

**CENTRAL ARIZONA PROJECT FISH MONITORING FINAL REPORT**

SUMMARY OF SAMPLE YEAR 2020 FISH SURVEYS IN BEHALF OF A  
LONG-TERM MONITORING PLAN FOR FISH POPULATIONS IN  
SELECTED WATERS OF THE GILA RIVER BASIN, ARIZONA

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This report summarizes fish sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona during sample year (SY) 2020 (collections over the period October 28, 2019 to July 22, 2021). Reclamation's monitoring program is a result of several biological opinions on impacts of transportation and delivery of Central Arizona Project (CAP) water from the Colorado River at Lake Havasu to the Gila River basin. Its primary intention is to establish baseline data on the presence and distribution of non-native fishes and to detect changes in species composition or distribution in the CAP aqueduct and selected river, stream, and canal reaches in Arizona.

Protocols implemented during this monitoring are provided by Clarkson (1996 a-c) and Clarkson et al. (2011), and will not be reiterated in detail here. In general, streams were stratified according to geomorphology or flow characteristics, and replicate 200-m "quantitative," fixed sampling stations were established as the source for distribution and assemblage structure data. The plan calls for electrofishing as the primary gear for this purpose, but use of other methods is encouraged if electrofishing is deemed inadequate. Following collection of quantitative data from fixed stream stations, qualitative sampling may be performed up- and/or downstream of each station to search for rare species.

In canals, sampling is more opportunistic, and is usually conducted during low flow or "dry-up" conditions. Sampling reaches are fixed, but only in the CAP canal are fixed stations sampled. For logistical reasons, pumping plant forebays are the primary source of CAP canal fishery data, and sampling there requires the use of a large array of sampling gears to be effective. Sampling in the Salt River Project (SRP) and Florence-Casa Grande (FCG) canals typically requires searches for available water and fish concentrations during flow outages, and primarily relies upon seines, dip nets, and entanglement gears for collection of fishes. SRP canals above the electrical fish barriers are sampled repeatedly with large seines and capture nearly all fishes in these short, confined reaches. See Clarkson et al. (2011) for more detailed descriptions of monitored streams and canals and the methods used to sample them.

Waters sampled during this SY 2020 monitoring were San Pedro River (SanP) downstream from the U.S. and Mexico international boundary, Gila River between Coolidge Dam and Ashurst-Hayden Diversion, Salt River between Stewart Mountain Dam and Granite Reef Diversion, CAP Canal at selected pumping plants, SRP South Canal (SRPs), SRP North (Arizona) Canal (SRPn), FCG Canal, and lower Cienega Creek (Table 1).

Comparisons are not made with data acquired during prior years of this monitoring program as reported by Clarkson (1998, 1999, 2001), Kesner and Marsh (2008, 2009), Marsh (1999, 2004a-c), and Marsh and Kesner (2004, 2005, 2006a-b, 2007a-b, 2008-2011, 2015) (available online at <https://www.usbr.gov/lc/phoenix/biology/azfish/nativefishmonitoring.html>), or with data reported under other studies of these waters (e.g., Marsh and Minckley 1982, Mueller 1996). The reader is referred to those documents for comparisons with prior years. A comprehensive list including common and scientific names and four-letter code of aquatic vertebrate taxa encountered during routine fish monitoring is provided in Table 2.

## MONITORING OVERVIEW

A total of 23 fish taxa was captured during SY 2020 monitoring (Table 3). Seven species were taken in the San Pedro River, nine in the Gila River, four in the Salt River, two in Cienega Creek, 12 in the CAP, 12 in the SRPs, four in the SRPn, and 10 in the FCG (Table 3). Four native species (17% of total taxa) were collected: Longfin Dace, Desert Sucker, Sonora Sucker, and Gila Topminnow. No native species were captured in the Gila River, Salt River, and FCG. Native species comprised 1 to 100% of all species among waterbodies where natives occurred. The remaining 19 taxa were non-native, which among waterbodies numbered between four (San Pedro River and SRPn) and 12 (CAP and SRPs) species.

Total number of fish captured varied widely among waters, reaches, and stations (Table 4), a reflection of differences in sampling effort and gear type as well as fish abundance. Canal samples were not strictly comparable because those from the SRPn, SRPs, and FCG were opportunistic and qualitative (except for samples above the electrical fish barriers on the SRP canals, which represented near-complete censuses). Monitoring in streams and rivers, and in the CAP, is designed to be quantitative and accompanied by recorded effort data, but at times may be supplemented by some qualitative sampling, which is opportunistic and is not necessarily accompanied by recorded effort.

Native fishes overall accounted for 64% of 5,658 individuals captured at all Gila River basin stations during the sample year (Table 4). The proportion of native fishes is heavily influenced by Cienega Creek because more than 53% of all fishes were captured in that stream. With the Cienega Creek catch removed, native fishes accounted for about 22% of all individuals captured. Proportion that native fishes comprised of total catch ranged from 0% (Gila River, Salt River, and FCG) to 100% (Cienega Creek). Both the SRPs and SRPn were 3% native above the electrical fish barriers; SRPs was 0% native below the barrier. The SRPn was not sampled below the electrical barrier in SY 2020; however, the canal was dry immediately below the structure during the upstream sampling effort.

Community structure differed substantially among waters, reaches, and stations (Table 4). Native Longfin Dace was the most abundant species in combined samples from San Pedro River (followed by Desert Sucker). Western Mosquitofish was the most abundant species from samples in Gila River, followed by Channel Catfish and Red Shiner. Largemouth Bass was the most abundant species from the Salt River. Longfin Dace was the most abundant species in Cienega Creek. Grass Carp and Common Carp were the most abundant fishes in the CAP. In the SRPs, Channel Catfish (followed by Largemouth Bass) was the most abundant fish above the electrical barrier, whereas Red Shiner (followed by Western Mosquitofish) was the most abundant fish below the structure. Largemouth Bass was the most abundant fish above the electrical barrier in the SRPn. In the FCG, Gizzard Shad was the most abundant fish above the barrier at China Wash, and Channel Catfish (followed by Gizzard Shad) was the most abundant fish below the structure.

