Santa Ana sucker
(*Catostomus santaanae*)

5-Year Review:
Summary and Evaluation

Photo by: Carey Galst, USFWS

U.S. Fish and Wildlife Service
Carlsbad Fish and Wildlife Office
Carlsbad, CA

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5-YEAR REVIEW

Santa Ana sucker
(*Catostomus santaanae*)

GENERAL INFORMATION

Species: Santa Ana Sucker (*Catostomus santaanae*), a fish species
Date listed: April 12, 2000
Federal Register citation: Service 2000 (65 FR 19686–19698)
Classification: Threatened
Recovery Plan: Final recovery plan (Service 2017)
Recovery Priority Number: 6C
Critical Habitat Designation: Service 2010

BACKGROUND

Under the Endangered Species Act of 1973, as amended (Act; 16 U.S.C. 1531 et seq.), the U.S. Fish and Wildlife Service (Service), referred to as "we" in this document, maintains lists of endangered and threatened wildlife and plant species (referred to as the List) in the Code of Federal Regulations (CFR) at 50 CFR 17.11 (for wildlife) and 17.12 (for plants). Section 4(c)(2)(A) of the Act requires us to review each listed species' status at least once every 5 years.

Most recent status review: Service 2011. Santa Ana Sucker *Catostomus santaanae*; 5-year Status Review: Summary and evaluation. Department of the Interior. 67 pp.

Federal Register notice announcing this status review: On May 20, 2021, we published a *Federal Register* notice announcing initiation of the 5-year review of this species, and the opening of a 60-day comment period to receive information from the public (Service 2021, pp. 27462–27464). No information relative to the Santa Ana sucker was received during the open comment period.

Species Overview and Habitat: The Santa Ana sucker (*Catostomus santaanae*) is a small, short-lived member of the sucker family (Catostomidae). Individuals are generally less than 6.3 inches (in) (16 centimeters (cm)) in length, are silvery-white ventrally, and darker along the dorsal side. The listed entity is found in three watersheds in Southern California: (1) the Santa Ana River in San Bernardino, Riverside, and Orange Counties; (2) the San Gabriel River in Los Angeles County; and (3) Big Tujunga Creek, a tributary to the Los Angeles River, in Los Angeles County. The species also occurs in the Santa Clara River watershed.

ASSESSMENT

Information acquired since the last status review

This 5-year Review was conducted by the U.S. Fish and Wildlife Service's (Service) Carlsbad Field Office. Data for this review were solicited from interested parties through a *Federal Register* notice announcing this review on May 20, 2021. We also contacted U.S. Geological Survey and the California Department of Fish and Wildlife to request any data or information we

should consider in our review. Additionally, we conducted a literature search and a review of information in our files.

We received additional survey reports/monitoring reports from the U.S. Geological Survey. The results indicate the species and subsequent threats are still present on the landscape. The species distribution also remains the same as described in our 2011 5-year Status Review.

SUMMARY OF NEW INFORMATION SINCE 2011

Occurrence status and distribution

The historical range of the Santa Ana sucker includes the rivers and larger streams emanating from the San Gabriel and San Bernardino Mountains in Ventura, Los Angeles, Orange, Riverside, and San Bernardino Counties, including the mainstems and tributaries from near the Pacific Ocean to the uplands of the Los Angeles and Santa Ana River systems (USFWS 2000, p. 19686). The listed entity is currently known to occur in three watersheds: (1) The Santa Ana River (San Bernardino, Riverside, and Orange Counties), (2) the San Gabriel River (Los Angeles County), and (3) Big Tujunga Creek of the Los Angeles River (Los Angeles County) (USFWS 2009, p. 65058). Though not part of the listed entity, a population of Santa Ana sucker also occurs in the Santa Clara River.

Based on the information received, we updated the Santa Ana sucker occurrence status in Table 1. In this review, we consider an occurrence to be extant if the species was observed within the last 10 years. We consider the occurrence is presumed extant if the species has not been observed in the last 10 years, but suitable habitat is present. We consider the occurrence is possibly extirpated if the species has not been observed for over 10 years and the habitat is small, degraded, or separated by a permanent barrier. We consider the occurrence to be extirpated if the species has not been observed for greater than 20 years and the habitat is no longer suitable.

