

APPENDIX A

List of Stream Renovation Projects in the Lower Colorado River Basin

Table A-1. Historical distributions, known extirpated populations, known occupied streams, and recommended replication sites for Federal- or State-listed fishes of the Gila River basin, excluding trouts. T=threatened, E=endangered, S=State listed, Ex=Extinct, PE=proposed endangered. Parentheticals denote major subdrainage affiliations, question marks denote uncertain status.

Species	Historical Distribution	Known Extirpated Populations	Known Occupied Streams (exclusive of restoration sites)
<i>Cyprinodon arcuatus</i> (Ex) Santa Cruz (Monkey Spring) pupfish	Low-elevation streams, springs, cienegas, backwaters, and margins of larger rivers in the Santa Cruz River basin	Santa Cruz River Monkey Spring (Santa Cruz) Sonoita Creek (Santa Cruz)	Species is extinct
<i>Cyprinodon macularius</i> (E) Desert pupfish	Low-elevation streams, springs, cienegas, backwaters, and margins of larger rivers in the Gila River basin, including all major subbasins except the Santa Cruz River basin	Agua Fria River Gila River Hassayampa River Salt River San Pedro River Verde River	Gila River basin populations extirpated
<i>Gila elegans</i> (E) Bonytail	Low-intermediate elevation mainstem reaches of the Gila and Salt rivers	Gila River Salt River	Gila River basin populations extirpated
<i>Gila intermedia</i> (PE) Gila chub	Upper reaches of small-middle-sized streams of the Gila River basin, including all major subbasins	Agua Fria River (Gila) Queen/Arnett creeks (Gila) San Simon River (Gila) Cave Creek/Seven Springs (Salt) Fish Creek (Salt) San Pedro River Binghampton Pond (San Pedro) Garden Canyon (San Pedro) Turkey Creek (San Pedro) Santa Cruz River Monkey Spring (Santa Cruz) Big Chino Wash (Verde)	Indian Creek (Agua Fria) Larry Creek (Agua Fria) Lousy Canyon (Agua Fria) Little Sycamore Creek (Agua Fria) Lousy Canyon (Agua Fria) Silver Creek (Agua Fria) Sycamore Creek (Agua Fria) Bonita Creek (Gila) Eagle/East Eagle Creek (Gila) Mineral Creek/Devil's Canyon (Gila) Turkey Creek, NM (Gila) San Carlos River Blue River (San Carlos) Dix Creek (San Francisco) Harden Cienega (San Francisco) San Pedro River, Mexico Babocomari River (San Pedro) Hot Springs/Bass Canyon (San Pedro) Los Fresnos River, Mexico (San Pedro) O'Donnell Creek (San Pedro) Post/Freeman canyons (San Pedro) Redfield Canyon (San Pedro) Cienega Creek (Santa Cruz) Empire Gulch (Santa Cruz) Mattie Canyon (Santa Cruz) Sabino Canyon (Santa Cruz) Sheehy Spring (Santa Cruz) Red Tank Draw (Verde) Spring Creek (Verde) Walker Creek (Verde) Williamson Valley Wash (Verde)

Species	Historical Distribution	Known Extirpated Populations	Known Occupied Streams (exclusive of restoration sites)
<i>Gila nigra</i> (S) Headwater chub	Middle to headwater reaches of middle-sized tributary streams in the Verde, Tonto, San Carlos, and upper Gila River (NM) subbasins	Beaver Creek (E Fk Gila River) Taylor Creek (E Fk Gila River) Christopher Creek (Tonto) Horton Creek (Tonto) Sharp Creek (Tonto) Rye Creek (Tonto) Dry Beaver Creek (Wet Beaver)	Gila River, upper San Carlos River Tonto Creek Ash Creek (San Carlos) Tonto Creek Buzzard Roost (Tonto) Gordon Creek (Tonto) Gunn Creek (Tonto) Haigler Creek (Tonto) Marsh Creek (Tonto) Rock Creek (Tonto) Spring Creek (Tonto) Deadman Creek (Verde) East Verde River (Verde) Fossil Creek (Verde) Webber Creek (Verde) Wet Bottom Creek (Verde)
<i>Gila robusta</i> (S) Roundtail chub	Middle-sized to larger streams of the Gila River basin, including all major subbasins except the Santa Cruz River basin	Boneyard Creek (E Fk Black) Gila River, middle reach (AZ) Salt River, upper reach San Francisco River (Gila) Blue River (San Francisco) San Pedro River N Fk White River (White) ?	Gila River, upper Eagle Creek (Gila) Salt River, lower reach Salt River Project canals Black River (Salt) Canyon Creek (Salt) Carrizzo Creek (Salt) Cedar Creek (Salt) Cherry Creek (Salt) Cibeque Creek (Salt) Corduoy Creek (Salt) Salome Creek (Salt) White River (Salt) ? Aravaipa Creek and tributaries (San Pedro) Verde River Fossil Creek (Verde) Oak Creek (Verde) West Clear Creek (Verde) Wet Beaver Creek (Verde)
<i>Meda fulgida</i> (T) Spikedace	Low-intermediate elevation streams in the Gila River basin, including all major subbasins except the Santa Cruz River basin	Agua Fria River Salt River San Francisco River San Pedro River, US and Mexico	Eagle Creek (Gila) Gila River, Middle Fork Gila River, West Fork Gila River, East Fork Gila River, middle reach (AZ) Mangus Creek (Gila) Aravaipa Creek (San Pedro) Verde River
<i>Plagopterus argentissimus</i> (E) Woundfin	Low elevation streams in the Gila River basin, including all major subbasins except the Santa Cruz River basin	Gila River Salt River Verde River	Gila River basin populations extirpated

