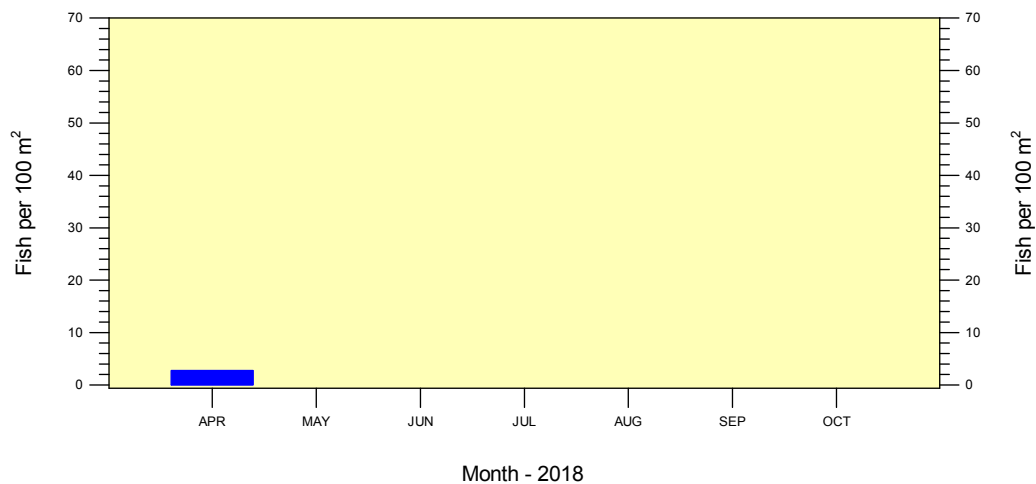
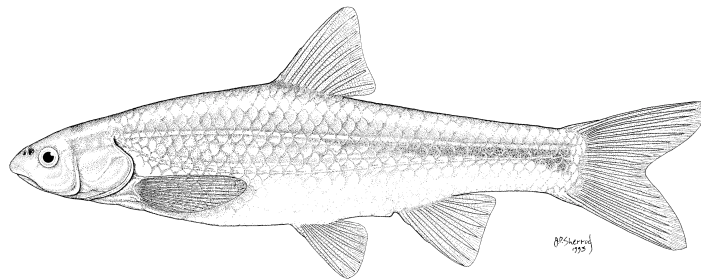


RIO GRANDE SILVERY MINNOW POPULATION MONITORING DURING APRIL 2018

***A U.S. BUREAU OF RECLAMATION FUNDED
RESEARCH PROGRAM***



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15 May 2018

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Requisition 0040306655

U.S. Bureau of Reclamation
Albuquerque Area Office
555 Broadway NE, Suite 100
Albuquerque, NM 87102-2352

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U.S. Bureau of Reclamation
Albuquerque Area Office
555 Broadway NE, Suite 100
Albuquerque, NM 87102-2352

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SUMMARY OF APRIL 2018 POPULATION MONITORING

The April population monitoring efforts were conducted at the 20 standard sites and at 10 additional sites. Ten sites were located in each of the three sampling reaches: Angostura, Isleta, and San Acacia. The Middle Rio Grande Endangered Species Collaborative Program requested that the additional sampling be conducted once in the spring and fall of each year. **While this report follows the typical monthly report format, key changes to the text, tables, and figures are highlighted in bold-italic font. For April 2018, comparisons were made between standard sites and all sites (i.e., standard, additional, and replacement sites) to maintain consistency across all monthly reports.** A list of all collection localities is appended (Appendix A). Adult and juvenile fish were obtained by rapidly drawing a 3.1 m x 1.8 m small mesh (ca. 5 mm) seine through discrete mesohabitats. Larval fish were also collected with a 1.0 m x 1.0 m fine mesh (ca. 1.5 mm) seine. All fishes were identified to species and enumerated. We used length-age relationships to assign ages (i.e., age-0, age-1, and age-2+) to all Rio Grande Silvery Minnow collected. Age-0 individuals are, however, only present after annual spring spawning occurs (ca. April–June). Figures illustrating fish densities (i.e., fish per 100 m²) were prepared for the ten focal species to facilitate comparisons across reaches.

Angostura Reach

Mean daily discharge in the Angostura Reach (Rio Grande at Albuquerque, NM; USGS Gage 08330000) averaged 436.6 and ranged from 380 to 507 cfs from 16 March to 15 April. Water temperatures ranged from 10.5 to 19.2 °C during the Angostura Reach sampling efforts (ca. 0830–1530 h). Secchi disk measurements of water clarity ranged from 30 to 100 cm.

Sampling for fishes in the Angostura Reach during April yielded 568 individuals with a cumulative fish density of 10.8 individuals/100 m² sampled. The overall sampling effort in the Angostura Reach covered 5,239.9 m² (surface area) of water. Densities of all fish species combined ranged from 0.5 to 57.2 individuals per 100 m² at the different sampling sites. In April, there were 8 fish species collected in the Angostura Reach. Red Shiner was the most abundant taxon (n = 443), followed by Rio Grande Silvery Minnow (n = 54), and Flathead Chub (n = 36). Densities of Rio Grande Silvery Minnow ranged from 0.0 to 3.5 individuals per 100 m². Rio Grande Silvery Minnow (n = 54) was present in 24 of the 84 seine hauls that yielded fish during April.

Isleta Reach

In the Isleta Reach, mean daily discharge (Rio Grande at Isleta Lakes near Isleta, NM; USGS Gage 08354900) averaged 373.4 and ranged from 298 to 452 cfs from 16 March to 15 April. Water temperatures ranged from 11.2 to 20.6 °C throughout the sampling localities during the day (ca. 0930–1600 h). Secchi disk measurements ranged from 24 to 34 cm during sampling.

Isleta Reach population monitoring efforts produced 2,127 individuals in April with a cumulative fish density of 43.2 individuals/100 m² sampled. The total sampling effort in the Isleta Reach during April covered 4,924.7 m² (surface area) of water. Fish densities (all species combined) at the sampling sites ranged from 6.7 to 142.2 individuals per 100 m² sampled. There were 10 fish species collected in the Isleta Reach during April. Red Shiner was the most abundant taxon (n = 1,851), followed by Rio Grande Silvery Minnow (n = 230), and Flathead Chub (n = 17). Densities of Rio Grande Silvery Minnow ranged from 0.0 to 23.6 individuals per 100 m². Rio Grande Silvery Minnow (n = 230) was present in 31 of the 117 seine hauls that yielded fish during April.

San Acacia Reach

Mean daily discharge at San Acacia (Rio Grande Floodway at San Acacia, NM; USGS Gage 08354900) from 16 March to 15 April was generally higher (average = 147.9; range = 74–315 cfs) as compared to San Marcial (Rio Grande Floodway at San Marcial, NM; USGS Gage 08358400) during the same period (average = 40.6; range = 10–124 cfs). Water temperatures in April for the San Acacia Reach ranged from 13.1 to 22.2 °C (ca. 0930–1600 h). Water clarity was generally lower in this reach (Secchi disk range = 9–70 cm) compared to the two upstream reaches.

Population monitoring efforts in the San Acacia Reach during April yielded 705 individuals with a cumulative fish density of 13.6 individuals per 100 m² sampled. Sampling in the San Acacia Reach covered an area of 5,179.9 m² of water. Fish densities (all species combined) ranged from 3.7 to 35.9 individuals per 100 m² at sites sampled in the San Acacia Reach. In April, there were 9 fish species collected in the San Acacia Reach. Red Shiner was the most abundant taxon (n = 485), followed by Rio Grande Silvery Minnow (n = 143), and Flathead Chub (n = 39). Densities of Rio Grande Silvery Minnow ranged from 0.0 to 9.7 individuals per 100 m². Rio Grande Silvery Minnow (n = 143) was present in 52 of the 119 seine hauls that yielded fish during April.

Standard Sites (n = 20)

During April, sampling covered 10,269.1 m² (surface area) of water and yielded 1,731 fish. There were no dry sampling sites. Cumulative fish density during April was 16.86 individuals/100 m² sampled. The three most common species were Red Shiner (n = 1,349), Rio Grande Silvery Minnow (n = 269), and Flathead Chub (n = 44). The sampling sites yielded a total of 15 fish species. Rio Grande Silvery Minnow was present in 69 of the 201 seine hauls that yielded fish. We collected Rio Grande Silvery Minnow at 14 of the 20 sampling sites, and its overall density was 2.62 (n = 269) individuals/100 m² sampled. Densities of unmarked and marked individuals were 2.61 (n = 268) and 0.01 (n = 1) individuals/100 m² sampled, respectively. Densities of age-0, age-1, and age-2+ individuals were 0.00 (n = 0), 2.53 (n = 260), and 0.09 (n = 9) individuals/100 m² sampled, respectively.

