Timber Resources

THE FEDERAL GOVERNMENT has a dominant position in the Nation's timber economy. Just before and after the beginning of the 20th century, vast areas of timberland were reserved from disposal under the public land laws for the express purpose of guaranteeing that the country would have a continuous supply of timber to meet its future needs. These reserves were later supplemented by additional timberlands acquired primarily in the eastern states.

As a result, the Federal Government now owns some 20 percent of all of the country's commercial forest land, nearly 40 percent of its supply of merchantable timber and over 60 percent of its softwood sawtimber. The degree of potential Federal control over the supply of timber is greater than over that of any other commodity presently produced from public lands.

In part because of the success of management programs on privately owned timberlands, in part because of the conservative manner in which Federal timber has been permitted to enter the economy in the past, and in part because of continuing changes in the wood needs of the country, the Nation's ability to meet its long-range future wood needs is promising, as long as the timber grown on both public and private lands is made available for harvesting. This is in sharp contrast to judgments often made as recently as the 1930's and 1940's.

At the present time, the wood needs of the United States are increasing rapidly. Also, exports of logs, particularly to Japan, increased dramatically during the 1960's. Forest lands, both public and private, are being withdrawn from timber harvesting and set aside for other purposes. Although private timberlands met the major burden of our wood requirements during the first half of this century, the pressure is now on public lands to supply much of the country's wood needs in the near future. Despite this tremendous responsibility of the Federal Government, the statutes applicable to most of the Federal forest lands provide at best inadequate policy guidelines directing how these public lands are to be managed or timber made available to meet our needs.

Regardless of the reasons why the Federal Government became, by far, the country's leading owner and manager of forest lands and timber, and regardless of the relevancy of these reasons to today's conditions, the facts are:

—Federally owned timber is vital to the wood economy of the country;
—Federally owned timber is vital to the economies of many communities;
—Federal policies with respect to the sale of this timber can result in the life or death of firms that use it;
—The Federal Government's dominance as a supplier of timber will continue in the future.

Although this chapter sets forth the Commission's recommendations concerning timber as a commodity of the public lands, the recommendations were arrived at, as were all our recommendations, only after giving full consideration to all other uses that can and must be made of the forests. This is emphasized because we recognize that the potential for conflicts among competing uses is particularly high on public forest lands. While wood harvesting, watershed protection, and grazing were always primary purposes of forests on public lands, recreation use, including wilderness areas, has assumed a growing importance in recent years. The availability of a continuing timber supply depends in part on the extent to which public forest lands are allocated to meet the demands for other uses. Despite this and the fact that, of all the various classes of public lands, forest lands generally are capable of producing the most combinations of commodities and, in many cases, the highest values, there are no statutory guidelines to indicate how the various uses are to be balanced.

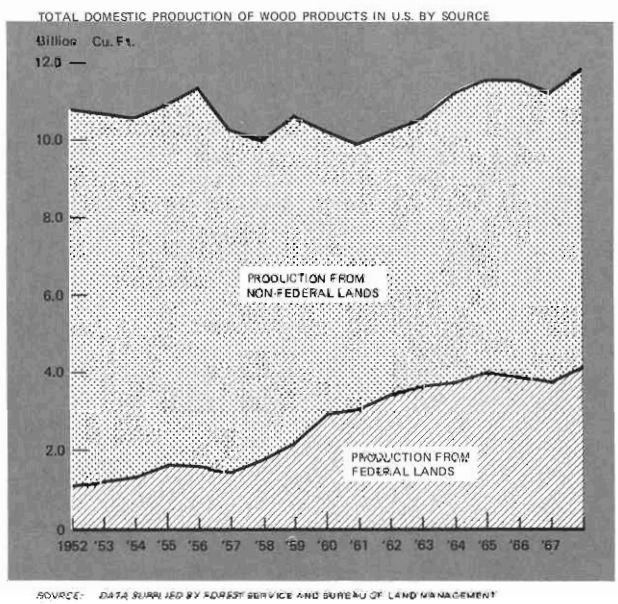
The diversity and intensity of use dictates that great care be taken on forest lands to assure that environmental values are not lost through poor forestry practices. This is especially important on

those forest lands that are managed primarily for the production of timber. The harvesting of timber, of course, can, when not exercised with care, have very substantial effects on the scenic and watershed values of forest land as well as on surrounding lands and downstream water flows. The United States cannot afford to have its timberlands used so as to degrade the surrounding environment.

