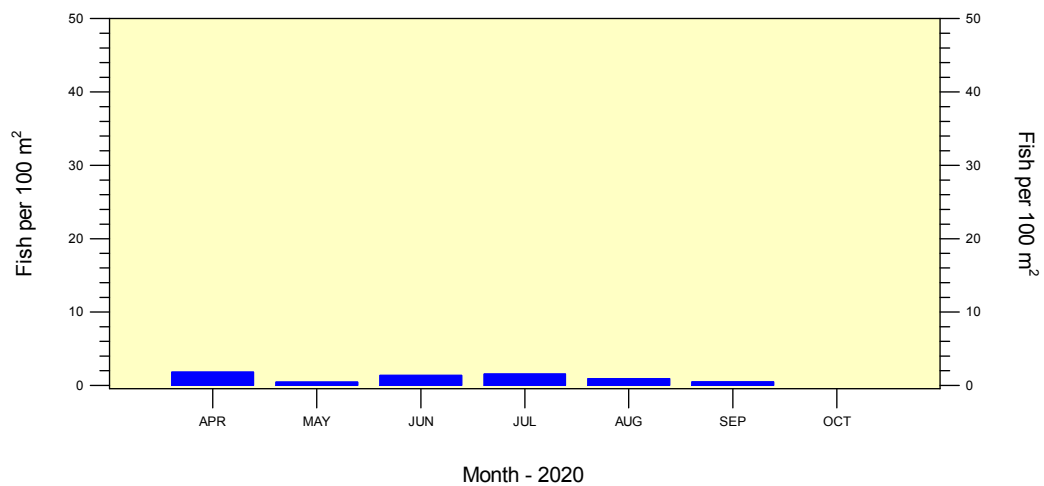
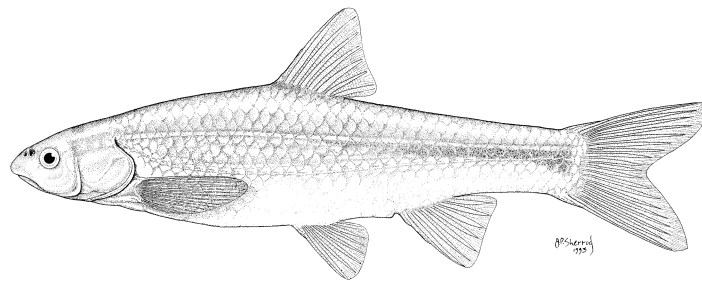


RIO GRANDE SILVERY MINNOW POPULATION MONITORING DURING SEPTEMBER 2020

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



19 October 2020

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Contract 140R4019P0048:

Requisition 0040488238

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

Submitted to:

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

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19 October 2020

SUMMARY OF SEPTEMBER 2020 POPULATION MONITORING

The September population monitoring efforts were conducted at the 20 standard sites and two replacement sites. Five sites were located in the Angostura Reach, six sites were located in the Isleta Reach, and eleven sites were located in the San Acacia Reach. For September 2020, comparisons were made between standard sites and all sites (i.e., standard, additional, and replacement sites), as replacement sites were sampled. For the 2020 monthly trends, data were based on 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 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 only present, however, 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

From 16 August to 15 September, provisional mean daily discharge in the Angostura Reach (Rio Grande at Albuquerque, NM; USGS Gage 08330000) averaged 191.7 ft³/s and ranged from 94 to 267 ft³/s. Water temperatures ranged from 20.9 to 30.4 °C during the Angostura Reach sampling efforts (ca. 0830–1530 h). Secchi disk measurements of water clarity ranged from 14 to 31 cm.

Sampling for fishes in the Angostura Reach during September yielded 1,741 individuals with a cumulative fish density of 70.1 individuals per 100 m² sampled. The overall sampling effort in the Angostura Reach covered 2,484.1 m² (surface area) of water. Densities of all fish species combined ranged from 49.6 to 98.7 individuals per 100 m² at the different sampling sites. In September, there were 13 fish species collected in the Angostura Reach. Red Shiner was the most abundant taxon (n = 810), followed by Western Mosquitofish (n = 466), and Channel Catfish (n = 122). We collected Rio Grande Silvery Minnow (n = 10) in 6 of the 96 seine hauls that yielded fish, and its site-specific densities ranged from 0.0 to 1.2 individuals per 100 m².

Isleta Reach

Provisional mean daily discharge in the Isleta Reach (Rio Grande near Bosque Farms, NM; USGS Gage 08331160), from 16 August to 15 September, averaged 34.6 ft³/s and ranged from 28 to 68 ft³/s. During the Isleta Reach sampling efforts (ca. 0930–1600 h), water temperatures ranged from 16.6 to 26.7 °C. Secchi disk measurements ranged from 5 to 43 cm during sampling.

Isleta Reach population monitoring efforts produced 6,430 individuals in September with a cumulative fish density of 216.4 individuals per 100 m² sampled. The total sampling effort in the Isleta Reach during September covered 2,971.2 m² (surface area) of water. Fish densities (all species combined) at the sampling sites ranged from 48.6 to 504.6 individuals per 100 m² sampled. There were 8 fish species collected in the Isleta Reach during September. Red Shiner was the most abundant taxon (n = 4,457), followed by Western Mosquitofish (n = 1,679), and Fathead Minnow (n = 133). We collected Rio Grande Silvery Minnow (n = 22) in 8 of the 98 seine hauls that yielded fish, and its site-specific densities ranged from 0.0 to 1.6 individuals per 100 m².

San Acacia Reach

From 16 August to 15 September, provisional mean daily discharge at San Acacia (Rio Grande Floodway at San Acacia, NM; USGS Gage 08354900) was generally higher (average = 23.2; range = 17–28 ft³/s) than at San Marcial (Rio Grande Floodway at San Marcial, NM; USGS Gage 08358400) during the same period (average = 0.3; range = 0–4 ft³/s). Water temperatures in September for the San Acacia Reach ranged from 20.6 to 30.1 °C (ca. 0930–1600 h). Secchi disk measurements ranged from 5 to 36 cm during sampling.

Population monitoring efforts in the San Acacia Reach during September yielded 6,530 individuals with a cumulative fish density of 199.4 individuals per 100 m² sampled. Sampling in the San Acacia Reach covered an area of 3,275.3 m² of water. Fish densities (all species combined) ranged from 0.0 to 483.0 individuals per 100 m² at sites sampled in the San Acacia Reach. In September, there were 14 fish species collected in the San Acacia Reach. Red Shiner was the most abundant taxon (n = 5,712), followed by Western Mosquitofish (n = 445), and Gizzard Shad (n = 155). We collected Rio Grande Silvery Minnow (n = 11) in 9 of the 140 seine hauls that yielded fish, and its site-specific densities ranged from 0.0 to 2.9 individuals per 100 m².

Standard Sites

During September, sampling covered 7,840.7 m² (surface area) of water and yielded 12,449 fish. There were two dry sampling sites. Cumulative fish density during September was 158.8 individuals per 100 m² sampled. The three most common species were Red Shiner (n = 10,979), Western Mosquitofish (n = 2,590), and Fathead Minnow (n = 204). The sampling sites yielded a total of 17 fish species.

Rio Grande Silvery Minnow was present in 18 of the 295 seine hauls that yielded fish and at 8 of the 20 sampling sites. Densities of unmarked and marked individuals were 0.42 (n = 37) and 0.00 (n = 0) individuals per 100 m² sampled, respectively. Densities of age-0, age-1, and age-2+ individuals were 0.15 (n = 13), 0.17 (n = 15), and 0.10 (n = 9) individuals per 100 m² sampled, respectively. Based on all September surveys since 1993, the overall density of Rio Grande Silvery Minnow averaged 5.82 (range = 0.01–26.32) individuals per 100 m² sampled. During September 2020, its overall density was 0.47 (n = 37) individuals per 100 m² sampled.

All Sites

During September, sampling covered 8,730.6 m² (surface area) of water and yielded 14,701 fish. There were two dry sampling sites. Cumulative fish density during September was 168.39 individuals per 100 m² sampled. The three most common species were Red Shiner (n = 10,979), Western Mosquitofish (n = 2,590), and Fathead Minnow (n = 204). The sampling sites yielded a total of 17 fish species.

Rio Grande Silvery Minnow was present in 23 of the 334 seine hauls that yielded fish and at 9 of the 22 sampling sites. Densities of unmarked and marked individuals were 0.49 (n = 43) and 0.00 (n = 0) individuals per 100 m² sampled, respectively. Densities of age-0, age-1, and age-2+ individuals were 0.15 (n = 13), 0.24 (n = 21), and 0.10 (n = 9) individuals per 100 m² sampled, respectively. Based on all September surveys since 1993, the overall density of Rio Grande Silvery Minnow averaged 5.82 (range = 0.01–26.32) individuals per 100 m² sampled. During September 2020, its overall density was 0.49 (n = 43) individuals per 100 m² sampled.

