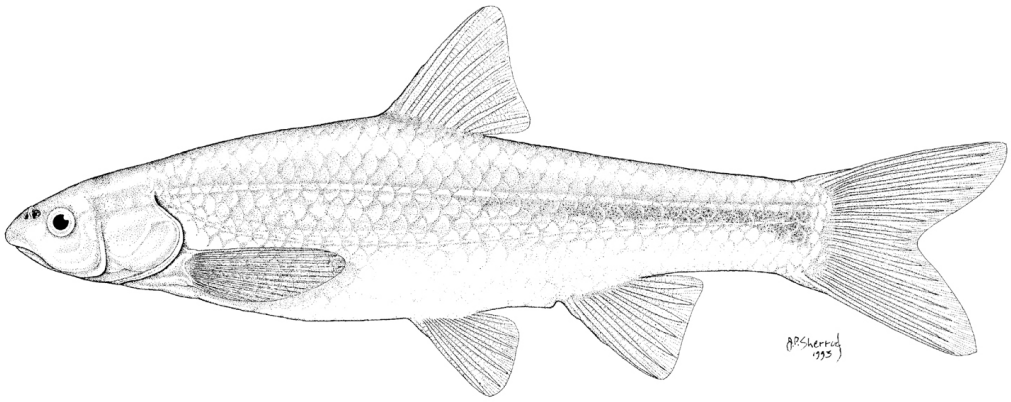
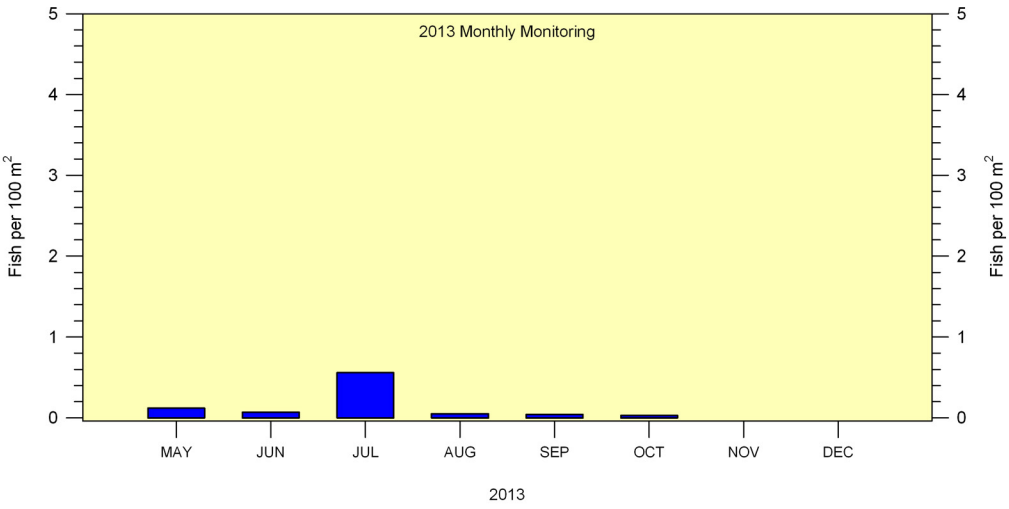
Summary of the Rio Grande Silvery Minnow Population Monitoring Program Results from October 2013

A Middle Rio Grande Endangered Species Collaborative Program Funded Research Project





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22 November 2013

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prepared for:

Middle Rio Grande Endangered Species Collaborative Program

under Contract GS-10F-0249X:

Order R13PD43013
U.S. Bureau of Reclamation
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Summary of Overall October 2013 Population Monitoring Efforts

All data presented in this report were collected under Contract GS-10F-0249X (Order R13PD43013) between USBR and ASIR, L.L.C. The October population monitoring efforts were conducted at 20 sites throughout the Middle Rio Grande. Five sites were located in the Angostura Reach, six sites in the Isleta Reach, and nine sites in the San Acacia Reach. A list of collection localities is appended (Table A-1).

Adult and juvenile fish were obtained by rapidly drawing a 3.1 m x 1.8 m small mesh (3/16th inch) seine through discrete mesohabitats. From April through October, larval fish were also collected with a 1.0 m x 1.0 m fine mesh (1/16th inch) seine. Rio Grande Silvery Minnow were counted and identified to age-class. Other fishes were identified to species and enumerated, but age-class was not determined. Figures illustrating fish densities (i.e., fish per 100 m^2) were prepared for the ten focal species, including Rio Grande Silvery Minnow, to facilitate comparisons among reaches.

During October, sampling covered 10,199.5 m^2 (surface area) of water and yielded 5,247 fish. Cumulative fish density during October was 51.4 individuals/100 m^2 sampled as compared with 80.3 individuals/100 m^2 sampled in September. The most common species included Red Shiner (n = 3,265), Western Mosquitofish (n = 959), and Fathead Minnow (n = 307). Fourteen fish species were collected; Rio Grande Silvery Minnow (n = 3) was found only in the San Acacia Reach. Rio Grande Silvery Minnow was present in 3 of the 303 seine hauls that yielded fish during October, as compared with 3 of the 325 seine hauls that yielded fish during September.

Summary of October 2013 Population Monitoring Effort by River Reach

Angostura Reach

Mean daily discharge in the Angostura Reach (Rio Grande at Albuquerque, NM; USGS Gauge 8330000) ranged from 435 to 1,260 cfs from 16 September to 15 October, which was less variable as compared to the period from 16 August to 15 September (range = 52 to 2,540 cfs). Water temperatures were modest and stable (range = 12.5–15.0 ^{o}C) during the Angostura Reach sampling efforts (ca. 0830–1430 h); temperatures during October sampling were lower as compared to those recorded in September (range = 19.2–21.3 ^{o}C). The water clarity was low throughout the reach; Secchi disk measurements ranged from 4 to 10 cm.

Sampling for fishes in the Angostura Reach during October yielded 1,160 individuals as compared with 1,797 individuals observed in September. The overall sampling effort in the Angostura Reach covered 2,579.5 m^2 (surface area) of water. Densities in the Angostura Reach, for all fish species combined, ranged from 17.3 to 56.0 individuals per 100 m^2. Ten fish species were collected during October. Longnose Dace was the most abundant taxon (n = 314), followed by Red Shiner (n = 253), and Channel Catfish (n = 183). Rio Grande Silvery Minnow was not observed at any of the five sampling sites in the Angostura Reach.

Isleta Reach

In the Isleta Reach, mean daily discharge (Rio Grande at Isleta Lakes near Isleta, NM; USGS Gauge 08354900) ranged from 421 to 1,570 cfs from 16 September to 15 October, which was less variable as compared to the period from 16 August to 15 September (range = 75 to 3,230 cfs). Water temperatures ranged from 12.4 to 20.5 ^{o}C throughout the sampling localities during the day (ca. 0930–1600 h); temperatures in October were lower as compared to September (range = 20.4 to 32.2 ^{o}C). The water was turbid throughout portions of the reach; Secchi disk readings ranged from 3 to 7 cm during sampling.

The Isleta Reach produced the highest number of fish in any of the three sampling reaches. There were 3,174 individuals collected in October as compared with 4,704 individuals collected in September. The total sampling effort in the Isleta Reach during October covered 3,107.9 m^2 (surface

area) of water. Fish densities (all species combined) at the six sites ranged from 3.4 to 228.2 individuals per 100 m^2 sampled. Nine fish species were collected in the Isleta Reach during October 2013. Red Shiner was the most abundant taxon (n = 2,187), followed by Western Mosquitofish (n = 760), and Fathead Minnow (n = 186). Rio Grande Silvery Minnow was not collected in the Isleta Reach.