We also believe it is important to note the possible effects of some management practices on the lands and forests themselves. Timber management on public lands has progressed over the past few decades from primarily fire protection to the point where a variety of techniques, including controlled fires, pesticides, herbicides, fertilizers, and mechanical equipment, is used. These techniques and the practice of planting large areas to a single species can have harmful environmental consequences over large areas of land. The use of these practices should not be stopped entirely, but, as discussed generally in the chapter on Public Land Policy and the Environment, we favor continued surveillance and monitoring of such programs. These must be supported by a continuing program of research to ascertain all the facts about presently used practices and to develop new and improved practices that will reduce environmental hazards.

In accord with out general recommendations that artificial distinctions between classes of land be eliminated, we believe that policies guiding timber production and use should generally be the same for all public lands. We see no reasons, other than those dictated by varying regional conditions, why the best available practices should not be adopted by all agencies.

There are significant differences now in some timber policies, in the same geographic area, between the Forest Service and the Bureau of Land Management. For example, the Forest Service sells timber on a royalty basis, while BLM sells timber on a lump sum basis, and the methods for measuring timber volumes as a basis for payment are different. Methods of financing timber management programs and timber access road construction differ between the two bureaus. The other agencies managing public lands also differ somewhat. We find that these differences are confusing to the public and should not be retained.



Federal lands are contributing an increasing share of our domestic wood production.

Dominant Use Timber Production Units

Recommendation 28: There should be a statutory requirement that those public lands that are highly productive for timber be classified for commercial timber production as the dominant use, consistent with the Commission's concept of how multiple use should be applied in practice.

We have previously recommended the concept of dominant use classifications as a means of implementing land use planning on public lands not designated by statute for a primary use.[1] This concept finds ready application in the case of planning for timber production on public lands.

Legislation creating national parks and wilderness areas, and administrative determinations without legislative sanction placing public forest lands in noncutting zones, and restricting the cut on other areas, have reduced the area of public land—and the value of timber available from it—that is necessary to support the timber industry. In some cases, despite the absence of guidance from Congress, which under the Constitution has the authority to make such rules, timber stands in which substantial sums of public money have been invested are set aside for other use before the timber can be harvested and the public can reap the benefits of its investment.

The amount of forested public land reserved from harvesting or placed under special cutting limitations more than doubled between 1957 and 1967.[2] Although data are not available to show the extent of the continuing pressure on private forests, land is being cleared for many uses such as residential, commercial, and highway construction. Also signif-

[1] See Chapter Three, Planning Future Public Land Use, for a discussion of the Commission's recommendation on this point.

[2] George Banzhaf & Company, *Public Land Timber Policy*, PLLRC Study Report, 1969, App. G.

icant is the fact that much private forest land is made unavailable for timber harvesting because of the increasing ownership of forest lands by people interested primarily in recreation values.

Lack of assurance that public land timber will be available for harvesting in the future results in:

—Lack of security for investment planning by timber industry firms using public land timber, and a concomitant unwillingness to modernize their plants and equipment;
—Short-range planning by communities whose economies are dependent on timber harvested from the public lands;
—Unwillingness on the part of the Bureau of the Budget to recommend needed levels of investments in timber management;
—Concern over the country's ability to continue to meet increasing levels of consumption of wood products without a substantial increase in timber prices;
—Resistance to all proposals, however meritorious, to withdraw public land from timber harvesting.

The fact is that the purposes of the 1897 Organic Act [3] of the Forest Service, whose major aim was to assure future timber supplies, have been obscured by changing conditions and needs. Yet, the United States continues to require timber and wood products in increasing quantities. The Commission believes that these and other requirements can best be met by the identification of highly productive areas of public forest lands administered by the Forest Service and the Bureau of Land Management, their classification for commercial timber production as the dominant use, and their inclusion in separate timber management systems. *To manage these systems separately from other public lands, there should be created a Federal timber corporation or division within the Forest Service and the Bureau of Land Management.*[4]

In harmony with our belief that effective multiple use planning can be accomplished only by classifying lands for their highest and best uses, *lands classified for inclusion in this system would be those that are capable of efficient, high quality timber production, and are not uniquely valuable for other uses.* By no means would all of the public lands currently defined by the Forest Service as "commercial forest lands" be included in the system. The Forest Service definition, for example, requires, among other things, that such lands be capable of producing at least 25 cubic feet of timber per acre per year. This standard excludes only those forest lands of the very poorest quality. Much of the land defined as commercial is at higher elevations in the West or on ridges or swamps of low productivity in the East. The Commission does not intend that these lower quality timberlands be included in timber production units.