There were six fish species and one reptile species captured during SY 2020 that had not been previously recorded within the specific waterbody under this monitoring program (1995 to present). Clarkson et al. 2011 also indicates negative detections of these species within the respective waterbodies since 1970 (except for Sonora Sucker and Western Mosquitofish in the CAP). Gizzard Shad were captured for the first time in both the Gila River and FCG. The species was also recently detected in the Gila River upstream of San Carlos Reservoir near Pima, AZ in July 2020 (Heidi Blasius, personal communication). Goldfish were also captured for the first time in the FCG. Inland Silverside, Western Mosquitofish, and Sonora Sucker (native) were captured for the first time in the CAP (Salt-Gila Pumping Plant forebay); however, these species have been previously documented in the Greater Phoenix Metropolitan Area and elsewhere in the Gila River basin. A Red-eared Slider was also captured for the first time in the CAP (San Xavier Pumping Plant forebay). Sailfin Molly was captured for the first time in the SRPs; however, this species has been captured upstream in the Salt River since SY 1999. Although not a new detection, Grass Carp were captured above the electrical fish barrier in the SRPs for the first time since 2004. It is possible that these fish breached the electrical fish barrier during an 8-hour 52-minute outage in 2018.

#### SAN PEDRO RIVER

*Sampling Notes and Deviations from Protocol* – Sampling was performed by Marsh & Associates (M&A) between October 20 – 22, 2020 (Table 1). Five of eight currently available stations were sampled (station 1-2-2 was eliminated from the protocol in 2005). The sites at Hughes Ranch (1-2-1) and Dudleyville (1-3-2) were dry. The site at the mouth (1-3-3) was not sampled due to ASARCO no longer allowing access to its properties for the study of threatened, endangered native or non-native species. The Three Links station (1-2-3) was adjusted approximately 2 km upstream as it was dry at the previously established location. Likewise, the station near Aravaipa Creek (1-3-1) was adjusted 200 m upstream where surface water was present. Backpack electrofishing was conducted at all wetted sites.

*Species Richness and Distribution* – Seven species were captured in the San Pedro River (Tables 5 and 6A). Six species were captured in the upper reach, one in the middle, and three in the lower. Two native fishes were encountered (Longfin Dace and Desert Sucker). Longfin Dace was found at all five sampled stations, while Desert Sucker was collected at two.

Four non-native fishes were captured in the upper reach, none in the middle, and two in the lower. Common Carp, Fathead Minnow, and Green Sunfish were found only in the upper reach. Western Mosquitofish was found in the upper and lower reaches. Native Lowland Leopard Frogs and Northern Crayfish were also present in the stream.

*Assemblage Structure* – Native Desert Sucker and Longfin Dace dominated the catch overall (79% of 556 individuals; Table 4). Longfin Dace was the most abundant species overall and was predominate in the upper and middle reach, while Western Mosquitofish was predominant in the lower reach (Table 6A). Non-native fishes represented 21% of the total catch. Western Mosquitofish was the most abundant non-native (11%), followed by Fathead Minnow (6%), Red

Shiner (3%), Green Sunfish (1%), and Common Carp (<1%). Desert Sucker and Common Carp were represented both by young-of-year (age-0) and adults (age-1+). Only age-0 Green Sunfish were detected.

## GILA RIVER

*Sampling Notes and Deviations from Protocol* – Reaches 2 through 4 were sampled by M&A between November 4 – 6, 2020 (Table 1); the upper reach (1) was not sampled in SY 2020 because permission to access the area was unavailable from the San Carlos Apache Tribe due to COVID-19 restrictions. Eight of nine currently available stations in Reaches 2 through 4 were sampled. The site near the San Pedro River (2-3-1) was not sampled due to ASARCO no longer allowing access to its properties for the study of threatened, endangered native or non-native species. In 2015, the lower-most station (2-4-3, Box-O Wash or Box Canyon) was relocated downstream to immediately upstream of Ashurst-Hayden Diversion Dam to alleviate access issues and renamed “Ashurst-Hayden Dam.” Backpack electrofishing was used at all sites.

*Species Richness and Distribution* – Nine fish species, all non-native, were captured in the Gila River (Tables 5 and 6B). Gizzard Shad were detected for the first time in the Gila River as part of this monitoring program. Eight species were taken in the upper middle reach, five in the lower middle, and five in the lower. No native species were encountered. A single specimen of Desert Sucker captured in 2006 comprises the entirety of native fish catch for the Gila River in the past 15 years (see prior year reports). Non-native Northern Crayfish were collected throughout the stream.

*Assemblage Structure* – Channel Catfish, Flathead Catfish, and Western Mosquitofish were found in all three reaches. Common Carp and Red Shiner were encountered in the upper-middle and lower-middle reaches. Gizzard Shad were found in the upper-middle and lower reaches. Fathead Minnow and Green Sunfish were only encountered in the upper-middle reach, while Bluegill was only in the lower reach. Western Mosquitofish was the most abundant species overall (55% of 501 individuals) and was predominant in the upper-middle and lower reach. Channel Catfish was second in overall abundance (21%) followed by Red Shiner (16%). Flathead Catfish and Green Sunfish each comprised 3% of the catch, and Gizzard Shad, Bluegill, and Fathead Minnow each comprised <1% of the remainder (Tables 4 and 6B). Channel Catfish, Flathead Catfish, and Green Sunfish all were represented by both age-0 and age-1+ individuals.

## SALT RIVER

*Sampling Notes and Deviations from Protocol* – Sampling was performed by M&A with assistance from Reclamation and SRP on January 21, 2021 (Table 1). Only the Granite Reef Dam (3-1-3) station was sampled. The stations at Stewart Mountain Dam (3-1-1) and Goldfield Administrative Site (3-1-2) were sampled in 2019 as part of the Gila River Basin Native Fish Long-Term Monitoring Program (Shollenberger et al. 2020). The Granite Reef Dam (3-1-3) station was sampled with a boat electrofisher, supplemented with a 150' trammel net.

*Species Richness and Distribution* – Four fish species were captured in the Salt River (Tables 5 and 6C). No new species were detected. No native species were captured. Non-native fishes detected include Bluegill, Green Sunfish, Largemouth Bass, and Western Mosquitofish.

*Assemblage Structure* –Largemouth Bass was the most abundant species captured overall (82% of 72 individuals), followed by Western Mosquitofish (11%), Green Sunfish (4%), and Bluegill (3%; Tables 4 and 6C). Largemouth Bass was represented by both age-0 and age-1+ individuals.

