

AT THE CROSSROADS

A Report on the Status of California's
Endangered and Rare Fish and Wildlife

State of California
Resources Agency,
Fish and Game Commission, and
Department of Fish and Game

December 1980

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On the cover: A collage of wildlife.

SUMMARY

This report describes the current status of 65 forms of fish and wildlife species listed by the Fish and Game Commission as endangered or rare, as authorized under the California Endangered Species Act, Section 2050-2055, of the California Fish and Game Code. The report summarizes what has been accomplished and makes recommendations to ensure the enhancement and continued survival of those species. A biennial report will be provided to the Legislature to keep them apprised of the status of listed species. As addenda to "At the Crossroads" are prepared, they will be made available to recipients of this edition.

INTRODUCTION

State Background

The California Legislature was the first in the United States to prohibit the importation, taking, possession, and sale of endangered and rare species. The Endangered Species Act of 1970, authored by Assemblymen Warren and Sieroty, expressed the Legislature's concern over California's threatened wildlife, defined rare and endangered wildlife, and gave authority to the Fish and Game Commission to identify animals in California that are rare and endangered. On May 21, 1971, the Commission declared the first group of 43 animals endangered or rare.

A legislative mandate in 1970, the California Species Preservation Act, authored by Assemblyman Karabian, directed the California Department of Fish and Game to inventory all threatened fish and wildlife, develop criteria for rare and endangered species, and report to the Governor and the Legislature every two years on the status of these animals. On January 1, 1972, the Department submitted its first biennial report, "At the Crossroads - a report on California's endangered and rare fish and wildlife." That report described the 43 species of wildlife threatened with extinction or possible peril and recommended actions for their protection and preservation.

Subsequent status reports were made in 1974, 1976 and 1978. This is the fifth edition of At the Crossroads.

Other state legislation to protect and restore endangered wildlife includes the Environmental Protection and Research Act of 1970, which created an Environmental Protection Program Fund from the sale of personalized automobile license plates.

Assembly Joint Resolution Number 31 in 1970 memorialized the President, Congress, and the Secretary of the Interior to assist the Department of Fish and Game in compiling a species inventory of threatened fish and wildlife and to establish criteria for determining rare and endangered species.

The Legislature appropriated \$1 million from the General Fund to reimburse the Department for 1974-75 fiscal year nongame species management and protection activities. General Fund reimbursement has continued each year and it has increased to where \$9.3 million is budgeted for 1981-82.

Assistance also is provided by a seven-member Citizens Nongame Advisory Committee, appointed by the Director of Fish and Game in 1975 to review and advise the Department on its nongame species programs and to recommend sources of funding.

The Department of Fish and Game and the U. S. Fish and Wildlife Service entered into a cooperative agreement in 1976, under which the Department agreed to manage federal- and state-listed endangered, threatened and rare species, and became eligible to receive Endangered Species Act grant-in-aid funds. The Department

Since 1970 the Department of Fish and Game has been acquiring habitat and preserving important natural ecosystems. A system of ecological reserves has been established and coastal wetlands, such as Upper Newport Bay and Bolsa Chica Marsh in southern California and Bair Island and other tidal marshlands in the San Francisco Bay area, have been preserved. Much of this has been accomplished through funds provided by the Environmental Protection and Research Act and special appropriations from the Legislature.

Other agencies of state government also have been responsive to the needs of endangered wildlife. The Department of Parks and Recreation has established natural preserves within the park system for the California Least Tern, the American Peregrine Falcon, Belding's Savannah Sparrow, the Light-footed Clapper Rail, San Francisco Garter Snake and Yellow-billed Cuckoo. Habitat important to the survival of the Morro Bay Kangaroo Rat and the Peninsular Bighorn Sheep was added to the Montana De Oro and Anza Borrego Desert state parks, and the establishment of the Morro Rock Natural Preserve in Morro Bay State Park gave protection to the endangered Peregrine Falcon. Also, the California Department of Transportation partially restored a breeding pond for the Santa Cruz Long-toed Salamander at Valencia Lagoon.

Federal agencies have made substantial contributions toward endangered species preservation by establishing national wildlife refuges, research natural areas and similar environmental protection units to protect critical habitat.

Contributions have also been made by county and city planning departments and local governments. An example is the preservation of the Palo Alto Marsh and Salt Marsh Harvest Mouse habitat by the City of Palo Alto through its Baylands Nature Interpretive Center. The County of San Mateo has committed itself to the protection of the San Bruno Elfin and Mission Blue Butterflies on San Bruno Mountain through acquisition of a large park, and it is sponsoring studies to prepare a habitat conservation plan for the portion of the mountain subject to development.

Conservation organizations and concerned citizens' groups have provided additional impetus to endangered species habitat preservation. The California Natural Areas Coordinating Council has compiled an inventory of 2,300 natural areas and the University of California has established a Natural Land and Water Reserves System. The National Audubon Society, The Nature Conservancy, and the National Wildlife Federation are among conservation organizations prominent in preserving natural areas in California through acquisition and contributions of funds. The Nature Conservancy was instrumental in helping establish in the Department a new unit called the California Natural Diversity Data Base Program, one of whose objectives is to identify and catalogue locality data for all native fauna and flora in the state to enable government agencies to protect native species and their habitats.

This is not to say all that is needed has been accomplished. Much remains to be done, and with continuing and increased financial support and public interest, the state will be able to protect and conserve habitat essential to the preservation of California's endangered and rare fish and wildlife.

Recent Listing Changes

In March 1983, the State list of endangered and rare species was amended by action of the California Fish and Game Commission. The following species were

added to the rare list: Swainson's Hawk and Greater Sandhill Crane. These amendments were made to reflect our current knowledge about the status of state wildlife species and subspecies. The changes bring the total number of wildlife forms on the State endangered and rare list to 65.

