Middle Missouri River Native Species Creel Survey
Final Report
-2005 and 2006 Field Season-

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Introduction

The middle Missouri River, which flows approximately 238-miles from Morony Dam near Great Falls to Fort Peck Reservoir, represents the last major free-flowing portion of the 2,474 mile Missouri River. This section of the Missouri is relatively unaltered due to the protection offered to it by the Upper Missouri River Breaks National Monument and the Charles M. Russell National Wildlife Refuge. Also, in 1976, the 149-mile portion from Fort Benton (RM 1772) to the Fred Robinson Bridge (RM 1921) was classified as a National Wild and Scenic Rivers System (US Congress 1975a; US Congress 1975b).

The middle Missouri River supports a diverse warm water fishery with approximately 53 fish species representing 14 families of fish (Alvord 1979; Berg 1981; Gardner & Berg 1980, 1982). Thirty-three of these species are native, all of which still occur within this section at varying population densities. One species, pallid sturgeon *Scaphirhynchus albus*, is federally listed as endangered (USFWS 1999), and five species are listed as Montana Species of Special Concern; blue sucker *Cycleptus elongatus*, northern redbelly dace *Phoxinus eos*, sauger *Sander canadenis*, shortnose gar *Lepisosteus platostomus*, and paddlefish *Polyodon spathula* (Montana 2001).

Over the past few years, severe drought has altered flows within the Missouri River and as a result there is great concern over the survival and recruitment of native species such as paddlefish, sauger, blue sucker, shovelnose sturgeon *Scaphirhynchus platorynchus*, and pallid sturgeon. In addition, fishing pressure within this section has doubled over the last decade and a half. In 1989, this fishery received an estimated 8,312 angler-days (McFarland 1990) and by 2005 this pressure increased to an estimated 16,587 angler-days (McFarland 2006).

The substantial increase in fishing pressure combined with poor survival and recruitment of native species is of concern. In 2002, the 5 daily combined harvest limits of walleye *Sander vitreus vitreus* and sauger was changed to allow only one sauger. In 2007, Montana Fish, Wildlife, & Parks reduced the two paddlefish limit within this section to a one fish limit, and removing the ability to immediately release a snagged paddlefish by enacting mandatory catch and release and mandatory harvest days.

This creel survey was designed to provide Montana Fish, Wildlife, & Parks with vital harvest information on native fishes by 1) determining fishing pressure and harvest rates for sauger, paddlefish, shovelnose sturgeon, channel catfish *Ictalurus punctatus*, burbot *Lota lota*, other native species, and walleye, 2) collecting tag return information from pallid sturgeon, shovelnose sturgeon, sauger, and paddlefish, 3) determining age structure of harvested sauger, shovelnose sturgeon, paddlefish, channel catfish, and other native fishes, 4) determining reasons for release of snagged paddlefish, and anglers opinions on potential paddlefish regulation changes, 5) determining the extent of accidental snagging or incidental catch of pallid sturgeon and identify survival of hatchery-stocked pallid sturgeon, and 6) distributing information on pallid sturgeon, paddlefish, and sauger in order to educate the public about on-going studies and increase awareness of the needs of native species.

Study Area

Our study focused specifically on angler use in the 22 mile section of the Missouri River between Fred Robinson Bridge (River Mile 1921) and Peggy's Bottom (River Mile 1899). This section supports a very popular native warm-water sport fishery consisting of paddlefish, sauger, shovelnose sturgeon, burbot, and channel catfish. Although the fishing season is open year

round, most fishing pressure occurs from late March through June when paddlefish, sauger, and channel catfish are migrating to spawning locations.

Fishing access consists of two boat ramps and eight camping sites all of which are accessible by vehicle. Fishing access in the wild and scenic section upstream of Fred Robinson Bridge is restricted to non-motorized boats during the summer period between Memorial Day and Labor Day.

Methods

A two-year native species creel survey was conducted in 2005 and 2006. In 2005, the roving creel survey was conducted by vehicle from April 1st to June 10th from the Fred Robinson Bridge to Peggy's Bottom. In 2006, the roving creel survey was repeated from April 3rd to June 18th.

Schedule

A roving creel survey was conducted from April through June from the Fred Robinson Bridge to Peggy's Bottom. For the first half of April and the last half of June, fishing pressure is lower and one creel clerk was employed. During this time we used a stratified random sampling design to select survey dates from two strata, weekends and weekdays. All weekends were surveyed due to the high fishing pressure and two randomly selected weekdays were surveyed. From mid April to mid June, two creel clerks were employed and all days were surveyed. During high-pressure times, Memorial Day weekend, two extra creel clerks were employed and two teams surveyed anglers.

Effort

Instantaneous angler counts were performed once a day by vehicle due to travel distance and time. Starting times were randomly chosen from the fishing day (8:00 to 21:00 in 2005 & 2006) and counts were performed from ten pre-determined vantage points and access areas. Counts were performed at all sites except when road conditions prevented travel to some of the sites. In 2006, the accuracy of the vantage point counts were double checked on three occasions by conducting simultaneous counts from vantage points and by boat for the entire creel area.

Harvest and Catch

Angler interviews were conducted at all boat ramps and fishing access/camping sites on the north side of the Missouri River between Fred Robinson Bridge (RM 1921) and lower Peggy's Bottom (RM 1987). Interviews were conducted at each site, during each sampling day except when road conditions prevented travel to certain sites. The creel clerks conducted party interviews and attempted to interview every party on the river each sampling day. When the creel clerk encountered too many angler parties at a location to interview them all, the clerk systematically sub sampled every kth party (k = interval demanded by the number of fishermen present) to ensure that all locations were sampled. Boat anglers who launched within the area were interviewed even if they fished out of the study reach. Survey cards were distributed or deposited on windshields of vehicles when boat anglers where not available for interviews.

During interviews one actively fishing angler per party was interviewed. This individual was asked a series of questions relating to residence, number in party, length of stay, time spent fishing, whether a boat was used, type of gear used, and primary species being sought. Anglers were asked how many of each fish species were caught, released and/or kept and if any of these

fish had tags and if so the type, color, and number on the tag. When tagged paddlefish were caught, the angler was provided with the original tagging location, date, and weight of the fish. In addition, if the angler released a paddlefish they were asked the reason for the release to determine if size-selective harvest was occurring.

When possible, harvested fish (except paddlefish and shovelnose sturgeon) were measured to the nearest 0.1-inch (total length; TL) and 0.01-pound. Eye-fork (body) length measurements were taken for paddlefish and fork-length measurements for shovelnose sturgeon. To determine age samples of jaws, spines, scales, or otoliths were collected from harvested fish. These samples were then sent to the University of Idaho for aging.

The creel clerks also carried Passive Integrated Transponder (PIT) tag readers to identify any previously tagged pallid sturgeon and were prepared to PIT tag any new fish they encountered. Pamphlets and brochures developed for sturgeon, sauger, and paddlefish were distributed freely to anglers.

Data Analysis

Fishing effort (angler-hours and angler days), catch rates, and harvest estimates were calculated using the Creel Census Program (McFarland and Roche 1987), which was developed using methods outlined in Neuhold and Kuo (1957). To minimize variance estimates, the creel survey was stratified into three periods (April, May, and June), by weekend and weekday effort, and by boat or shore effort. Effort was not broken down by fishing method or by species because anglers were usually fishing with multiple gear types for more than one species during a day.

Results

In 2005, a total of 861 parties from 13 states and 45 of the 56 Montana counties were interviewed from April 1st to June 12th. In 2006, a total of 611 parties from 10 states and 39 of the 56 Montana counties were interviewed from April 3rd to June 18th. In 2005 and 2006 combined, the highest percentage of anglers in Montana came from Yellowstone (21.0%), Cascade (13.4%), Fergus (13.0%), Gallatin (9.3%), and Lewis & Clark (6.5%) Counties. In 2005, the average party contained 3.9 anglers (range = 1 to 20 anglers), 82.3% of which were males. In 2006, the average party contained 4.0 anglers (range = 1 to 35 anglers), 83.8% of which were males. In 2005, the average length of stay was 3.9 day/trip (range = 1 to 16 days). And in 2006, the average length of stay was 3.8 day/trip (range = 1 to 14 days).

Effort

In 2005, the Missouri River (RM 1899 to 1921) received 31,752 angler-hours of pressure (Table 1) and a total of 6,679 angler days (Table 2). In 2006, angler-hours increased to 36,757 (Table 3) and angler days increased to 7,532 (Table 4). In 2005 and 2006, 82% of the angling effort occurred from shore and 51% of the effort occurred on weekdays. In both years 56% of the angling effort occurred in May, which coincides with the peak of the paddlefish spawning migration. This corresponds with the primary target species in 2005 and 2006, with paddlefish being the mostly commonly sought fish (77.0% and 82.1%, respectively), followed by channel catfish (7.2% and 8.9%, respectively), walleye (6.2% and 6.4%, respectively), sauger (4.4% and 0.7% respectively), and shovelnose sturgeon (0.6% and 0.5%, respectively).

