05
Non-Tidal 1	0.0166	0.0000	2765	0.64	0.51	0	0.00		0.00
Pooled Non-Tidal	0.0205	0.0004	4334	1.00	0.35	78	1.00	0.66	0.02
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	0.0128	0.0002	4334	1.00	0.35	78	1.00	0.66	0.02
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0396	0.0158	958	0.26	0.70	383	0.86	0.99	0.40
Non-Tidal 1	0.1064	0.0024	2684	0.74	0.71	61	0.14	0.90	0.02
Pooled Non-Tidal	0.0737	0.0090	3642	1.00	0.56	444	1.00	0.86	0.12
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	0.0581	0.0071	3642	1.00	0.56	444	1.00	0.86	0.12
<b>All Anglers</b>									
Non-Tidal 2+3	0.0368	0.0067	2526	0.32	0.35	461	0.88	0.83	0.18
Non-Tidal 1	0.0284	0.0003	5449	0.68	0.43	61	0.12	0.90	0.01
Pooled Non-Tidal	0.0306	0.0020	7976	1.00	0.32	522	1.00	0.74	0.07
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	0.0199	0.0013	7976	1.00	0.32	522	1.00	0.74	0.07

Table D.8.1.2. Catch and harvest statistics (boat anglers) for rock bass by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.2058	0.0095	1275	0.29	0.42	59	0.75	0.82	0.05
	4	0.0150	0.0000	49	0.01	0.65	0	0.00		0.00
	5	0.0208	0.0035	116	0.03	0.48	19	0.25	0.90	0.17
	6	0.0201	0.0000	128	0.03	1.14	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0749	0.0000	695	0.16	0.86	0	0.00		0.00
	4	0.0557	0.0000	866	0.20	1.02	0	0.00		0.00
	5	0.0615	0.0000	1080	0.25	0.83	0	0.00		0.00
	6	0.0090	0.0000	124	0.03	0.99	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.1273	0.0038	1970	0.45	0.41	59	0.75	0.82	0.03
	4	0.0486	0.0000	915	0.21	0.97	0	0.00		0.00
	5	0.0517	0.0008	1197	0.28	0.75	19	0.25	0.90	0.02
	6	0.0125	0.0000	252	0.06	0.76	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0763	0.0023	1970	0.45	0.41	59	0.75	0.82	0.03
	4	0.0258	0.0000	915	0.21	0.97	0	0.00		0.00
	5	0.0351	0.0006	1197	0.28	0.75	19	0.25	0.90	0.02
	6	0.0081	0.0000	252	0.06	0.76	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0128	0.0002	4334	1.00	0.35	78	1.00	0.66	0.02

Table D.8.1.3. Catch and harvest statistics (shore anglers) for rock bass by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0585	0.0234	298	0.08	0.88	119	0.27	1.15	0.40
	4	0.0067	0.0000	21	0.01	0.95	0	0.00		0.00
	5	0.0693	0.0000	200	0.05	0.97	0	0.00		0.00
	6	0.1425	0.0855	440	0.12	1.34	264	0.59	1.34	0.60
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.2203	0.0073	1848	0.51	0.98	61	0.14	0.90	0.03
	3	0.2211	0.0000	250	0.07	1.49	0	0.00		0.00
	4	0.0167	0.0000	43	0.01	1.10	0	0.00		0.00
	5	0.0294	0.0000	123	0.03	0.90	0	0.00		0.00
	6	0.1678	0.0000	421	0.12	1.11	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.1031	0.0034	1848	0.51	0.98	61	0.14	0.90	0.03
	3	0.0880	0.0191	547	0.15	0.83	119	0.27	1.15	0.22
	4	0.0112	0.0000	64	0.02	0.80	0	0.00		0.00
	5	0.0456	0.0000	323	0.09	0.69	0	0.00		0.00
	6	0.1538	0.0472	860	0.24	0.87	264	0.59	1.34	0.31
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0908	0.0030	1848	0.51	0.98	61	0.14	0.90	0.03
	3	0.0850	0.0185	547	0.15	0.83	119	0.27	1.15	0.22
	4	0.0103	0.0000	64	0.02	0.80	0	0.00		0.00
	5	0.0347	0.0000	323	0.09	0.69	0	0.00		0.00
	6	0.1339	0.0411	860	0.24	0.87	264	0.59	1.34	0.31
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0581	0.0071	3642	1.00	0.56	444	1.00	0.86	0.12

Table D.8.1.4. Catch and harvest statistics (all anglers) for rock bass by geographic strata and months										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.1394	0.0157	1573	0.20	0.38	178	0.34	0.82	0.11
	4	0.0109	0.0000	70	0.01	0.54	0	0.00		0.00
	5	0.0373	0.0023	316	0.04	0.64	19	0.04	0.90	0.06
	6	0.0602	0.0280	567	0.07	1.07	264	0.51	1.34	0.47
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0310	0.0010	1848	0.23	0.98	61	0.12	0.90	0.03
	3	0.0907	0.0000	945	0.12	0.75	0	0.00		0.00
	4	0.0501	0.0000	909	0.11	0.97	0	0.00		0.00
	5	0.0553	0.0000	1203	0.15	0.75	0	0.00		0.00
	6	0.0334	0.0000	545	0.07	0.89	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0215	0.0007	1848	0.23	0.98	61	0.12	0.90	0.03
	3	0.1160	0.0082	2517	0.32	0.37	178	0.34	0.82	0.07
	4	0.0398	0.0000	980	0.12	0.91	0	0.00		0.00
	5	0.0503	0.0006	1519	0.19	0.61	19	0.04	0.90	0.01
	6	0.0432	0.0103	1112	0.14	0.70	264	0.51	1.34	0.24
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0135	0.0004	1848	0.23	0.98	61	0.12	0.90	0.03
	3	0.0781	0.0055	2517	0.32	0.37	178	0.34	0.82	0.07
	4	0.0235	0.0000	980	0.12	0.91	0	0.00		0.00
	5	0.0351	0.0004	1519	0.19	0.61	19	0.04	0.90	0.01
	6	0.0297	0.0070	1112	0.14	0.70	264	0.51	1.34	0.24
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0199	0.0013	7976	1.00	0.32	522	1.00	0.74	0.07

**D.8.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**



Table D.82.1. Catch and harvest statistics by fishing mode for rock bass across the total study period, based on monthly post-stratification									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0425	0.0022	2164	0.41	0.34	110	1.00	0.62	0.05
Non-Tidal 1	0.0176	0.0000	3102	0.59	0.49	0	0.00		0.00
Pooled Non-Tidal	0.0232	0.0005	5266	1.00	0.32	110	1.00	0.62	0.02
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	0.0145	0.0003	5266	1.00	0.32	110	1.00	0.62	0.02
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0407	0.0162	1175	0.22	0.66	469	0.85	0.92	0.40
Non-Tidal 1	0.1557	0.0032	4149	0.78	0.66	85	0.15	0.87	0.02
Pooled Non-Tidal	0.0958	0.0100	5324	1.00	0.53	553	1.00	0.79	0.10
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	0.0762	0.0079	5324	1.00	0.53	553	1.00	0.79	0.10
<b>All Anglers</b>									
Non-Tidal 2+3	0.0418	0.0072	3340	0.32	0.32	578	0.87	0.75	0.17
Non-Tidal 1	0.0358	0.0004	7250	0.68	0.43	85	0.13	0.87	0.01
Pooled Non-Tidal	0.0375	0.0023	10590	1.00	0.31	663	1.00	0.66	0.06
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	0.0245	0.0015	10590	1.00	0.31	663	1.00	0.66	0.06

Table D.8.2.2. Catch and harvest statistics (boat anglers) for rock bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.2117	0.0128	1492	0.28	0.40	90	0.82	0.72	0.06
	4	0.0903	0.0000	428	0.08	0.95	0	0.00		0.00
	5	0.0208	0.0035	116	0.02	0.48	19	0.18	0.90	0.17
	6	0.0201	0.0000	128	0.02	1.14	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0842	0.0000	938	0.18	0.81	0	0.00		0.00
	4	0.0450	0.0000	959	0.18	0.98	0	0.00		0.00
	5	0.0615	0.0000	1080	0.21	0.83	0	0.00		0.00
	6	0.0090	0.0000	124	0.02	0.99	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.1335	0.0050	2430	0.46	0.40	90	0.82	0.72	0.04
	4	0.0532	0.0000	1387	0.26	0.74	0	0.00		0.00
	5	0.0517	0.0008	1197	0.23	0.75	19	0.18	0.90	0.02
	6	0.0125	0.0000	252	0.05	0.76	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0787	0.0029	2430	0.46	0.40	90	0.82	0.72	0.04
	4	0.0290	0.0000	1387	0.26	0.74	0	0.00		0.00
	5	0.0351	0.0006	1197	0.23	0.75	19	0.18	0.90	0.02
	6	0.0081	0.0000	252	0.05	0.76	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0145	0.0003	5266	1.00	0.32	110	1.00	0.62	0.02



Table D.8.2.3. Catch and harvest statistics (shore anglers) for rock bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0834	0.0334	512	0.10	0.91	205	0.37	1.19	0.40
	4	0.0051	0.0000	24	0.00	0.96	0	0.00		0.00
	5	0.0693	0.0000	200	0.04	0.97	0	0.00		0.00
	6	0.1425	0.0855	440	0.08	1.34	264	0.48	1.34	0.60
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0107	0.0107	85	0.02	0.87	85	0.15	0.87	1.00
	2	0.5906	0.0000	2612	0.49	0.93	0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.2552	0.0000	908	0.17	1.30	0	0.00		0.00
	5	0.0294	0.0000	123	0.02	0.90	0	0.00		0.00
	6	0.1678	0.0000	421	0.08	1.11	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0064	0.0064	85	0.02	0.87	85	0.15	0.87	1.00
	2	0.2456	0.0000	2612	0.49	0.93	0	0.00		0.00
	3	0.0667	0.0267	512	0.10	0.91	205	0.37	1.19	0.40
	4	0.1120	0.0000	933	0.18	1.26	0	0.00		0.00
	5	0.0456	0.0000	323	0.06	0.69	0	0.00		0.00
	6	0.1538	0.0472	860	0.16	0.87	264	0.48	1.34	0.31
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0045	0.0045	85	0.02	0.87	85	0.15	0.87	1.00
	2	0.1945	0.0000	2612	0.49	0.93	0	0.00		0.00
	3	0.0642	0.0257	512	0.10	0.91	205	0.37	1.19	0.40
	4	0.1072	0.0000	933	0.18	1.26	0	0.00		0.00
	5	0.0347	0.0000	323	0.06	0.69	0	0.00		0.00
	6	0.1339	0.0411	860	0.16	0.87	264	0.48	1.34	0.31
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0762	0.0079	5324	1.00	0.53	553	1.00	0.79	0.10