Of the nine historical occurrences identified, six were considered extant in the 2011 5-year review among the three occupied watersheds. We now consider San Dimas Wash and the Lower Santa Ana River and Tributaries as possibly extirpated due to the lack of positive occurrences since 2013 (Chambers Group 2013, p. 6) and 2010 (RCRCD 2010, p. 4), respectively. San Dimas Creek was surveyed in 2014, and no Santa Ana suckers were positively identified. Negative survey data was reported in all subsequent surveys including 2011, 2014 (Aspen 2014, p. 2), late 2014 (Aspen 2014, p. 2), and 2018 (Aspen 2018, p. 4) on the lower Santa Ana River, after the last positive in 2010. Based on these updates, currently four occurrences are extant for this status review (Table 1).

Table 1. Occurrence table for the Santa Ana sucker.

Occurrence	2011 Status	Last Detected	2023 Status	Current Threats
Los Angeles River Watershed				
Big Tujunga Creek	Extant	2023	Extant	**Factor A:** Modification, fragmentation of habitat, water quality, OHV/recreation, drought, fire **Factor C**: Nonnative predation **Factor E**: Small population size
Los Angeles River	Extirpated		Extirpated	
San Gabriel River Watershed				
San Gabriel River-East Fork	Extant	2023	Extant	**Factor A:** Modification of habitat, water quality, OHV/recreation; mining, drought, fire **Factor C**: Nonnative predation **Factor E**: Small population size
San Gabriel River West and North Forks	Extant	2023	Extant	**Factor A:** Modification and fragmentation of habitat, water quality, OHV/recreation; mining, drought, fire drought, fire **Factor C**: Nonnative predation **Factor E**: Small population size
San Dimas Wash*	Extant	2013	Possibly Extirpated	**Factor A:** Habitat modification, water quality, drought **Factor C**: Nonnative predation **Factor E**: Small population size
Below San Gabriel Dam-San Gabriel River Watershed	Extirpated		Extirpated	
San Ana River Watershed				
Upper Santa Ana River and Tributaries (Upstream of S. La Cadena Ave.)	Extirpated		Extirpated	
Middle Santa Ana River and Tributaries (S. La Cadena to Prado Dam)	Extant	2023	Extant	**Factor A:** Modification, fragmentation of habitat, water quality, OHV/recreation; mining, drought, nonnative vegetation **Factor C**: Nonnative predation **Factor E**: Small population size
Lower Santa Ana River and Tributaries (Prado Dam to near California Highway 90)	Extant	2010	Possibly Extirpated	**Factor A:** Modification, fragmentation of habitat, water quality, OHV/recreation, mining, drought, nonnative vegetation **Factor C**: Nonnative predation **Factor E**: Small population size

*2014 survey results documented no Santa Ana sucker, although habitat quality may provide refugia for suckers (SRMA 2014, p.12)

Genetics

Richmond *et al*. (2017, entire) used microsatellite and mitochondrial DNA datasets to investigate the genetic distinctiveness of Santa Ana suckers throughout the species' range to help determine whether fish from the Santa Clara River population were introduced. Genetic samples were obtained from fish in the Los Angeles River, San Gabriel River, Santa Ana River, and Santa Clara River watersheds. Results from Richmond *et al.* (2017, p. 10) support substantial genetic structure within *Catostomus santaanae*. Their analysis looked at differences in allele frequency among each of the drainages and they reported strong patterns of structuring with sampling geography. Samples from the Santa Clara River were distinguishable from the Los Angeles, San Gabriel, and Santa Ana Rivers. Their results do not support recent exchange between the Santa Clara population and the other populations, which would have been expected if Santa Clara population had been introduced. Therefore, they concluded that the Santa Clara River population is distinctive from the populations in the other drainages, and the data suggests that it was not introduced 80 to 100 years ago, as previously thought.

Translocations

Recent management agreements have identified range expansions via translocations as part of conservation measures in the plans. Preliminary monitoring indicates ongoing reestablishment efforts that began in fall 2022 above Cogswell Dam on the West Fork of the San Gabriel River has likely led to successful spawning (Jackson pers. comm., 2023). Translocations and monitoring above the dam are planned to continue. Similar efforts are planned to occur on Big Tujunga Creek in 2023, with suckers scheduled to be translocated above Big Tujunga Dam, potentially increasing the current occupied range upstream of a permanent barrier (Service 2023, p. 28). Expanding the current range by establishing new self-sufficient populations upstream of major barriers has the potential to increase resiliency in these two Recovery Units by increasing the number of extant occurrences and amount of occupied habitat. These translocation efforts are executing Recovery Action 4.2 (Plan and Implement Range Expansion) found in the 2017 Recovery Plan (Service 2017, p. III-11).