San Acacia Reach

Flow at San Acacia (Rio Grande Floodway at San Acacia, NM; USGS Gauge 08354900) from 16 September to 15 October was more variable (range = 241 to 6,260 cfs) as compared to San Marcial (Rio Grande Floodway at San Marcial, NM; USGS Gauge 08358400) during the same period (range = 52 to 3,910 cfs). Water temperatures in October for the San Acacia Reach ranged from 10.6 to 13.0 ^oC (ca. 0930–1500 h), which was lower as compared with September (range = 18.0 to 25.3 ^oC). Water turbidity was elevated throughout the reach (Secchi disk range = 1 to 6 cm).

Population monitoring efforts in the San Acacia Reach during October yielded 913 individuals as compared with 1,301 individuals collected during September. Sampling in the San Acacia Reach covered an area of 4,512.2 m^2 of water during October. Fish densities (all species combined) ranged from 5.5 to 50.6 individuals per 100 m^2 sampled in the San Acacia Reach. Of the ten fish species collected in the San Acacia Reach, Red Shiner was the most abundant taxon (n = 825), followed by Flathead Chub (n = 24), and Channel Catfish (n = 24). Rio Grande Silvery Minnow (n = 3) was observed at three of the nine sampling sites in the San Acacia Reach. All Rio Grande Silvery Minnow were wild age-0 individuals.

CONCLUSIONS

During the October sampling effort, Rio Grande Silvery Minnow was present at three of the 20 sampling sites in the Middle Rio Grande, New Mexico. With the addition of large numbers of hatchery-reared Rio Grande Silvery Minnow in 2012 (ca. 300,000; Thomas P. Archdeacon, New Mexico Fish and Wildlife Conservation Office, pers. comm.), there should have presumably been adequate numbers of individuals for spawning and recruitment in 2013. However, Rio Grande Silvery Minnow was only rarely collected during May and June 2013. While there were higher numbers of Rio Grande Silvery Minnow collected during July, nearly all (95.6%) were hatchery-reared individuals and many were found in areas of the river with low flows (i.e., concentrating fish into remaining wetted habitats). Only three wild age-0 Rio Grande Silvery Minnow were collected during October. The September and October sampling efforts indicate poor survival of hatchery-reared Rio Grande Silvery Minnow and poor recruitment success of young during 2013.

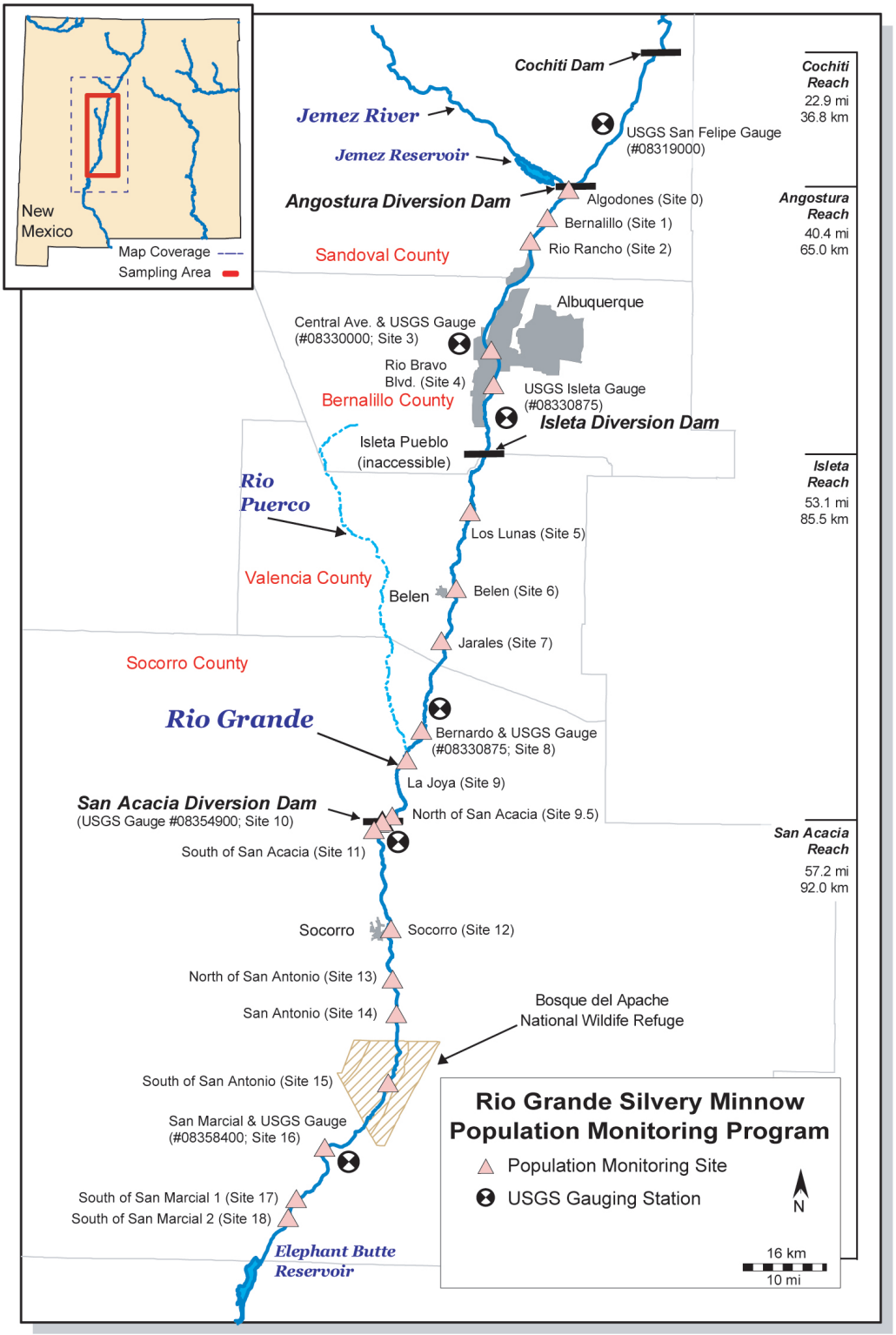

Figure 1. Map of the study area and sampling localities (numbered) for the Rio Grande Silvery Minnow population monitoring program. Sampling locality information that corresponds with the numbered localities is provided in Appendix A (Table A-1).

