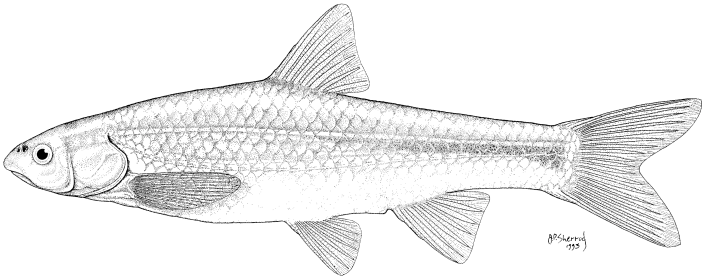
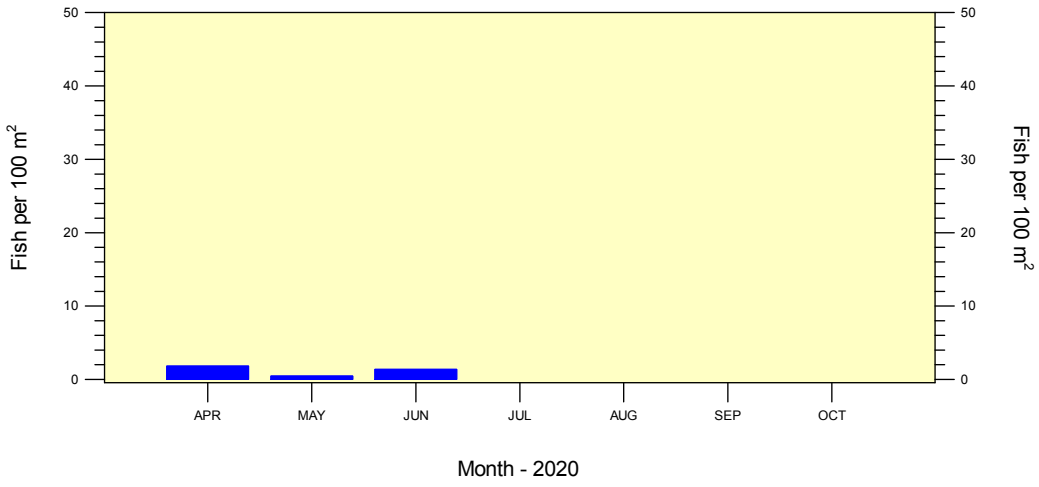
# *Rio Grande Silvery Minnow Population Monitoring during June 2020*

## *A U.S. Bureau of Reclamation Funded Research Program*






29 July 2020

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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
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Albuquerque, NM 87102

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29 July 2020

## SUMMARY OF JUNE 2020 POPULATION MONITORING

The June population monitoring efforts were conducted at the 20 standard sites. Five sites were located in the Angostura Reach, six sites were located in the Isleta Reach, and nine sites were located in the San Acacia Reach. For June 2020, no comparisons were made between standard sites and all sites (i.e., standard, additional, and replacement sites), as no additional/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 $m^2$) were prepared for the ten focal species to facilitate comparisons across reaches.

### *Angostura Reach*

From 16 May to 15 June, provisional mean daily discharge in the Angostura Reach (Rio Grande at Albuquerque, NM; USGS Gage 08330000) averaged 553.6 $ft^3$/s and ranged from 484 to 801 $ft^3$/s. Water temperatures ranged from 17.9 to 22.5 ºC during the Angostura Reach sampling efforts (ca. 0830–1530 h). Secchi disk measurements of water clarity ranged from 19 to 41 cm.

Sampling for fishes in the Angostura Reach during June yielded 987 individuals with a cumulative fish density of 37.6 individuals per 100 $m^2$ sampled. The overall sampling effort in the Angostura Reach covered 2,623.1 $m^2$ (surface area) of water. Densities of all fish species combined ranged from 17.7 to 76.3 individuals per 100 $m^2$ at the different sampling sites. In June, there were 12 fish species collected in the Angostura Reach. White Sucker was the most abundant taxon (n = 344), followed by Fathead Minnow (n = 307), and Red Shiner (n = 139). We collected Rio Grande Silvery Minnow (n = 6) in 5 of the 71 seine hauls that yielded fish, and its site-specific densities ranged from 0.0 to 0.6 individuals per 100 $m^2$.

### *Isleta Reach*

Provisional mean daily discharge in the Isleta Reach (Rio Grande near Bosque Farms, NM; USGS Gage 08331160), from 16 May to 15 June, averaged 138.3 $ft^3$/s and ranged from 53 to 442 $ft^3$/s. Water temperatures ranged from 22.2 to 33.2 ºC throughout the sampling localities during the day (ca. 0930–1600 h). Secchi disk measurements ranged from 10 to 20 cm during sampling.

Isleta Reach population monitoring efforts produced 3,369 individuals in June with a cumulative fish density of 112.5 individuals per 100 $m^2$ sampled. The total sampling effort in the Isleta Reach during June covered 2,994.9 $m^2$ (surface area) of water. Fish densities (all species combined) at the sampling sites ranged from 23.2 to 207.4 individuals per 100 $m^2$ sampled. There were 10 fish species collected in the Isleta Reach during June. Red Shiner was the most abundant taxon (n = 2,362), followed by Flathead Chub (n = 323), and Western Mosquitofish (n = 265). We collected Rio Grande Silvery Minnow (n = 15) in 11 of the 103 seine hauls that yielded fish, and its site-specific densities ranged from 0.0 to 1.0 individuals per 100 $m^2$.

### *San Acacia Reach*

From 16 May to 15 June, provisional mean daily discharge at San Acacia (Rio Grande Floodway at San Acacia, NM; USGS Gage 08354900) was generally higher (average = 85.9; range = 44–217 $ft^3/s$) than at San Marcial (Rio Grande Floodway at San Marcial, NM; USGS Gage 08358400) during the same period (average = 23.3; range = 17–35 $ft^3/s$). Water temperatures in June for the San Acacia Reach ranged from 23.4 to 35.8 ºC (ca. 0930–1600 h). Secchi disk measurements ranged from 2 to 52 cm during sampling.

Population monitoring efforts in the San Acacia Reach during June yielded 5,941 individuals with a cumulative fish density of 178.7 individuals per 100 $m^2$ sampled. Sampling in the San Acacia Reach covered an area of 3,325.2 $m^2$ of water. Fish densities (all species combined) ranged from 60.9 to 1,563.1 individuals per 100 $m^2$ at sites sampled in the San Acacia Reach. In June, there were 16 fish species collected in the San Acacia Reach. Red Shiner was the most abundant taxon (n = 4,807), followed by Common Carp (n = 383), and Western Mosquitofish (n = 320). We collected Rio Grande Silvery Minnow (n = 102) in 20 of the 119 seine hauls that yielded fish, and its site-specific densities ranged from 0.0 to 38.9 individuals per 100 $m^2$.

### *All Sites*

During June, sampling covered 8,943.1 $m^2$ (surface area) of water and yielded 10,297 fish. There were no dry sampling sites. Cumulative fish density during June was 115.14 individuals per 100 $m^2$ sampled. The three most common species were Red Shiner (n = 7,308), Western Mosquitofish (n = 605), and Flathead Chub (n = 533). The sampling sites yielded a total of 17 fish species.