#### CENTRAL ARIZONA PROJECT CANAL

*Sampling Notes and Deviations from Protocol* – All seven stations were sampled by Reclamation with assistance from the Central Arizona Water Conservation District (CAWCD) and Arizona Game and Fish Department (AGFD; Table 1). Salt-Gila (4-2-1) was sampled on October 28 and 29, 2019 during a complete dry-up of the forebay to conduct preventative maintenance on the Salt River Siphon. The lower reach was sampled between November 4 – 19, 2020 and the upper reach was sampled between July 19 – 22, 2021. Boat-mounted electrofishing, minnow trapping, and trammel netting were conducted at all stations. Spin-cast angling was also conducted at San Xavier (4-3-3).

*Species Richness and Distribution* – Twelve fish species (1 native, 11 non-native) and one reptile species (1 non-native) were captured in the CAP. Inland Silverside, Western Mosquitofish, Sonora Sucker, and Red-eared Slider were detected for the first time in the CAP under this monitoring program; however, all these species have been previously documented elsewhere in the Gila River basin. Seven species were taken from the upper reach, nine from Salt-Gila (middle reach), and seven in the lower reach (Tables 5 and 6D). Grass Carp, Common Carp, Channel Catfish, and Striped Bass were captured in all reaches. Smallmouth Bass were captured in the upper and middle reaches; Largemouth Bass and Bluegill in the upper and lower reaches; Inland Silverside, Western Mosquitofish, Threadfin Shad, and Sonora Sucker in the middle reach; and Redear Sunfish and undetermined sunfish (age-0) in the lower reach. Red-eared Slider was captured in the lower reach.

*Assemblage Structure* – Grass Carp was the most abundant species captured overall (29% of 342 individuals) in the CAP, followed by Common Carp (27%), Striped Bass (14%), Largemouth Bass (7%), Bluegill (5%), undetermined sunfish (5%), Redear Sunfish (4%), Channel Catfish (3%), Smallmouth Bass (2%), Inland Silverside (2%), Sonora Sucker (<1%), Threadfin Shad (<1%), and Western Mosquitofish (<1%; Tables 4 and 6D).

In the upper reach, Grass Carp was the predominant species (39% of 75 individuals), followed by undetermined sunfish (23%) and Common Carp (21%). Striped Bass (7%), Largemouth Bass (4%), Smallmouth Bass (4%), Bluegill (1%), and Channel Catfish (1%) made up the remaining fishes captured. In the middle reach, Grass Carp (35% of 182 individuals) and Common Carp (35%) were the predominant species, followed by Striped Bass (20%). Inland Silverside (3%), Channel Catfish (3%), Smallmouth Bass (2%), Sonora Sucker (1%), Threadfin Shad (<1%), and

Western Mosquitofish (<1%) made up the remaining fishes captured. In the lower reach, Largemouth Bass was the most abundant species captured (25% of 85 individuals), followed by Bluegill (19%), Redear Sunfish (18%), Common Carp (17%), Grass Carp (11%), Striped Bass (7%), and Channel Catfish (5%).

## SRP SOUTH CANAL

*Sampling Notes and Deviations from Protocol* – Sampling was performed by Reclamation with assistance from SRP and AGFD on November 30, 2020 (Table 1). Two stations were sampled during routine monitoring: one above the electrical fish barrier and one below the fish barrier. The above barrier site was sampled with a 75-ft bag seine; six seine hauls were performed. A 30-ft bag seine was used to collect fishes immediately below the barrier, and visual surveys were conducted along the canal road to the Salt River Sand road crossing. Other stations were not sampled because there was no reach-wide outage that would have provided an opportunity to safely and effectively make collections.

*Species Richness and Distribution* – Twelve species (2 native, 10 non-native) were detected in the SRPs (Tables 5 and 6E). Sailfin Molly were detected for the first time in the SRPs under this monitoring program; however, this species has been previously detected upstream in the Salt River (Shollenberger et al. 2020). Also, Grass Carp were detected above the electrical fish barrier for the first time since 2004. It is unclear if these Grass Carp entered the canal from upstream in the Salt River or breached the electrical fish barrier from downstream. It is worth noting that the SRPs electrical fish barrier experienced an outage during a significant storm event and was offline between July 9, 2018 4:28 pm to July 10, 2018 1:20 am (Brian Moorhead, personal communication). In addition, there are no records of Grass Carp in the lower Salt River under this monitoring program.

The SRPs was subdivided into two reaches: above (one station) and below (one station) the electrical fish barrier (Table 5), although these reaches were not designated in the monitoring protocol (Clarkson 1996a). Eight species were captured above the electrical fish barrier and five were collected (or observed) below the structure. Grass Carp were encountered above and below the barrier. Desert Sucker, Sonora Sucker, Bluegill, Channel Catfish, Common Carp, Largemouth Bass, and Yellow Bullhead were only captured above the barrier, whereas Flathead Catfish, Red Shiner, Sailfin Molly, and Western Mosquitofish were only captured below the barrier. An undetermined sunfish and undetermined catfish were also observed below the barrier during visual surveys.

*Assemblage Structure* – Native fishes collectively comprised about 2% of the 221 individuals captured from the SRPs (Tables 4 and 6E). Channel Catfish was the most abundant species overall (26%) followed by Largemouth Bass (22%), Red Shiner (21%), Western Mosquitofish (14%), Grass Carp (11%), Bluegill (3%), Sailfin Molly (1%), Desert Sucker (1%), Sonora Sucker (<1%), Common Carp (<1%), Flathead Catfish (<1%), and Yellow Bullhead (<1%).

Above the fish barrier, Channel Catfish was the most abundant species captured (40% of 141 individuals), followed by Largemouth Bass (34%), Grass Carp (17%), Bluegill (4%), and Desert Sucker (2%). Sonora Sucker, Common Carp, and Yellow Bullhead made up the remaining 2% of fishes captured.

Below the fish barrier, Red Shiner was the most abundant species captured (58% of 80 individuals captured), followed by Western Mosquitofish (38%), Sailfin Molly (4%), and Flathead Catfish (1%). Grass Carp (about 52 individuals), undetermined centrarchid (1 individual), and undetermined catfish (1 individual) were also visually observed downstream of the fish barrier.

#### SRP NORTH (ARIZONA) CANAL

*Sampling Notes and Deviations from Protocol* – Sampling was performed by Reclamation with assistance from SRP and the AGFD on January 11, 2021 (Table 1). One station, located above the electrical fish barrier, was sampled during routine monitoring. No sampling was conducted below the fish barrier; however, the stretch of canal immediately below the structure was dry. Other stations were not sampled because there was no reach-wide outage that would have provided an opportunity to safely and effectively make collections. The station above the electrical fish barrier was sampled with a 75-ft bag seine; three seine hauls were performed.