All Sites (n = 30)

During April, sampling covered 15,344.4 m² (surface area) of water and yielded 3,400 fish. There were no dry sampling sites. Cumulative fish density during April was 22.16 individuals/100 m² sampled. The three most common species were Red Shiner (n = 2,779), Rio Grande Silvery Minnow (n = 427), and Flathead Chub (n = 92). The sampling sites yielded a total of 15 fish species. Rio Grande Silvery Minnow was present in 107 of the 320 seine hauls that yielded fish. We collected Rio Grande Silvery Minnow at 24 of the 30 sampling sites, and its overall density was 2.78 (n = 427) individuals/100 m² sampled. Densities of unmarked and marked individuals were 2.77 (n = 425) and 0.01 (n = 2) individuals/100 m² sampled, respectively. Densities of age-0, age-1, and age-2+ individuals were 0.00 (n = 0), 2.68 (n = 411), and 0.10 (n = 16) individuals/100 m² sampled, respectively.

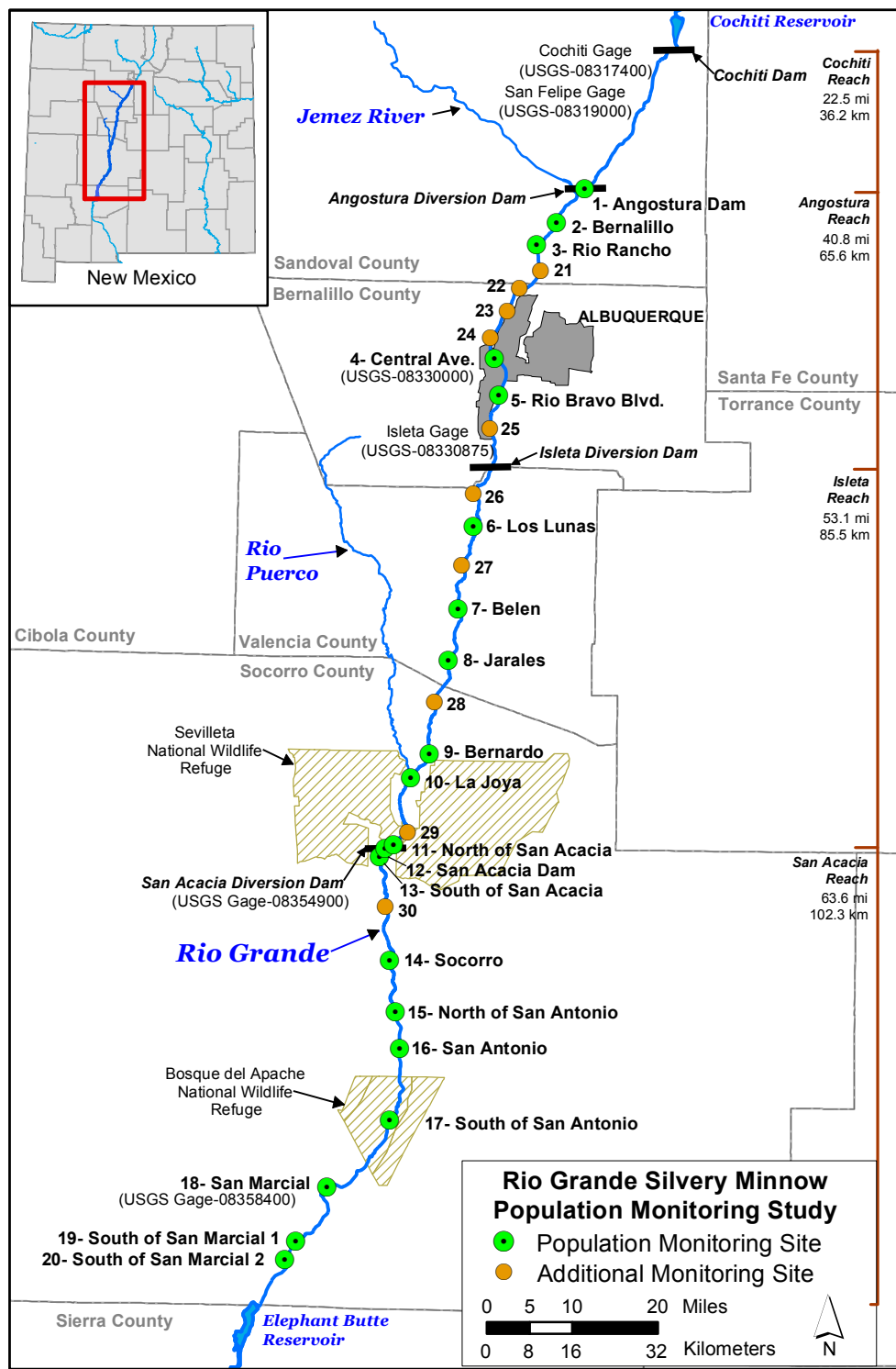


Figure 1. Map of the study area, **standard sites** (green), and **additional sites** (orange) for the Rio Grande Silvery Minnow population monitoring study. Sampling site descriptions are provided in Appendix A.

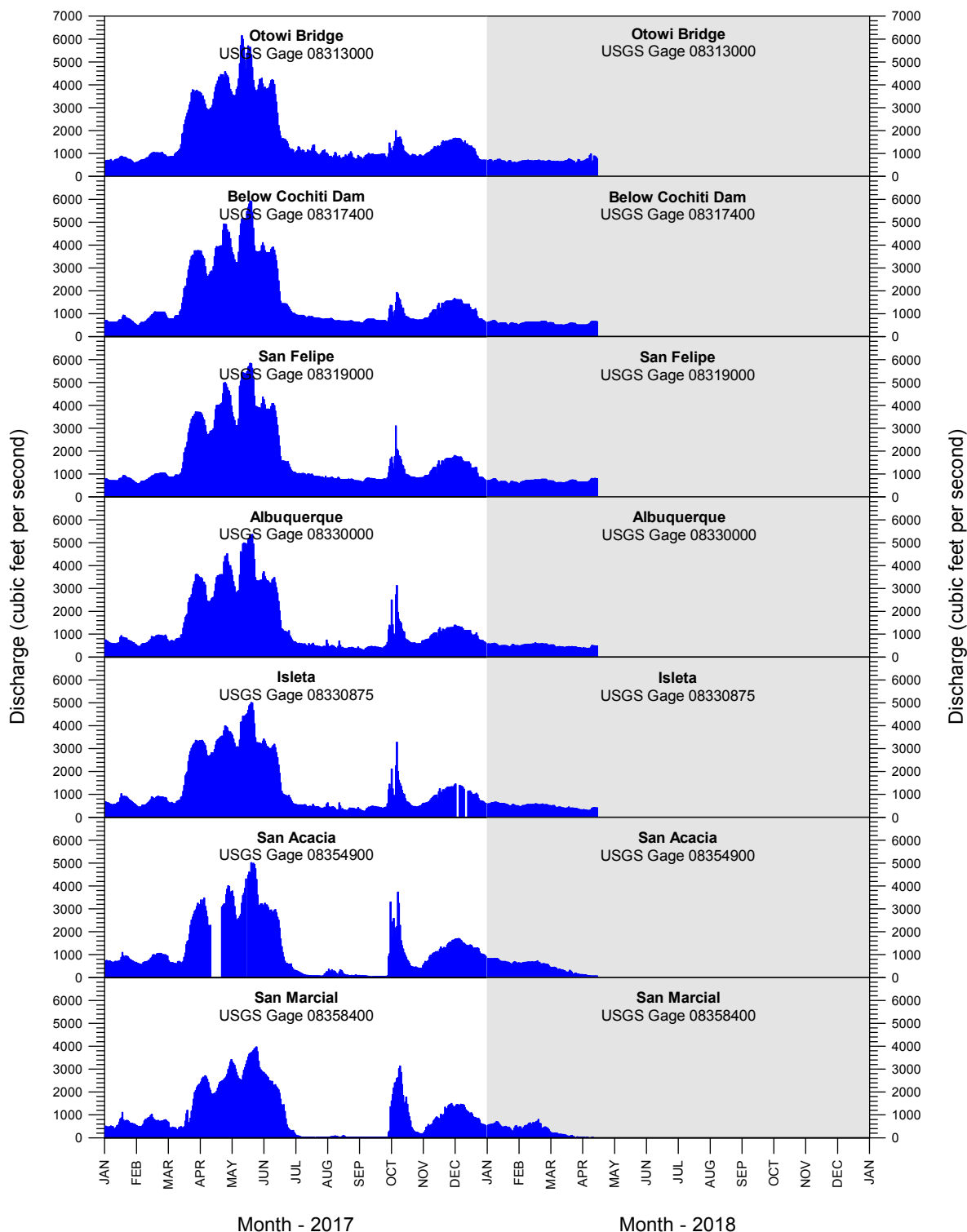


Figure 2. Rio Grande discharge from 1 January 2017 to 15 April 2018 at U.S. Geological Survey (USGS) gaging stations. Discharge data are provisional and subject to change.

Table 1. Scientific names, common names, and species codes of fish collected in the Middle Rio Grande since 1993.

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

Table 1. Scientific names, common names, and species codes of fish collected in the Middle Rio Grande since 1993 (continued).