Table D.8.2.4. Catch and harvest statistics (all anglers) for rock bass by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.1520	0.0224	2004	0.19	0.38	295	0.44	0.85	0.15
	4	0.0476	0.0000	453	0.04	0.90	0	0.00		0.00
	5	0.0373	0.0023	316	0.03	0.64	19	0.03	0.90	0.06
	6	0.0602	0.0280	567	0.05	1.07	264	0.40	1.34	0.47
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0010	0.0010	85	0.01	0.87	85	0.13	0.87	1.00
	2	0.0814	0.0000	2612	0.25	0.93	0	0.00		0.00
	3	0.0739	0.0000	938	0.09	0.81	0	0.00		0.00
	4	0.0750	0.0000	1867	0.18	0.81	0	0.00		0.00
	5	0.0553	0.0000	1203	0.11	0.75	0	0.00		0.00
	6	0.0334	0.0000	545	0.05	0.89	0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0008	0.0008	85	0.01	0.87	85	0.13	0.87	1.00
	2	0.0537	0.0000	2612	0.25	0.93	0	0.00		0.00
	3	0.1137	0.0114	2942	0.28	0.36	295	0.44	0.85	0.10
	4	0.0674	0.0000	2320	0.22	0.67	0	0.00		0.00
	5	0.0503	0.0006	1519	0.14	0.61	19	0.03	0.90	0.01
	6	0.0432	0.0103	1112	0.11	0.70	264	0.40	1.34	0.24
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0006	0.0006	85	0.01	0.87	85	0.13	0.87	1.00
	2	0.0303	0.0000	2612	0.25	0.93	0	0.00		0.00
	3	0.0757	0.0076	2942	0.28	0.36	295	0.44	0.85	0.10
	4	0.0411	0.0000	2320	0.22	0.67	0	0.00		0.00
	5	0.0351	0.0004	1519	0.14	0.61	19	0.03	0.90	0.01
	6	0.0297	0.0070	1112	0.11	0.70	264	0.40	1.34	0.24
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0245	0.0015	10590	1.00	0.31	663	1.00	0.66	0.06

**D.8.3 Catch and Harvest Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Rock Bass**



Table D.8.3.1. Catch and harvest statistics by fishing mode for rock bass across the total study period, based on original temporal stratification and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	1.6303	0.0000	1639	0.69	1.65	0			0.00
Non-Tidal 1	0.6699	0.0000	751	0.31		0			0.00
Pooled Non-Tidal	1.1241	0.0000	2390	1.00	1.13	0			0.00
Tidal	0.0000	0.0000	0	0.00		0			
All	1.1241	0.0000	2390	1.00	1.13	0			0.00
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.6667	0.0000	11	0.04		0	0.00		0.00
Non-Tidal 1	2.1067	0.1535	246	0.96	1.42	18	1.00	1.49	0.07
Pooled Non-Tidal	1.9331	0.1350	257	1.00	1.36	18	1.00	1.49	0.07
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	1.9331	0.1350	257	1.00	1.36	18	1.00	1.49	0.07
<b>All Anglers</b>									
Non-Tidal 2+3	1.6152	0.0000	1650	0.62	1.64	0	0.00		0.00
Non-Tidal 1	0.8057	0.0145	997	0.38	0.35	18	1.00	1.49	0.02
Pooled Non-Tidal	1.1717	0.0079	2647	1.00	1.03	18	1.00	1.49	0.01
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	1.1717	0.0079	2647	1.00	1.03	18	1.00	1.49	0.01

Table D.8.3.2. Catch and harvest statistics (boat anglers) for rock bass by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	1.79	0			0.00
	2	0.0000	0.0000	0	0.00		0			
	3	1.6066	0.0000	1518	0.64		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	2.0000	0.0000	121	0.05		0			
	7	0.0000	0.0000	0	0.00		0			
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0			0.00
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	1.2727	0.0000	621	0.26		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.2051	0.0000	130	0.05		0			
	7	0.0000	0.0000	0	0.00		0			
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00	1.79	0			0.00
	2	0.0000	0.0000	0	0.00		0			
	3	1.6066	0.0000	1518	0.64		0			
	4	1.2727	0.0000	621	0.26		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.3620	0.0000	251	0.11		0			
	7	0.0000	0.0000	0	0.00		0			
Tidal	1	0.0000	0.0000	0	0.00		0			
	2	0.0000	0.0000	0	0.00		0			
	3	0.0000	0.0000	0	0.00		0			
	4	0.0000	0.0000	0	0.00		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.0000	0.0000	0	0.00		0			
	7	0.0000	0.0000	0	0.00		0			
All	1	0.0000	0.0000	0	0.00	1.79	0			0.00
	2	0.0000	0.0000	0	0.00		0			
	3	1.6066	0.0000	1518	0.64		0			
	4	1.2727	0.0000	621	0.26		0			
	5	0.0000	0.0000	0	0.00		0			
	6	0.3620	0.0000	251	0.11		0			
	7	0.0000	0.0000	0	0.00		0			
All	All	1.1241	0.0000	2390	1.00	1.13	0			0.00

Table D.8.3.3. Catch and harvest statistics (shore anglers) for rock bass by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.6667	0.0000	11	0.04		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00	2.05	0	0.00	1.49	0.11
	2	2.8079	0.2956	171	0.66		18	1.00		
	3	3.0000	0.0000	2	0.01		0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	1.3333	0.0000	74	0.29		0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00	2.05	0	0.00	1.49	0.11
	2	2.8079	0.2956	171	0.66		18	1.00		
	3	3.0000	0.0000	2	0.01		0	0.00		0.00
	4	0.6667	0.0000	11	0.04		0	0.00		
	5	1.3333	0.0000	74	0.29		0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00	2.05	0	0.00	1.49	0.11
	2	2.8079	0.2956	171	0.66		18	1.00		
	3	3.0000	0.0000	2	0.01		0	0.00		0.00
	4	0.6667	0.0000	11	0.04		0	0.00		
	5	1.3333	0.0000	74	0.29		0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	1.9331	0.1350	257	1.00	1.36	18	1.00	1.49	0.07

Table D.8.3.4. Catch and harvest statistics (all anglers) for rock bass by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	1.79	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	1.6066	0.0000	1518	0.57		0	0.00		
	4	0.6667	0.0000	11	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	2.0000	0.0000	121	0.05		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00	2.05	0	0.00	1.49	0.11
	2	2.8079	0.2956	171	0.06		18	1.00		
	3	3.0000	0.0000	2	0.00		0	0.00		
	4	1.2727	0.0000	621	0.23		0	0.00		
	5	1.3333	0.0000	74	0.03		0	0.00		
	6	0.2051	0.0000	130	0.05		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00	2.05	0	0.00	1.49	0.11
	2	2.8079	0.2956	171	0.06		18	1.00		
	3	1.6074	0.0000	1520	0.57		0	0.00		
	4	1.2535	0.0000	632	0.24		0	0.00		
	5	1.3333	0.0000	74	0.03		0	0.00		
	6	0.3620	0.0000	251	0.09		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00	2.05	0	0.00	1.49	0.11
	2	2.8079	0.2956	171	0.06		18	1.00		
	3	1.6074	0.0000	1520	0.57		0	0.00		
	4	1.2535	0.0000	632	0.24		0	0.00		
	5	1.3333	0.0000	74	0.03		0	0.00		
	6	0.3620	0.0000	251	0.09		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	1.1717	0.0079	2647	1.00	1.03	18	1.00	1.49	0.01



**D.8.4 Catch and Harvest Statistics Based on Monthly Post-Stratification and Targeted Effort (Angler Hours) for Rock Bass**



Table D.8.4.1. Catch and harvest statistics by fishing mode for rock bass across the total study period, based on monthly post-strata and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	1.6242	0.0000	2199	0.73	1.74	0			0.00
Non-Tidal 1	0.6920	0.0000	805	0.27		0			0.00
Pooled Non-Tidal	1.1934	0.0000	3004	1.00	1.28	0			0.00
Tidal	0.0000	0.0000	0	0.00		0			
All	1.1934	0.0000	3004	1.00	1.28	0			0.00
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.6667	0.0000	13	0.03		0	0.00		0.00
Non-Tidal 1	2.2762	0.1465	386	0.97	0.93	25	1.00		0.06
Pooled Non-Tidal	2.1105	0.1314	399	1.00	0.90	25	1.00		0.06
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	2.1105	0.1314	399	1.00	0.90	25	1.00		0.06
<b>All Anglers</b>									
Non-Tidal 2+3	1.6106	0.0000	2212	0.65	1.73	0	0.00		0.00
Non-Tidal 1	0.8938	0.0187	1192	0.35	0.30	25	1.00		0.02
Pooled Non-Tidal	1.2575	0.0092	3404	1.00	1.13	25	1.00		0.01
Tidal	0.0000	0.0000	0	0.00		0	0.00		
All	1.2575	0.0092	3404	1.00	1.13	25	1.00		0.01

Table D.8.4.2. Catch and harvest statistics (boat anglers) for rock bass by geographic strata and monthly post-strata, based on targeted effort (angler hours)