Rio Grande Silvery Minnow was present in 36 of the 293 seine hauls that yielded fish and at 15 of the 20 sampling sites. Densities of unmarked and marked individuals were 1.35 (n = 121) and 0.02 (n = 2) individuals per 100 $m^2$ sampled, respectively. Densities of age-0, age-1, and age-2+ individuals were 0.03 (n = 3), 1.30 (n = 116), and 0.04 (n = 4) individuals per 100 $m^2$ sampled, respectively. Based on all June surveys since 1993, the overall density of Rio Grande Silvery Minnow averaged 11.29 (range = 0.07–104.32) individuals per 100 $m^2$ sampled. During June 2020, its overall density was 1.38 (n = 123) individuals per 100 $m^2$ sampled.

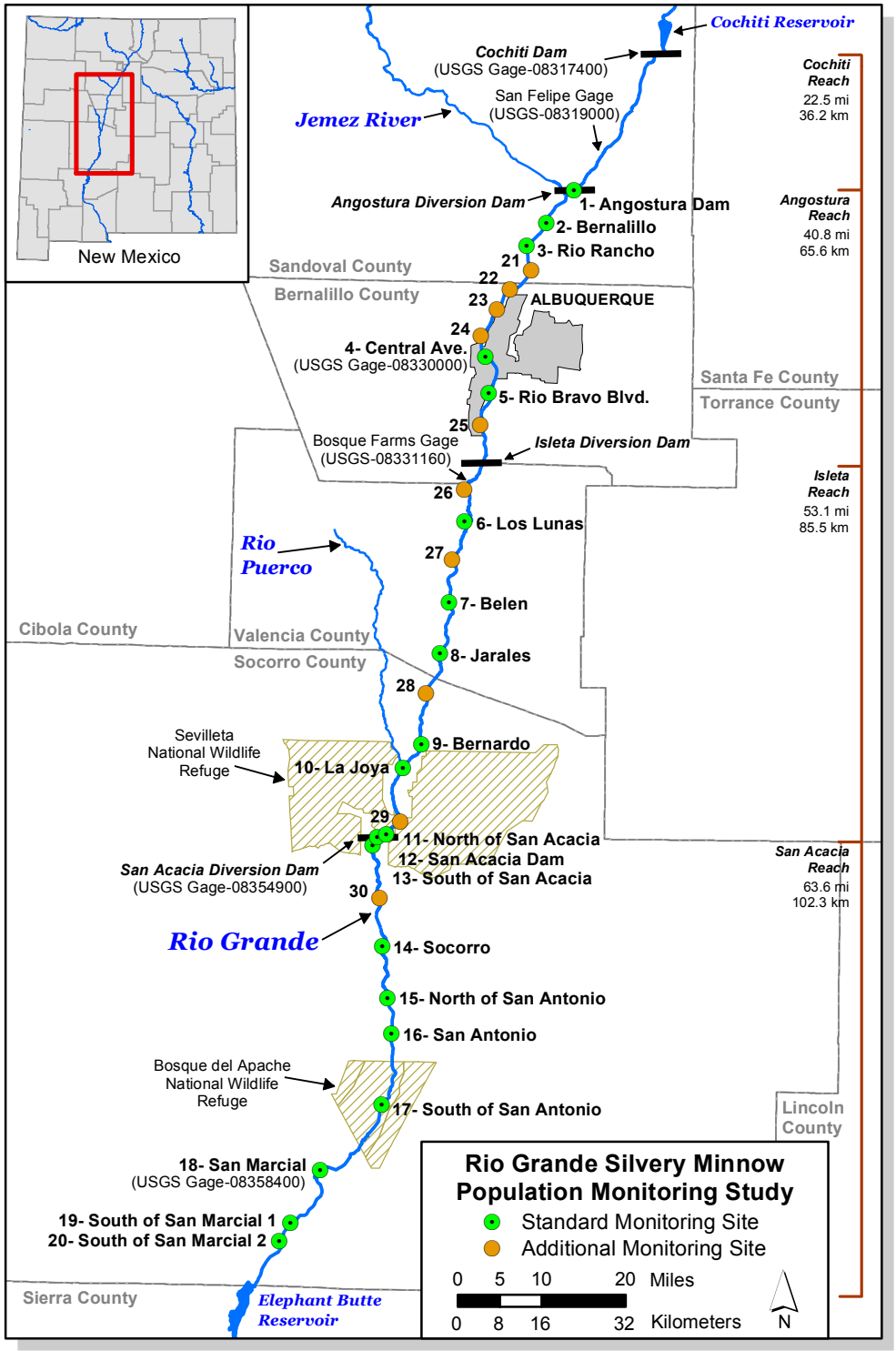


Figure 1. Map of the study area, standard sites, and additional sites for the Rio Grande Silvery Minnow population monitoring study. Sampling site descriptions are provided in Appendix A.