Scientific Name	Common Name	Species Code
Order Perciformes		
Family Moronidae		
	temperate basses	
<i>Morone chrysops</i>	White Bass	(MORCHR)
<i>Morone saxatilis</i>	Striped Bass	(MORSAX)
Family Centrarchidae		
	sunfishes	
<i>Lepomis cyanellus</i>	Green Sunfish	(LEPCYA)
<i>Lepomis macrochirus</i>	Bluegill	(LEPMAC)
<i>Lepomis megalotis</i>	Longear Sunfish	(LEPMEG)
<i>Micropterus dolomieu</i>	Smallmouth Bass	(MICDOL)
<i>Micropterus salmoides</i>	Largemouth Bass	(MICSAL)
<i>Pomoxis annularis</i>	White Crappie	(POMANN)
<i>Pomoxis nigromaculatus</i>	Black Crappie	(POMNIG)
Family Percidae		
	perches	
<i>Perca flavescens</i>	Yellow Perch	(PERFLA)
<i>Percina macrolepida</i>	Bigscale Logperch	(PERMAC)
<i>Sander vitreus</i>	Walleye	(SANVIT)

¹ = Focal taxa were the most abundant species from recent Middle Rio Grande collections.

Table 2. Summary of the abundance of Rio Grande Silvery Minnow, by reach, site, and mesohabitat, during April 2018, **based on all sites**. Blank cells indicate site-specific mesohabitats that were unavailable for sampling.

Reach	Site	Locality	BW	PO	RU	SHPO	SHRU	Total
Angostura	1	Angostura Dam	-	-	-	-	-	0
Angostura	2	Bernalillo	-	-	-	-	-	0
Angostura	3	Rio Rancho	-	-	-	-	-	0
Angostura	21	Site 21	-	2	-	-	5	7
Angostura	22	Site 22	-	-	-	17	1	18
Angostura	23	Site 23	-	1	-	2	6	9
Angostura	24	Site 24	-	4	2	-	9	15
Angostura	4	Central Ave.	-	-	-	-	2	2
Angostura	5	Rio Bravo Blvd.	-	-	-	-	-	0
Angostura	25	Site 25	-	-	1	-	2	3
<i>Angostura Totals</i>			-	7	3	19	25	54
Isleta	26	Site 26	1	-	-	-	1	2
Isleta	6	Los Lunas	1	1	4	102	-	108
Isleta	27	Site 27	-	3	-	-	68	71
Isleta	7	Belen	-	1	-	3	4	8
Isleta	8	Jarales	-	-	-	2	1	3
Isleta	28	Site 28	-	2	2	1	1	6
Isleta	9	Bernardo	-	-	1	2	2	5
Isleta	10	La Joya	-	-	-	-	-	0
Isleta	29	Site 29	23	-	-	2	-	25
Isleta	11	North of San Acacia	-	-	-	-	2	2
<i>Isleta Totals</i>			25	7	7	112	79	230
San Acacia	12	San Acacia Dam	-	-	-	5	-	5
San Acacia	13	South of San Acacia	-	-	3	6	2	11
San Acacia	30	Site 30	-	1	-	-	1	2
San Acacia	14	Socorro	2	-	1	6	1	10
San Acacia	15	North of San Antonio	-	-	1	-	5	6
San Acacia	16	San Antonio	8	3	24	7	5	47
San Acacia	17	South of San Antonio	9	6	11	16	5	47
San Acacia	18	San Marcial	-	-	3	1	-	4
San Acacia	19	South of San Marcial 1	-	-	-	-	-	0
San Acacia	20	South of San Marcial 2	-	-	-	-	11	11
<i>San Acacia Totals</i>			19	10	43	41	30	143
Monthly Totals			44	24	53	172	134	427

Table 3. Summary of the abundance of Rio Grande Silvery Minnow, by reach, site, and month, during 2018, **based on all sites**. Marked individuals at sites are shown in parentheses, as a subset of the total. Blank cells indicate months when a site was not sampled or will not be sampled.

Reach	Site	Locality	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Angostura	1	Angostura Dam	-	-	-	-	-	-	-	0
Angostura	2	Bernalillo	-	-	-	-	-	-	-	0
Angostura	3	Rio Rancho	-	-	-	-	-	-	-	0
Angostura	21	Site 21	7(0)						-	7
Angostura	22	Site 22	18(0)						-	18
Angostura	23	Site 23	9(0)						-	9
Angostura	24	Site 24	15(0)						-	15
Angostura	4	Central Ave.	2(0)	-	-	-	-	-	-	2
Angostura	5	Rio Bravo Blvd.	-	-	-	-	-	-	-	0
Angostura	25	Site 25	3(0)						-	3
<i>Angostura Totals</i>			<i>54</i>	-	-	-	-	-	-	<i>54</i>
Isleta	26	Site 26	2(0)						-	2
Isleta	6	Los Lunas	108(0)	-	-	-	-	-	-	108
Isleta	27	Site 27	71(0)						-	71
Isleta	7	Belen	8(0)	-	-	-	-	-	-	8
Isleta	8	Jarales	3(0)	-	-	-	-	-	-	3
Isleta	28	Site 28	6(0)						-	6
Isleta	9	Bernardo	5(0)	-	-	-	-	-	-	5
Isleta	10	La Joya	-	-	-	-	-	-	-	0
Isleta	29	Site 29	25(0)						-	25
Isleta	11	North of San Acacia	2(0)	-	-	-	-	-	-	2
<i>Isleta Totals</i>			<i>230</i>	-	-	-	-	-	-	<i>230</i>
San Acacia	12	San Acacia Dam	5(0)	-	-	-	-	-	-	5
San Acacia	13	South of San Acacia	11(0)	-	-	-	-	-	-	11
San Acacia	30	Site 30	2(1)						-	2
San Acacia	14	Socorro	10(0)	-	-	-	-	-	-	10
San Acacia	15	North of San Antonio	6(0)	-	-	-	-	-	-	6
San Acacia	16	San Antonio	47(1)	-	-	-	-	-	-	47
San Acacia	17	South of San Antonio	47(0)	-	-	-	-	-	-	47
San Acacia	18	San Marcial	4(0)	-	-	-	-	-	-	4
San Acacia	19	South of San Marcial 1	-	-	-	-	-	-	-	0
San Acacia	20	South of San Marcial 2	11(0)	-	-	-	-	-	-	11
<i>San Acacia Totals</i>			<i>143</i>	-	-	-	-	-	-	<i>143</i>
Monthly Totals			427	-	-	-	-	-	-	427