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio	
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C	
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	1.85	0			0.00	
	2	0.0000	0.0000	0	0.00		0				
	3	1.6066	0.0000	2078	0.69		0				
	4	0.0000	0.0000	0	0.00		0				
	5	0.0000	0.0000	0	0.00		0				
	6	2.0000	0.0000	121	0.04		0				0.00
	7	0.0000	0.0000	0	0.00		0				
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0			0.00	
	2	0.0000	0.0000	0	0.00		0				
	3	0.0000	0.0000	0	0.00		0				
	4	1.2727	0.0000	675	0.22		0				
	5	0.0000	0.0000	0	0.00		0				
	6	0.2051	0.0000	130	0.04		0				0.00
	7	0.0000	0.0000	0	0.00		0				
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00	1.85	0			0.00	
	2	0.0000	0.0000	0	0.00		0				
	3	1.6066	0.0000	2078	0.69		0				
	4	1.2727	0.0000	675	0.22		0				
	5	0.0000	0.0000	0	0.00		0				
	6	0.3620	0.0000	251	0.08		0				0.00
	7	0.0000	0.0000	0	0.00		0				
Tidal	1	0.0000	0.0000	0	0.00		0				
	2	0.0000	0.0000	0	0.00		0				
	3	0.0000	0.0000	0	0.00		0				
	4	0.0000	0.0000	0	0.00		0				
	5	0.0000	0.0000	0	0.00		0				
	6	0.0000	0.0000	0	0.00		0				
	7	0.0000	0.0000	0	0.00		0				
All	1	0.0000	0.0000	0	0.00	1.85	0			0.00	
	2	0.0000	0.0000	0	0.00		0				
	3	1.6066	0.0000	2078	0.69		0				
	4	1.2727	0.0000	675	0.22		0				
	5	0.0000	0.0000	0	0.00		0				
	6	0.3620	0.0000	251	0.08		0				0.00
	7	0.0000	0.0000	0	0.00		0				
All	All	1.1934	0.0000	3004	1.00	1.28	0			0.00	

Table D.8.4.3. Catch and harvest statistics (shore anglers) for rock bass by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.6667	0.0000	13	0.03		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.5581	0.5581	25	0.06	2.00	25	1.00		1.00
	2	5.3403	0.0000	180	0.45		0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		0.00
	4	3.0000	0.0000	108	0.27		0	0.00		0.00
	5	1.3333	0.0000	74	0.19		0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		0.00
Pooled Non-Tidal	1	0.5581	0.5581	25	0.06	2.00	25	1.00		1.00
	2	5.3403	0.0000	180	0.45		0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		0.00
	4	2.1788	0.0000	121	0.30		0	0.00		0.00
	5	1.3333	0.0000	74	0.19		0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		0.00
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.5581	0.5581	25	0.06	2.00	25	1.00		1.00
	2	5.3403	0.0000	180	0.45		0	0.00		0.00
	3	0.0000	0.0000	0	0.00		0	0.00		0.00
	4	2.1788	0.0000	121	0.30		0	0.00		0.00
	5	1.3333	0.0000	74	0.19		0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		0.00
	7	0.0000	0.0000	0	0.00		0	0.00		0.00
All	All	2.1105	0.1314	399	1.00	0.90	25	1.00		0.06

Table D.8.4.4. Catch and harvest statistics (all anglers) for rock bass by geographic strata and monthly post-strata, based on targeted effort (angler hours)

Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00	1.85	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	1.6066	0.0000	2078	0.61		0	0.00		
	4	0.6667	0.0000	13	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	2.0000	0.0000	121	0.04		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.5581	0.5581	25	0.01	2.00	25	1.00		1.00
	2	5.3403	0.0000	180	0.05		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	1.3822	0.0000	783	0.23		0	0.00		
	5	1.3333	0.0000	74	0.02		0	0.00		
	6	0.2051	0.0000	130	0.04		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.5581	0.5581	25	0.01	2.00	25	1.00		1.00
	2	5.3403	0.0000	180	0.05		0	0.00		
	3	1.6066	0.0000	2078	0.61		0	0.00		
	4	1.3584	0.0000	796	0.23		0	0.00		
	5	1.3333	0.0000	74	0.02		0	0.00		
	6	0.3620	0.0000	251	0.07		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.5581	0.5581	25	0.01	2.00	25	1.00		1.00
	2	5.3403	0.0000	180	0.05		0	0.00		
	3	1.6066	0.0000	2078	0.61		0	0.00		
	4	1.3584	0.0000	796	0.23		0	0.00		
	5	1.3333	0.0000	74	0.02		0	0.00		
	6	0.3620	0.0000	251	0.07		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	1.2575	0.0092	3404	1.00	1.13	25	1.00		0.01

**D.8.5 Targeted Effort Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for Rock Bass**





Table D.8.5.1. Targeted effort statistics by fishing mode for rock bass across the total study period, based on original temporal stratification and targeted effort (boat anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.1525	4.0748	945	1.77	3.75	252	7
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0096	0.0022	61	1.64	3.00	20	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0314	0.2010	488	1.93	5.50	89	4
	5	0.0000	0.0000	0				0
	6	0.0459	0.6293	633	1.98	9.75	65	1
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0610	1.1577	945	1.77	3.75	252	7
	4	0.0259	0.1827	488	1.93	5.50	89	4
	5	0.0000	0.0000	0				0
	6	0.0345	0.2226	693	1.81	8.15	85	2
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0101	0.0083	2126	1.08	4.99	426	13
Tidal	All	0.0000	0.0000	0			0	0
All	All	0.0063	0.0057	2126	1.08	4.99	426	13

Table D.8.5.2. Targeted effort statistics by fishing mode for rock bass across the total study period, based on original temporal stratification and targeted effort (shore anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0051	0.0023	16	2.50	3.00	5	1
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0072	0.0044	61	1.86	2.76	22	3
	3	0.0005	0.0000	1	1.00	3.25	0	2
	4	0.0000	0.0000	0				0
	5	0.0133	0.0512	56	2.23	2.25	25	1
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0034	0.0011	61	1.86	2.76	22	3
	3	0.0001	0.0000	1	1.00	3.25	0	2
	4	0.0028	0.0015	16	2.50	3.00	5	1
	5	0.0079	0.0336	56	2.23	2.25	25	1
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0059	0.0091	133	1.30	2.54	52	7
Tidal	All	0.0000	0.0000	0			0	0
All	All	0.0055	0.0089	133	1.30	2.54	52	7

Table D.8.5.3. Targeted effort statistics by fishing mode for rock bass across the total study period, based on original temporal stratification and targeted effort (all anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0837	1.7444	945	1.77	3.75	252	7
	4	0.0025	0.0014	16	2.50	3.00	5	1
	5	0.0000	0.0000	0				0
	6	0.0064	0.0015	61	1.64	3.00	20	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0010	0.0001	61	1.86	2.76	22	3
	3	0.0001	0.0000	1	1.00	3.25	0	2
	4	0.0269	0.1858	488	1.93	5.50	89	4
	5	0.0026	0.0042	56	2.23	2.25	25	1
	6	0.0388	0.4457	633	1.98	9.75	65	1
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0007	0.0001	61	1.86	2.76	22	3
	3	0.0436	0.7998	945	1.77	3.75	252	9
	4	0.0205	0.1503	504	1.87	5.36	94	5
	5	0.0018	0.0032	56	2.23	2.25	25	1
	6	0.0270	0.1539	693	1.81	8.15	85	2
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0087	0.0081	2259	1.02	4.73	478	20
Tidal	All	0.0000	0.0000	0			0	0
All	All	0.0056	0.0055	2259	1.02	4.73	478	20

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**D.8.6 Targeted Effort Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours) for Rock Bass**



Table D.8.6.1. Targeted effort statistics (boat anglers) for rock bass by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.1835	3.5700	1293	1.83	3.75	345	7
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0096	0.0022	61	1.64	3.00	20	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0249	0.3315	531	2.20	5.50	96	4
	5	0.0000	0.0000	0				0
	6	0.0459	0.6293	633	1.98	9.75	65	1
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0711	1.2677	1293	1.83	3.75	345	7
	4	0.0204	0.2729	531	2.20	5.50	96	4
	5	0.0000	0.0000	0				0
	6	0.0345	0.2226	693	1.81	8.15	85	2
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0111	0.0134	2517	1.16	4.78	526	13
Tidal	All	0.0000	0.0000	0			0	0
All	All	0.0069	0.0069	2517	1.16	4.78	526	13

Table D.8.6.2. Targeted effort statistics (shore anglers) for rock bass by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0041	0.0032	19	2.90	3.00	6	1
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0056	0.0022	45	2.12	3.58	12	1
	2	0.0076	0.0055	34	1.83	2.35	14	2
	3	0.0000	0.0000	0				0
	4	0.0101	0.0219	36	2.41	3.25	11	2
	5	0.0133	0.0512	56	2.23	2.25	25	1
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0033	0.0008	45	2.12	3.58	12	1
	2	0.0032	0.0005	34	1.83	2.35	14	2
	3	0.0000	0.0000	0				0
	4	0.0067	0.0079	55	1.87	3.16	18	3
	5	0.0079	0.0336	56	2.23	2.25	25	1
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0073	0.0089	189	1.04	2.74	69	7
Tidal	All	0.0000	0.0000	0			0	0
All	All	0.0067	0.0087	189	1.04	2.74	69	7



Table D.8.6.3. Targeted effort statistics (all anglers) for rock bass by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0981	1.4475	1293	1.83	3.75	345	7
	4	0.0020	0.0017	19	2.90	3.00	6	1
	5	0.0000	0.0000	0				0
	6	0.0064	0.0015	61	1.64	3.00	20	1
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0005	0.0000	45	2.12	3.58	12	1
	2	0.0010	0.0001	34	1.83	2.35	14	2
	3	0.0000	0.0000	0				0
	4	0.0228	0.3078	566	2.07	4.75	119	6
	5	0.0026	0.0042	56	2.23	2.25	25	1
	6	0.0388	0.4457	633	1.98	9.75	65	1
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0004	0.0000	45	2.12	3.58	12	1
	2	0.0007	0.0001	34	1.83	2.35	14	2
	3	0.0500	0.8168	1293	1.83	3.75	345	7
	4	0.0170	0.2167	586	2.00	4.66	126	7
	5	0.0018	0.0032	56	2.23	2.25	25	1
	6	0.0270	0.1539	693	1.81	8.15	85	2
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0096	0.0127	2707	1.08	4.46	607	20
Tidal	All	0.0000	0.0000	0			0	0
All	All	0.0063	0.0066	2707	1.08	4.46	607	20