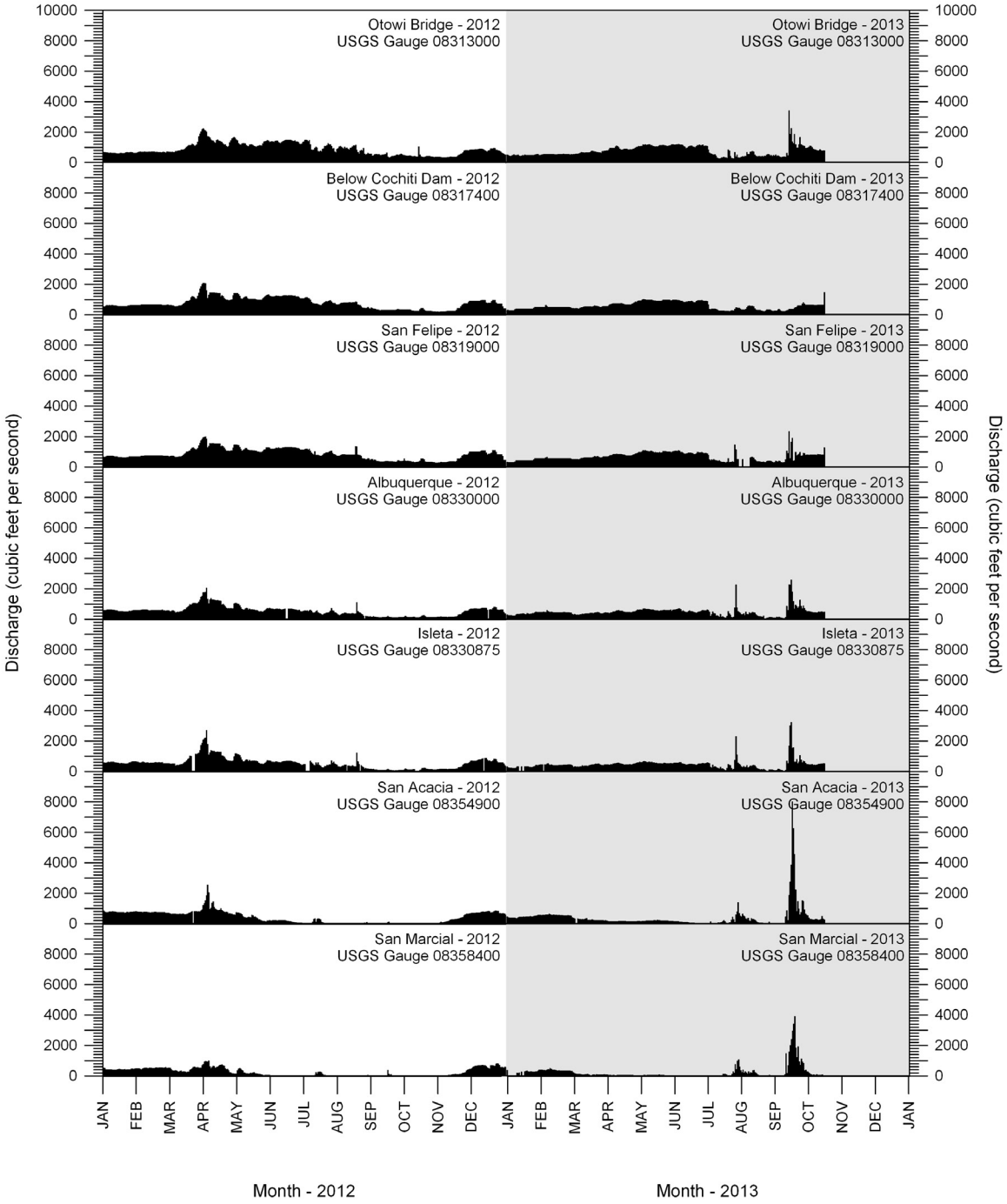

Figure 2. Discharge in the Rio Grande from 1 January 2012 through 15 October 2013 as recorded at seven U. S. Geological Survey (USGS) gauge stations. The Otowi Bridge gauge site is outside of the study area (ca. 25.5 river miles upstream of Cochiti Dam) and provided for reference. **Discharge data are provisional and subject to change.

Table 1. Scientific and common names and species codes of fish collected in the Middle Rio Grande during the Rio Grande Silvery Minnow population monitoring program (since 1993).

Scientific Name	Common Name	Code
Order Clupeiformes		
Family Clupeidae	herrings	
Dorosoma cepedianum	Gizzard Shad	(DORCEP)
Dorosoma petenense	Threadfin Shad	(DORPET)
Order Cypriniformes		
Family Cyprinidae	carps and minnows	
Campostoma anomalum	Central Stoneroller	(CAMANO)
Carassius auratus	Goldfish	(CARAUR)
Cyprinella lutrensis	Red Shiner[1]	(CYPLUT)
Cyprinus carpio	Common Carp[1]	(CYPCAR)
Gila pandora	Rio Grande Chub	(GILPAN)
Hybognathus amarus	Rio Grande Silvery Minnow[1]	(HYBAMA)
Notemigonus crysoleucas	Golden Shiner	(NOTCRY)
Pimephales promelas	Fathead Minnow[1]	(PIMPRO)
Pimephales vigilax	Bullhead Minnow	(PIMVIG)
Platygobio gracilis	Flathead Chub[1]	(PLAGRA)
Rhinichthys cataractae	Longnose Dace[1]	(RHICAT)
Family Catostomidae	suckers	
Carpiodes carpio	River Carpsucker[1]	(CARCAR)
Catostomus commersonii	White Sucker[1]	(CATCOM)
Ictiobus bubalus	Smallmouth Buffalo	(ICTBUB)
Order Siluriformes		
Family Ictaluridae	North American catfishes	
Ameiurus melas	Black Bullhead	(AMEMEL)
Ameiurus natalis	Yellow Bullhead	(AMENAT)
Ictalurus furcatus	Blue Catfish	(ICTFUR)
Ictalurus punctatus	Channel Catfish[1]	(ICTPUN)
Pylodictis olivaris	Flathead Catfish	(PYLOLI)
Order Salmoniformes		
Family Salmonidae	trouts and salmons	
Oncorhynchus mykiss	Rainbow Trout	(ONCMYK)
Salmo trutta	Brown Trout	(SALTRU)

Table 1. (continued) Scientific and common names and species codes of fish collected in the Middle Rio Grande during the Rio Grande Silvery Minnow population monitoring program (since 1993).

Scientific Name	Common Name	Code
Order Cyprinodontiformes		
Family Poeciliidae	livebearers	
Gambusia affinis	Western Mosquitofish[1]	(GAMAFF)
Order Perciformes		
Family Moronidae	temperate basses	
Morone chrysops	White Bass	(MORCHR)
Morone saxatilis	Striped Bass	(MORSAX)
Family Centrarchidae	sunfishes	
Lepomis cyanellus	Green Sunfish	(LEPCYA)
Lepomis macrochirus	Bluegill	(LEPMAC)
Lepomis megalotis	Longear Sunfish	(LEPMEG)
Micropterus dolomieu	Smallmouth Bass	(MICDOL)
Micropterus salmoides	Largemouth Bass	(MICSAL)
Pomoxis annularis	White Crappie	(POMANN)
Pomoxis nigromaculatus	Black Crappie	(POMNIG)
Family Percidae	perches	
Perca flavescens	Yellow Perch	(PERFLA)
Percina macrolepida	Bigscale Logperch	(PERMAC)
Sander vitreus	Walleye	(SANVIT)

[1] Focal taxa represent the most abundant species present in recent Middle Rio Grande collections; these species are illustrated in monthly plots of data.

Table 2. Summary of the October 2013 Rio Grande Silvery Minnow population monitoring program results (species list is based on fish collected since 1993).