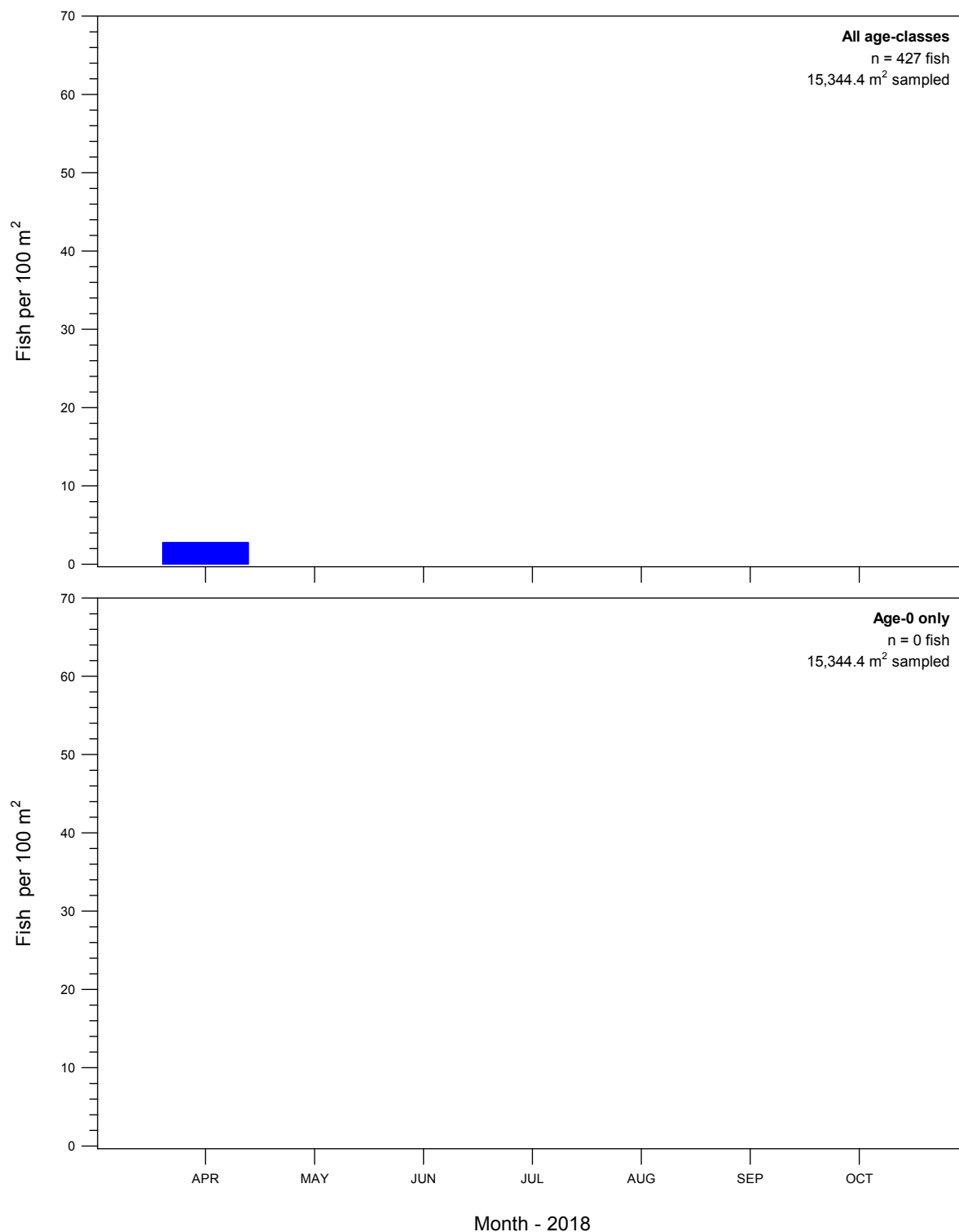


Figure 3. Rio Grande Silvery Minnow densities (all age-classes and age-0 only) by sampling month during 2018, **based on all sites**. Marked and unmarked individuals are included.

Table 4. Summary of the April 2018 population monitoring fish community results (species list is based on fish collected since 1993), **based on standard sites**. Marked and unmarked Rio Grande Silvery Minnow are included in the totals.

Family	Common Name	Residence Status ¹	Total Number of Individuals	Percent (%) of Total	Frequency of Occurrence ²	% Frequency of Occurrence ²
Clupeidae	Gizzard Shad	N	18	1.04	2	10
Clupeidae	Threadfin Shad	I	-	-	-	-
Cyprinidae	Central Stoneroller	I	-	-	-	-
Cyprinidae	Goldfish	I	-	-	-	-
Cyprinidae	Red Shiner	N	1,349	77.93	19	95
Cyprinidae	Common Carp	I	11	0.64	8	40
Cyprinidae	Rio Grande Chub	N	-	-	-	-
Cyprinidae	Rio Grande Silvery Minnow	N	269	15.54	14	70
Cyprinidae	Golden Shiner	I	-	-	-	-
Cyprinidae	Fathead Minnow	N	1	0.06	1	5
Cyprinidae	Bullhead Minnow	I	2	0.12	1	5
Cyprinidae	Flathead Chub	N	44	2.54	11	55
Cyprinidae	Longnose Dace	N	4	0.23	2	10
Catostomidae	River Carpsucker	N	4	0.23	3	15
Catostomidae	White Sucker	I	2	0.12	1	5
Catostomidae	Smallmouth Buffalo	N	5	0.29	1	5
Ictaluridae	Black Bullhead	I	-	-	-	-
Ictaluridae	Yellow Bullhead	I	-	-	-	-
Ictaluridae	Blue Catfish	N	-	-	-	-
Ictaluridae	Channel Catfish	I	12	0.69	7	35
Ictaluridae	Flathead Catfish	N	-	-	-	-
Salmonidae	Rainbow Trout	I	-	-	-	-
Salmonidae	Brown Trout	I	-	-	-	-
Poeciliidae	Western Mosquitofish	I	8	0.46	5	25
Moronidae	White Bass	I	1	0.06	1	5
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	0.06	1	5
Centrarchidae	Black Crappie	I	-	-	-	-
Percidae	Yellow Perch	I	-	-	-	-
Percidae	Bigscale Logperch	I	-	-	-	-
Percidae	Walleye	I	-	-	-	-
Monthly Total			1,731	100.00		

¹ = N (native); I (introduced)

² = Frequency and % frequency of occurrence were based on 20 sampling sites.

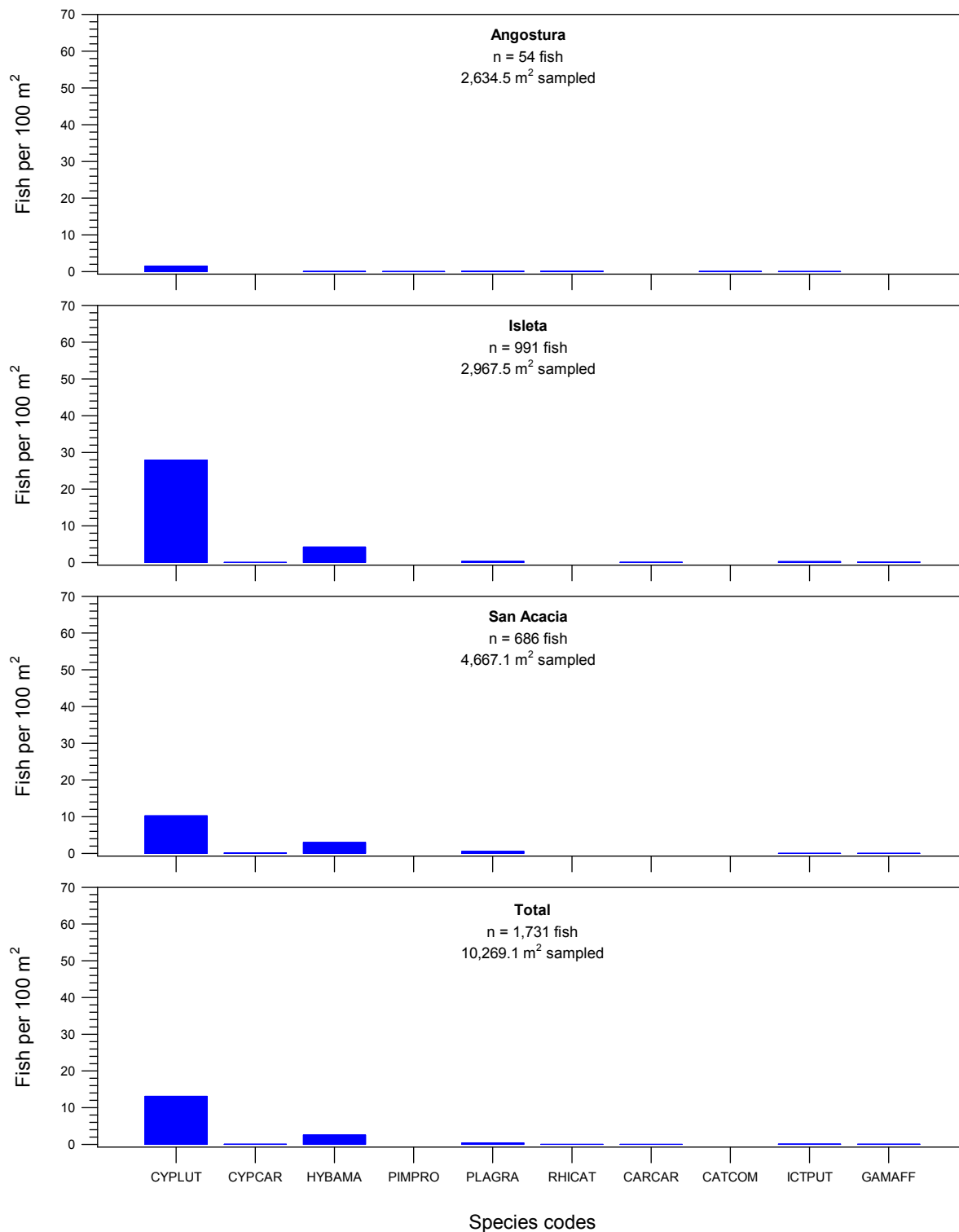


Figure 4. Reach-specific fish densities during April 2018 for each focal species (see Table 1 for species codes), **based on standard sites**.

Table 5. Summary of the April 2018 population monitoring fish community results (species list is based on fish collected since 1993), **based on all sites**. Marked and unmarked Rio Grande Silvery Minnow are included in the totals.