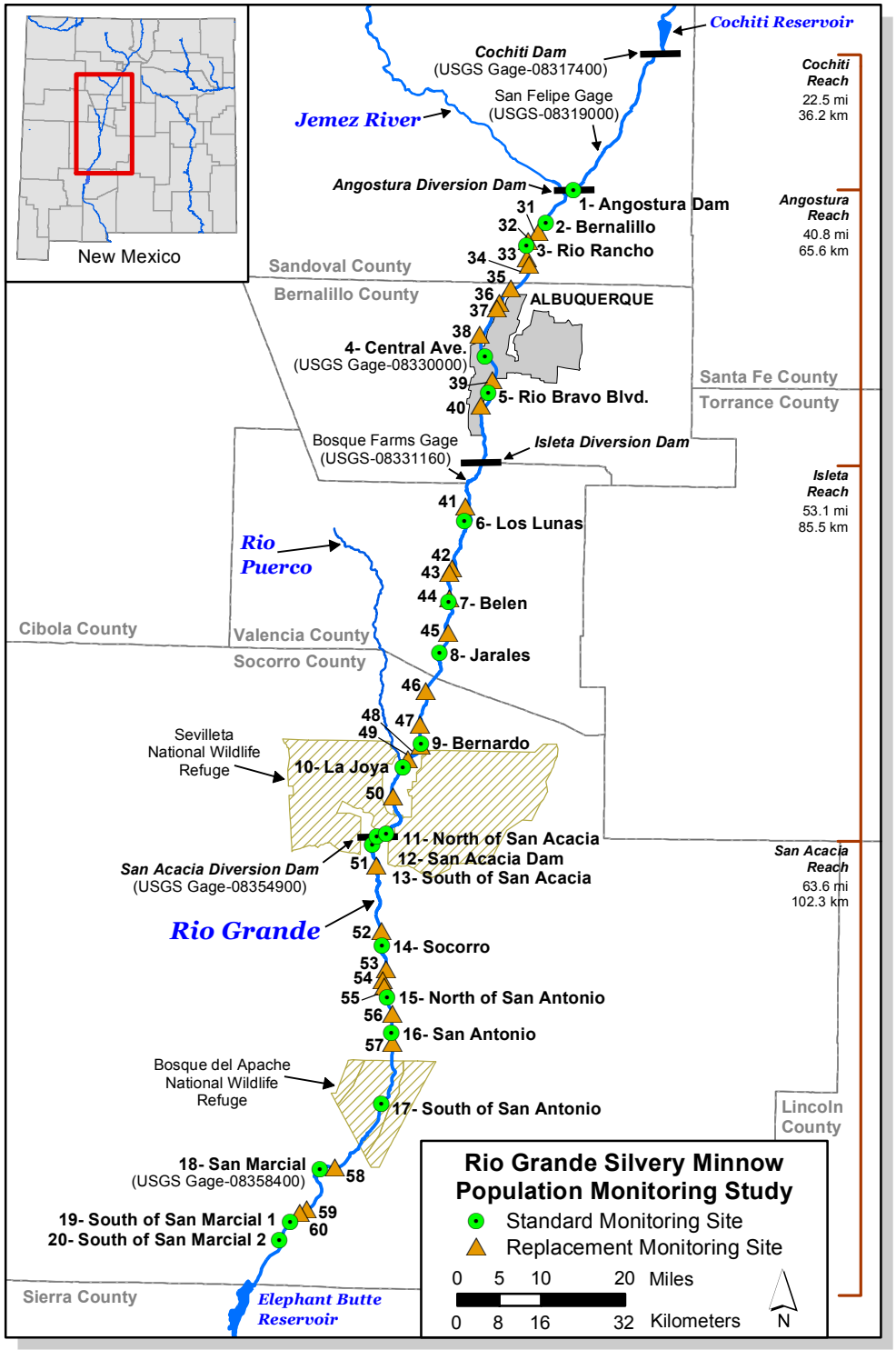


Figure 2. Map of the study area, standard sites, and replacement sites for the Rio Grande Silvery Minnow population monitoring study. Sampling site descriptions are provided in Appendix A.

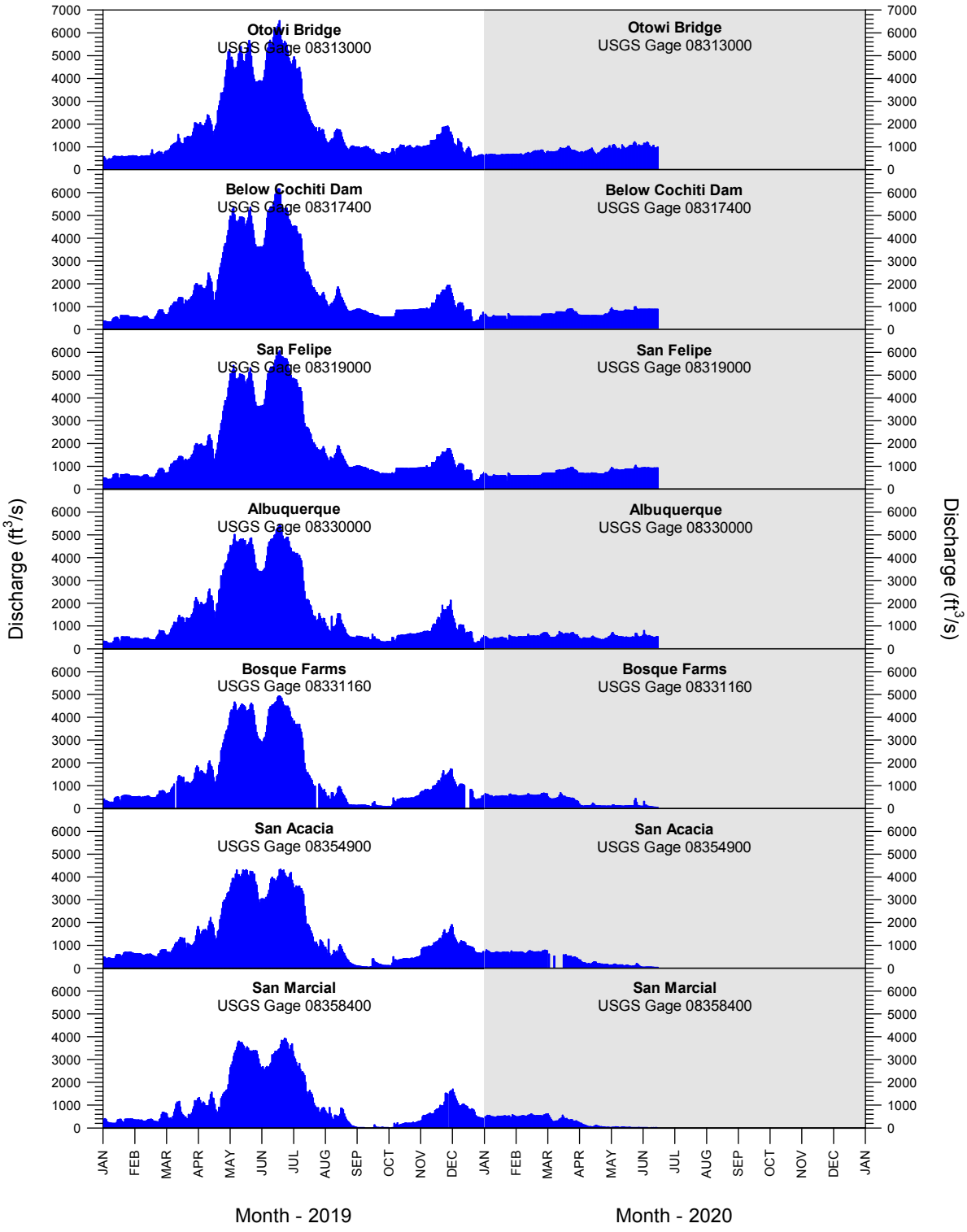


Figure 3. Rio Grande mean-daily discharge, by U.S. Geological Survey (USGS) gaging station, from 1 January 2019 to 15 June 2020. All discharge data are provisional and subject to change.