Non-Essential Experimental Population under Section 10(j)

We have determined that the use of a 10(j) rule is feasible and the appropriate tool to carry out introductions of Santa Ana suckers to develop new populations that contribute to species recovery. Therefore, we are moving forward with the development of a proposed rule to establish a non-essential experimental population under section 10(j) of the Act to help facilitate reintroduction of Santa Ana sucker into the region. Feasibility studies for a number of potential translocation sites have been completed, and plans are in the works for growing young suckers to a larger size before being translocated. Partner support for this work includes funding for sucker collections, grow out of fish that will be translocated, reintroduction, and monitoring.

Threats

The primary threat to Santa Ana sucker is the ongoing habitat loss, degradation, and alteration through hydrological modifications throughout the range of the species. Fish in all occurrences are isolated by impassable barriers (e.g., dams) or unsuitable habitat (e.g., insufficient water

flow, sand substrate, incised channel morphology) and are increasingly threatened throughout their range by modification, fragmentation, and loss of habitat. The impacts attributed to loss of available habitat (i.e., dams, changes in water allocations, and other hydrological modifications) combined with increasing threats (water quality degradation, impacts to habitat from recreation, loss of habitat from economic development, increased wildfire frequency, and potential effects of nonnative vegetation and predators) have a cumulative effect on the Santa Ana sucker and its habitat, thereby increasing the potential risk of extirpation in all watersheds.

Ongoing operation of dams for flood control and water conservation purposes are the primary threat to the species. Dams impact Santa Ana sucker habitat by altering hydrological and sediment transport processes, which can change the channel morphology, stream gradient, substrate size, and water quality in a manner that is more suitable for nonnative fish species than Santa Ana sucker. Additionally, they create impassable barriers and areas of unsuitable habitat preventing movement of individual Santa Ana suckers. Fragmented and isolated habitat within each of the three watersheds make the Santa Ana sucker susceptible to limited gene flow among occurrences, thus increasing the vulnerability of small populations to a range of environmental stochastic factors and inbreeding depression.

The two Santa Ana River occurrences are particularly at risk from these hydrological threats and have become dependent on discharges of tertiary treated wastewater throughout the year because in-stream flows have been reduced or lost to water diversions for human use. This also renders the Santa Ana sucker in this watershed more susceptible to spills, unauthorized discharges (e.g., violations of discharge limitations), or combined pollutants in permitted wastewater discharges. As water demands for municipal use continue to rise, the amount of suitable habitat (water) available to the Santa Ana sucker becomes severely depleted because water is generally removed from the system upstream of occupied areas.

The Riverside-Corona Resource Conservation District published a report, summarizing findings from surveys completed in 2022 (RCRCD 2023). The results indicated that the abundance of suckers had been significantly reduced in the Rialto Channel and in areas below the Rapid Infiltration and Extraction treatment plant on the middle Santa Ana River (RCRCD 2023a, entire; RCRCD 2023b, p. 2). Habitat degradation from OHV and homeless encampments were also noted. The summary indicated that over the preceding 2 years predation from bass and channel catfish was the cause for reduced sucker abundance. Since this time, predator removal efforts have significantly reduced bass and catfish numbers in these areas (Christensen 2023). Preliminary results from spring of 2023 indicate an increase in favorable conditions and subsequent higher larvae numbers. These positive trends are attributed to higher flows and a reduction in nonnative predators from recent predator removal efforts. These recent conflicting survey results highlight the stressors sucker experiences and its resiliency to bounce back when conditions are favorable. Santa Ana suckers in the Santa Ana River habitat are also impacted by fire (which is projected to increase in frequency in response to a changing climate), OHVs, mining operations, and nonnative plants.

In the San Gabriel River specifically, impacts attributed to recreation are prevalent including OHV use, recreational dams, and roads and trails. Other impacts noted include nonnative plants, nonnative predators, dam operations, debris flows after fire, sediment removal, and fire retardant

(Service 2023a, pp. 19–20). In the Los Angeles River, nonnative predators, recreational dams, roads, trails, general recreation, fire retardant, and drought continue to impact the Santa Ana sucker (Service 2023b, pp. 77–78). Garbage dumping is also known as a major issue to habitat and water quality in Big Tujunga Creek.

Conservation

Since the last 5-year review, the sucker Recovery Plan (Service 2017, entire) was completed and will continue to help prioritize recovery actions and activities into the future.