Family	Common Name	Residence Status ¹	Total Number of Individuals	Percent (%) of Total	Frequency of Occurrence ²	% Frequency of Occurrence ²
Clupeidae	Gizzard Shad	N	18	0.53	2	7
Clupeidae	Threadfin Shad	I	-	-	-	-
Cyprinidae	Central Stoneroller	I	-	-	-	-
Cyprinidae	Goldfish	I	-	-	-	-
Cyprinidae	Red Shiner	N	2,779	81.74	29	97
Cyprinidae	Common Carp	I	13	0.38	9	30
Cyprinidae	Rio Grande Chub	N	-	-	-	-
Cyprinidae	Rio Grande Silvery Minnow	N	427	12.56	24	80
Cyprinidae	Golden Shiner	I	-	-	-	-
Cyprinidae	Fathead Minnow	N	7	0.21	3	10
Cyprinidae	Bullhead Minnow	I	2	0.06	1	3
Cyprinidae	Flathead Chub	N	92	2.71	19	63
Cyprinidae	Longnose Dace	N	8	0.24	5	17
Catostomidae	River Carpsucker	N	6	0.18	4	13
Catostomidae	White Sucker	I	13	0.38	6	20
Catostomidae	Smallmouth Buffalo	N	5	0.15	1	3
Ictaluridae	Black Bullhead	I	-	-	-	-
Ictaluridae	Yellow Bullhead	I	-	-	-	-
Ictaluridae	Blue Catfish	N	-	-	-	-
Ictaluridae	Channel Catfish	I	13	0.38	8	27
Ictaluridae	Flathead Catfish	N	-	-	-	-
Salmonidae	Rainbow Trout	I	-	-	-	-
Salmonidae	Brown Trout	I	-	-	-	-
Poeciliidae	Western Mosquitofish	I	15	0.44	8	27
Moronidae	White Bass	I	1	0.03	1	3
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	0.03	1	3
Centrarchidae	Black Crappie	I	-	-	-	-
Percidae	Yellow Perch	I	-	-	-	-
Percidae	Bigscale Logperch	I	-	-	-	-
Percidae	Walleye	I	-	-	-	-
Monthly Total			3,400	100.00		

¹ = N (native); I (introduced)

² = Frequency and % frequency of occurrence were based on 30 sampling sites.

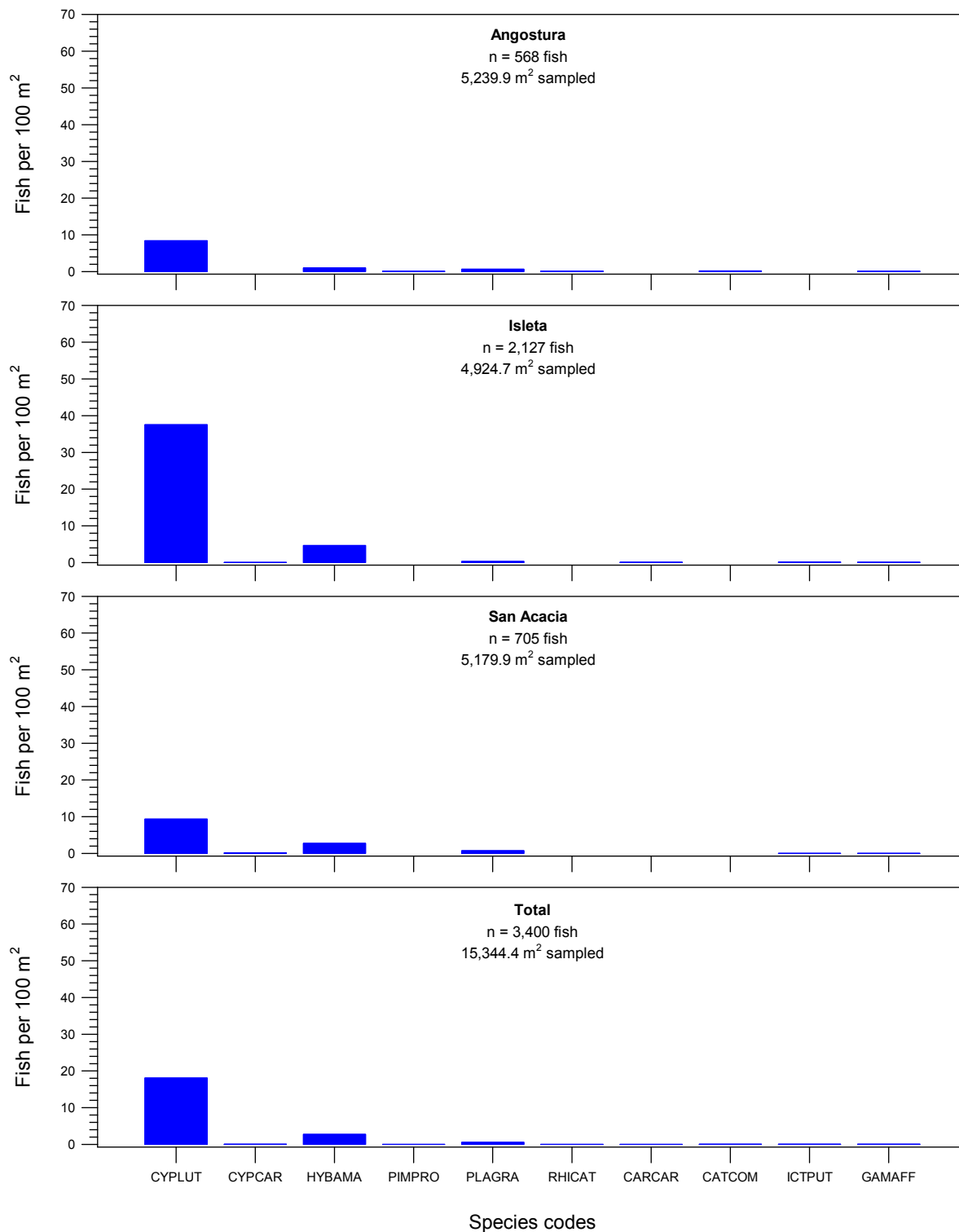


Figure 5. Reach-specific fish densities during April 2018 for each focal species (see Table 1 for species codes), **based on all sites**.

Table 6. Summary of the population monitoring fish community results by month, ***based on all sites***. Marked and unmarked Rio Grande Silvery Minnow are included in the totals.

Family	Common Name	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Clupeidae	Gizzard Shad	18	-	-	-	-	-	-	18
Clupeidae	Threadfin Shad	-	-	-	-	-	-	-	0
Cyprinidae	Central Stoneroller	-	-	-	-	-	-	-	0
Cyprinidae	Goldfish	-	-	-	-	-	-	-	0
Cyprinidae	Red Shiner	2,779	-	-	-	-	-	-	2,779
Cyprinidae	Common Carp	13	-	-	-	-	-	-	13
Cyprinidae	Rio Grande Chub	-	-	-	-	-	-	-	0
Cyprinidae	Rio Grande Silvery Minnow	427	-	-	-	-	-	-	427
Cyprinidae	Golden Shiner	-	-	-	-	-	-	-	0
Cyprinidae	Fathead Minnow	7	-	-	-	-	-	-	7
Cyprinidae	Bullhead Minnow	2	-	-	-	-	-	-	2
Cyprinidae	Flathead Chub	92	-	-	-	-	-	-	92
Cyprinidae	Longnose Dace	8	-	-	-	-	-	-	8
Catostomidae	River Carpsucker	6	-	-	-	-	-	-	6
Catostomidae	White Sucker	13	-	-	-	-	-	-	13
Catostomidae	Smallmouth Buffalo	5	-	-	-	-	-	-	5
Ictaluridae	Black Bullhead	-	-	-	-	-	-	-	0
Ictaluridae	Yellow Bullhead	-	-	-	-	-	-	-	0
Ictaluridae	Blue Catfish	-	-	-	-	-	-	-	0
Ictaluridae	Channel Catfish	13	-	-	-	-	-	-	13
Ictaluridae	Flathead Catfish	-	-	-	-	-	-	-	0
Salmonidae	Rainbow Trout	-	-	-	-	-	-	-	0
Salmonidae	Brown Trout	-	-	-	-	-	-	-	0
Poeciliidae	Western Mosquitofish	15	-	-	-	-	-	-	15
Moronidae	White Bass	1	-	-	-	-	-	-	1
Moronidae	Striped Bass	-	-	-	-	-	-	-	0
Centrarchidae	Green Sunfish	-	-	-	-	-	-	-	0
Centrarchidae	Bluegill	-	-	-	-	-	-	-	0
Centrarchidae	Longear Sunfish	-	-	-	-	-	-	-	0
Centrarchidae	Smallmouth Bass	-	-	-	-	-	-	-	0
Centrarchidae	Largemouth Bass	-	-	-	-	-	-	-	0
Centrarchidae	White Crappie	1	-	-	-	-	-	-	1
Centrarchidae	Black Crappie	-	-	-	-	-	-	-	0
Percidae	Yellow Perch	-	-	-	-	-	-	-	0
Percidae	Bigscale Logperch	-	-	-	-	-	-	-	0
Percidae	Walleye	-	-	-	-	-	-	-	0
Monthly Totals		3,400	-	-	-	-	-	-	3,400

APPENDIX A (Sampling Sites)

Middle Rio Grande Fish Sampling Sites

Table A - 1. Sampling reaches and **standard sites** for population monitoring of Rio Grande Silvery Minnow in the Middle Rio Grande, NM.