Species caught and released

In 2005 and 2006, a total of 17 fish species were caught and 16 fish species were harvested from April through June. In 2005, channel catfish, paddlefish, goldeye *Hiodon alosoides*, sauger, stonecats *Noturus flavus*, and freshwater drum *Aplodinotus grunniens* were the most commonly caught species (Tables 5 & 6). In 2005, channel catfish, paddlefish, walleye, sauger, and goldeye were the most commonly harvested species (Tables 7). In 2006, channel catfish, paddlefish, sauger, goldeye, and walleye were the most commonly caught species by anglers (Tables 8 & 9). In 2006, paddlefish, channel catfish, sauger, walleye, and freshwater drum were the most commonly harvested species (Tables 10). Average length, weight, and condition of harvested fish measured by the creel clerks in 2005 and 2006 are presented in Tables 11 and 12 respectively.

Paddlefish

In 2005, a total of 745 paddlefish were caught and reported to the creel clerks. Overall, there was an estimated catch of 781 paddlefish (Table 5) and the average catch rate was 0.025 paddlefish/hour (Table 6). Seventy-four percent of the paddlefish caught were harvested, with an overall estimated harvest of 576 paddlefish (Table 7). In 2006, a total of 989 paddlefish were caught and reported to creel clerks. Overall, there was an estimated catch of 2,036 paddlefish (Table 8) and the estimated overall catch rate was 0.056 paddlefish/hour (Table 8). Sixty-three percent of the paddlefish caught were harvested, with an overall estimated harvest of 1,289 paddlefish (Table 10).

In 2005 and 2006, 7.7% of anglers released paddlefish because they were too big, 18.9% released paddlefish because they were too small, 41.1% released paddlefish because they were catch and release fishing only, and 32.2% released paddlefish for other reasons which were primarily because anglers did not want to keep paddlefish until the end of their trip.

In 2005, harvested paddlefish ranged in length from 33.3 to 60.5 inches (eye-fork length) and ranged in weight from 12.0 to 90.0 pounds (Table 11). Sixty-one percent of the harvested paddlefish were males. Jaw tags were observed on 85 (26.0%) of the harvested paddlefish and nine (9.7%) of the released paddlefish. Harvested paddlefish ranged in age from 10 to 59 years with 52.5% of the harvested fish being 20 to 27 years old (Table 13). Twenty percent of the harvested fish were less than 16 years old (new recruits).

In 2006, harvested paddlefish ranged in length from 28.1 to 65.0 inches (eye-fork length) and ranged in weight from 15.1 to 112.0 pounds (Table 12). Fifty-two percent of the harvested paddlefish were males. Jaw tags were observed on 49 (13.2%) of the harvested paddlefish and 11 (4.9%) of the released paddlefish. Harvested paddlefish ranged in age from 9 to 56 years with 43% of the harvested fish being 20 to 27 years old (Table 14). Nineteen percent of the harvested fish were less than 16 years old (new recruits).

Channel Catfish

In 2005, a total of 795 channel catfish were caught and reported to creel clerks. Overall there was an estimated catch of 780 channel catfish (Table 5) and the estimated overall catch rate was 0.025 channel catfish/angler-hour (Table 6). Eighty percent of the channel catfish caught were harvested, with an estimated overall harvest of 621 channel catfish (Table 7). In 2006, a total of 904 channel catfish were caught and reported to creel clerks. Overall there was an estimated catch of 1,809 channel catfish (Table 8) and the catch rate was 0.051 channel catfish/angler-hour (Table 9). Sixty-nine percent of the channel catfish that were caught were

harvested with a total estimated harvest of 1,256 channel catfish (Table 10). In 2005 and 2006, 58.3% of anglers released channel catfish because they were too small, 1.4% released them because they were caught snagging for paddlefish, 20.8% because they were catch and release fishing, and 19.4% released them for other unspecified reasons.

In 2005, harvested channel catfish ranged in length from 10.5 to 35.0 inches and in weight from 0.3 to 26.0 pounds (Table 11). Harvested channel catfish ranged in age from 4 to 17 years old with 83.4% being 11 to 15 years old (weight range = 5.0 to 15.0 pounds; Table 15). And 71.8% of the harvested channel catfish were male. In 2006, harvested channel catfish ranged in length from 7.5 to 35.5 inches and in weight from 0.3 to 20.5 pounds (Table 12). Harvested channel catfish ranged in age from 3 to 15 years old (weight range = 0.6 to 8.9 lbs; Table 16).

Stonecats

In 2005, a total of 158 stonecats were caught and reported to the creel clerks. Overall there was an estimated catch of 297 stonecats (Table 5) and the catch rate was 0.009 stonecats/angler-hour (Table 6), with the highest catch occurring in May (Table 5). Only 9.8% of the stonecats caught were harvested, with an estimated overall harvest of 29 stonecats (Table 7). In 2006, 105 stonecats were caught and reported to the creel clerks. Overall there was an estimated catch of 335 stonecats (Table 7) and the catch rate was 0.009 stonecats/angler-hour (Table 9). Only 6.3% of the stonecats caught were harvested, with an estimated overall harvest of 21 stonecats (Table 10).

In 2005 and 2006, 27.7% of anglers released stonecats because they were too small, 12.8% released them because they were catch and release fishing, 4.3% released stonecats citing compliance with regulations, and the remaining anglers (55.3%) released stonecats for other reasons; primarily they did not want the fish.

In 2005, stonecats that were harvested ranged in length from 5.5 to 7.4 inches (Table 11) and ranged in age from 3 to 8 years old (n=15; TL range = 5.3 to 7.4 in.; Table 17). In 2006, harvested stonecats ranged in length from 6.7 to 7.6 inches (Table 12) and in age from 5 to 7 years old (n=4; Table 18)

Sauger

In 2005, a total of 382 sauger were caught and reported to the creel clerks. Overall there was an estimated catch of 503 sauger (Table 5), a catch rate of 0.016 sauger/hour (Table 6), with the majority of sauger being caught in April and May. Anglers harvested 36.6% of the sauger caught, with an estimated overall harvest of 205 sauger (Table 7). In 2006, a total of 265 sauger were caught and reported to the creel clerks. Overall there was an estimated catch of 621 sauger (Table 8) with a catch rate of 0.004 sauger/angler-hour (Table 9). Anglers harvested 61% of the sauger caught, with an estimated overall harvest of 379 sauger (Table 10).

In 2005 and 2006, 41.9% of anglers released their sauger because they were too small, 32.3% because anglers were complying with the regulations, 12.9% because anglers were catch and release fishing, and 11.3% released sauger for other reasons such as the fish was tagged, the angler thought sauger were endangered, or because they were not the species being targeted.

In 2005, harvested sauger ranged in length from 11.3 to 24.8 inches and in weight from 0.3 to 3.5 pounds (Table 11). Harvested sauger ranged in age from 3 to 14 years, with 87.3% being 5 to 9 years old (TL=13.4-19.2 inches; n=71; Table 19). In 2006, harvested sauger ranged

in length from 12.0 to 27.0 inches and in weight from 0.5 to 7.1 pounds (Table 12). Harvested sauger ranged in length from 4 to 11 years old (TL=16.3-15.8 in.; n=57; Table 20).

Walleye

In 2005, a total of 201 walleye were caught and reported to the creel clerks. Overall there was an estimated catch of 222 walleye (Table 5), an estimated catch rate of 0.007 walleye/angler-hour (Table 6), with the majority of the walleye being caught in April and May (Table 5). Anglers harvested 81.5% of the walleye they caught, with an estimated overall harvest of 197 walleye (Table 8). In 2006, a total of 154 walleye were caught and reported to the creel clerks. Overall there was an estimated catch of 281 walleye (Table 8) with an estimated overall catch rate of 0.008 walleye/angler-hour (Table 9). Anglers harvested 80.1% of the walleye they caught, with an estimated overall harvest of 225 walleye (Table 10). In 2005 and 2006, the primary reason for anglers to release walleye was because they were too small.

In 2005, harvested walleye ranged in length from 11.5 to 29.1 inches and in weight from 0.3 to 9.5 pounds (Table 11). Harvested walleye ranged in age from 4 to 15, with 84.5% being 5 to 9 years old (TL=13.3-16.6 inches; Table 21). In 2006, harvested walleye ranged in length from 11.7 to 30.5 inches and in weight from 0.4 to 11.0 pounds (Table 12). Harvested walleye ranged in age from 3 to 14 years old, with 70% being 6 to 8 years old (Table 22).

Pallid Sturgeon

A total of 25 pallid sturgeon were caught and reported to the creel clerks in 2005. Overall there was an estimated catch of 48 pallid sturgeon (Table 5), with an estimated catch rate of 0.002 pallid sturgeon/angler-hour (Table 6). In 2006, 19 pallid sturgeon were caught and reported to the creel clerks. Overall there was an estimated catch of 67 pallid sturgeon (Table 7), with an estimated catch rate of 0.0006 pallid sturgeon/angler-hour (Table 9).

All pallid sturgeon caught by anglers were hatchery stocked fish, identified by the presence of curly fins, elastomer tags, floy tags, and/or passive integrated transponder (PIT) tags. In 2005, one pallid sturgeon was measured and scanned for a PIT tag by the creel clerks. This pallid was 26 inches in length and weight 0.91 pounds and had PIT tag (number 4527066BOF) and a radio transmitter.

