

**1994 NWS&GC MANAGEMENT WORKSHOP QUESTIONNAIRE RESPONSE:  
CALIFORNIA'S MOUNTAIN SHEEP MANAGEMENT PROGRAM**

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**QUESTION: Does your state or province have an identifiable sheep management program?**

California has a mountain sheep management program, with a statewide program coordinator located in the Sacramento office, and a regional coordinator located in the Bishop office of the California Department of Fish and Game (CDFG).

**QUESTION: What is your guiding policy statement?**

General policy for the conservation of wildlife in the state of California is provided in Section 1801 of the California Fish and Game Code, which states:

"...It is hereby declared to be the policy of the state to encourage the preservation, conservation, and maintenance of wildlife resources under the jurisdiction and influence of the state. This policy shall include the following objectives:

- a. To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the objectives stated in subdivisions (b), (c), and (d).
- b. To provide for the beneficial use and enjoyment of wildlife by all citizens of the state.
- c. To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to all persons.
- d. To provide for aesthetic, educational, and nonappropriative uses of the various wildlife species.

e. To maintain diversified recreational uses of wildlife, including the sport of hunting, as proper uses of certain designated species of wildlife, subject to regulations consistent with the maintenance of healthy, viable wildlife resources, the public safety, and a quality outdoor experience.

f. To provide for economic contributions to the citizens of the state, through the recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of the state, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resources.

g. To alleviate economic losses or public health or safety problems caused by wildlife to the people of the state either individually or collectively. Such resolution shall be in a manner designed to bring the problem within tolerable limits consistent with economic and public health considerations and the objectives stated in subdivisions (a), (b), and (c).

h. It is not intended that this policy shall provide any power to regulate natural resources or commercial or other activities connected therewith, except as specifically provided by the Legislature..."

Policy specific to the conservation of the wild sheep resource is provided in Section 4900 of the California Fish and Game Code, which states:

"...The Legislature declares that bighorn sheep are an important wildlife resource of the state to be managed and maintained at sound biological levels. Therefore, it is hereby declared to be the policy of the state to encourage the preservation, restoration, utilization, and management of California's bighorn sheep population. The management shall be in accordance with the policy set forth in Section 1801 [of the Fish and Game Code]..."

**QUESTION: How do/did you do management planning?**

The statewide program coordinator annually organizes a meeting for the department's Mountain Sheep Management Program participants. The objectives of this meeting include reviewing and reporting the progress of current research and management efforts, receiving and reviewing proposed research, coordinating survey and capture efforts, and outlining the program budget and fund requests.

The statewide and regional coordinators and contract collaborators are currently preparing an updated "Long-Range Conservation Plan for Mountain Sheep in California." In addition to updating management goals, this plan will serve as a lead reference for management planning, continued population assessment, program priorities, and the economics of our conservation efforts. This plan should be completed in 1994.

Planning mandates are also specified in Section 4901 of the Fish and Game Code. This provides for the preparation of management plans based on defined management units. Management units are defined on geographic and biological criteria, and include information on the following:

1. Data on the numbers, age, sex ratios, and distribution of bighorn sheep within the management unit.
2. A survey of range conditions and a report on the competition that may exist as a result of human, livestock, wild burro, and any other mammal encroachment.
3. An assessment of the need to relocate or reestablish bighorn populations.

4. A statement on the prevalence of diseases or parasites within the population.
5. Recommendations for achieving the policy objective of Section 4900 [of the Fish and Game Code].

These management plans generally are prepared as a collaborative effort that includes input from the local wildlife unit manager, the regional coordinator, and the statewide coordinator. Appropriate goals are selected for each management unit on a case-by-case basis using the best biological information available to the planners.

**QUESTION: What are your management goals?**

Management goals for mountain sheep, as published in the Statewide Plan for Bighorn Sheep (California Department of Fish and Game 1983:3), are as follows:

1. Maintain, improve and expand bighorn habitat where possible or feasible.
2. Reestablish bighorn populations on historic ranges where feasible.
3. Increase bighorn populations so that all races become numerous enough to no longer require classification as rare or fully protected.
4. Provide for aesthetic, educational, and recreational uses of bighorn sheep.

**QUESTION: What methods do you use to reach management goals?**

1. Most research and management activities are carried out by the efforts of department biologists and contract collaborators. Given departmental time constraints, most ground-monitoring efforts are conducted by contract staff, while survey, capture, and habitat improvement projects are coordinated and conducted by department staff.
2. Based on the results of the program research, plans were formulated that provided for a variety of uses of sheep occurring in the various management units. In some cases, harvest management was recommended and, in others, recommendations against harvest

until certain criteria defined in the management plans were met specifically were included.