Species listed in this publication do not necessarily comprise all native species that are endangered or rare in the state. There is a need for citizens to provide information that would justify further investigation for species that may be in decline or already depleted. Persons with such information should contact the Department of Fish and Game, 1416 Ninth Street, Sacramento, CA 95814.

Endangered and Rare Species Accounts

The species accounts that follow summarize the actions taken by the Department of Fish and Game to fulfill the intent of the Legislature and the Congress with regard to endangered species legislation. Fauna species accounts are listed in phylogenetical order. Species status is discussed in each of the species accounts.

The animals on the following pages have been declared endangered by the California Fish and Game Commission because their continued existence is jeopardized by one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition or disease.

The animals that have been declared rare, although not presently threatened with extinction, are in such small numbers throughout their range that they may become endangered if their environments worsen.

All animals listed are protected and may be taken only for research purposes under a memorandum of understanding issued by the Department of Fish and Game, as authorized by the Fish and Game Commission.

Following the species accounts is a listing of extinct and extirpated wildlife species.

The fifth biennial report on the status of California's endangered and rare fish and wildlife was published by the Department of Fish and Game, E. C. Fullerton, Director, under the auspices of the Resources Agency, Huey Johnson, Secretary, and with the cooperation of the Fish and Game Commission, Elizabeth L. Venrick, Ph.D., Chairperson. The Report was edited by Robert D. Mallette, Wildlife Management Supervisor, and Stephen J. Nicola, Senior Fisheries Biologist, and produced by the Conservation Education Branch, Sacramento, California.

TRINITY BRISTLE SNAIL
(Monadenia setosa)

CLASSIFICATION: State - Rare
Federal - Not listed

DESCRIPTION: This is a medium-sized, dull-surfaced, brown to chestnut-colored snail, with a lighter peripheral band. The peripheral band may have a dark central stripe. The adult shell is 25-35 mm (1-1.4 in.) in diameter and has six whorls. The periostracum bears short translucent bristles from which M. setosa derives its name. Spider webs and small leaf particles often become entangled in the bristles making the snails more difficult to see. The body of the snail is dark gray with closely spaced russet or salmon-colored tubercles resulting in an overall light reddish-brown appearance. This species has been called the "California Northern River Snail" by the U. S. Fish and Wildlife Service.

DISTRIBUTION: The Trinity Bristle Snail is locally distributed along seven small streams and tributary to Trinity River in northern Trinity County. This snail occurs near spring seeps on moist but generally well drained, somewhat stable, leaf mold covered slopes in mixed deciduous-coniferous forests and on stabilized, forested riparian benches. It is found only in the presence of hardwood overstory in moderate to deep shade. Juveniles up to 9 mm (.36 in.) diameter live beneath the loose bark of standing deadwood 0.5-3m (1.64-9.84 ft.) above ground level. Larger juveniles and adults infrequently climb. Because it is uncommon, even within its restricted range and has a very distinctive shell, it is vulnerable to overharvesting by shell collectors.

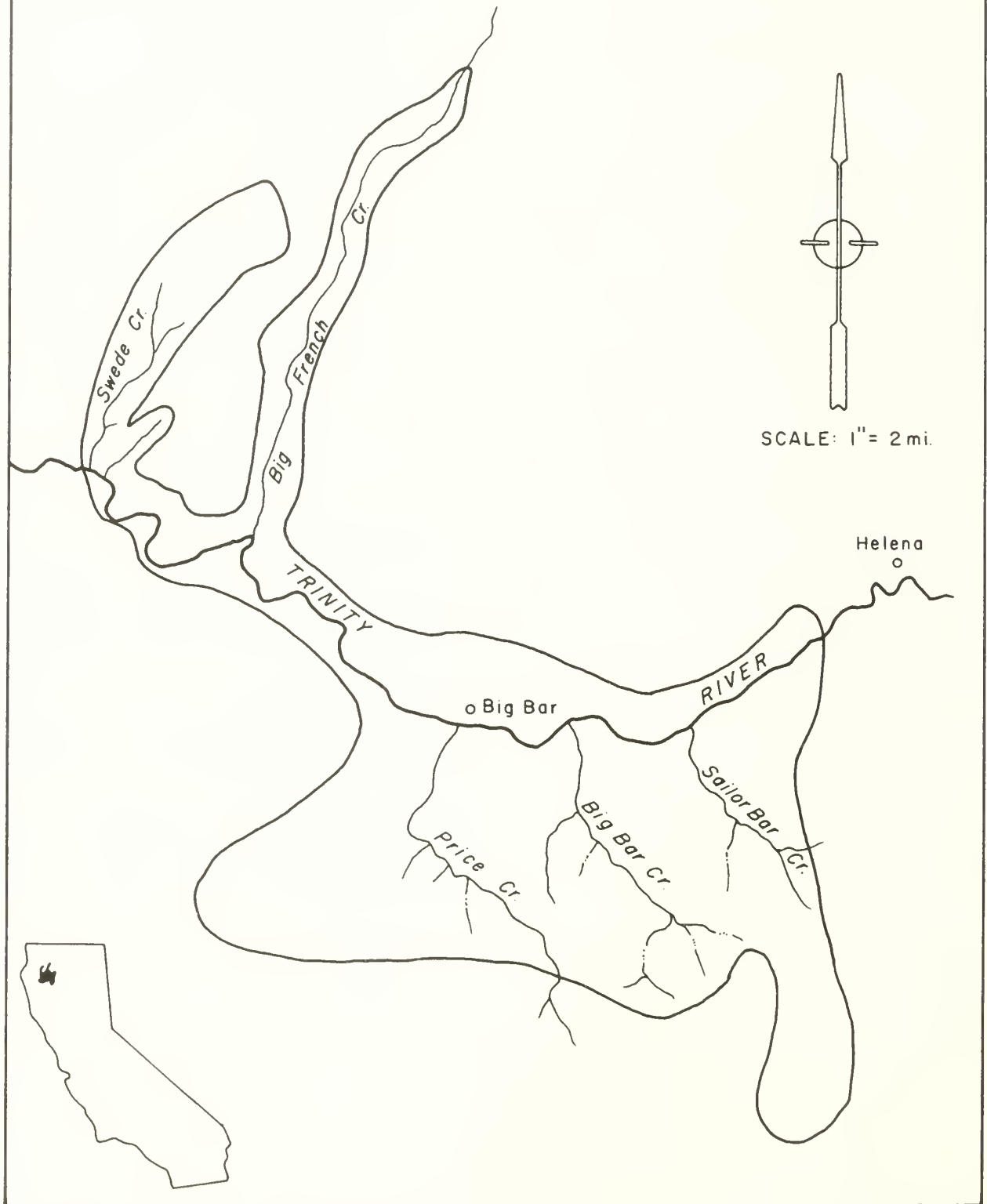
RECOVERY EFFORTS: The Department and the U. S. Forest Service conducted or funded studies on the snail's distribution, abundance, and habitat requirements in 1978 and 1980-81. The U. S. Forest Service recognizes M. setosa as a sensitive species and has developed an interim management plan for it.