**D.9 WHITE PERCH**



**D.9.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**



Table D.9.1.1 Catch and harvest statistics by fishing mode for white perch across the total study period, based on original stratification.									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0057	0.0009	255	0.02	0.54	39	0.06	0.90	0.15
Non-Tidal 1	0.0044	0.0000	739	0.07	0.51	0	0.00		0.00
Pooled Non-Tidal	0.0047	0.0002	994	0.09	0.40	39	0.06	0.90	0.04
Tidal	0.0756	0.0050	9553	0.91	0.36	630	0.94	0.86	0.07
All	0.0312	0.0020	10547	1.00	0.33	669	1.00	0.81	0.06
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0168	0.0024	425	0.30	1.15	61	0.50	1.02	0.14
Pooled Non-Tidal	0.0086	0.0012	425	0.30	1.15	61	0.50	1.02	0.14
Tidal	0.0754	0.0045	1001	0.70	0.32	60	0.50	0.61	0.06
All	0.0227	0.0019	1425	1.00	0.41	121	1.00	0.60	0.08
<b>All Anglers</b>									
Non-Tidal 2+3	0.0037	0.0006	255	0.02	0.54	39	0.05	0.90	0.15
Non-Tidal 1	0.0061	0.0003	1164	0.10	0.53	61	0.08	1.02	0.05
Pooled Non-Tidal	0.0054	0.0004	1419	0.12	0.45	100	0.13	0.72	0.07
Tidal	0.0756	0.0049	10554	0.88	0.33	691	0.87	0.78	0.07
All	0.0299	0.0020	11972	1.00	0.30	790	1.00	0.69	0.07

Table D.9.1.2. Catch and harvest statistics (boat anglers) for white perch by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0598	0.0000	197	0.02	0.65	0	0.00		0.00
	5	0.0104	0.0069	58	0.01	0.90	39	0.06	0.90	0.67
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0055	0.0000	280	0.03	1.02	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0262	0.0000	243	0.02	0.81	0	0.00		0.00
	4	0.0139	0.0000	217	0.02	0.71	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0051	0.0000	280	0.03	1.02	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0157	0.0000	243	0.02	0.81	0	0.00		0.00
	4	0.0219	0.0000	413	0.04	0.48	0	0.00		0.00
	5	0.0025	0.0017	58	0.01	0.90	39	0.06	0.90	0.67
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0999	0.0000	2141	0.20	0.96	0	0.00		0.00
	2	0.0560	0.0129	2732	0.26	0.36	630	0.94	0.86	0.23
	3	0.0307	0.0000	317	0.03	0.89	0	0.00		0.00
	4	0.0735	0.0000	1218	0.12	0.34	0	0.00		0.00
	5	0.2886	0.0000	3145	0.30	0.81	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0318	0.0000	2421	0.23	0.86	0	0.00		0.00
	2	0.0234	0.0054	2732	0.26	0.36	630	0.94	0.86	0.23
	3	0.0217	0.0000	561	0.05	0.62	0	0.00		0.00
	4	0.0460	0.0000	1631	0.15	0.28	0	0.00		0.00
	5	0.0941	0.0011	3203	0.30	0.80	39	0.06	0.90	0.01
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0312	0.0020	10547	1.00	0.33	669	1.00	0.81	0.06



Table D.9.1.3. Catch and harvest statistics (shore anglers) for white perch by geographic strata and original temporal strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0121	0.0073	102	0.07	0.69	61	0.50	1.02	0.60
	3	0.2861	0.0000	323	0.23	1.49	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0057	0.0034	102	0.07	0.69	61	0.50	1.02	0.60
	3	0.0520	0.0000	323	0.23	1.49	0	0.00		0.00
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0713	0.0000	174	0.12	1.15	0	0.00		0.00
	3	0.3269	0.0000	71	0.05	0.56	0	0.00		0.00
	4	0.0512	0.0000	24	0.02	1.31	0	0.00		0.00
	5	0.0992	0.0071	220	0.15	0.46	16	0.13	1.12	0.07
	6	0.0292	0.0000	24	0.02	1.49	0	0.00		0.00
	7	0.2037	0.0185	488	0.34	0.46	44	0.37	0.72	0.09
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0135	0.0030	276	0.19	0.77	61	0.50	1.02	0.22
	3	0.0612	0.0000	394	0.28	1.23	0	0.00		0.00
	4	0.0038	0.0000	24	0.02	1.31	0	0.00		0.00
	5	0.0237	0.0017	220	0.15	0.46	16	0.13	1.12	0.07
	6	0.0038	0.0000	24	0.02	1.49	0	0.00		0.00
	7	0.0920	0.0084	488	0.34	0.46	44	0.37	0.72	0.09
All	All	0.0227	0.0019	1425	1.00	0.41	121	1.00	0.60	0.08

Table D.9.1.4. Catch and harvest statistics (all anglers) for white perch by geographic strata and months										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0304	0.0000	197	0.02	0.65	0	0.00		0.00
	5	0.0069	0.0046	58	0.00	0.90	39	0.05	0.90	0.67
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0051	0.0000	280	0.02	1.02	0	0.00		0.00
	2	0.0017	0.0010	102	0.01	0.69	61	0.08	1.02	0.60
	3	0.0544	0.0000	566	0.05	0.92	0	0.00		0.00
	4	0.0119	0.0000	217	0.02	0.71	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0048	0.0000	280	0.02	1.02	0	0.00		0.00
	2	0.0012	0.0007	102	0.01	0.69	61	0.08	1.02	0.60
	3	0.0261	0.0000	566	0.05	0.92	0	0.00		0.00
	4	0.0168	0.0000	413	0.03	0.48	0	0.00		0.00
	5	0.0019	0.0013	58	0.00	0.90	39	0.05	0.90	0.67
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0819	0.0000	2141	0.18	0.96	0	0.00		0.00
	2	0.0568	0.0123	2906	0.24	0.35	630	0.80	0.86	0.22
	3	0.0368	0.0000	388	0.03	0.74	0	0.00		0.00
	4	0.0729	0.0000	1241	0.10	0.33	0	0.00		0.00
	5	0.2566	0.0012	3364	0.28	0.76	16	0.02	1.12	0.00
	6	0.0021	0.0000	24	0.00	1.49	0	0.00		0.00
	7	0.0498	0.0045	488	0.04	0.46	44	0.06	0.72	0.09
All	1	0.0285	0.0000	2421	0.20	0.86	0	0.00		0.00
	2	0.0219	0.0050	3008	0.25	0.34	691	0.87	0.79	0.23
	3	0.0296	0.0000	955	0.08	0.62	0	0.00		0.00
	4	0.0397	0.0000	1654	0.14	0.28	0	0.00		0.00
	5	0.0790	0.0013	3422	0.29	0.75	54	0.07	0.72	0.02
	6	0.0006	0.0000	24	0.00	1.49	0	0.00		0.00
	7	0.0207	0.0019	488	0.04	0.46	44	0.06	0.72	0.09
All	All	0.0299	0.0020	11972	1.00	0.30	790	1.00	0.69	0.07

**D.9.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**



Table D.9.2.1. Catch and harvest statistics by fishing mode for white perch across the total study period, based on monthly post-stratification									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0041	0.0008	207	0.02	0.62	39	0.06	0.90	0.19
Non-Tidal 1	0.0038	0.0000	671	0.06	0.49	0	0.00		0.00
Pooled Non-Tidal	0.0039	0.0002	878	0.08	0.40	39	0.06	0.90	0.04
Tidal	0.0712	0.0042	9638	0.92	0.37	567	0.94	1.08	0.06
All	0.0290	0.0017	10516	1.00	0.34	605	1.00	1.01	0.06
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0446	0.0014	1188	0.51	1.27	36	0.37	0.89	0.03
Pooled Non-Tidal	0.0214	0.0006	1188	0.51	1.27	36	0.37	0.89	0.03
Tidal	0.0810	0.0042	1161	0.49	0.37	60	0.63	0.61	0.05
All	0.0336	0.0014	2349	1.00	0.67	96	1.00	0.51	0.04
<b>All Anglers</b>									
Non-Tidal 2+3	0.0026	0.0005	207	0.02	0.62	39	0.06	0.90	0.19
Non-Tidal 1	0.0092	0.0002	1859	0.14	0.83	36	0.05	0.89	0.02
Pooled Non-Tidal	0.0073	0.0003	2066	0.16	0.75	75	0.11	0.63	0.04
Tidal	0.0721	0.0042	10799	0.84	0.33	627	0.89	0.98	0.06
All	0.0298	0.0016	12865	1.00	0.31	702	1.00	0.88	0.05

Table D.9.2.2. Catch and harvest statistics (boat anglers) for white perch by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0314	0.0000	149	0.01	0.79	0	0.00		0.00
	5	0.0104	0.0069	58	0.01	0.90	39	0.06	0.90	0.67
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0013	0.0000	103	0.01	1.12	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0295	0.0000	328	0.03	0.78	0	0.00		0.00
	4	0.0112	0.0000	240	0.02	0.71	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0011	0.0000	103	0.01	1.12	0	0.00		0.00
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0180	0.0000	328	0.03	0.78	0	0.00		0.00
	4	0.0149	0.0000	389	0.04	0.53	0	0.00		0.00
	5	0.0025	0.0017	58	0.01	0.90	39	0.06	0.90	0.67
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0767	0.0153	2833	0.27	0.65	567	0.94	1.08	0.20
	2	0.0512	0.0000	1783	0.17	0.91	0	0.00		0.00
	3	0.0204	0.0000	259	0.02	1.05	0	0.00		0.00
	4	0.0745	0.0000	1618	0.15	0.31	0	0.00		0.00
	5	0.2886	0.0000	3145	0.30	0.81	0	0.00		0.00
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0230	0.0044	2936	0.28	0.63	567	0.94	1.08	0.19
	2	0.0245	0.0000	1783	0.17	0.91	0	0.00		0.00
	3	0.0190	0.0000	588	0.06	0.64	0	0.00		0.00
	4	0.0420	0.0000	2006	0.19	0.27	0	0.00		0.00
	5	0.0941	0.0011	3203	0.30	0.80	39	0.06	0.90	0.01
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.0290	0.0017	10516	1.00	0.34	605	1.00	1.01	0.06