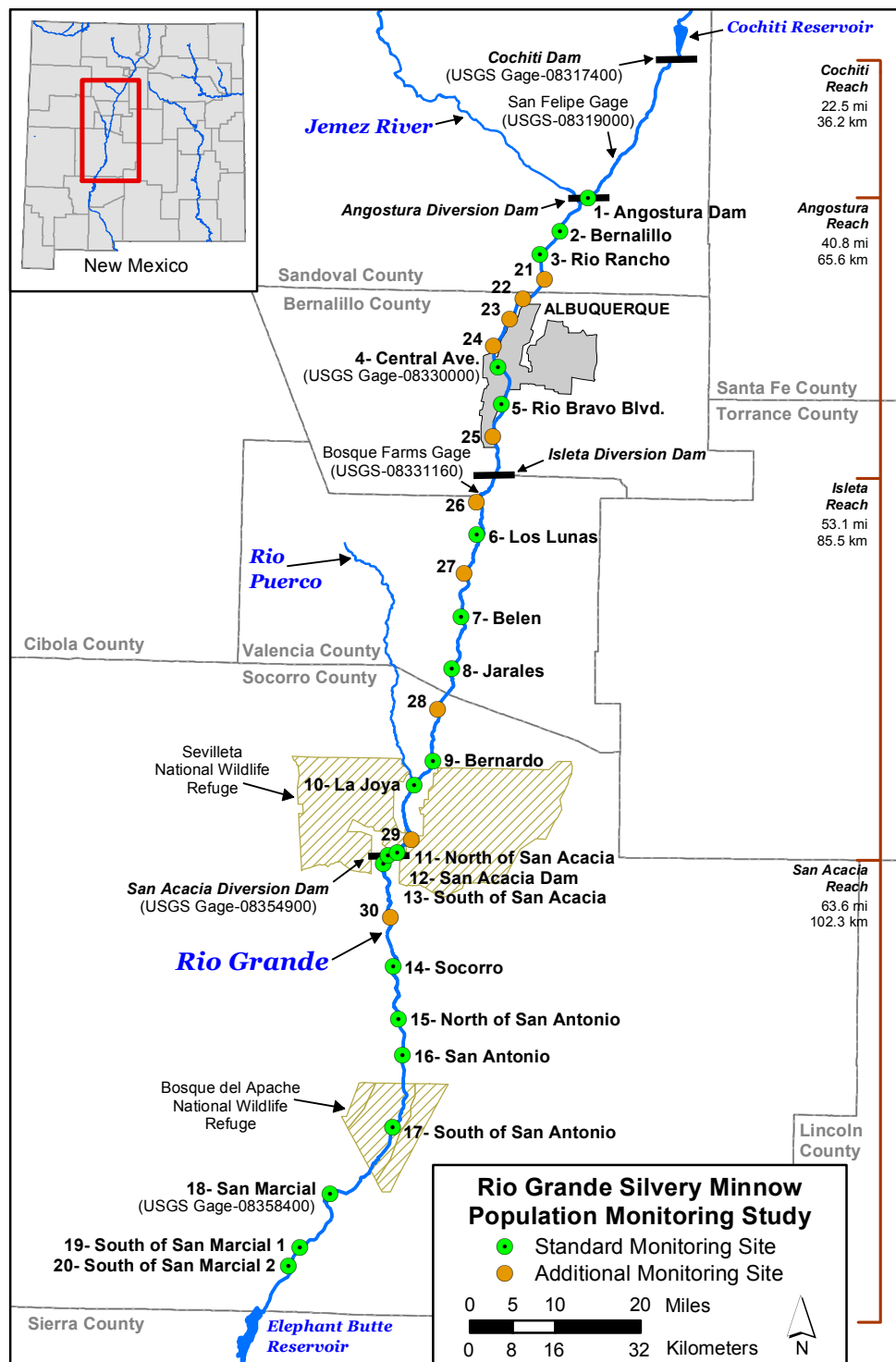


Figure 1. Map of the study area, standard sites, and additional sites for the Rio Grande Silvery Minnow population monitoring study. Sampling site descriptions are provided in Appendix A.

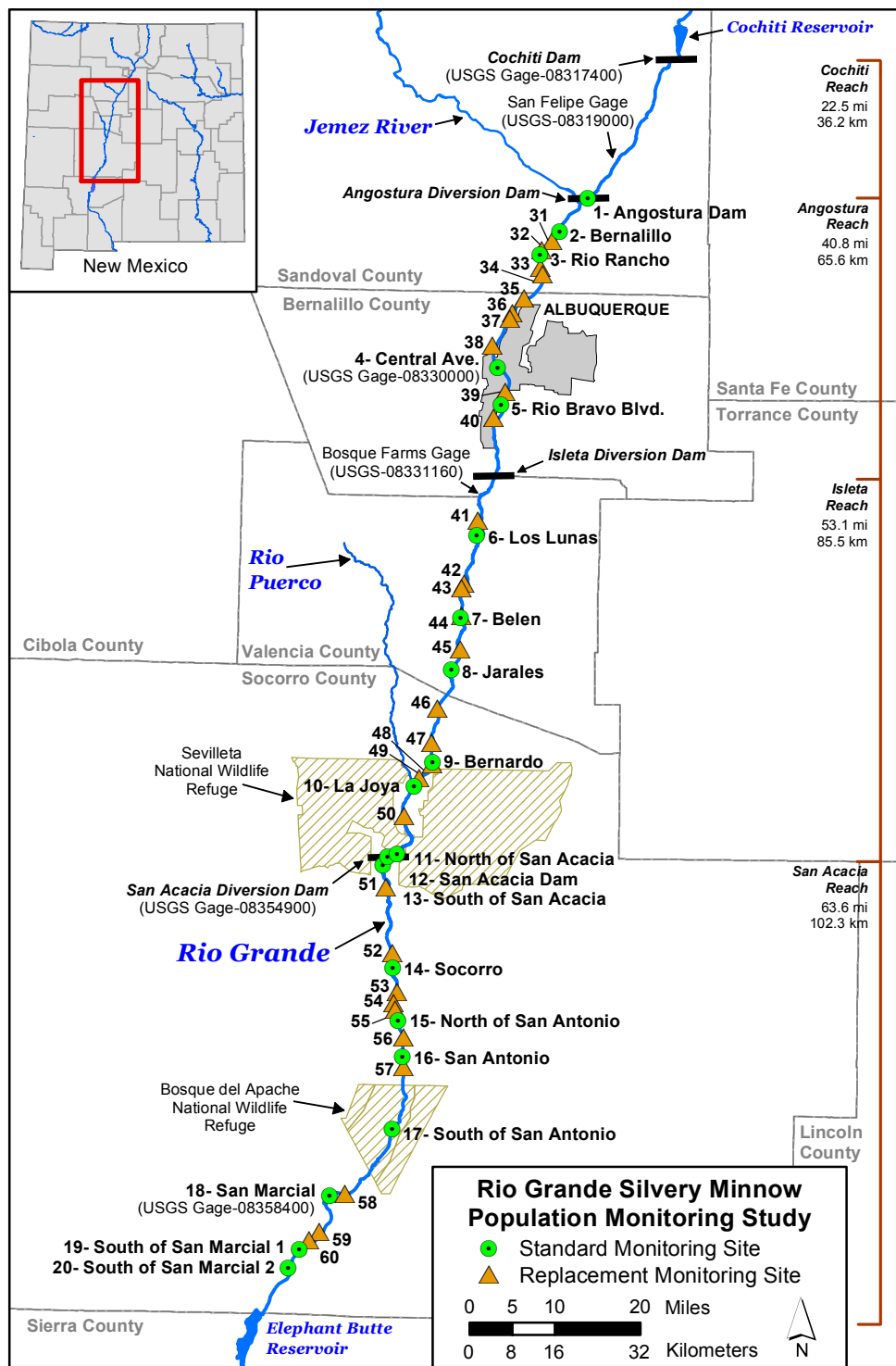


Figure 2. Map of the study area, standard sites, and replacement sites for the Rio Grande Silvery Minnow population monitoring study. Sampling site descriptions are provided in Appendix A.