Most of the forest lands to be included in such units are in Alaska, California, Idaho, western Montana, Oregon, Washington, and the southern states. These lands are highly productive; for example, about 70 percent of the national forest lands in the Douglas-fir region of Oregon and Washington is capable of producing more than 85 cubic feet per acre per year. These areas are already the ones where the greatest wood processing capacity is located. However, there are other areas of public lands that should be considered for inclusion in such units. The decision should rest on the merits of each case.

Criteria for establishing timber production as a dominant use on public forest lands must involve consideration of other existing or potential uses. Those lands having a unique potential for other uses should not be included in timber production units. Critical watersheds, for example, where cutting may be prohibited or sharply limited, should not be included. Similarly, important, or potentially important, intensive recreation use sites close to urban areas should not be included. On the other hand, watershed, recreation, or other uses would not be precluded on lands in the system.

Timber production should be the dominant use, but secondary uses should be permitted wherever they are compatible with the dominant use. Generally these areas would be available for recreation use except during the period when timber is being harvested and the time thereafter required to permit new growth to get started. It may also be necessary to impose greater restrictions than now exist on grazing during periods when timber stands are being regenerated.

The actual limitations placed on other uses would not be as severe as they might appear at first glance. The best sites for timber growing are mostly at lower or middle elevations in the West and in the southern states. In the West, outdoor recreation use tends to occur at the higher elevations where the scenery is more spectacular, where there is snow for winter sports, and where the ground cover is more open and suitable for hiking and other summer sports. The conflicts resulting from outdoor recreation on the better national forest timber production areas in the South occur less frequently than in other regions.

The total area that would be included in timber production units would probably be less than one-half of the total forest land now in Federal ownership, and less than one-fourth of the total area of the na-

[3] 16 U.S.C. §§ 473–478, 479–482, 551 (1964).

[4] If merger of the Forest Service and the Department of the Interior is accomplished, as recommended in Chapter Twenty, Organization, Administration, and Budgeting Policy, merger into one system should be possible.

Federally owned timber is vital to the wood economy of the country and to the economies of many communities. The Federal Government owns more than 60 percent of the country's softwood sawtimber.

tional forests. Although the area of forest land that would be so designated does not make up a majority of all federally owned forest lands, this highly productive part of the total is vital as a source of timber. This is the land that will react most readily to investments in timber management and will be the key source of public timber for industrial uses in the future.

Financing

> Recommendation 29: Federal programs on timber production units should be financed by appropriations from a revolving fund made up of receipts from timber sales on these units. Financing for development and use of public forest lands, other than those classified for timber production as the dominant use, would be by appropriation of funds unrelated to receipts from the sale of timber.

On the more productive public forest lands, receipts from timber sales generally exceed the costs of financing not only the administration of timber sales, but the overall level of investments in timber management. This is not true of much of the lower quality forest lands.

