

to the FCC Form 477, for each state in which they exceed this threshold.

(b) Respondents identified in paragraph (a) of this section shall file the FCC Form 477 on diskette or via e-mail, as directed in the instructions to the FCC Form 477. Upon submission of each report, an original certification letter (as contained in the instructions to FCC Form 477) signed by the responsible official shall be mailed to the Commission.

(c) Respondents may make requests for Commission non-disclosure of provider-specific data contained in the Form 477 under § 0.459 of this chapter by so indicating on the Form 477 at the time that the subject data are submitted. The Commission shall make all decisions regarding non-disclosure of provider-specific information, except that the Chief of the Common Carrier Bureau may release provider-specific information to a state commission, provided that the state commission has protections in place that would preclude disclosure of any confidential information.

(d) Respondents identified in paragraph (b) of this section shall file a revised version of FCC Form 477 if and when they discover a significant error in their filed FCC Form 477. For counts, a difference amounting to 5 percent of the filed number is considered significant. For percentages, a difference of 5 percentage points is considered significant.

(e) Failure to file FCC Form 477 in accordance with the Commission's rules and the instructions to Form 477 may lead to enforcement action pursuant to the Act and any other applicable law.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AF34

Endangered and Threatened Wildlife and Plants; Threatened Status for the Santa Ana Sucker

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the Fish and Wildlife Service (Service), determine threatened status according to the Endangered Species Act of 1973, as amended (Act), for the Santa Ana sucker (*Catostomus santaanae*). The species is threatened by

potential habitat destruction, natural and human-induced changes in streamflows, urban development and related land-use practices, intensive recreation, introduction of nonnative competitors and predators, and demographics associated with small populations. The final rule invokes the Federal protection afforded by the Act for the Santa Ana sucker within the Los Angeles, San Gabriel, and Santa Ana River drainages.

DATES: The effective date of this rule is May 12, 2000.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, 2730 Loker Avenue West, Carlsbad, California 92008.

FOR FURTHER INFORMATION CONTACT: Glen W. Knowles, Fish and Wildlife Biologist, U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office (telephone 760-431-9440; facsimile 760-431-9624).

SUPPLEMENTARY INFORMATION:

Background

The Santa Ana sucker (*Catostomus santaanae*) is a recognized species and member of the sucker family (*Catostomidae*) (Robbins *et al.* 1991). The Santa Ana sucker was originally described as *Pantosteus santa-anae* by Snyder (1908). The genus *Pantosteus* was reduced to a subgenus of *Catostomus*, and the hyphen was omitted from the specific name in a subsequent revision of the nomenclature (Smith 1966). Smith and Koehn (1971) and Smith (1992) continued to recognize *Pantosteus* as a subgenus, although several authors have followed earlier usage (Miller 1959) in recognizing *Pantosteus* as a genus related to *Catostomus* (Minckley 1973; Minckley *et al.* 1986).

Moyle (1976a) described the Santa Ana sucker as being less than 16 centimeters (cm) (6.3 inches (in.)) in length. The species is silvery below and darker along the back, with irregular blotches and pigmented membranes connecting the rays of the tail (Moyle 1976a).

The Santa Ana sucker inhabits streams that are generally small and shallow, with currents ranging from swift (in canyons) to sluggish (in the bottomlands). All the streams are subject to periodic severe flooding (Moyle 1976a). Santa Ana suckers appear to be most abundant where the water is cool (less than 22° Celsius (72° Fahrenheit)), unpolluted, and clear, although they can tolerate and survive

in seasonally turbid water (Moyle 1976a; Moyle and Yoshiyama 1992). Santa Ana suckers feed mostly on algae, diatoms, and detritus scraped from rocks and other hard substrates, with aquatic insects making up a very small component of their diet. Larger fish generally feed more on insects than do smaller fish (Greenfield *et al.* 1970; Moyle 1976a).

Santa Ana suckers generally reach sexual maturity in just over 1 year and typically do not live more than 3 years (Greenfield *et al.* 1970). Spawning generally occurs from early April to early July, with a peak in spawning activity occurring in late May and June (Greenfield *et al.* 1970; Moyle 1976a). The spawning period may be variable and protracted, however. Recent field surveys on the East Fork of the San Gabriel River found evidence of an extended spawning period. These surveys found small juveniles (<30 millimeters (mm) standard length (<1.2 in.)) in December (1998) and March (1999) at the San Gabriel River site (U.S. Geological Survey (USGS) data, *in litt.* 1999). This data indicates that spawning may be very protracted in this stream, and begin as early as November. The fecundity of the Santa Ana sucker appears to be exceptionally high for a small sucker species (Moyle 1976a). Total fecundity of six females, ranging in size from 78 mm (3.1 in.) to 158 mm (6.2 in.), ranged from 4,423 to 16,151 eggs (Greenfield *et al.* 1970). The combination of early sexual maturity, a protracted spawning period, and high fecundity should allow the Santa Ana sucker to quickly repopulate streams following periodic flood events that could decimate populations (Moyle 1976a).

Historically, the Santa Ana sucker appeared to be native to the rivers and larger streams of the Los Angeles Basin—the Los Angeles, San Gabriel, and Santa Ana River drainage systems in Los Angeles, Orange, Riverside, and San Bernardino Counties (Smith 1966). Although historic records are scarce, Santa Ana suckers presumably ranged from near the Pacific Ocean to the uplands of the Los Angeles and San Gabriel River systems, and to at least where Pump House #1 is now located (near the San Bernardino National Forest boundary) in the Santa Ana River (Swift *et al.* 1993; Camm Swift, Ichthyologist Consultant, pers. comm. 1996). Although the Santa Ana sucker was described as common in the 1970s (Moyle 1976a), the species has experienced declines throughout most of its range (Moyle *et al.* 1995; Swift *et al.* 1993). The species is now restricted to three noncontiguous populations:

lower Big Tujunga Creek (Los Angeles River drainage); the East, West, and North Forks of the San Gabriel River (San Gabriel River drainage); and the lower and middle Santa Ana River (Santa Ana River drainage) (Moyle *et al.* 1995; Swift *et al.* 1993). A population also occurs in portions of the Santa Clara River drainage system in Ventura and Los Angeles Counties. The Santa Clara population is presumed to be an introduced population, although this presumption is based on the absence of the species from early collections, and not on any documented records of introduction (Hubbs *et al.* 1943; Miller 1968; Moyle 1976a; Bell 1978). The Santa Clara River population was not included in the proposal to list the Santa Ana sucker as threatened because of its presumed introduced status (see the proposed rule, 64 FR 3915, for further details on this population). In this document, we define the native range of the Santa Ana sucker, as outlined in the proposed rule, to include populations in the Los Angeles River, San Gabriel River, and Santa Ana River drainage systems.

Los Angeles River System

Although historically present, the species may now be extirpated from the Los Angeles River (Swift *et al.* 1993). Santa Ana suckers are still found in portions of Big Tujunga Creek (a tributary of the Los Angeles River) between Big Tujunga Dam and Hansen Dam. Surveys downstream of the Big Tujunga Dam found the species to be present but rare (fewer than 20 individuals collected at each site) just below the dam, as well as in the vicinities of Delta Flat and Wildwood. The species was found to be abundant (an estimated 200 individuals collected) near Stoneyvale (Mike Wickman, Angeles National Forest, *in litt.* 1996). Several thousand Santa Ana suckers were observed in a visual survey of Big Tujunga Creek in small sections from the confluence of Little Tujunga Creek to the Foothill Boulevard bridge in May 1999 (C. Swift, pers. com. 1999). Santa Ana suckers were also common in visual surveys of Big Tujunga Creek from Foothill Boulevard to the intersection of Oro Vista and Mt. Gleason Avenues in May 1999 (Glen Knowles, U.S. Fish and Wildlife Service, *in litt.* 1999a); however, by October 1999, this reach had dried up entirely. Santa Ana suckers were abundant in October 1999 in the approximately 1-mile-long stretch of flowing waters of Big Tujunga and Haines Canyon Creeks between the 210 Freeway and Hansen Dam, as were two other rare native fish species, arroyo

chub (*Gila orcutti*) and Santa Ana speckled dace (*Rhinichthys osculus* ssp.). Santa Ana suckers could not be found in other parts of the Big Tujunga Creek in October 1999, which were dry except for a few isolated shallow pools (G. Knowles, *in litt.* 1999a). In late summer and autumn of dry years, Big Tujunga Creek becomes a dry wash for much of its length. During these times, Santa Ana suckers may be restricted to about 1 mile of stream in the Los Angeles River Basin. We estimate that the Santa Ana sucker has lost approximately 80 percent of its historic native range in the Los Angeles River Basin. The portions of Big Tujunga Creek currently occupied by the Santa Ana sucker constitute approximately 25 percent of the total remaining native range of the species. Approximately 60 percent of the current range of the Santa Ana sucker in the Los Angeles River Basin occurs on private lands. The remaining 40 percent of the range in the Los Angeles River Basin occurs on Angeles National Forest lands managed by the U.S. Forest Service (USFS).