Species	Historical Distribution	Known Extirpated Populations	Known Occupied Streams (exclusive of restoration sites)
<p><i>Poeciliopsis occidentalis</i> (E) Gila topminnow</p>	<p>Low-intermediate elevation streams, springs, cienegas, backwaters, and margins of larger rivers in the Gila River basin, including all major subbasins</p>	<p>Gila River Ash Creek, North Fork (Gila) Salt Creek (Gila) San Simon River (Gila) San Carlos River (Gila) Salt River Tonto Creek (Salt) Frisco Hot Spring (San Francisco) San Pedro River Arivaca Creek (San Pedro) Cocio Wash (Santa Cruz) Potrero Creek (Santa Cruz) Sabino Canyon (Santa Cruz) Sheehy Spring (Santa Cruz) Tanque Verde Creek (Santa Cruz) Verde River Other unnamed waters</p>	<p>Bylas Springs (Gila) Santa Cruz River, upper reach (US and Mexico) Cienega Creek (Santa Cruz) Cottonwood Spring (Santa Cruz) Monkey Spring (Santa Cruz) Sharp Spring (Santa Cruz) Sonita Creek complex (Santa Cruz) Redrock Canyon Fresno Canyon Coal Mine Canyon Sonoita Creek</p>
<p><i>Ptychocheilus lucius</i> (E) Colorado squawfish</p>	<p>Low-intermediate elevation streams in the Gila River basin, including all major subbasins except the Santa Cruz River basin</p>	<p>Gila River Salt River San Pedro River Verde River</p>	<p>Gila River basin populations extirpated</p>
<p><i>Tiaroga cobitis</i> (T) Loach minnow</p>	<p>Low-high elevation streams in the Gila River basin, including all major subbasins except the Santa Cruz River basin</p>	<p>Gila River (AZ portion) Salt River San Pedro River, US and Mexico Verde River</p>	<p>Aravaipa Creek and tributaries (San Pedro) Black River, North Fork of East Fork (Salt) Blue River, and tributaries (San Francisco) Eagle Creek (Gila) Gila River, Middle Fork Gila River, West Fork Gila River, East Fork San Francisco River and NM tributaries White River, North Fork (Salt) White River (Salt) White River, East Fork (Salt)</p>
<p><i>Xyrauchen texanus</i> (E) Razorback sucker</p>	<p>Low-intermediate elevation streams in the Gila River basin, including all major subbasins except the Santa Cruz River basin</p>	<p>Gila River Salt River San Pedro River Verde River</p>	<p>Gila River basin populations extirpated</p>

Table A-2. Partial list of established nonnative fishes in the Gila River basin. Distribution acronyms are W = widespread, L = localized, R = rare. Trend acronyms are E = expanding distribution, S = stable distribution, R = recently introduced, trend uncertain.

Species	Status	
	Distribution	Trend
Fathead minnow, <i>Pimephales promelas</i>	W	E
Goldfish, <i>Carassius auratus</i>	L	S
Grass carp, <i>Ctenopharyngodon idella</i>	L	S
Common carp, <i>Cyprinus carpio</i>	W	E
Red shiner, <i>Cyprinella lutrensis</i>	W	E
Bigmouth buffalo, <i>Ictiobus cyprinellus</i>	L	S
Black buffalo, <i>Ictiobus niger</i>	R	
Smallmouth buffalo, <i>Ictiobus bubalus</i>	R	
Largemouth bass, <i>Micropterus salmoides</i>	W	S
Smallmouth bass, <i>Micropterus dolomieu</i>	W	E
Bluegill, <i>Lepomis macrochirus</i>	W	E
Redear sunfish, <i>Lepomis microlophus</i>	W	S
Green sunfish, <i>Lepomis cyanellus</i>	W	E
Black crappie, <i>Pomoxis nigromaculatus</i>	W	S
White crappie, <i>Pomoxis annularis</i>	L	S
Black bullhead, <i>Ameiurus melas</i>	W	E
Yellow bullhead, <i>Ameiurus natalis</i>	W	E

Species	Status	
	Distribution	Trend
Flathead catfish, <i>Pylodictis olivaris</i>	W	E
Channel catfish, <i>Ictalurus punctatus</i>	W	E
Mosquitofish, <i>Gambusia affinis</i>	W	E
Sailfin molly, <i>Poecilia latipinna</i>	L	S
Guppy, <i>Lesbistes reticulatus</i>	L	S
Walleye, <i>Stizostedion vitreum</i>	L	S
Yellow perch, <i>Perca flavescens</i>	R	
Threadfin shad, <i>Dorosoma petenense</i>	W	S
African cichlids, <i>Tilapia</i> and <i>Oreochromis</i> spp.	L	E
Yellow bass, <i>Morone mississippiensis</i>	L	S
Striped bass, <i>Morone saxatilis</i>	L	E
White bass, <i>Morone chrysops</i>	L	E
Northern pike, <i>Esox lucius</i>	L	R
Arctic grayling, <i>Thymallus arcticus</i> ¹	L	S
Rainbow trout, <i>Oncorhynchus mykiss</i> ¹	W	S
Brown trout, <i>Salmo trutta</i>	W	S
Brook trout, <i>Salvelinus fontinalis</i>	W	S

¹ Routinely stocked.