The recently completed Big Tujunga Habitat Conservation Plan (HCP) and associated Biological Opinion (BO), is expected to alleviate threats associated with the Big Tujunga Dam by adaptively managing water releases, monitoring the results of changes in water releases, restoration, and reestablishing Santa Ana sucker upstream of the dam (Service 2023a, entire). Translocation of Santa Ana sucker upstream of the dam is scheduled to start in fall 2023. The recently completed BO for Cogswell Dam includes similar management measures and is already having a positive impact on the status of the species (Service 2023b, entire). Efforts to reestablish Santa Ana sucker upstream of the dam on the West Fork of San Gabriel River began in November 2022 and evidence of spawning was documented in July 2023 (Jackson pers. comm., 2023).

The Upper Santa Ana HCP is also anticipated to have beneficial impacts for the sucker including: ensuring adequate flows are provided to the mainstem of Santa Ana River, determining effective population size for future management possibilities, increasing the amount and quality of habitat for Santa Ana sucker- including the mainstem and spawning habitat in the downstream tributaries, conducting nonnative predator removal, reducing human impacts (trash, recreational use), managing hydrologic processes in a beneficial way, conducting translocation efforts to expand sucker distribution, and managing for genetic diversity within local populations (including identifying and removing fish barriers) (ICF 2021, pp. 5-49 – 5-55). This HCP is in the process of being reviewed by the Service.

Summary

At listing and the 2011 5-year Review, Santa Ana suckers occurred at six extant occurrences among three watersheds (two in the Santa Ana River, three in the San Gabriel River, and one in the Los Angeles River) (Service 2011, p. 7). These occurrences were threatened by habitat destruction, natural and human-induced changes in stream flows, urban development and land-use practices, intensive recreation, introduction of nonnative predators, and risks associated with small population size. Santa Ana suckers are now believed to be extant in four of those six occurrences because no positive observations have been made in lower Santa Ana River or San Dimas Wash since 2010 and 2013, respectively. The number of individuals within these areas appears to have declined and their remaining habitat is fragmented and degraded. Since listing, threats have continued to increase in magnitude and impacts to the habitat have increased rangewide. However, recent completion of the Big Tujunga HCP and the BO associated with Cogswell Dam are anticipated to help alleviate threats associated with dam operations while also helping to improve habitat quality and extend the occupied range through ongoing and planned translocation efforts in the San Gabriel Mountains. Likewise, the completion of the Upper Santa

Ana River HCP is expected to extend the occupied range and contribute to sucker recovery in the Santa Ana River Recovery Unit (RU) in the future.

CONCLUSION

After reviewing the best available scientific information, we conclude that Santa Ana sucker remains a threatened species. The evaluation of threats affecting the species under the factors in 4(a)(1) of the Act and analysis of the status of the species in our 2011 5-year review remains an accurate reflection of the species current status. Therefore, we recommend no change in status at this time.

RECOMMENDATIONS FOR FUTURE ACTIONS

The recommended actions listed below are to be initiated over the next 5 years. The actions are intended to reduce threats to the Santa Ana sucker and provide information to better understand the biological and physical factors limiting the population growth and distribution. We recognize that conservation of this species will require cooperation and coordination with partners to minimize impacts from current threats, aid future restoration, and maximize effectiveness of limited funding.

1. Conduct a species status assessment to evaluate Santa Ana sucker viability in the four watersheds where the species occurs.
2. Continue to expand the current distribution of the Santa Ana sucker through augmentation or reintroduction efforts.
    a. Assess areas outside the currently occupied range of the species that may serve as suitable reintroduction sites.
    b. Conduct translocation activities upstream of Cogswell Dam and monitor efforts for the next 5 years.
    c. Conduct translocation activities upstream of Big Tujunga Dam and monitor efforts for the next 5 years.
    d. Prepare and implement restoration and reintroduction plan(s) for the Santa Ana River RU.
    e. Expand the captive rearing facilities in the Santa Ana River RU to facilitate translocations, if needed.
    f. Use the 10(j) designation to establish additional populations that contribute to species recovery.
3. Implement management actions to minimize impacts from recreational activities associated with OHV use, rock dams, recreational residences, and recreational mining (or dredging) for precious metals throughout range.
4. Manage predators in all RUs.
5. Utilize conservation easements on streams as a long-term management tool in lower tributaries.
6. Work with partners to identify opportunities for conservation or preservation of Santa Ana sucker occurrences on private lands. Support land acquisition to meet recovery goals. Work with local, State, and Federal partners to identify and leverage funding (i.e., section 6) to acquire habitat for the Santa Ana sucker.

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FIELD OFFICE APPROVAL

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