FAMILY	SPECIES COMMON NAME	RESIDENCE STATUS[1]	TOTAL NUMBER OF SPECIMENS	PERCENT (%) OF TOTAL	FREQUENCY OF OCCURRENCE[2]	% FREQUENCY OCCURRENCE[2]
Clupeidae	Gizzard Shad	N	-	-	-	-
Clupeidae	Threadfin Shad	I	-	-	-	-
Cyprinidae	Central Stoneroller	I	-	-	-	-
Cyprinidae	Goldfish	I	-	-	-	-
Cyprinidae	Red Shiner	N	3,265	62.23	19	95
Cyprinidae	Common Carp	I	6	0.11	5	25
Cyprinidae	Rio Grande Chub	N	1	0.02	1	5
Cyprinidae	Rio Grande Silvery Minnow	N	3	0.06	3	15
Cyprinidae	Golden Shiner	I	-	-	-	-
Cyprinidae	Fathead Minnow	N	307	5.85	13	65
Cyprinidae	Bullhead Minnow	I	9	0.17	2	10
Cyprinidae	Flathead Chub	N	127	2.42	14	70
Cyprinidae	Longnose Dace	N	317	6.04	7	35
Catostomidae	River Carpsucker	N	7	0.13	4	20
Catostomidae	White Sucker	I	25	0.48	4	20
Catostomidae	Smallmouth Buffalo	N	-	-	-	-
Ictaluridae	Black Bullhead	I	-	-	-	-
Ictaluridae	Yellow Bullhead	I	2	0.04	1	5
Ictaluridae	Blue Catfish	N	-	-	-	-
Ictaluridae	Channel Catfish	I	218	4.15	15	75
Ictaluridae	Flathead Catfish	N	-	-	-	-
Salmonidae	Rainbow Trout	I	-	-	-	-
Salmonidae	Brown Trout	I	-	-	-	-
Poeciliidae	Western Mosquitofish	I	959	18.28	14	70
Moronidae	White Bass	I	-	-	-	-
Moronidae	Striped Bass	I	-	-	-	-
Centrarchidae	Green Sunfish	I	-	-	-	-
Centrarchidae	Bluegill	N	-	-	-	-
Centrarchidae	Longear Sunfish	I	-	-	-	-
Centrarchidae	Smallmouth Bass	I	-	-	-	-
Centrarchidae	Largemouth Bass	I	-	-	-	-
Centrarchidae	White Crappie	I	1	0.02	1	5
Centrarchidae	Black Crappie	I	-	-	-	-
Percidae	Yellow Perch	I	-	-	-	-
Percidae	Bigscale Logperch	I	-	-	-	-
Percidae	Walleye	I	-	-	-	-
TOTAL			5,247			

[1] N = native; I = introduced
[2] Frequency and % frequency of occurrence are based on 20 sample sites.

Table 3. Summary of the monthly catch of all fish species from May to October 2013 (species list is based on fish collected since 1993).

FAMILY	SPECIES COMMON NAME	MAY	JUN	JUL	AUG	SEP	OCT	DEC	TOTAL
Clupeidae	Gizzard Shad	-	-	-	-	-	-	-	0
Clupeidae	Threadfin Shad	-	-	-	-	-	-	-	0
Cyprinidae	Central Stoneroller	-	-	-	-	-	-	-	0
Cyprinidae	Goldfish	-	-	-	-	-	-	-	0
Cyprinidae	Red Shiner	3,098	2,483	8,249	2,639	4,740	3,265	-	24,474
Cyprinidae	Common Carp	13	408	377	61	36	6	-	901
Cyprinidae	Rio Grande Chub	-	-	-	-	-	1	-	1
Cyprinidae	Rio Grande Silvery Minnow	12	7	45	5	4	3	-	76
Cyprinidae	Golden Shiner	-	-	-	-	-	-	-	0
Cyprinidae	Fathead Minnow	563	1,017	742	554	648	307	-	3,831
Cyprinidae	Bullhead Minnow	-	2	28	28	5	9	-	72
Cyprinidae	Flathead Chub	176	204	137	209	261	127	-	1,114
Cyprinidae	Longnose Dace	41	55	71	252	411	317	-	1,147
Catostomidae	River Carpsucker	7	216	1,243	47	118	7	-	1,638
Catostomidae	White Sucker	75	344	335	70	37	25	-	886
Catostomidae	Smallmouth Buffalo	-	278	52	-	-	-	-	330
Ictaluridae	Black Bullhead	-	-	-	-	2	-	-	2
Ictaluridae	Yellow Bullhead	-	-	1	21	11	2	-	35
Ictaluridae	Blue Catfish	-	-	-	-	-	-	-	0
Ictaluridae	Channel Catfish	19	10	12	324	417	218	-	1,000
Ictaluridae	Flathead Catfish	-	-	-	-	-	-	-	0
Salmonidae	Rainbow Trout	-	-	-	-	-	-	-	0
Salmonidae	Brown Trout	-	-	-	-	-	-	-	0
Poeciliidae	Western Mosquitofish	198	857	2,260	1,142	1,112	959	-	6,528
Moronidae	White Bass	-	-	-	-	-	-	-	0
Moronidae	Striped Bass	-	-	-	-	-	-	-	0
Centrarchidae	Green Sunfish	-	-	-	-	-	-	-	0
Centrarchidae	Bluegill	1	-	-	-	-	-	-	1
Centrarchidae	Longear Sunfish	-	-	-	-	-	-	-	0
Centrarchidae	Smallmouth Bass	-	-	-	-	-	-	-	0
Centrarchidae	Largemouth Bass	-	2	3	-	-	-	-	5
Centrarchidae	White Crappie	-	-	1	-	-	1	-	2
Centrarchidae	Black Crappie	-	-	-	-	-	-	-	0
Percidae	Yellow Perch	-	-	-	-	-	-	-	0
Percidae	Bigscale Logperch	-	-	-	-	-	-	-	0
Percidae	Walleye	-	-	-	-	-	-	-	0
MONTHLY TOTALS		4,203	5,883	13,556	5,352	7,802	5,247	0	42,043

Table 4. Summary of the monthly catch of Rio Grande Silvery Minnow, by site and reach, from May to October 2013. Numerals in parentheses are the number of individuals in a site collection that were marked (subset of the total).

REACH	SITE #	SITE NAME	MAY	JUN	JUL	AUG	SEP	OCT	DEC	TOTAL
Angostura	0	Angostura Dam	-	-	-	-	-	-	-	0
Angostura	1	Bernalillo	-	-	-	-	-	-	-	0
Angostura	2	Rio Rancho	-	-	-	-	-	-	-	0
Angostura	3	Central Ave.	-	-	-	-	-	-	-	0
Angostura	4	Rio Bravo Blvd.	-	-	-	-	-	-	-	0
Angostura Totals			0	0	0	0	0	0	0	0
Isleta	5	Los Lunas	-	-	1(1)	-	-	-	-	1
Isleta	6	Belen	-	-	1	-	-	-	-	1
Isleta	7	Jarales	-	-	1(1)	1	-	-	-	2
Isleta	8	Bernardo	-	-	-	-	1	-	-	1
Isleta	9	La Joya	-	-	2(2)	-	-	-	-	2
Isleta	9.5	North of San Acacia	2(2)	-	-	-	-	-	-	2
Isleta Totals			2	0	5	1	1	0	0	9
San Acacia	10	San Acacia Dam	8(8)	4(4)	7(6)	-	2	1	-	22
San Acacia	11	South of San Acacia	-	1(1)	5(5)	-	-	-	-	6
San Acacia	12	Socorro	-	-	28(28)	-	1	-	-	29
San Acacia	13	North of San Antonio	1(1)	1	-	-	-	1	-	3
San Acacia	14	San Antonio	-	-	-	-	-	-	-	0
San Acacia	15	South of San Antonio	-	1	-	1(1)	-	1	-	3
San Acacia	16	San Marcial	1(1)	-	-	-	-	-	-	1
San Acacia	17	South of San Marcial 1	-	-	-	3	-	-	-	3
San Acacia	18	South of San Marcial 2	-	-	-	-	-	-	-	0
San Acacia Totals			10	7	40	4	3	3	0	67
MONTHLY TOTALS			12	7	45	5	4	3	0	76

