

SECTION I

PURPOSE AND NEED

SECTION I. PURPOSE AND NEED

Sole legal responsibility for managing the Sheldon National Wildlife Refuge was transferred to the U.S. Fish and Wildlife Service (FWS) in February 1976 (see appendix D). Prior to that time the area had been jointly administered with the U.S. Bureau of Land Management (BLM), and sustained heavy grazing by feral horses and burros, and domestic livestock under guidelines established by the Taylor Grazing Act of 1936. Wildlife habitat was not managed as the area's primary use.

FWS mission and administrative policies significantly differ from those of the BLM (e.g., BLM has a multiple-use management mandate and FWS management is to serve the needs of wildlife first and other uses, if they are determined to be compatible, only secondarily). Therefore, FWS has concluded that a new management plan for Sheldon is needed, with special attention given to how grazing should be handled. The purpose of this plan is to meet the special purpose of the National Wildlife Refuge System (NWRS), that is, to provide, preserve, restore and manage a national network of lands and waters sufficient in size, diversity and location to meet society's needs for areas where the widest possible spectrum of benefits associated with wildlife and wildlands is enhanced and made available (FWS, 1979). That broad mission statement has been translated into a more specific refuge purpose, to manage Sheldon as a representative area of high-desert habitat for optimum populations of native plants and wildlife.

I.1 Planning Process

In order to identify problems and needs on Sheldon as well as alternative strategies for addressing those problems and needs, a Coordinated Resource Management Planning Process was used.

Coordinated resource management planning was devised in Oregon in the mid-1960's and, to date, has been used to develop plans on about four million acres in Oregon and over 10 million acres in British Columbia. The process takes into account ownerships, major resources and uses made of these resources. These uses are integrated into a single unified program of use and management consistent with land capabilities. Public input is obtained through a group consisting primarily of the land owners and users and resource people involved in managing the area. While this group concurrently develops the rationale upon which decisions are based, the resource managers do not abrogate their responsibility to make the final decisions.

The coordinated planning process and the kind of public input it involves is designed to compensate for serious deficiencies that have existed in resource planning procedures. Included are the following five items:

(1) The need to make resource management decisions in unison; (2) the need for practicality in the plan; (3) the need to consider the second and third order of consequences that take place when something is done out on the land; (4) the need to avoid an incomplete consideration of what needs to be done on the planned area; and (5) the need to obtain attitudinal changes as well as biophysical changes. Resource workers are primarily trained and experienced in achieving biophysical changes, yet many planning efforts fail because they do not achieve the necessary attitudinal changes. Because of the total involvement of the participants in a CRMP, management actions are better understood.

The Coordinated Resource Management Plan for Sheldon was developed in three separate workshops as follows:

March 7, 8 and 9, 1978; Alturas, California

April 28 and 29, 1978; Reno, Nevada

July 22, 23 and 24, 1978; Badger Cabin, Sheldon NWR

In addition, a field tour was held November 4 and 5, 1978, to provide opportunity for public input from representatives of organizations that had not been directly involved in the workshops. A list of workshop attendees is given in Response 28.

I.2 Wildlife Habitat Problems

During the public meetings the following problems were identified:

First, vegetative communities on Sheldon lack diversity. Large acreages are dominated by shrubs such as sagebrush and rabbitbrush. The lack of vegetative diversity is indicative of vegetative communities in poor condition. In high-desert communities, unlike other vegetative communities, climax vegetation is characterized by a wide diversity of species, including grasses and forbs (an herb, other than grass). On Sheldon, however, domestic livestock have continuously grazed off forbs and grasses year after year to the point where these species have been greatly diminished. This lack of vegetative diversity results in reduced wildlife diversity and reduced availability of food and cover for wildlife.

