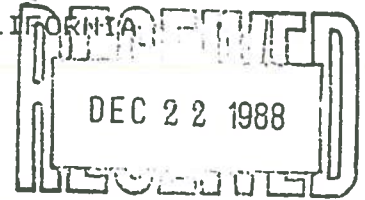


THE SAN FRANCISCO GARTER SNAKE AT PACIFICA, CALIFORNIA

PAST, PRESENT, AND FUTURE



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THE PAST

The Laguna Salada area of Pacifica, California, is one of the most frequently mention habitat and collecting sites for the San Francisco garter snake (SFGS) in the bound field note collection of the Museum of Vertebrate Zoology, UC Berkeley. It was second in the production of MVZ collection specimens only to the now extinct Skyline Boulevard sag ponds. This apparent abundance of the first two thirds of the century was last referred to in a private consulting report by Shawn Berry in 1979 in which he described SFGSs crossing the road between the Mori Point marsh and upland bowl area and estimated a population at that site at between 5 and 10 individuals.

THE PRESENT

In the spring and summer of 1986 I conducted a trapping and visual survey for the SFGS on the Sharp Park golf course property for the Geometrics Corporation of San Francisco. In this work 5,600 funnel trap unit hours and 34 visual observation hours revealed an abundance of the coast garter snake but a complete absence of the SFGS. It also documented the absence of frogs and tadpoles in Laguna Salada and attributed this to a spring salinity range of 5 to 9 ppt NaCl. Interviews with golf course personnel revealed that this brackish water condition is caused by an annual intrusion of sea water during the high winter tidal period, a situation which has persisted since 1980.

However, a late summer - early fall study in 1986 of the marsh, pond, and stable area at the south end of Sharp Park (1176 trap hour; 42 visual survey hours) produced the capture of one newborn SFGS and the observation of two adult specimens. In November of that year, I submitted to local, state, and federal agencies an initial recovery plan which would serve as a mitigation measure for a proposed housing development in the upland area south of the marsh-pond complex. In brief, this plan would create a privately financed snactuary where the remnant population could be sequestered and allowed to recover until such time that the Sharp Park sea wall could be properly restored and the Laguna Salada anuran population reestablished.

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No field research was conducted at Pacifica during 1987 while the development plan and its habitat mitigation measure was under consideration by the planning commission and city council. However, field work at two sites in southern San Mateo county that year revealed that the SFGS garter snake requires upland retreat habitat in addition to lowland pond feeding sites for its successful persistence in an area.

As a result of this finding, a study was conducted in the upland bowl area of Mori point in the spring and early summer of 1988. The main thrust of the 5,230 trap hours and 62 observation hours was to document the movement of SFGSs from this presumed upland retreat site to the marsh foraging site to the north. However, no SFGS were captured or seen. A companion study with the intent of intercepting SFGSs returning to upland sites from the northern wetland areas was conducted in the fall of 1988. Once again, 5,040 trap unit hours and 57 observation hours revealed no SFGSs.

The total of 17,136 funnel trap unit hours and 245 direct observation hours at the Sharp Park - Mori Point population site is equal to approximately one third of all the field time expended on the 30 month study of SFGS habitat sites which I have recently concluded for the California Department of Fish and Game. Whereas each of those sites averaged 3 SFGS per 1000 funnel trap unit hours, the Pacifica site has statistically produced only 0.06.

RESEARCH SUMMARY AND CONCLUSIONS

A. The SFGS population at Pacifica, CA, is approaching extinction. If no specimens are found at the Calera Creek marsh site during the upcoming spring, 1989, study for Cal Trans, it is possible that the gene pool of this northern most population may be lost.

B. The reasons for this present state are:

1. The negation of the anuran population at Laguna Salada
2. The disruption of movements to and from the adjacent upland retreat area by the presence of the barren, open corral areas between the two sites, the ongoing disruption of the hillside site by ORVs and bands of young humans, and the continuing loss of topsoil due to erosion.

THE FUTURE

I present the following opinions not as a biological consultant representing governmental or private interests but instead as an "amicus serpentes" or friend of the snake.

The most commonly used approach to endangered species protection, the complete preservation of the habitat site, is not sufficient for the Pacifica population. Instead, habitat enhancement

procedures which will protect feeding habitats against further marine intrusion and upland retreat habitats from further human misuse are urgently needed. This view is consistent with the suggestions for habitat enhancement and protection recommended for the Laguna Salada area in the 1985 U.S. Fish and Wildlife Service Recovery Plan for the San Francisco Garter Snake published by the Endangered Species Office, Portland, Oregon.

Given that such enhancement procedures are not only necessary but also in accord with USFWS policy, the following options are open:

A. Wait and hope that the City and County of San Francisco will build a new sea wall along the Sharp Park coast. It should be noted here that no plans or time table for such a project has been made known to date. If a new sea wall does become a reality, it will solve the feeding habitat problem in Laguna Salada but will do nothing to eliminate the habitat deterioration problem in the Mori Point upland area.

B. Wait and hope that the suggestions of one local citizens group that the Mori Point area be made a national, state, or local park area becomes reality. To date no governmental agency has expressed a willingness to purchase this land. If they did, it would solve the upland habitat problem but not the feeding habitat problem. Indeed, both events A and B would have to occur together and, in my opinion, quickly to save the SFGS at Pacifica.

C. Approve and adapt the plan put forth by the Mori Point Development Company for a SFGS habitat enhancement - golf course project for the degraded bowl area and horse stables adjacent to the south border of Sharp Park. Unlike options A and B, this plan will provide a rapid solution to the problem and will work for the following reasons:

1. It will provide two new shallow water anuran breeding ponds which will be fashioned after those recently studied by this biologist at productive, natural SFGS habitat sites. They will be positioned well above the elevation for marine intrusion and contain wide riparian borders which interconnect with the marsh area to the north and undisturbed, upland, coastal scrub stands.

2. It avoids intrusion into any of the remaining high quality coastal scrub retreat habitat. It will also restore and enhance eroded and degraded areas of the upland through the planting of coastal scrub species. The latter and not eucalyptus, Monterey pine, etc., will be the landscaping plant complex for the golf course.

3. It will place feeding habitats immediately adjacent to upland retreat habitats, thus mirroring the situations recently documented at Ano Nuevo State Reserve and the Pearson Ranch habitat study site. In doing so, it eliminates the gantlet which snakes presently have to "crawl" at the barren stable area.

4. It will eliminate all roads and ORV trails between and within the primary feeding and retreat area. The new road to Mori Point will be positioned above the prime stands of coastal scrub retreat sites. Snakes may travel further upland by crossing under the road through large culverts with soil and cover items on their floor. They will be shunted to these by a sturdy exclusion fence which will prevent snakes and other small terrestrial vertebrates from entering the road surface area from either side of the road bed.

5. It will eliminate all habitat intrusion by ORVs, careless humans, and destructive domestic pets. The site will receive proper surveillance and protection against trespass and will be populated only by golfers and grounds keepers, two human subspecies which have proven to be compatible with the SFGS at Sharp Park..

6. It will provide the first large scale opportunity and experiment in the habitat enhancement and possible restocking of an endangered snake species.

7. It will not cost the City of Pacifica, the State of California, or the United States of America one cent.