

Criteria and Conditions for Public and Private Ownership of Range Resources¹

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When does the Issue of Public Ownership Arise?

By way of introducing a complex and controversial subject, one may raise the question why it is that in range resources—and also in forest resources—public ownership is a live and hotly debated issue in a country which, in its basic ideology and institutions, relies on private ownership. Public ownership of agricultural or mineral resources, on the other hand, is not a controversial issue in this country.

In range and forest resources, public ownership is not only an issue, but most people would concede that public ownership should play at least some role. Is this attitude determined only by the momentum of historical experience, by the fact that, in the relatively short history of this country, public ownership has played such an important role in range and forest resources? Without denying this influence, there are more important reasons for the attitude toward public ownership of range and forest resources.

In order to get at these reasons, one has to clarify certain basic assumptions with respect to the over-all role of ownership in natural resources. For the purposes of this paper, a particular form of ownership—public or private—will be regarded not as an “end” of community welfare nor as a necessary condi-

tion for the development of that society one usually calls “Modern Western,” but as a “means” for public policy to increase welfare or as a variable in economic development (Ciriacy-Wantrup, 1956).

Our first question, then, may be answered by saying that public ownership of natural resources becomes an issue under conditions which create doubt as to the superiority of private ownership as a means to increase community welfare. For range resources these conditions prevail more frequently than for agricultural resources. But there are cases when they prevail for agricultural resources also. In California, for example, considerable areas of agricultural land of high per-acre value have been transferred from private to public ownership; they are intensively cultivated to sustain the waterfowl of the Pacific Flyway. Such transfer is an important policy tool for decreasing crop damage on surrounding private agricultural lands and for perpetuating and distributing benefits from waterfowl.

Let us inquire what are the criteria for identifying such conditions in range resources. Two interrelated criteria will be discussed. For short, one will be called the “social-benefit” and the other the “conservation” criterion. Only a short sketch of these two criteria can be given here. A more detailed treatment is found elsewhere (Ciriacy-Wantrup, 1952).

Social Benefits from Range Resources

Range resources yield several

products jointly. Besides livestock, the most important are water, protection of the soil against erosion by water and wind, and outdoor recreational opportunities, especially those provided by fish and game. Except the first, these products are generally not sold in the market and are difficult to evaluate in monetary terms. Potentially they are of benefit to others besides the private owner of range resources, but both their production and their distribution are affected by private range management decisions. Largely for economic reasons, these effects are not and cannot be taken into account by the private owner to the same extent as they would be from the standpoint of welfare economics.

Such “extra-market” products by themselves do not distinguish range resources from agricultural resources. Wildlife and other recreational opportunities are also produced on corn belt farms. There, however, the social benefits derived from them—this means benefits received not only by the owner but also by other members of society—are generally small relative to the social benefits derived from crops and livestock. Social benefits from the latter products are evaluated through the market and taken into account in private management decisions.

The concept “welfare” in economics has reference to both the aggregate volume and the distribution of social benefits. Hence, both the production and the distribution of social benefits from range resources must be considered here. In the future, the problem of distribution may become even more important than the problem of production. There are three major reasons for this expectation.

First, there is a trend for wildlife and other recreational op-

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portunities yielded by range resources to become marketable products. This is exemplified by leasing hunting and fishing rights to individuals and groups, by fees charged for trespass permits, by taking in "paying guests" and by outright "dude" ranching. In view of such trends, production per acre of opportunities for outdoor recreation may not be smaller under private than under public ownership of range resources. But the distribution of these benefits is quite different under the two forms of ownership. Under private ownership these benefits are distributed to those who are able to pay for them; they are distributed on the basis of money incomes, as are most other products in our society. Under public ownership these benefits are distributed free. Where rationing becomes necessary, this is generally accomplished on a "first come, first served" basis. (The relatively small fees for hunting and fishing licenses are paid also by those who use private lands.)

Second, through education, through public assistance in habitat improvement, stocking and patrolling, and through taxation, zoning, and land-use regulations, public policy can exercise considerable influence upon the production of wildlife and other recreational opportunities on private land. Such policy tools can also be used to influence distribution. This latter influence, however, is likely to remain minor. Let me illustrate the basis for this conclusion by an example. Public assistance to private landowners can be given under the condition that at least a portion of the land is open to public hunting and fishing. This approach is taken in the cooperative hunting areas in California. In these, the major advantage to the private landowner is that a portion of the land (not more than 20 percent) is reserved for him, his family

and guests, and that the posting and patrolling is done by the state (Harper, Metcalf, and Davis, 1950).