Second, plant communities exhibit uniformly low vegetative "health" or vigor (G)¹ over Sheldon. Besides drought, the most common cause of low vigor is season-long grazing. Continuous grazing limits the plants' ability to maintain an adequate root system. This, in turn, delays or slows spring growth, reduces herbage, seed production, and plant residues--all of which results in reduced reproductive potential. Low vegetative vigor translates into reduced food supplies for wildlife.

¹ Words followed by a (G) are defined in a Glossary following the Table of Contents.

Third, water sources and surrounding plant communities have been degraded through overuse. Because only a few natural water sources exist on Sheldon, domestic livestock and feral horses and burros tend to concentrate around these sources. This has resulted in:

- a. Overutilization of spring-associated ("stringer") meadows
- b. Trampling of riparian vegetation
- c. Elimination of streamside shading
- d. Elevation of stream temperatures
- e. Stream bank erosion
- f. Excessive sedimentation

Soils and associated vegetation around water sources have been trampled, resulting in erosion and dropping of the water table. Adjacent meadows--critical to a variety of wildlife species--have been invaded by sagebrush and are in poor condition. Destruction of riparian vegetation (willows and aspen) has eliminated streamside shading and elevated water temperatures. In some cases, the water is presently too warm to support indigenous fish species. High turbidity caused by stream bank erosion and excessive sedimentation have adversely affected fish and other aquatic fauna.

Finally, feral horses and burros have contributed to serious degradation of forage and water resources of importance to wildlife. Historically, the areas which have received the highest amount of horse use are also those areas of critical importance to antelope, mule deer and sage grouse. Large numbers of horses and burros compete very effectively with other wildlife species for available forage resources. Of equal significance is the fact that in recent years numbers have been increasing at an annual rate of nearly 20%. In 1973, 398 horses were counted; by July 1976, their numbers had reached about 800. Burro populations were estimated at 150 animals. Year-round horse and burro use has been especially detrimental to wildlife areas around water sources.

I.3 Causes of Wildlife Habitat Problems

The wildlife habitat problems on the Refuge are the result of two separate periods of overgrazing. The first period extended from approximately 1850 to 1940. There is only sketchy documentation of the intensity of grazing which occurred over that time, however, the FWS conservatively estimates that 70,000 AUM's (G) were removed annually (Fallon and Rouse, 1941). Many of the problems which exist on the Refuge today, such as the lack of plant cover in the Virgin Valley and the poor condition of certain areas of arid loamy terrace, are probably the direct result of this first period of overgrazing. The impact of removing 70,000 AUM's

annually is brought home when it is realized that only 48,000 AUM's are available on the refuge today within safe degree of use (G).

The second period of overgrazing extended from the early forties to 1976, when FWS acquired sole jurisdiction of Sheldon. Records show that an average of 20,000 AUM's were removed during that time. In addition, during the period 1973 to 1978, feral horse populations grew from 398 to about 800 and the number of AUM's they removed grew from approximately 6,000 to 14,000. Although the total AUM figures were well within safe use for the entire refuge, grazing was uncontrolled.

Uncontrolled grazing meant that cattle and horses were allowed to graze with few restrictions on where grazing occurred, when it occurred, and to what extent it occurred. As a result cattle and horses tended to concentrate their grazing activities in prime forage areas around water sources. Furthermore, cattle and horses selectively removed preferred forage species which provided important food and cover for native wildlife forms. Overutilization of the grasses and forbs seriously depleted their abundance and diversity over the range. With the low moisture conditions, temperature extremes and shallow soils on Sheldon, these species were unable to recover from the first period of overgrazing. The consequence has been a systematic weakening and reduction of the grasses and forbs, resulting in monotypic stands of the hardier members of the vegetative community and those species which are not preferred by livestock--namely sagebrush and rabbitbrush.