3. Although no detailed statewide objectives exist for monitoring each mountain sheep population, local personnel cooperate with project coordinators to ensure the acquisition of meaningful demographic information on a regular basis. Annual demographic surveys are conducted in those zones subject to harvest management, and recommendations for utilization are formulated based on those surveys.
4. State law (Office of Administrative Law) requires that the department annually provide hunting regulation proposals. These proposed regulation changes are provided to the California Fish and Game Commission, and are submitted for public review and input. Final recommendations and adoption of regulations occur in April.
5. State law (California Environmental Quality Act) provides that an environmental document be prepared to ensure full disclosure of environmental impacts anticipated to result from implementation of any harvest management recommendations. Such a document has been prepared each year since 1987. This document is also circulated for public review and input.
6. Unit biologists review and comment on federal land management proposals that would impact the habitat of mountain sheep, and work to ensure that anticipated impacts are mitigated to the extent possible.
7. Formal working groups that include representatives of CDFG, as well as land management agencies and other appropriate personnel, have been initiated to coordinate management efforts for mountain sheep occurring in the Sierra Nevada (*Ovis canadensis californiana*) and in the peninsular ranges of southwestern California (*Ovis canadensis cremnobates*). Both of these subspecies are listed as "Threatened" by the California Fish and Game Commission.

**QUESTION: How much time is devoted to reaching management goals?**

There are 9 unit biologists that have sheep in their assigned geographic areas. As in most other states, these biologists are generalists and are expected to accomplish a variety of tasks related to numerous species occurring in their geographic areas. The amount of time spent on mountain sheep by each of these unit biologists varies considerably. In some cases (n=2), less than 1 week per year is spent on activities directly related to wild sheep management, while in others (n=2), as much as 3 months per year may be spent on activities related directly to the management of the wild sheep resource. On average, unit biologists probably spend less than 1 month each year on activities related directly to the management of the mountain sheep resource. The amount of time dedicated to sheep management by unit biologists probably is a function of 3 things: (1) the number of other "urgent" activities, such as environmental review activities, occurring within their geographic area; (2) the size of the sheep population in their geographic area; and (3) the presence of ongoing harvest programs in their geographic area.

Currently, all of the mountain sheep in California occur in a single administrative region that includes the eastern Sierra Nevada, the Mojave Desert, and the Sonoran Desert. The regional coordinator expends approximately 6 months/year on activities related directly to the management of mountain sheep in this broad geographic area. Activities include facilitating and coordinating aerial survey activities, research efforts, and overseeing the harvest program.

The program coordinator at the statewide level expends approximately 10 months/year on administration directly related to the management of mountain sheep in California. Activities include program planning and administration, budgeting, project coordination with regional staff, oversight of survey and research efforts, oversight of contract collaborators, reviewing legislative proposals, preparing hunting recommendations and environmental documents.

The total person-months dedicated to the management of wild sheep by personnel of the California Department of Fish and Game total approximately 25 months/year; 9 of these are accomplished by unit biologists, 6 of these are accomplished by the regional coordinator, and 10 are accomplished by the statewide program coordinator.

**QUESTION: What is your operating budget for sheep management?**

There is no special operating budget for activities of wildlife unit biologists or the regional coordinator related to the management of mountain sheep. In recent years, operating expenses for each of these personnel have been limited to approximately \$5,000/year for all management activities. When operating expenses are exhausted, some augmentation may be provided from funds controlled by the statewide program coordinator.

Since 1986, CDFG has received approximately \$200,000/year from the California Environmental License Plate Fund specifically for mountain sheep management. These funds have been made available through a special legislative appropriation on an annual basis. Additionally, CDFG has received funds ranging from \$37,000 to \$162,000 from the annual sale of special fund-raising hunting

permits (Table 1) since 1987. To date, the department has received \$734,473.50 from the allocation of 64 mountain sheep tags. These funds are allocated to an account dedicated to mountain sheep management. Section 4903 of the Fish and Game Code stipulates that such funds must be used "...solely for programs and projects to benefit bighorn sheep and for the direct costs and administrative overhead incurred solely in carrying out the department's bighorn sheep activities. Administrative overhead shall be limited to the reasonable costs associated with the direct administration of the program. These funds shall be used to augment, and not to replace, moneys appropriated from existing funds available to the department for the preservation, restoration, utilization, and management of bighorn sheep." The interpretation of these mandates has been open to some question both by persons within and outside CDFG.

**Table 1. Summary of Nelson bighorn sheep tag allocations, harvest, applications, and auction tag revenue\* from 1987-1994 in California.**

Year	Allo- cated	Number harvested	Number applicants	Revenue*	Tag fees	Total
1987	9	9	4,066	\$ 70,000.00	\$ 21,930.00	\$ 91,930.00
1988	9	7	3,385	\$ 59,000.00	\$ 18,525.00	\$ 77,525.00
1989	9	9	3,185	\$ 40,000.00	\$ 17,525.00	\$ 57,525.00
1990	6	6	2,591	\$ 37,000.00	\$ 13,955.00	\$ 50,955.00
1991	8	7	2,834	\$ 42,000.00	\$ 15,570.00	\$ 57,570.00
1992	12	12	3,798	\$ 61,000.00	\$ 22,464.50	\$ 83,464.50
1993	11	9	4,318	\$100,000.00	\$ 25,082.00	\$125,082.00
1994	14	—	4,692	\$162,000.00	\$ 28,422.00	\$190,422.00
<b>TOTAL</b>	<b>64</b>	<b>59</b>	<b>24,177</b>	<b>\$571,000.00</b>	<b>\$163,473.50</b>	<b>\$734,473.50</b>

**Other Agency Participation in Sheep Management in California**

Mountain sheep occur on land managed by the U. S. Forest Service (USFS), Department of Defense, California Department of Parks and Recreation, Los Angeles Department of Water and Power (LADWP), National Park Service (NPS), U. S. Fish and Wildlife Service (USFWS), and the Bureau of Land Management (BLM); the majority of wild sheep in California occur on BLM lands.