This interesting and worthwhile attempt to influence distribution of benefits from wildlife is endangered by the trend, just noted, for wildlife to become a paying crop. If a private landowner knows that his hunting rights have a market value, when sold by him directly or through some community organization, he will be reluctant to join a cooperative hunting area. As a consequence, the state may have to acquire hunting rights through payments to private landowners or through other ways if free public hunting is to be provided.

Third, it would not be realistic to expect that in this country distribution of social benefits from range resources will be exercised *entirely* through the market mechanism on the basis of money incomes. Here, in contrast to some European countries, the tradition of free hunting and fishing is strong. Furthermore, the provision of some forms of outdoor recreation, for example, in parks and playgrounds, is generally regarded as a public responsibility.

This is not to imply that the provision of free hunting and fishing for everyone to his heart's content should be made a public responsibility. The trend toward sale of recreational opportunities has just been mentioned. This trend favors a greater aggregate volume of such opportunities available for use. In this sense, one may regard the trend toward marketability as being in the interest of welfare. The point is that, in view of and in addition to an increasing sale of outdoor recreational opportunities, there is an increasing demand for a public program in order to distribute these opportunities in the interest of community welfare. Efficient administration of such a

program may require public ownership of the land and not merely acquisition of certain use rights.

If these three points are accepted, it follows that, in applying the social-benefit criterion for public and private ownership of range resources, one must consider recreational opportunities provided in relation to the production of livestock. Computation of a precise numerical ratio between the net value of these two types of products on a given acre of range land presents difficulties, but is not always necessary. Such a ratio would be relevant only under constraints: minimum requirements of wildlife management, such as balance of summer and winter range and suitable administrative units, must be met. More importantly, public policy must look toward the future. On the basis of fairly clear trends in total United States population, age distribution, occupational patterns, per-capita income, and residence, one can predict that the demand for outdoor recreational opportunities will increase much faster than the demand for livestock. At present, the criterion under discussion may seem more important for range resources in a fast-growing state like California with a large urban population. But in the future it may become important also for range resources in areas like the Northern Great Plains which, at present, are less urbanized.

Although no attempt is made here to define the social-benefit criterion numerically, it can be applied on a considerable acreage without difficulty and certain consequences that would follow from its application can be spelled out. It would seem sound public policy to deal with those areas first where the ratio which is being considered here as a criterion clearly is either very large or very small. In some parts of this country, such

as the Northern Great Plains, there are range resources presently in public ownership which now and in the future have little significance for outdoor recreation. In terms of the social-benefit criterion, therefore, there would be no objection against a transfer to private ownership. On the other hand, there are range resources presently in private ownership that have great significance for outdoor recreation. This is especially true for some critical winter ranges of deer and elk. In terms of the social-benefit criterion, such range resources should be in public ownership. The State of California, for example, has recently bought from private owners a large acreage of this type of range in the foothills of the Sierra Nevada.

Conservation of Range Resources

Let us turn now to the second criterion. The classical argument in favor of public ownership of range resources is based on the criterion of conservation. The argument in favor of this criterion points out that under some conditions private owners do not practice conservation and that such conservation is in the public interest. Before one can apply this criterion, the meaning of conservation must be clear. Then one needs to ascertain whether the conditions that prevent conservation under private ownership can be changed without changing the form of ownership. Let us look somewhat more closely at these requirements.

Range conservation by itself has no clear meaning in terms of a certain level of range productivity that should be preserved indefinitely. Range productivity is increasingly man-made. This raises the question what productivity level should be aimed at and to what extent productivity variations over time should be tolerated—for example, in periods of drought

or economic depression. Furthermore, in an attempt to connect range conservation with the public interest, the question arises which level of productivity is regarded as the social "optimum."

A detailed discussion of the meaning of conservation in the light of these questions cannot be undertaken here. It is sufficient to say that a minimum standard of conservation defined in terms of range management practices, or physical results of such practices, appears more relevant and useful for public policy than defining as the objective of range conservation a status quo of productivity or a social optimum of productivity (Ciriacy-Wantrup, 1952, chapters 4, 17, 18; Ciriacy-Wantrup and Schultz, 1957).