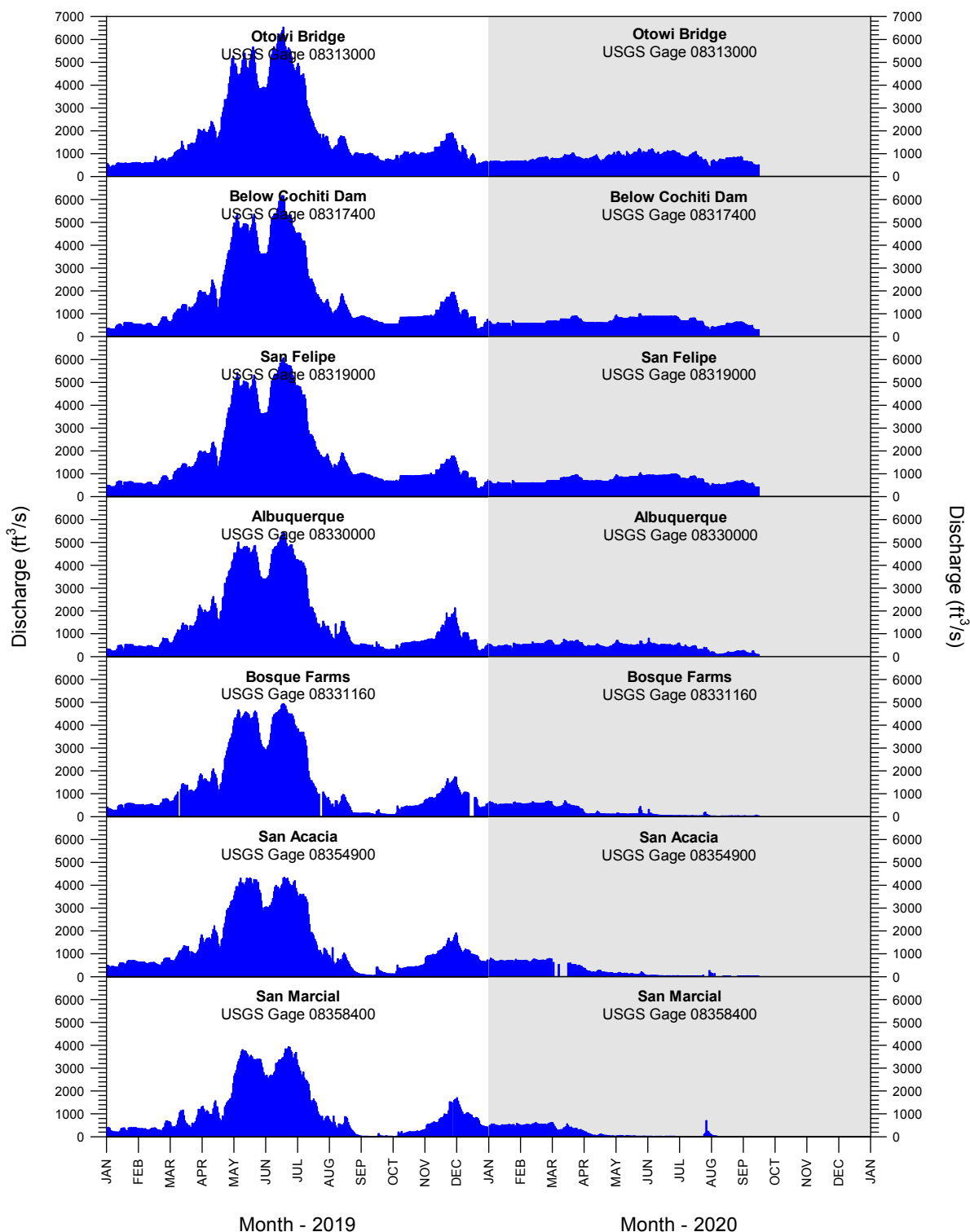


Figure 3. Rio Grande mean-daily discharge, by U.S. Geological Survey (USGS) gaging station, from 1 January 2019 to 15 September 2020. All discharge data are provisional and subject to change.

Table 1. Scientific names, common names, and species codes of fishes 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>Carpionodes 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)
Family Loricariidae		
	suckermouth armored catfishes	
<i>Pterygoplichthys disjunctivus</i>	Vermiculated Sailfin Catfish	(PTEDIS)
Order Salmoniformes		
Family Salmonidae		
	trouts and salmons	
<i>Oncorhynchus mykiss</i>	Rainbow Trout	(ONCMYK)
<i>Salmo trutta</i>	Brown Trout	(SALTRU)

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

Scientific Name	Common Name	Species Code
Order Cyprinodontiformes		
Family Poeciliidae		
	livebearers	
<i>Gambusia affinis</i>	Western Mosquitofish ¹	(GAMAFF)
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 gulosus</i>	Warmouth	(LEPGUL)
<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 and darters	
<i>Perca flavescens</i>	Yellow Perch	(PERFLA)
<i>Percina macrolepida</i>	Bigscale Logperch	(PERMAC)
<i>Sander vitreus</i>	Walleye	(SANVIT)
Family Sciaenidae		
	drums and croakers	
<i>Aplodinotus grunniens</i>	Freshwater Drum	(APLGRU)

¹ = Focal taxa were typically the 10 most abundant species collected during October.

Table 2. Rio Grande Silvery Minnow abundance, by reach, site, and mesohabitat, during September 2020. Marked and unmarked individuals were included. 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	-	-	-	4	2	6
Angostura	4	Central Ave.	-	-	-	-	1	1
Angostura	5	Rio Bravo Blvd.	-	-	2	-	1	3
<i>Angostura Totals</i>			-	-	2	4	4	10
Isleta	6	Los Lunas	-	-	-	-	-	0
Isleta	7	Belen	-	-	-	7	-	7
Isleta	8	Jarales	-	-	1	-	8	9
Isleta	9	Bernardo	-	-	-	-	-	0
Isleta	10	La Joya	-	-	-	-	-	0
Isleta	11	North of San Acacia	-	-	-	1	5	6
<i>Isleta Totals</i>			-	-	1	8	13	22
San Acacia	12	San Acacia Dam	-	-	-	-	-	0
San Acacia	13	South of San Acacia	-	-	1	-	1	2
San Acacia	52	Site 52	2	-	1	2	1	6
San Acacia	14	Socorro	-	-	-	-	-	0
San Acacia	15	North of San Antonio	-	-	-	-	-	0
San Acacia	16	San Antonio	-	-	-	-	-	0
San Acacia	17	South of San Antonio	-	-	-	-	-	0
San Acacia	18	San Marcial	-	3	-	-	-	3
San Acacia	60	Site 60	-	-	-	-	-	0
San Acacia	19	South of San Marcial 1	-	-	-	-	-	0
San Acacia	20	South of San Marcial 2	-	-	-	-	-	0
<i>San Acacia Totals</i>			2	3	2	2	2	11
Monthly Totals			2	3	5	14	19	43

Table 3. Rio Grande Silvery Minnow abundance, by reach, site, and month, during 2020. Marked individuals are shown in parentheses, as a subset of the site-specific total. Blank cells indicate months when a site was not visited or will not be visited.

Reach	Site	Locality	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Angostura	1	Angostura Dam	-	-	1(0)	1(0)	-	-	-	2
Angostura	2	Bernalillo	4(0)	-	2(0)	6(0)	-	-	-	12
Angostura	3	Rio Rancho	8(0)	1(0)	-	-	1(0)	6(0)	-	16
Angostura	21	Site 21	3(0)						-	3
Angostura	22	Site 22	99(0)						-	99
Angostura	23	Site 23	8(0)						-	8
Angostura	24	Site 24	7(0)						-	7
Angostura	4	Central Ave.	3(0)	1(0)	-	-	-	1(0)	-	5
Angostura	5	Rio Bravo Blvd.	5(0)	2(0)	3(0)	3(0)	3(0)	3(0)	-	19
Angostura	25	Site 25	-						-	0
<i>Angostura Totals</i>			137	4	6	10	4	10	-	171
Isleta	26	Site 26	5(0)						-	5
Isleta	6	Los Lunas	11(0)	1(0)	1(0)	-	1(0)	-	-	14
Isleta	27	Site 27	14(0)						-	14
Isleta	7	Belen	5(0)	1(0)	1(0)	-	7(0)	7(0)	-	21
Isleta	8	Jarales	1(0)	4(0)	4(0)	11(0)	1(0)	9(0)	-	30
Isleta	28	Site 28	6(0)						-	6
Isleta	9	Bernardo	7(0)	4(0)	5(0)	1(0)	-	-	-	17
Isleta	10	La Joya	1(0)	1(0)	4(0)	-	9(0)	-	-	15
Isleta	29	Site 29	4(0)						-	4
Isleta	11	North of San Acacia	4(0)	1(0)	-	-	2(0)	6(0)	-	13
<i>Isleta Totals</i>			58	12	15	12	20	22	-	139
San Acacia	12	San Acacia Dam	9(0)	10(0)	31(0)	59(0)	3(0)	-	-	112
San Acacia	13	South of San Acacia	12(0)	6(0)	5(0)	18(0)	4(0)	2(0)	-	47
San Acacia	51	Site 51				24(0)				24
San Acacia	30	Site 30	7(0)						-	7
San Acacia	52	Site 52				20(1)		6(0)		26
San Acacia	14	Socorro	16(6)	7(1)	2(0)	9(1)	5(0)	-	-	39
San Acacia	15	North of San Antonio	4(0)	3(0)	50(2)	-	3(0)	-	-	60
San Acacia	16	San Antonio	7(0)	3(0)	2(0)	-	9(0)	-	-	21
San Acacia	17	South of San Antonio	10(0)	3(0)	11(0)	-	38(0)	-	-	62
San Acacia	58	Site 58				-				0
San Acacia	18	San Marcial	4(0)	-	-	-	10(0)	3(0)	-	17
San Acacia	60	Site 60						-		0
San Acacia	19	South of San Marcial 1	4(0)	2(0)	-	2(0)	-	-	-	8
San Acacia	20	South of San Marcial 2	2(0)	-	1(0)	-	-	-	-	3
<i>San Acacia Totals</i>			75	34	102	132	72	11	-	426
Monthly Totals			270	50	123	154	96	43	-	736