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** | |
| *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) |
| **Family Loricariidae** | **suckermouth armored catfishes** | |
| *Pterygoplichthys disjunctivus* | Vermiculated Sailfin Catfish | (PTEDIS) |
| **Order Salmoniformes** | | |
| **Family Salmonidae** | **trouts and salmons** | |
| *Oncorhynchus mykiss* | Rainbow Trout | (ONCMYK) |
| *Salmo trutta* | 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** | |
| *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 gulosus* | Warmouth | (LEPGUL) |
| *Lepomis macrochirus* | Bluegill | (LEPMAC) |
| *Lepomis megalotis* | Longear Sunfish | (LEPMEG) |
| *Micropterus punctulatus* | Spotted Bass | (MICPUN) |
| *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) |
| **Family Sciaenidae** | **drums and croakers** | |
| *Aplodinotus grunniens* | 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 June 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 | - | - | - | - | 1 | 1 |
| Angostura | 2 | Bernalillo | | - | 2 | - | - | 2 |
| Angostura | 3 | Rio Rancho | | | | - | - | 0 |
| Angostura | 4 | Central Ave. | - | | - | - | - | 0 |
| Angostura | 5 | Rio Bravo Blvd. | - | 1 | | - | 2 | 3 |
| *Angostura Totals* | | | - | *1* | *2* | - | *3* | *6* |
| Isleta | 6 | Los Lunas | - | - | - | - | 1 | 1 |
| Isleta | 7 | Belen | - | - | - | - | 1 | 1 |
| Isleta | 8 | Jarales | | - | 3 | - | 1 | 4 |
| Isleta | 9 | Bernardo | | - | - | 4 | 1 | 5 |
| Isleta | 10 | La Joya | - | - | 3 | - | 1 | 4 |
| Isleta | 11 | North of San Acacia | | | - | - | - | 0 |
| *Isleta Totals* | | | - | - | *6* | *4* | *5* | *15* |
| San Acacia | 12 | San Acacia Dam | - | 10 | 4 | 15 | 2 | 31 |
| San Acacia | 13 | South of San Acacia | - | 1 | - | 1 | 3 | 5 |
| San Acacia | 14 | Socorro | | - | - | 2 | - | 2 |
| San Acacia | 15 | North of San Antonio | | 50 | | | | 50 |
| San Acacia | 16 | San Antonio | | 2 | | | | 2 |
| San Acacia | 17 | South of San Antonio | | 11 | | | | 11 |
| San Acacia | 18 | San Marcial | - | - | - | - | - | 0 |
| San Acacia | 19 | South of San Marcial 1 | - | - | - | - | - | 0 |
| San Acacia | 20 | South of San Marcial 2 | - | | - | | 1 | 1 |
| *San Acacia Totals* | | | - | *74* | *4* | *18* | *6* | *102* |
| **Monthly Totals** | | | **-** | **75** | **12** | **22** | **14** | **123** |

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 |
| Angostura | 2 | Bernalillo | 4(0) | - | 2(0) | - | - | - | - | 6 |
| Angostura | 3 | Rio Rancho | 8(0) | 1(0) | - | - | - | - | - | 9 |
| 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) | - | - | - | - | - | 4 |
| Angostura | 5 | Rio Bravo Blvd. | 5(0) | 2(0) | 3(0) | - | - | - | - | 10 |
| Angostura | 25 | Site 25 | - | | | | | | - | 0 |
| *Angostura Totals* | | | *137* | *4* | *6* | - | - | - | - | *147* |
| Isleta | 26 | Site 26 | 5(0) | | | | | | - | 5 |
| Isleta | 6 | Los Lunas | 11(0) | 1(0) | 1(0) | - | - | - | - | 13 |
| Isleta | 27 | Site 27 | 14(0) | | | | | | - | 14 |
| Isleta | 7 | Belen | 5(0) | 1(0) | 1(0) | - | - | - | - | 7 |
| Isleta | 8 | Jarales | 1(0) | 4(0) | 4(0) | - | - | - | - | 9 |
| Isleta | 28 | Site 28 | 6(0) | | | | | | - | 6 |
| Isleta | 9 | Bernardo | 7(0) | 4(0) | 5(0) | - | - | - | - | 16 |
| Isleta | 10 | La Joya | 1(0) | 1(0) | 4(0) | - | - | - | - | 6 |
| Isleta | 29 | Site 29 | 4(0) | | | | | | - | 4 |
| Isleta | 11 | North of San Acacia | 4(0) | 1(0) | - | - | - | - | - | 5 |
| *Isleta Totals* | | | *58* | *12* | *15* | - | - | - | - | *85* |
| San Acacia | 12 | San Acacia Dam | 9(0) | 10(0) | 31(0) | - | - | - | - | 50 |
| San Acacia | 13 | South of San Acacia | 12(0) | 6(0) | 5(0) | - | - | - | - | 23 |
| San Acacia | 30 | Site 30 | 7(0) | | | | | | - | 7 |
| San Acacia | 14 | Socorro | 16(6) | 7(1) | 2(0) | - | - | - | - | 25 |
| San Acacia | 15 | North of San Antonio | 4(0) | 3(0) | 50(2) | - | - | - | - | 57 |
| San Acacia | 16 | San Antonio | 7(0) | 3(0) | 2(0) | - | - | - | - | 12 |
| San Acacia | 17 | South of San Antonio | 10(0) | 3(0) | 11(0) | - | - | - | - | 24 |
| San Acacia | 18 | San Marcial | 4(0) | - | - | - | - | - | - | 4 |
| San Acacia | 19 | South of San Marcial 1 | 4(0) | 2(0) | - | - | - | - | - | 6 |
| San Acacia | 20 | South of San Marcial 2 | 2(0) | - | 1(0) | - | - | - | - | 3 |
| *San Acacia Totals* | | | *75* | *34* | *102* | - | - | - | - | *211* |
| **Monthly Totals** | | | **270** | **50** | **123** | **-** | **-** | **-** | **-** | **443** |