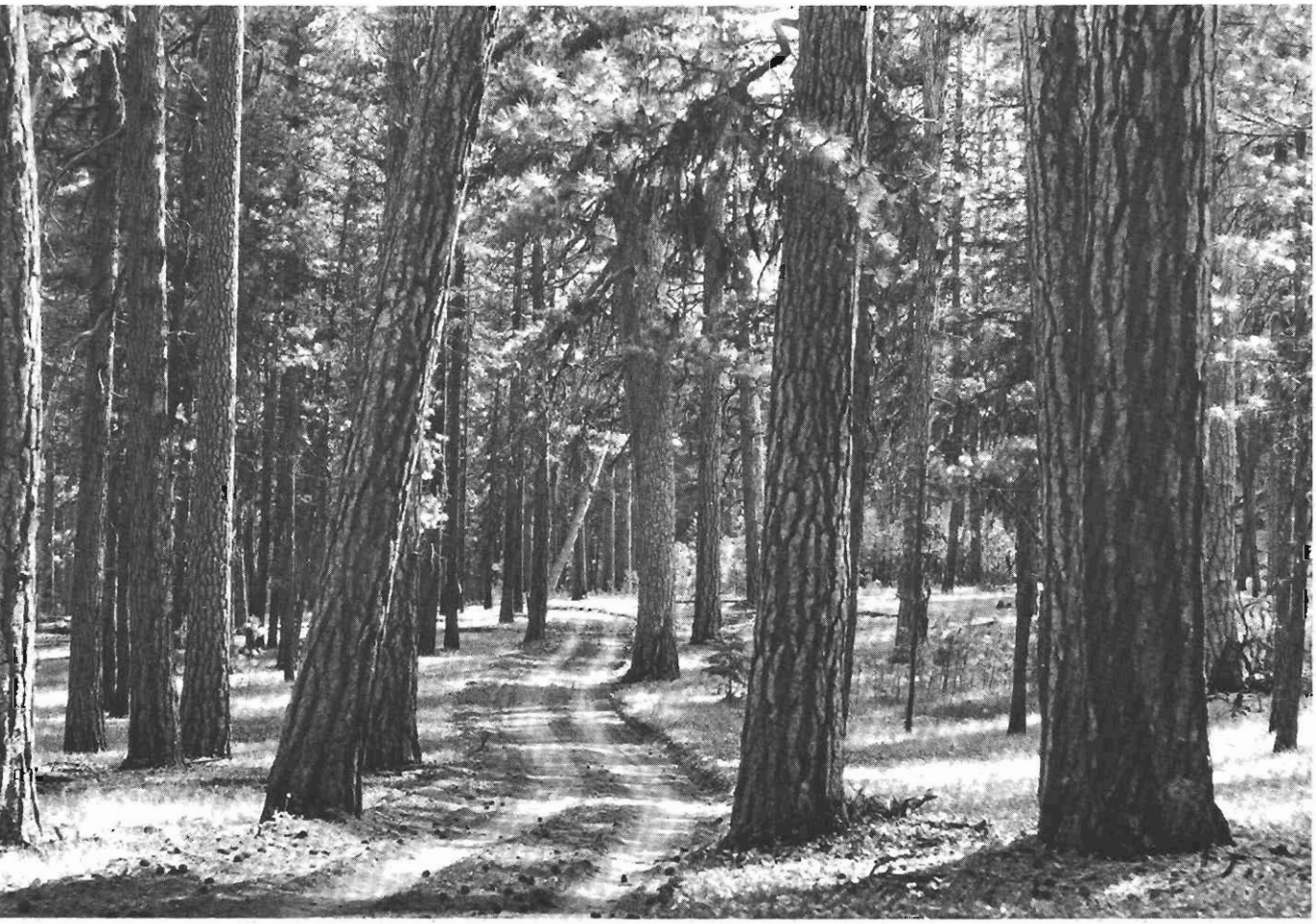
A revolving-fund method of financing these timber production units would provide the land management agencies with a reasonably assured source of funds to permit long-term investment and management programs; it would assure the industry of a fairly certain continuity of supply; and it would provide Congress and the people of the country with a means of measuring the success of this economic program in economic terms.

Such a fund, as envisioned by the Commission, would not bypass the congressional appropriation process. We propose that no money would be available to the agencies unless appropriated, even though the money came from the production fund. *Funds for timber production on other forested public lands should be provided by direct appropriation from the Treasury as justified.*

Back-door financing, i.e., payments that do not go through the appropriation process, of timber production programs should be ended, whether in the form of purchaser-built access roads, reforestation payments under the Knutson-Vandenberg Act,[5] *or any other form of indirect appropriation. When timber is sold from public lands, its full value should be collected by the United States and deposited either in the timber production fund or the Treasury.*

The Federal timber corporation or division we recommend be established within the administering

[5] 16 U.S.C. § 576 (1964).



To help meet future timber needs, highly productive timber areas in the National Forests should be classified for commercial timber production. Such areas comprise less than one-fourth of National Forest acreage.

agency would be charged with overseeing the management of the timber dominant areas and for maintaining records of both expenditures and receipts. Keeping records in a manner that will permit comparisons of expenditures with receipts will be a key to the success of this approach.

Use of Economic Considerations

> Recommendation 30: Dominant timber production units should be managed primarily on the basis of economic factors so as to maximize net returns to the Federal Treasury. Such factors should also play an important but not primary role in timber management on other public lands.

Timber is an economic good that is typically grown and harvested on private, as well as public, lands. The market for timber is well established, just as it is for most other goods and services used by the American public. This system generally works well by producing the desired goods and services in an efficient manner and allocating them to those who need or desire particular products. We find no compelling reason to treat public land timber differently from the way it would be treated by the owners of well managed private forest lands.

