Weedman, D.A., A.L. Girmendonk, and K.L. Young. 1996. Status review of Gila chub, *Gila intermedia*, in the United States and Mexico. Nongame and Endangered Wildlife Program Technical Report 91. Arizona Game and Fish Department, Phoenix, Arizona.

Cienega Creek (p41-43)

Site Description

Cienega Creek, Pima and Santa Cruz counties, Arizona is a tributary of the Santa Cruz River. It flows north between the Santa Rita and Empire mountains on the west and the Whetstone Mountains on the east, joining Pantano Wash near Vail, Arizona. The headwater elevation of Cienega Creek is about 1520 m (5000 ft), and it flows to an elevation of about 1070 m (3500 ft) at its confluence with Pantano Wash.

Land Ownership

Cienega Creek passes through a total of 34.9 km (21.7 mi) from the confluence with Spring Water Canyon downstream to Interstate 10 (all of which is not perennial, see below). Land ownership along this length of Cienega Creek is comprised of State (58 percent), BLM (37 percent), and private (5 P42
percent) lands (Cienega Creek Land Ownership Map). The majority of this portion of Cienega Creek is Federally owned and managed by BLM as the Empire-Cienega Resource Conservation Area. Perennial water is also known to exist within the Cienega Creek Natural Preserve managed by the Pima County Flood Control District.

Land and Water Uses

The BLM Empire-Cienega Resource Conservation Area (RCA) encompasses a majority of Cienega Creek currently occupied by Gila chub. The RCA is currently grazed at unknown levels. No known mining or other resource uses are occurring. The RCA is managed to preserve aquatic, riparian, and associated wildlife values. An unknown amount of streamflow is diverted through the Panama Canal for irrigation purposes. There are no other known water withdrawal structures or other uses impacting water in Cienega Creek. Headwaters of the stream are also grazed, but effects on the stream are unknown.

Collection History

Monitoring of Cienega Creek for the FFC in 1989, 1990, 1992, and 1993 resulted in the capture of Gila chubs. Gila chubs have also been collected during annual monitoring for Gila topminnow in 1985, 1988, 1989, 1992, and 1995 (Table 9). The earliest reported collection of Gila chubs in Cienega Creek was in 1969 by an unknown collector (Table C-16).
Jeff Simms (BLM, pers. comm.) provided information delineating reaches of Cienega Creek occupied by Gila chubs based on his personal observations and recent collections. Those reaches have been transferred to the Cienega Creek Land Ownership Map and are highlighted in blue. According to that information, of the approximately 39 km (24 mi) of Cienega Creek above Interstate 10, approximately 11 km (7 mi) are inhabited by Gila chub. This includes approximately 5 km (3 mi) of stream from 1.6 km (1.0 mi) above Gardner Canyon to Empire Ranch Road crossing, and 6 km (4 mi) of stream extending from 1.6 km (1.0 mi) above the confluence of Cienega Creek and Mattie

Canyon downstream to The Narrows, as well as the lowest 1.6 km (1.0 mi) of stream in Mattie Canyon.

Recent Survey Results

Cienega Creek was not surveyed for this project. Sufficient information exists to summarize the present status of the Gila chub, but not decreases in range or abundance in Cienega Creek.

Status, Threats, and Management Recommendations

Stable-Secure. Historical distribution and abundance information is insufficient to determine decreases in range or population abundance. Karen Simms (unpublished manuscript) conducted a survey from 1988 to 1990 of the Cienega Creek watershed to determine the presence of nonnative fishes in the watershed. The report identified 246 water sources within the BLM Empire/Cienega Planning Area, of which 86 were sampled. Only two water sources were found to have nonnative

fishes (largemouth bass, bluegill, goldfish, smallmouth bass, and catfish). These nonnatives were found in tanks on private land a significant distance from Cienega Creek, therefore Simms concluded that nonnative emigration from these areas into Cienega Creek was not a threat. The final results of that survey indicated a fairly low threat of exotic fish contamination from migration or surreptitious introduction from local sources. Simms concluded the most likely source of nonnatives would be by people stocking them from outside the watershed.