If this point regarding the meaning and objective of range conservation is accepted, the requirements for advocating public ownership on the basis of the conservation criterion are, first, that a minimum standard of range conservation is not adopted under private ownership because range operators are not sufficiently informed about appropriate practices or are not able for economic reasons to adopt them; and second, that these factors cannot be changed more effectively through education, land-use regulations, zoning, subsidies, and other policy tools than through public ownership.

Conditions under which these requirements are fulfilled still exist. But insufficient information and economic inability are much less important now than during the history of the range industry even as late as in the 1930's. Today, and probably also in the future, another economic factor is more important. This is the short-run private profit that can be made in regions with high climatic hazards but fairly level topography by plowing up range lands, which in the public

interest should remain permanently in grass. This factor operated especially during and shortly after the two world wars and the Korean War.

Zoning and land-use regulations by grazing districts or other units of government are tools of public policy to prevent such privately profitable but socially costly plowing up of range lands. Experience shows, however, that these tools are not always acceptable to the owners of range resources and to the people as a whole. To the extent, then, that such tools are politically not acceptable or administratively too expensive, public ownership may be the safest and most economical way to guarantee a minimum standard of range conservation.

It is possible to outline certain consequences if the conservation criterion is applied in a decision on whether in particular areas private or public ownership is superior. In the more mountainous areas of the West, where topography precludes plowing up of range lands, considerable areas could be safely transferred from public to private ownership. Most range managers know of areas where range conservation is practiced on private lands to the same or even to a higher degree than on similar public lands. On the other hand, in the arid or semi-arid plains, expansion of public ownership may become necessary if other tools of public policy remain insufficient.

After saying this, a word of caution would seem appropriate with respect to the relation between the two criteria. The argument in favor of public ownership may be strong according to the social-benefit criterion and weak according to the conservation criterion, or vice versa. As a matter of geographical fact, there is a tendency for the two criteria to operate in opposite directions when applied jointly. This is explained by the habitat

requirements of the presently important wildlife species and the characteristics of the demand for outdoor recreation. This complexity brings us to the last major point of the paper.

Need of More Research in the Economics of Range Policy

In discussing the form of ownership and related problems of range policy, one is handicapped by lack of scientific facts. Some of this lack is in the field of natural sciences. For example, more information is needed on how far and under what conditions livestock and game compete for feed; far too little is known about the deferred effects—as distinguished from the more immediate effects—of management practices on range productivity. But much of the lack of scientific facts is in the field of the social sciences, especially economics. There is a great need for more research in economics of range policy.

The social-benefit criterion points to the need for more research in the economic evaluation of extra-market products, especially of recreational opportunities. Whether one likes it or not, their evaluation and also the dismissal of such evaluation are already a part of the political process. Reports of fish and game departments and other public agencies illustrate many attempts to evaluate these products. One may have professional doubts about some of the procedures used. Still these attempts should be encouraged.

Otherwise, social benefits from these products may fail to receive due attention in policy decisions.

Not all social benefits from these products can be evaluated. Partial measurement, however, is possible by using market values indirectly—for example, through analyzing data on leases, fees, and real estate transactions. Values of additional physical units of use can be approached through questionnaires and similar procedures. These and related problems of benefit-cost analysis have been more thoroughly explored for water resources than for range resources (Ciriacy-Wantrup, 1955).

The conservation criterion points to the need for more research in the response by private range operators to economic forces and government policies. In studying the response to variations in prices and price supports of products and cost factors, special attention should be given to shifts from grass to cultivated crops. In studying the response to economic uncertainty and the reaction to the actual incidence of drought and other extreme variations in the physical and economic environment, one should focus on fluctuations of livestock numbers. The type and the degree of response in terms of livestock numbers frequently gives rise to social costs. From the standpoint of conservation, responses to variations in institutional arrangements such as tenancy,

taxation, credit, and subsidies are no less important than responses to price variations and weather fluctuations. Knowledge about these responses is needed in order to decide whether or not range policies other than transfer to public ownership guarantee a minimum standard of conservation.

But the usefulness of such studies is not confined to this decision. The response of private operators using public range resources to various forms of tenure and to other economic forces is of great interest for the administration of the public range. More research in the economics of range policy is needed, not only to identify in terms of criteria and conditions where the margin between public and private ownership should lie, but also to improve the use of public range resources by private enterprise.

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