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NEEDS AND OPPORTUNITIES FOR CONSERVATION OF THE PUBLIC RANGE

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Previous consideration of the economics of conservation by this Association, such as the papers presented in 1948 by Kelso, Pingrey, Weeks, and Joss, have emphasized that exact economic measurements of conservation values are not obtainable, at least at the present time. In selecting conservation actions, a large factor of judgment must be applied, even after the economist has marshalled and analyzed the available data. We present the present discussion with the aim of analyzing what we feel is a reasonable sample of data as a further aid to the exercise of judgment concerning conservation, with special reference to conservation of the public range in the Pacific Northwest.

Responsibilities for Conservation

The public range is an integral part of most livestock ranching operations in the West. With more than eight million head of livestock using forage and water on the public lands, either yearlong or seasonally, the stability of the range livestock industry and the national supply of range livestock depend materially upon the stability and productivity of the public range.

After decades of unrestricted use and piecemeal disposal, the remaining vacant, unreserved, and unappropriated public lands were placed under a program of managed use and disposal with the passage of the Taylor Grazing Act in 1934. There are now approximately 180 million acres of public lands managed by the Bureau of Land Management in the United States, of which 134 million acres are in grazing districts.

Under the Taylor Grazing Act, the National Soil Conservation Act, and other legislation, the Secretary of the Interior has wide authority for the administration of these lands, which he has delegated to the Bureau of Land Management. Private interests in the public lands are strong, however, and a part of the responsibility for the public lands rests with the land users. The full cooperation of the land users and a desire on the part of the general public are essential before conservation of the public range can be placed on an adequate level.

The interest of the livestock industry in range conservation and rehabilitation has been indicated in numerous ways. Many operators are donating time, equipment, and money to reseed or otherwise improve the ranges under permit to them. Under the Taylor Grazing Act, stability of tenure has been strengthened, increasing the incentive for private investment in conservation and improvement.

Conditions, Problems, and Needs

The Federal public range, though constituting a major segment of the livestock feed base, is in a state of low productivity in terms of its past condition and its present potential. The range has suffered over the years from over-use, drought, fire, weed infestation, and other causes. The cumulative effect in terms of soil erosion, siltation, excessive water run-off, and other damage is indeed serious.

°The views expressed are not necessarily those of the Bureau of Land Management.

In the Pacific Northwest and extending into California, the Pacific Bunchgrass type has withstood grazing poorly, and has been infiltrated by annual grasses with unstable capacity. The sagebrush grasslands east of the Cascades now have only a third of the productivity that they should and might have. Invading annuals have greatly increased the fire hazard.

A serious side-effect of range deterioration is infestion with annual weeds which turn the range into a reservoir for virus infections and a breeding ground for damaging insects.

The serious beet leafhopper and curly top infestations in Idaho are derived from host weeds, most of which are on the public lands. In a recent survey, it was found that 79 percent of the Russian thistle infestation in three Idaho counties was on Federal lands. 1/ The Weed Control Committee of the Department of the Interior, in cooperation with a like organization in the Department of Agriculture, is considering ways and means to combat this problem. The Land Subcommittee of the Columbia Basin Inter-Agency Committee has authorized the establishment of a Task Force to consider the general problem of noxious weeds in the Pacific Northwest.

The problem of reduced grazing-use of the public lands has been intensified by a growing demand for range livestock and by reductions or exclusions in grazing made necessary in the interest of watershed protection or other land uses with which grazing is partly or wholly in conflict. Irrigation development in range land areas is reducing the area available for range, altering the range land economy, and increasing the demand for range livestock and range land use.

Fortunately, ranchers and technologists have developed methods that are potentially available to solve many of these problems. Further research in range conservation and rehabilitation methods is needed, but the primary need now is to provide the implementation so that known techniques can be carried out on the ground.

Experience has shown that range rehabilitation under favorable circumstances increases grazing capacity promptly and sharply. The Bureau of Land Management, Forest Service, Soil Conservation Service, State colleges, and other agencies have conducted experiments and demonstrations of rehabilitation and reseeding in the Northwest over a period of years.

The results of crested wheatgrass seedings near Fort Rock, Oregon, are illustrative of results. About 5,000 acres were seeded in this area from 1930 to 1943. In 1949, Professor E. R. Jackman of Oregon State College, visited this area. He found that crested wheatgrass keeps out annual weeds completely, and furnishes five times as much feed per acre as adjacent stands of fair sagebrush grass, and ten times as much feed as rabbitbrush and sage where the native grasses had been killed. 2/

At the Squaw Butte-Harney Range and Livestock Experiment Station near Burns, Oregon, operated by the Bureau of Land Management and Oregon State College, gains in forage capacity from reseeding have been over 300 percent. 3/

1/ Douglas, J. R. Land use in relation to the beet leafhopper in Southern Idaho. 1950.

2/ Jackman, E. R. Report of crested wheatgrass field examination near Fort Rock Ore., July 11-14, 1949. Oregon Agr. Ext. Serv. Corvallis, Ore. 1949.

3/ Sawyer, W. A. The Big sagebrush problem. Squaw Butte-Harney Range and Livestock Experiment Station. January 1950.