Reach and Site	Locality
Angostura Reach	
1	New Mexico, Sandoval County, Rio Grande, downstream of Angostura Diversion Dam, Algodones. River Mile: 209.7; UTM Easting: 363811; UTM Northing: 3916006; Zone: 13S; Datum: NAD27
2	New Mexico, Sandoval County, Rio Grande, upstream of US Highway 550 bridge crossing, Bernalillo. River Mile: 203.8; UTM Easting: 358543; UTM Northing: 3909722; Zone: 13S; Datum: NAD27
3	New Mexico, Sandoval County, Rio Grande, ca. 4.0 miles downstream of US Highway 550 bridge crossing, east and upstream of Rio Rancho Wastewater Treatment Plant, Rio Rancho. River Mile: 200.0; UTM Easting: 354772; UTM Northing: 3905355; Zone: 13S; Datum: NAD27
4	New Mexico, Bernalillo County, Rio Grande, upstream of Central Avenue (US Highway 66) bridge crossing, Albuquerque. River Mile: 183.4; UTM Easting: 346840; UTM Northing: 3884094; Zone: 13S; Datum: NAD27
5	New Mexico, Bernalillo County, Rio Grande, upstream of Rio Bravo Boulevard bridge crossing, Albuquerque. River Mile: 178.3; UTM Easting: 347554; UTM Northing: 3877163; Zone: 13S; Datum: NAD27
Isleta Reach	
6	New Mexico, Valencia County, Rio Grande, ca. 0.3 miles upstream of Los Lunas (NM State Highway 49) bridge crossing, Los Lunas. River Mile: 161.4; UTM Easting: 342898; UTM Northing: 3852531; Zone: 13S; Datum: NAD27
7	New Mexico, Valencia County, Rio Grande, ca. 1.0 miles upstream of NM State Highway 309/6 bridge crossing, Belen. River Mile: 151.5; UTM Easting: 339972; UTM Northing: 3837061; Zone: 13S; Datum: NAD27
8	New Mexico, Valencia County, Rio Grande, ca. 2.2 miles upstream of NM State Highway 346 bridge crossing, Jarales. River Mile: 143.2; UTM Easting: 338136; UTM Northing: 3827329; Zone: 13S; Datum: NAD27
9	New Mexico, Socorro County, Rio Grande, upstream of US Highway 60 bridge crossing, Bernardo. River Mile: 130.6; UTM Easting: 334604; UTM Northing: 3809726; Zone: 13S; Datum: NAD27
10	New Mexico, Socorro County, Rio Grande, ca. 3.5 miles downstream of US Highway 60 bridge crossing, La Joya. River Mile: 127.0; UTM Easting: 331094; UTM Northing: 3805229; Zone: 13S; Datum: NAD27
11	New Mexico, Socorro County, Rio Grande, ca. 0.6 miles upstream of San Acacia Diversion Dam, San Acacia. River Mile: 116.8; UTM Easting: 327902; UTM Northing: 3792603; Zone: 13S; Datum: NAD27

Table A - 1. Sampling reaches and **standard sites** for population monitoring of Rio Grande Silvery Minnow in the Middle Rio Grande, NM (continued).

Reach and Site	Locality
San Acacia Reach	
12	New Mexico, Socorro County, Rio Grande, downstream of San Acacia Diversion Dam, San Acacia. River Mile: 116.2; UTM Easting: 326162; UTM Northing: 3791977; Zone: 13S; Datum: NAD27
13	New Mexico, Socorro County, Rio Grande, ca. 1.5 miles downstream of San Acacia Diversion Dam, San Acacia. River Mile: 114.6; UTM Easting: 325263; UTM Northing: 3790442; Zone: 13S; Datum: NAD27
14	New Mexico, Socorro County, Rio Grande, ca. 0.5 miles upstream of the Low Flow Conveyance Channel bridge, east and upstream of Socorro Wastewater Treatment Plant, Socorro. River Mile: 99.5; UTM Easting: 327097; UTM Northing: 3771043; Zone: 13S; Datum: NAD27
15	New Mexico, Socorro County, Rio Grande, ca. 4.0 miles upstream of US Highway 380 bridge crossing, San Antonio. River Mile: 91.7; UTM Easting: 328140; UTM Northing: 3761283; Zone: 13S; Datum: NAD27
16	New Mexico, Socorro County, Rio Grande, upstream of US Highway 380 bridge crossing, San Antonio. River Mile: 87.1; UTM Easting: 328914; UTM Northing: 3754471; Zone: 13S; Datum: NAD27
17	New Mexico, Socorro County, Rio Grande, directly east of Bosque del Apache National Wildlife Refuge headquarters, San Antonio. River Mile: 79.1; UTM Easting: 327055; UTM Northing: 3740839; Zone: 13S; Datum: NAD27
18	New Mexico, Socorro County, Rio Grande, downstream of the San Marcial railroad crossing, San Marcial. River Mile: 68.6; UTM Easting: 315284; UTM Northing: 3728347; Zone: 13S; Datum: NAD27
19	New Mexico, Socorro County, Rio Grande, ca. 8.0 miles downstream of the San Marcial Railroad Bridge crossing, San Marcial. River Mile: 60.5; UTM Easting: 309487; UTM Northing: 3718178; Zone: 13S; Datum: NAD27
20	New Mexico, Socorro County, Rio Grande, ca. 10.0 miles downstream of the San Marcial Railroad Bridge crossing, San Marcial. River Mile: 58.8; UTM Easting: 307846; UTM Northing: 3716150; Zone: 13S; Datum: NAD27

Table A - 2. Sampling reaches and **additional sites** for population monitoring of Rio Grande Silvery Minnow in the Middle Rio Grande, NM.

Reach and Site	Locality
Angostura Reach	
21	New Mexico, Sandoval County, Rio Grande, ca. 4.4 miles upstream of Alameda Blvd. (NM State Hwy. 528) bridge crossing, Corrales. River Mile: 196.6; UTM Easting: 355531; UTM Northing: 3900626; Zone: 13S; Datum: NAD83
22	New Mexico, Sandoval County, Rio Grande, ca. 1.1 miles upstream of Alameda Blvd. (NM State Hwy. 528) bridge crossing, Corrales. River Mile: 193.1; UTM Easting: 351562; UTM Northing: 3897190; Zone: 13S; Datum: NAD83
23	New Mexico, Bernalillo County, Rio Grande, ca. 1.0 miles downstream of Paseo del Norte Blvd. (NM State Hwy. 423) bridge crossing Albuquerque. River Mile: 190.0; UTM Easting: 349214; UTM Northing: 3893063; Zone: 13S; Datum: NAD83
24	New Mexico, Bernalillo County, Rio Grande, ca. 1.1 miles upstream of I-40 bridge crossing, Albuquerque. River Mile: 186.1; UTM Easting: 346011; UTM Northing: 3887973; Zone: 13S; Datum: NAD83
25	New Mexico, Bernalillo County, Rio Grande, ca. 1.5 miles upstream of I-25 bridge crossing, Isleta. River Mile: 174.0; UTM Easting: 345900; UTM Northing: 3870990; Zone: 13S; Datum: NAD83
Isleta Reach	
26	New Mexico, Valencia County, Rio Grande, ca. 4.1 miles upstream of NM State Hwy. 6 bridge crossing, Los Lunas. River Mile: 165.2; UTM Easting: 342799; UTM Northing: 3858637; Zone: 13S; Datum: NAD83
27	New Mexico, Valencia County, Rio Grande, ca. 6.2 miles upstream of NM State Hwy. 309 bridge crossing, Belen. River Mile: 156.0; UTM Easting: 340647; UTM Northing: 3845146; Zone: 13S; Datum: NAD83
28	New Mexico, Socorro County, Rio Grande, ca. 6.3 miles upstream of U.S. Hwy. 60 bridge crossing, Bernardo. River Mile: 137.1; UTM Easting: 335554; UTM Northing: 3819543; Zone: 13S; Datum: NAD83
29	New Mexico, Socorro County, Rio Grande, ca. 1.5 miles upstream of confluence with the Rio Salado, San Acacia. River Mile: 120.1; UTM Easting: 330498; UTM Northing: 3795053; Zone: 13S; Datum: NAD83
San Acacia Reach	
30	New Mexico, Socorro County, Rio Grande, ca. 2.6 miles upstream of Pueblitos Rd. bridge crossing, Escondida. River Mile: 107.1; UTM Easting: 326303; UTM Northing: 3781123; Zone: 13S; Datum: NAD83

APPENDIX B (Site-Specific Ichthyofaunal Composition)

Site-specific ichthyofaunal composition during the April 2018
Rio Grande Silvery Minnow population monitoring study,
based on standard and additional sites

Monthly and annual reports, along with raw data, are available at:
<https://webapps.usgs.gov/MRGESCP>

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

Rio Grande Silvery Minnow Population Monitoring April 2018

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

RKD18-018

Site Number: 1 River Mile: 209.7 05 April 2018
UTM Easting: 363811 UTM Northing: 3916006 Zone: 13 Quad: San Felipe Pueblo
A.L. Barkalow, A.C. Wedemeyer, M.J. Chavez Effort: 506.0 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Platygobio gracilis</i>	1
76	<i>Rhinichthys cataractae</i>	2

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

RKD18-019

Site Number: 2 River Mile: 203.8 05 April 2018
UTM Easting: 358543 UTM Northing: 3909722 Zone: 13 Quad: Bernalillo
A.L. Barkalow, A.C. Wedemeyer, M.J. Chavez Effort: 484.7 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	6
76	<i>Platygobio gracilis</i>	1
76	<i>Rhinichthys cataractae</i>	2

NEW MEXICO: SANDOVAL Co., RIO GRANDE Drainage
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.

