

VOLUNTEERS AND WILDLIFE HABITAT MANAGEMENT: TWELVE YEARS TOGETHER

Vernon C. Bleich
California Department of Fish and Game
P.O. Box 1741
Hemet, CA 92343

Lester J. Coombes
California Department of Fish and Game
Route 5, Bird Farm Road
Chino, CA 91710

Glenn W. Sudmeier
Society for the Conservation of Bighorn Sheep
Star Route, Box 4C
Hesperia, CA 92345

ABSTRACT.

In 1969, interested conservationists and the Department of Fish and Game founded the Volunteer Desert Water and Wildlife Survey to assist the Department with wildlife management activities in the desert regions of southern California.

Between July 1, 1969 and June 30, 1981 members of the Survey contributed 10,138 man-days of labor, 706,900 vehicle miles, and \$145,985 worth of other goods and services to the Department of Fish and Game. Total cash value of these contributions exceeds \$1,000,000.

It has taken a substantial amount of effort to direct this program over the past 12 years, but the returns have more than compensated the Department for its investment. Additionally, the public relations value to the Department has been substantial, and the communication which occurs among persons participating in the volunteer program allows a greater understanding of wildlife management principles by persons from many diverse backgrounds.

INTRODUCTION

The term "volunteer" is defined by Webster as "one who enters into or offers himself for any service of his own free will." In that sense, volunteers have been of service in several aspects of wildlife management in California for a number of years.

Wilbur (1978) recently reported on the valuable contributions made to the California Condor (*Gymnogyps californianus*) management effort by interested citizens. That is a loosely knit program, but does include a well coordinated annual two-day count. Participants submit individual sightings of condors on record cards during the remainder of the year.

In parts of California, sportsmen's groups or other conservation organizations occasionally organize "clean up" days at various Department facilities. While popular, these affairs usually occur only annually, and generally are restricted to state or federally operated waterfowl areas or other Department lands.

More recently, the Department of Fish and Game reorganized and revitalized its reserve warden program (Replogle 1981). Opportunities for public participation in the program, while a significant factor in strengthening already strained patrol efforts, are not great. The program is extremely selective, and rigorous testing and background investigations are involved. It is estimated that only 100 reserve wardens will be available for service by the end of 1982. Therefore, this program, while important, offers only a limited opportunity for public involvement in Department activities.

One area within the Department's scope where large numbers of volunteers have been able to contribute significantly to a wildlife management program has been the Department of Fish and Game's Habitat Development Project (Federal Aid Project W-26-D) in the deserts of southern California (Massie 1975; Carpenter 1976; MacKenzie 1977). That project is responsible for all habitat work in southern California in which the Department is involved. Within the Department's southern California administrative area (Region 5) are 15,133,520 ha, much of it desert. Within this area are nearly 1,400 small game guzzlers, over 500 springs, 31 big game guzzlers, and numerous opportunities for Departmental personnel to participate in other activities such as brush manipulation for mule deer (*Odocoileus hemionus*) habitat improvement and marsh management activities, such as pothole blasting, to create nesting habitat for waterfowl.

HISTORY

In 1969, a group of persons concerned about the future of desert wildlife met with Department personnel to set up a volunteer program which would allow all interested persons the opportunity to participate in wildlife management activities in the desert. The meeting was requested by the Southern and Inland Councils of Conservation Clubs, representing several thousand sportsmen, and the Society for the Conservation of Bighorn Sheep. The purpose of that meeting was to explore ways to carry out programs recommended by California Department of Fish and Game biologist Dick Weaver and his cohorts, who conducted the first and only intensive investigation on the status of mountain sheep (*Ovis canadensis*) in California. Weaver (1973) recommended numerous options aimed at improving conditions for mountain sheep in California, but lack of manpower was a major factor limiting the Department's ability to carry out those recommendations. After lengthy discussions at the initial meeting, those present agreed that a program using volunteer labor could be effective in improving conditions throughout the desert for mountain sheep as well as many other wildlife species. This program was designated the Volunteer Desert Water and Wildlife Survey (hereafter referred to as the Survey). Several subsequent meetings among those involved in the program resulted in a series of objectives for the program, and on the means of accomplishing those objectives.

SCOPE

Participants in the Survey are involved primarily in four aspects of wildlife habitat management: (1) water hole surveys, (2) small game guzzler maintenance, (3) spring development and maintenance, and (4) construction and maintenance of artificial big game watering devices, or game guzzlers (Massie 1975).

On a continuing basis, volunteers collect data relevant to wildlife populations in numerous desert mountain ranges. These counts are conducted over a three-day period during the most inhospitable time of the year, usually early July in the southern California desert, when daytime temperatures routinely exceed 50°C. During this hot period, many species are concentrated near waterholes, and the physiological stresses imposed by high temperatures assure the observer that the majority of the wildlife in the vicinity of a waterhole will use it during a given 3-day period. It is through these surveys that many of the Department's Wildlife Biologists are kept apprised of wildlife population trends occurring in their geographic areas of responsibility. This is especially true for populations of mountain sheep, which are so sporadically distributed throughout the desert mountain ranges that they are difficult to monitor, particularly when such activities seldom are included in a biologist's annual work plans.