Shovelnose Sturgeon

In 2005, a total of 88 shovelnose sturgeon were caught and reported to the creel clerks. Overall there was an estimated catch of 123 shovelnose sturgeon (Table 5), with an estimated overall catch rate of 0.0039 shovelnose sturgeon/angler-hour (Table 6). Anglers harvested 45.9% of the shovelnose sturgeon they caught with an estimated overall harvest of 58 shovelnose sturgeon (Table 7). In 2006, a total of 139 shovelnose sturgeon were caught and reported to the creel clerks. Overall there was an estimated catch of 421 shovelnose sturgeon (Table 8), with an estimated overall catch rate of 0.011 shovelnose sturgeon/angler-hour (Table 9). Anglers harvested 19.5% of the shovelnose sturgeon caught with an estimated overall harvest of 82 shovelnose sturgeon (Table 10). In 2005 and 2006, the primary reason for release was compliance with fishing regulations (66.7%), 15.7% of anglers released fish because they were too small, and 17.6% released fish for other unspecified reasons.

In 2005, harvested shovelnose sturgeon ranged in length from 26.5 to 37.3 inches and in weight from 2.9 to 8.3 pounds (Table 11). In 2005, age was determined on one shovelnose sturgeon, which was 35 years old (34.5 in., 6.5 lbs.; Table 23). In addition two floy-tagged

shovelnose sturgeon were reported. In 2006, harvested shovelnose sturgeon ranged in length from 25.5 to 37.5 inches and in weight from 1.75 to 10 pounds (Table 12). No aging structures were sampled from shovelnose sturgeon in 2006.

Burbot

In 2005, a total of 10 burbot were caught and reported to the creel clerks. Overall there was an estimated catch of 10 burbot (Table 5), with an estimated overall catch rate of 0.0003 burbot/angler-hour (Table 6). Anglers harvested all burbot caught and the estimated harvest was 12 burbot (Table 7). In 2006, a total of 13 burbot caught and reported to the creel clerks. Overall there was an estimated catch of 30 burbot (Table 8), with an estimated catch rate of 0.0008 burbot/angler-hour (Table 9). Anglers harvested 36.7% of the burbot caught, with an estimated overall harvest of 8 burbot (Table 10).

In 2005, harvested burbot ranged in length from 18.8 to 28.5 and in weight from 2.0 to 3.9 pounds (Table 11). In 2005, age was determined on one harvested burbot, which was 10 years old (Table 23). In 2006, harvested burbot ranged in length from 19.6 to 30.0 inches and ranged in weight from 1.6 to 4.5 pounds (Table 12). No ageing structures were sampled from burbot in 2006.

Freshwater Drum

In 2005 a total of 70 freshwater drum (drum) were caught and reported to the creel clerks. Overall there was an estimated catch of 67 drum (Table 5), with an estimated overall catch rate of 0.002 drum/angler-hour (Table 6). Anglers harvested 55% of the drum caught, with an estimated overall harvest of 37 drum (Table 7). In 2006 a total of 126 drum were caught and reported to the creel clerks. Overall there was an estimated catch of 371 drum (Table 8), with an estimated overall catch rate of 0.0004 drum/angler-hour (Table 9). Anglers harvested 41.2% of the drum caught, with an estimated overall harvest of 153 drum (Table 10).

In 2005, harvested drum ranged in length from 12.5 to 19.5 inches (Table 11) and in age from 12 to 15 years (n=3; Table 24). In 2006, harvested drum ranged in length from 10.4 to 17.6 inches and in weight from 0.3 to 4.0 pounds (Table 12). Harvested drum ranged in age from 3 to 14 years old (n=13; Table 25).

Goldeye

In 2005 a total of 324 goldeye were caught and reported to the creel clerks. Overall there was an estimated catch of 520 goldeye (Table 5), with an estimated overall catch rate of 0.016 goldeye/angler-hour (Table 6). Anglers harvested 23% of the goldeye caught, with an estimated overall harvest of 122 goldeye (Table 7). In 2006 a total of 190 goldeye were caught and reported to the creel clerks. Overall there was an estimated catch of 551 goldeye (Table 8), with an estimated overall catch rate of 0.003 goldeye/angler-hour (Table 9). Anglers harvested 15.6% of the goldeye caught, with an estimated overall harvest of 86 goldeye (Table 10).

In 2005, harvested goldeye ranged in length from 11.5 to 13.1 inches (Table 11) and in age from 5 to 9 years (n=21; Table 26). In 2006, harvested drum ranged in length from 10.1 to 14.6 and in age from 5 to 13 years old (n=8; Table 27).

Other Species

Other native species caught included, flathead chub, largescale sucker, bigmouth buffalo, smallmouth buffalo, and shorthead redhorse. The majority of these species were released. Other

non-native species caught included rainbow trout, northern pike, and common carp. The specific length, weight, and structural indices for these species are reported in Table 11 and 12.

In 2005, the harvested rainbow trout was aged as 10 years old (Table 25) and was 21.9 inches long and weighed 2.7 pounds (Table 11). No age structures were collected for any other native or non-native species caught.

Discussion

The Middle Missouri River around the Fred Robinson Bridge (Sec 06A) supports a very popular fishery consisting primarily of native fishes. Over the past 15 years angler interest in this fishery has doubled and anglers from around the country have participate in the fishery. During our survey period (April-June 2005 & 2006) anglers from 13 states and from 45 of Montana's 56 counties participated in this fishery resulting in an angling effort of between 31,752 and 36,757 angler-hours (6,679 to 7,532 angler-days). Increasing interest in the fishery from around the county combined with increasing angler effort raises concerns about the effects of harvest levels on the native fish populations.

Many of the native fishes of the Missouri River have been declining due to a variety of factor including alteration of their habitat by the creation of dams and reservoir and the alteration of flow and temperature regimes, which have resulted in reduced or fragmented spawning and rearing habitat or altered the environmental factors which trigger these fish to spawn. As a result of reduced recruitment in these populations they are very sensitive to harvest levels.

To provide a stable recreational fishery while maintaining the population size and historical age structure of the spawning stock, harvest regulation on sauger and paddlefish have recently been reduced. The effects of these regulation changes on sauger and paddlefish will continue to be monitored to insure that a stable recreational fishery is maintained. Additionally, harvest levels of other native fishes such as channel catfish will have to be monitored to assure that the size and age structure of this population is not adversely affected by angling pressure.

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Tables

Table 1. - Estimated fishing effort (angler-hours) and standard error (SE) by month, time of week, and angler type for the Missouri River (RM 1899 to 1921), April-June 2005.

	Weekday (angler hours)				Weekend (angler hours)				Overall
	Shore	SE	Boat	SE	Shore	SE	Boat	SE	(angler hours)
April	2,440.20	791.38	294.00	138.59	2,988.00	1,009.02	774.00	279.63	6,496.20
May	6,515.53	1,296.55	1,525.26	591.16	7,770.00	1,319.43	2,220.00	796.18	18,030.79
June	3,430.40	941.82	179.20	111.59	3,105.00	1,241.14	510.00	287.23	7,224.60
Overall	12,386.13		1,998.46		13,863.00		3,504.00		31,751.59

Table 2. - Estimated fishing effort (angler days) by month, time of week, and angler type for the Missouri River (RM 1899 to 1921), April-June 2005.

	Weekday (angler days)		Weekend (angler days)		Overall
	Shore	Boat	Shore	Boat	
April	865.70	39.48	566.50	154.34	1,626.02
May	1,509.67	351.75	1,453.10	405.37	3,719.89
June	409.17	17.31	811.59	95.32	1,333.39
Overall	2,784.54	408.53	2,831.19	655.03	6,679.29

Table 3. - Estimated fishing effort (angler-hours) and standard error (SE) by month, time of week, and angler type for the Missouri River (RM 1899 to 1921), April-June 2006.

	Weekday (angler hours)				Weekend (angler hours)				Overall
	Shore	SE	Boat	SE	Shore	SE	Boat	SE	(angler hours)
April	3,187.69	996.29	904.62	414.77	2,870.00	891.74	875.00	319.41	7,837.31
May	10,920.00	1,464.25	2,475.00	756.75	7,890.00	1,613.76	1,470.00	180.62	22,755.00
June	3,456.00	699.83	384.00	149.61	1,830.00	468.61	495.00	245.65	6,165.00
Overall	17,563.69		3,763.62		12,590.00		2,840.00		36,757.31

Table 4. - Estimated fishing effort (angler days) by month, time of week, and angler type for the Missouri River (RM 1899 to 1921), April-June 2006.

	Weekday (angler days)		Weekend (angler days)		Overall
	Shore	**Boat**	**Shore**	**Boat**	
April	564.61	171.64	366.38	182.90	1,285.54
May	2,123.33	543.70	1,762.57	400.86	2,163.42
June	756.00	99.34	451.48	109.40	1,416.23
Overall	3,443.94	814.69	2,580.43	693.16	7,532.22

Table 5. - Estimated catch rate (fish/strata) of paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), pallid sturgeon (PSTG), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), and common carp (CARP) in the Missouri River (RM 1899 to 1921), April-June 2005.