RKD18-020

Site Number: 3 River Mile: 200.0 05 April 2018
UTM Easting: 354772 UTM Northing: 3905355 Zone: 13 Quad: Bernalillo
A.L. Barkalow, A.C. Wedemeyer, M.J. Chavez Effort: 547.5 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	24
76	<i>Platygobio gracilis</i>	1
81	<i>Catostomus commersonii</i>	2

**Rio Grande Silvery Minnow Population Monitoring
April 2018**

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

RKD18-017

Site Number: 4 River Mile: 183.4 05 April 2018
UTM Easting: 346840 UTM Northing: 3884094 Zone: 13 Quad: Albuquerque West
A.L. Barkalow, A.C. Wedemeyer, M.J. Chavez Effort: 544.5 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	9
76	<i>Hybognathus amarus*</i>	2
76	<i>Platygobio gracilis</i>	1

***Hybognathus amarus (age-classes):**

age-0	
age-1	2
age-2+	

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

RKD18-016

Site Number: 5 River Mile: 178.3 05 April 2018
UTM Easting: 347554 UTM Northing: 3877163 Zone: 13 Quad: Albuquerque West
A.L. Barkalow, A.C. Wedemeyer, M.J. Chavez Effort: 552.0 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	1
76	<i>Pimephales promelas</i>	1
93	<i>Ictalurus punctatus</i>	1

**Rio Grande Silvery Minnow Population Monitoring
April 2018**

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

RKD18-015

Site Number: 6 River Mile: 161.4 04 April 2018
UTM Easting: 342898 UTM Northing: 3852531 Zone: 13 Quad: Los Lunas
W.H. Brandenburg, A.C. Wedemeyer, M.J. Chavez Effort: 456.8 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	127
76	<i>Hybognathus amarus</i> *	108
76	<i>Platygobio gracilis</i>	4

***Hybognathus amarus (age-classes):**

age-0	
age-1	106
age-2+	2

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

RKD18-014

Site Number: 7 River Mile: 151.5 04 April 2018
UTM Easting: 339972 UTM Northing: 3837061 Zone: 13 Quad: Tome
W.H. Brandenburg, A.C. Wedemeyer, M.J. Chavez Effort: 480.2 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	171
76	<i>Hybognathus amarus</i> *	8
81	<i>Carpodes carpio</i>	2
93	<i>Ictalurus punctatus</i>	1

***Hybognathus amarus (age-classes):**

age-0	
age-1	8
age-2+	

**Rio Grande Silvery Minnow Population Monitoring
April 2018**

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

RKD18-013

Site Number: 8 River Mile: 143.2 04 April 2018
UTM Easting: 338136 UTM Northing: 3827329 Zone: 13 Quad: Veguita
W.H. Brandenburg, A.C. Wedemeyer, M.J. Chavez Effort: 509.3 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	365
76	<i>Hybognathus amarus</i> *	3
93	<i>Ictalurus punctatus</i>	2
283	<i>Morone chrysops</i>	1
294	<i>Pomoxis annularis</i>	1

***Hybognathus amarus (age-classes):**

age-0	
age-1	2
age-2+	1

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

RKD18-012

Site Number: 9 River Mile: 130.6 04 April 2018
UTM Easting: 334604 UTM Northing: 3809726 Zone: 13 Quad: Abeytas
W.H. Brandenburg, A.C. Wedemeyer, M.J. Chavez Effort: 471.5 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	88
76	<i>Cyprinus carpio</i>	2
76	<i>Hybognathus amarus</i> *	5
76	<i>Platygobio gracilis</i>	2
212	<i>Gambusia affinis</i>	3

***Hybognathus amarus (age-classes):**

age-0	
age-1	5
age-2+	

Rio Grande Silvery Minnow Population Monitoring April 2018

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

RKD18-011

Site Number: 10 River Mile: 127.0 04 April 2018
UTM Easting: 331094 UTM Northing: 3805229 Zone: 13 Quad: Abeytas
W.H. Brandenburg, A.C. Wedemeyer, M.J. Chavez Effort: 508.7 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	28
76	<i>Cyprinus carpio</i>	1
76	<i>Platygobio gracilis</i>	1
81	<i>Carpoides carpio</i>	1
93	<i>Ictalurus punctatus</i>	1
212	<i>Gambusia affinis</i>	2

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

RKD18-010

Site Number: 11 River Mile: 116.8 03 April 2018
UTM Easting: 327902 UTM Northing: 3792603 Zone: 13 Quad: La Joya
S.L. Clark Barkalow, M.J. Chavez, A.C. Wedemeyer Effort: 541.1 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	50
76	<i>Hybognathus amarus*</i>	2
76	<i>Platygobio gracilis</i>	5
81	<i>Carpoides carpio</i>	1
93	<i>Ictalurus punctatus</i>	5
212	<i>Gambusia affinis</i>	1

***Hybognathus amarus (age-classes):**

age-0	
age-1	2
age-2+	

**Rio Grande Silvery Minnow Population Monitoring
April 2018**

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

RKD18-009

Site Number: 12 River Mile: 116.2 03 April 2018
UTM Easting: 326162 UTM Northing: 3791977 Zone: 13 Quad: San Acacia
S.L. Clark Barkalow, M.J. Chavez, A.C. Wedemeyer Effort: 510.0 sq. m

<u>FAMILY</u>		<u>N</u>
69	<i>Dorosoma cepedianum</i>	17
76	<i>Cyprinella lutrensis</i>	131
76	<i>Cyprinus carpio</i>	2
76	<i>Hybognathus amarus</i> *	5
76	<i>Platygobio gracilis</i>	21
81	<i>Ictiobus bubalus</i>	5
93	<i>Ictalurus punctatus</i>	1
212	<i>Gambusia affinis</i>	1

***Hybognathus amarus (age-classes):**

age-0
age-1 5
age-2+

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

RKD18-008

Site Number: 13 River Mile: 114.6 03 April 2018
UTM Easting: 325263 UTM Northing: 3790442 Zone: 13 Quad: Lemitar
S.L. Clark Barkalow, M.J. Chavez, A.C. Wedemeyer Effort: 531.9 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	35
76	<i>Cyprinus carpio</i>	1
76	<i>Hybognathus amarus</i> *	11
76	<i>Platygobio gracilis</i>	5

***Hybognathus amarus (age-classes):**

age-0
age-1 11
age-2+

**Rio Grande Silvery Minnow Population Monitoring
April 2018**

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage

RKD18-007

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: 14

River Mile: 99.5

03 April 2018

UTM Easting: 327097

UTM Northing: 3771043

Zone: 13

Quad: Loma de las Canas

S.L. Clark Barkalow, M.J. Chavez, A.C. Wedemeyer

Effort: 467.3 sq. m

<u>FAMILY</u>		<u>N</u>
69	<i>Dorosoma cepedianum</i>	1
76	<i>Cyprinella lutrensis</i>	39
76	<i>Hybognathus amarus*</i>	10
76	<i>Platygobio gracilis</i>	2

***Hybognathus amarus (age-classes):**

age-0	
age-1	9
age-2+	1

NEW MEXICO: SOCORRO Co., RIO GRANDE Drainage

RKD18-006

Rio Grande, ca. 4.0 miles upstream of U.S. 380 bridge crossing.

Site Number: 15

River Mile: 91.7

03 April 2018

UTM Easting: 328140

UTM Northing: 3761283

Zone: 13

Quad: San Antonio

S.L. Clark Barkalow, M.J. Chavez, A.C. Wedemeyer

Effort: 556.0 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	14
76	<i>Cyprinus carpio</i>	2
76	<i>Hybognathus amarus*</i>	6

***Hybognathus amarus (age-classes):**

age-0	
age-1	5
age-2+	1

Rio Grande Silvery Minnow Population Monitoring April 2018

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

RKD18-005

Site Number: 16 River Mile: 87.1 02 April 2018
UTM Easting: 328914 UTM Northing: 3754471 Zone: 13 Quad: San Antonio
A.L. Barkalow, A.C. Wedemeyer, M.J. Chavez Effort: 521.3 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	1
76	<i>Cyprinus carpio</i>	1
76	<i>Hybognathus amarus</i> *	47

***Hybognathus amarus (age-classes):**

age-0	
age-1	46
age-2+	1

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

RKD18-004

Site Number: 17 River Mile: 79.1 02 April 2018
UTM Easting: 327055 UTM Northing: 3740839 Zone: 13 Quad: San Antonio SE
A.L. Barkalow, A.C. Wedemeyer, M.J. Chavez Effort: 483.4 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	101
76	<i>Hybognathus amarus</i> *	47

***Hybognathus amarus (age-classes):**

age-0	
age-1	45
age-2+	2

**Rio Grande Silvery Minnow Population Monitoring
April 2018**

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

RKD18-003

Site Number: 18 River Mile: 68.6 02 April 2018
UTM Easting: 315284 UTM Northing: 3728347 Zone: 13 Quad: San Marcial
A.L. Barkalow, M.J. Chavez, A.C. Wedemeyer Effort: 475.7 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	60
76	<i>Cyprinus carpio</i>	1
76	<i>Hybognathus amarus*</i>	4