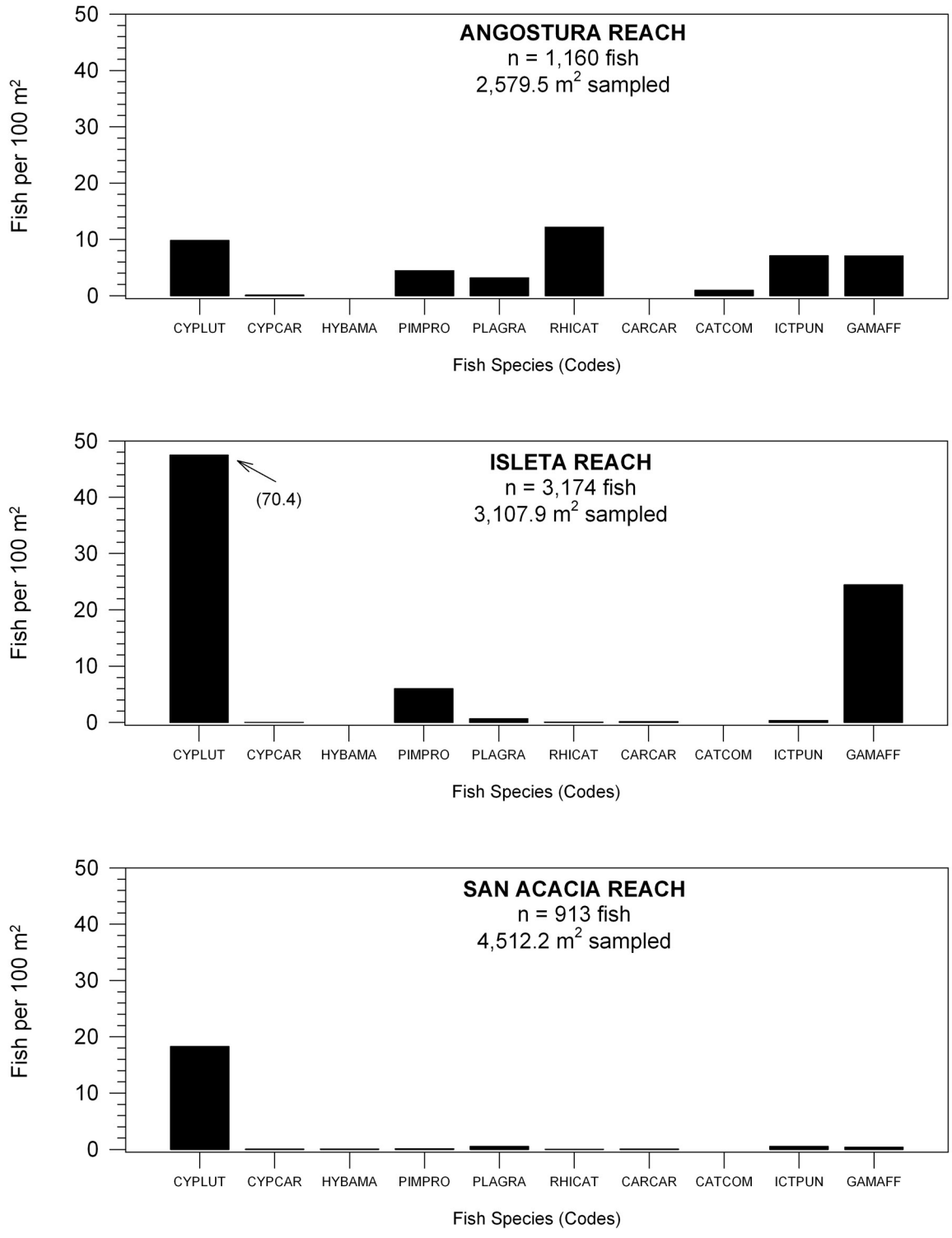

Figure 3. Fish densities from October 2013 for each focal species in the Middle Rio Grande (see Table 1 for fish species codes).

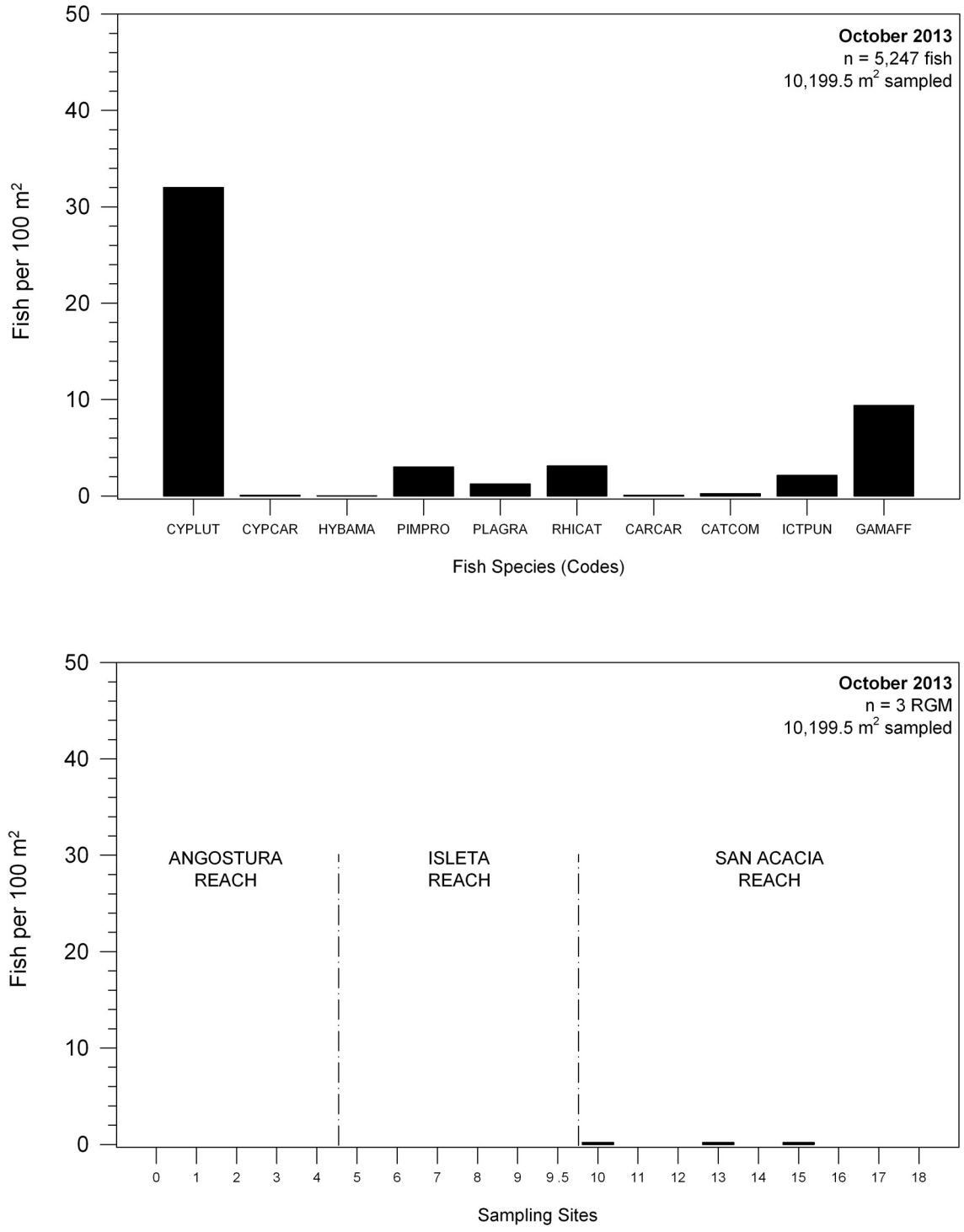

Figure 4. Catch rates for ten focal species (upper graph*), including Rio Grande Silvery Minnow, (RGM; lower graph*) during October 2013 at Rio Grande Silvery Minnow population monitoring program collection sites (see Table 1 for fish species codes).