	April				**May**				**June**				**Overall**		
	Weekday		**Weekend**		**Weekday**		**Weekend**		**Weekday**		**Weekend**		**Shore**	**Boat**	**Overall**
	Shore	**Boat**	**Shore**	**Boat**	**Shore**	**Boat**	**Shore**	**Boat**	**Shore**	**Boat**	**Shore**	**Boat**			
PF	61	8	17	5	225	77	119	30	113	12	123	18	636	144	781
C CAT	155	0	214	16	130	81	148	81	6	6	12	12	570	202	780
S CAT	0	0	0	0	75	0	89	31	0	50	2	1	185	105	297
SGR	41	90	144	146	53	4	52	15	13	0	0	0	262	224	503
WE	24	11	58	29	60	9	27	16	3	4	0	0	152	66	222
PSTG	4	0	26	0	8	0	5	3	6	0	2	0	44	5	48
SSTG	0	3	14	0	35	0	24	4	32	0	12	2	118	7	123
LING	4	0	3	0	0	0	5	0	0	0	0	0	10	0	10
DRUM	0	0	202	0	3	5	24	7	3	0	0	0	56	11	67
GE	248	13	179	15	70	5	138	10	0	0	0	0	487	39	520
B BUF	0	0	0	0	0	2	2	0	0	0	2	0	4	2	6
S BUF	0	0	0	0	0	0	2	0	0	0	0	0	2	0	2
CARP	0	0	12	2	45	56	65	13	23	0	3	0	157	67	227

Table 6. - Estimated hourly catch rate (fish/angler hour) by strata for paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), pallid sturgeon (PSTG), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), and common carp (CARP) in the Missouri River (RM 1899 to 1921), April-June 2005.

	April								May							
	Weekday				Weekend				Weekday				Weekend			
	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	SE	Boat	SE
PF	0.0017	0.0016	0.0017	0.0013	0.0058	0.0020	0.0071	0.0033	0.0346	0.0057	0.0505	0.0163	0.0153	0.0027	0.0135	0.0044
C CAT	0.0634	0.0486	0.0000	0.0165	0.0715	0.0020	0.0212	0.0104	0.0200	0.0045	0.0528	0.0155	0.0190	0.0061	0.0364	0.0120
S CAT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0115	0.0063	0.0000	0.0000	0.0115	0.0049	0.0142	0.0099
SGR	0.0167	0.0082	0.3045	0.2232	0.0483	0.0132	0.1887	0.0962	0.0081	0.0025	0.0023	0.0014	0.0067	0.0020	0.0067	0.0043
WE	0.0100	0.0062	0.0358	0.0211	0.0193	0.0070	0.0377	0.0164	0.0092	0.0030	0.0057	0.0027	0.0035	0.0012	0.0074	0.0027
PSTG	0.0017	0.0016	0.0000	0.0000	0.0087	0.0048	0.0000	0.0000	0.0012	0.0000	0.0000	0.0000	0.0006	0.0004	0.0013	0.0013
SSTG	0.0000	0.0017	0.0090	0.0094	0.0048	0.0030	0.0000	0.0000	0.0054	0.0022	0.0000	0.0000	0.0030	0.0136	0.0020	0.0012
LING	0.0000	0.0017	0.0000	0.0000	0.0010	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0005	0.0000	0.0000
DRUM	0.0000	0.0026	0.0000	0.0000	0.0677	0.0038	0.0000	0.0000	0.0004	0.0004	0.0030	0.0023	0.0030	0.0015	0.0034	0.0020
GE	0.1018	0.0443	0.0448	0.0152	0.0599	0.0146	0.0189	0.0099	0.0108	0.0031	0.0034	0.0026	0.0177	0.0051	0.0047	0.0031
B BUF	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0011	0.0012	0.0002	0.0002	0.0000	0.0000
S BUF	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0002	0.0000	0.0000
CARP	0.0000	0.0000	0.0000	0.0000	0.0039	0.0019	0.0024	0.0024	0.0069	0.0030	0.0368	0.0224	0.0084	0.0028	0.0061	0.0029

Table 6 (cont.). - Estimated hourly catch rate (fish/angler hour) by strata for paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), pallid sturgeon (PSTG), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), and common carp (CARP) in the Missouri River (RM 1899 to 1921), April-June 2005.

	June								Overall					
	Weekday				Weekend									
	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Overall	SE
PF	0.0331	0.0087	0.0664	0.0274	0.0395	0.0062	0.0345	0.0125	0.0242	0.0022	0.0262	0.0049	0.0246	0.0020
C CAT	0.0019	0.0014	0.0332	0.0243	0.0039	0.0020	0.0239	0.0216	0.0217	0.0046	0.0367	0.0071	0.0246	0.0039
S CAT	0.0000	0.0000	0.2766	0.2378	0.0006	0.0006	0.0027	0.0025	0.0071	0.0024	0.0191	0.0119	0.0094	0.0030
SGR	0.0038	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0100	0.0016	0.0408	0.0157	0.0158	0.0033
WE	0.0009	0.0010	0.0221	0.0240	0.0000	0.0000	0.0000	0.0000	0.0058	0.0011	0.0121	0.0029	0.0070	0.0011
PSTG	0.0019	0.0019	0.0000	0.0000	0.0006	0.0006	0.0027	0.0027	0.0017	0.0005	0.0009	0.0006	0.0015	0.0005
SSTG	0.0094	0.0031	0.0000	0.0000	0.0039	0.0020	0.0000	0.0000	0.0045	0.0009	0.0012	0.0006	0.0039	0.0007
LING	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.0002	0.0000	0.0000	0.0003	0.0002
DRUM	0.0009	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0021	0.0007	0.0020	0.0010	0.0021	0.0006
GE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0186	0.0030	0.0072	0.0021	0.0164	0.0024
B BUF	0.0000	0.0000	0.0000	0.0000	0.0006	0.0006	0.0000	0.0000	0.0002	0.0001	0.0003	0.0003	0.0002	0.0001
S BUF	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000	0.0001	0.0001
CARP	0.0066	0.0067	0.0000	0.0000	0.0011	0.0008	0.0000	0.0000	0.0060	0.0015	0.0122	0.0058	0.0072	0.0016

Table 7. - Estimated harvest by strata for paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), and common carp (CARP) in the Missouri River (RM 1899 to 1921), April-June 2005.

	April								May							
	Weekday				Weekend				Weekday				Weekend			
	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	SE	Boat	SE
PF	4	2.0	0	0.0	9	5.8	5	3.3	160	43.9	56	28.0	91	22.9	27	13.5
C CAT	65	8.1	0	0.0	136	76.9	9	8.6	110	36.0	72	34.3	128	51.0	73	37.5
S CAT	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	3.8	22	23.0
SGR	12	3.5	13	9.8	52	25.4	27	14.5	43	17.1	4	2.5	39	12.5	12	8.0
WE	20	4.5	11	8.0	52	27.1	9	5.0	50	20.8	9	5.3	27	10.7	15	8.0
SSTG	0	0.0	0	0.0	12	9.7	0	0.0	5	3.6	0	0.0	17	10.0	3	2.4
LING	4	2.0	0	0.0	3	2.9	0	0.0	0	0.0	0	0.0	5	3.9	0	0.0
DRUM	0	0.0	0	0.0	9	9.2	0	0.0	3	2.6	4	3.8	12	8.9	7	5.2
GE	8	2.9	3	3.0	46	27.0	4	3.0	35	16.3	4	2.9	22	11.4	1	1.6
B BUF	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	1.7	0	0.0
S BUF	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	1.7	0	0.0
CARP	0	0.0	0	0.0	0	0.0	0	0.0	8	5.8	5	4.5	7	3.5	0	0.0

Table 7 (cont.). - Estimated harvest by strata for paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), and common carp (CARP) in the Missouri River (RM 1899 to 1921), April-June 2005.

	June								Overall				
	Weekday				Weekend				Weekday		Weekend		Overall
	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	Boat	Shore	Boat	
PF	78	26.8	10	7.7	119	51.3	18	11.8	242	66	218	50	576
C CAT	3	3.4	4	5.0	9	6.8	12	13.0	178	76	272	95	621
S CAT	0	0.0	0	0.0	0	0.0	1	1.5	0	0	5	24	29
SGR	3	3.4	0	0.0	0	0.0	0	0.0	58	17	91	39	205
WE	0	0.0	4	5.0	0	0.0	0	0.0	70	23	79	24	197
SSTG	13	8.4	0	0.0	9	6.2	0	0.0	18	0	37	3	58
LING	0	0.0	0	0.0	0	0.0	0	0.0	4	0	8	0	12
DRUM	3	3.4	0	0.0	0	0.0	0	0.0	6	4	20	7	37
GE	0	0.0	0	0.0	0	0.0	0	0.0	43	6	68	5	122
B BUF	0	0.0	0	0.0	2	1.9	0	0.0	0	0	3	0	3
S BUF	0	0.0	0	0.0	0	0.0	0	0.0	0	0	2	0	2
CARP	0	0.0	0	0.0	2	1.9	0	0.0	8	5	8	0	21

Table 8. - Estimated catch by strata of paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), pallid sturgeon (PSTG), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), and common carp (CARP), in the Missouri River (RM 1899 to 1921), April-June 2006.

	April				May				June				Overall		
	Weekday		Weekend		Weekday		Weekend		Weekday		Weekend		Shore	Boat	Overall
	Shore	Boat	Shore	Boat	Shore	Boat	Shore	Boat	Shore	Boat	Shore	Boat			
PF	163	46	122	86	459	115	303	79	473	12	127	47	1,647	389	2,036
C CAT	35	48	208	47	258	130	423	178	203	91	43	33	1,184	625	1,809
S CAT	118	0	38	0	42	22	71	0	41	0	22	2	314	21	335
SGR	31	32	16	5	75	24	138	113	108	12	36	0	409	213	621
WE	17	8	9	0	66	17	22	42	41	20	7	12	153	128	281
PSTG	7	0	19	2	9	0	13	2	7	1	7	0	61	6	67
SSTG	24	0	25	7	141	15	138	2	7	15	14	2	369	52	421
LING	0	8	3	0	9	2	0	0	14	2	0	0	22	8	30
DRUM	21	0	9	0	27	13	165	21	41	15	14	2	302	69	371
GE	55	0	3	5	216	9	80	79	47	0	33	0	430	122	551
B BUF	0	0	0	0	0	0	0	0	7	0	0	0	5	0	5
S BUF	0	0	0	0	0	2	13	0	0	0	0	0	16	2	18
CARP	17	0	13	2	27	4	85	2	14	2	14	2	183	17	200

Table 9. - Estimated hourly catch rate (fish/angler-hour) by strata for paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), pallid sturgeon (PSTG), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), and common carp (CARP) in the Missouri River (RM 1899 to 1921), April-June 2006.