Jeff Simms (BLM, pers. comm.) believes that the chub population is healthy and that pool habitat is abundant and stable. Headcut erosion has occurred that could potentially threaten approximately 4 km (3 mi) of chub habitat. BLM has taken steps to eliminate that threat (constructed instream erosion control structures). The greatest threat to this chub population continues to be the potential for illegal introduction of nonnatives from outside the watershed. Areas of Cienega Creek downstream of Interstate 10 managed by Pima County are controlled access only, and may provide future habitat for the reintroduction of Gila topminnow and Gila chub.

Table 9. Relative abundance of fishes collected during FFC and Gila topminnow monitoring in Cienega Creek, Santa Cruz County, Arizona in 1985-1995. Data are from AGFD NFDB. Species code abbreviations are defined in Appendix A.

Date	**Location**	**Project**	**Fish collected (% relative abundance)**	**N collected**
850731	Cienega Creek, 31□49'30" 110□34'10"	Topminnow Mon.	POOC AGCH GIIN	unknown
880818	T18S R17E S. 23 NE4 NE4	Topminnow Mon.	POOC (57%), AGCH (39%), GIIN (3%)	n=376
890724	T18S R17E S.12 & 35 T19S R17E S.10	Topminnow Mon.	POOC (54%), AGCH (40%), GIIN (6%)	n=946

Date	Location	Project	Fish collected (% relative abundance)	N collected
891021	T18S R17E S. 23 NE4 SW4	Fall Fish Count	POOC (88%), AGCH (12%), GIIN (<1%)	n=2589
901121	T18S R17E S. 23 SE4 SW4 T19S R17E S. 10 NE4 T19.5S R17E S. 15 SE4 SE4	Fall Fish Count	POOC (71%), AGCH (29%), GIIN (<1%)	n=717
920618	T19S R17E S. 10 NE4	Topminnow Mon.	POOC (100%)	n=69
921027	T18S R17E S. 12 NE4	Fall Fish Count	GIIN (55%), AGCH (36%), POOC (9%)	n=94
921028	T19S R17E S. 15 SE4 SE4	Fall Fish Count	POOC (99%), GIIN (<1%)	n=3224
921031	T19S R17E S. 10 NE4 SE4 T19S R17E S. 3 NE4 SE4	Fall Fish Count	POOC (97%), AGCH (3%), GIIN (<1%)	n=7501
921110	T18S R17E S. 13 NE4 NW4	Fall Fish Count	AGCH (72%), POOC (27%), GIIN (1%)	n=71
931012	T19S R17E S. 15 SE4 SE4	Fall Fish Count	POOC (98%), GIIN (2%)	n=794
931013	T19S R17E S. 10 NE4 SE4 T19S R17E S. 3 NE4 SE4	Fall Fish Count	AGCH (61%), POOC (39%)	n=896
931014	T18S R17E S. 23 SW4 NE4 T18S R17E S. 23 NE4 SE4	Fall Fish Count	AGCH (89%), POOC (11%), GIIN (<1%)	n=1724
931015	T18S R17E S. 13 NE4 NW4 T18S R17E S. 12 NE4 SE4	Fall Fish Count	AGCH (99%), GIIN (1%)	n=370
931028	T19S R17E S. 15 NE4 NE4	Fall Fish Count	POOC (78%), GIIN (14%), AGCH (8%)	n=450

Date	Location	Project	Fish collected (% relative abundance)	N collected
940721	T19S R17E S. 15 NE4 SE4 T18S R18E S. 6 SE4 SW4	Topminnow Mon.	AGCH (79%), POOC (21%)	n=400
950724	T18S R17E S. 14 SE4 SE4 T18S R17E S. 12 NE4 SE4	Topminnow Mon.	AGCH (58%), POOC (29%), GIIN (13%)	n=857