Table D.9.2.3. Catch and harvest statistics (shore anglers) for white perch by geographic strata and monthly post-strata											
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio	
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C	
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00			
	2	0.0000	0.0000	0	0.00		0	0.00			
	3	0.0000	0.0000	0	0.00		0	0.00			
	4	0.0000	0.0000	0	0.00		0	0.00			
	5	0.0000	0.0000	0	0.00		0	0.00			
	6	0.0000	0.0000	0	0.00		0	0.00			
	7	0.0000	0.0000	0	0.00		0	0.00			
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00			
	2	0.0067	0.0000	30	0.01	0.92	0	0.00	0.89	0.00	
	3	0.0311	0.0233	48	0.02	0.70	36	0.37		0.75	
	4	0.3119	0.0000	1110	0.47	1.36	0	0.00		0.00	
	5	0.0000	0.0000	0	0.00		0	0.00			
	6	0.0000	0.0000	0	0.00		0	0.00			
	7	0.0000	0.0000	0	0.00		0	0.00			
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		0.89	0.00
	2	0.0028	0.0000	30	0.01	0.92	0	0.00	0.00		
	3	0.0063	0.0047	48	0.02	0.70	36	0.37	0.75		
	4	0.1333	0.0000	1110	0.47	1.36	0	0.00	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00			
	6	0.0000	0.0000	0	0.00		0	0.00			
	7	0.0000	0.0000	0	0.00		0	0.00			
Tidal	1	0.0210	0.0000	114	0.05	1.11	0	0.00	1.12	0.00	
	2	0.0739	0.0000	206	0.09	1.59	0	0.00		0.00	
	3	0.2730	0.0000	79	0.03	0.59	0	0.00		0.00	
	4	0.0806	0.0000	30	0.01	1.33	0	0.00		0.00	
	5	0.0992	0.0071	220	0.09	0.46	16	0.16		0.07	
	6	0.0292	0.0000	24	0.01	1.49	0	0.00		0.00	
	7	0.2037	0.0185	488	0.21	0.46	44	0.46		0.72	0.09
All	1	0.0061	0.0000	114	0.05	1.11	0	0.00	0.89	0.00	
	2	0.0176	0.0000	236	0.10	1.40	0	0.00		0.00	
	3	0.0159	0.0045	127	0.05	0.45	36	0.37		0.28	
	4	0.1311	0.0000	1140	0.49	1.32	0	0.00		0.00	
	5	0.0237	0.0017	220	0.09	0.46	16	0.16		1.12	0.07
	6	0.0038	0.0000	24	0.01	1.49	0	0.00		0.00	
	7	0.0920	0.0084	488	0.21	0.46	44	0.46		0.72	0.09
All	All	0.0336	0.0014	2349	1.00	0.67	96	1.00	0.51	0.04	

Table D.9.2.4. Catch and harvest statistics (all anglers) for white perch by geographic strata and monthly post-strata										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0157	0.0000	149	0.01	0.79	0	0.00		0.00
	5	0.0069	0.0046	58	0.00	0.90	39	0.06	0.90	0.67
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0012	0.0000	103	0.01	1.12	0	0.00		0.00
	2	0.0009	0.0000	30	0.00	0.92	0	0.00		0.00
	3	0.0297	0.0028	376	0.03	0.68	36	0.05	0.89	0.10
	4	0.0542	0.0000	1350	0.10	1.12	0	0.00		0.00
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0010	0.0000	103	0.01	1.12	0	0.00		0.00
	2	0.0006	0.0000	30	0.00	0.92	0	0.00		0.00
	3	0.0145	0.0014	376	0.03	0.68	36	0.05	0.89	0.10
	4	0.0436	0.0000	1499	0.12	1.01	0	0.00		0.00
	5	0.0019	0.0013	58	0.00	0.90	39	0.06	0.90	0.67
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0696	0.0134	2948	0.23	0.62	567	0.81	1.08	0.19
	2	0.0529	0.0000	1990	0.15	0.83	0	0.00		0.00
	3	0.0261	0.0000	338	0.03	0.82	0	0.00		0.00
	4	0.0746	0.0000	1647	0.13	0.31	0	0.00		0.00
	5	0.2566	0.0012	3364	0.26	0.76	16	0.02	1.12	0.00
	6	0.0021	0.0000	24	0.00	1.49	0	0.00		0.00
	7	0.0498	0.0045	488	0.04	0.46	44	0.06	0.72	0.09
All	1	0.0209	0.0039	3050	0.24	0.60	567	0.81	1.08	0.19
	2	0.0234	0.0000	2019	0.16	0.82	0	0.00		0.00
	3	0.0184	0.0009	715	0.06	0.53	36	0.05	0.89	0.05
	4	0.0557	0.0000	3146	0.24	0.51	0	0.00		0.00
	5	0.0790	0.0013	3422	0.27	0.75	54	0.08	0.72	0.02
	6	0.0006	0.0000	24	0.00	1.49	0	0.00		0.00
	7	0.0207	0.0019	488	0.04	0.46	44	0.06	0.72	0.09
All	All	0.0298	0.0016	12865	1.00	0.31	702	1.00	0.88	0.05



**D.9.1.3 Catch and Harvest Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for White Perch**



Table D.9.3.1. Catch and harvest statistics by fishing mode for white perch across the total study period, based on original temporal stratification and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0	0.00		
Tidal	0.8489	0.6174	253	1.00		184	1.00		
All	0.8489	0.6174	253	1.00		184	1.00		
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0	0.00		
Tidal	0.8183	0.1562	34	1.00		7	1.00		
All	0.8183	0.1562	34	1.00		7	1.00		
<b>All Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0	0.00		
Tidal	0.8451	0.5603	287	1.00		190	1.00		
All	0.8451	0.5603	287	1.00		190	1.00		

Table D.9.3.2. Catch and harvest statistics (boat anglers) for white perch by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.8489	0.6174	253	1.00		184	1.00		0.73
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.8489	0.6174	253	1.00		184	1.00		0.73
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.8489	0.6174	253	1.00		184	1.00		0.73

Table D.9.3.3. Catch and harvest statistics (shore anglers) for white perch by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.7500	0.0000	28	0.81		0	0.00		0.00
	7	1.3333	1.3333	7	0.19		7	1.00		1.00
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.7500	0.0000	28	0.81		0	0.00		0.00
	7	1.3333	1.3333	7	0.19		7	1.00		1.00
All	All	0.8183	0.1562	34	1.00		7	1.00		0.19

Table D.9.3.4. Catch and harvest statistics (all anglers) for white perch by geographic strata and original temporal strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.8489	0.6174	253	0.88		184	0.97		0.73
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.7500	0.0000	28	0.10		0	0.00		0.00
	7	1.3333	1.3333	7	0.02		7	0.03		1.00
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.8489	0.6174	253	0.88		184	0.97		0.73
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.7500	0.0000	28	0.10		0	0.00		0.00
	7	1.3333	1.3333	7	0.02		7	0.03		1.00
All	All	0.8451	0.5603	287	1.00		190	1.00		0.66

**D.9.4 Catch and Harvest Statistics Based on Monthly Post-Stratification and Targeted Effort (Angler Hours) for White Perch**





Table D.9.4.1. Catch and harvest statistics by fishing mode for white perch across the total study period, based on monthly post-strata and targeted effort (angler hours)									
Stratum	Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio H / C
	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	
<b>Boat Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0	0.00		
Tidal	0.8489	0.6174	381	1.00		277	1.00		0.73
All	0.8489	0.6174	381	1.00		277	1.00		0.73
<b>Shore Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0	0.00		
Tidal	0.8183	0.1562	34	1.00		7	1.00		0.19
All	0.8183	0.1562	34	1.00		7	1.00		0.19
<b>All Anglers</b>									
Non-Tidal 2+3	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	0.0000	0.0000	0	0.00		0	0.00		
Tidal	0.8463	0.5778	415	1.00		283	1.00		0.68
All	0.8463	0.5778	415	1.00		283	1.00		0.68

Table D.9.4.2. Catch and harvest statistics (boat anglers) for white perch by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.8489	0.6174	381	1.00		277	1.00		0.73
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	1	0.8489	0.6174	381	1.00		277	1.00		0.73
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
All	All	0.8489	0.6174	381	1.00		277	1.00		0.73

Table D.9.4.3. Catch and harvest statistics (shore anglers) for white perch by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.7500	0.0000	28	0.81		0	0.00		0.00
	7	1.3333	1.3333	7	0.19		7	1.00		1.00
All	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.7500	0.0000	28	0.81		0	0.00		0.00
	7	1.3333	1.3333	7	0.19		7	1.00		1.00
All	All	0.8183	0.1562	34	1.00		7	1.00		0.19

Table D.9.4.4. Catch and harvest statistics (all anglers) for white perch by geographic strata and monthly post-strata, based on targeted effort (angler hours)										
Strata		Catch Rate	Harvest Rate	Catch ( C )			Harvest ( H )			Ratio
Geographical	Temporal	# Fish / Hour	# Fish / Hour	# Fish	p of Total	RSE	# Fish	p of Total	RSE	H / C
Non-Tidal 2+3	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Non-Tidal 1	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Pooled Non-Tidal	1	0.0000	0.0000	0	0.00		0	0.00		
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.0000	0.0000	0	0.00		0	0.00		
	7	0.0000	0.0000	0	0.00		0	0.00		
Tidal	1	0.8489	0.6174	381	0.92		277	0.98		0.73
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.7500	0.0000	28	0.07		0	0.00		0.00
	7	1.3333	1.3333	7	0.02		7	0.02		1.00
All	1	0.8489	0.6174	381	0.92		277	0.98		0.73
	2	0.0000	0.0000	0	0.00		0	0.00		
	3	0.0000	0.0000	0	0.00		0	0.00		
	4	0.0000	0.0000	0	0.00		0	0.00		
	5	0.0000	0.0000	0	0.00		0	0.00		
	6	0.7500	0.0000	28	0.07		0	0.00		0.00
	7	1.3333	1.3333	7	0.02		7	0.02		1.00
All	All	0.8463	0.5778	415	1.00		283	1.00		0.68

**D.9.5 Targeted Effort Statistics Based on Temporal Stratification and Targeted Effort (Angler Hours) for White Perch**



Table D.9.5.1. Targeted effort statistics by fishing mode for white perch across the total study period, based on original temporal stratification and targeted effort (boat anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0061	0.0064	298	2.12	6.97	43	6
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0000	0.0000	0				0
Tidal	All	0.0024	0.0014	298	2.12	6.97	43	6
All	All	0.0009	0.0004	298	2.12	6.97	43	6

Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0447	0.0025	37	1.00	2.67	14	3
	7	0.0021	0.0002	5	2.23	1.50	3	1
Non-Tidal	All	0.0000	0.0000	0				0
Tidal	All	0.0032	0.0002	42	0.92	2.44	17	4
All	All	0.0007	0.0001	42	0.92	2.44	17	4