San Gabriel River System

Santa Ana suckers were common in the San Gabriel River below Morris Dam, near Fish Canyon, until the mid-1970s (C. Swift, *in litt.* 1999a). However, no suckers were found in surveys conducted below Morris Dam in 1995 (Dr. Tom Haglund, University of California, Los Angeles, *in litt.* 1996). Santa Ana suckers were also absent from 1998 surveys in the mainstem San Gabriel River at Browns Gulch, below Morris Dam, and at Rainbow Ranch (Chambers Group 1999). Santa Ana suckers were present in 1998 Chamber Group surveys of the West Fork of the San Gabriel River (Chambers Group 1999); however, surveys conducted by California Department of Fish and Game (CDFG) in 1998 and 1999 failed to locate suckers in the West Fork (Ray Ally, CDFG, *in litt.* 1999; Robert C. Hight, CDFG, *in litt.* 1999). However, CDFG did find Santa Ana suckers in Bear Creek, a tributary of the West Fork San Gabriel River, in June 1999 (R. Ally, CDFG, *in litt.* 1999). Quarterly surveys indicated suckers were common in the East Fork of the San Gabriel River throughout 1999 (Mike Saiki, USGS Biological Resources Division (BRD), pers. comm. 1999). Thus, the Santa Ana sucker now appears extant only upstream of the confluence of the East, West, and North Forks of the San Gabriel River. Furthermore, the population of Santa Ana suckers in the North Fork is small, and the population in the West Fork appears to be declining. The portions of the San Gabriel River occupied by the

Santa Ana sucker constitute approximately 15 percent of the total remaining native range of the species. However, data gathered during sampling indicates that the San Gabriel River may contain the most individuals of any remaining population (R. Ally, *in litt.* 1996; Mike Guisti, CDFG, *in litt.* 1996; M. Wickman, *in litt.* 1996; Juan Hernandez, CDFG, *in litt.* 1997; M. Saiki, pers. com. 1999). We estimate that the Santa Ana sucker has lost approximately 75 percent of its native range in the San Gabriel River. Approximately 15 percent of the current range of the Santa Ana sucker in the San Gabriel River Basin occurs on private lands. The remaining 85 percent of the range in the San Gabriel River Basin occurs in the Angeles National Forest. Even with the substantial decrease in the sucker's range in the San Gabriel River drainage system, Moyle and Yoshiyama (1992) considered this population of Santa Ana suckers to be the only viable population within the species' native range.

Santa Ana River System

In 1986 and 1987, several hundred Santa Ana suckers were observed in the Santa Ana River downstream of Prado Dam (C. Swift, pers. comm. 1996). By 1996, a general fish survey below Prado Dam yielded only 5 suckers from a total of 271 fishes captured (M. Guisti, CDFG, *in litt.* 1996). In April 1987, only five suckers were found during a sampling effort above the Prado Dam from the City of Norco to about 5 kilometers (km) (3.1 miles (mi)) upstream. In addition to fish being scarce above the dam, no small individuals were observed, indicating the possibility of little or no reproduction occurring in the area (Moyle and Yoshiyama 1992). In 1991, sampling indicated that, although fishery habitat in the Santa Ana River was primarily fair to poor, Santa Ana suckers were abundant between Norco and Riverside (Chadwick and Associates 1992). Additionally, evidence suggested Santa Ana suckers were using tributaries, including Tequesquite Arroyo, Sunnyslope Channel, and Anza Park Drain, for spawning and nurseries (Chadwick and Associates 1996). Seventy-six Santa Ana suckers were taken in three collections about 2.0 km (1.2 mi) below Hamner Avenue, Anaheim County, in the summer of 1997. An extensive survey of the Santa Ana River between Weir Canyon Road and Hamner Avenue, in Anaheim County, during the summer of 1998 yielded 42 Santa Ana suckers. All were juveniles less than 70 mm (2.8 in.) long (C. Swift, *in litt.* 1998). However, recently, in surveys between September

and November 1999, seven adult suckers were captured near River Road, Riverside—three in the main-stem Santa Ana River, and four in the diversion channel that diverts most of the river's flow into the Prado Wetlands (C. Swift, *in litt.* 1999). Snorkel surveys of the Santa Ana River between Mission Boulevard and Riverside Avenue in Riverside in November 1999 found several pockets of tens to hundreds of Santa Ana suckers, usually in the deepest areas of the stream (C. Swift, pers. comm. 1999). Although Chadwick and Associates (1991) collected one Santa Ana sucker in this area near Mission Boulevard in March 1991, they stated that this reach probably would not support viable populations of fishes due to elevated levels of "chlorine and unionized ammonia" in this reach and unsuitable breeding substrates. Recent surveys in September and December 1999 in the Metropolitan Water District crossing near the Van Buren Avenue bridge in Riverside captured 48 and 16 suckers, respectively, although these individuals appeared to be in poorer body condition than those in the San Gabriel River (Barbara Martin, USGS, BRD, pers. comm. 1999). Extensive surveys of the Santa Ana River at Imperial Highway in December 1998 and March, June, September, and December 1999 failed to record any Santa Ana suckers (B. Martin, pers. comm. 1999).

Chadwick and Associates (1996) noted that length-frequency analysis indicates Santa Ana suckers are naturally reproducing in the Santa Ana River system. However, they asserted that Santa Ana sucker population decreases, as evidenced by 1996 surveys, were due to high flows in the basin between 1991 and 1996 (M. Guisti, *in litt.*, 1996). T. Haglund (*in litt.* 1996) contended that a large number of suckers reported in tributaries are juveniles and may be the progeny of very few adults. The presence of juveniles in surveys at the Metropolitan Water District Crossing, in March, June, and September 1999, represent positive evidence of recruitment, despite the apparent lack of suitable spawning habitat at that site (M. Saiki, pers. comm. 1999).

Santa Ana suckers occur in the lower portions of the Santa Ana River, with current survey records from the vicinity of Weir Canyon Road in Anaheim to Riverside Avenue in Riverside, but are now apparently absent from the upper reach of the river in the San Bernardino Mountains (Moyle and Yoshiyama 1992; Swift *et al.* 1993). We estimate that the Santa Ana sucker has lost approximately 70 percent of its native

range in the Santa Ana River. The portions of the Santa Ana River occupied by the Santa Ana sucker constitute approximately 60 percent of the total remaining native range of the species. Approximately 75 percent of the range of the species in the Santa Ana River Basin occurs on private lands. The balance is within State, county, city, and regional park lands, with a small portion, 3 percent, on military lands.

In summary, the Santa Ana sucker has declined throughout significant portions of its range. The species has lost approximately 75 percent of its native range. Recent population densities range from approximately 246 fish in 2.9 km (1.8 mi) on the East Fork of the San Gabriel River (J. Hernandez, *in litt.* 1997) to 16 fish in 1.6 km (1.0 mile) of the Santa Ana River in December 1999 (USGS Survey Data, *in litt.* 1999). This overall reduction in range, and the more localized reductions in numbers, are particularly surprising given the high fecundity and apparent broad habitat tolerances of the species. Urbanization, water diversions, dams, introduced competitors and/or predators, and other human-caused disturbances likely are playing a role in the decline of the species. These factors have also been implicated in the decline of other western suckers (Minckley *et al.* 1991; Scopetone and Vinyard 1991).

The decline of the Santa Ana sucker is also part of a greater overall decline of freshwater fishes in Southern California. The Los Angeles Basin was or is home to at least seven native species of freshwater fishes that have been declining or have been extirpated since the 1930s (Swift *et al.* 1993). Four of these species, the steelhead (*Oncorhynchus mykiss*), the Pacific lamprey (*Lampetra tridentata*), the Pacific brook lamprey (*Lampetra cf. pacifica*), and the unarmored three-spined stickleback (*Gasterosteus aculeatus williamsoni*), have been extirpated from the Los Angeles Basin since the 1950s. Two others, the Santa Ana speckled dace (*Rhinichthys osculus*), and the arroyo chub (*Gila orcutti*), have become rare in the Los Angeles Basin (Swift *et al.* 1993).