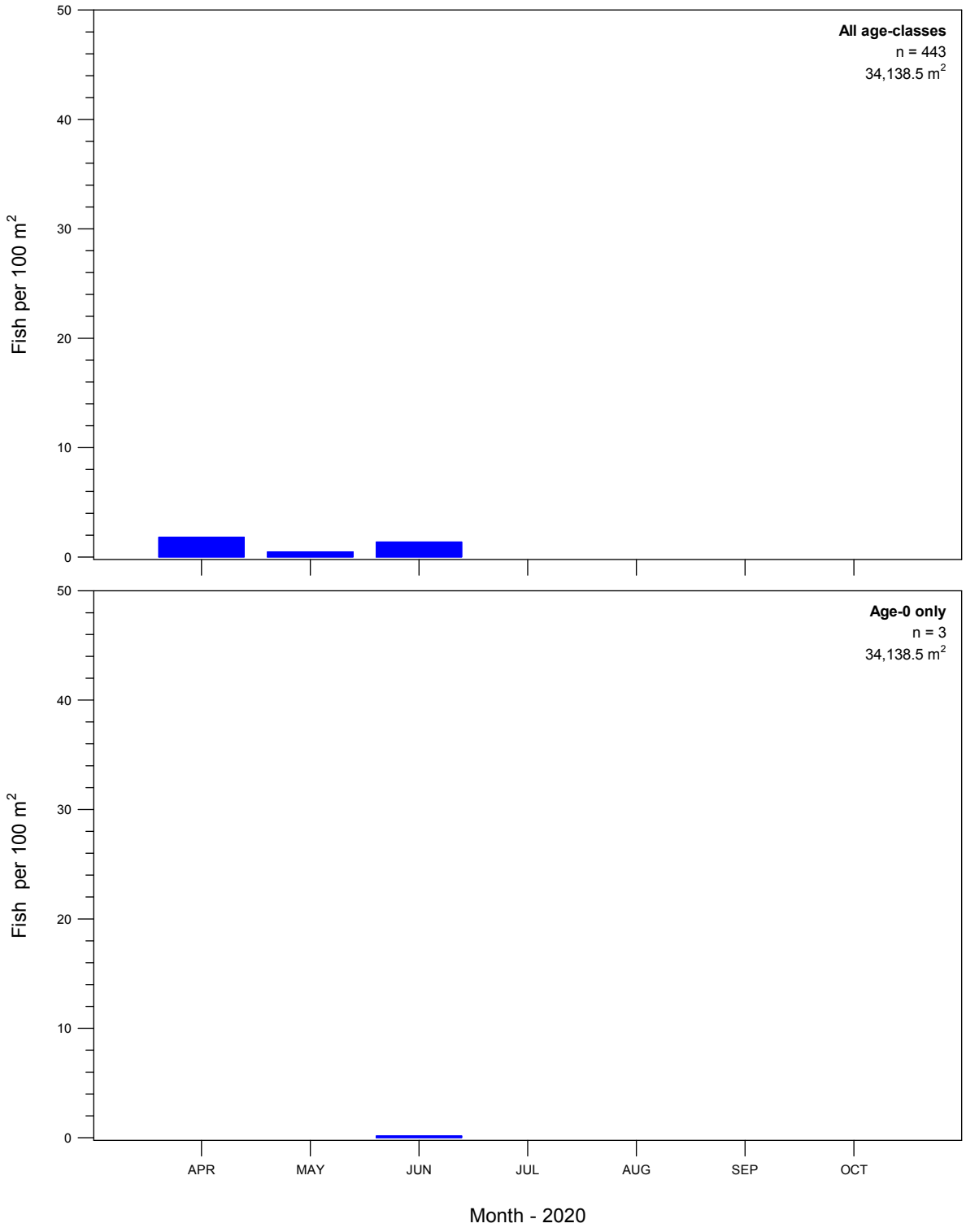


Figure 4. Rio Grande Silvery Minnow densities based on all sites, by age-class and month, during 2020. Marked and unmarked individuals were included.

Table 4. Ichthyofaunal summary based on standard sites, by species, during June 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 | 8 | 0.08 | 2 | 10.00 |
| Clupeidae | Threadfin Shad | I | - | - | - | - |
| Cyprinidae | Central Stoneroller | I | - | - | - | - |
| Cyprinidae | Goldfish | I | - | - | - | - |
| Cyprinidae | Red Shiner | N | 7,308 | 70.97 | 20 | 100.00 |
| Cyprinidae | Common Carp | I | 433 | 4.21 | 16 | 80.00 |
| Cyprinidae | Rio Grande Chub | N | - | - | - | - |
| Cyprinidae | Rio Grande Silvery Minnow | N | 123 | 1.19 | 15 | 75.00 |
| Cyprinidae | Golden Shiner | I | - | - | - | - |
| Cyprinidae | Fathead Minnow | N | 433 | 4.21 | 17 | 85.00 |
| Cyprinidae | Bullhead Minnow | I | - | - | - | - |
| Cyprinidae | Flathead Chub | N | 533 | 5.18 | 13 | 65.00 |
| Cyprinidae | Longnose Dace | N | 61 | 0.59 | 7 | 35.00 |
| Catostomidae | River Carpsucker | N | 386 | 3.75 | 18 | 90.00 |
| Catostomidae | White Sucker | I | 365 | 3.54 | 9 | 45.00 |
| Catostomidae | Smallmouth Buffalo | N | 2 | 0.02 | 2 | 10.00 |
| Ictaluridae | Black Bullhead | I | - | - | - | - |
| Ictaluridae | Yellow Bullhead | I | 5 | 0.05 | 1 | 5.00 |
| Ictaluridae | Blue Catfish | N | 1 | 0.01 | 1 | 5.00 |
| Ictaluridae | Channel Catfish | I | 26 | 0.25 | 7 | 35.00 |
| Ictaluridae | Flathead Catfish | N | - | - | - | - |
| Loricariidae | Vermiculated Sailfin Catfish | I | - | - | - | - |
| Salmonidae | Rainbow Trout | I | - | - | - | - |
| Salmonidae | Brown Trout | I | - | - | - | - |
| Poeciliidae | Western Mosquitofish | I | 605 | 5.88 | 16 | 80.00 |
| Moronidae | White Bass | I | 2 | 0.02 | 2 | 10.00 |
| Moronidae | Striped Bass | I | - | - | - | - |
| Centrarchidae | Green Sunfish | I | - | - | - | - |
| Centrarchidae | Bluegill | I | - | - | - | - |
| Centrarchidae | Longear Sunfish | I | - | - | - | - |
| Centrarchidae | Smallmouth Bass | I | - | - | - | - |
| Centrarchidae | Largemouth Bass | I | 5 | 0.05 | 4 | 20.00 |
| Centrarchidae | White Crappie | I | 1 | 0.01 | 1 | 5.00 |
| Centrarchidae | Black Crappie | I | - | - | - | - |
| Percidae | Yellow Perch | I | - | - | - | - |
| Percidae | Bigscale Logperch | I | - | - | - | - |
| Percidae | Walleye | I | - | - | - | - |
| Sciaenidae | Freshwater Drum | N | - | - | - | - |
| **Monthly Total** | | | **10,297** | **100.00** | | |

[1] = N (native); I (introduced)
[2] = Frequency and % frequency of occurrence were based on standard sites.