	April								May							
	Weekday				Weekend				Weekday				Weekend			
	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	SE	Boat	SE
PF	0.0510	0.0125	0.0510	0.0125	0.0735	0.0236	0.0981	0.0362	0.0421	0.0055	0.0464	0.0226	0.0384	0.0064	0.0534	0.0190
C CAT	0.0109	0.0040	0.0533	0.0267	0.0724	0.0181	0.0542	0.0183	0.0236	0.0083	0.0526	0.0187	0.0536	0.0158	0.1210	0.0348
S CAT	0.0369	0.0177	0.0000	0.0000	0.0132	0.0001	0.0000	0.0000	0.0038	0.0015	0.0088	0.0049	0.0090	0.0038	0.0000	0.0000
SGR	0.0098	0.0043	0.0356	0.0228	0.0055	0.0000	0.0052	0.0036	0.0069	0.0022	0.0096	0.0046	0.0175	0.0052	0.0770	0.0547
WE	0.0054	0.0036	0.0089	0.0089	0.0033	0.0000	0.0000	0.0000	0.0060	0.0023	0.0070	0.0051	0.0028	0.0012	0.0283	0.0161
PSTG	0.0022	0.0015	0.0000	0.0000	0.0066	0.0000	0.0026	0.0026	0.0008	0.0006	0.0000	0.0000	0.0017	0.0013	0.0016	0.0016
SSTG	0.0076	0.0054	0.0000	0.0000	0.0088	0.0000	0.0077	0.0044	0.0129	0.0052	0.0061	0.0050	0.0175	0.0057	0.0016	0.0016
LING	0.0000	0.0000	0.0089	0.0089	0.0011	0.0011	0.0000	0.0000	0.0008	0.0006	0.0009	0.0009	0.0000	0.0000	0.0000	0.0000
GE	0.0174	0.0098	0.0000	0.0000	0.0011	0.0000	0.0052	0.0052	0.0198	0.0085	0.0035	0.0029	0.0102	0.0035	0.0534	0.0282
DRUM	0.0065	0.0046	0.0000	0.0000	0.0033	0.0000	0.0000	0.0000	0.0025	0.0012	0.0053	0.0035	0.0209	0.0068	0.0142	0.0100
B BUF	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S BUF	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0009	0.0009	0.0017	0.0017	0.0000	0.0000
CARP	0.0054	0.0045	0.0000	0.0000	0.0044	0.0000	0.0026	0.0026	0.0025	0.0014	0.0018	0.0013	0.0107	0.0035	0.0016	0.0016

Table 9 (cont.). - Estimated hourly catch rate (fish/angler-hour) by strata for paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), pallid sturgeon (PSTG), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), and common carp (CARP) in the Missouri River (RM 1899 to 1921), April-June 2006.

	June								Overall					
	Weekday				Weekend									
	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Overall	SE
PF	0.1369	0.0606	0.0322	0.0151	0.0692	0.0176	0.0943	0.0404	0.0546	0.0065	0.0589	0.0113	0.0555	0.0057
C CAT	0.0587	0.0284	0.2379	0.0000	0.0237	0.2570	0.0660	0.0436	0.0393	0.0066	0.0947	0.0246	0.0511	0.0074
S CAT	0.0117	0.0117	0.0000	0.0000	0.0119	0.0687	0.0047	0.0047	0.0104	0.0025	0.0031	0.0015	0.0088	0.0020
SGR	0.0313	0.0112	0.0322	0.0000	0.0198	0.0000	0.0000	0.0000	0.0136	0.0024	0.0322	0.0173	0.0175	0.0041
WE	0.0117	0.0072	0.0515	0.0000	0.0040	0.1536	0.0236	0.0191	0.0051	0.0012	0.0194	0.0067	0.0081	0.0017
PSTG	0.0020	0.0020	0.0015	0.0015	0.0040	0.0000	0.0000	0.0000	0.0020	0.0007	0.0008	0.0006	0.0018	0.0006
SSTG	0.0020	0.0020	0.0386	0.0000	0.0079	0.0687	0.0047	0.0047	0.0122	0.0027	0.0078	0.0043	0.0113	0.0023
LING	0.0039	0.0039	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007	0.0004	0.0013	0.0008	0.0008	0.0004
GE	0.0137	0.0075	0.0000	0.0000	0.0178	0.0000	0.0000	0.0000	0.0143	0.0035	0.0184	0.0089	0.0152	0.0033
DRUM	0.0117	0.0072	0.0386	0.0000	0.0079	0.0687	0.0047	0.0047	0.0100	0.0024	0.0105	0.0051	0.0101	0.0022
B BUF	0.0020	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0002	0.0000	0.0000	0.0001	0.0001
S BUF	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0005	0.0003	0.0003	0.0005	0.0004
CARP	0.0039	0.0027	0.0064	0.0000	0.0079	0.0687	0.0047	0.0047	0.0061	0.0014	0.0026	0.0011	0.0053	0.0011

Table 10. - Estimated harvest by strata for paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), and common carp (CARP) in the Missouri River (RM 1899 to 1921), April-June 2006.

	April								May							
	Weekday				Weekend				Weekday				Weekend			
	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	SE	Boat	SE
PF	97	38.7	16	12.1	129	52.9	50	52.9	312	58.8	43	21.1	254	65.1	65	28.2
C CAT	28	14.1	8	26.5	186	75.1	45	22.6	192	84.0	113	58.3	303	114.0	81	32.3
S CAT	0	0.0	0	0.0	0	0.0	0	0.0	12	8.8	0	0.0	9	6.6	0	0.0
SGR	28	15.9	32	25.3	16	9.4	5	3.5	60	22.4	20	11.8	102	39.3	21	10.4
WE	17	12.6	8	8.9	9	7.5	0	0.0	63	25.9	15	12.8	18	9.6	35	19.8
SSTG	3	3.7	0	0.0	3	3.3	2	2.4	9	5.5	0	0.0	35	19.5	0	0.0
LING	0	0.0	0	0.0	0	0.0	0	0.0	3	3.1	2	2.3	0	0.0	0	0.0
DRUM	17	15.1	0	0.0	9	6.0	0	0.0	12	6.4	0	0.0	71	35.1	2	2.3
GE	28	28.9	0	0.0	0	0.0	0	0.0	36	26.6	0	0.0	13	8.2	9	7.6
B BUF	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
S BUF	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	13	13.7	0	0.0
CARP	3	3.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	18	9.8	0	0.0

Table 10 (cont.). - Estimated harvest by strata for paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), and common carp (CARP) in the Missouri River (RM 1899 to 1921), April-June 2006.

	June								Overall				
	Weekday				Weekend				Weekday		Weekend		Overall
	Shore	SE	Boat	SE	Shore	SE	Boat	SE	Shore	Boat	Shore	Boat	
PF	196	65.0	12	7.5	94	32.8	21	12.9	605	72	477	135	1,289
C CAT	162	80.8	89	85.1	29	14.8	21	0.0	382	210	517	147	1,256
S CAT	0	0.0	0	0.0	0	0.0	0	0.0	12	0	9	0	21
SGR	74	36.8	7	6.0	14	14.9	0	0.0	162	59	132	25	379
WE	34	23.2	10	10.6	4	3.7	12	0.0	114	33	31	46	225
SSTG	7	6.9	15	15.8	7	7.5	0	0.0	19	15	45	2	82
LING	0	0.0	2	2.6	0	0.0	0	0.0	3	5	0	0	8
DRUM	20	15.4	10	10.5	11	11.2	0	0.0	50	10	91	2	153
GE	0	0.0	0	0.0	0	0.0	0	0.0	64	0	13	9	86
B BUF	7	6.9	0	0.0	0	0.0	0	0.0	7	0	0	0	7
S BUF	0	0.0	0	0.0	0	0.0	0	0.0	0	0	13	0	13
CARP	0	0.0	0	0.0	4	3.7	2	0.0	3	0	21	2	27

Table 11. – Length, weight, and condition indices of harvested paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), bigmouth buffalo (B BUF), smallmouth buffalo (S BUF), common carp (CARP), fathead chub (FH CH), northern pike (NP), rainbow trout (RBT), and shorthead redhorse (SH RH) from anglers creeled in the middle Missouri River native species creel, April-June 2005.