Previous Federal Action

On September 6, 1994, we received a petition under the Act (16 U.S.C. 1531 *et seq.*) to list the Santa Ana sucker (*Catostomus santaanae*), Santa Ana speckled dace (*Rhinichthys osculus*), and Shay Creek threespine stickleback (*Gasterosteus aculeatus*) as endangered species. The petition was submitted by the Sierra Club Legal Defense Fund, Inc., on behalf of seven groups including the California-Nevada Chapter

of the American Fisheries Society, The Nature School, California Sportfishing Protection Alliance, Friends of the River, Izaak Walton League of America, California Trout, and Trout Unlimited. We deferred processing this petition because of other higher priority listing actions and severe funding constraints imposed by a number of continuing resolutions between November 1995 and April 1996.

On July 9, 1996, we published a 90-day petition finding (61 FR 36021) that substantial information had been presented indicating listing may be warranted for the Santa Ana sucker. On November 26, 1996, we published a notice initiating a status review for the Santa Ana sucker (61 FR 60073). On April 3, 1997, we published a 12-month finding (62 FR 15872) that listing the Santa Ana sucker was warranted, but precluded by higher listing priorities. On January 26, 1999, we proposed threatened status for the Santa Ana sucker within its native historic range of the Los Angeles, San Gabriel and Santa Ana River Systems (64 FR 3915). After the close of the comment period, we received seven requests to reopen the comment period. These requests asked us to consider new information gained from ongoing studies on the species, and to consider the use of a special rule under section 4(d) of the Act to implement a long-term conservation program for the species in the Santa Ana River. On December 16, 1999, we reopened the comment period to satisfy the public notice requirements of the Act and our regulations (50 CFR 424.16(c)(vi)), and to consider new scientific information (64 FR 70209).

The processing of this final rule conforms with our Final Listing Priority Guidance published in the **Federal Register** on October 22, 1999 (64 FR 57114). The guidance clarifies the order in which we will process rulemakings. Highest priority is processing emergency listing rules for any species determined to face a significant and imminent risk to its well-being (Priority 1). Second priority (Priority 2) is processing final determinations on proposed additions to the lists of endangered and threatened wildlife and plants. Third priority (Priority 3) is processing new proposals to add species to the lists. The processing of administrative petition findings (petitions filed under section 4 of the Act) is the fourth priority (Priority 4). The processing of this final rule is a Priority 2 action.

Summary of Comments and Recommendations

In the January 26, 1999, proposed rule (64 FR 3915), we requested interested parties to submit factual reports or information that might contribute to development of a final rule. The 60-day comment period closed on March 29, 1999. We contacted appropriate Federal and State agencies, county and city governments, scientific organizations, and other interested parties. We reopened the comment period on December 16, 1999, to satisfy the public notice requirements of the Act and to consider new scientific information. The reopened comment period closed on January 3, 2000. We published public notices of the proposed rule in the *Los Angeles Times*, the *Orange County Register*, and the *Riverside Press Enterprise* on December 17, 1999, which invited general public comment. We did not receive any requests for a public hearing.

During the public comment periods, we received written comments from 45 individuals, organizations, and State and local agencies. Of the comments received, 32 were in support of listing, 3 were opposed, and 10 were neutral. Some commenters submitted updated status information on the Santa Ana sucker and new information on possible threats to the species. This information has been incorporated in the "Background" and "Summary of Factors Affecting the Species" sections. We address all other comments received during the comment periods in the following summary of issues. Comments of a similar nature are grouped into a single issue.

Issue 1: Several commenters felt that the Santa Ana sucker should be listed as an endangered species, rather than a threatened species.

Our Response: Most of these comments did not provide additional information or criteria to justify listing the species as endangered. Those commenters who did provide a basis for endangered status identified potential habitat destruction, natural and human-induced changes in streamflows, urban development and related land-use practices, intensive recreation, the introduction of nonnative competitors and predators, and demographics associated with small populations as reasons that remaining populations were threatened with extinction. We agree that multiple factors threaten the Santa Ana sucker (see "Summary of Factors Affecting the Species" section). However, we do not believe the Santa Ana sucker meets the Act's definition of endangered, which is a species "in

danger of extinction throughout all or a significant portion of its range." The Act defines a threatened species as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range" (section 3(19)). Although current population estimates do not exist for any of the sucker populations, all of the currently known populations within the native range were surveyed in 1999. In each drainage, suckers were locally common in 1999, and no populations appeared to be in imminent danger of extinction. We conclude that the remaining populations that constitute the native range of Santa Ana sucker are likely to become in danger of extinction in the foreseeable future. Therefore, the Act's definition of a threatened species fits the current situation of the Santa Ana sucker best.

Issue 2: Some commenters expressed support for designating critical habitat and felt that we should designate critical habitat for the species at the time of listing. Other commenters offered specific recommendations for areas to list as critical habitat, or requested that we not designate critical habitat in specific stream reaches.

Our Response: In this rule, as in the proposed rule, we find that critical habitat is not determinable because the biological needs of the Santa Ana sucker are not sufficiently known to identify an area as critical habitat. When a "not determinable" finding is made, we must, within 2 years of the publication date of the original proposed rule, propose the designation of critical habitat unless such designation is found to be not prudent. For a more detailed evaluation of our critical habitat finding for the Santa Ana sucker, and an explanation of "not determinable" and "not prudent" findings, please see the "Critical Habitat" section.

Issue 3: Some commenters requested that we list the Santa Clara population as threatened or endangered. Another commenter asked if the Santa Clara River population would require any increased protection because of its possible role in the recovery of the species.

Our Response: In the proposed rule, we identified only those Santa Ana sucker populations within the native range of the species for listing as threatened. The native range of the Santa Ana sucker is considered to be the rivers and streams of the Los Angeles, San Gabriel, and Santa Ana River Basins. The Santa Clara population is presumed to be an introduced population, although this presumption is based on its absence from early

collections, and not on a documented record of introduction (Hubbs *et al.* 1943; Miller 1968; Moyle 1976a; Bell 1978). Therefore, the Santa Clara River population was not included in the proposal to list the species.

We believe that the Santa Ana sucker has lost about 75 percent of its historic native range. Considering the total remaining range of the species as all those areas currently occupied by the Santa Ana sucker, including both native and introduced populations, the portions of the Santa Clara River occupied by the species constitute approximately 50 percent of the total remaining range of the species. In light of the current status of the Santa Ana sucker, and the portion of the remaining range that occurs in the Santa Clara River system, further evaluation of the Santa Clara population is needed to determine its role in the recovery of the species. If the Santa Clara River population is determined to be crucial to the recovery of the species, we may need to reevaluate the status of this population under the Act.

Issue 4: Several commenters expressed the opinion that recreational suction dredging actually benefits the Santa Ana sucker, and that such suction dredging should be allowed to continue in streams occupied by the species.

Our Response: Suction dredging is the use of a suction system to remove and return material at the bottom of a stream, river, or lake for the extraction of minerals. Suction dredging in California is regulated by the CDFG under section 228 of the California Code of Regulations and by the U.S. Army Corps of Engineers (USACE) under section 404 of the Clean Water Act. The USFS may also regulate this activity by closing streams to dredging on Forest Service lands. The USACE does not require a section 404 permit for holders of a CDFG 5653 Standard Dredge Permit, but does require a 404 permit for all other types of dredging. Suction dredge operators are required to obtain a permit from CDFG, which is valid for a calendar year (J. Reese, USACE, *in litt.* 1995; CDFG, *in litt.* 1999). In 1999, all counties where the Santa Ana sucker naturally occur were open to suction dredging (Los Angeles, Orange, and Riverside Counties); however, the East Fork of the San Gabriel River and portions of the West Fork of the San Gabriel River are covered by special regulation. The East Fork is the only stream containing Santa Ana suckers that is commonly subject to suction dredging. CDFG issues special dredge permits for this stream with conditions to exclude dredging from April 1 to June 30. The closed period is to allow

resident fish and amphibians to spawn without interference from dredging. CDFG issued approximately 200 special dredging permits in 1995 for the East Fork, the first year the stream had been dredged legally in 15 years. This number has decreased steadily to approximately 40 special dredging permits issued in 1999 (Dwayne Maxwell, CDFG, pers. comm. 1999).