Memoranda of understanding exist with each of these agencies regarding the management of wildlife and habitat occurring on their respective lands.

The Inyo National Forest, Yosemite National Park, Sequoia-Kings Canyon National Park, LADWP, and the Bishop Resource Area of BLM have entered into an agreement with CDFG regarding mountain sheep in the Sierra Nevada (Sierra Nevada Bighorn Sheep Interagency Advisory Group 1984). This

agreement is directed specifically at restoring populations of this subspecies on historical ranges, as well as maintaining existing populations. Mountain sheep also occur on the Los Padres, Angeles, and San Bernardino National Forests, and throughout southeastern California on lands administered by the California Desert District of BLM. Recently, BLM has embarked on a planning effort emphasizing a metapopulation approach to the conservation of habitat for desert-dwelling mountain sheep, and approximately 6 months/year are expended by a planner working on that effort.

Death Valley National Monument (DVNM) receives the majority of funding from NPS specifically directed toward mountain sheep management. Currently, research is directed at describing the demography of sheep occurring in DVNM. Aside from the planning position noted above, few funds are expended by BLM specifically for mountain sheep; operating costs for sheep activities are borne by the individual resource area biologists. Mountain sheep occur on USFWS lands adjacent to the Colorado River; few, if any, funds have been expended specifically for sheep management. Recently, USFWS personnel have become involved in several planning efforts that have arisen as a direct result of the proposed listing of *O. c. cernobates* as a federally-threatened population.

#### **Additional Funding and Foundation for North American Wild Sheep Participation**

In 1986 the California Legislature authorized the harvest of mountain sheep for the first time in more than 100 years. With that authorization, the legislature provided for special harvest tags for fund-raising purposes. In 1987 the first such tag sold for \$70,000; total income from 1987 to 1994 is \$571,000. The majority of these tags (7 of 9) have been auctioned by the Foundation for North American Wild Sheep (FNAWS). Because state law mandates that all proceeds from the sale of these tags must be returned to the state of California, specifically for wild sheep management, CDFG annually donates a special Research and Management Adventure to FNAWS, which retains 100% of the proceeds from the sale of that item.

Although CDFG receives all of the monies from the sale of fund-raising tags, relatively few requests have been submitted by CDFG to FNAWS requesting support for projects. Since 1983, CDFG has received funds totalling \$50,500 that have been

expended for research (\$32,500), translocations (\$15,000), and inventories (\$3,000).

#### **DISCUSSION**

Management activities for mountain sheep in California are highly visible and are at the highest level in history. Funds provided through the sale of environmental license plates and through the auction of special fund-raising permits have enabled the department to support a number of important research efforts concentrating primarily on demography and the disease status of mountain sheep.

Although funds are adequate to augment in-house personnel to work specifically on mountain sheep conservation and research, requests for such positions have been consistently denied by the Department of Finance. The lack of adequate internal staffing has been detrimental to the department's sheep management program, because individuals outside the department perceive CDFG personnel as being incapable of completing research projects without contracting with academic personnel or other consultants. Although funds are available to support a formal mountain sheep research program within CDFG, no such program exists because no positions have been allocated for such a program. Hence, most formal research conducted on mountain sheep has been contracted to individuals associated with a number of academic institutions. Some significant research has been carried out by permanent department employees, however, largely in addition to their regular duties.

The management of mountain sheep is one of the few programs within CDFG that annually is growing and becoming more strongly supported. At this time, the statewide program coordinator and the regional coordinator work closely to ensure that funds are allocated to the most meaningful projects, but burgeoning administrative tasks, such as the preparation of environmental documents for the hunting program or the preparation of contracts and budgets, supersede activities that would directly benefit mountain sheep. There is more work than can be accomplished by personnel currently involved with sheep management, and the augmentation of the sheep program with additional positions would be welcomed. In the absence of such an event, planning, coordination, and

implementation will be carried out at a rate consistent with available time constraints.

#### **LITERATURE CITED**

California Department of Fish and Game. 1983. A plan for bighorn sheep. The Resources Agency, Sacramento, 11pp.

Sierra Nevada Bighorn Sheep Recovery and Conservation Plan. 1984. Sierra Bighorn Interagency Advisory Group. California Department of Fish and Game, Sacramento. 17pp.