FUTURE MANAGEMENT: Studies should be initiated on limiting factors, reproductive biology, and activity cycles to provide necessary information for the protection of the species.

REFERENCES:

- Armijo, P. 1979. Monadenia setosa (California northern river snail). Interim species management plan. U. S. Forest Service, Shasta-Trinity National Forest. Unpublished MS. 24 pp.
- Roth, B., and L. L. Eng. 1980. Distribution, ecology, and reproductive anatomy of a rare land snail, Monadenia setosa Talmadge. California Fish and Game 66(1):4-16.
- Talmadge, R. R. 1952. A bristled Monadenia from California. Nautilus 66:47-50.

TRINITY BRISTLE SNAIL DISTRIBUTION



At The Crossroads, 1980. Calif. Dep. of Fish and Game.

(July 1983)

RAZORBACK SUCKER
(Xyrauchen texanus)

CLASSIFICATION: State - Endangered
Federal - Not Listed

DESCRIPTION: This species, also called the Humpback Sucker, has a sharp-edged hump just behind the head. The hump is most prominent in larger individuals. The remaining morphological features are typical of other California suckers. The Razorback Sucker grows to about 61 cm (2 ft) and 3.6-4.5 kg (8-10 lb). Color is olivaceous, except during spawning when the dorsal surface turns dark brown to black, and the ventral surface turns bright yellow to orange.

DISTRIBUTION: Formerly found throughout mainstem Colorado River and its major tributaries in association with Colorado Squawfish and Bonytail Chub. It is now found in reduced numbers above Lake Powell, with even smaller populations in lakes Mohave and Havasu. Occasionally taken by anglers in California, it has also been collected by biologists in Senator Wash Reservoir, where they seem more abundant than elsewhere in the California portion of the Colorado River. The population decline was probably the result of habitat alteration caused by dams and channelization, and by competition and predation by introduced species. Limited spawning habitat and water level fluctuations during the spawning season have also caused the present population status.

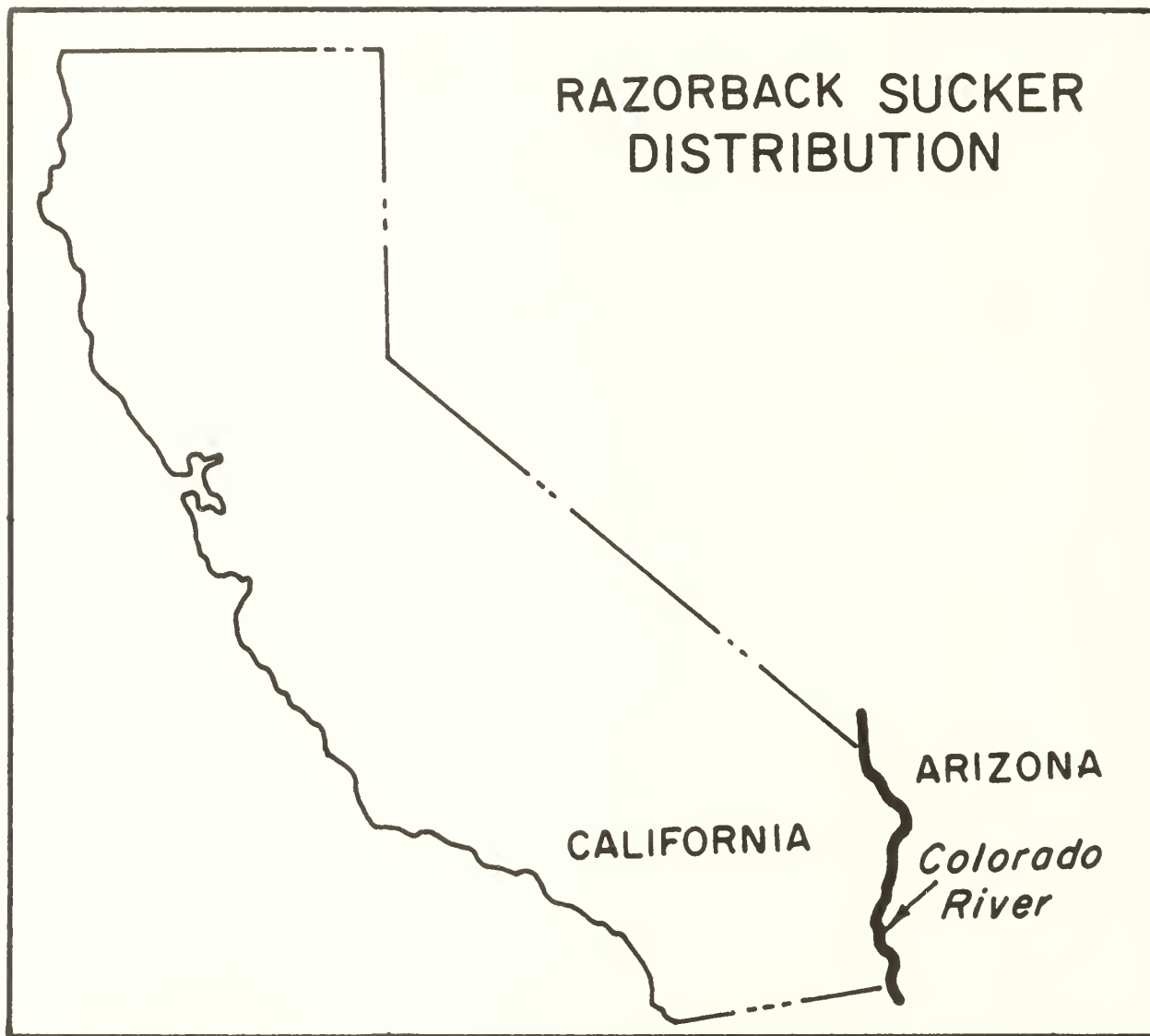
RECOVERY EFFORTS: A Colorado River Fishes Recovery Team was appointed by the Fish and Wildlife Service to determine abundance and distribution of the Razorback Sucker in the Colorado River, and to determine what measures are necessary for its continued survival. Studies on spawning behavior, movement patterns, and habitat preference are currently being conducted at Senator Wash Reservoir. This information will provide baseline data for preparing a species management plan. The species can be artificially propagated in hatchery facilities.