*Species Richness and Distribution* – Four species (1 native, 3 non-native) were captured above the electrical fish barrier in the SRPn (Tables 5 and 6F). Fish species captured included Bluegill, Largemouth Bass, Red Shiner, and Sonora Sucker. No new species were detected.

*Assemblage Structure* – Largemouth Bass was the most abundant species captured (83% of 30 Individuals) above the electrical fish barrier in the SRPn, followed by Red Shiner (10%), Bluegill (3%), and Sonora Sucker (3%; Tables 4 and 6F).

#### FLORENCE-CASA GRANDE CANAL

*Sampling Notes and Deviations from Protocol* – Sampling was performed by Reclamation with assistance from the AGFD between October 26 – 27, 2020 (Table 1). The FCG is currently being rehabilitated and lined with concrete, and construction has been completed from Ashurst-Hayden Diversion Dam downstream to the CAP siphon crossing (the remaining canal was earthen at the time of sampling). As part of the rehabilitation, a sediment basin was constructed downstream of the diversion dam. In addition, the electrical fish barrier at China Wash was removed and replaced with a siphon structure that acts as a barrier to fish passage. Seven stations were visited during routine monitoring: two locations above China Wash (sediment basin and immediately upstream of China Wash [Mile 2.6]) and six locations below China Wash (immediately below China Wash [Mile 2.6], CAP siphon crossing [Mile 4.4], above and below the first irrigation turnout [Mile 11.4], and above and below the Pima-Lateral Canal [15.2 miles]). The sediment basin was sampled using a canoe electrofisher and minnow traps. Downstream of the sediment basin, the FCG was primarily dry with shallow pools at the



sampled locations. A combination of backpack electrofishing, straight seines, and visual surveys were used to sample these stations.

*Species Richness and Distribution* – Ten species (all non-native) were captured within the FCG (Tables 5 and 6G). Gizzard Shad and Goldfish were detected for the first time in the FCG under this monitoring program. Nine species were captured above China Wash, including Bluegill, Channel Catfish, Common Carp, Fathead Minnow, Flathead Catfish, Gizzard Shad, Goldfish, Green Sunfish, and Red Shiner. Nine species were captured below China Wash, including Western Mosquitofish and eight of the nine species captured above China Wash (excluding Fathead Minnow). Non-native Northern Crayfish were also present in the FCG.

*Assemblage Structure* – Channel Catfish was the most abundant species captured overall (34% of 758 individuals) followed by Gizzard Shad (32%), Western Mosquitofish (14%), Red Shiner (10%), Common Carp (6%), Flathead Catfish (2%), Bluegill (1%), Green Sunfish (<1%), Goldfish (<1%), and Fathead Minnow (<1%; Tables 4 and 6G).

Above China Wash, Gizzard Shad was the most abundant species captured (50% of 110 individuals) followed by Red Shiner (22%), Common Carp (10%), Channel Catfish (8%), Flathead Catfish (4%), Green Sunfish (3%), Bluegill (2%), Goldfish (1%), and Fathead Minnow (1%).

Below China Wash, Channel Catfish was the most abundant species overall (39% of 648 individuals) followed by Gizzard Shad (29%), Western Mosquitofish (17%), Red Shiner (8%), Common Carp (5%), Flathead Catfish (2%), Bluegill (1%), Green Sunfish (<1%), and Goldfish (<1%).

## CIENEGA CREEK

*Sampling Notes and Deviations from Protocol* – Sampling was performed by M&A with assistance from Pima County Office of Sustainability and Conservation on September 29, 2020 (Table 1). Two stations were sampled during routine monitoring: one at Head Cut (9-1-1) and one at Three Bridges (9-1-2). Surface water present at the Three Bridges station consisted of a small pool at the start of the station and 25 m of shallow riffle immediately upstream of the pool. Both stations were sampled using a straight seine and dip net sweeps were also used at Three Bridges. Hoop nets were used to supplement sampling in two large pools at the upstream and downstream end of the Head Cut station.

*Species Richness and Distribution* – Two species, native Longfin Dace, and Gila Topminnow, were captured in Cienega Creek (Tables 5 and 6H). Longfin Dace and Gila Topminnow were collected at both stations.

*Assemblage Structure* – Native Longfin Dace predominated the catch at Head Cut (65% of 2,956 individuals) and was the most abundant species in Cienega Creek overall (64%; of 3,033 individuals; Tables 4 and 6H). Gila Topminnow made up remainder of the catch at Head Cut (35%) and were the most abundant species at the Three Bridges (70% of 77 individuals; Table

6H). An additional 15 Longfin Dace and 12 Gila Topminnow were captured by hoop nets outside of the fixed station at Head Cut.

#### RECOMMENDATIONS

The process of acquiring authorization to access established stations should be initiated early in the sample year in attempt to ensure that all permissions are in hand when the field season begins. In dry years, a suitable alternative site has been identified for the Three Links station in the San Pedro River that has perennial surface water approximately 2 km upstream of the original established location. An attempt should be made to reacquire access to the Gila River and San Pedro River stations on ASARCO property.

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Table 1. Stream, station, date, gear type, effort, and lead entity for sampling activities conducted in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, for sample year 2020 (period 10/28/2019 to 07/21/2021). Stations are identified by 3-digit numeric codes that respectively indicate stream or canal name, reach name, (1 up- to 4 downstream), and station name (1-3 for upper, middle, and lower) (see Clarkson 1996 a-c). Where station location and name have changed from Clarkson 1996 a-c, the corrected (new) name is given. Dates are given as MM/DD/YYYY. Gear codes, names, and acronyms by category are Entrapment/Entanglement: gill net (G), trammel net (T), hoop net (H), fyke net (F), trap net (TR), minnow trap (M), shock/gill net (SGN), shock/trammel net (STN), experimental gill net (EXPG); Seining: straight seine (SS), bag seine (BS), kick seine (KS), dip net (D); Angling: spin-cast (SC), fly rod (FR), drop line (DL), trotline (TL); Electrofishing: backpack shocker (Bp), boat shocker (Ef), bank shocker (BKS); and Miscellaneous: trammel net/drifted (TND), gill net/drifted (GND), electric seine (ES), dry station (DS) and visual observation (VO). Effort is given in seconds (electrofishing), hours (entrapment/entanglement and angling gears), and haul numbers (seining gears). CAP Canal stations all are associated with pumping plants, which are named for each station, while FCG and SRP canal stations are given as approximate miles downstream from canal origin and a verbal location description.