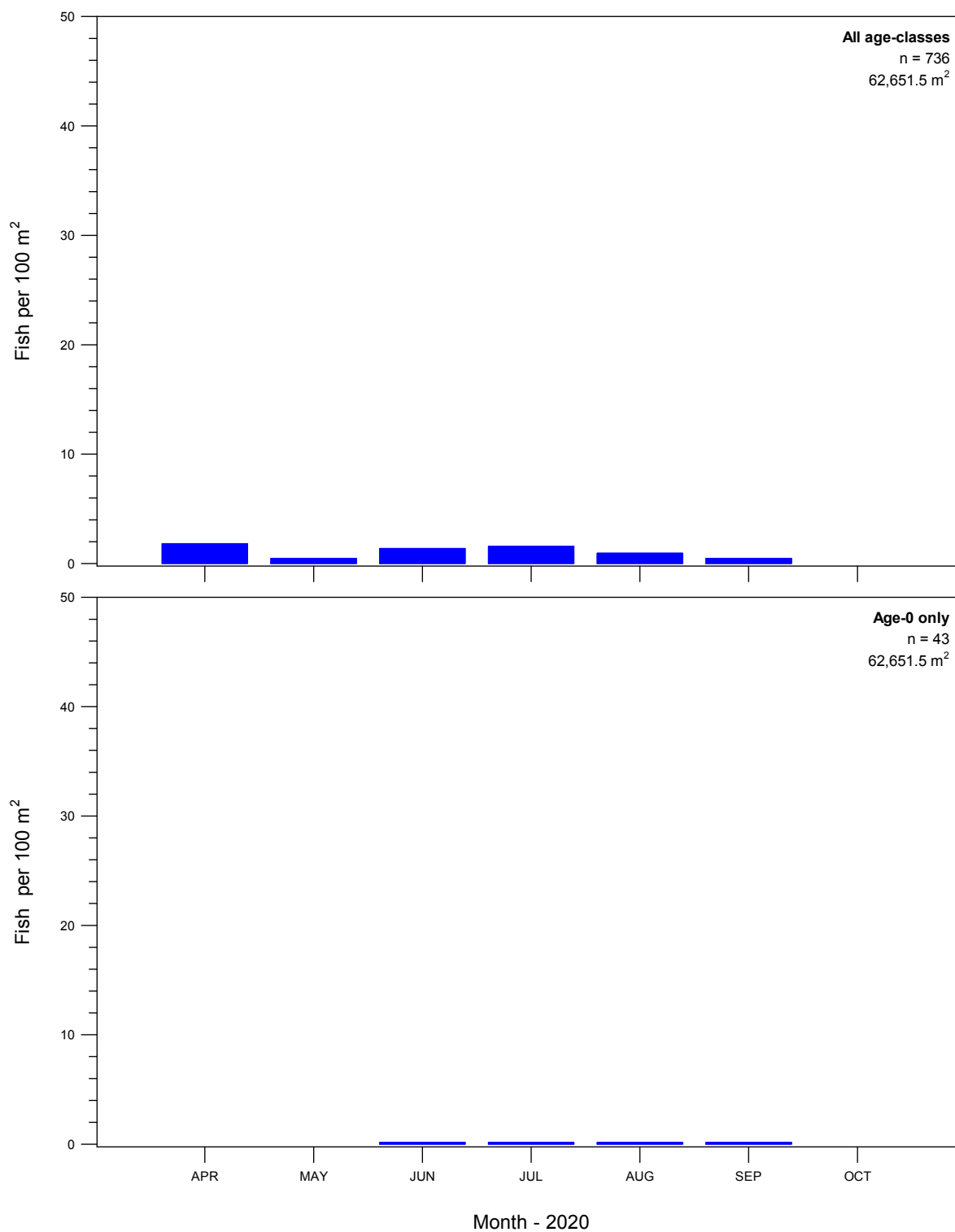


Figure 4. Rio Grande Silvery Minnow densities based on all sites, by age-class and month, during 2020. Marked and unmarked individuals were included.

Table 4. Ichthyofaunal summary based on standard sites, by species, during September 2020. Marked and unmarked Rio Grande Silvery Minnow were included.

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	150	1.20	2	9.09
Clupeidae	Threadfin Shad	I	-	-	-	-
Cyprinidae	Central Stoneroller	I	-	-	-	-
Cyprinidae	Goldfish	I	-	-	-	-
Cyprinidae	Red Shiner	N	8,810	70.77	17	77.27
Cyprinidae	Common Carp	I	36	0.29	8	36.36
Cyprinidae	Rio Grande Chub	N	-	-	-	-
Cyprinidae	Rio Grande Silvery Minnow	N	37	0.30	8	36.36
Cyprinidae	Golden Shiner	I	-	-	-	-
Cyprinidae	Fathead Minnow	N	201	1.61	12	54.55
Cyprinidae	Bullhead Minnow	I	2	0.02	1	4.55
Cyprinidae	Fathead Chub	N	147	1.18	8	36.36
Cyprinidae	Longnose Dace	N	89	0.71	5	22.73
Catostomidae	River Carpsucker	N	147	1.18	10	45.45
Catostomidae	White Sucker	I	111	0.89	4	18.18
Catostomidae	Smallmouth Buffalo	N	1	0.01	1	4.55
Ictaluridae	Black Bullhead	I	-	-	-	-
Ictaluridae	Yellow Bullhead	I	13	0.10	5	22.73
Ictaluridae	Blue Catfish	N	-	-	-	-
Ictaluridae	Channel Catfish	I	150	1.20	11	50.00
Ictaluridae	Fathead Catfish	N	1	0.01	1	4.55
Loricariidae	Vermiculated Sailfin Catfish	I	-	-	-	-
Salmonidae	Rainbow Trout	I	-	-	-	-
Salmonidae	Brown Trout	I	-	-	-	-
Poeciliidae	Western Mosquitofish	I	2,551	20.49	18	81.82
Moronidae	White Bass	I	-	-	-	-
Moronidae	Striped Bass	I	-	-	-	-
Centrarchidae	Green Sunfish	I	-	-	-	-
Centrarchidae	Bluegill	I	1	0.01	1	4.55
Centrarchidae	Longear Sunfish	I	-	-	-	-
Centrarchidae	Smallmouth Bass	I	-	-	-	-
Centrarchidae	Largemouth Bass	I	2	0.02	1	4.55
Centrarchidae	White Crappie	I	-	-	-	-
Centrarchidae	Black Crappie	I	-	-	-	-
Percidae	Yellow Perch	I	-	-	-	-
Percidae	Bigscale Logperch	I	-	-	-	-
Percidae	Walleye	I	-	-	-	-
Sciaenidae	Freshwater Drum	N	-	-	-	-
Monthly Total			12,449	100.00		

¹ = N (native); I (introduced)