Table D.9.5.3. Targeted effort statistics by fishing mode for white perch across the total study period, based on original temporal stratification and targeted effort (all anglers)								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0058	0.0060	298	2.12	6.97	43	6
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0032	0.0006	37	1.00	2.67	14	3
	7	0.0005	0.0000	5	2.23	1.50	3	1
Non-Tidal	All	0.0000	0.0000	0				0
Tidal	All	0.0024	0.0013	340	1.86	5.67	60	10
All	All	0.0008	0.0004	340	1.86	5.67	60	10



**D.9.6 Targeted Effort Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours) for White Perch**



Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0121	0.0017	448	1.86	6.97	64	6
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal	All	0.0000	0.0000	0				0
Tidal	All	0.0033	0.0011	448	1.86	6.97	64	6
All	All	0.0012	0.0006	448	1.86	6.97	64	6

Table D.9.6.2. Targeted effort statistics (shore anglers) for white perch by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0447	0.0025	37	0.30	2.67	14	3
	7	0.0021	0.0002	5	1.00	1.50	3	1
Non-Tidal	All	0.0000	0.0000	0				0
Tidal	All	0.0029	0.0001	42	0.92	2.44	17	4
All	All	0.0006	0.0000	42	0.92	2.44	17	4

Table D.9.6.3. Targeted effort statistics (all anglers) for white perch by geographic strata and monthly post-strata								
Strata		p of Total Effort	p of Total Effort Variance	Effort (hours)	RSE	Mean Hours/Trip	# Trips	# Interviews
Geographical	Temporal							
Non-Tidal 2+3	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Non-Tidal 1	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Pooled Non-Tidal	1	0.0000	0.0000	0				0
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0000	0.0000	0				0
	7	0.0000	0.0000	0				0
Tidal	1	0.0106	0.0017	448	1.86	6.97	64	6
	2	0.0000	0.0000	0				0
	3	0.0000	0.0000	0				0
	4	0.0000	0.0000	0				0
	5	0.0000	0.0000	0				0
	6	0.0032	0.0006	37	1.00	2.67	14	3
	7	0.0005	0.0000	5	2.23	1.50	3	1
Non-Tidal	All	0.0000	0.0000	0				0
Tidal	All	0.0033	0.0011	490	1.70	6.02	82	10
All	All	0.0011	0.0005	490	1.70	6.02	82	10





## **D.10 RIVER STRATUM 2 CATCH AND HARVEST**



**D.10.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**



**Table D.10.1.1. Catch and harvest statistics (boat anglers) in non-tidal stratum 3 by original temporal strata. No American shad and only two striped bass were recorded.**

Species	Temporal Strata	Catch Rate	Harvest Rate	Catch (C)	RSE C	Harvest (H)	RSE H	Ratio H/C
American Shad	1-2	0.4602	0.0410	8080	0.44	719	0.55	0.09
	3	0.0199	0.0000	132	1.05	0		0.00
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.2229	0.0195	8211	0.43	719	0.55	0.09
Bluegill	1-2	0.0000	0.0000	0		0		
	3	0.0517	0.0437	342	1.05	290	1.05	0.85
	4-5	0.0194	0.0000	128	0.64	0		0.00
	6-7	0.0197	0.0000	119	1.01	0		0.00
	All	0.0160	0.0079	590	0.66	290	1.05	0.49
Channel Catfish	1-2	0.0000	0.0000	0		0		
	3	0.0040	0.0000	26	1.05	0		0.00
	4-5	0.0108	0.0000	71	0.63	0		0.00
	6-7	0.0296	0.0000	178	0.63	0		0.00
	All	0.0075	0.0000	276	0.45	0		0.00
Eel	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0170	0.0000	113	0.73	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0031	0.0000	113	0.73	0		0.00
Largemouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.0040	0.0000	26	1.00	0		0.00
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0007	0.0000	26	1.00	0		0.00
River Herring	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0032	0.0000	21	1.02	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0006	0.0000	21	1.02	0		0.00
Rock Bass	1-2	0.0000	0.0000	0		0		
	3	0.2623	0.0159	1738	1.07	105	1.05	0.06
	4-5	0.0624	0.0022	414	0.72	14	0.95	0.03
	6-7	0.0148	0.0000	89	1.01	0		0.00
	All	0.0609	0.0032	2241	0.84	120	0.93	0.05
Striped Bass	1-2	0.0000	0.0000	0		0		
	3	0.0199	0.0000	132	1.06	0		0.00
	4-5	0.0086	0.0000	57	0.49	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0051	0.0000	189	0.75	0		0.00
Smallmouth Bass	1-2	0.0757	0.0000	1328	0.42	0		0.00
	3	0.4053	0.0079	2687	1.06	53	1.05	0.02
	4-5	0.6155	0.0086	4083	0.26	57	0.52	0.01
	6-7	0.5872	0.0099	3531	0.42	59	0.77	0.02
	All	0.3157	0.0046	11629	0.29	169	0.46	0.01
White Perch	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0237	0.0043	157	0.59	29	0.95	0.18
	6-7	0.0000	0.0000	0		0		
	All	0.0043	0.0008	157	0.59	29	0.95	0.18

Table D.10.1.2. Catch and harvest statistics (shore anglers) in non-tidal stratum 3 by original temporal strata. No American shad and only two striped bass were recorded.								
Species	Temporal Strata	Catch Rate	Harvest Rate	Catch (C)	RSE C	Harvest (H)	RSE H	Ratio H/C
American Shad	1-2	0.2044	0.0282	1154	0.82	159	0.84	0.14
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0884	0.0122	1154	0.82	159	0.84	0.14
Bluegill	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0183	0.0000	53	0.76	0		0.00
	6-7	0.0314	0.0209	49	1.10	33	1.10	0.67
	All	0.0078	0.0025	102	0.66	33	1.10	0.32
Channel Catfish	1-2	0.0846	0.0705	478	1.01	398	1.01	0.83
	3	0.0000	0.0000	0		0		
	4-5	0.0091	0.0000	27	0.68	0		0.00
	6-7	0.0523	0.0209	82	0.77	33	0.81	0.40
	All	0.0449	0.0330	586	0.83	431	0.94	0.73
Eel	1-2	0.0070	0.0070	40	1.01	40	1.01	1.00
	3	0.0000	0.0000	0		0		
	4-5	0.0330	0.0000	96	0.87	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0104	0.0030	136	0.68	40	1.01	0.29
Largemouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0046	0.0000	13	0.94	0		0.00
	6-7	0.0314	0.0000	49	0.98	0		0.00
	All	0.0048	0.0000	63	0.79	0		0.00
River Herring	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0000	0.0000	0		0		
Rock Bass	1-2	0.0000	0.0000	0		0		
	3	0.0814	0.0543	239	0.38	159	0.38	0.67
	4-5	0.0091	0.0000	27	0.79	0		0.00
	6-7	0.0523	0.0314	82	1.10	49	1.10	0.60
	All	0.0266	0.0160	347	0.37	208	0.39	0.60
Striped Bass	1-2	0.0070	0.0000	40	1.04	0		0.00
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0105	0.0000	16	1.08	0		0.00
	All	0.0043	0.0000	56	0.80	0		0.00
Smallmouth Bass	1-2	0.0070	0.0000	40	1.01	0		0.00
	3	0.5973	0.0543	1749	1.69	159	0.38	0.09
	4-5	0.2330	0.0228	678	0.48	66	0.94	0.10
	6-7	0.0418	0.0105	66	0.76	16	1.10	0.25
	All	0.1940	0.0185	2533	1.17	242	0.37	0.10
White Perch	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0000	0.0000	0		0		

Table D.10.1.3. Catch and harvest statistics (all anglers) in non-tidal stratum 3 by original temporal strata. No American shad and only two striped bass were recorded.								
Species	Temporal Strata	Catch Rate	Harvest Rate	Catch (C)	RSE C	Harvest (H)	RSE H	Ratio H/C
American Shad	1-2	0.3980	0.0379	9234	0.40	879	0.47	0.10
	3	0.0138	0.0000	132	1.05	0		0.00
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.1877	0.0176	9365	0.39	879	0.47	0.09
Bluegill	1-2	0.0000	0.0000	0		0		
	3	0.0358	0.0303	342	1.05	290	1.05	0.85
	4-5	0.0190	0.0000	182	0.51	0		0.00
	6-7	0.0221	0.0043	168	0.78	33	1.10	0.20
	All	0.0139	0.0065	692	0.57	323	0.95	0.47
Channel Catfish	1-2	0.0206	0.0172	478	1.01	398	1.01	0.83
	3	0.0028	0.0000	26	1.05	0		0.00
	4-5	0.0103	0.0000	98	0.49	0		0.00
	6-7	0.0343	0.0043	260	0.49	33	0.81	0.13
	All	0.0173	0.0086	862	0.58	431	0.94	0.50
Eel	1-2	0.0017	0.0017	40	1.01	40	1.01	1.00
	3	0.0000	0.0000	0		0		
	4-5	0.0219	0.0000	209	0.56	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0050	0.0008	248	0.50	40	1.01	0.16
Largemouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.0028	0.0000	26	1.00	0		0.00
	4-5	0.0014	0.0000	13	0.94	0		0.00
	6-7	0.0065	0.0000	49	0.98	0		0.00
	All	0.0018	0.0000	89	0.63	0		0.00
River Herring	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0022	0.0000	21	1.02	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0004	0.0000	21	1.02	0		0.00
Rock Bass	1-2	0.0000	0.0000	0		0		
	3	0.2068	0.0277	1977	0.94	264	0.48	0.13
	4-5	0.0462	0.0015	441	0.67	14	0.95	0.03
	6-7	0.0226	0.0065	171	0.74	49	1.10	0.29
	All	0.0519	0.0066	2589	0.73	328	0.42	0.13
Striped Bass	1-2	0.0017	0.0000	40	1.04	0		0.00
	3	0.0138	0.0000	132	1.06	0		0.00
	4-5	0.0060	0.0000	57	0.49	0		0.00
	6-7	0.0022	0.0000	16	1.08	0		0.00
	All	0.0049	0.0000	245	0.61	0		0.00
Smallmouth Bass	1-2	0.0590	0.0000	1368	0.41	0		0.00
	3	0.4641	0.0222	4436	0.92	212	0.39	0.05
	4-5	0.4988	0.0129	4761	0.23	124	0.56	0.03
	6-7	0.4744	0.0100	3597	0.41	76	0.65	0.02
	All	0.2839	0.0082	14162	0.32	411	0.29	0.03
White Perch	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0165	0.0030	157	0.59	29	0.95	0.18
	6-7	0.0000	0.0000	0		0		
	All	0.0031	0.0006	157	0.59	29	0.95	0.18





**D.10.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**



Table D.10.2.1. Catch and harvest statistics (boat anglers) in non-tidal stratum 3 by monthly temporal strata. No American shad and only two striped bass were recorded.