FUTURE MANAGEMENT: Additional studies need to be carried out at both Senator Wash Reservoir and the Lower Colorado River to determine population status and possible limiting factors. Artificial propagation or development of spawning areas or channels within the Colorado River may be necessary to restore this species in California. A recovery plan needs to be developed and management recommendations implemented.

REFERENCES:

- Dill, W. A. 1944. The fishery of the lower Colorado River. Calif. Fish Game 30: 109-211.
- Douglas, P. A. 1952. Notes on the spawning of the humpback sucker, Xyrauchen texanus (Abbott). Calif. Fish Game 38: 149-155.
- Gustafson, E. S. 1975. Early development, adult sexual dimorphism, and fecundity of the razorback sucker, Xyrauchen texanus (Abbott). U. S. Fish Wildl. Serv., Albuquerque, Contract 14-16-0002-3585, 28 pp.
- Holden, P. B., and C. B. Stalnaker. 1975. Distribution and abundance of mainstream fishes of the middle and upper Colorado River basins, 1967-1973. Trans. Amer. Fish. Soc. 104(2): 217-231.

Mamika, K. 1979. A literature review and summary report on the razorback sucker (Xyrauchen texanus). U. S. Bur. Land Manage., Yuma, Contract AZ-050-PH9-107, 16 pp.



At The Crossroads, 1980. Calif. Dep. of Fish and Game.

(July 1983)

SISKIYOU MOUNTAIN SALAMANDER
(Plethodon stormi)

CLASSIFICATION: State - Rare
Federal - Not Listed

DESCRIPTION: This is a slim-bodied salamander with short legs. Color is dull brown to chocolate brown on the dorsal surface and sides, often profusely speckled with white or yellowish flecks. The ventral surface is purplish gray. Adults grow to 102-152 cm (4-6 in).

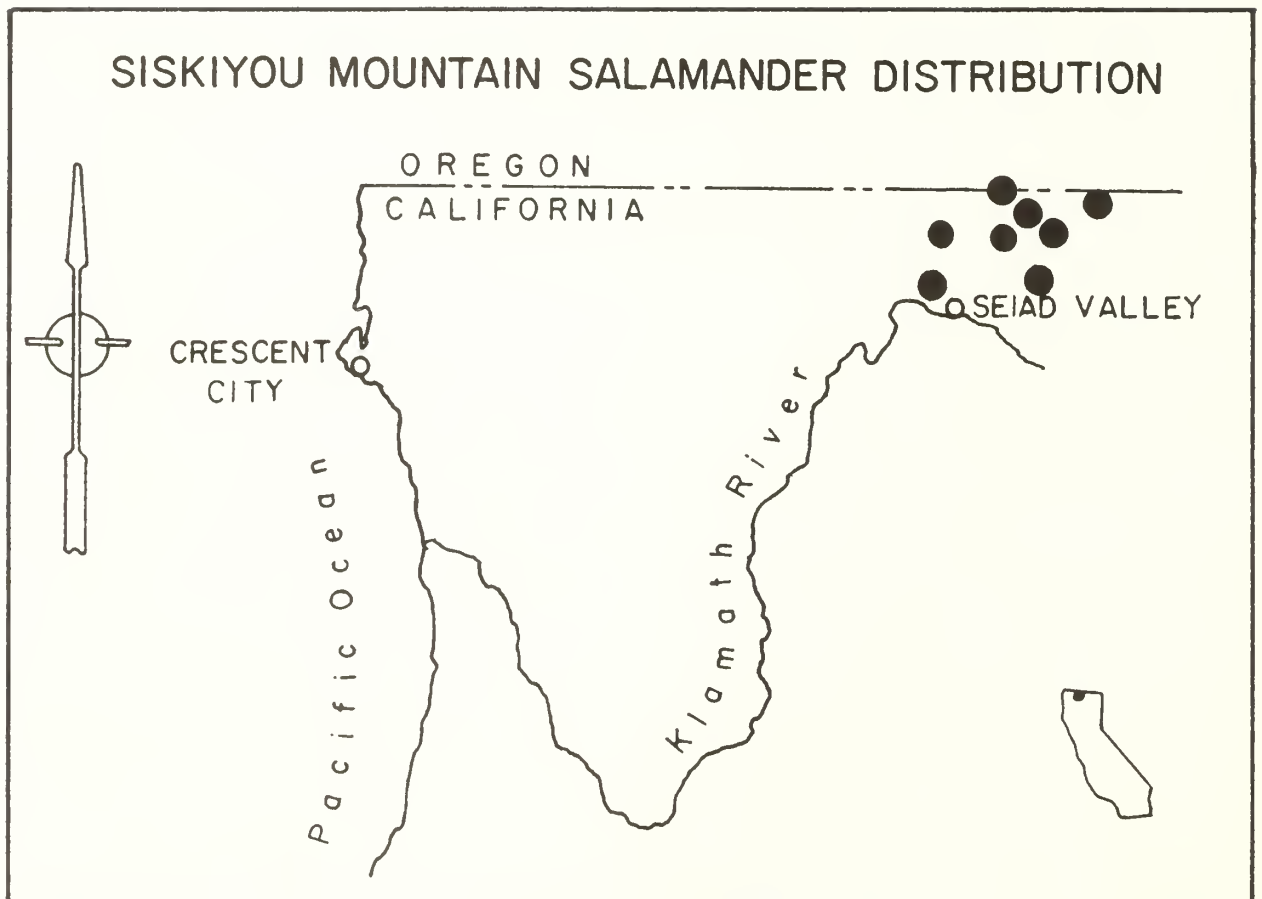
DISTRIBUTION: Occurs near the Hutton Guard Station, the Cook and Green Guard stations, along Joe and Dutch creeks in the upper Applegate River drainage, and along Seiad and Horse creeks in the Klamath River drainage, Siskiyou County. It is associated with loose rock rubble and talus on north-facing slopes or with heavily wooded areas.