Stream		Station	Date	Gear	Effort	Lead
San Pedro River (SanP)	1-1-1	Hereford	10/20/2020	Bp	716	M & A
	1-1-2	Lewis Springs	10/20/2020	Bp	1118	M & A
	1-1-3	Charleston	10/20/2020	Bp	1460	M & A
	1-2-1	Hughes Ranch	10/21/2020	DS	--	M & A
	1-2-3	Three Links Farm	10/21/2020	Bp	1042	M & A
	1-3-1	Aravaipa Creek	10/21/2020	Bp	573	M & A
	1-3-2	Dudleyville	10/22/2020	DS	--	M & A
Gila River (Gila)	2-2-1	Dripping Springs Wash	11/4/2020	Bp	1120	M & A
	2-2-2	Christmas	11/4/2020	Bp	864	M & A
	2-2-3	O'Carroll Canyon	11/4/2020	Bp	1082	M & A
	2-3-2	Kearny	11/5/2020	Bp	1142	M & A
	2-3-3	Kelvin	11/5/2020	Bp	512	M & A
	2-4-1	A Diamond Ranch	11/5/2020	Bp	1059	M & A
	2-4-2	Cochran	11/6/2020	Bp	746	M & A
	2-4-3	Ashurst-Hayden Dam	11/6/2020	Bp	445	M & A
Salt River (Salt)	3-1-3	Granite Reef Dam	1/21/2020	Ef	1388	M & A
	3-1-3	Granite Reef Dam	1/21/2020	T	3.5	M & A
CAP Canal (CAP)	4-1-1	Bouse Hills	7/21/2021	Ef	2269	Reclamation
	4-1-1	Bouse Hills	7/21/2021	T	109.2	Reclamation
	4-1-1	Bouse Hills	7/21/2021	M	78.2	Reclamation
	4-1-2	Little Harquahala	7/20/2021	Ef	2837	Reclamation
	4-1-2	Little Harquahala	7/20/2021	T	115.9	Reclamation
	4-1-2	Little Harquahala	7/20/2021	M	81.7	Reclamation
	4-1-3	Hassayampa	7/19/2021	Ef	2789	Reclamation
	4-1-3	Hassayampa	7/19/2021	T	112.9	Reclamation
	4-1-3	Hassayampa	7/19/2021	M	79.7	Reclamation
	4-2-1	Salt-Gila	10/28/2019	Ef	11753	Reclamation
	4-2-1	Salt-Gila	10/28/2019	T	26.7	Reclamation

Table 1. Concluded.

Stream		Station	Date	Gear	Effort	Lead
	4-3-1	Brady	11/4/2020	Ef	6746	Reclamation
	4-3-1	Brady	11/4/2020	T	57.3	Reclamation
	4-3-1	Brady	11/4/2020	M	77.6	Reclamation
	4-3-2	Red Rock	11/5/2020	Ef	2722	Reclamation
	4-3-2	Red Rock	11/5/2020	T	75.7	Reclamation
	4-3-2	Red Rock	11/5/2020	M	77.3	Reclamation
	4-3-3	San Xavier	11/18/2020	Ef	3964	Reclamation
	4-3-3	San Xavier	11/18/2020	T	78.3	Reclamation
	4-3-3	San Xavier	11/18/2020	M	80.7	Reclamation
	4-3-3	San Xavier	11/18/2020	SC	3	Reclamation
SRP South Canal (SRPs)	5-1-1	0.0 Above Fish Barrier	11/30/2020	BS	6	Reclamation
	5-2-0	0.0 Below Fish Barrier	11/30/2020	BS	2	Reclamation
	5-2-2.9	2.9 Below Fish Barrier	11/30/2020	VO	--	Reclamation
SRP North Canal (SRPn)	6-1-0	0.0 Above Fish Barrier	1/11/2021	BS	3	Reclamation
FCG Canal (FCG)	7-1-0	0.0 Below Diversion Dam	10/26/2020	Ef	2974	Reclamation
	7-1-0	0.0 Below Diversion Dam	10/26/2020	M	28	Reclamation
	7-1-2.6	2.6 Above China Wash	10/26/2020	SS	1	Reclamation
	7-1-2.6	2.6 Above China Wash	10/26/2020	VO	--	Reclamation
	7-2-2.6	2.6 Below China Wash	10/26/2020	Bp	112	Reclamation
	7-2-2.6	2.6 Below China Wash	10/26/2020	VO	--	Reclamation
	7-2-4.4	4.4 CAP Canal Crossing	10/26/2020	Bp	1017	Reclamation
	7-2-11.4	11.4 Above First Turnout	10/27/2020	Bp	453	Reclamation
	7-2-11.4	11.4 Below First Turnout	10/27/2020	Bp	409	Reclamation
	7-2-15.3	15.3 Above Pima Lateral	10/27/2020	Bp	236	Reclamation
	7-2-15.3	15.3 Below Pima Lateral	10/27/2020	Bp	729	Reclamation
Cienega Creek (Cien)	9-1-1	Head-Cut	9/29/2020	SS	24	M & A
	9-1-2	Three Bridges	9/29/2020	SS	1	M & A
	9-1-2	Three Bridges	9/29/2020	D	9	M & A

Table 2. Common and scientific names and four-letter species codes of fishes and other aquatic vertebrates encountered during routine monitoring of waters in the Gila River basin, Arizona.