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

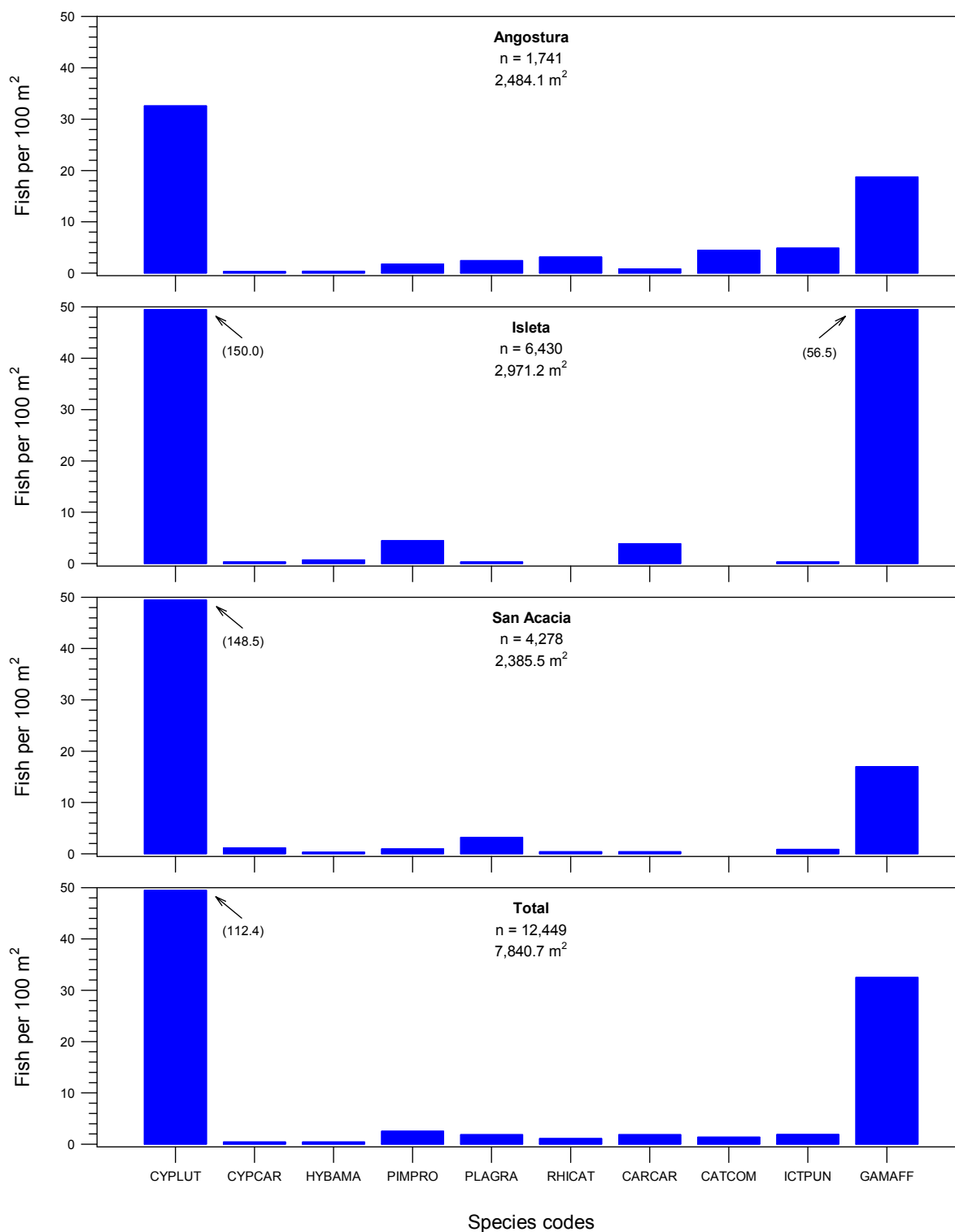


Figure 5. Fish densities based on standard sites, by reach and focal taxa, during September 2020. Marked and unmarked Rio Grande Silvery Minnow were included.

Table 5. Ichthyofaunal summary based on all sites, by species, during September 2020. Marked and unmarked Rio Grande Silvery Minnow were included.

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	155	1.05	3	13.64
Clupeidae	Threadfin Shad	I	-	-	-	-
Cyprinidae	Central Stoneroller	I	-	-	-	-
Cyprinidae	Goldfish	I	-	-	-	-
Cyprinidae	Red Shiner	N	10,979	74.68	19	86.36
Cyprinidae	Common Carp	I	39	0.27	9	40.91
Cyprinidae	Rio Grande Chub	N	-	-	-	-
Cyprinidae	Rio Grande Silvery Minnow	N	43	0.29	9	40.91
Cyprinidae	Golden Shiner	I	-	-	-	-
Cyprinidae	Fathead Minnow	N	204	1.39	13	59.09
Cyprinidae	Bullhead Minnow	I	2	0.01	1	4.55
Cyprinidae	Fathead Chub	N	157	1.07	9	40.91
Cyprinidae	Longnose Dace	N	89	0.61	5	22.73
Catostomidae	River Carpsucker	N	162	1.10	11	50.00
Catostomidae	White Sucker	I	111	0.76	4	18.18
Catostomidae	Smallmouth Buffalo	N	1	0.01	1	4.55
Ictaluridae	Black Bullhead	I	-	-	-	-
Ictaluridae	Yellow Bullhead	I	13	0.09	5	22.73
Ictaluridae	Blue Catfish	N	-	-	-	-
Ictaluridae	Channel Catfish	I	152	1.03	12	54.55
Ictaluridae	Fathead Catfish	N	1	0.01	1	4.55
Loricariidae	Vermiculated Sailfin Catfish	I	-	-	-	-
Salmonidae	Rainbow Trout	I	-	-	-	-
Salmonidae	Brown Trout	I	-	-	-	-
Poeciliidae	Western Mosquitofish	I	2,590	17.62	20	90.91
Moronidae	White Bass	I	-	-	-	-
Moronidae	Striped Bass	I	-	-	-	-
Centrarchidae	Green Sunfish	I	-	-	-	-
Centrarchidae	Bluegill	I	1	0.01	1	4.55
Centrarchidae	Longear Sunfish	I	-	-	-	-
Centrarchidae	Smallmouth Bass	I	-	-	-	-
Centrarchidae	Largemouth Bass	I	2	0.01	1	4.55
Centrarchidae	White Crappie	I	-	-	-	-
Centrarchidae	Black Crappie	I	-	-	-	-
Percidae	Yellow Perch	I	-	-	-	-
Percidae	Bigscale Logperch	I	-	-	-	-
Percidae	Walleye	I	-	-	-	-
Sciaenidae	Freshwater Drum	N	-	-	-	-
Monthly Total			14,701	100.00		

¹ = N (native); I (introduced)

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

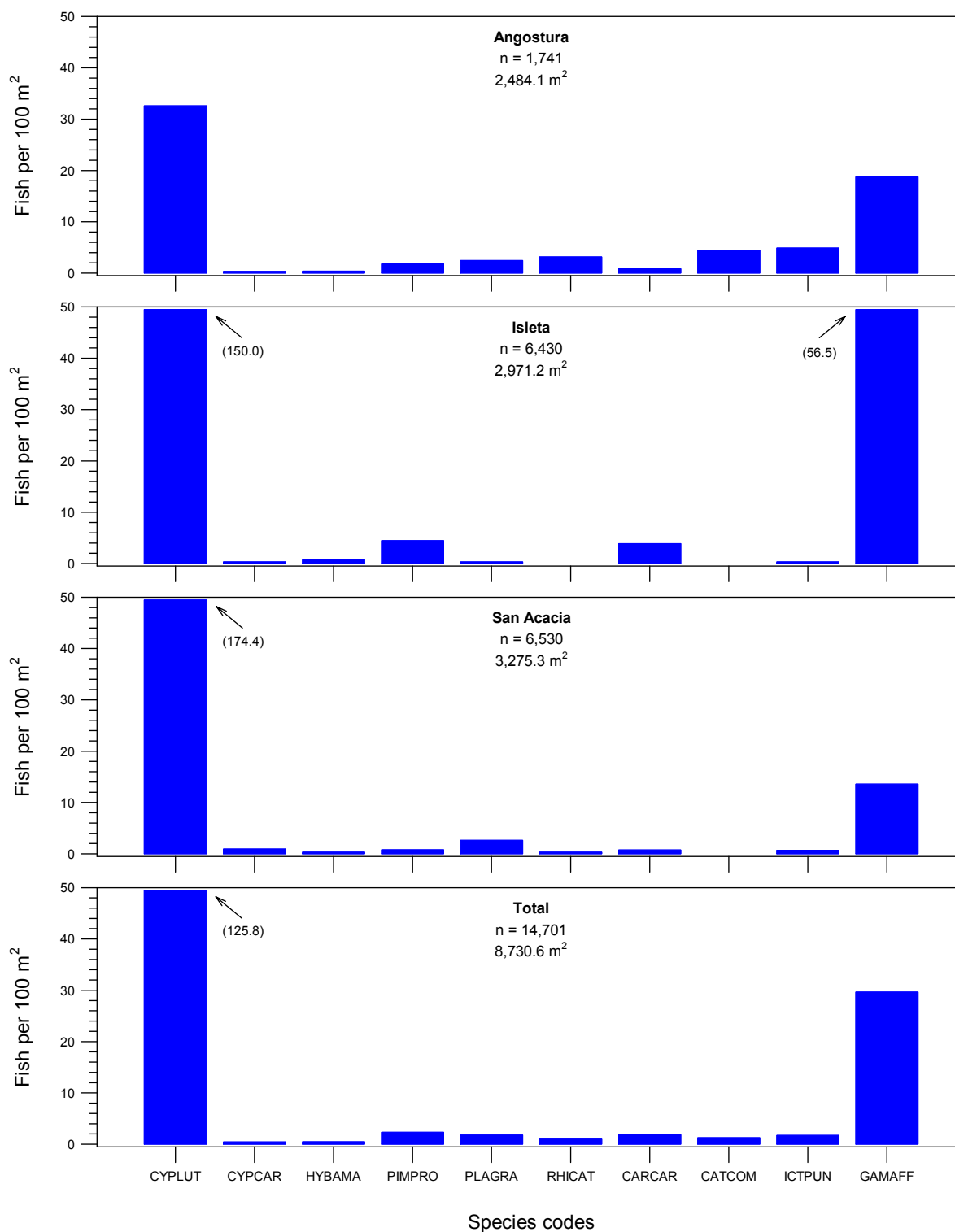


Figure 6. Fish densities based on all sites, by reach and focal taxa, during September 2020. Marked and unmarked Rio Grande Silvery Minnow were included.