Species	Temporal Strata	Catch Rate	Harvest Rate	Catch (C)	RSE C	Harvest (H)	RSE H	Ratio H/C
American Shad	1-2	0.4754	0.0423	5688	0.45	506	0.56	0.09
	3	0.0191	0.0000	116	0.67	0		0.00
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.1738	0.0152	5803	0.44	506	0.56	0.09
Bluegill	1-2	0.0000	0.0000	0		0		
	3	0.0496	0.0420	300	0.59	254	0.67	0.85
	4-5	0.0194	0.0000	181	0.65	0		0.00
	6-7	0.0197	0.0000	119	1.01	0		0.00
	All	0.0180	0.0076	600	0.41	254	0.67	0.42
Channel Catfish	1-2	0.0000	0.0000	0		0		
	3	0.0038	0.0000	23	0.67	0		0.00
	4-5	0.0108	0.0000	101	0.63	0		0.00
	6-7	0.0296	0.0000	178	0.63	0		0.00
	All	0.0090	0.0000	302	0.43	0		0.00
Eel	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0170	0.0000	159	0.73	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0048	0.0000	159	0.73	0		0.00
Largemouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.0038	0.0000	23	0.99	0		0.00
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0007	0.0000	23	0.99	0		0.00
River Herring	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0032	0.0000	30	1.02	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0009	0.0000	30	1.02	0		0.00
Rock Bass	1-2	0.0000	0.0000	0		0		
	3	0.2521	0.0153	1525	0.43	92	0.67	0.06
	4-5	0.0624	0.0022	584	0.72	20	0.95	0.03
	6-7	0.0148	0.0000	89	1.01	0		0.00
	All	0.0658	0.0034	2198	0.36	113	0.58	0.05
Striped Bass	1-2	0.0000	0.0000	0		0		
	3	0.0191	0.0000	116	0.56	0		0.00
	4-5	0.0086	0.0000	81	0.49	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0059	0.0000	196	0.39	0		0.00
Smallmouth Bass	1-2	0.0684	0.0000	818	0.45	0		0.00
	3	0.4010	0.0076	2426	0.52	46	0.63	0.02
	4-5	0.6155	0.0086	5759	0.26	81	0.53	0.01
	6-7	0.5872	0.0099	3531	0.42	59	0.77	0.02
	All	0.3755	0.0056	12534	0.20	186	0.37	0.01
White Perch	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0237	0.0043	222	0.59	40	0.95	0.18
	6-7	0.0000	0.0000	0		0		
	All	0.0066	0.0012	222	0.59	40	0.95	0.18

Table D.10.2.2. Catch and harvest statistics (shore anglers) in non-tidal stratum 3 by monthly temporal strata. No American shad and only two striped bass were recorded.

Species	Temporal Strata	Catch Rate	Harvest Rate	Catch (C)	RSE C	Harvest (H)	RSE H	Ratio H/C
American Shad	1-2	0.2391	0.0330	1079	0.83	149	0.82	0.14
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0837	0.0115	1079	0.83	149	0.82	0.14
Bluegill	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0183	0.0000	74	0.75	0		0.00
	6-7	0.0314	0.0209	49	1.10	33	1.10	0.67
	All	0.0096	0.0025	124	0.63	33	1.10	0.27
Channel Catfish	1-2	0.0000	0.0000	0		0		
	3	0.2090	0.1742	572	0.83	477	0.83	0.83
	4-5	0.0091	0.0000	37	0.67	0		0.00
	6-7	0.0523	0.0209	82	0.77	33	0.81	0.40
	All	0.0536	0.0395	691	0.69	510	0.78	0.74
Eel	1-2	0.0000	0.0000	0		0		
	3	0.0174	0.0174	48	0.83	48	0.83	1.00
	4-5	0.0330	0.0000	135	0.87	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0141	0.0037	182	0.68	48	0.83	0.26
Largemouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0046	0.0000	19	0.94	0		0.00
	6-7	0.0314	0.0000	49	0.98	0		0.00
	All	0.0053	0.0000	68	0.75	0		0.00
River Herring	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0000	0.0000	0		0		
Rock Bass	1-2	0.0000	0.0000	0		0		
	3	0.0522	0.0348	143	1.13	95	1.13	0.67
	4-5	0.0091	0.0000	37	0.78	0		0.00
	6-7	0.0523	0.0314	82	1.10	49	1.10	0.60
	All	0.0203	0.0112	262	0.71	145	0.83	0.55
Striped Bass	1-2	0.0082	0.0000	37	1.05	0		0.00
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0105	0.0000	16	1.08	0		0.00
	All	0.0042	0.0000	54	0.80	0		0.00
Smallmouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.4006	0.0348	1097	0.64	95	1.13	0.09
	4-5	0.2330	0.0228	949	0.45	93	0.94	0.10
	6-7	0.0418	0.0105	66	0.76	16	1.10	0.25
	All	0.1638	0.0159	2112	0.39	205	0.68	0.10
White Perch	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0000	0.0000	0		0		

Table D.10.2.3. Catch and harvest statistics (all anglers) in non-tidal stratum 3 by monthly temporal strata. No American shad and only two striped bass were recorded.

Species	Temporal Strata	Catch Rate	Harvest Rate	Catch (C)	RSE C	Harvest (H)	RSE H	Ratio H/C
American Shad	1-2	0.4107	0.0398	6767	0.40	655	0.47	0.10
	3	0.0131	0.0000	116	0.67	0		0.00
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.1487	0.0142	6883	0.40	655	0.47	0.10
Bluegill	1-2	0.0000	0.0000	0		0		
	3	0.0342	0.0289	300	0.59	254	0.67	0.85
	4-5	0.0190	0.0000	256	0.51	0		0.00
	6-7	0.0221	0.0043	168	0.78	33	1.10	0.20
	All	0.0156	0.0062	724	0.35	287	0.61	0.40
Channel Catfish	1-2	0.0000	0.0000	0		0		
	3	0.0677	0.0543	595	0.80	477	0.83	0.80
	4-5	0.0103	0.0000	138	0.49	0		0.00
	6-7	0.0343	0.0043	260	0.49	33	0.81	0.13
	All	0.0215	0.0110	993	0.50	510	0.78	0.51
Eel	1-2	0.0000	0.0000	0		0		
	3	0.0054	0.0054	48	0.83	48	0.83	1.00
	4-5	0.0218	0.0000	293	0.56	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0074	0.0010	341	0.50	48	0.83	0.14
Largemouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.0026	0.0000	23	0.99	0		0.00
	4-5	0.0014	0.0000	19	0.94	0		0.00
	6-7	0.0065	0.0000	49	0.98	0		0.00
	All	0.0020	0.0000	91	0.62	0		0.00
River Herring	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0022	0.0000	30	1.02	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0007	0.0000	30	1.02	0		0.00
Rock Bass	1-2	0.0000	0.0000	0		0		
	3	0.1898	0.0214	1668	0.40	188	0.66	0.11
	4-5	0.0462	0.0015	621	0.68	20	0.95	0.03
	6-7	0.0226	0.0065	171	0.74	49	1.10	0.29
	All	0.0532	0.0056	2460	0.33	257	0.53	0.10
Striped Bass	1-2	0.0023	0.0000	37	1.05	0		0.00
	3	0.0131	0.0000	116	0.56	0		0.00
	4-5	0.0060	0.0000	81	0.49	0		0.00
	6-7	0.0022	0.0000	16	1.08	0		0.00
	All	0.0054	0.0000	250	0.35	0		0.00
Smallmouth Bass	1-2	0.0497	0.0000	818	0.45	0		0.00
	3	0.4009	0.0161	3522	0.41	142	0.79	0.04
	4-5	0.4994	0.0129	6709	0.23	174	0.56	0.03
	6-7	0.4744	0.0100	3597	0.41	76	0.65	0.02
	All	0.3165	0.0084	14646	0.18	391	0.40	0.03
White Perch	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0165	0.0030	222	0.59	40	0.95	0.18
	6-7	0.0000	0.0000	0		0		
	All	0.0048	0.0009	222	0.59	40	0.95	0.18



## **D.11 RIVER STRATUM 3 CATCH AND HARVEST**





**D.11.1 Catch and Harvest Statistics Based on Original Temporal Stratification and All Effort (Angler Hours)**



Table D.11.1.1. Catch and harvest statistics (boat anglers) in non-tidal stratum 3 by original temporal strata. No American shad and only two striped bass were recorded.								
Species	Temporal Strata	Catch Rate	Harvest Rate	Catch (C)	RSE C	Harvest (H)	RSE H	Ratio H/C
Brown Trout	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0127	0.0000	39	0.65	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0016	0.0000	39	0.65	0		0.00
Channel Catfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0000	0.0000	0		0		
Eel	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0000	0.0000	0		0		
Fallfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.2667	0.0000	824	0.76	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0327	0.0000	824	0.76	0		0.00
Rainbow Trout	1-2	0.0000	0.0000	0		0		
	3	0.1600	0.0000	922	0.53	0		0.00
	4-5	0.0000	0.0000	0		0		
	6-7	0.0594	0.0594	216	1.26	216	1.26	1.00
	All	0.0451	0.0086	1138	0.49	216	1.26	0.19
Smallmouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.4698	0.0127	1452	0.51	39	1.20	1.20
	6-7	0.1188	0.0000	431	0.58	0		
	All	0.0747	0.0016	1884	0.42	39	1.20	1.20
Walleye	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.4752	0.3564	1725	0.73	1294	0.58	0.56
	All	0.0684	0.0513	1725	0.73	1294	0.58	0.56

Table D.11.1.2. Catch and harvest statistics (shore anglers) in non-tidal stratum 3 by original temporal strata. No American shad and only two striped bass were recorded.								
Species	Temporal Strata	Catch Rate	Harvest Rate	Catch ( C )	RSE C	Harvest ( H )	RSE H	Ratio H/C
Brown Trout	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0639	0.0000	223	0.64	0		0.00
	6-7	0.0313	0.0000	79	0.89	0		0.00
	All	0.0130	0.0000	302	0.52	0		0.00
Channel Catfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.1410	0.1097	356	1.48	277	1.48	1.48
	All	0.0153	0.0119	356	1.48	277	1.48	1.48
Eel	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0240	0.0240	84	1.12	84	1.12	1.00
	6-7	0.0157	0.0000	40	1.48	0		0.00
	All	0.0053	0.0036	123	0.90	84	1.12	0.68
Fallfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0479	0.0000	168	0.70	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0072	0.0000	168	0.70	0		0.00
Rainbow Trout	1-2	0.0217	0.0000	216	1.22	0		0.00
	3	0.0000	0.0000	0		0		
	4-5	0.0958	0.0000	335	0.49	0		0.00
	6-7	0.0313	0.0000	79	0.85	0		0.00
	All	0.0272	0.0000	630	0.50	0		0.00
Smallmouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.4000	0.0000	2901	0.20	0		0.00
	4-5	0.2794	0.0000	978	0.61	0		0.00
	6-7	0.0157	0.0000	40	1.40	0		0.00
	All	0.1689	0.0000	3918	0.21	0		0.00
Walleye	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0160	0.0080	56	1.14	28	1.10	1.14
	6-7	0.0000	0.0000	0		0		
	All	0.0024	0.0012	56	1.14	28	1.10	1.14

Table D.11.1.3. Catch and harvest statistics (all anglers) in non-tidal stratum 3 by original temporal strata. No American shad and only two striped bass were recorded.