Species	Sample Size	Length Range	Length Avg	Length SD	Weight Range (lbs.)	Weight Avg	Weight SD	Condition Factor Avg	Condition Factor SD	Relative Wt Avg	Relative Wt SD
PF	241	33.3-60.5	41.7	1.2	12.0-90.0	40.3	47.6	53.08	44.57	82.50	68.66
C CAT	259	10.5-35.0	26.9	1.0	0.3-26.0	9.5	20.5	42.67	188.39	111.10	538.27
S CAT	15	5.5-7.4	5.8	0.3	--	--	--	--	--	--	--
SGR	92	11.3-24.8	16.7	0.8	11.3-24.8	1.4	1.0	28.56	13.49	79.20	36.72
WE	67	11.5-29.1	16.1	0.9	0.3-9.5	1.8	3.6	33.56	89.72	89.70	241.50
SSTG	9	26.5-37.3	32.4	0.5	2.9-8.3	4.8	1.4	13.74	2.57	80.90	14.41
LING	3	18.8-28.5	24.4	0.0	2.0-3.9	2.7	0.0	20.00	--	78.20	--
DRUM	5	12.5-19.5	14.4	0.3	0.6-0.83	0.8	0.1	33.87	4.98	75.30	11.17
GE	24	11.5-13.1	12.0	0.4	0.5-0.6	0.6	0.1	31.48	4.62	--	--
B BUF	1	36.5	36.5	--	32.0	32.0	--	65.81	--	95.50	--
S BUF	1	17.0	17.0	--	1.9	1.9	--	38.67	--	60.20	--
CARP	6	18.4-26.5	22.6	--	2.5-8.7	6.0	--	48.80	--	97.80	--
FH CH	2	4.8-8.6	6.7	--	--	0.2	--	34.59	--	0.00	--
NP	5	27.0-34.5	31.0	--	4.7-8.9	7.3	--	21.95	--	87.50	--
RBT	1	21.90	21.9	--	2.7	2.7	--	25.71	--	64.54	--
SH RH	1	17.4	17.4	--	1.0	1.0	--	18.60	--	45.10	--

Table 12. – Length, weight, and condition indices of harvested paddlefish (PF), channel catfish (C CAT), stonecat (S CAT), sauger (SGR), walleye (WE), shovelnose sturgeon (SSTG), burbot (LING), freshwater drum (DRUM), goldeye (GE), common carp (CARP), fathead chub (FH CH), and northern pike (NP) from anglers creeled in the middle Missouri River native species creel, April-June 2006.

Species	Sample Size	Length Range	Length Avg	Length SD	Weight Range (lbs.)	Weight Avg	Weight SD	Condition Factor Avg	Condition Factor SD	Relative Wt Avg	Relative Wt SD
PF	259	28.1-65.0	42.7	1.3	15.1-112.0	47.0	36.5	57.23	39.71	88.7	61.54
C CAT	182	7.5-35.5	22.8	1.4	0.6-8.9	5.8	7.1	35.80	64.68	98.0	194.07
S CAT	7	6.7-7.6	7.0	0.3	0.1-.02	0.1	0.1	19.70	14.97	0.0	0.00
SGR	62	12.5-27.0	17.0	1.0	0.5-7.1	1.5	0.8	28.31	17.18	78.4	48.08
WE	26	11.7-30.5	16.5	0.7	0.4-11.0	1.9	0.6	28.29	12.55	75.1	33.93
SSTG	27	25.5-37.5	32.5	0.6	1.8-10.0	4.8	2.6	13.26	7.21	77.4	42.01
LING	2	19.6-30.0	24.8	0.0	1.6-4.5	3.0	0.0	18.87	0.00	74.1	0.00
DRUM	16	10.4-17.6	13.2	0.6	0.3-4.0	1.1	2.1	43.29	61.21	96.1	132.99
GE	24	10.1-14.6	11.9	0.7	0.3-0.9	0.5	0.3	31.59	17.54	0.0	0.00
CARP	7	17.7-31.8	21.5	0.1	2.7-23.0	6.2	0.5	47.45	7.78	94.9	15.37
FH CH	1	8.50	8.5	0.0	0.2	0.2	0.0	30.94	0.00	0.0	0.00
NP	5	30.7-37.5	34.5	0.0	6.7-10.4	8.7	1.7	21.17	3.15	83.9	12.37

Table 13. - Age, length range (inches), sample size, sex, average length (eye-fork (E-F) ; inches), length standard deviation (SD), average weight (pounds), weight standard deviation (SD), condition factor, and relative weight of paddlefish from which jaw samples were collected during the middle Missouri River native species creel survey, April –June 2005.

Age Class	E-F Length Range (in.)	Nbr Sampled	Sex (% Male)	E-F Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD	Relative Wt Avg	Relative Wt SD
10	38	1	100.0	38.0	0.0	29.0	0.0	52.85	0.00	82.7	0.00
11	33.5	1	100.0	33.5	0.0	28.0	0.0	74.48	0.00	118.0	0.00
12	35.0 - 38.5	2	100.0	36.8	2.5	25.0	5.7	49.90	1.30	78.4	1.56
13	35.5 - 36.5	5	100.0	35.9	0.4	21.8	1.1	47.36	3.17	74.5	5.04
14	33.0 - 40.0	10	100.0	36.0	1.8	24.9	2.5	53.58	5.59	84.3	9.04
15	34.0 - 38.0	11	100.0	36.3	1.4	25.2	3.5	52.65	6.42	82.8	10.15
16	34.0 - 44.3	11	90.9	37.7	11.9	28.0	6.3	51.46	4.92	80.6	7.38
17	35.0 - 49.0	5	60.0	39.6	5.5	31.6	11.0	50.29	6.69	78.6	11.17
18	36.0 - 37.5	2	100.0	36.8	1.1	23.0	2.8	46.21	1.70	72.6	2.47
19	37.5	2	100.0	37.5	26.5	27.0	0.0	53.10	0.00	83.2	0.00
20	36.0 - 42.0	11	90.9	38.1	1.9	28.8	6.0	52.08	9.97	81.5	15.75
21	35.3 - 46.0	15	80.0	38.9	3.5	31.4	14.2	50.47	10.12	78.8	15.39
22	40.0 - 45.0	9	77.8	40.6	13.8	37.0	13.3	53.66	8.73	83.5	13.21
23	39.25 - 48.0	22	40.9	42.8	9.5	45.5	12.3	57.51	9.25	89.1	14.22
24	35.8 - 49.5	17	64.7	41.9	4.6	40.3	15.3	49.60	5.91	76.8	8.85
25	36.0 - 48.0	10	70.0	41.7	3.7	39.7	17.7	52.00	10.25	80.7	15.45
26	36.0 - 49.5	10	60.0	41.5	13.7	40.6	13.3	55.84	7.56	86.7	11.04
27	37.0 - 48.3	12	33.3	43.0	13.1	48.8	5.8	57.57	9.46	89.1	14.52
28	39.5 - 47.5	5	20.0	44.4	3.4	51.4	13.0	57.54	3.31	88.8	4.70
29	39.0 - 48.5	4	25.0	45.1	4.4	56.5	17.7	60.34	12.43	93.0	19.12
30	39.0 - 51.0	7	42.9	45.9	4.2	57.0	12.2	59.12	10.24	91.1	16.14
32	36.5 - 50.0	6	66.7	42.6	5.7	43.3	23.5	51.76	7.51	80.2	11.00
33	40.0 - 49.5	2	50.0	44.8	6.7	47.0	25.5	49.45	5.85	76.2	7.98
35	39.0 - 49.5	3	33.3	45.5	5.7	51.0	29.7	54.97	6.21	84.9	8.28
36	50	1	0.0	50.0	0.0	83.0	0.0	66.40	0.00	101.4	0.00
37	39	1	100.0	39.0	0.0	32.0	0.0	53.95	0.00	84.3	0.00
38	39.0 - 44.0	2	50.0	41.5	3.5	41.5	4.9	58.44	7.94	90.8	13.05
39	48.3 - 50.0	2	0.0	49.1	1.2	72.5	3.5	61.16	1.64	93.5	2.72
40	45.5	1	0.0	45.5	0.0	63.0	0.0	66.88	0.00	103.0	0.00
41	41	1	100.0	41.0	0.0	27.0	0.0	39.18	0.00	60.9	0.00
42	40.0 - 50.0	2	50.0	45.0	7.1	45.0	21.2	47.44	0.80	73.2	0.16
43	49	1	0.0	49.0	0.0	62.0	0.0	52.70	0.00	80.6	0.00
44	44.0 - 52.0	4	0.0	47.9	3.4	68.3	9.0	57.73	8.23	88.3	12.83
48	48.3	1	0.0	48.3	0.0	90.0	0.0	80.12	0.00	122.7	0.00
50	41.5	1	0.0	41.5	0.0	40.0	0.0	55.96	0.00	86.9	0.00
52	49	1	0.0	49.0	0.0	73.0	0.0	62.05	0.00	94.9	0.00
59	39.8	1	100.0	39.8	0.0	42.0	0.0	66.87	0.00	104.3	0.00
	Totals:	202	56.9	41.0	4.7	39.5	17.4	54.01	8.71	84.0	13.26

Table 14. - Age, length range (inches), sample size, sex, average length (eye-fork (E-F); inches), length standard deviation (SD), average weight (pounds), weight standard deviation (SD), condition factor, and relative weight of paddlefish from which jaw samples were collected during the middle Missouri River native species creel survey, April –June 2006.