Table 6. Ichthyofaunal summary based on all sites, by species and month, during 2020. Marked and unmarked Rio Grande Silvery Minnow were included.

Family	Common Name	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Clupeidae	Gizzard Shad	2	4	8	1	-	155	-	170
Clupeidae	Threadfin Shad	-	-	-	-	-	-	-	0
Cyprinidae	Central Stoneroller	-	-	-	-	-	-	-	0
Cyprinidae	Goldfish	-	-	-	-	-	-	-	0
Cyprinidae	Red Shiner	2,618	1,622	7,308	8,962	5,198	10,979	-	36,687
Cyprinidae	Common Carp	33	18	433	1,061	94	39	-	1,678
Cyprinidae	Rio Grande Chub	-	-	-	-	-	-	-	0
Cyprinidae	Rio Grande Silvery Minnow	270	50	123	154	96	43	-	736
Cyprinidae	Golden Shiner	-	-	-	-	-	-	-	0
Cyprinidae	Fathead Minnow	21	69	433	280	171	204	-	1,178
Cyprinidae	Bullhead Minnow	-	-	-	-	1	2	-	3
Cyprinidae	Flathead Chub	349	221	533	289	242	157	-	1,791
Cyprinidae	Longnose Dace	83	33	61	81	136	89	-	483
Catostomidae	River Carpsucker	1	55	386	488	122	162	-	1,214
Catostomidae	White Sucker	4	945	365	418	160	111	-	2,003
Catostomidae	Smallmouth Buffalo	-	1	2	13	-	1	-	17
Ictaluridae	Black Bullhead	-	-	-	-	-	-	-	0
Ictaluridae	Yellow Bullhead	-	-	5	1	71	13	-	90
Ictaluridae	Blue Catfish	1	10	1	-	-	-	-	12
Ictaluridae	Channel Catfish	157	50	26	22	123	152	-	530
Ictaluridae	Flathead Catfish	-	-	-	-	-	1	-	1
Loricariidae	Vermiculated Sailfin Catfish	-	-	-	-	-	-	-	0
Salmonidae	Rainbow Trout	-	-	-	-	-	-	-	0
Salmonidae	Brown Trout	-	-	-	-	-	-	-	0
Poeciliidae	Western Mosquitofish	10	34	605	839	1,007	2,590	-	5,085
Moronidae	White Bass	1	3	2	2	-	-	-	8
Moronidae	Striped Bass	-	-	-	-	-	-	-	0
Centrarchidae	Green Sunfish	-	-	-	-	-	-	-	0
Centrarchidae	Bluegill	-	1	-	1	-	1	-	3
Centrarchidae	Longear Sunfish	-	-	-	-	-	-	-	0
Centrarchidae	Smallmouth Bass	-	-	-	1	-	-	-	1
Centrarchidae	Largemouth Bass	1	1	5	3	2	2	-	14
Centrarchidae	White Crappie	4	-	1	1	1	-	-	7
Centrarchidae	Black Crappie	-	-	-	-	-	-	-	0
Percidae	Yellow Perch	-	-	-	-	-	-	-	0
Percidae	Bigscale Logperch	-	-	-	1	-	-	-	1
Percidae	Walleye	-	-	-	-	-	-	-	0
Sciaenidae	Freshwater Drum	-	-	-	-	-	-	-	0
Monthly Totals		3,555	3,117	10,297	12,618	7,424	14,701	-	51,712

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.

Reach and Site	Locality
Angostura Reach	
1	New Mexico, Sandoval County, Rio Grande, just downstream of Angostura Diversion Dam, Algodones. River Mile: 209.9; UTM Easting: 363665; UTM Northing: 3916331; Zone: 13; Datum: NAD83
2	New Mexico, Sandoval County, Rio Grande, at US HWY 550 bridge crossing, Bernalillo. River Mile: 203.9; UTM Easting: 358457; UTM Northing: 3909887; Zone: 13; Datum: NAD83
3	New Mexico, Sandoval County, Rio Grande, ca. 4.0 mi downstream of US HWY 550 bridge crossing, Rio Rancho. River Mile: 199.9; UTM Easting: 354728; UTM Northing: 3905587; Zone: 13; Datum: NAD83
4	New Mexico, Bernalillo County, Rio Grande, at Central Ave. bridge crossing (US HWY 66), Albuquerque. River Mile: 183.4; UTM Easting: 346719; UTM Northing: 3884331; Zone: 13; Datum: NAD83
5	New Mexico, Bernalillo County, Rio Grande, at Rio Bravo Blvd. bridge crossing (NM State HWY 500), Albuquerque. River Mile: 178.4; UTM Easting: 347468; UTM Northing: 3877400; Zone: 13; Datum: NAD83
Isleta Reach	
6	New Mexico, Valencia County, Rio Grande, just upstream of NM State HWY 6 bridge crossing, Los Lunas. River Mile: 161.7; UTM Easting: 343149; UTM Northing: 3853187; Zone: 13; Datum: NAD83
7	New Mexico, Valencia County, Rio Grande, ca. 1.0 mi upstream of NM State HWY 309 bridge crossing, Belen. River Mile: 150.8; UTM Easting: 340105; UTM Northing: 3837722; Zone: 13; Datum: NAD83
8	New Mexico, Valencia County, Rio Grande, ca. 2.2 mi upstream of NM State HWY 346 bridge crossing, Jarales. River Mile: 143.2; UTM Easting: 338020; UTM Northing: 3827545; Zone: 13; Datum: NAD83
9	New Mexico, Socorro County, Rio Grande, at US HWY 60 bridge crossing, Bernardo. River Mile: 130.6; UTM Easting: 334578; UTM Northing: 3809921; Zone: 13; Datum: NAD83
10	New Mexico, Socorro County, Rio Grande, ca. 3.7 mi downstream of US HWY 60 bridge crossing, Bernardo. River Mile: 126.8; UTM Easting: 330946; UTM Northing: 3805307; Zone: 13; Datum: NAD83
11	New Mexico, Socorro County, Rio Grande, ca. 1.2 mi upstream of San Acacia Diversion Dam, San Acacia. River Mile: 117.3; UTM Easting: 328152; UTM Northing: 3792564; Zone: 13; Datum: NAD83

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

Reach and Site	Locality
San Acacia Reach	
12	New Mexico, Socorro County, Rio Grande, just downstream of San Acacia Diversion Dam, San Acacia. River Mile: 115.6; UTM Easting: 325960; UTM Northing: 3792183; Zone: 13; Datum: NAD83
13	New Mexico, Socorro County, Rio Grande, ca. 1.5 mi downstream of San Acacia Diversion Dam, San Acacia. River Mile: 114.1; UTM Easting: 325390; UTM Northing: 3790397; Zone: 13; Datum: NAD83
14	New Mexico, Socorro County, Rio Grande, ca. 0.5 mi upstream of Socorro Low Flow Conveyance Channel bridge crossing, Socorro. River Mile: 99.6; UTM Easting: 327231; UTM Northing: 3771432; Zone: 13; Datum: NAD83
15	New Mexico, Socorro County, Rio Grande, ca. 4.5 mi upstream of US HWY 380 bridge crossing, San Antonio. River Mile: 92.0; UTM Easting: 328151; UTM Northing: 3761487; Zone: 13; Datum: NAD83
16	New Mexico, Socorro County, Rio Grande, at US HWY 380 bridge crossing, San Antonio. River Mile: 87.8; UTM Easting: 328907; UTM Northing: 3754926; Zone: 13; Datum: NAD83
17	New Mexico, Socorro County, Rio Grande, east of Bosque del Apache NWR headquarters, San Antonio. River Mile: 79.0; UTM Easting: 327219; UTM Northing: 3740906; Zone: 13; Datum: NAD83
18	New Mexico, Socorro County, Rio Grande, at San Marcial Railroad bridge crossing, San Marcial. River Mile: 68.3; UTM Easting: 315091; UTM Northing: 3728487; Zone: 13; Datum: NAD83
19	New Mexico, Socorro County, Rio Grande, ca. 8.0 mi downstream of San Marcial Railroad bridge crossing, San Marcial. River Mile: 60.1; UTM Easting: 309441; UTM Northing: 3718309; Zone: 13; Datum: NAD83
20	New Mexico, Socorro County, Rio Grande, ca. 10.0 mi downstream of San Marcial Railroad bridge crossing, San Marcial. River Mile: 58.5; UTM Easting: 307767; UTM Northing: 3716360; Zone: 13; Datum: NAD83

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

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: 13; 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: 13; 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: 13; 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: 13; 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: 13; 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: 13; 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: 13; 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: 13; 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: 13; 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: 13; Datum: NAD83

Table A - 3. Sampling reaches and replacement sites for population monitoring of Rio Grande Silvery Minnow in the Middle Rio Grande.