RECOVERY EFFORTS: The U. S. Forest Service has been appraised of the status of this salamander. Preliminary studies on the ecology of this species have been completed by the University of Michigan, under funding from the U. S. Army Corps of Engineers.

FUTURE MANAGEMENT: Further studies to determine if additional populations occur in California will be conducted, and in cooperation with the U. S. Forest Service, a habitat management plan will be prepared.

REFERENCES:

- Brodie, E. D. 1970. Western salamanders of the genus Plethodon: systematics and geographic variation. *Herpetologica* 26(4):468-615.
- Nussbaum, R. A. 1974. The distributional ecology and life history of the Siskiyou mountain salamander, Plethodon stormi, in relation to the potential impact of the proposed Applegate Reservoir on this species. U. S. Army Corps of Engineers, Portland. 32 pp. (typewritten)



At The Crossroads, 1980. Calif. Dep. of Fish and Game.

(July 1983)

GIANT GARTER SNAKE
(Thamnophis couchi gigas)

CLASSIFICATION: State - Rare
Federal - Not Listed

DESCRIPTION: This is one of the largest garter snakes, reaching 137 cm (4 1/2 ft). The basic color is dull brown with a checkered pattern of well separated black spots on the dorsal side. There is a dull yellow-mid-dorsal stripe, and the lateral stripes are often not developed. The head is elongated with a pointed muzzle.

DISTRIBUTION: The original reported range of this snake was the San Joaquin Valley from the vicinity of Sacramento and Antioch southward to Buena Vista Lake. It appears that this snake has been extirpated from Buena Vista Lake and the Tulare Lake Basin. The present known distribution extends from the vicinity of Gridley, Butte County, to the vicinity of Burrell, Fresno County. It is one of the most aquatic of garter snakes and is usually found in areas of permanent freshwater, although it also frequents temporary water such as flooded rice fields and irrigation canals.

RECOVERY EFFORTS: The Department has completed preliminary survey work in the San Joaquin Valley and southern Sacramento Valley. The managers of several wildlife areas have been notified of the presence of this snake on their areas.

FUTURE MANAGEMENT: The distribution of this snake in the northern Sacramento Valley is not fully understood. Field surveys will be conducted to determine the northern limits of the Giant Garter Snake's range and its distribution in the Sacramento Valley. Recent pesticide testing programs have been carried out in potential Giant Garter Snake habitat. A better understanding of this snake's distribution and habitat preferences will allow more positive evaluation of future pesticide applications. The managers of State and Federal wildlife management areas and private duck clubs will be encouraged to retain aquatic habitat for this snake.

REFERENCES:

- Fitch, H. S. 1940. A biogeographical study of the ordinoides artenkreis of garter snakes (genus Thamnophis). Univ. Calif. Publ. Zool. 44(1):1-150.
- Fox, W. 1951. Relationships among the garter snakes of the Thamnophis elegans Rassenkreis. Univ. Calif. Publ. Zool. 50(5):485-530.
- Hansen, G. E., and J. M. Brode. 1980. Status of the giant garter snake, Thamnophis couchi gigas (Fitch). Calif. Dep. Fish Game, Inland Fish. Endang. Spec. Program Special Publ. 80-5. 14 pp.



At The Crossroads, 1980. Calif. Dep. of Fish and Game.

CALIFORNIA CONDOR
(Gymnogyps californianus)

CLASSIFICATION: State - Endangered
Federal - Endangered

DESCRIPTION: This vulture is North America's largest land bird. Condors weigh approximately 9 kg (20 lb), and average wingspread is 3 m (9 ft). Coloration is mostly black. Young birds have a bare gray head and neck, and the underwing lining may be dark, white, or mottled. Adult plumage develops by 5 or 6 years of age; plumages of both sexes are identical. The underwing feathers of adults form a white, triangular wing bar, and the head and neck are mostly orange.