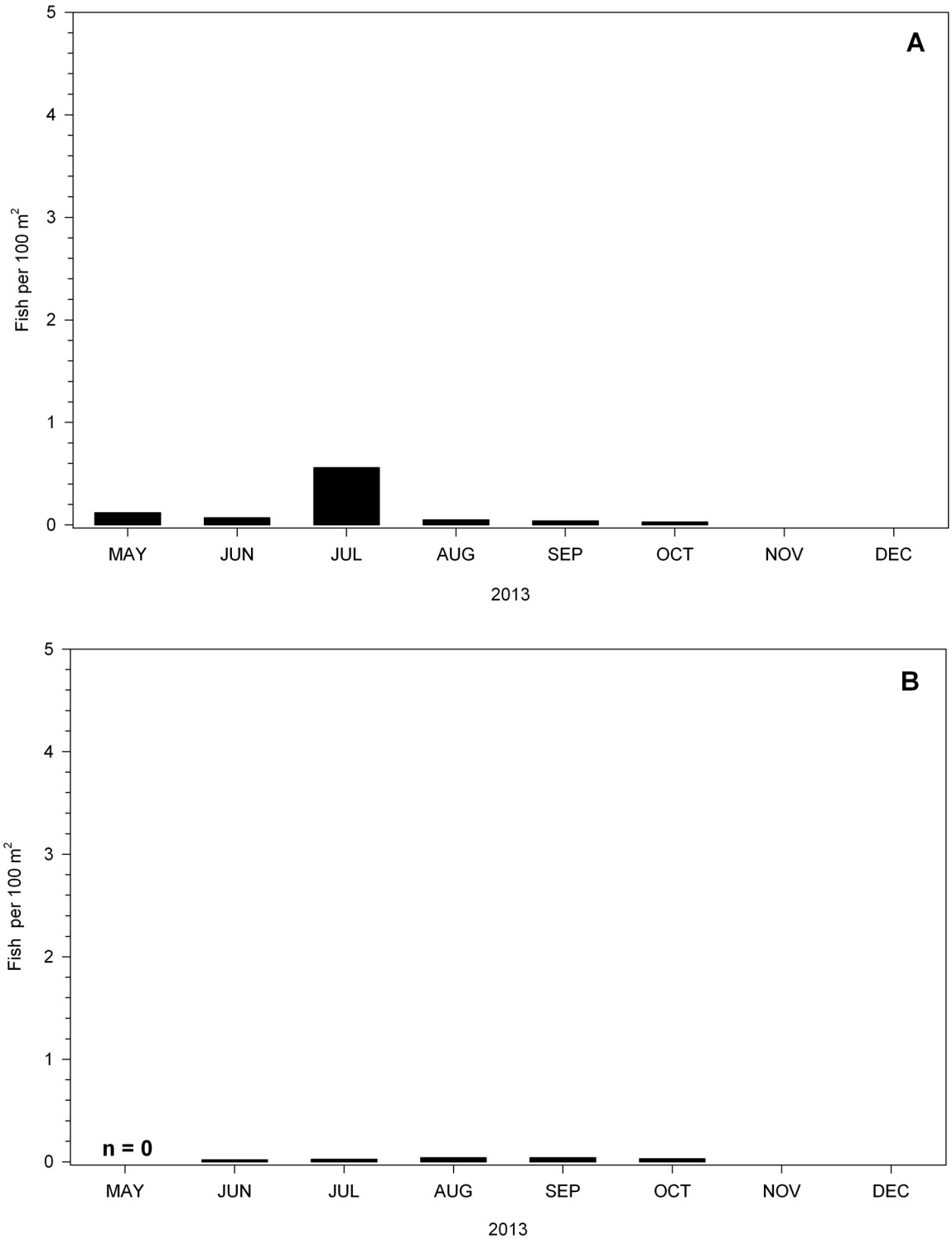

Figure 5. Inter-month fluctuations in densities of Rio Grande Silvery Minnow from May to October 2013 (**A** = all age-classes; **B** = age-0 only).

APPENDIX A.

Collection localities of the Rio Grande Silvery Minnow population monitoring program.

Table A-1. Collection localities of the Rio Grande Silvery Minnow population monitoring program.

Site #	Site Locality

ANGOSTURA REACH SITES
SITE #

0 New Mexico, Sandoval County, Rio Grande, below Angostura Diversion Dam, Algodones.
River Mile 209.7 SAN FELIPE PUEBLO QUADRANGLE
3916006 N 363811 E

1 New Mexico, Sandoval County, Rio Grande, at US Highway 550 bridge crossing, (formerly NM State Highway 44 bridge crossing), Bernalillo.
River Mile 203.8 BERNALILLO QUADRANGLE
3909722 N 358543 E

2 New Mexico, Sandoval County, Rio Grande, ca. 4 miles downstream of US Highway 550 bridge crossing, at Rio Rancho Wastewater Treatment Plant, Rio Rancho.
River Mile 200.0 BERNALILLO QUADRANGLE
3905355 N 354772 E

3 New Mexico, Bernalillo County, Rio Grande, at Central Avenue (US Highway 66) bridge crossing, Albuquerque.
River Mile 183.4 ALBUQUERQUE WEST QUADRANGLE
3884094 N 346840 E

4 New Mexico, Bernalillo County, Rio Grande, at Rio Bravo Boulevard bridge crossing, Albuquerque.
River Mile 178.3 ALBUQUERQUE WEST QUADRANGLE
3877163 N 347554 E

ISLETA REACH SITES
SITE #

5 New Mexico, Valencia County, Rio Grande, at Los Lunas (NM State Highway 49) bridge crossing, Los Lunas.
River Mile 161.4 LOS LUNAS QUADRANGLE
3852531 N 342898 E

6 New Mexico, Valencia County, Rio Grande, ca. 1.0 miles upstream of NM State Highway 309/6 bridge crossing, Belen.
River Mile 151.5 TOME QUADRANGLE
3837061 N 339972 E

7 New Mexico, Valencia County, Rio Grande, ca. 2.2 miles upstream of NM State Highway 346 bridge crossing (near Transwestern Natural Gas Pipeline crossing), Jarales.
River Mile 143.2 VEGUITA QUADRANGLE
3827329 N 338136 E

Table A-1. Collection localities of the Rio Grande Silvery Minnow population monitoring program (continued).