Few studies exist on suction dredging and its effects on aquatic ecosystems. Of the studies conducted, most indicate that the effects of a single suction dredge on overall habitat and on benthic (bottom of the stream) aquatic insect communities are highly localized and short term, but vary with stream gradient, flow regime, and sediment load characteristics of the stream (Griffith and Andrews 1981; Harvey *et al.* 1982; Thomas 1985; Harvey 1986; Hall 1988; Somer and Hassler 1992). In general, suction dredging removes all substrates smaller than the diameter of the intake nozzle and deposits them as large, unstable piles just downstream from the dredge. Harvey *et al.* (1982) found that on the American River, Yuba River, and Butte Creek, California, settleable solids and sedimentation rate both increased within several meters of the suction dredge, but rapidly returned to ambient levels downstream. Turbidity, however, was more variable. Streams with higher clay content substrates experienced greater long-lasting changes in turbidity. As with the work by Harvey *et al.* (1982), Thomas (1985) found during a study on Gold Creek in Missoula County, Montana, that suction dredging had only localized, short-term effects on insects living in the soil. Just after dredging, numbers of soil-living insects were significantly reduced in the dredged area. However, within 10 meters (32.5 feet) downstream of the dredged area, insect numbers and turbidity were normal. Within a month, aquatic insect numbers had returned to normal in the dredged section of the stream (Thomas 1985). In addition, Somer and Hassler (1992) found that, while the species composition of benthic insects was altered within sections of streams adjacent to suction dredging, overall abundance remained the same.

Thomas (1985) observed cutthroat trout opportunistically feeding on invertebrates dislodged by a suction dredge. In some circumstances, habitat may be temporarily created by suction dredging. Harvey (1986) observed that fish occupying a riffle during late summer in Butte Creek, California, moved into a newly created dredge excavation, presumably seeking deeper water. Harvey found that adult fishes in

general were not sensitive to dredging; however, riffle sculpin (*Cottus gulosus*), a benthic species, was displaced from suction-dredged areas, probably due to disturbance of its microhabitat. Harvey also suspected that the microhabitats of speckled dace (*Rhinichthys osculus*) would also be deleteriously altered by suction dredging.

Although the effects of recreational suction dredging on adult fishes may range from beneficial to deleterious, such dredging appears to have strong negative impacts to early life stages of fishes. Griffith and Andrews (1981) found a mortality rates of up to 100 percent for cutthroat trout (*Oncorhynchus clarki*) eggs and fry, and rainbow trout (*O. mykiss*) un-eyed eggs and sac fry that pass through a suction dredge. Harvey and Lisle (1998) noted that passing through a suction dredge would likely kill eggs, larvae, and fry of other types of fishes as well, including suckers (Catostomidae). Harvey *et al.* (1995) concluded that small larvae of fish such as suckers are easily damaged by physical disturbance caused by the dredge, but adults and juveniles are unlikely to be directly affected by suction dredges since they can either avoid or survive the passage through a dredge. In a review of the current literature on suction dredging, Harvey and Lisle (1998) concluded that while effects from dredging may be minor and local in some situations, fisheries managers would be prudent to consider dredging to be a harmful practice in streams that support threatened or endangered species.

No studies exist that specifically address the effects of suction dredging on Santa Ana suckers. In the proposed rule, we concluded that suction dredging may impact larvae and eggs of Santa Ana suckers, particularly if dredging is concentrated in an area containing spawning suckers. Santa Ana suckers and speckled dace, another species in the East Fork of the San Gabriel River, appear to prefer larger unconsolidated cobble substrates. These types of substrates may actually be created by suction dredging (Harvey and Lisle 1998). Also, suction dredging may provide local increases in food resources for fish (Thomas 1985). However, as stated above, suction dredging could result in mortality of eggs or larvae during spawning periods, and so should be excluded from Santa Ana sucker habitats during spawning. We will continue to evaluate the overall effects of suction dredging on Santa Ana suckers and provide specific recommendations to CDFG and the USFS based on those results.

Issue 5: We received comments that the Service should consider the application of a special rule under section 4(d) of the Act for the Santa Ana sucker in the Santa Ana River. The special rule would exempt certain activities from the take prohibitions of the Act, so long as a Service-approved Santa Ana sucker conservation plan is funded and implemented. The conservation plan would provide for the conservation of the species within the Santa Ana River watershed.

Our Response: Under section 4(d) of the Act, we have the authority to issue regulations as deemed necessary and advisable to provide for the conservation of a species listed as threatened. We are interested in pursuing collaborative, proactive efforts to conserve the Santa Ana sucker. A special rule under section 4(d) could provide an incentive for State, county, and local jurisdictions, as well as private land owners, to protect and conserve the Santa Ana sucker. This special rule could potentially provide for substantial conservation of the Santa Ana sucker. The comments we received from the County of Orange, Orange County Water District, and Santa Ana River Watershed Group provided background information to consider the possibilities of a special rule under section 4(d). If our review of this information indicates that the application of a special rule under 4(d) to facilitate the conservation of the Santa Ana sucker warrants further evaluation, we will publish in the **Federal Register** a notice of intent to consider such a rule.

Issue 6: Commenters expressed concerns about the effects of listing the Santa Ana sucker on the continued use of the San Gabriel Canyon Off Highway Vehicle Area (SGCOHVA), located at the confluence of the East and West Forks of the San Gabriel River in the Angeles National Forest.

Our Response: Although surveys in 1999 failed to record the Santa Ana sucker in the West Fork of the San Gabriel River (R. Ally, CDGF, *in litt.* 1999), the species was found within 1.6 km (1.0 mile) of the SGCOHVA during 1999 surveys of the East Fork (G. Knowles, *in litt.* 1999b). Therefore, we conclude that Santa Ana suckers can be expected to occur in the SGCOHVA.

The commenters stated that the use of the SGCOHVA would have minimal impact to the species because off-road vehicles are not used in streams but cross streams only to access other areas of the SGCOHVA. However, the operation of off-road vehicles in the SGCOHVA could adversely affect Santa Ana sucker habitat due to increased

sedimentation to the stream from erosion, or alteration of channel morphology from the physical disturbance of crossing the stream. In addition, one recent study found that certain types of stream crossings can act as barriers to fish movement (Warren and Pardew 1998), although temporary ford crossings, such as those currently in the SGCOHVA, were not a significant barrier to fish dispersal. Since the overall impact of the SGCOHVA to Santa Ana suckers is not currently known, further evaluation is required. Under section 7 of the Act, Federal agencies are required to insure, through consultation with us, that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species. The USFS would need to consult with us on the impacts that off-road vehicles in the SGCOHVA, or other ongoing and future activities on national forest lands, would have on Santa Ana suckers.

Issue 7: Several commenters were concerned that future efforts to repatriate the Santa Ana sucker into streams of the upper Santa Ana River Drainage would adversely impact the operation of hydroelectric facilities in the area.

Our Response: No decision has been made to reestablish Santa Ana suckers into areas formerly occupied by the species. However, considering the large amount of habitat loss (the Santa Ana sucker is believed to be extirpated from about 75 percent of its former range), reintroduction of Santa Ana suckers into formerly occupied habitats may be an important component of a recovery plan for the species. A decision to reintroduce the Santa Ana suckers to formerly occupied areas would be part of the recovery efforts for the species and would include analysis under and compliance with the Act, National Environmental Policy Act (NEPA), and other applicable Federal laws and regulations. Such analysis would include an evaluation of the impacts reintroduction would have on hydroelectric facilities and ways to minimize potential conflicts.

Issue 8: Commenters were concerned that listing the Santa Ana sucker would impair the ability of flood control districts to protect upland property from flooding. A commenter stated that the Santa Ana sucker has managed to adapt to the long history of flood control and maintenance activities in the Santa Ana River, and therefore, these activities should be allowed to continue. According to the commenters, flood control districts are willing to work with us to develop plans that would promote

the recovery of the Santa Ana sucker to the "maximum extent possible."

Our Response: The issue of flood control in Santa Ana sucker habitat is of critical importance. We disagree that the species has managed to adapt to flood control activity in the Santa Ana River. Flood control activity, such as bank stabilization, channelization, vegetation removal, drop structures, and the construction of dams, dikes, and diversions, has been implicated as a key factor responsible for the decline of not only the Santa Ana sucker but six other species of freshwater fishes native to the Los Angeles Basin (Swift *et al.* 1993). An example of the adverse impacts of flood control activity on this species is the Santa Ana River at Imperial Highway (State Highway 90) near Anaheim. Santa Ana suckers were common at this site in the late 1980s and early 1990s. During the last 15 years, the USACE has undertaken various flood control activities at the site. The river has been channelized, riparian vegetation removed, and banks stabilized with rip rap and concrete. Santa Ana suckers have not been recorded in this reach since 1996. Although the exact reasons for the apparent disappearance of Santa Ana suckers from this area may never be known, the drastic changes to its habitat by flood control activities are plausibly a key factor (Chadwick and Commies 1996; Robert Fisher, pers. comm. 1999; M. Saiki, pers. comm. 1999).