Program Requirements

The first requirement of conservation on public lands is protection -- from trespass, over-use, fire, and other forms of damage. This is a primary objective of the Bureau of Land Management. In carrying out this objective, the Bureau has reduced the rate of use in depleted range areas. A cut was recently made in the Gooding-King Hill area of Idaho. A hearing has just been held at Gooding to explain the situation and reasons for the cut and provide an opportunity for the stockmen who were affected to present opposing arguments. On the basis of all facts presented, the hearings examiner will reach a decision.

It has been demonstrated beyond reasonable doubt that grazing use which is "moderate" in terms of current growth not only conserves the grass for watershed protection and future years' forage, but also results in higher gains per head from the current year's grazing. Thus, a cut in permitted numbers of livestock is not always a reduction in productive range use.

The results of ten years of research at the Central Plains Experimental Range in Colorado have recently been announced by the Forest Service, indicating that "moderate" grazing use turns out better quality livestock at lower costs of production, with higher net returns per acre and per ranch, than under "heavy" use. 1/ However, under the current level of appropriations for the Bureau of Land Management, the protection that can be given to the range is incomplete. Provision should be made for a higher level of protection as the range is rehabilitated or improved and as range values increase. Another basic requirement is research information - and range surveys, classification surveys, topographic surveys, and other types of basic data required for sound land management.

The Bureau of Land Management has made impressive accomplishments in soil and water conservation on the public lands under the National Soil Conservation Act, but progress has been slow in terms of need. Many areas needing soil and water conservation have not been authorized for treatment because of lack of funds.

Benefits and Costs

The activities necessary for the management of the public range may be thought of as producing benefits to the users of the lands, to local industries and communities, and to the general public. The benefits accruing to range users include increased quality and quantity of livestock production, lowered operating costs, and lowered operating risks. These benefits may be expected to reflect themselves in improved income or increased value of ranch headquarters or both. The benefits accruing to local industries and communities take the form of increased economic opportunity and employment, and local downstream benefits through watershed protection or water control. The potential public benefits are highly significant. The public is concerned with building up resource productivity and increasing employment, and in benefits to wildlife resources, recreational values, reduction of flood and silt damage, and protection of water supplies over wide areas.

Much of the public range, and for that matter the private range, can be

1/ U. S. Forest Service. Rocky Mountain Forest and Range Experiment Station. Annual report, Calendar year 1949. Fort Collins, Col. 1950.

returned to something near its potential productivity at a reasonably low cost. As a rough average, a cost of $5. per acre will cover the costs of reseeding and related improvements on lands in the Pacific Northwest, with variation somewhere between $2. and $10. per acre. Current estimates indicate that nearly 4 million acres administered by the Bureau of Land Management in Idaho and Oregon require artificial revegetation, with an additional 12.5 million acres requiring revegetation by natural means.

As an average, range reseeding and appurtenant work, costing $5. per acre, would increase grazing capacity from 20 acres per animal-unit-month to 4 acres; or it would increase livestock gains during the range season from 2 pounds per acre to 10 pounds. If we were to borrow for the moment a concept of economic justification known as the "gross value" method, which has been used in considering projects of the Bureau of Reclamation, we would find that the reseeding of an acre of depleted range would cost $0.60 per year and would make possible the production of an additional 8 pounds of beef, valued at upwards of $1.60. The benefit-cost ratio would be nearly 3 to 1.

To extend the comparison with reclamation projects further: The initial cost of rehabilitating an acre of depleted range is only 1 percent that of the cost of reclaiming an acre of cropland under current scales of cost (that is, $5. as compared with $500); whereas, the gross productivity of an acre of rehabilitated range land is about 3 percent that of an acre of irrigated cropland (roughly, 4 acres per A.U.M. as compared with 8 A.U.M's per acre.) On the basis of these initial costs, range rehabilitiation appears to have a comparative advantage over reclamation at the rate of about 3 to 1.

Allocation of Costs

To arrive at a fair and equitable allocation of administrative and improvement costs on the public range is a difficult problem -- one that must be solved before the range conservation program can be expected to receive full financial support from either the Federal government or the stockmen.

In 1946, the Secretary of the Interior, in recognition of this problem, asked the Bureau of Agricultural Economics to make recommendations. The report prepared by BAE recommended a reasonable allocation on the basis of the proportionate benefits accruing to the users and the general public.

A schedule of percentage allocations was suggested, which in general would (1) charge to the users the full cost of range-use supervision, water developments, fences, and trails; (2) charge to the Government the full cost of research, land planning, recreation, timber, and wildlife management; and (3)make an equal allocation of other items including range protection, range surveys, records, lease administration, management plans, truck trails, range revegetation, and soil and moisture conservation projects. The suggested allocations were based primarily upon questionnaires received from district graziers, advisory board chairmen, and State experiment station representatives. 1/

As developed in the discussion of Dr. Brekke's and Dr. Upchurch's papers (yesterday), the question of cost allocations is one of crucial importance that needs much more thought.

1/ U. S. Bureau of Agricultural Economics. Allocation of costs of administration and improvement of Taylor Grazing Act lands between range users and public interest. 1947.