A second major activity of the Survey has been the routine inspection and maintenance of the Department's small game guzzlers. Nearly 1,400 of these units are found in southern California, most of them in the desert. While many persons have a slightly negative impression of off-road vehicle operators, it is very important to note that members of off-road vehicle clubs have been the primary participants in this aspect of the volunteer program. Over 50 off-road vehicle clubs have accepted the responsibility of maintaining a large number of the small game guzzlers located throughout the desert. Participants in this program are provided with maps to the various sites, instructions on how to inspect the guzzlers and estimate wildlife use, and the materials necessary for the repair of these units should that be necessary. Repairs generally consist of patching cracks in the water collecting surfaces using roofing compound and fiberglass tape, which allows water to flow over the cracks and into the storage tank.

By far the most difficult part of this work is locating the guzzler, and sometimes 70% of the time required for repair job is spent just looking for the site. Many of the volunteers participating in this aspect of the Survey are interested in off-road driving for pleasure, and they have the time, appropriate equipment, and desire to do this work. Inspections and required repairs are done by volunteers on their own time schedule, after they have received proper orientation.

The third major activity in which members of the Survey participate is the ongoing spring development and maintenance program. Work on desert springs located in remote areas has created considerable interest among the volunteers, particularly among a number of hunter-oriented sportsmen's groups.

Development of a desert spring may involve the use of a number of techniques, including hand-labor, explosives, prescribed fire, and even horizontal-well technology (Weaver et al. 1959, Biswell and Schultz 1958, Coombes and Bleich 1979, Bleich et al. 1982). Hand-work is by far the most tedious and common method used by volunteers in spring development work. Tools and material generally are back-packed into the site, which may take as long as five hours to reach.

A typical desert spring development involves the construction of an underground box in which water is collected, and a drinker which makes the collected water available to wildlife. One very important aspect of this program is that once a spring has been developed, periodic inspections and minor maintenance are necessary to assure that the water it is producing remains available to wildlife.

By far the most difficult part of this work is locating the guzzler, and sometimes 70% of the time required for a repair job is spent just looking for the site. Many of the volunteers participating in this aspect of the Survey are interested in off-road driving for pleasure, and they have the time, appropriate equipment, and desire to do this work. Inspection and required repairs are done by volunteers on their own time schedule, after they have received proper orientation.

Since 1971, 25 additional big game guzzlers have been constructed, using volunteer labor, throughout the southern California desert. These recently constructed devices have been located primarily at sites recommended by Weaver (1973) to benefit populations of mountain sheep. The one exception was a guzzler constructed recently in the Riverside Mountains to provide a permanent water source for burro deer inhabiting that mountain range; two additional burro deer guzzlers will be completed in 1982.

Extensive preparation is involved in a project of this magnitude. A site must be located, usually by helicopter, and it must be inspected on the ground. Environmental documents must be completed, and an agreement reached with the land-owning agency to allow the project to proceed. Then all necessary tools, materials, and heavy equipment must be transported to the site, prior to the arrival of the volunteers.

Once the volunteers are at the site, individuals are organized into work teams, and equipment is taken to one of five work areas, each supervised by a Project employee. The first major work area is the dam site. A rebar framework is drilled into the bedrock and a special filter is attached to a 50 mm pipe running through the base of the dam. Concrete is then mixed and relayed in buckets to the site, where it is used, along with large rocks, to construct a small masonry dam.

The 50 mm galvanized pipeline, or pickup line, leading from the dam to the tanks, is the second work area. Pipe is cut to size and threaded, and then connected together. Where necessary, it is supported by rebar inserted into holes drilled into the canyon walls, often in precarious places.

The third work area involves the installation of the water storage tanks. An area is leveled by rock fill, and then a concrete slab is poured to form a solid, level base on which the tanks rest. The tanks are rolled into place, positioned, and then plumbed. The fourth work area centers around the installation of a float valve regulated drinker, which is connected to the water storage tanks by an 18 mm galvanized pipeline.

The final work area involves the construction of an enclosure around the drinker to preclude access by range cattle (*Bos taurus*) and feral asses (*Equus asinus*) and yet allow native species access to the water. Fortunately, such fences have been necessary at only a few of the projects.

ACCOMPLISHMENTS

As shown above, the members of the Volunteer Desert Water and Wildlife Survey have been active participants in the Department's Wildlife Habitat Development Project. Just how active they have been is surprising.

Between July 1, 1969 and June 30, 1981, members of the Survey contributed substantially to the Department's ability to maintain and enhance desert water sources, and to the Department's knowledge of population trends of several desert wildlife species. During that period, they donated 10,138 man-days of labor, 706,900 miles of travel and \$145,985 worth of goods and services. These figures are conservative, because they are taken from annual reports compiled by the project leaders, and include only those activities actually reported by the volunteers (Massie 1970-1977; Bleich 1978-1981).

Interest in the program has been very consistent over the past 12 years, with contributions of labor fluctuating about a long term mean of 850 man-days per year. Contributions of vehicle-miles have fluctuated about a long term mean of 60,000 miles/year, and materials and other services contributed have fluctuated about a long term mean of \$12,000/year.