Age Class	E-F Length Range (in)	Nbr Sampled	Sex (% Male)	E-F Length Avg (in)	Length SD	Weight Avg (lbs)	Weight SD	Condition Factor	Condition Factor SD	Relative Wt Avg	Relative Wt SD
9	32.5 - 47.5	4	75.0	36.9	7.1	32.4	19.9	59.83	4.27	94.1	7.23
10	33.0 - 33.8	2	100.0	33.4	0.6	24.3	2.5	64.97	3.34	102.9	5.13
11	33.6 - 39.8	9	100.0	36.2	2.1	28.0	4.5	58.64	4.20	92.2	6.82
12	38.5 - 39.1	2	100.0	38.8	0.4	31.5	6.4	53.77	9.13	84.0	14.18
13	0.0 - 37.8	6	100.0	36.5	14.9	26.4	4.4	54.03	5.13	84.9	7.94
14	32.0 - 44.4	13	76.9	37.7	3.9	32.4	15.8	56.87	10.57	89.1	16.04
15	34.5 - 47.6	12	66.6	40.1	4.2	35.4	12.5	54.21	11.07	84.5	17.26
16	34.0 - 46.3	13	84.6	38.6	3.9	33.7	15.4	55.38	9.75	86.5	14.76
17	34.5 - 42.0	10	90.0	38.1	2.9	29.9	9.7	53.12	8.56	83.2	13.28
18	0.0 - 45.0	5	60.0	41.2	18.8	41.1	14.7	56.63	3.98	88.0	5.39
19	34.5 - 46.0	8	87.5	40.8	3.9	39.6	15.4	55.70	8.00	86.6	11.96
20	35.2 - 45.0	12	83.3	39.9	3.4	35.9	10.0	55.18	5.74	86.0	8.93
21	0.0 - 47.5	29	55.2	41.7	9.0	45.4	16.7	60.87	17.80	94.6	28.81
22	0.0 - 49.3	22	27.3	44.7	10.2	51.4	14.7	56.16	6.89	86.6	10.51
23	0.0 - 50.0	11	45.5	44.4	18.6	54.0	22.6	57.92	13.34	89.4	20.36
24	0.0 - 48.0	8	12.5	46.6	16.5	61.2	9.7	60.69	9.21	93.3	14.24
25	39.0 - 49.7	10	20.0	44.1	3.7	51.6	16.8	57.79	6.12	89.2	8.91
26	36.7 - 48.4	7	28.6	42.9	5.3	46.9	17.9	56.61	8.24	87.7	12.55
27	0.0 - 50.5	10	30.0	45.2	14.7	56.0	15.7	59.52	8.50	91.7	12.99
28	39.9 - 51.0	5	80.0	42.7	4.8	43.9	21.2	53.68	8.17	83.1	12.37
29	0.0 - 47.8	3	33.3	42.8	25.2	46.4	27.7	55.22	7.36	85.5	10.09
30	46.9 - 51.0	6	16.7	48.9	1.4	67.5	8.5	57.40	7.41	87.8	11.44
31	0.0 - 47.0	3	0.0	46.5	26.9	61.3	2.5	60.90	0.32	93.6	0.62
32	0.0 - 55.0	7	42.8	44.9	18.3	58.8	26.4	61.09	13.07	94.3	19.96
33	40.9 - 50.3	3	66.7	45.9	4.7	48.8	27.4	47.74	14.30	73.4	21.54
34	42.0 - 52.5	5	75.0	45.1	4.3	55.6	22.4	57.09	13.69	87.9	21.15
35	0.0 - 42.2	2	50.0	42.2	29.8	73.8	0.0	47.24	0.00	73.2	0.00
36	41.2 - 52.3	4	25.0	47.6	4.7	66.0	17.1	60.07	2.32	92.2	3.91
37	0.0 - 37.0	2	50.0	37.0	26.2	24.0	0.0	47.38	0.00	74.4	0.00
38	43.4 - 53.2	4	25.0	47.8	4.3	67.6	14.7	61.60	7.70	94.5	12.11
39	44.8 - 51.0	3	0.0	47.8	3.1	65.7	18.0	58.99	5.09	90.4	7.30
42	49.7	1	0.0	49.7	0.0	83.0	0.0	67.61	0.00	103.3	0.00
44	49.6 - 50.9	2	0.0	50.3	0.9	80.5	3.6	63.55	6.33	97.0	9.81
45	47.7 - 57.0	2	0.0	52.4	6.6	74.0	15.6	51.97	8.59	79.1	13.98
46	50.3	1	0.0	50.3	0.0	75.9	0.0	59.64	0.00	91.0	0.00
47	51	1	0.0	51.0	0.0	75.0	0.0	56.54	0.00	86.2	0.00
48	51.1	1	0.0	51.1	0.0	81.0	0.0	60.70	0.00	92.5	0.00
50	50.5	1	0.0	50.5	0.0	72.0	0.0	55.91	0.00	85.3	0.00
51	48.3	1	0.0	48.3	0.0	90.0	0.0	80.12	0.00	122.7	0.00
52	46.9	1	100.0	46.9	0.0	50.9	0.0	49.34	0.00	75.8	0.00
56	52.6	1	0.0	52.6	0.0	100.0	0.0	68.71	0.00	104.4	0.00
	Totals:	252		42.4	5.4	46.5	20.2	57.38	10.07	89.0	15.69

Table 15. - Age, length range (inches), sample size, average length (inches), average weight (pounds), and condition factor of channel catfish from which pectoral spines were collected during the middle Missouri River creel survey, April-June 2005.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD
4	11.5-11.8	2	11.6	0.2	1.3	1.1	81.16	71.19
5	11.8-14.5	8	13.0	1.0	0.7	0.2	30.25	2.15
6	10.5-13.3	2	11.9	2.0	0.6	0.4	29.96	5.72
7	15.5-19.6	3	18.2	2.4	2.7	0.0	35.86	0.00
8	14.0-18.0	3	16.7	2.3	1.5	0.6	32.08	1.06
9	16.0-19.0	4	17.1	1.4	1.5	0.5	23.38	4.04
10	19.0-34.0	5	23.9	6.0	5.6	5.1	34.06	4.45
11	19.5-34.0	23	28.0	4.2	9.0	4.2	37.97	4.15
12	18.5-35.0	47	28.0	4.3	10.3	5.5	41.44	8.16
13	22.0-34.3	56	28.5	3.5	10.6	4.3	42.87	7.24
14	19.0-34.0	30	27.4	3.7	10.4	6.4	59.22	92.16
15	14.4-33.0	11	27.7	5.5	12.7	7.6	132.03	300.59
16	30.5-34.5	4	32.3	1.8	13.2	2.6	38.92	4.27
17	28	1	28.0	0.0	9.0	0.0	41.00	0.00
	Totals	199	26.6	5.8	9.4	5.7	48.71	82.39

Table 16. - Age, length range (inches), sample size, average length (inches), average weight (pounds), and condition factor of channel catfish from which pectoral spines were collected during the middle Missouri River creel survey, April-June 2006.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD	Relative Wt Avg	Relative Wt SD
3	11.5	1	11.5	0.0	0.6	0.0	39.45	0.00	129.8	0.00
4	7.5 - 12.0	3	10.3	2.4	1.2	1.2	87.47	54.66	294.8	169.67
5	10.5 - 15.6	25	12.7	1.3	0.6	0.2	29.64	5.31	94.9	17.13
6	13.0 - 25.3	17	15.0	2.8	1.1	1.0	28.38	5.21	86.6	15.69
7	13.5 - 33.0	8	20.1	6.2	3.9	5.4	32.11	9.23	90.1	23.99
8	15.7 - 21.3	4	17.9	2.4	1.8	1.0	29.45	5.96	85.3	17.40
9	16.8 - 31.0	8	24.2	5.7	5.8	3.9	31.18	8.26	81.7	18.49
10	18.1 - 34.0	12	26.0	5.0	6.9	4.4	34.69	5.68	90.1	13.03
11	15.5 - 35.5	22	25.3	5.2	7.2	5.4	38.78	18.68	101.8	51.69
12	20.2 - 33.6	36	27.5	3.6	8.8	4.6	38.57	8.73	98.1	20.15
13	23.5 - 33.7	17	28.5	2.9	9.4	4.5	38.77	9.81	97.7	23.56
14	22.0 - 32.0	10	27.5	3.1	8.0	3.1	36.60	6.82	93.2	16.40
15	27.8 - 28.5	2	28.2	0.5	8.9	2.3	39.43	8.38	99.7	20.66
	Totals:	165	22.5	7.2	5.7	5.1	35.85	13.92	98.4	41.69

Table 17. - Age, length range (inches), sample size, and average length (inches) of stonecats from which pectoral spines were collected during the middle Missouri River creel survey, April-June 2005.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD
3	5.5	1	5.5	0.0
4	5.6 - 6.2	3	5.8	0.4
5	5.0 - 5.5	4	5.3	0.2
6	5.5 - 6.0	4	5.8	0.2
7	6.3 - 6.6	2	6.5	0.2
8	7.4	1	7.4	0.0
	Totals:	15	5.8	0.6

Table 18. - Age, length range (inches), sample size, and average length (inches), average weight (pounds), and condition factor of stonecats from which pectoral spines were collected during the middle Missouri River creel survey, April-June 2006.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD
5	7.8	1	7.8	0.0	0.2	0.0	37.93	0.00
6	6.5 - 6.8	2	6.7	0.2	0.1	0.0	23.73	7.82
7	7.4	1	7.4	0.0	0.1	0.0	27.15	0.00
	Totals:	4	7.1	0.6	0.1	0.1	28.14	8.10

Table 19. - Age, length range (inches), sample size, and average length (inches), average weight (pounds), condition factor, and relative weight of sauger from which otoliths were collected during the middle Missouri River creel survey, April-June 2005.