DISTRIBUTION: This species formerly ranged over much of western North America from British Columbia to Baja California. Many factors--including human disturbance and habitat changes, shooting, egg collecting, and environmental contamination--have contributed, or may have contributed, to reduction of population size and range and to a reproductive rate that is too low to maintain a stable or increasing population. The existing population is estimated to be fewer than 30 birds. Current range includes the mountains and foothills around the San Joaquin Valley. Nesting takes place in shallow caves in cliffs in the southern limit of this range. Condors are carrion eaters, feeding on the carcasses of cattle, sheep, deer and other animals that the birds find on foothill rangelands and other open country.

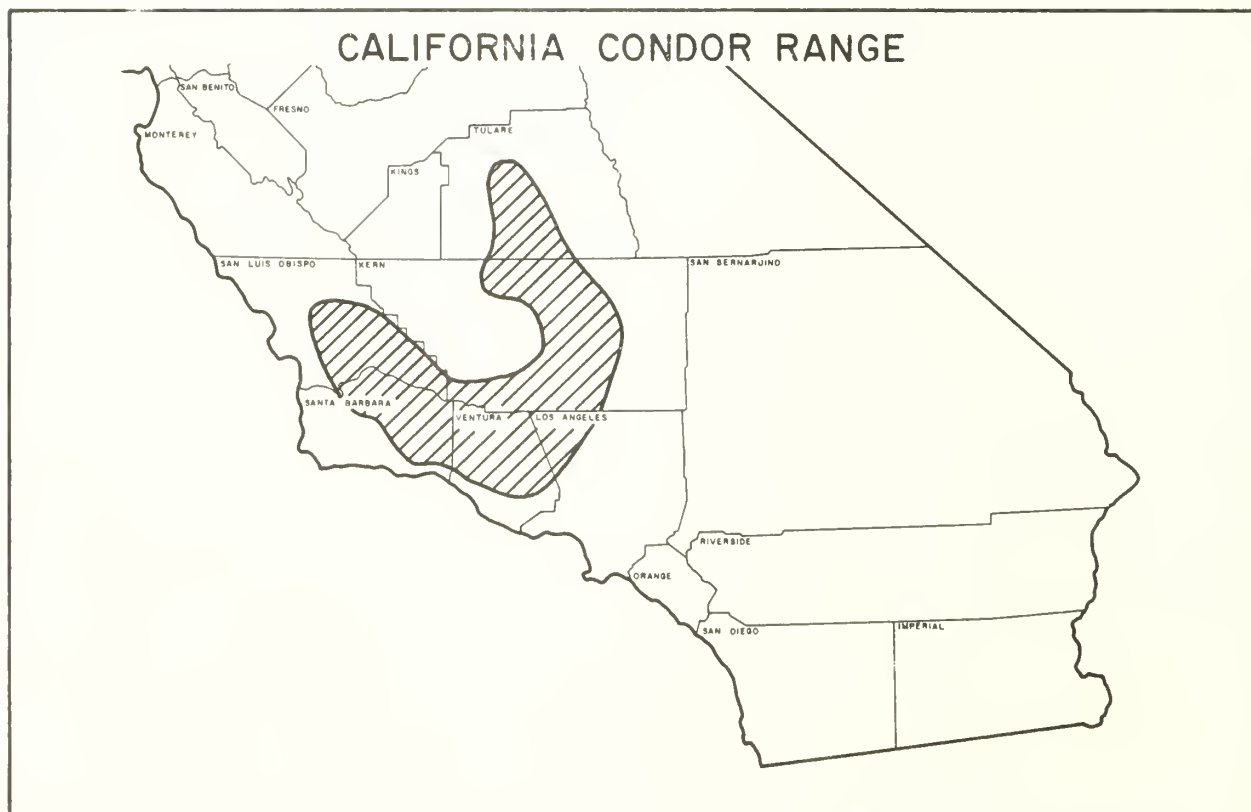
RECOVERY EFFORTS: All known nesting areas used in the last 20 years are located on U. S. Forest Service lands, and a habitat management plan for nesting and other habitats was developed by that agency in 1971. Prior to 1950, Forest Service had established the Sisquoc and Sespe condor sanctuaries to protect key roosting and nesting habitats; these areas were enlarged in later years. Other agencies and private organizations have secured additional key habitats, including Huff's Hole nesting area, inholdings in the Sespe Condor Sanctuary, and Hopper Mountain National Wildlife Refuge. Agencies have controlled uses of public lands in important condor habitats, such as placing moratoriums on oil, gas and mineral leasing activities and restrictions on aircraft, motor vehicles, blasting, human access and firearms use. In 1976, nine regions within the condor range were determined to be Critical Habitat under provisions of the Federal Endangered Species Act. A California Condor Recovery Plan was developed in 1975 and revised in 1980 by the California Condor Recovery Team. The plan provides guidelines for agency and organization actions needed to maintain and enhance the condor status. In 1979, U. S. Fish and Wildlife Service, Forest Service, U. S. Bureau of Land Management, Department of Fish and Game, and National Audubon Society entered a cooperative agreement on condor conservation programs. Under the agreement, the Condor Research Center was established to direct field research and public education activities. In 1980, Fish and Wildlife Service received federal approval for a program of radiotelemetry marking and captive propagation, but a pending state permit was cancelled following the accidental death of a condor chick being studied in the nest. A five-member Condor Advisory Committee has been established to review any new program proposals and provide advice to the Fish and Game Commission and the Department. Ongoing programs of member agencies under the cooperative agreement include annual population surveys, environmental project reviews, habitat assessments, observational condor population studies, condor sexing techniques, environmental contamination study, supplemental feeding program, and public education.