In cash value to date, the Department has received over \$1,000,000 worth of goods and services from members of the Survey. Using the conservative values of \$50.00 per man-day for labor, \$25.00 daily per diem, and \$.15 per mile driven, and including the materials and other services contributed, the total cash value is \$1,012,370. When put in the simplest terms, the Department has received an average of 3.5 man-years of help per year, including transportation and travel costs, for 12 straight years.

When we consider what has been accomplished by members of the Volunteer Desert Water and Wildlife Survey over the past dozen years, it is truly impressive. Between 1969 and 1981, our records indicate that volunteers performed maintenance on or inspected big game guzzlers a total of 336 times; performed maintenance on or inspected 897 small game guzzlers; developed and maintained 78 springs; inspected and reported on 524 other springs; and constructed 25 big game guzzlers.

Although the actual physical labor performed and total miles driven are impressive figures, and desert wildlife have benefited tremendously from the efforts of individuals involved in the Survey, perhaps one of the most important aspects is the opportunity that the Survey presents for persons from many different walks of life to join together and work toward a common goal. The backbone of the Survey has always been the hunting sportsman, but volunteers come from many walks of life, with varying interests and backgrounds, and the communication that occurs among these people is impressive.

During volunteer projects, protectionists are able to discuss philosophies of wildlife management with avid hunters and other consumptive sportsmen, and both groups learn to work together. These people often discover that their preconceived and stereotyped opinions about each other have to be changed. An additional very important benefit is that the Survey provides an opportunity for Department of Fish and Game personnel to work alongside the volunteers, which presents one of the best opportunities that employees have to sell the Department's programs and to create support for the Department and its objectives.

PROBLEMS

Although the Survey has been a spectacular success, administration of it has not been easy. Annually, the Project is faced with an inadequate budget and may face elimination during the next budget crisis. Additionally, it is very difficult to properly supervise all aspects of the Project with our limited staffing, and supervision and guidance are of paramount importance if a volunteer program is to be successful. Furthermore, the rising price of gasoline

has cut substantially into the number of off-road vehicle clubs actively participating in the small game guzzler maintenance program, and more and more clubs are requesting a re-assignment of guzzlers which are located closer to the metropolitan areas where most of them live.

RECOMMENDATIONS

Many well qualified people are looking for meaningful ways to participate in wildlife conservation activities (Smith 1974). The problems of organizing and training the volunteers are more than compensated for by the amount and quality of the labor performed. In addition, there are many indirect benefits to wildlife programs which result from a better informed, more involved public (Smith 1974).

The Volunteer Desert Water and Wildlife Survey, a long term, relatively intensive and highly successful program, has demonstrated that large numbers of persons can be of great value when given the opportunity to utilize their skills and when such a program appeals to their interests. The guidance and supervision necessary to coordinate such a program should, however, not be underestimated.

In this era of decreasing revenues and increasing workloads, it is possible that volunteers may become important sources of labor in many other aspects of natural resource management. Administrators are encouraged to investigate the opportunities for such volunteer involvement and, where practical, to integrate members of the public into conservation programs.

LITERATURE CITED

- Biswell, H.H. and A.M. Schultz. 1958. Effects of vegetation removal on spring flow. Calif. Fish and Game 44:211-230.
- Bleich, V.C. 1978-1981. Annual Report, Federal Aid in Wildlife Restoration Project W-26-D. Calif. Dept. Fish and Game, Long Beach, CA.
- _____, L.J. Coombes and J.H. Davis. 1982. Horizontal wells as a wildlife habitat improvement technique. Wildl. Soc. Bull. 10:324-328.
- Carpenter, L.E. 1976. Conservationists in-put into bighorn sheep management. N. Amer. Wild Sheep Conf., Trans. 2:57-60.
- Coombes, L.J. and V.C. Bleich. 1979. Horizontal wells--the DFG's new slant on water for wildlife. Outdoor Calif. 40(3):10-12.
- Mackenzie, J. 1977. Donations to nongame fund put to work. Outdoor Calif. 38(3):31-32.
- Massie, J.D. 1970-1977. Annual Report, Federal Aid in Wildlife Restoration Project W-26-D. Calif. Dept. Fish and Game, Long Beach, CA.
- _____. 1975. Volunteers make a harsh life a little easier for our desert animals. Outdoor Calif. 36(4):1-4.
- Replogle, B. 1981. Reserve wardens join DFG patrol. Outdoor Calif. 42(5):25.
- Smith, J.C. 1974. Utilization of the public in surveying rare and endangered species; negative and positive aspects. Proc. Annu. Conf. Southeastern Assoc. Game and Fish Commissioners 27:290-294.
- Weaver, R.A. 1973. California's bighorn management plan. Desert Bighorn Council. Trans. 1973:22-42.
- _____, F. Vernoy and B. Craig. 1959. Game water development on the desert. Calif. Fish and Game 45:333-342.
- Wilbur, S.R. 1978. Volunteer participation in California condor surveys. Wildl. Soc. Bull. 6:157-159.

CAL-NEVA WILDLIFE TRANSACTIONS 1982.