Reach and Site	Locality
Isleta Reach	
44	New Mexico, Valencia County, Rio Grande, ca. 1.0 mi upstream of NM State HWY 309 bridge crossing, Belen. River Mile: 150.5; UTM Easting: 340084; UTM Northing: 3837308; Zone: 13; Datum: NAD83
San Acacia Reach	
51	New Mexico, Socorro County, Rio Grande, ca. 5.0 mi downstream of San Acacia Diversion Dam, San Acacia. River Mile: 110.8; UTM Easting: 325855; UTM Northing: 3786216; Zone: 13; Datum: NAD83
52	New Mexico, Socorro County, Rio Grande, ca. 2.2 mi. downstream of Pueblitos Rd. bridge crossing, Escondida. River Mile: 101.7; UTM Easting: 327091; UTM Northing: 3773950; Zone: 13; Datum: NAD83
53	New Mexico, Socorro County, Rio Grande, ca. 3.1 mi downstream of the Socorro Low Flow Conveyance Channel bridge crossing, Socorro. River Mile: 96.0; UTM Easting: 327928; UTM Northing: 3766570; Zone: 13; Datum: NAD83
54	New Mexico, Socorro County, Rio Grande, ca. 4.7 mi. downstream of Socorro LFCC bridge crossing, Socorro. River Mile: 94.2; UTM Easting: 327288; UTM Northing: 3764453; Zone: 13; Datum: NAD83
56	New Mexico, Socorro County, Rio Grande, ca. 2.1 miles upstream of San Antonio bridge crossing, San Antonio. River Mile: 89.3; UTM Easting: 329188; UTM Northing: 3758027; Zone: 13; Datum: NAD83
58	New Mexico, Socorro County, Rio Grande, ca. 1.8 mi. upstream of San Marcial Railroad bridge crossing, San Marcial. River Mile: 70.1; UTM Easting: 318083; UTM Northing: 3728535; Zone: 13; Datum: NAD83
59	New Mexico, Socorro County, Rio Grande, ca. 5.1 mi. downstream of San Marcial Railroad bridge crossing, San Marcial. River Mile: 63.3; UTM Easting: 313269; UTM Northing: 3721434; Zone: 13; Datum: NAD83
60	New Mexico, Socorro County, Rio Grande, ca. 6.4 mi. downstream of San Marcial Railroad bridge crossing, San Marcial. River Mile: 61.8; UTM Easting: 311422; UTM Northing: 3719873; Zone: 13; Datum: NAD83

APPENDIX B (Site-Specific Population Monitoring Data)

Site-specific data, collected in September 2020, as part of the
Rio Grande Silvery Minnow Population Monitoring Program

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

Rio Grande Silvery Minnow Population Monitoring September 2020

NEW MEXICO: SANDOVAL County, RIO GRANDE Drainage
Rio Grande, just downstream of Angostura Diversion Dam, Algodones.
Site Number: 1 River Mile: 209.9
UTM Easting: 363665 UTM Northing: 3916331 Zone: 13
Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen, J.G. Ditty

RKD20-131

04 September 2020
USGS Quad: San Felipe Pueblo
Effort: 473.8 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	128
76	<i>Cyprinus carpio</i>	1
76	<i>Pimephales promelas</i>	8
76	<i>Platygobio gracilis</i>	2
76	<i>Rhinichthys cataractae</i>	28
81	<i>Catostomus commersonii</i>	29
93	<i>Ameiurus natalis</i>	6
212	<i>Gambusia affinis</i>	31
294	<i>Micropterus salmoides</i>	2

NEW MEXICO: SANDOVAL County, RIO GRANDE Drainage
Rio Grande, at US HWY 550 bridge crossing, Bernalillo.
Site Number: 2 River Mile: 203.9
UTM Easting: 358457 UTM Northing: 3909887 Zone: 13
Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen, J.G. Ditty

RKD20-132

04 September 2020
USGS Quad: Bernalillo
Effort: 485.5 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	252
76	<i>Pimephales promelas</i>	10
76	<i>Platygobio gracilis</i>	14
76	<i>Rhinichthys cataractae</i>	29
81	<i>Catostomus commersonii</i>	28
93	<i>Ameiurus natalis</i>	3
93	<i>Ictalurus punctatus</i>	2
212	<i>Gambusia affinis</i>	140
294	<i>Lepomis macrochirus</i>	1

Rio Grande Silvery Minnow Population Monitoring September 2020

NEW MEXICO: SANDOVAL County, RIO GRANDE Drainage

RKD20-133

Rio Grande, ca. 4.0 mi downstream of US HWY 550 bridge crossing, Rio Rancho.

Site Number: 3

River Mile: 199.9

04 September 2020

UTM Easting: 354728

UTM Northing: 3905587

Zone: 13

USGS Quad: Bernalillo

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen, J.G. Ditty

Effort: 494.2 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	115
76	<i>Hybognathus amarus</i> *	6
76	<i>Pimephales promelas</i>	15
76	<i>Platygobio gracilis</i>	15
76	<i>Rhinichthys cataractae</i>	20
81	<i>Catostomus commersonii</i>	45
93	<i>Ameiurus natalis</i>	2
93	<i>Ictalurus punctatus</i>	18
212	<i>Gambusia affinis</i>	40

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

age-0	
age-1	2
age-2+	4

Rio Grande Silvery Minnow Population Monitoring September 2020

NEW MEXICO: BERNALILLO County, RIO GRANDE Drainage
Rio Grande, at Central Ave. bridge crossing (US HWY 66), Albuquerque.
Site Number: 4 River Mile: 183.4
UTM Easting: 346719 UTM Northing: 3884331 Zone: 13
Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen, J.G. Ditty

RKD20-130

03 September 2020
USGS Quad: Albuquerque West
Effort: 535.1 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	210
76	<i>Hybognathus amarus</i> *	1
76	<i>Pimephales promelas</i>	4
76	<i>Platygobio gracilis</i>	26
76	<i>Rhinichthys cataractae</i>	2
81	<i>Carpionodes carpio</i>	2
81	<i>Catostomus commersonii</i>	9
93	<i>Ameiurus natalis</i>	1
93	<i>Ictalurus punctatus</i>	49
212	<i>Gambusia affinis</i>	138

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

age-0	
age-1	
age-2+	1

Rio Grande Silvery Minnow Population Monitoring September 2020

NEW MEXICO: BERNALILLO County, RIO GRANDE Drainage

RKD20-129

Rio Grande, at Rio Bravo Blvd. bridge crossing (NM State HWY 500), Albuquerque.

Site Number: 5

River Mile: 178.4

03 September 2020

UTM Easting: 347468

UTM Northing: 3877400

Zone: 13

USGS Quad: Albuquerque West

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen, J.G. Ditty

Effort: 495.6 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	105
76	<i>Hybognathus amarus*</i>	3
76	<i>Pimephales promelas</i>	8
76	<i>Platygobio gracilis</i>	4
81	<i>Carpoides carpio</i>	19
93	<i>Ictalurus punctatus</i>	53
212	<i>Gambusia affinis</i>	117

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

age-0	
age-1	
age-2+	3

NEW MEXICO: VALENCIA County, RIO GRANDE Drainage

RKD20-128

Rio Grande, just upstream of NM State HWY 6 bridge crossing, Los Lunas.

Site Number: 6

River Mile: 161.7

02 September 2020

UTM Easting: 343149

UTM Northing: 3853187

Zone: 13

USGS Quad: Los Lunas

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen

Effort: 507.4 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	123
76	<i>Pimephales promelas</i>	15
81	<i>Carpoides carpio</i>	24
93	<i>Ictalurus punctatus</i>	6
212	<i>Gambusia affinis</i>	718

Rio Grande Silvery Minnow Population Monitoring September 2020

NEW MEXICO: VALENCIA County, RIO GRANDE Drainage

RKD20-127

Rio Grande, ca. 1.0 mi upstream of NM State HWY 309 bridge crossing, Belen.

Site Number: 7

River Mile: 150.8

02 September 2020

UTM Easting: 340105

UTM Northing: 3837722

Zone: 13

USGS Quad: Tome

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen

Effort: 443.9 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	1860
76	<i>Hybognathus amarus</i> *	7
76	<i>Pimephales promelas</i>	101
81	<i>Carpoides carpio</i>	80
212	<i>Gambusia affinis</i>	192

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

age-0	4
age-1	3
age-2+	

NEW MEXICO: VALENCIA County, RIO GRANDE Drainage

RKD20-126

Rio Grande, ca. 2.2 mi upstream of NM State HWY 346 bridge crossing, Jarales.