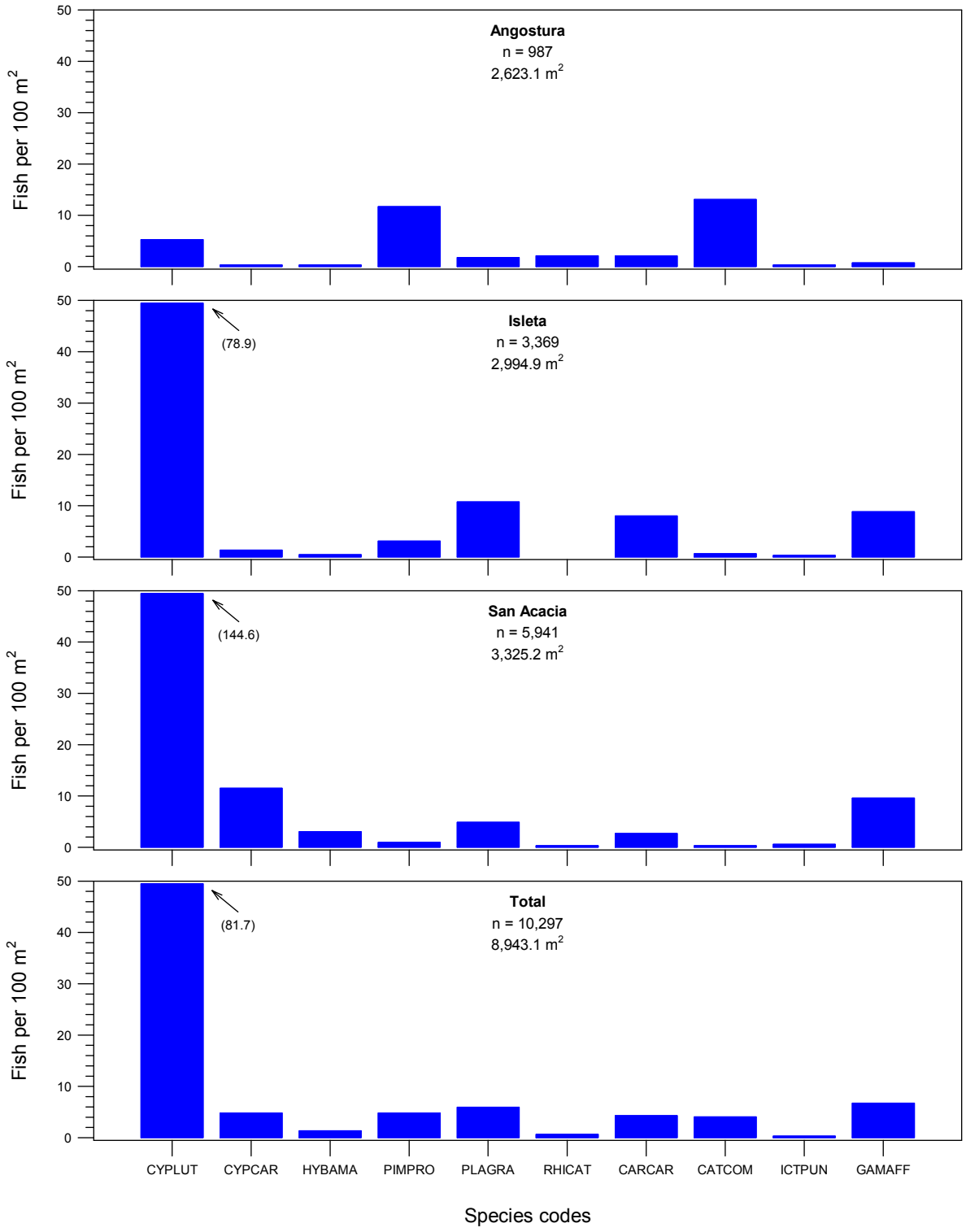


Figure 5. Fish densities based on standard sites, by reach and focal taxa, during June 2020. Marked and unmarked Rio Grande Silvery Minnow were included.

Table 5. 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 | - | - | - | - | 14 |
| Clupeidae | Threadfin Shad | - | - | - | - | - | - | - | 0 |
| Cyprinidae | Central Stoneroller | - | - | - | - | - | - | - | 0 |
| Cyprinidae | Goldfish | - | - | - | - | - | - | - | 0 |
| Cyprinidae | Red Shiner | 2,618 | 1,622 | 7,308 | - | - | - | - | 11,548 |
| Cyprinidae | Common Carp | 33 | 18 | 433 | - | - | - | - | 484 |
| Cyprinidae | Rio Grande Chub | - | - | - | - | - | - | - | 0 |
| Cyprinidae | Rio Grande Silvery Minnow | 270 | 50 | 123 | - | - | - | - | 443 |
| Cyprinidae | Golden Shiner | - | - | - | - | - | - | - | 0 |
| Cyprinidae | Fathead Minnow | 21 | 69 | 433 | - | - | - | - | 523 |
| Cyprinidae | Bullhead Minnow | - | - | - | - | - | - | - | 0 |
| Cyprinidae | Flathead Chub | 349 | 221 | 533 | - | - | - | - | 1,103 |
| Cyprinidae | Longnose Dace | 83 | 33 | 61 | - | - | - | - | 177 |
| Catostomidae | River Carpsucker | 1 | 55 | 386 | - | - | - | - | 442 |
| Catostomidae | White Sucker | 4 | 945 | 365 | - | - | - | - | 1,314 |
| Catostomidae | Smallmouth Buffalo | - | 1 | 2 | - | - | - | - | 3 |
| Ictaluridae | Black Bullhead | - | - | - | - | - | - | - | 0 |
| Ictaluridae | Yellow Bullhead | - | - | 5 | - | - | - | - | 5 |
| Ictaluridae | Blue Catfish | 1 | 10 | 1 | - | - | - | - | 12 |
| Ictaluridae | Channel Catfish | 157 | 50 | 26 | - | - | - | - | 233 |
| Ictaluridae | Flathead Catfish | - | - | - | - | - | - | - | 0 |
| Loricariidae | Vermiculated Sailfin Catfish | - | - | - | - | - | - | - | 0 |
| Salmonidae | Rainbow Trout | - | - | - | - | - | - | - | 0 |
| Salmonidae | Brown Trout | - | - | - | - | - | - | - | 0 |
| Poeciliidae | Western Mosquitofish | 10 | 34 | 605 | - | - | - | - | 649 |
| Moronidae | White Bass | 1 | 3 | 2 | - | - | - | - | 6 |
| Moronidae | Striped Bass | - | - | - | - | - | - | - | 0 |
| Centrarchidae | Green Sunfish | - | - | - | - | - | - | - | 0 |
| Centrarchidae | Bluegill | - | 1 | - | - | - | - | - | 1 |
| Centrarchidae | Longear Sunfish | - | - | - | - | - | - | - | 0 |
| Centrarchidae | Smallmouth Bass | - | - | - | - | - | - | - | 0 |
| Centrarchidae | Largemouth Bass | 1 | 1 | 5 | - | - | - | - | 7 |
| Centrarchidae | White Crappie | 4 | - | 1 | - | - | - | - | 5 |
| Centrarchidae | Black Crappie | - | - | - | - | - | - | - | 0 |
| Percidae | Yellow Perch | - | - | - | - | - | - | - | 0 |
| Percidae | Bigscale Logperch | - | - | - | - | - | - | - | 0 |
| Percidae | Walleye | - | - | - | - | - | - | - | 0 |
| Sciaenidae | Freshwater Drum | - | - | - | - | - | - | - | 0 |
| **Monthly Totals** | | **3,555** | **3,117** | **10,297** | **-** | **-** | **-** | **-** | **16,969** |

## 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 |
|---|---|
| **San Acacia Reach** | |
| 52 | New Mexico, Socorro County, Rio Grande, ca. 2.2 mi. downstream of Pueblitos Rd. bridge crossing, Escondida.<br>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.<br>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.<br>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.<br>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.<br>River Mile: 70.1; UTM Easting: 318083; UTM Northing: 3728535; Zone: 13; Datum: NAD83 |
| 60 | New Mexico, Socorro County, Rio Grande, ca. 6.4 mi. downstream of San Marcial Railroad bridge crossing, San Marcial.<br>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 June 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
## June 2020

NEW MEXICO: SANDOVAL County, RIO GRANDE Drainage **RKD20-068**
Rio Grande, just downstream of Angostura Diversion Dam, Algodones.

Site Number: 1 River Mile: 209.9 05 June 2020
UTM Easting: 363665 UTM Northing: 3916331 Zone: 13 Quad: San Felipe Pueblo
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 458.7 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 30 |
| 76 | *Hybognathus amarus** | 1 |
| 76 | *Pimephales promelas* | 22 |
| 76 | *Platygobio gracilis* | 4 |
| 76 | *Rhinichthys cataractae* | 28 |
| 81 | *Carpiodes carpio* | 5 |
| 81 | *Catostomus commersonii* | 158 |
| 212 | *Gambusia affinis* | 6 |

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

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

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: SANDOVAL County, RIO GRANDE Drainage **RKD20-069**
Rio Grande, at US HWY 550 bridge crossing, Bernalillo.