FUTURE MANAGEMENT: The Department will cooperate with other agencies and organizations in implementing the California Condor Recovery Plan and recovery efforts. A Department wildlife biologist will be assigned to work with the Condor Research

Center. Any future "hands-on" study proposals by Fish and Wildlife Service will be reviewed by the Fish and Game Commission, the Condor Advisory Committee, the Department, other agencies and the public before any possible new state authorization would be given. The Department will coordinate annual condor surveys and will continue to cooperate with other agencies on environmental reviews, assessments and studies.

REFERENCES:

- California Condor Recovery Team. 1980. California Condor Recovery Plan. U. S. Fish Wildl. Serv., Washington, D. C. 56 pp. + append.
- Carrier, D. 1971. Habitat management plan for the California Condor, U. S. For. Serv., Dept. of Agr., San Francisco. 51 pp.
- Mallette, R. D. 1970. Operational management plan for California condor. Calif. Dep. Fish Game, Sacramento. 59 pp.
- Ricklefs, R. E. (ed.) 1978. Report of the Advisory Panel on the California condor. Aud. Conserv. Rep. 6, New York. 27 pp.
- Verner, J. 1976. California Condors: Status of the recovery effort. Pac. Southwest For. and Range Exper. Sta., U. S. Dept. Inter. For. Serv., Gen. Tech. Rep. PSW-28/1978.
- Wilbur, S. R. 1978. The California Condor, 1966-76: A look at its past and future. N. Amer. Fauna, No. 72. U. S. Fish Wildl. Serv., Washington, D. C. 136 pp.
- _____. 1980. Estimating the size and trend of the California Condor population, 1967-1978. Calif. Fish Game 66(1):40-48.



At The Crossroads, 1980. Calif. Dep. of Fish and Game.

SWAINSON'S HAWK
(Buteo swainsoni)

CLASSIFICATION: State - Rare
Federal - Not Listed

DESCRIPTION: The Swainson's Hawk is adapted to open plains, grasslands or flat terrain over which it often soars in search of small mammalian prey. The species is slightly smaller and more agile than its close relative the Red-tailed Hawk (B. jamaicensis), another plains buteo hawk. Swainson's Hawks often exhibit 2 distinct color phases, a dark and a light. There are sometimes intermediate color phases as well. The light phase is more typical and the birds found in California have white underwing coverts, throat, belly and flanks. The wings and tail are dark and barred and the chest area is brown.

DISTRIBUTION: Historically, the Swainson's Hawk nested over much of the nonforested lowland areas of California except for the Mojave and Colorado deserts which had few suitable nest trees. The hawks generally nested in trees on large plains and also utilized canyon and hill country. Today, Swainson's Hawks breeding populations are found in reduced numbers in portions of the Central Valley and the Klamath Basin in California. Results of recent studies and monitoring programs indicate that the hawks are often found in areas where suitable nest trees such as Cottonwoods (Populus fremontii) are growing adjacent to open fields of native grasses, irrigated pastures, or open fields of crops such as grain or alfalfa. If one or both of these two important habitat elements are absent, birds will not nest. During the fall, Swainson's Hawks leave California breeding grounds for wintering areas in Central and South America. As yet, the location where the California population of Swainson's Hawks winter is not known. It is hoped that ongoing research and banding programs will shed light on the wintering locations and other biological factors essential to the hawks' preservation.

RECOVERY EFFORT: The Department, in cooperation with the U.S. Bureau of Land Management, initiated a survey in 1979 to determine the breeding status of the Swainson's Hawk in California. Since that time, monitoring surveys of nesting territories have been conducted each breeding season. The species was considered as a species of special concern because of its reduced nesting range and population size. During the 1979 survey a population of 375 pairs was estimated. Estimates of historic population size range from 4,284 to 17,136 pairs. A minimum population decline of 91 percent has resulted and that prompted the California Fish and Game Commission to list the species as rare. A continued monitoring program confirms that the Swainson's Hawk population remains at a low level and the breeding range is much reduced compared to that during the early 1900's.

FUTURE MANAGEMENT: Swainson's Hawk distribution and abundance will be monitored periodically and systematically to determine if the present population level is stable or declining. Agricultural practices, loss of riparian habitat and other factors adversely affecting nesting Swainson's Hawks need to be monitored. Management measures must be applied to reverse the declining population trend.

REFERENCES:

Bloom, Peter H. 1980. The Status of the Swainson's Hawk in California, 1979.
Federal Aid in Wildlife Restoration, Project W-54-R-12, Nongame Wildl. Invest.
Job Final Report II-8.0. 24 pp. + appendix.

SWAINSON'S HAWK NESTING DISTRIBUTION



GREATER SANDHILL CRANE
(Grus canadensis tabida)

CLASSIFICATION: State - Rare
Federal - Not Listed

DESCRIPTION: The Greater Sandhill Crane is the larger of two subspecies of crane found in California. This large migratory bird is pale gray in color with a red skin patch on the forehead. The bird has a long neck, long sharp beak and long black legs. The crane's wing span of 2 m (6.5') enables the bird to make migratory flights of several hundred kilometers.

DISTRIBUTION: One population of this migratory bird breeds in parts of Southern British Columbia, Washington, Oregon, and northeastern California and winters in the Central Valley of California, particularly on the delta agricultural lands of the San Joaquin and Sacramento Rivers, in the vicinity of the Gray Lodge State Wildlife Area, and near the town of Chico in Butte County. Another population breeds in northeast Nevada and winters along the lower Colorado River and Imperial Valley in California and Gila River in Arizona. Recent surveys indicate both wintering areas in California support small populations. Approximately 3,200 birds winter in the Central Valley of California and only 75 - 150 birds in the Imperial Valley, California. Most of the 1,500 to 1,600 birds comprising this population of Greater Sandhill Cranes winter in Arizona. A breeding population of 191 pairs of Greater Sandhill Cranes nest in native meadows in the Surprise and Big Valley areas of Modoc and Lassen Counties and other suitable habitats of northeastern California.