<b>Common Name</b>	<b>Species Name</b>	<b>Species Code</b>
Gizzard Shad	<i>Dorosoma cepedianum</i>	DOCE
Threadfin Shad	<i>Dorosoma petenense</i>	DOPE
Bigmouth Buffalo	<i>Ictiobus cyprinella</i>	ICCY
Black Buffalo	<i>Ictiobus niger</i>	ICNI
Common Carp	<i>Cyprinus carpio</i>	CYCA
Fathead Minnow	<i>Pimephales promelas</i>	PIPR
Gila Chub	<i>Gila intermedia</i>	GIIN
Goldfish	<i>Carassius auratus</i>	CAAU
Grass Carp	<i>Ctenopharyngodon idella</i>	CTID
Loach Minnow	<i>Tiaroga cobitis</i>	TICO
Longfin Dace	<i>Agosia chrysogaster</i>	AGCH
Red Shiner	<i>Cyprinella lutrensis</i>	CYLU
Roundtail Chub	<i>Gila robusta</i>	GIRO
Speckled Dace	<i>Rhinichthys osculus</i>	RHOS
Desert Sucker	<i>Pantosteus clarkii</i>	PACL
Hybrid Sucker	<i>Pantosteus X Catostomus</i>	HYBR
Sonora Sucker	<i>Catostomus insignis</i>	CAIN
Pacu	<i>Colossoma sp</i>	COLO
Black Bullhead	<i>Ameiurus melas</i>	AMME
Channel Catfish	<i>Ictalurus punctatus</i>	ICPU
Flathead Catfish	<i>Pylodictis olivaris</i>	PYOL
Yellow Bullhead	<i>Ameiurus natalis</i>	AMNA
Rainbow Trout	<i>Oncorhynchus mykiss</i>	ONMY
Gila Topminnow	<i>Poeciliopsis occidentalis</i>	POOC
Western Mosquitofish	<i>Gambusia affinis</i>	GAAF
Sailfin Molly	<i>Poecilia latipinna</i>	POLA
Striped Bass	<i>Morone saxatilis</i>	MOSA
White Bass	<i>Morone chrysops</i>	MOCH
Yellow Bass	<i>Morone mississippiensis</i>	MOMI
Black Crappie	<i>Pomoxis nigromaculatus</i>	PONI
Bluegill	<i>Lepomis macrochirus</i>	LEMA
Green Sunfish	<i>Lepomis cyanellus</i>	LECY
Largemouth Bass	<i>Micropterus salmoides</i>	MISA
Redear Sunfish	<i>Lepomis microlophus</i>	LEMI
Smallmouth Bass	<i>Micropterus dolomieu</i>	MIDO
Undetermined or hybrid sunfish	<i>Lepomis?</i>	LEPO
Walleye	<i>Sander vitreus (Stizostedion vitreum)</i>	SAVI
Yellow Perch	<i>Perca flavescens</i>	PEFL
Blue Tilapia	<i>Oreochromis aureus (Tilapia aurea)</i>	ORAU
Mozambique Tilapia	<i>Oreochromis mossambicus (Tilapia mossambica)</i>	ORMO
Redbelly Tilapia	<i>Tilapia zilli</i>	TIZI
Undetermined cichlid	<i>Tilapia?</i>	TILA
Inland Silverside	<i>Menidia beryllina</i>	MEBE



Table 2. Concluded.

<b>Common Name</b>	<b>Species Name</b>	<b>Species Code</b>
American Bullfrog	<i>Lithobates catesbeianus (Rana catesbeiana)</i>	LICA
Lowland Leopard Frog	<i>Lithobates yavapaiensis (Rana yavapaiensis)</i>	LIYA
Sonora Mud Turtle	<i>Kinosternon sonoriense</i>	KISO
Spiny Softshell Turtle	<i>Apalone spinifera (Trionyx spinifera)</i>	APSP
Red-eared Slider	<i>Trachemys scripta elegans</i>	TRSC
Undetermined frog	<i>Lithobates? (Rana ?)</i>	LITH
Unknown fish species	<i>Unknown fish species</i>	FISH
Unknown species	<i>Unknown species</i>	UNKN

Table 3. Occurrence of fish species captured and observed during sampling activities conducted in behalf a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (period 10/28/2019 to 07/21/2021). Native fishes indicated by asterisks. Stream abbreviations are the same as in Table 1.

<b>Species</b>	<b>SanP</b>	<b>Gila</b>	<b>Salt</b>	<b>Cien</b>	<b>CAP</b>	<b>SRPs</b>	<b>SRPn</b>	<b>FCG</b>	<b>All Sites</b>
Bluegill	-	X	X	-	X	X	X	X	X
Channel Catfish	-	X	-	-	X	X	-	X	X
Common Carp	X	X	-	-	X	X	-	X	X
Desert Sucker*	X	-	-	-	-	X	-	-	X
Fathead Minnow	X	X	-	-	-	-	-	X	X
Flathead Catfish	-	X	-	-	-	X	-	X	X
Gila Topminnow*	-	-	-	X	-	-	-	-	X
Gizzard Shad	-	X	-	-	-	-	-	X	X
Goldfish	-	-	-	-	-	-	-	X	X
Grass Carp	-	-	-	-	X	X	-	-	X
Green Sunfish	X	X	X	-	-	-	-	X	X
Inland Silverside	-	-	-	-	X	-	-	-	X
Largemouth Bass	-	-	X	-	X	X	X	-	X
Longfin Dace*	X	-	-	X	-	-	-	-	X
Redear Sunfish	-	-	-	-	X	-	-	-	X
Red Shiner	X	X	-	-	-	X	X	X	X
Sailfin Molly	-	-	-	-	-	X	-	-	X
Smallmouth Bass	-	-	-	-	X	-	-	-	X
Sonora Sucker*	-	-	-	-	X	X	X	-	X
Striped Bass	-	-	-	-	X	-	-	-	X
Threadfin Shad	-	-	-	-	X	-	-	-	X
Western Mosquitofish	X	X	X	-	X	X	-	X	X
Yellow Bullhead	-	-	-	-	-	X	-	-	X
<b>Total Species</b>	<b>7</b>	<b>9</b>	<b>4</b>	<b>2</b>	<b>12</b>	<b>12</b>	<b>4</b>	<b>10</b>	<b>23</b>
Native	2	0	0	2	1	2	1	0	4
Non-native	5	9	4	0	11	10	3	10	19
% Native	29	0	0	100	8	17	25	0	17

<sup>1</sup> Total species (taxa) excludes undetermined or hybrid sunfish, which are assumed to be subsumed into the individual species.

Table 4. Total numbers of fishes captured during sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (period 10/28/2019 to 07/21/2021). Native fishes indicated by asterisks. Ab and Bb respectively indicate Above and Below electrical or physical fish barriers on SRPn, SRPs, and FCG canals. VO indicates fish were visually observed during sampling, but not captured. NS indicates not sampled during SY 2020.