We commend the willingness of the flood control districts to work with us to develop a plan to recover the Santa Ana sucker. The Santa Ana River, within the jurisdiction of various flood control districts, contains some of the best remaining occupied habitat for Santa Ana suckers within this drainage, and the protection and enhancement of this habitat likely will be crucial to the recovery of the species. Certain flood control activities are regulated by the USACE under section 404 of the Clean Water Act. Under section 7 of the Act, Federal agencies are required to insure, through consultation with us, that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species. The impacts of ongoing and future flood control activities to Santa Ana sucker would be addressed during the section 7 consultation process. In addition, we are considering proposing special regulations under the authority of section 4(d) of the Act that would promote the conservation of the Santa Ana sucker by exempting certain activities from the take prohibitions of the Act in association with implementing locally prepared, Service-

approved programs that would contribute to the overall conservation of the species (see "Issue 5").

Issue 9: Commenters expressed the concern that the listing of the Santa Ana sucker is premature because sound scientific evidence does not exist demonstrating that the species populations are decreasing, because surveys have been inadequate to document declining populations, and because apparent declines represent natural variation in population size resulting from climate cycles and not from human-induced changes to ecosystems.

Our Response: We estimate that the Santa Ana sucker has been eliminated from about 75 percent of its former native range. This loss has been caused by habitat destruction, natural and human-induced changes in streamflows, urban development and related land-use practices, and the introduction of nonnative competitors and predators (Moyle *et al.* 1995; Swift *et al.* 1993). The utilization of the rivers of the Los Angeles Basin for irrigation began as early as 1821, and was extensive by the 1880s (Miller 1961). The demands of an increasing human population in the Los Angeles area resulted in an extreme level of utilization of the Los Angeles Basin Rivers that was apparent as early as 1930, when McGlashan (1930) wrote of the Santa Ana River, "Probably no other stream of its size in the United States is made to serve greater or more varied uses." By the 1950s, urbanization of the greater Los Angeles metropolitan area had resulted in severe declines of the native fish fauna of the Los Angeles Basin, such that four fish species had been extirpated from the basin (Swift *et al.* 1993). This urbanization resulted in conversion of Santa Ana sucker habitat to the concrete-lined storm drains that now constitute the lowermost reaches of the Los Angeles, San Gabriel, and Santa Ana Rivers (Mount 1995) (see "Summary of Factors Affecting the Species" section). Moyle and Yoshiyama (1992) stated, "[e]ven though Santa Ana suckers seem to be quite generalized in their habitat requirements, they are intolerant of polluted or highly modified streams." The impacts associated with urbanization are likely the primary cause of the extirpation of Santa Ana suckers from lower reaches of the Los Angeles, San Gabriel, and Santa Ana Rivers. We, therefore, disagree with the contention that sound scientific evidence does not exist demonstrating that the species is decreasing. The decline of the Santa Ana sucker and the destruction of its habitat are well documented (Miller 1961; Moyle 1976a;

Moyle and Yoshiyama 1992; Swift *et al.* 1993; Moyle *et al.* 1995).

Issue 10: Commenters expressed the belief that the newly completed Seven Oaks Dam, upstream from the present range of Santa Ana sucker in the Santa Ana River, would not act as a barrier to upstream fish movement. The only flows connecting the upper and lower Santa Ana River Basins in the last 40 years have been extreme flood flows, which would cause Santa Ana suckers to be lost downstream. In fact, commenters felt that Seven Oaks Dam would be beneficial for the species by reducing the amount of fine particles and sand deposited downstream in flood flows, sediments that threaten Santa Ana sucker habitat in the Santa Ana River.

Our Response: We agree that the surface flows of the Santa Ana River between Riverside and Seven Oaks Dam have long been diverted to provide water for the communities in southwestern San Bernardino County and western Riverside County. We also agree that this dewatered stretch, and not the dam, is the current primary barrier to the movement of Santa Ana suckers upstream in the Santa Ana River. However, records from the 1940s indicate that Santa Ana suckers were once a common resident in the now dewatered stretch of the Santa Ana River near San Bernardino. The restoration of a more perennial flow to these areas may make these areas suitable for Santa Ana suckers. Ideally, connectivity between the upper and lower portions of the drainage would allow for gene flow throughout the population. However, even if water was returned to dry reaches of the Santa Ana River, Seven Oaks Dam would prevent movement of Santa Ana suckers between formerly occupied upstream habitats and the lower reaches they occupy now. Thus, Seven Oaks Dam represents a more permanent barrier to the movement of fishes than dewatered sections of the stream.

We agree that sediment load characteristics of the Santa Ana River have been modified downstream from Seven Oaks Dam. However, the ultimate effects on sediment characteristics of the Santa Ana River downstream of the newly completed Seven Oaks Dam are, at best, difficult to predict. In general, streams below newly closed dams are changed through narrowing and deepening of their channels and coarsening of their beds. This generally results in an armored condition of the river bed just below the dam, such that the bed is lined with relatively large particles that were mobile during high flood flows before the dam was closed

but are now too heavy to be moved by the new regime (Graf 1988; Mount 1995). Also, most dams have a high trap efficiency, meaning that they trap most sediment. Only the finer sediments get through (Mount 1995). So, although we cannot know for certain what effect the newly completed Seven Oaks Dam will have on the Santa Ana River downstream, we can generally predict that it will result in a decrease of coarser materials and an increase in finer substrates delivered to downstream reaches. Seven Oaks Dam will further prevent the Santa Ana River from functioning as a natural river, a scenario that has often had numerous negative impacts on the aquatic environment (Hunt 1988; Harden 1996; McCully 1996), as well as on the resident fish populations (Miller 1961; Moyle 1976a; Minckley and Deacon 1991; Mount 1995).

Peer Review

In accordance with the interagency peer review policy published on July 1, 1994 (59 FR 34270), we solicited the expert opinions of independent specialists regarding pertinent scientific or commercial data and assumptions relating to the taxonomy, population status, and supportive biological and ecological information for the taxon under consideration for listing. The purpose of such review is to ensure that listing decisions are based on scientifically sound data, assumptions, and analyses, including input of appropriate experts and specialists. We requested four individuals, who possess expertise in Santa Ana sucker biology and Catostomid ecology, and whose affiliations include academia, a Federal agency, and a private company, to review the proposed rule by the close of the comment period. Two individuals responded to our request, and we have addressed their comments in the previous section of the rule, and in updating the "Background" and "Summary of Factors Affecting the Species" sections.

Summary of Factors Affecting the Species

Section 4 of the Act and regulations (50 CFR part 424) issued to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more factors described in section 4(a)(1) of the Act. These factors and their application to the Santa Ana sucker (*Catostomus santaanae*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

Moyle and Yoshiyama (1992) concluded that the native range of the Santa Ana sucker is largely coincident with the Los Angeles metropolitan area. Intensive urban development of the area has resulted in water diversions, extreme alteration of stream channels, changes in the watershed that result in erosion and debris torrents, pollution, and the establishment of introduced nonnative fishes. Moyle and Yoshiyama (1992) stated, "[e]ven though Santa Ana suckers seem to be quite generalized in their habitat requirements, they are intolerant of polluted or highly modified streams." The impacts associated with urbanization are likely the primary cause of the extirpation of this species from lowland reaches of the Los Angeles, San Gabriel, and Santa Ana Rivers.

As the Los Angeles urban area expanded, the Los Angeles Basin rivers (the Los Angeles, Santa Ana, and San Gabriel Rivers) were highly modified, channelized, or moved in an effort to either capture water runoff or protect property. As Moyle (1976a) stated, "[t]he lower Los Angeles River is now little more than a concrete storm drain." The same is true for the Santa Ana and San Gabriel Rivers. These channelized rivers and canals with uniform and altered substrates do not appear to be suitable for sustaining Santa Ana sucker populations (Swift *et al.* 1993; Chadwick and Associates 1996), and the species appears to persist only in reaches that remain relatively unchannelized. Past and continuing projects have resulted (or will result) in channelization of the Santa Ana River throughout most of the range of the Santa Ana sucker in Orange County. Urban development also threatens the Santa Ana sucker in the Los Angeles and Santa Ana River Basins. This urban development has also resulted in changes in water quality and quantity and the hydrologic regime of these rivers. The Santa Ana sucker is one of seven native freshwater fish species of the Los Angeles Basin that have declined drastically in the last 70 years. Four of these species, the steelhead, Pacific lamprey, Pacific brook lamprey, and the unarmored threespine stickleback have been extirpated from the Los Angeles Basin since the 1950s, and two others are very rare (Santa Ana speckled dace and arroyo chub), presumably due to the same factors that have caused the decline of the Santa Ana sucker (Swift *et al.* 1993) (For an example of the apparent effects of

channelization on Santa Ana suckers, see "Issue 8" in the "Summary of Comments and Recommendations" section).