RECOVERY EFFORTS: Interagency management plans have been developed in an attempt to improve the status of Sandhill Cranes that breed and nest within the Pacific Flyway states and Canada. Within the breeding range of the Greater Sandhill Crane in California, land use change is a threat to nesting habitat. Any activities that would disturb cranes or destroy their habitats will lead to a further decline in the populations. Research and management to protect habitat and to improve knowledge of biology and ecology of Sandhill Cranes is continuing in California and elsewhere within the Pacific Flyway.

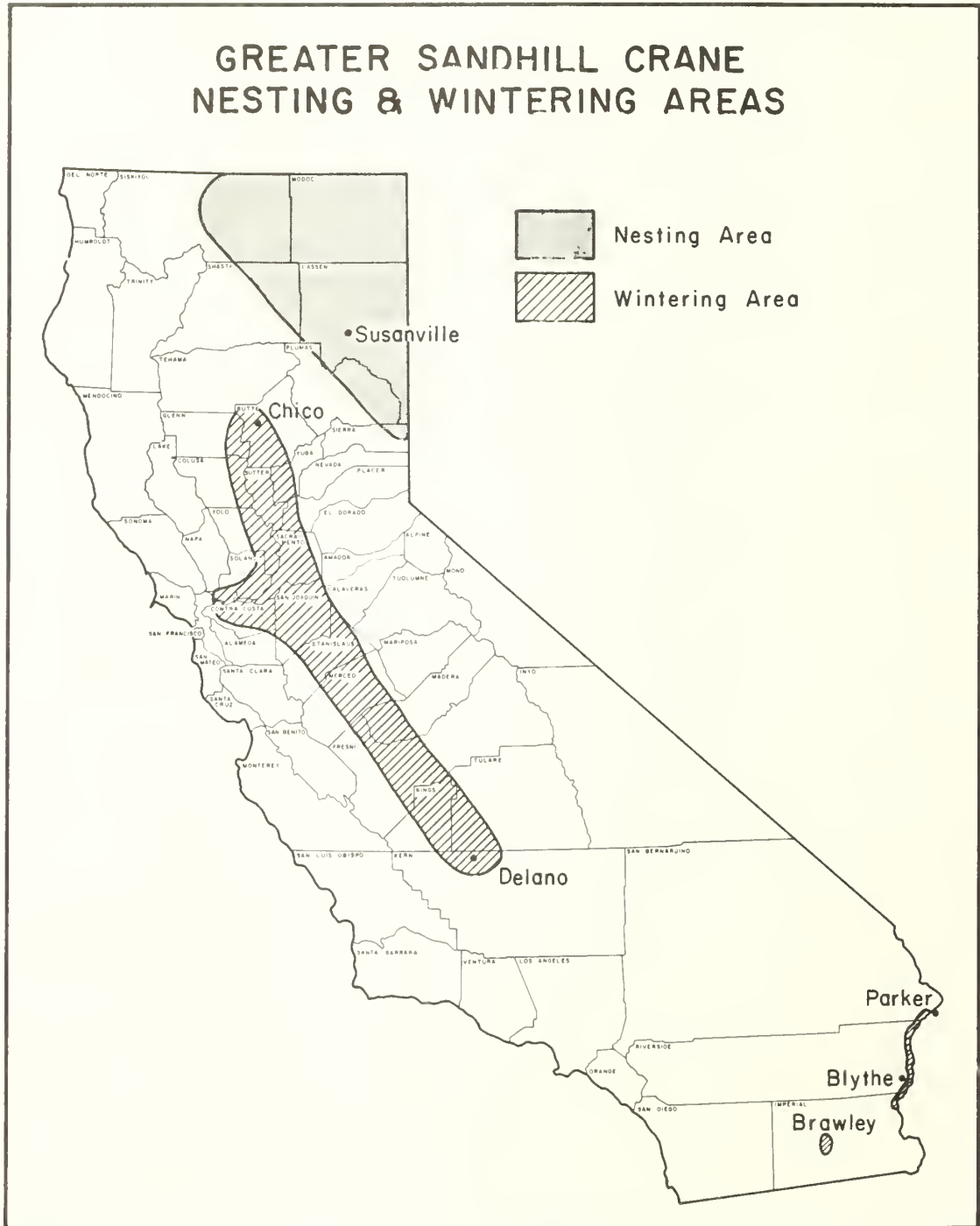
FUTURE MANAGEMENT: Acquisition or easement of remaining Greater Sandhill Crane nesting habitat is the single most important management option necessary to prevent a further decline of the breeding population in California. Wintering areas, including both foraging and roosting habitats, need to be protected from disturbance and destruction. Since 80 percent of all cranes nesting in California depend on private lands for habitat, and most cranes wintering in California winter on private lands, it will be increasingly important to monitor and minimize the detrimental effects of certain land use practices if these lands can not be acquired in fee title or conservation easement. Research must continue in order to improve our knowledge of the needs of Greater Sandhill Cranes.

REFERENCES:

Brown, David E., et al. 1982. Pacific Flyway Management Plan for the Greater Sandhill Crane Population Wintering Along the Lower Colorado River Valley. Prepared for the: Pacific Flyway Council, Canadian Wildlife Service, U.S. Fish and Wildlife Service. 25 pp. (Draft)

Littlefield, C. D. The Status and Distribution of Greater Sandhill Cranes in California, 1981. California Department of Fish and Game, Wildlife Management Branch, Administrative Report 82-1, January, 1982, 27 pp.

Schlorff, Ronald W., et al. 1982. Pacific Flyway Management Plan for the Central Valley Population of Greater Sandhill Cranes. Prepared for the: Pacific Flyway Council, Canadian Wildlife Service, U. S. Fish and Wildlife Service. 28 pp. (Draft).



At The Crossroads, 1980. Calif. Dep. of Fish and Game.