Site Number: 2 River Mile: 203.9 05 June 2020
UTM Easting: 358457 UTM Northing: 3909887 Zone: 13 Quad: Bernalillo
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 570.0 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 11 |
| 76 | *Hybognathus amarus** | 2 |
| 76 | *Platygobio gracilis* | 11 |
| 76 | *Rhinichthys cataractae* | 7 |
| 81 | *Catostomus commersonii* | 96 |
| 93 | *Ictalurus punctatus* | 1 |

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

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

NEW MEXICO: SANDOVAL County, RIO GRANDE Drainage **RKD20-070**
Rio Grande, ca. 4.0 mi downstream of US HWY 550 bridge crossing, Rio Rancho.

Site Number: 3 River Mile: 199.9 05 June 2020
UTM Easting: 354728 UTM Northing: 3905587 Zone: 13 Quad: Bernalillo
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 541.5 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 4 |
| 76 | *Pimephales promelas* | 16 |
| 76 | *Platygobio gracilis* | 8 |
| 76 | *Rhinichthys cataractae* | 19 |
| 81 | *Catostomus commersonii* | 48 |
| 212 | *Gambusia affinis* | 1 |

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: BERNALILLO County, RIO GRANDE Drainage **RKD20-067**
Rio Grande, at Central Ave. bridge crossing (US HWY 66), Albuquerque.

Site Number: 4 River Mile: 183.4 04 June 2020
UTM Easting: 346719 UTM Northing: 3884331 Zone: 13 Quad: Albuquerque West
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 549.7 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 17 |
| 76 | *Cyprinus carpio* | 1 |
| 76 | *Pimephales promelas* | 6 |
| 76 | *Platygobio gracilis* | 24 |
| 76 | *Rhinichthys cataractae* | 1 |
| 81 | *Carpiodes carpio* | 44 |
| 81 | *Catostomus commersonii* | 30 |
| 212 | *Gambusia affinis* | 2 |

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: BERNALILLO County, RIO GRANDE Drainage **RKD20-066**
Rio Grande, at Rio Bravo Blvd. bridge crossing (NM State HWY 500), Albuquerque.

Site Number: 5 River Mile: 178.4 04 June 2020
UTM Easting: 347468 UTM Northing: 3877400 Zone: 13 Quad: Albuquerque West
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 503.2 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 77 |
| 76 | *Cyprinus carpio* | 8 |
| 76 | *Hybognathus amarus** | 3 |
| 76 | *Pimephales promelas* | 263 |
| 76 | *Rhinichthys cataractae* | 1 |
| 81 | *Carpiodes carpio* | 6 |
| 81 | *Catostomus commersonii* | 12 |
| 212 | *Gambusia affinis* | 11 |
| 283 | *Morone chrysops* | 1 |
| 294 | *Micropterus salmoides* | 2 |

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

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

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: VALENCIA County, RIO GRANDE Drainage **RKD20-065**
Rio Grande, just upstream of NM State HWY 6 bridge crossing, Los Lunas.

Site Number: 6 River Mile: 161.7 04 June 2020
UTM Easting: 343149 UTM Northing: 3853187 Zone: 13 Quad: Los Lunas
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 475.4 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 398 |
| 76 | *Cyprinus carpio* | 7 |
| 76 | *Hybognathus amarus** | 1 |
| 76 | *Pimephales promelas* | 47 |
| 81 | *Carpiodes carpio* | 20 |
| 212 | *Gambusia affinis* | 85 |

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

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

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: VALENCIA County, RIO GRANDE Drainage **RKD20-064**
Rio Grande, ca. 1.0 mi upstream of NM State HWY 309 bridge crossing, Belen.

Site Number: 7 River Mile: 150.8 04 June 2020
UTM Easting: 340105 UTM Northing: 3837722 Zone: 13 Quad: Tome
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 491.0 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 77 |
| 76 | *Cyprinus carpio* | 8 |
| 76 | *Hybognathus amarus** | 1 |
| 76 | *Pimephales promelas* | 24 |
| 81 | *Carpiodes carpio* | 118 |
| 93 | *Ictalurus punctatus* | 1 |
| 212 | *Gambusia affinis* | 31 |
| 294 | *Micropterus salmoides* | 1 |

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

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

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: VALENCIA County, RIO GRANDE Drainage **RKD20-063**
Rio Grande, ca. 2.2 mi upstream of NM State HWY 346 bridge crossing, Jarales.

Site Number: 8 River Mile: 143.2 03 June 2020
UTM Easting: 338020 UTM Northing: 3827545 Zone: 13 Quad: Veguita
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 542.8 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 91 |
| 76 | *Cyprinus carpio* | 1 |
| 76 | *Hybognathus amarus** | 4 |
| 76 | *Pimephales promelas* | 4 |
| 76 | *Platygobio gracilis* | 1 |
| 81 | *Carpiodes carpio* | 23 |
| 93 | *Ictalurus punctatus* | 2 |

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

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

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-062**
Rio Grande, at US HWY 60 bridge crossing, Bernardo.

Site Number: 9 River Mile: 130.6 03 June 2020
UTM Easting: 334578 UTM Northing: 3809921 Zone: 13 Quad: Abeytas
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 521.8 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 1017 |
| 76 | *Cyprinus carpio* | 14 |
| 76 | *Hybognathus amarus** | 5 |
| 76 | *Pimephales promelas* | 11 |
| 81 | *Carpiodes carpio* | 17 |
| 81 | *Catostomus commersonii* | 3 |
| 93 | *Ictalurus punctatus* | 2 |
| 212 | *Gambusia affinis* | 12 |
| 294 | *Micropterus salmoides* | 1 |

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

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

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-061**
Rio Grande, ca. 3.7 mi downstream of US HWY 60 bridge crossing, Bernardo.

Site Number: 10 River Mile: 126.8 03 June 2020
UTM Easting: 330946 UTM Northing: 3805307 Zone: 13 Quad: Abeytas
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 499.6 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 519 |
| 76 | *Cyprinus carpio* | 3 |
| 76 | *Hybognathus amarus** | 4 |
| 76 | *Pimephales promelas* | 4 |
| 81 | *Carpiodes carpio* | 2 |
| 81 | *Catostomus commersonii* | 5 |
| 212 | *Gambusia affinis* | 133 |

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

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

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-060**
Rio Grande, ca. 1.2 mi upstream of San Acacia Diversion Dam, San Acacia.

Site Number: 11 River Mile: 117.3 03 June 2020
UTM Easting: 328152 UTM Northing: 3792564 Zone: 13 Quad: La Joya
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 464.4 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 260 |
| 76 | *Cyprinus carpio* | 8 |
| 76 | *Pimephales promelas* | 4 |
| 76 | *Platygobio gracilis* | 322 |
| 81 | *Carpiodes carpio* | 61 |
| 81 | *Catostomus commersonii* | 12 |
| 212 | *Gambusia affinis* | 4 |
| 294 | *Micropterus salmoides* | 1 |

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-059**
Rio Grande, just downstream of San Acacia Diversion Dam, San Acacia.