All three river systems have dams that isolate and fragment fish populations. These dams have likely resulted in some populations being excluded from suitable spawning and rearing tributaries. Reservoirs created by the dams also provide areas where introduced predators and competitors can live and reproduce (Moyle and Light 1996) (see factor C of this section). The newly completed Seven Oaks Dam, upstream from the present range of Santa Ana sucker in the Santa Ana River, forms a barrier for the upstream movement of fish and further isolates Santa Ana sucker populations from their native range in the headwaters of the system.

The population of Santa Ana suckers in the West Fork of the San Gabriel River is threatened by accidental high flows from Cogswell Reservoir, which have devastated this section of stream several times in the past (Moyle and Yoshiyama 1992; Haglund and Baskins 1992; T. Haglund, *in litt.* 1996). T. Haglund (*in litt.* 1996) stated that, "[t]he West Fork population was wiped out by a sluicing event (removal of sediment by releasing a sudden flow of water) from Cogswell Dam in 1981 (anecdotal data) but recolonized from tributaries that acted as refugia. However, data (from CDFG, no date) suggest that the suckers have never returned to their former abundance." Santa Ana suckers have biological adaptations that allow the fish to quickly repopulate streams following periodic flood events (Moyle *et al.* 1995). However, successive high flows could eliminate the sucker population in the West Fork of the San Gabriel River by rapidly depleting the individuals soon after they migrate into the mainstem from tributaries. Proposals for additional sluicing or other sediment removal activities from the Cogswell reservoir on the San Gabriel River system are being considered (R. C. Hight, *in litt.* 1999). The potential effects of the proposed sediment management project may also degrade the habitat of the Santa Ana sucker by depositing large amounts of silt on the streambed, causing a rapid increase in suspended sediments in the water column.

The petitioners contended that suction dredge mining has increased in the Cattle Canyon tributary to the East Fork of the San Gabriel River, thereby threatening the Santa Ana sucker. A commenter indicated that no suction dredging has occurred in Cattle Canyon and suggested that the petitioners took Moyle and Yoshiyama (1992) out of

context (Gerald Hobbs, Public Lands Action Committee, *in litt.* 1996, 1999). The CDFG (Patricia Wolf, CDFG, *in litt.* 1996) indicated they are not aware of suction dredging in the Cattle Canyon tributary to the East Fork of the San Gabriel River. However, they had issued nearly 200 Special Dredge Permits for the East Fork of the San Gabriel River in 1995, the first time the East Fork had been dredged in 15 years. This number has dropped to approximately 40 Special Dredge Permits issued in 1999 for the East Fork San Gabriel River (D. Maxwell, CDFG, pers. comm. 1999). Even though surveys from 1996 through 1999 indicate the East Fork of the San Gabriel River continues to maintain a healthy Santa Ana sucker population (R. Ally, *in litt.* 1996; J. Hernandez, *in litt.* 1997; M. Saiki, pers. comm. 1999), suction dredging may impact larvae and eggs of Santa Ana suckers, particularly if dredging is concentrated in an area containing spawning suckers. Harvey and Lisle (1998) recommended that, given the uncertainty concerning the effects of suction dredging, fisheries managers would be wise to assume that suction dredging is a harmful practice in streams that support threatened or endangered species. (See "Issue 4" in the "Summary of Comments and Recommendations" section.)

Recreational activities on forest lands may also pose some threat to Santa Ana sucker habitat quality. Annually, thousands of people from the Los Angeles metropolitan area and adjacent urban communities use wilderness and nonwilderness areas within the Big Tujunga Creek and San Gabriel Forks areas of the Angeles National Forest for recreation. The impact of large numbers of people using these areas include destruction of streambank vegetation, streambank erosion, and the disposal of untreated human waste and other refuse into the creeks, all of which degrade water quality (D. Maxwell, CDFG, pers. comm. 1999). Given the projected growth of the Los Angeles metropolitan area, this threat should increase.

Although the Santa Ana sucker evolved under conditions that presumably included droughts, water diversions and management practices threaten the continued existence of the species. For example, stretches of the upper Santa Ana River have been permanently dewatered, eliminating Santa Ana sucker populations and migration through these reaches to other areas (Swift *et al.* 1993). As previously discussed, channelization of the rivers of the Los Angeles Basin, water quality degradation, and dam construction have all combined to degrade and eliminate historic Santa Ana sucker habitat.

Future human population and urban growth of the basin will further stress the natural resources of the basin and likely exacerbate these conditions by further destruction and degradation of Santa Ana sucker habitat.

Degradation of water quality in the Santa Ana and Los Angeles Rivers may threaten the Santa Ana sucker (Moyle and Yoshiyama 1992). Suckers are common in some areas upstream from Prado Dam where several water treatment facilities discharge into the Santa Ana River (Chadwick and Associates 1992). Chadwick and Associates (1992) attributed high sucker numbers to adequate water supplies discharged by the treatment facilities and the presence of tributaries that offer spawning areas and refugia for suckers. However, they did note that the Santa Ana River between Mission Boulevard and Interstate 10 probably would not support viable populations of fishes, due, in part, to "elevated levels of chlorine and unionized ammonia." Overall, Santa Ana sucker numbers are much reduced in the Santa Ana River, and the Santa Ana River population appears to be less healthy than populations in other rivers occupied by the species (Moyle and Yoshiyama 1992; M. Saiki, pers. comm. 1999; P. Wolf, *in litt.* 1996).

The small mile-long stretch of Big Tujunga and Haines Canyon Creeks that appears to provide a critical refugia for the Santa Ana sucker, as well as the arroyo chub and Santa Ana speckled dace, is threatened by the potential water quality impacts of a proposed golf course development to be built just upstream of Interstate 210 (Bill Eick, *in litt.* 1999). Cohen *et al.* (1999) reviewed studies of 36 golf courses around the United States in an effort to evaluate the impacts to water quality by golf courses. Although no toxicologically significant impacts were observed by the authors, maximum allowable concentrations of pesticides and related chemicals for aquatic organisms occasionally were exceeded. Moreover, maximum contaminant levels/health advisory levels were frequently exceeded for various pesticides and ground water nitrate-nitrogen. Although the water quality tolerances of Santa Ana suckers are unknown, in general, point and non-point source pollution (*e.g.*, urban runoff, sedimentation) have significantly degraded the water quality in most of the native range of the Santa Ana sucker.

In an effort to identify what environmental variables affect the Santa Ana sucker, the Biological Resources Division of the USGS, in conjunction with the Orange County Water District,

County of Orange, Los Angeles County Department of Public Works, and the Service, is nearing completion of a study of the factors affecting Santa Ana sucker abundance. Initial results from this study indicate that tissue concentrations of inorganic and organic contaminants from Santa Ana suckers from the San Gabriel and Santa Ana Rivers were not unusually high. However, measurements of electrical conductance and turbidity did show significant negative correlations with Santa Ana sucker abundance, indicating that Santa Ana suckers are less tolerant where conditions are more turbid and contain more salts (M. Saiki, pers. comm. 1999). Based on available information, we conclude that increased turbidity and associated deposition of fine particles and sand likely threaten the Santa Ana sucker population in the Santa Ana River by decreasing the availability of cobble and other hard substrates and altering the water quality preferred by the species (Moyle and Yoshiyama 1992).

B. Overutilization for Commercial, Sporting, Scientific, or Educational Purposes

We are not aware of any commercial or recreational demand for the Santa Ana sucker. Although the CDFG reported that Santa Ana suckers had been illegally caught with gill and throw nets in the Santa Ana River below Prado Dam (Lt. M. Maytorena, CDFG, pers. comm. 1997), the relative impact of illegal harvesting of the species is unknown.