Age Class	Length Range (inches)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs)	Weight SD	Condition Factor	Condition Factor SD	Relative Wt Avg	Relative Wt SD
3	11.3	1	11.3	0.0	0.3	0.0	22.47	0.00	67.0	0.00
4	13.5 - 15.0	2	14.3	1.1	0.8	0.1	27.82	2.05	79.4	6.94
5	12.0 - 15.0	7	13.4	1.3	0.7	0.3	26.58	3.44	76.6	8.99
6	13.7 - 19.1	12	16.3	1.9	1.2	0.4	27.38	3.76	76.5	10.89
7	13.0 - 21.0	16	16.1	2.0	1.1	0.4	27.93	2.74	78.2	7.46
8	14.1 - 19.8	16	17.4	1.8	1.6	0.6	29.79	2.92	82.0	7.47
9	15.3 - 20.5	6	18.5	2.1	2.1	0.7	31.98	3.93	87.0	10.54
10	17.3 - 19.8	5	19.2	1.1	2.1	0.3	29.35	2.69	79.2	7.58
11	20.9 - 22.1	2	21.5	0.9	3.1	0.1	31.25	2.27	82.6	6.61
12	15.5 - 24.8	3	21.3	5.1	3.5	0.0	22.95	0.00	59.0	0.00
14	18.3	1	18.3	0.0	1.4	0.0	23.03	0.00	62.7	0.00
	Totals:	71	16.9	2.8	1.5	0.7	28.49	3.52	79.0	9.21

Table 20. - Age, length range (inches), sample size, and average length (inches), average weight (pounds), condition factor, and relative weight of sauger from which otoliths were collected during the middle Missouri River creel survey, April-June 2006.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD	Relative Wt Avg	Relative Wt SD
4	12.0 - 19.6	5	16.3	3.1	1.3	0.6	28.64	3.14	80.0	9.36
5	12.7 - 19.0	13	15.7	2.0	1.0	0.4	25.54	3.76	71.8	11.29
6	12.9 - 20.4	7	16.4	2.6	1.7	0.9	31.77	6.79	87.8	17.24
7	13.3 - 21.0	9	17.6	2.9	1.6	0.7	28.50	9.03	78.5	25.81
8	14.5 - 19.5	10	17.5	1.7	1.6	0.5	28.90	1.99	79.4	5.23
9	13.3 - 20.8	9	18.1	2.8	1.6	0.6	27.20	6.39	74.7	19.74
10	16.0 - 27.0	3	20.9	5.6	3.4	3.3	29.06	6.38	77.0	13.00
11	15.8	1	15.8	0.0	1.2	0.0	30.71	0.00	86.0	0.00
	Totals:	57	17.1	2.8	1.5	1.0	28.09	5.65	77.6	15.89

Table 21. - Age, length range (inches), sample size, and average length (inches), average weight (pounds), condition factor, and relative weight of walleye from which otoliths were collected during the middle Missouri River creel survey, April-June 2005.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD	Relative Wt Avg	Relative Wt SD
4	13.8	1	13.8	0.0	0.9	0.0	35.39	0.00	96.8	0.00
5	11.0 - 18.0	14	13.3	2.0	0.7	0.3	29.49	4.08	81.4	12.43
6	12.0 - 16.4	13	13.8	1.3	0.7	0.3	27.33	5.72	74.8	15.52
7	13.1 - 17.6	13	15.4	1.7	1.1	0.3	29.24	2.48	78.5	6.70
8	12.8 - 14.9	2	13.9	1.5	0.9	0.4	30.93	3.28	84.5	7.34
9	14.3 - 20.3	7	16.7	2.3	1.4	0.7	28.64	6.94	75.9	18.72
10	23.8	1	23.8	0.0	5.4	0.0	40.31	0.00	100.0	0.00
11	23.7	1	23.7	0.0	4.5	0.0	33.73	0.00	83.7	0.00
12	22.0 - 29.4	5	25.5	3.5	5.4	2.4	31.87	5.50	78.2	13.65
15	28.5 in	1	28.5	0.0	8.5	0.0	36.72	0.00	88.1	0.00
	Totals:	58	16.0	4.4	1.6	1.9	29.59	5.00	79.2	13.01

Table 22. - Age, length range (inches), sample size, and average length (inches), average weight (pounds), condition factor, and relative weight of walleye from which otoliths were collected during the middle Missouri River creel survey, April-June 2006.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD	Relative Wt Avg	Relative Wt SD
3	13.5	1	13.5	0.0	0.8	0.0	31.66	0.00	86.9	0.00
4	16	1	16.0	0.0	1.4	0.0	34.18	0.00	91.0	0.00
6	13.8 - 17.3	5	15.3	1.4	1.0	0.3	27.72	3.43	74.4	9.20
7	11.7 - 14.0	5	13.0	1.1	0.6	0.1	26.16	1.93	72.4	5.67
8	13.1 - 19.0	4	15.4	2.6	1.2	0.7	31.19	6.30	84.0	18.80
9	14.6	1	14.6	0.0	0.8	0.0	24.74	0.00	67.0	0.00
10	24.5	1	24.5	0.0	5.0	0.0	34.00	0.00	83.8	0.00
11	14.5	1	14.5	0.0	0.9	0.0	29.52	0.00	80.0	0.00
14	27	1	27.0	0.0	6.4	0.0	32.52	0.00	78.8	0.00
	Totals:	20	15.7	3.9	1.4	1.6	28.93	4.04	77.6	10.30

Table 23. - Age, length range (inches), sample size, and average length (inches), average weight (pounds), condition factor, and relative weight of burbot (LING), shovelnose sturgeon (SSTG), and rainbow trout (RBT) from which otoliths, pectoral spines, and otoliths were collected, respectively, during the middle Missouri River creel survey, April-June 2005.

Species	Age	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD	Relative Wt Avg	Relative Wt SD
LING	10	25.8	1	2.2	0	2.2	0	--	--	--	--
SSTG	35	34.5	1	34.5	0	6.5	0	15.83	0	90.8	0
RBT	10	21.9	1	31.9	0	2.7	0	25.71	--	--	--

Table 24. - Age, length range (inches), sample size, and average length (inches), average weight (pounds), condition factor, and relative weight of freshwater drum from which otoliths were collected during the middle Missouri River creel survey, April-June 2005.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD	Relative Wt Avg	Relative Wt SD
12	12.5	1	12.5	0.0	0.6	0.0	30.72	0.00	69.0	0.00
13	13.8	1	13.8	0.0	0.9	0.0	34.62	0.00	76.2	0.00
15	13.1	1	13.1	0.0	0.9	0.0	40.03	0.00	89.0	0.00
	Totals:	3	13.1	0.6	0.8	0.2	35.12	4.68	78.1	10.15

Table 25. - Age, length range (inches), sample size, and average length (inches), average weight (pounds), condition factor, and relative weight of freshwater drum from which otoliths were collected during the middle Missouri River creel survey, April-June 2006.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD	Relative Wt Avg	Relative Wt SD
3	10.2	2	10.20	0.00	0.34	0.05	31.57	4.66	73.9	10.91
5	12.1	1	12.10	0.00	0.66	0.00	37.26	0.00	84.2	0.00
6	11.6 - 16.2	2	13.90	3.25	1.26	0.98	40.87	7.06	89.7	11.24
7	10.9	1	10.90	0.00	0.80	0.00	61.77	0.00	142.6	0.00
8	15.3 - 17.6	3	16.07	1.33	1.66	0.45	39.55	6.62	84.4	14.51
9	11.9 - 13.3	2	12.60	0.99	1.23	0.81	57.84	26.41	129.2	57.13
10	13.7	1	13.70	0.00	0.82	0.00	31.89	0.00	70.3	0.00
14	15.5	1	15.50	0.00	4.00	0.00	107.41	0.00	230.8	0.00
	Totals:	13	13.37	2.43	1.30	1.02	47.50	22.36	105.1	48.01

Table 26. - Age, length range (inches), sample size, and average length (inches), average weight (pounds), condition factor, and relative weight of goldeye from which scales were collected during the middle Missouri River creel survey, April-June 2005.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD
5	11.8	1	11.8	0.0	0.5	0.0	30.43	0.00
6	11.0 - 13.0	8	11.9	0.6	0.5	0.1	30.46	3.62
7	11.3 - 13.0	6	12.0	0.6	0.5	0.1	30.83	3.10
8	11.9 - 13.2	4	12.6	0.5	0.7	0.1	33.60	2.21
9	11.5 - 12.4	2	12.0	0.6	0.6	0.1	32.17	0.99
	Totals:	21	12.1	0.6	0.6	0.1	31.32	3.05

Table 27. - Age, length range (inches), sample size, and average length (inches), average weight (pounds), condition factor, and relative weight of goldeye from which scales were collected during the middle Missouri River creel survey, April-June 2006.

Age Class	Length Range (in.)	Nbr Sampled	Length Avg (in.)	Length SD	Weight Avg (lbs.)	Weight SD	Condition Factor	Condition Factor SD
5	11.1 - 11.7	2	11.4	0.4	0.5	0.0	28.72	0.00
7	12.3	1	12.3	0.0	0.0	0.0	0.00	0.00
8	11.6 - 14.3	2	13.0	1.9	0.9	0.0	29.07	0.00
9	13.3	1	13.3	0.0	0.6	0.0	25.50	0.00
10	11.6	1	11.6	0.0	1.0	0.0	64.07	0.00
13	13.9	1	13.9	0.0	0.7	0.0	27.07	0.00
	Totals:	8	12.5	1.2	0.7	0.0	34.89	0.00