Site Number: 8

River Mile: 143.2

02 September 2020

UTM Easting: 338020

UTM Northing: 3827545

Zone: 13

USGS Quad: Veguita

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen

Effort: 549.1 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	1169
76	<i>Hybognathus amarus</i> *	9
76	<i>Pimephales promelas</i>	12
212	<i>Gambusia affinis</i>	289

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

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

Rio Grande Silvery Minnow Population Monitoring September 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-125

Rio Grande, at US HWY 60 bridge crossing, Bernardo.

Site Number: 9

River Mile: 130.6

03 September 2020

UTM Easting: 334578

UTM Northing: 3809921

Zone: 13

USGS Quad: Abeytas

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen, J.G. Ditty

Effort: 447.3 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	139
76	<i>Cyprinus carpio</i>	1
81	<i>Carpoides carpio</i>	3
212	<i>Gambusia affinis</i>	182

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-124

Rio Grande, ca. 3.7 mi downstream of US HWY 60 bridge crossing, Bernardo.

Site Number: 10

River Mile: 126.8

03 September 2020

UTM Easting: 330946

UTM Northing: 3805307

Zone: 13

USGS Quad: Abeytas

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen, J.G. Ditty

Effort: 507.6 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	1060
76	<i>Cyprinus carpio</i>	2
76	<i>Pimephales promelas</i>	4
81	<i>Carpoides carpio</i>	1
212	<i>Gambusia affinis</i>	182

Rio Grande Silvery Minnow Population Monitoring September 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-123

Rio Grande, ca. 1.2 mi upstream of San Acacia Diversion Dam, San Acacia.

Site Number: 11

River Mile: 117.3

01 September 2020

UTM Easting: 328152

UTM Northing: 3792564

Zone: 13

USGS Quad: La Joya

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen

Effort: 516.0 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	106
76	<i>Cyprinus carpio</i>	4
76	<i>Hybognathus amarus*</i>	6
76	<i>Pimephales promelas</i>	1
76	<i>Platygobio gracilis</i>	9
81	<i>Carpoides carpio</i>	8
93	<i>Ictalurus punctatus</i>	1
212	<i>Gambusia affinis</i>	116

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

age-0	6
age-1	
age-2+	

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-122

Rio Grande, just downstream of San Acacia Diversion Dam, San Acacia.

Site Number: 12

River Mile: 115.6

02 September 2020

UTM Easting: 325960

UTM Northing: 3792183

Zone: 13

USGS Quad: San Acacia

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen

Effort: 464.2 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	952
76	<i>Pimephales promelas</i>	22
76	<i>Platygobio gracilis</i>	74
76	<i>Rhinichthys cataractae</i>	10
81	<i>Carpoides carpio</i>	2
93	<i>Ameiurus natalis</i>	1
93	<i>Ictalurus punctatus</i>	9
212	<i>Gambusia affinis</i>	34

Rio Grande Silvery Minnow Population Monitoring September 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-121

Rio Grande, ca. 1.5 mi downstream of San Acacia Diversion Dam, San Acacia.

Site Number: 13

River Mile: 114.1

01 September 2020

UTM Easting: 325390

UTM Northing: 3790397

Zone: 13

USGS Quad: Lemitar

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen

Effort: 490.5 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	344
76	<i>Cyprinus carpio</i>	2
76	<i>Hybognathus amarus</i> *	2
76	<i>Platygobio gracilis</i>	3
212	<i>Gambusia affinis</i>	39

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

age-0	
age-1	2
age-2+	

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-135

Rio Grande, ca. 2.2 mi downstream of Pueblitos Rd. bridge crossing, Lemitar.

Site Number: 52

River Mile: 101.7

01 September 2020

UTM Easting: 327063

UTM Northing: 3773933

Zone: 13

USGS Quad: Loma de las Canas

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen

Effort: 481.1 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	931
76	<i>Cyprinus carpio</i>	3
76	<i>Hybognathus amarus</i> *	6
76	<i>Pimephales promelas</i>	3
76	<i>Platygobio gracilis</i>	10
81	<i>Carpionodes carpio</i>	15
93	<i>Ictalurus punctatus</i>	2
212	<i>Gambusia affinis</i>	16

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

age-0	
age-1	6
age-2+	

Rio Grande Silvery Minnow Population Monitoring September 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-120

Rio Grande, ca. 0.5 mi upstream of Socorro Low Flow Conveyance Channel bridge crossing, Socorro.

Site Number: 14

River Mile: 99.6

01 September 2020

UTM Easting: 327231

UTM Northing: 3771432

Zone: 13

USGS Quad: Loma de las Canas

Collector(s): R.K. Dudley, A.D. Urioste, J.G. Mortensen

Effort: 424.7 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	510
76	<i>Cyprinus carpio</i>	1
81	<i>Carpoides carpio</i>	5
93	<i>Ictalurus punctatus</i>	6
212	<i>Gambusia affinis</i>	18

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-119

Rio Grande, ca. 4.5 mi upstream of US HWY 380 bridge crossing, San Antonio.

Site Number: 15

River Mile: 92.0

31 August 2020

UTM Easting: 328151

UTM Northing: 3761487

Zone: 13

USGS Quad: San Antonio

Collector(s): R.K. Dudley, M.A. Farrington, A.D. Urioste

Effort: sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
	Site Dry	

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-118

Rio Grande, at US HWY 380 bridge crossing, San Antonio.

Site Number: 16

River Mile: 87.8

31 August 2020

UTM Easting: 328907

UTM Northing: 3754926

Zone: 13

USGS Quad: San Antonio

Collector(s): R.K. Dudley, M.A. Farrington, A.D. Urioste

Effort: sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
	Site Dry	

Rio Grande Silvery Minnow Population Monitoring August 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

Rio Grande, east of Bosque del Apache NWR headquarters, San Antonio.

Site Number: 17

River Mile: 79.0

UTM Easting: 327219

UTM Northing: 3740906

Zone: 13

USGS Quad: San Antonio SE

Collector(s): R.K. Dudley, M.A. Farrington, A.D. Urioste

RKD20-117

31 August 2020

Effort: 18.5 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
212	<i>Gambusia affinis</i>	8

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

Rio Grande, at San Marcial Railroad bridge crossing, San Marcial.

Site Number: 18

River Mile: 68.3

UTM Easting: 315091

UTM Northing: 3728487

Zone: 13

USGS Quad: San Marcial

Collector(s): R.K. Dudley, M.A. Farrington, A.D. Urioste

RKD20-116

31 August 2020

Effort: 104.2 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
69	<i>Dorosoma cepedianum</i>	147
76	<i>Cyprinella lutrensis</i>	199
76	<i>Cyprinus carpio</i>	23
76	<i>Hybognathus amarus*</i>	3
81	<i>Carpoides carpio</i>	3
81	<i>Ictiobus bubalus</i>	1
93	<i>Ictalurus punctatus</i>	2
93	<i>Pylodictis olivaris</i>	1
212	<i>Gambusia affinis</i>	124

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

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

Rio Grande Silvery Minnow Population Monitoring August 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-134

Rio Grande, ca. 6.4 mi downstream of San Marcial Railroad bridge crossing, San Marcial.

Site Number: 60

River Mile: 61.8

31 August 2020

UTM Easting: 311422

UTM Northing: 3719864

Zone: 13

USGS Quad: Paraje Well

Collector(s): R.K. Dudley, M.A. Farrington, A.D. Urioste

Effort: 408.8 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
69	<i>Dorosoma cepedianum</i>	5
76	<i>Cyprinella lutrensis</i>	1238
212	<i>Gambusia affinis</i>	23

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-115

Rio Grande, ca. 8.0 mi downstream of San Marcial Railroad bridge crossing, San Marcial.

Site Number: 19

River Mile: 60.1

31 August 2020

UTM Easting: 309441

UTM Northing: 3718309

Zone: 13

USGS Quad: Paraje Well

Collector(s): R.K. Dudley, M.A. Farrington, A.D. Urioste

Effort: 472.5 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
69	<i>Dorosoma cepedianum</i>	3
76	<i>Cyprinella lutrensis</i>	741
76	<i>Pimephales promelas</i>	1
93	<i>Ictalurus punctatus</i>	2
212	<i>Gambusia affinis</i>	64

Rio Grande Silvery Minnow Population Monitoring August 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage

RKD20-114

Rio Grande, ca. 10.0 mi downstream of San Marcial Railroad bridge crossing, San Marcial.

Site Number: 20

River Mile: 58.5

31 August 2020

UTM Easting: 307767

UTM Northing: 3716360

Zone: 13

USGS Quad: Paraje Well

Collector(s): R.K. Dudley, M.A. Farrington, A.D. Urioste

Effort: 411.1 sq. m

<u>Family</u>	<u>Species</u>	<u>Total</u>
76	<i>Cyprinella lutrensis</i>	797
76	<i>Cyprinus carpio</i>	2
76	<i>Pimephales vigilax</i>	2
93	<i>Ictalurus punctatus</i>	2
212	<i>Gambusia affinis</i>	119