Site #	Site Locality

ISLETA REACH SITES (continued)
SITE #

8 New Mexico, Socorro County, Rio Grande, at US Highway 60 bridge crossing, Bernardo.
River Mile 130.6 ABEYTAS QUADRANGLE
3809726 N 334604 E

9 New Mexico, Socorro County, Rio Grande, ca. 3.5 miles downstream of US Highway 60 bridge crossing, La Joya.
River Mile 127.0 ABEYTAS QUADRANGLE
3805229 N 331094 E

9.5 New Mexico, Socorro County, Rio Grande, ca. 0.6 miles upstream of San Acacia Diversion Dam, San Acacia.
River Mile 116.8 LA JOYA QUADRANGLE
3792603 N 327902 E

SAN ACACIA REACH SITES
SITE #

10 New Mexico, Socorro County, Rio Grande, directly below San Acacia Diversion Dam, San Acacia.
River Mile 116.2 SAN ACACIA QUADRANGLE
3791977 N 326162 E

11 New Mexico, Socorro County, Rio Grande, ca. 1.5 miles downstream of San Acacia Diversion Dam, San Acacia.
River Mile 114.6 LEMITAR QUADRANGLE
3790442 N 325263 E

12 New Mexico, Socorro County, Rio Grande, 0.5 miles upstream of the Low Flow Conveyance Channel bridge, east and upstream of Socorro Wastewater Treatment Plant, Socorro.
River Mile 99.5 LOMA DE LAS CANAS QUADRANGLE
3771043 N 327097 E

13 New Mexico, Socorro County, Rio Grande, ca. 4.0 miles upstream of US Highway 380 bridge crossing, San Antonio.
River Mile 91.7 SAN ANTONIO QUADRANGLE
3761283 N 328140 E

14 New Mexico, Socorro County, Rio Grande, at US Highway 380 bridge crossing, San Antonio.
River Mile 87.1 SAN ANTONIO QUADRANGLE
3754471 N 328914 E

Table A-1. Collection localities of the Rio Grande Silvery Minnow population monitoring program (continued).

Site #	Site Locality

SAN ACACIA REACH SITES (continued)
SITE #

15 New Mexico, Socorro County, Rio Grande, directly east of Bosque del Apache National Wildlife Refuge headquarters, San Antonio.
River Mile 79.1 SAN ANTONIO, SE QUADRANGLE
3740839 N 327055 E

16 New Mexico, Socorro County, Rio Grande, at the San Marcial railroad crossing, San Marcial.
River Mile 68.6 SAN MARCIAL QUADRANGLE
3728347 N 315284 E

17 New Mexico, Socorro County, Rio Grande, at its former confluence with the Low Flow Conveyance Channel and 16 miles downstream of the southern end of the Bosque del Apache National Wildlife Refuge, San Marcial.
River Mile 60.5 PARAJE WELL QUADRANGLE
3718178 N 309487 E

18 New Mexico, Socorro County, Rio Grande, ca. 10 miles downstream of the San Marcial Railroad Bridge crossing, San Marcial.
River Mile 58.8 PARAJE WELL QUADRANGLE
3716150 N 307846 E

APPENDIX B.

Ichthyofaunal composition of the October 2013
Rio Grande Silvery Minnow population monitoring efforts

** Data are provisional and should be verified by direct inspection of field data whenever possible **

Rio Grande silvery minnow Population Monitoring
October 2013

NEW MEXICO: SANDOVAL Co., RIO GRANDE Drainage **RKD13-158**
Rio Grande, directly below Angostura Diversion Dam, Algodones.

Site Number: 0 River Mile: 209.7 10 October 2013
UTM Easting: 363811 UTM Northing: 3916006 Zone: 13 Quad: San Felipe Pueblo
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 501.3 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	101
76	*Gila pandora*	1
76	*Pimephales promelas*	39
76	*Platygobio gracilis*	6
76	*Rhinichthys cataractae*	242
81	*Catostomus commersonii*	8
93	*Ictalurus punctatus*	18

NEW MEXICO: SANDOVAL Co., RIO GRANDE Drainage **RKD13-159**
Rio Grande, at US HWY 550 (formerly NM State HWY 44) bridge crossing, Bernalillo.

Site Number: 1 River Mile: 203.8 10 October 2013
UTM Easting: 358543 UTM Northing: 3909722 Zone: 13 Quad: Bernalillo
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 556.2 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	1
76	*Pimephales promelas*	6
76	*Platygobio gracilis*	26
76	*Rhinichthys cataractae*	42
81	*Catostomus commersonii*	7
93	*Ictalurus punctatus*	13
212	*Gambusia affinis*	1

Rio Grande silvery minnow Population Monitoring
October 2013

NEW MEXICO: SANDOVAL Co., RIO GRANDE Drainage **RKD13-160**
Rio Grande, ca. 4.0 miles downstream of US HWY 550 (formerly NM State HWY 44) bridge crossing, at Rio Rancho Wastewater Treatment Plant, Rio Rancho.

Site Number: 2 River Mile: 200.0 10 October 2013
UTM Easting: 354772 UTM Northing: 3905355 Zone: 13 Quad: Bernalillo
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 501.4 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	81
76	*Cyprinus carpio*	1
76	*Pimephales promelas*	41
76	*Platygobio gracilis*	32
76	*Rhinichthys cataractae*	29
81	*Catostomus commersonii*	2
93	*Ictalurus punctatus*	55
212	*Gambusia affinis*	40

NEW MEXICO: BERNALILLO Co., RIO GRANDE Drainage **RKD13-157**
Rio Grande, at Central Avenue bridge crossing (US HWY 66), Albuquerque.

Site Number: 3 River Mile: 183.4 10 October 2013
UTM Easting: 346840 UTM Northing: 3884094 Zone: 13 Quad: Albuquerque West
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 535.0 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	30
76	*Pimephales promelas*	9
76	*Platygobio gracilis*	15
76	*Rhinichthys cataractae*	1
93	*Ameiurus natalis*	2
93	*Ictalurus punctatus*	64
212	*Gambusia affinis*	27

Rio Grande silvery minnow Population Monitoring
October 2013

NEW MEXICO: BERNALILLO Co., RIO GRANDE Drainage **RKD13-156**
Rio Grande, at Rio Bravo Blvd. Bridge crossing (NM State HWY 500) crossing, Albuquerque.

Site Number: 4 River Mile: 178.3 10 October 2013
UTM Easting: 347554 UTM Northing: 3877163 Zone: 13 Quad: Albuquerque West
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 485.7 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	40
76	*Cyprinus carpio*	2
76	*Pimephales promelas*	20
76	*Platygobio gracilis*	3
81	*Catostomus commersonii*	8
93	*Ictalurus punctatus*	33
212	*Gambusia affinis*	114

NEW MEXICO: VALENCIA Co., RIO GRANDE Drainage **RKD13-155**
Rio Grande, at Los Lunas Bridge crossing (NM State HWY 49), Los Lunas.

Site Number: 5 River Mile: 161.4 09 October 2013
UTM Easting: 342898 UTM Northing: 3852531 Zone: 13 Quad: Los Lunas
R.K. Dudley, J.M. Barkstedt, R.E. Grey Effort: 499.3 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	199
76	*Pimephales promelas*	16
76	*Platygobio gracilis*	1
76	*Rhinichthys cataractae*	1
93	*Ictalurus punctatus*	3
212	*Gambusia affinis*	14

Rio Grande silvery minnow Population Monitoring
October 2013

NEW MEXICO: VALENCIA Co., RIO GRANDE Drainage **RKD13-154**
Rio Grande, ca. 1.0 miles upstream of NM State HWY 309/6 bridge crossing, Belen.