Species						SRPs		SRPn	FCG		Total
	SanP	Gila	Salt	Cien	CAP	Ab	Bb	Ab	Ab	Bb	
Bluegill		1	2		17	6		1	2	7	36
Channel Catfish		105			10	57			9	251	432
Common Carp	4	2			93	1			11	31	142
Desert Sucker*	150					3					153
Fathead Minnow	44	1							1		46
Flathead Catfish		17					1		4	12	34
Gila Topminnow*				1103							1103
Gizzard Shad		3							55	187	245
Goldfish									1	1	2
Grass Carp					102	24	VO				126
Green Sunfish	5	13	3						3	1	25
Inland Silverside					6						6
Largemouth Bass			57		24	48		25			154
Longfin Dace*	406			1930							2336
Redear Sunfish					15						15
Red Shiner	18	81					46	3	24	50	222
Sailfin Molly							3				3
Smallmouth Bass					7						7
Sonora Sucker*					2	1		1			4
Striped Bass					47						47
Threadfin Shad					1						1
Western Mosquitofish	76	278	8		1		30			108	501
Yellow Bullhead						1					1
Undetermined Sunfish					17		VO				17
Undetermined Catfish							VO				0
											0
<b>Total</b>	<b>703</b>	<b>501</b>	<b>70</b>	<b>3033</b>	<b>342</b>	<b>141</b>	<b>80</b>	<b>30</b>	<b>110</b>	<b>648</b>	<b>5658</b>
<b>Total natives</b>	<b>556</b>	<b>0</b>	<b>0</b>	<b>3033</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3596</b>
<b>Total nonnatives</b>	<b>147</b>	<b>501</b>	<b>70</b>	<b>0</b>	<b>340</b>	<b>137</b>	<b>80</b>	<b>29</b>	<b>110</b>	<b>648</b>	<b>2551</b>
<b>% native</b>	<b>79</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>64</b>

Table 5. Fish species richness determined by sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (period 10/28/2019 to 07/21/2021). Species counts exclude undetermined cichlids (see notes accompanying Table 1). See Table 1 for reach and station names (see also Clarkson 1996 a-c). Distances between stations and reaches are variable. Totals for each reach (and for all reaches) followed by number of native and non-native (n/nn) species; NS indicates not sampled during SY 2020; dash (--) indicates designated reach or station does not exist on that stream/canal. Reaches along SRPn, SRPs, and FCG canals are artificial; canal reaches 1 are above respective electrical or physical fish barriers and reaches 2, 3, and 4 are below; see also Clarkson (1996 a-c).

Reach-Station	SanP	Gila	Salt	Cien	CAP	SRPs	SRPn	FCG
1-1	3	NS	NS	2	3	8	4	9
1-2	6	--	NS	2	4	--	--	--
1-3	5	NS	4	--	5	--	--	--
total	6	--	4	2	7	8	4	9
native/non-native	2/4	NS	0/4	2/0	0/7	2/6	0/4	0/9
2-1	Dry	5	--	--	9	6	NS	9
2-2	--	5	--	--	--	--	--	--
2-3	1	8	--	--	--	--	--	--
total	1	8	--	--	9	6	--	9
native/non-native	1/0	0/8	--	--	1/8	0/6	NS	0/9
3-1	3	NS	--	--	5	--	--	--
3-2	Dry	2	--	--	2	--	--	--
3-3	NS	5	--	--	6	--	--	--
total	3	5	--	--	7	--	--	--
native/non-native	1/2	0/5	--	--	0/7	--	--	--
4-1	--	3	--	--	--	--	--	--
4-2	--	4	--	--	--	--	--	--
4-3	--	4	--	--	--	--	--	--
total	--	5	--	--	--	--	--	--
native/non-native	--	0/5	--	--	--	--	--	--
Total all reaches	7	9	4	2	12	12	4	10
native/non-native	2/5	0/9	0/4	2/0	1/11	2/10	1/3	0/10
% native	29	0	0	100	8	17	25	0

Table 6A. Fish catch at San Pedro River stations (see Table 1) during sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (period 10/20/2020 to 10/22/2020). Fish species listed alphabetically using standard abbreviations in Table 2, data are total fish or number of young-of-year (age-0) followed by number of older age classes (age  $\geq 1$ ), if specified; subtotals and total number are for each age class. Native fishes indicated by asterisks.

Species	Age	Reach			Sum	Reach			Sum	Totals
		1-1-1	1-1-2	1-1-3		1-2-3	1-3-1			
Common Carp	0	1	0	0	1	0	0	0	0	1
	1	0	1	2	3	0	0	0	0	3
Desert Sucker*	0	0	11	91	102	0	0	0	0	102
	1	0	0	48	48	0	0	0	0	48
Fathead Minnow		0	43	1	44	0	0	0	0	44
Green Sunfish	0	4	1	0	5	0	0	0	0	5
Longfin Dace*		270	44	63	377	15	15	14	14	406
Western Mosquitofish		0	34	8	42	0	0	34	34	76
Red Shiner		0	0	0	0	0	0	18	18	18
Totals		275	134	213	622	15	15	66	66	703

Table 6B. Fish catch at Gila River stations (see Table 1) during sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (period 11/04/2020-11/06/2020). Fish species listed alphabetically using standard abbreviations in Table 2; data are total fish or number of young-of-year (age-0) followed by number of older age classes (age  $\geq 1$ ), if specified; subtotals and total number are for each age class.

Species	Age	Reach			Sum	Reach			Sum	Reach			Totals
		2-2-1	2-2-2	2-2-3		2-3-2	2-3-3	2-4-1		2-4-2	2-4-3		
Bluegill	1	0	0	0	0	0	0	0	0	0	1	1	1
Channel Catfish	0	13	19	47	79	1	0	1	1	1	5	7	87
	1	0	1	2	3	1	3	4	3	1	7	11	18
Common Carp	1	0	0	1	1	0	1	1	0	0	0	0	2
Fathead Minnow		0	0	1	1	0	0	0	0	0	0	0	1
Flathead Catfish	0	2	1	1	4	0	1	1	3	1	3	7	12
	1	1	0	2	3	0	0	0	1	1	0	2	5
Gizzard Shad		0	0	2	2	0	0	0	0	1	0	1	3
Green Sunfish	0	0	0	2	2	0	0	0	0	0	0	0	2
	1	6	1	4	11	0	0	0	0	0	0	0	11
Western Mosquitofish		189	31	21	241	3	1	4	1	2	30	33	278
Red Shiner		5	49	24	78	0	3	3	0	0	0	0	81
Totals		216	102	107	425	5	9	14	9	7	46	62	501

Table 6C. Fish catch at Salt River stations (see Table 1) during sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (01/21/2021). Fish species listed alphabetically using standard abbreviations in Table 2; data are total fish or number of young-of-year (age-0) followed by number of older age classes (age ≥1), if specified; subtotals and total number are for each age class.