***Hybognathus amarus (age-classes):**

age-0	
age-1	3
age-2+	1

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

RKD18-002

Site Number: 19 River Mile: 60.5 02 April 2018
UTM Easting: 309487 UTM Northing: 3718178 Zone: 13 Quad: Paraje Well
A.L. Barkalow, A.C. Wedemeyer, M.J. Chavez Effort: 557.6 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	80
212	<i>Gambusia affinis</i>	1

**Rio Grande Silvery Minnow Population Monitoring
April 2018**

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

RKD18-001

Site Number: 20 River Mile: 58.8 02 April 2018
UTM Easting: 307846 UTM Northing: 3716150 Zone: 13 Quad: Paraje Well
A.L. Barkalow, A.C. Wedemeyer, M.J. Chavez Effort: 564.1 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	19
76	<i>Cyprinus carpio</i>	1
76	<i>Hybognathus amarus</i> *	11
76	<i>Pimephales vigilax</i>	2
93	<i>Ictalurus punctatus</i>	1

***Hybognathus amarus (age-classes):**

age-0
age-1 11
age-2+

NEW MEXICO: Sandoval Co., RIO GRANDE Drainage
Rio Grande, ca. 4.4 miles upstream of Alameda Blvd. (NM State Hwy. 528) bridge crossing,
Corrales

RKD18-030

Site Number: 21 River Mile: 196.6 11 April 2018
UTM Easting: 355531 UTM Northing: 3900626 Zone: 13 Quad: Alameda
M.A. Farrington, A.L. Barkalow, M.J. Chavez Effort: 538.1 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	12
76	<i>Hybognathus amarus</i> *	7
76	<i>Platygobio gracilis</i>	6
76	<i>Rhinichthys cataractae</i>	2
81	<i>Catostomus commersonii</i>	4

***Hybognathus amarus (age-classes):**

age-0
age-1 6
age-2+ 1

Rio Grande Silvery Minnow Population Monitoring April 2018

NEW MEXICO: Sandoval Co., RIO GRANDE Drainage

RKD18-029

Rio Grande, ca. 1.1 miles upstream of Alameda Blvd. (NM State Hwy. 528) bridge crossing,
Corrales

Site Number: 22

River Mile: 193.1

11 April 2018

UTM Easting: 351562

UTM Northing: 3897190

Zone: 13

Quad: Los Griegos

M.A. Farrington, A.L. Barkalow, M.J. Chavez

Effort: 519.8 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	7
76	<i>Hybognathus amarus</i> *	18
76	<i>Pimephales promelas</i>	1
76	<i>Platygobio gracilis</i>	13
76	<i>Rhinichthys cataractae</i>	1
81	<i>Catostomus commersonii</i>	1
212	<i>Gambusia affinis</i>	2

***Hybognathus amarus (age-classes):**

age-0	
age-1	18
age-2+	

NEW MEXICO: Bernalillo Co., RIO GRANDE Drainage

RKD18-028

Rio Grande, ca. 1.0 miles downstream of Paseo del Norte Blvd. (NM State Hwy. 423) bridge
crossing Albuquerque

Site Number: 23

River Mile: 190.0

11 April 2018

UTM Easting: 349214

UTM Northing: 3893063

Zone: 13

Quad: Albuquerque West

M.A. Farrington, A.L. Barkalow, M.J. Chavez

Effort: 474.7 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	20
76	<i>Hybognathus amarus</i> *	9
76	<i>Platygobio gracilis</i>	2
81	<i>Catostomus commersonii</i>	1
212	<i>Gambusia affinis</i>	1

***Hybognathus amarus (age-classes):**

age-0	
age-1	9
age-2+	

Rio Grande Silvery Minnow Population Monitoring April 2018

NEW MEXICO: Bernalillo Co., RIO GRANDE Drainage
Rio Grande, ca. 1.1 miles upstream of I-40 bridge crossing, Albuquerque

RKD18-027

Site Number: 24 River Mile: 186.1 11 April 2018
UTM Easting: 346011 UTM Northing: 3887973 Zone: 13 Quad: Albuquerque West
M.A. Farrington, A.L. Barkalow, M.J. Chavez Effort: 546.7 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	81
76	<i>Hybognathus amarus</i> *	15
76	<i>Platygobio gracilis</i>	6
81	<i>Catostomus commersonii</i>	4

***Hybognathus amarus (age-classes):**

age-0	
age-1	14
age-2+	1

NEW MEXICO: Bernalillo Co., RIO GRANDE Drainage
Rio Grande, ca. 1.5 miles upstream of I-25 bridge crossing, Isleta

RKD18-026

Site Number: 25 River Mile: 174.0 10 April 2018
UTM Easting: 345900 UTM Northing: 3870990 Zone: 13 Quad: Isleta
M.A. Farrington, A.L. Barkalow, M.J. Chavez Effort: 526.2 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	283
76	<i>Hybognathus amarus</i> *	3
76	<i>Pimephales promelas</i>	5
76	<i>Platygobio gracilis</i>	5
76	<i>Rhinichthys cataractae</i>	1
212	<i>Gambusia affinis</i>	4

***Hybognathus amarus (age-classes):**

age-0	
age-1	3
age-2+	

Rio Grande Silvery Minnow Population Monitoring April 2018

NEW MEXICO: Valencia Co., RIO GRANDE Drainage
Rio Grande, ca. 4.1 miles upstream of NM State Hwy. 6 bridge crossing, Los Lunas

RKD18-025

Site Number: 26 River Mile: 165.2 10 April 2018
UTM Easting: 342799 UTM Northing: 3858637 Zone: 13 Quad: Los Lunas
M.A. Farrington, A.L. Barkalow, M.J. Chavez Effort: 481.9 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	63
76	<i>Cyprinus carpio</i>	2
76	<i>Hybognathus amarus*</i>	2
81	<i>Carpodes carpio</i>	2
81	<i>Catostomus commersonii</i>	1

***Hybognathus amarus (age-classes):**

age-0
age-1
age-2+ 2

NEW MEXICO: Valencia Co., RIO GRANDE Drainage
Rio Grande, ca. 6.2 miles upstream of NM State Hwy. 309 bridge crossing, Belen

RKD18-024

Site Number: 27 River Mile: 156.0 10 April 2018
UTM Easting: 340647 UTM Northing: 3845146 Zone: 13 Quad: Belen
M.A. Farrington, A.L. Barkalow, M.J. Chavez Effort: 482.4 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	614
76	<i>Hybognathus amarus*</i>	71
76	<i>Platygobio gracilis</i>	1

***Hybognathus amarus (age-classes):**

age-0
age-1 68
age-2+ 3

**Rio Grande Silvery Minnow Population Monitoring
April 2018**

NEW MEXICO: Socorro Co., RIO GRANDE Drainage
Rio Grande, ca. 6.3 miles upstream of U.S. Hwy. 60 bridge crossing, Bernardo

RKD18-023

Site Number: 28 River Mile: 137.1
UTM Easting: 335554 UTM Northing: 3819543 Zone: 13 Quad: Abeytas
R.K. Dudley, A.L. Barkalow, M.J. Chavez

09 April 2018
Effort: 495.3 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	177
76	<i>Hybognathus amarus</i> *	6

***Hybognathus amarus (age-classes):**

age-0	
age-1	6
age-2+	

NEW MEXICO: Socorro Co., RIO GRANDE Drainage
Rio Grande, ca. 1.5 miles upstream of confluence with the Rio Salado, San Acacia

RKD18-022

Site Number: 29 River Mile: 120.1
UTM Easting: 330498 UTM Northing: 3795053 Zone: 13 Quad: Mesa del Yeso
R.K. Dudley, A.L. Barkalow, M.J. Chavez

09 April 2018
Effort: 497.7 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	168
76	<i>Hybognathus amarus</i> *	25
76	<i>Platygobio gracilis</i>	4

***Hybognathus amarus (age-classes):**

age-0	
age-1	25
age-2+	

Rio Grande Silvery Minnow Population Monitoring April 2018

NEW MEXICO: Socorro Co., RIO GRANDE Drainage
 Rio Grande, ca. 2.6 miles upstream of Pueblitos Rd. bridge crossing, Escondida

RKD18-021

Site Number: 30 River Mile: 107.1
 UTM Easting: 326303 UTM Northing: 3781123 Zone: 13 Quad: Socorro
 R.K. Dudley, A.L. Barkalow, M.J. Chavez

09 April 2018
 Effort: 512.8 sq. m

<u>FAMILY</u>		<u>N</u>
76	<i>Cyprinella lutrensis</i>	5
76	<i>Hybognathus amarus</i> *	2
76	<i>Platygobio gracilis</i>	11
93	<i>Ictalurus punctatus</i>	1

***Hybognathus amarus (age-classes):**

age-0	
age-1	2
age-2+	