Site Number: 6 River Mile: 151.5 09 October 2013
UTM Easting: 339972 UTM Northing: 3837061 Zone: 13 Quad: Tome
R.K. Dudley, J.M. Barkstedt, R.E. Grey Effort: 496.6 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	259
76	*Pimephales promelas*	55
76	*Rhinichthys cataractae*	1
93	*Ictalurus punctatus*	2
212	*Gambusia affinis*	227

NEW MEXICO: VALENCIA Co., RIO GRANDE Drainage **RKD13-153**
Rio Grande, ca. 2.2 miles upstream of NM State HWY 346 bridge crossing, Jarales.

Site Number: 7 River Mile: 143.2 09 October 2013
UTM Easting: 338136 UTM Northing: 3827329 Zone: 13 Quad: Veguita
R. K. Dudley, J.M. Barkstedt, R.E. Grey Effort: 495.5 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	841
76	*Cyprinus carpio*	1
76	*Pimephales promelas*	91
81	*Carpiodes carpio*	3
93	*Ictalurus punctatus*	4
212	*Gambusia affinis*	191

Rio Grande silvery minnow Population Monitoring
October 2013

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-152**
Rio Grande, at US HWY 60 bridge crossing, Bernardo.

Site Number: 8 River Mile: 130.6 08 October 2013
UTM Easting: 334604 UTM Northing: 3809726 Zone: 13 Quad: Abeytas
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 512.9 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	424
76	*Pimephales promelas*	8
81	*Carpiodes carpio*	2
93	*Ictalurus punctatus*	1
212	*Gambusia affinis*	292
294	*Pomoxis annularis*	1

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-151**
Rio Grande, ca. 3.5 miles downstream of the US HWY 60 bridge crossing, Bernardo.

Site Number: 9 River Mile: 127.0 09 October 2013
UTM Easting: 331094 UTM Northing: 3805229 Zone: 13 Quad: Abeytas
R.K. Dudley, J.M. Barkstedt, R.E. Grey Effort: 545.3 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	464
76	*Pimephales promelas*	16
76	*Platygobio gracilis*	1
93	*Ictalurus punctatus*	1
212	*Gambusia affinis*	36

Rio Grande silvery minnow Population Monitoring
October 2013

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-150**
Rio Grande, ca. 0.6 miles upstream of San Acacia Diversion Dam, San Acacia

Site Number: 9.5 River Mile: 116.8 21 October 2013
UTM Easting: 327902 UTM Northing: 3792603 Zone: 13 Quad: La Joya
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 558.2 sq. m

FAMILY		N
76	*Platygobio gracilis*	19

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-149**
Rio Grande, directly below San Acacia Diversion Dam, San Acacia.

Site Number: 10 River Mile: 116.2 08 October 2013
UTM Easting: 326162 UTM Northing: 3791977 Zone: 13 Quad: San Acacia
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 472.0 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	11
76	*Hybognathus amarus**	1
76	*Pimephales promelas*	3
76	*Platygobio gracilis*	7
76	*Rhinichthys cataractae*	1
212	*Gambusia affinis*	3

***Hybognathus amarus* by age class:**
age-0: 1
age-1:
age-2:

Rio Grande silvery minnow Population Monitoring
October 2013

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-148**
Rio Grande, ca. 1.5 miles downstream of San Acacia Diversion Dam, San Acacia.

Site Number: 11 River Mile: 114.6 08 October 2013
UTM Easting: 325263 UTM Northing: 3790442 Zone: 13 Quad: Lemitar
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 492.7 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	18
76	*Pimephales promelas*	1
76	*Platygobio gracilis*	12
93	*Ictalurus punctatus*	18
212	*Gambusia affinis*	6

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-147**
Rio Grande, east of Socorro, 0.5 miles upstream of Socorro Low Flow Conveyance Channel bridge and east just upstream of Socorro Wastewater Treatment Plant, Socorro.

Site Number: 12 River Mile: 99.5 08 October 2013
UTM Easting: 327097 UTM Northing: 3771043 Zone: 13 Quad: Loma de las Canas
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 545.2 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	92
76	*Platygobio gracilis*	2
81	*Carpiodes carpio*	1
93	*Ictalurus punctatus*	2

Rio Grande silvery minnow Population Monitoring
October 2013

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-146**
Rio Grande, ca. 4.0 miles upstream of U.S. 380 bridge crossing.

Site Number: 13 River Mile: 91.7 08 October 2013
UTM Easting: 328140 UTM Northing: 3761283 Zone: 13 Quad: San Antonio
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 536.2 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	38
76	*Hybognathus amarus**	1
93	*Ictalurus punctatus*	1

***Hybognathus amarus* by age class:**

age-0: 1
age-1:
age-2:

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-145**
Rio Grande, at US HWY 380 bridge crossing, San Antonio.

Site Number: 14 River Mile: 87.1 07 October 2013
UTM Easting: 328914 UTM Northing: 3754471 Zone: 13 Quad: San Antonio
R.K. Dudley, J.L. Hester, J.M. Barkstedt, R.E. Grey Effort: 501.1 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	37
76	*Platygobio gracilis*	1
93	*Ictalurus punctatus*	1

Rio Grande silvery minnow Population Monitoring
October 2013

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-144**
Rio Grande, directly east of Bosque del Apache National Wildlife Refuge Headquarters.

Site Number: 15 River Mile: 79.1 21 October 2013
UTM Easting: 327055 UTM Northing: 3740839 Zone: 13 Quad: San Antonio SE
R.K. Dudley, J.L. Hester, R.E. Grey Effort: 518.1 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	8
76	*Hybognathus amarus**	1
76	*Pimephales promelas*	2
81	*Carpiodes carpio*	1
212	*Gambusia affinis*	3

***Hybognathus amarus* by age class:**
age-0: 1
age-1:
age-2:

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-143**
Rio Grande, at San Marcial Railroad Bridge, San Marcial.

Site Number: 16 River Mile: 68.6 07 October 2013
UTM Easting: 315284 UTM Northing: 3728347 Zone: 13 Quad: San Marcial
R.K. Dudley, J.L. Hester, J.M. Barkstedt, R.E. Grey Effort: 448.1 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	198
76	*Cyprinus carpio*	1
76	*Platygobio gracilis*	1
212	*Gambusia affinis*	1

Rio Grande silvery minnow Population Monitoring
October 2013

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-142**
Rio Grande, ca. 8 miles downstream of the San Marcial railroad bridge crossing

Site Number: 17 River Mile: 60.5 07 October 2013
UTM Easting: 309487 UTM Northing: 3718178 Zone: 13 Quad: Paraje Well
R.K. Dudley, J.L. Hester, J.M. Barkstedt, R.E. Grey Effort: 492.0 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	240
76	*Pimephales vigilax*	4
76	*Platygobio gracilis*	1
212	*Gambusia affinis*	4

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage **RKD13-141**
Rio Grande, ca. 10 mi downstream of the San Marcial railroad bridge crossing

Site Number: 18 River Mile: 58.8 07 October 2013
UTM Easting: 307846 UTM Northing: 3716150 Zone: 13 Quad: Paraje Well
R.K. Dudley, J.L. Hester, J.M. Barkstedt, R.E. Grey Effort: 507.0 sq. m

FAMILY		N
76	*Cyprinella lutrensis*	183
76	*Cyprinus carpio*	1
76	*Pimephales vigilax*	5
93	*Ictalurus punctatus*	2