Species	Age	Reach		Totals
		3-1-3	Sum	
Bluegill	1	2	2	2
Green Sunfish	1	3	3	3
Largemouth Bass	0	18	18	18
	1	41	41	41
Western Mosquitofish		8	8	8
Totals		72	72	72

Table 6D. Fish catch at Central Arizona Project (CAP) canal stations (see Table 1) during sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (period 10/28/2019 to 07/21/2021). Fish species listed alphabetically using standard abbreviations in Table 2; data are total fish or number of young-of-year (age-0) followed by number of older age classes (age  $\geq 1$ ), if specified; subtotals and total number are for each age class. Native fishes indicated by asterisks.

Species	Age	Reach			Reach			Reach			Totals	
		4-1-1	4-1-2	4-1-3	Sum	4-2-1	Sum	4-3-1	4-3-2	4-3-3		Sum
Bluegill	0	0	0	0	0	0	0	1	0	0	1	1
	1	1	0	0	1	0	0	3	0	12	15	16
Common Carp	1	0	3	13	16	63	63	3	0	11	14	93
Channel Catfish	1	0	0	1	1	5	5	0	0	4	4	10
Grass Carp	1	0	10	19	29	64	64	4	0	5	9	102
Inland Silverside	0	0	0	0	0	6	6	0	0	0	0	6
Largemouth Bass	0	0	1	0	1	0	0	0	0	2	2	3
	1	1	1	0	2	0	0	2	5	12	19	21
Redear Sunfish	0	0	0	0	0	0	0	0	0	1	1	1
	1	0	0	0	0	0	0	0	0	14	14	14
Smallmouth Bass	1	0	1	2	3	4	4	0	0	0	0	7
Sonora Sucker*	1	0	0	0	0	2	2	0	0	0	0	2
Striped Bass	1	3	0	2	5	36	36	1	5	0	6	47
Threadfin Shad	0	0	0	0	0	1	1	0	0	0	0	1
Western Mosquitofish		0	0	0	0	1	1	0	0	0	0	1
Undetermined Sunfish	0	17	0	0	17	0	0	0	0	0	0	17
Totals		22	16	37	75	182	182	14	10	61	85	342



Table 6E. Fish catch at Salt River Project (SRP) South Canal stations (see Table 1) during sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (11/30/2020). Fish species listed alphabetically using standard abbreviations in Table 2, data are total fish or number of young-of-year (age-0) followed by number of older age classes (age  $\geq 1$ ), if specified; total number is for each age class. Native fishes indicated by asterisks. VO indicates fish were visually observed during sampling, but not captured.

Species	Age	Reach			Reach		Totals
		5-1-1	Sum	5-2-0	5-2-2.9	Sum	
Bluegill	1	6	6	0	0	0	6
Channel Catfish	1	57	57	0	0	0	57
Common Carp	1	1	1	0	0	0	1
Desert Sucker*	1	3	3	0	0	0	3
Flathead Catfish	1	0	0	1	0	1	1
Grass Carp	1	24	24	0	VO	0	24
Largemouth Bass	1	48	48	0	0	0	48
Red Shiner		0	0	46	0	46	46
Sailfin Molly		0	0	3	0	3	3
Sonora Sucker*	1	1	1	0	0	0	1
Western Mosquitofish		0	0	30	0	30	30
Yellow Bullhead	1	1	1	0	0	0	1
Undetermined Sunfish	1	0	0	0	VO	0	0
Undetermined Catfish	1	0	0	0	VO	0	0
<b>Totals</b>		<b>141</b>	<b>141</b>	<b>80</b>		<b>80</b>	<b>221</b>

Table 6F. Fish catch at Salt River Project (SRP) North (Arizona) Canal stations (see Table 1) during sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (01/11/2021). Fish species listed alphabetically using standard abbreviations in Table 2, data are total fish or number of young-of-year (age-0) followed by number of older age classes (age  $\geq 1$ ), if specified; total number is for each age class. Native fishes indicated by asterisks.

Species	Age	Reach		
		6-1-0	Sum	Totals
Bluegill	1	1	1	1
Largemouth Bass	0	3	3	3
	1	22	22	22
Red Shiner		3	3	3
Sonora Sucker*	1	1	1	1
<b>Totals</b>		<b>30</b>	<b>30</b>	<b>30</b>

Table 6G. Fish catch at Florence Casa Grande (FCG) Canal stations (see Table 1) during sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (period 10/26/2020 to 10/27/2020). Fish species listed alphabetically using standard abbreviations in Table 2, data are total fish or number of young-of-year (age-0) followed by number of older age classes (age  $\geq 1$ ), if specified; total number is for each age class.

Species	Age	Reach					Reach			Totals
		7-1-0	7-1-2.6	Sum	7-2-2.6	7-2-4.4	7-2-11.4	7-2-15.3	Sum	
Bluegill	0	2	0	2	0	0	0	1	1	3
	1	0	0	0	0	4	0	2	6	6
Channel Catfish	0	1	0	1	0	11	3	225	239	240
	1	1	7	8	0	3	7	2	12	20
Common Carp	0	0	0	0	0	1	0	0	1	1
	1	11	0	11	0	3	7	20	30	41
Fathead Minnow		1	0	1	0	0	0	0	0	1
Flathead Catfish	0	0	0	0	0	0	0	4	4	4
	1	1	3	4	0	3	2	3	8	12
Gizzard Shad	0	43	0	43	0	10	64	13	87	130
	1	12	0	12	0	0	0	100	100	112
Goldfish	1	1	0	1	0	0	1	0	1	2
Green Sunfish	0	2	0	2	0	0	0	0	0	2
	1	1	0	1	0	0	0	1	1	2
Red Shiner		24	0	24	3	10	15	22	50	74
Western Mosquitofish		0	0	0	11	4	81	12	108	108
Totals		100	10	110	14	49	180	405	648	758

Table 6H. Fish catch at Cienega Creek stations (see Table 1) during sampling in behalf of a long-term monitoring plan for fish populations in selected waters of the Gila River basin, Arizona, during sample year 2020 (09/29/2020). Fish species listed alphabetically using standard abbreviations in Table 2; data are total fish or number of young-of-year (age-0) followed by number of older age classes (age  $\geq 1$ ), if specified; subtotals and total number are for each age class. Native fishes indicated by asterisks.

Species	Age	9-1-1	9-1-2	Reach	Totals
				Sum	
Gila Topminnow*		1049	54	1103	1103
Longfin Dace*		1907	23	1930	1930
Totals		2956	77	3033	3033