Species	Temporal Strata	Catch Rate	Harvest Rate	Catch (C)	RSE C	Harvest (H)	RSE H	Ratio H/C
Brown Trout	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0399	0.0000	263	0.55	0		0.00
	6-7	0.0128	0.0000	79	0.89	0		0.00
	All	0.0071	0.0000	342	0.47	0		0.00
Channel Catfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0578	0.0450	356	1.48	277	1.48	0.78
	All	0.0073	0.0057	356	1.48	277	1.48	0.78
Eel	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0127	0.0127	84	1.12	84	1.12	1.00
	6-7	0.0064	0.0000	40	1.48	0		0.00
	All	0.0025	0.0017	123	0.90	84	1.12	0.68
Fallfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.1505	0.0000	992	0.64	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0205	0.0000	992	0.64	0		0.00
Rainbow Trout	1-2	0.0095	0.0000	216	1.22	0		0.00
	3	0.0708	0.0000	922	0.53	0		0.00
	4-5	0.0509	0.0000	335	0.49	0		0.00
	6-7	0.0479	0.0350	295	0.95	216	1.26	0.73
	All	0.0365	0.0045	1768	0.36	216	1.26	0.12
Smallmouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.2229	0.0000	2901	0.20	0		0.00
	4-5	0.3688	0.0060	2430	0.39	39	1.20	0.02
	6-7	0.0765	0.0000	471	0.54	0		0.00
	All	0.1199	0.0008	5801	0.20	39	1.20	0.01
Walleye	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0085	0.0042	56	1.14	28	1.10	1.14
	6-7	0.2804	0.2103	1725	0.73	1294	0.58	0.56
	All	0.0368	0.0273	1781	0.70	1322	0.57	0.55



**D.11.2 Catch and Harvest Statistics Based on Monthly  
Post-Stratification and All Effort (Angler Hours)**





Table D.11.2.1. Catch and harvest statistics (boat anglers) in non-tidal stratum 3 by monthly temporal strata. No American shad and only two striped bass were recorded.

Species	Temporal Strata	Catch Rate	Harvest Rate	Catch ( C )	RSE C	Harvest ( H )	RSE H	Ratio H/C
Brown Trout	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0127	0.0000	51	0.65	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0022	0.0000	51	0.65	0		0.00
Channel Catfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0000	0.0000	0		0		
Eel	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0000	0.0000	0		0		
	All	0.0000	0.0000	0		0		
Fallfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.2667	0.0000	1074	0.76	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0454	0.0000	1074	0.76	0		0.00
Rainbow Trout	1-2	0.0000	0.0000	0		0		
	3	0.1600	0.0000	1288	0.13	0		0.00
	4-5	0.0000	0.0000	0		0		
	6-7	0.0594	0.0594	216	1.26	216	1.26	1.00
	All	0.0635	0.0091	1503	0.21	216	1.26	0.14
Smallmouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.4698	0.0127	1893	0.51	51	1.20	0.03
	6-7	0.1188	0.0000	431	0.59	0		0.00
	All	0.0982	0.0022	2324	0.43	51	1.20	0.02
Walleye	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.4752	0.3564	1725	0.73	1294	0.56	0.75
	All	0.0729	0.0547	1725	0.73	1294	0.56	0.75

Table D.11.2.2. Catch and harvest statistics (shore anglers) in non-tidal stratum 3 by monthly temporal strata. No American shad and only two striped bass were recorded.

Species	Temporal Strata	Catch Rate	Harvest Rate	Catch ( C )	RSE C	Harvest ( H )	RSE H	Ratio H/C
Brown Trout	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0639	0.0000	351	0.64	0		0.00
	6-7	0.0313	0.0000	79	0.89	0		0.00
	All	0.0186	0.0000	430	0.55	0		0.00
Channel Catfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.1410	0.1097	356	1.48	519	1.48	1.46
	All	0.0154	0.0120	356	1.48	519	1.48	1.46
Eel	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0240	0.0240	132	1.12	132	1.12	1.00
	6-7	0.0157	0.0000	40	1.48	0		0.00
	All	0.0074	0.0057	171	0.93	132	1.12	0.77
Fallfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0479	0.0000	263	0.71	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0114	0.0000	263	0.71	0		0.00
Rainbow Trout	1-2	0.0217	0.0000	121	1.23	0		0.00
	3	0.0000	0.0000	0		0		
	4-5	0.0958	0.0000	526	0.50	0		0.00
	6-7	0.0313	0.0000	79	0.85	0		0.00
	All	0.0314	0.0000	726	0.42	0		0.00
Smallmouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.4000	0.0000	3810	0.05	0		0.00
	4-5	0.2794	0.0000	1534	0.61	0		0.00
	6-7	0.0157	0.0000	40	1.41	0		0.00
	All	0.2330	0.0000	5384	0.26	0		0.00
Walleye	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0160	0.0080	88	1.14	44	1.14	0.50
	6-7	0.0000	0.0000	0		0		
	All	0.0038	0.0019	88	1.14	44	1.14	0.50

Table D.11.2.3. Catch and harvest statistics (all anglers) in non-tidal stratum 3 by monthly temporal strata. No American shad and only two striped bass were recorded.

Species	Temporal Strata	Catch Rate	Harvest Rate	Catch (C)	RSE C	Harvest (H)	RSE H	Ratio H/C
Brown Trout	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0422	0.0000	402	0.56	0		0.00
	6-7	0.0128	0.0000	79	0.89	0		0.00
	All	0.0103	0.0000	481	0.49	0		0.00
Channel Catfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0000	0.0000	0		0		
	6-7	0.0578	0.0450	356	1.48	277	1.48	0.78
	All	0.0076	0.0059	356	1.48	277	1.48	0.78
Eel	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0138	0.0138	132	1.12	132	1.12	1.00
	6-7	0.0064	0.0000	40	1.48	0		0.00
	All	0.0037	0.0028	171	0.93	132	1.12	0.77
Fallfish	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.1405	0.0000	1337	0.63	0		0.00
	6-7	0.0000	0.0000	0		0		
	All	0.0286	0.0000	1337	0.63	0		0.00
Rainbow Trout	1-2	0.0090	0.0000	121	1.23	0		0.00
	3	0.0733	0.0000	1288	0.13	0		0.00
	4-5	0.0553	0.0000	526	0.50	0		0.00
	6-7	0.0479	0.0350	295	0.95	216	1.26	0.73
	All	0.0477	0.0046	2230	0.20	216	1.26	0.10
Smallmouth Bass	1-2	0.0000	0.0000	0		0		
	3	0.2168	0.0000	3810	0.05	0		0.00
	4-5	0.3600	0.0054	3427	0.39	51	1.20	0.01
	6-7	0.0765	0.0000	471	0.54	0		0.00
	All	0.1648	0.0011	7708	0.18	51	1.20	0.01
Walleye	1-2	0.0000	0.0000	0		0		
	3	0.0000	0.0000	0		0		
	4-5	0.0092	0.0046	88	1.14	44	1.14	0.50
	6-7	0.2804	0.2103	1725	0.73	1294	0.56	0.75
	All	0.0387	0.0286	1813	0.69	1337	0.54	0.74

**APPENDIX E**

**FIELD DATA COLLECTION FORMS**



**E.1 ACCESS POINT INTERVIEW FORM**



# COOPERATIVE CREEL SURVEY - 2002

Angler Number 
 Month 
 Day 
 Year 
 Time of Interview

Clerk \_\_\_\_\_ Zone \_\_\_\_\_ Location ID \_\_\_\_\_

Location \_\_\_\_\_ Route \_\_\_\_\_

Type of Fishing: Boat: \_\_\_\_\_ Shore: \_\_\_\_\_

When did you start fishing today? \_\_\_\_\_ AM \_\_\_\_\_ PM

When did you finish fishing today? \_\_\_\_\_ AM \_\_\_\_\_ PM

What species were you fishing for today? \_\_\_\_\_

### Catch and Harvest

### Sex and Lengths (TL mm)

Species	Catch and Harvest				Sex and Lengths (TL mm)			
	Total Kept	Total Released	Total Caught		American Shad		Striped Bass	
				Sex	Length	Sex	Length	
American shad								
Striped bass								

### TAGGED FISH

Species						
Tag Number						

Angler Age Group: Youth (<15 yrs): \_\_\_\_\_ Adult (16-64 yrs): \_\_\_\_\_ Senior (>64 yrs): \_\_\_\_\_

Angler Gender : Male \_\_\_\_\_ Female \_\_\_\_\_

Fishing License: (R= Resident, N= Nonresident): Pa: \_\_\_\_\_ NJ: \_\_\_\_\_ NY: \_\_\_\_\_

City \_\_\_\_\_ County \_\_\_\_\_ State \_\_\_\_\_

(Anglers Residence)





**E.2 AERIAL SURVEY ANGLER COUNT FORM**