Site Number: 12 River Mile: 115.6 02 June 2020
UTM Easting: 325960 UTM Northing: 3792183 Zone: 13 Quad: San Acacia
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 489.7 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 235 |
| 76 | *Cyprinus carpio* | 3 |
| 76 | *Hybognathus amarus** | 31 |
| 76 | *Platygobio gracilis* | 121 |
| 76 | *Rhinichthys cataractae* | 2 |
| 81 | *Carpiodes carpio* | 6 |
| 283 | *Morone chrysops* | 1 |

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

| | |
|---|---|
| age-0 | |
| age-1 | 29 |
| age-2+ | 2 |

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-058**
Rio Grande, ca. 1.5 mi downstream of San Acacia Diversion Dam, San Acacia.

Site Number: 13 River Mile: 114.1 02 June 2020
UTM Easting: 325390 UTM Northing: 3790397 Zone: 13 Quad: Lemitar
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 521.4 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 1545 |
| 76 | *Cyprinus carpio* | 293 |
| 76 | *Hybognathus amarus** | 5 |
| 76 | *Pimephales promelas* | 3 |
| 76 | *Platygobio gracilis* | 25 |
| 81 | *Carpiodes carpio* | 21 |
| 81 | *Ictiobus bubalus* | 1 |
| 212 | *Gambusia affinis* | 107 |

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

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

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-057**
Rio Grande, ca. 0.5 mi upstream of Socorro Low Flow Conveyance Channel bridge crossing, Socorro.
Site Number: 14 River Mile: 99.6 02 June 2020
UTM Easting: 327231 UTM Northing: 3771432 Zone: 13 Quad: Loma de las Canas
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 474.4 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 296 |
| 76 | *Cyprinus carpio* | 2 |
| 76 | *Hybognathus amarus** | 2 |
| 76 | *Pimephales promelas* | 1 |
| 76 | *Platygobio gracilis* | 13 |
| 81 | *Carpiodes carpio* | 5 |
| 212 | *Gambusia affinis* | 12 |

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

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

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-056**
Rio Grande, ca. 4.5 mi upstream of US HWY 380 bridge crossing, San Antonio.

Site Number: 15 River Mile: 92.0 02 June 2020
UTM Easting: 328151 UTM Northing: 3761487 Zone: 13 Quad: San Antonio
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 128.4 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 747 |
| 76 | *Cyprinus carpio* | 20 |
| 76 | *Hybognathus amarus** | 50 |
| 76 | *Pimephales promelas* | 19 |
| 76 | *Platygobio gracilis* | 1 |
| 76 | *Rhinichthys cataractae* | 3 |
| 81 | *Carpiodes carpio* | 43 |
| 81 | *Catostomus commersonii* | 1 |
| 93 | *Ameiurus natalis* | 5 |
| 93 | *Ictalurus punctatus* | 3 |
| 212 | *Gambusia affinis* | 1 |
| 294 | *Pomoxis annularis* | 1 |

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

| | |
|---|---|
| age-0 | |
| age-1 | 50 |
| age-2+ | |

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-055**
Rio Grande, at US HWY 380 bridge crossing, San Antonio.

Site Number: 16 River Mile: 87.8 01 June 2020
UTM Easting: 328907 UTM Northing: 3754926 Zone: 13 Quad: San Antonio
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 10.3 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 137 |
| 76 | *Cyprinus carpio* | 1 |
| 76 | *Hybognathus amarus** | 2 |
| 76 | *Pimephales promelas* | 5 |
| 81 | *Carpiodes carpio* | 7 |
| 93 | *Ictalurus punctatus* | 9 |

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

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

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-054**
Rio Grande, east of Bosque del Apache NWR headquarters, San Antonio.

Site Number: 17 River Mile: 79.0 01 June 2020
UTM Easting: 327219 UTM Northing: 3740906 Zone: 13 Quad: San Antonio SE
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 51.7 sq. m

| Family | Species | Total |
|---|---|---|
| 69 | *Dorosoma cepedianum* | 6 |
| 76 | *Cyprinella lutrensis* | 189 |
| 76 | *Cyprinus carpio* | 12 |
| 76 | *Hybognathus amarus** | 11 |
| 76 | *Pimephales promelas* | 1 |
| 76 | *Platygobio gracilis* | 1 |
| 81 | *Carpiodes carpio* | 4 |
| 212 | *Gambusia affinis* | 31 |

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

| | |
|---|---|
| age-0 | 3 |
| age-1 | 6 |
| age-2+ | 2 |

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-053**
Rio Grande, at San Marcial Railroad bridge crossing, San Marcial.

Site Number: 18 River Mile: 68.3 01 June 2020
UTM Easting: 315091 UTM Northing: 3728487 Zone: 13 Quad: San Marcial
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 519.4 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 487 |
| 76 | *Cyprinus carpio* | 3 |
| 81 | *Carpiodes carpio* | 1 |
| 81 | *Ictiobus bubalus* | 1 |
| 212 | *Gambusia affinis* | 24 |

# Rio Grande Silvery Minnow Population Monitoring
## June 2020

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-052**
Rio Grande, ca. 8.0 mi downstream of San Marcial Railroad bridge crossing, San Marcial.

Site Number: 19 River Mile: 60.1 01 June 2020
UTM Easting: 309441 UTM Northing: 3718309 Zone: 13 Quad: Paraje Well
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 555.0 sq. m

| Family | Species | Total |
|---|---|---|
| 76 | *Cyprinella lutrensis* | 191 |
| 76 | *Pimephales promelas* | 1 |
| 76 | *Platygobio gracilis* | 1 |
| 81 | *Carpiodes carpio* | 1 |
| 212 | *Gambusia affinis* | 144 |

NEW MEXICO: SOCORRO County, RIO GRANDE Drainage **RKD20-051**
Rio Grande, ca. 10.0 mi downstream of San Marcial Railroad bridge crossing, San Marcial.

Site Number: 20 River Mile: 58.5 01 June 2020
UTM Easting: 307767 UTM Northing: 3716360 Zone: 13 Quad: Paraje Well
R.K. Dudley, M.A. Farrington, S.L. Clark-Barkalow Effort: 575.1 sq. m

| Family | Species | Total |
|---|---|---|
| 69 | *Dorosoma cepedianum* | 2 |
| 76 | *Cyprinella lutrensis* | 980 |
| 76 | *Cyprinus carpio* | 49 |
| 76 | *Hybognathus amarus** | 1 |
| 76 | *Pimephales promelas* | 2 |
| 76 | *Platygobio gracilis* | 1 |
| 81 | *Carpiodes carpio* | 2 |
| 93 | *Ictalurus furcatus* | 1 |
| 93 | *Ictalurus punctatus* | 8 |
| 212 | *Gambusia affinis* | 1 |

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

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