I.4 Vegetation and Wildlife Objectives

In order to manage Sheldon as a representative area of high-desert habitat for optimum populations of native plants and wildlife, the FWS has established objectives for vegetation and wildlife. These objectives were quantified when sufficient information was available, however, to spell out absolute numbers and time schedules is virtually impossible and meaningless. Various factors such as disease, natural cycles, drought, predation, severe weather and the fact that many species migrate off the refuge cause wildlife populations to fluctuate, while vegetation is extremely dependent on moisture. Thus the objectives which follow are based on available data but subject to change depending on results of future field surveys.

I.4.1 Vegetation Objectives

Wildlife populations expand or decrease to fill available habitat and cannot be predicted or controlled. Thus, the major management problems on Sheldon are the quality and quantity of wildlife habitat. FWS feels that the key to improving habitat is to improve vegetative vigor and condition.

1.4.2 Wildlife Population Objective Levels

Antelope: Population objective levels for antelope have been set at 2,500 - 3,500 individuals. Current populations are low in comparison to what the habitat can potentially support. Based on population surveys which have been conducted since 1955, antelope populations on Sheldon have averaged about 1,450 wintering animals. Populations are believed to be limited by factors such as competition between cattle and antelope for bitterbrush during the late summer; poor condition of range sites; and "kid" mortalities due to predation.

Mule Deer: The FWS estimates that Sheldon has the potential to support 1,000-1,200 mule deer. Since the early 1960's, mule deer populations on Sheldon and adjacent areas have shown a rapid decline. The causes for the decline are not known. Present populations are estimated at 800 - 1,000 animals.

California Bighorn Sheep: With appropriate habitat enhancement, the FWS estimates that Sheldon can support 200-300 bighorns. Bighorn sheep were reintroduced on the Sheldon in 1968, after the population was eliminated in the 1920's due to encroachment by domestic sheep and poaching. The present bighorn sheep population is estimated at 41 individuals.

Sage Grouse: Sheldon has the capacity to support an estimated 6,000 - 8,000 sage grouse. The present population is estimated at 4,000. Sage grouse numbers have generally shown a declining trend since the early 70's. The trend is attributed to conflicts between cattle and sage grouse for use of meadow vegetation. Sage grouse depend upon upland meadows in the summer to provide food for their young. Continuous season-long grazing of these meadows by cattle has resulted in loss of sage grouse rearing habitat.

Small Birds and Mammals: Habitat capacity data for these species does not exist. In addition, Reid and Schroeder (1978) in studying small bird and mammal populations on Sheldon, found relatively small, if any, difference between numbers of birds and mammals per hectare between good and poor condition range. If this is substantiated with further study, there would be very little response of small birds and mammals to improved range condition. Specific habitat goals for these species at this time are, therefore, premature. There are four possible exceptions. In big sagebrush habitat, more horned larks and meadowlarks were counted on good than poor condition range. In meadow habitat, more encounters were made with vesper sparrows on good than poor condition range. Sampling also showed a larger number of northern pocket gophers present on good than poor condition big sagebrush and meadow areas. The general vegetation goal to improve condition class on as many sites as possible would meet the needs of these species. If further data shows that some species require poor condition range, the needs of these species will be met because, in the best professional judgment of the FWS, many sites will not improve in the next 40 years, no matter what type of management occurs.

I.5 Other Needs

One of the problems encountered at the outset of the planning process was the lack of data on many wildlife species, plants, and cultural resources. Consequently, numerous separate studies were initiated in 1978 on mule deer, antelope, sage grouse, bighorn sheep, nongame mammals and birds, fish, reptiles and amphibians, and plants. Special attention was given to determining the existence of any endangered or threatened plant or animal species on the Refuge. Those studies were designed to inventory and evaluate critical natural resources, and help answer questions about what effects future management alternatives might have on each. Additionally, a study was undertaken to characterize the social and economic environment of the area and evaluate the dependence of permittees on Sheldon's grazing privileges. A compilation and evaluation of existing information on the prehistory, history, and cultural resources of Sheldon was also undertaken. Some of the studies will take five years or longer to complete, however, so some data was limited for this document. The available data is summarized in Section III.