C. Disease or Predation

Moyle and Yoshiyama (1992) concluded that introduced brown trout (*Salmo trutta*) may have caused the extirpation of the Santa Ana sucker from the upper Santa Ana River in the San Bernardino Mountains. The petitioners noted that centrarchid (sunfishes) and bullheads prey on suckers. In the Los Angeles River, such introduced predators aggregate in pools during droughts and are presumably feeding on native fishes, including Santa Ana suckers (Sierra Club Legal Defense Fund, *in litt.* 1994). Similar conditions exist in the Santa Ana River. Predation by introduced fishes in combination with habitat destruction has been implicated in the decline of other species of suckers in the Southwest (Minckley *et al.* 1991; Scopettone and Vinyard 1991) and on native fishes in general in California (Moyle 1976b).

Initial results from the USGS study mentioned above indicate that the presence of nonnative fish species was more strongly correlated with the

absence of Santa Ana suckers than any water quality variable. Strongly significant negative associations were found with common carp (*Cyprinus carpio*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), and fathead minnow (*Pimephales promelas*), indicating nonnative fishes may exclude Santa Ana suckers by competition, or eliminate suckers through predation (M. Saiki, pers. comm. 1999). Nonnative introduced fishes have long been recognized as having far-reaching negative impacts to native fishes in North America (Moyle *et al.* 1986). Accordingly, introduced predators and competitors likely threaten the continued existence of Santa Ana suckers throughout most of the range of the species.

D. The Inadequacy of Existing Regulatory Mechanisms

Despite existing regulatory mechanisms and conservation activities accomplished to date by private, State, and Federal entities, the Santa Ana sucker has continued to decline throughout a significant portion of its range. Existing regulatory mechanisms that might provide some protection for the Santa Ana sucker if it was not listed include the California Endangered Species Act, California Environmental Quality Act (CEQA), NEPA, Clean Water Act, Federal Endangered Species Act (where the Santa Ana sucker occurs in areas where other federally listed species are located), and land management or conservation measures by Federal, State, or local agencies or by private groups and organizations.

The State of California considers the Santa Ana sucker a "species of special concern." However, the Santa Ana sucker is not listed as endangered or threatened by the State, and "species of special concern" are afforded no protection under the California Endangered Species Act.

CEQA requires full public disclosure of the potential environmental impact of proposed projects. This law also obligates disclosure of environmental resources within proposed project areas and may enhance opportunities for conservation efforts. However, CEQA does not guarantee that such conservation efforts will be implemented. The public agency with primary authority or jurisdiction over the project is designated as the lead agency under CEQA, and is responsible for conducting a review of the project and consulting with other agencies concerned with resources affected by the project. Section 15065 of the CEQA guidelines requires a finding of

significance if a project has the potential to "reduce the number or restrict the range of a rare or endangered plant or animal." Although not currently listed under the California Endangered Species Act, the Santa Ana sucker would likely qualify as a rare species under section 15380 of the CEQA guidelines and thus would be given the same consideration under CEQA as those species that are officially listed with the State. Once significant impacts are identified, the lead agency may either require mitigation for effects through changes in the project or decide that overriding considerations justify approval of a project with significant impacts. In the latter case, projects may be approved that cause significant environmental damage, such as resulting in the loss of habitat supporting State-listed species. Protection of listed species through CEQA is, therefore, not assured.

NEPA requires an intensive environmental review of projects that may adversely affect a federally listed species, but project proponents are not required to avoid impacts to nonlisted species. The primary purpose of NEPA is to require Federal agencies to fully disclose impacts that would result from their proposed actions, and to make findings regarding the significance of those impacts. It does not require that resources be protected.

Lead agencies responsible under CEQA and/or NEPA have made determinations that have adversely affected, or would adversely affect, the Santa Ana sucker and its habitat. Examples of projects that have been completed or are currently undergoing the review process under CEQA and/or NEPA that would impact this species include the Santa Ana River Mainstem Project, containing multiple projects including Seven Oaks Dam and the raising of Prado Dam, and the continued channelization of the Santa Ana River in Orange County. The reviews for these projects have not addressed the effects of the proposed actions on the Santa Ana sucker, despite its status as a species proposed for listing. Similarly, on the San Gabriel River, proposed silt removal from Cogswell Dam may adversely affect the sucker. While projects altering a stream course are subject to review under section 1601 or 1603 of the California Fish and Game Code, such State regulations have not prevented habitat loss or sufficiently protected habitats to prevent the decline of the Santa Ana sucker.

Section 404 of the Clean Water Act currently affords some protection for the Santa Ana sucker. However, the Clean Water Act, by itself, does not provide

adequate protection for the Santa Ana sucker. Although the objective of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. 1251), this law contains no specific provisions to address the conservation needs of rare species. USACE is the Federal agency with primary responsibility for administering the section 404 program. Under section 404, nationwide permits may be issued for certain activities that are considered to have minimal impacts, including minor dredging and discharges of dredged material, some road crossings, and minor bank stabilization (December 13, 1996; 61 FR 65873). USACE seldom withholds authorization of an activity under nationwide permits unless the existence of a listed threatened or endangered species would be jeopardized. Activities that do not qualify for authorization under a nationwide permit, including projects that would result in more than minimal adverse environmental effects, either individually or cumulatively, may be authorized by an individual permit or regional general permit, which are typically subject to more extensive review. Regardless of the type of permit deemed necessary under section 404, rare species such as the Santa Ana sucker may receive no special consideration with regard to conservation or protection unless they are listed under the Act.

As part of the section 404 review process, we provide comments to USACE on nationwide permits and individual permits under the Fish and Wildlife Coordination Act. Our comments are only advisory, although procedures exist for elevating permit review within the agencies when disagreements between us and USACE arise concerning the issuance of a permit. In practice, the section 404 permit review process has often proven to be inadequate to protect unlisted but rare species, such as the Santa Ana sucker.

The Santa Ana sucker may receive a small amount of protection from the overlap of its habitat with two federally endangered birds, the least Bell's vireo (*Vireo bellii pusillus*) and the southwestern willow flycatcher (*Empidonax traillii extimus*). Consideration for these listed bird species protects some areas from projects that could ultimately damage Santa Ana sucker habitat. However, protection is limited because these listed bird species occupy different areas and have dissimilar ecological requirements from the Santa Ana sucker. Although the federally

endangered San Bernardino kangaroo rat (*Dipodomys merriami parvus*) also occurs along the Santa Ana River, this listed mammal occurs upstream from the present range of the Santa Ana sucker. Therefore, the presence of the San Bernardino kangaroo rat will have little effect on the status or protection afforded the sucker.

USFS lands encompass approximately 15 percent of the current native range of the Santa Ana sucker. Although a small percentage of the range is within a designated wilderness area, the majority of the range on USFS lands is not under wilderness management. Wilderness designation offers no direct regulatory protection to the sucker, but it does reduce some human-induced impacts on the stream. For example, motorized equipment is excluded from these areas. This restriction reduces or eliminates all motorized recreation and mining activities within the wilderness areas. Because these types of activities may harm Santa Ana sucker populations and habitats, wilderness designation offers some indirect benefit to the species. Santa Ana sucker habitat on USFS is also not subject to the development pressures existing on private land. However, this protection likely is partially offset by the recreational impacts discussed earlier (see factor "A").

E. Other Natural or Manmade Factors Affecting its Continued Existence

Periodic wildfires could adversely affect Santa Ana suckers by eliminating vegetation that shades the water and moderates water temperature, or by producing silt-and-ash-laden runoff that can significantly increase the turbidity of rivers. Although recent fires, including the 1996 Biedebach Fire (near the vicinity of Prairie Fork on the East Fork of the San Gabriel River) and the 1999 Bridge Fire (adjacent to the West and North Forks of the San Gabriel River), did not burn the riparian corridor, they may have contributed increased runoff and siltation to the creek.

The high degree of fragmentation of the remaining Santa Ana sucker populations makes the species especially vulnerable to random events, environmental factors, and loss of genetic variability. A small population size increases the rate of inbreeding and may allow increased expression of deleterious recessive genes occurring in the population (known as inbreeding depression). Loss of genetic variability, through random genetic drift (random gene frequency changes in a small population due to chance), reduces the ability of small populations to respond

successfully to environmental stresses. Most of the lowland river habitats have been lost, and the remaining populations of Santa Ana suckers are low in numbers, with the exception of the San Gabriel Forks populations. Although Santa Ana suckers are locally common in what remains of their native range, the total population size of any one of the remaining native populations is still relatively small. Random events, such as floods, variations of annual weather patterns, predation and associated demographic uncertainty (conditions affected by chance events, such as sex ratios, that influence survival and reproduction in small populations), or other environmental stresses and human-caused factors, such as chemical spills, may lead to the demise of the remnant populations in the Los Angeles or Santa Ana Basins.

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining its status. Based on this evaluation, the preferred action is to list the Santa Ana sucker (*Catostomus santaanae*) as threatened. While not in immediate danger of extinction, the Santa Ana sucker is likely to become an endangered species in the foreseeable future if the present threats continue and populations decline further.

Critical Habitat

Critical habitat is defined in section 3, paragraph (5)(A), of the Act as the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and specific areas outside the geographical area occupied by a species at the time it is listed in accordance with the provisions of section 4 of the Act, upon a determination that such areas are essential for the conservation of the species. "Conservation" means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Critical habitat designation, by definition, directly affects only Federal agency actions through consultation under section 7(a)(2) of the Act. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat.

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. According to Service regulations (50 CFR 424.12(a)), critical habitat is not determinable if information sufficient to perform required analysis of the impacts of the designation is lacking or if the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat. Section 4(b)(2) of the Act requires us to consider economic and other relevant impacts of designating a particular area as critical habitat on the basis of the best scientific data available. The Secretary may exclude any area from critical habitat if he determines that the economic benefits of such exclusion outweigh the conservation benefits of designation, unless to do so would result in the extinction of the species.

In designating critical habitat, we consider the following requirements of the species: Space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing of offspring; and, generally, habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of this species (see 50 CFR 424.12(b)). In addition to these factors, we also focus on the known physical and biological features (primary constituent elements) within the designated area that are essential to the conservation of the species and may require special management considerations or protection. The essential features for the Santa Ana sucker may include, but are not limited to, spawning sites, food resources, and water quality and quantity (see 50 CFR 424.12(b)).

We conclude that the knowledge and understanding of the biological needs and environmental limitations of the Santa Ana sucker and the primary constituent elements of its habitat are insufficient to determine critical habitat for the fish. We believe that the Santa Ana sucker is intolerant of highly polluted waters, but little information is available concerning this possible limiting factor. Furthermore, in the Santa Ana River, suckers remain extant, although rare, in the lower reaches where water quality is degraded relative to the headwaters. We need additional information on the environmental limits

of the sucker to enable us to accurately designate critical habitat for the Santa Ana sucker throughout its range. The physical and biological features including but not limited to water chemistry, water temperature, instream flows, streambed substrate and structure, and fauna and flora of the aquatic environment that supports the Santa Ana sucker are the features about which we need additional information. In an effort to gain these data, the Orange County Water District, the County of Orange, Los Angeles County Department of Public Works, the National Fish and Wildlife Foundation, the Biological Resources Division of USGS, and the Service have funded and implemented research on the environmental limitations of the Santa Ana Sucker. The study is nearing completion and has already identified some environmental parameters, including water quality (e.g., turbidity and conductivity) and some biological parameters (introduced nonnative fish species) associated with variations in population densities. These correlations will help guide future research to focus on the variable(s) most likely to limit sucker populations.

When a "not determinable" finding is made, we must, within 2 years of the publication date of the original proposed rule, propose the designation of critical habitat, unless the designation is found to be not prudent. Initial results of the USGS-Santa Ana sucker study have been incorporated into this rule. A final report should be available later this year. We will use this study and other new information to reevaluate our knowledge of the species and, if determined prudent, propose critical habitat for the Santa Ana sucker. We will continue in our efforts to obtain more information on Santa Ana sucker biology and ecology, including distribution, population density, and essential habitat characteristics, particularly in regard to water quality. We will also use the information resulting from these efforts to identify measures needed to achieve conservation of the species, as defined under the Act.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for

possible land acquisition and cooperation with the States, and requires that recovery plans be carried out for all listed species. Funding may be available through section 6 of the Act for the State to conduct recovery activities. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer with us on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat, if designated. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with us, under section 7(a)(2) of the Act.

Federal agencies expected to consult with us under section 7 regarding the Santa Ana sucker include USACE and the Environmental Protection Agency because of their permitting authority under section 404 of the Clean Water Act. The USFS may consult with us on its activities on the Angeles National Forest and Los Padres National Forest. These agencies either administer lands/waters containing the Santa Ana sucker or authorize, fund, or otherwise conduct activities that may affect this species.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered and threatened wildlife not covered by a special rule. These prohibitions, codified at 50 CFR 17.21 and 17.31, in part, make it illegal for any person subject to the jurisdiction of the United States to take (including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt any such conduct), import or export, transport in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It is also illegal to possess, sell, deliver, carry, transport, or

ship any such wildlife that has been taken illegally. Certain exceptions apply to our agents and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving threatened wildlife under certain circumstances. Regulations governing permits are at 50 CFR 17.32. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. For threatened species, permits also are available for zoological exhibition, educational purposes, or special uses consistent with the mission of the Act.

As published in the **Federal Register** (59 FR 34272) on July 1, 1994, our policy is to identify to the maximum extent practicable those activities that would or would not be likely to constitute a violation of section 9 of the Act if a species is listed. The intent of this policy is to increase public awareness of the effect of a listing on proposed and ongoing activities within a species' range. We believe the following actions would not likely result in a violation of section 9:

(1) Actions that may affect the Santa Ana sucker and are authorized, funded, or carried out by a Federal agency when the action is conducted in accordance with any reasonable and prudent alternatives or reasonable and prudent measures to minimize the impacts of take identified by us in accordance with section 7 of the Act; and

(2) Possession, transport within or between States, and import and export, with proper permits, of Santa Ana suckers that were legally collected prior to the date of publication in the **Federal Register** of the final regulation adding this species to the list of threatened and endangered species.

Activities that we believe could potentially harm the Santa Ana sucker and result in a violation of section 9 of the Act include, but are not limited to:

(1) Take of Santa Ana suckers without a permit, which includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting any of these actions;

(2) Possessing, selling, delivering, carrying, transporting, or shipping illegally taken Santa Ana suckers;

(3) Unauthorized interstate and foreign commerce (commerce across State and international boundaries) and import/export;

(4) Introduction of nonnative species that compete or hybridize with, or prey on Santa Ana suckers;

(5) Unauthorized destruction or alteration of Santa Ana sucker habitat by dredging, channelization, diversion, dewatering through groundwater withdraw, in-stream vehicle operation or rock removal, or other activities that result in the destruction or significant degradation of cover, channel stability, substrate composition, water quality, water temperature, and migratory corridors; and

(6) Discharging or dumping of toxic chemicals, silt, organic waste, or other pollutants (such as may result from mining, land development or land management activities) into waters supporting Santa Ana suckers that results in death or injury to the species or results in the destruction or degradation of cover, channel stability, substrate composition, water quality, water temperature, and migratory corridors used by the species for foraging, cover, migration, and spawning.

We will review other activities not identified above on a case-by-case basis to determine if a violation of section 9 of the Act may be likely to result from such activity. We do not consider these lists to be exhaustive and provide them as information to the public.

Questions regarding whether specific activities may constitute a violation of section 9 should be directed to the Field Supervisor of the Service's Carlsbad Fish and Wildlife Office (see **ADDRESSES** section). Requests for copies of the regulations regarding listed wildlife and inquiries about prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Ecological Services, Endangered Species Permits, 911 N.E. 11th Avenue, Portland, Oregon 97232-4181 (telephone 503/231-6241; facsimile 503/231-6243)

National Environmental Policy Act

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted

pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Paperwork Reduction Act

This rule does not contain any new collections of information other than those already approved under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and assigned Office of Management and Budget clearance number 1018-0094. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid control number. For additional information concerning permit and associated requirements for threatened wildlife, see 50 CFR 17.32.

References Cited

A complete list of all references cited herein is available upon request from the Carlsbad Fish and Wildlife Office (see **ADDRESSES** section).

Author

The primary author of this document is Glen W. Knowles, Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as follows:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500, unless otherwise noted.

2. Amend § 17.11(h) by adding the following, in alphabetical order under FISHES, to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
FISHES							
* Sucker, Santa Ana ..	* <i>Catostomus santaanae.</i>	* U.S.A. (CA)	* Los Angeles River basin, San Gabriel River basin, Santa Ana River basin.	* T	* 694	NA	* NA
*	*	*	*	*	*		*

Dated: March 31, 2000.

Jamie Rappaport Clark,

Director, Fish and Wildlife Service.

[FR Doc. 00-8999 Filed 4-11-00; 8:45 am]

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