It appears to the Commission that timber management and investment programs will be most effective if the market for timber is generally accepted as a guide for Federal actions. On dominant timber production areas, this will mean that the primary directive to the public land management agencies should be to maximize the net dollar return to the Federal Treasury in the long run. This does not mean, of course, that other considerations on these lands are not important. We do not believe that the use of economic guidelines will lead to a deterioration of the land and its capacity to produce other values. Timber production is consistent in many cases with the production of other values and long-term timber

production requires the maintenance of the basic productivity of the land.

Although the position of the Federal Government as the Nation's major owner of timber and timberlands leaves it open to the charge that it controls timber markets through the exercise of monopoly power, no evidence was found to indicate that this is actually occurring. Nevertheless, it would be reassuring to the users of public timber to have it well understood, and stated in law, that the Federal Government is not to extract monopoly profits or to use its position to control timber markets. This is particularly important with respect to timber sales to firms dependent on the public lands for their supply of timber.

We have found that failure to make needed economic investments in Federal timberlands has resulted in failure of the Federal agencies to meet their share of the Nation's wood requirements today, even though protection of other values was not involved. Of particular note is timber access road construction, which has lagged behind needs in past years. As a result, considerable areas of timber that could be harvested are inaccessible, and salvage and protection programs have been hampered.

Our recommended approach to the use of Federal funds in timber production programs, utilizing sound conservation practices, will result in higher receipts from timber sales over the long run, and in greater expenditures per acre than at present for the areas involved, without depleting this natural resource. Average annual timber production on these areas will be increased substantially by directing the land management agencies to maximize the net return to the Federal Treasury. The Commission notes that there are many opportunities on national forest lands for investments that would more than pay for themselves.[6]

Economic Factors

Recommendation 31: Major timber management decisions, including allowable-cut determinations, should include specific consideration of economic factors.

Although timber is an economic good, and there are data on the costs and returns to timber management, the Commission found that the public land agencies do not generally make specific economic analyses as a basis for their management decisions. Allowable-cut determinations, which provide a basis for determining most of the timber programs, are particularly confusing with respect to the use of economic factors. Those that are used are commonly hidden behind cumbersome definitions and are combined with other assumptions in complicated formulae so that their actual use and effects are completely obscured.[7]

The Multiple Use and Sustained Yield Act of 1960 [8] confirmed the policy long enforced by the Forest Service that timber harvesting should be accomplished on a sustained yield basis. This has been interpreted by the management agency to require establishing annual allowable cuts that do not vary widely from one year to the next. Biological factors predominate in the methods used to determine allowable cuts. The species mix, growth rate and age classes of the existing timber stands all enter into the resulting calculations.

The public lands have large volumes of overmature timber, in part because of the conservative cutting policies that have been followed and in part because these forest lands were more inaccessible than the private lands that were the base for logging in past years. Consequently, mortality rates are high and net annual timber growth is less than in managed forests with a lower average age. For example, the annual growth rate in western national forests is somewhat less than one-half of 1 percent, while managed forests can be expected to grow at several times this rate. To convert an over-mature forest with large volume of timber to a balanced managed forest requires liquidating the old growth timber over a period of time. The public land agencies have generally chosen to do this over a fairly long period of time so that the volume of timber harvested from one period to the next does not vary considerably. On the other hand, commercial forest operators have usually cut old growth faster so that the goal of a balanced managed forest capable of rapid growth is reached sooner. Such a policy includes a larger allowable cut in the earlier stages and a reduction in allowable cut later on as the age classes become balanced and the annual net growth rate becomes stabilized. To an extent, investments in reforestation and thinning can tend to offset this reduction, although the extent of their effect depends on the length of time set for converting old growth to a managed forest.

In Federal forests the rotation age, i.e., the time to grow timber from seed until harvest, has been traditionally determined by the log size suitable for

[6] George Banzhaf & Company, *Public Land Timber Policy*, Ch. 8. PLLRC Study Report, 1969.

[7] Allowable cut is the amount of timber that may be harvested from a timber management unit over a prescribed period of time in accordance with a timber management plan designed to provide a sustained flow of timber over a period of years. A detailed discussion of the methods used in planning the annual cut is contained in George Banzhaf & Company, *Public Land Timber Policy*, Ch. 6. PLLRC Study Report, 1969.

[8] 16 U.S.C. §§ 528–531 (1964).

manufacture into lumber. These large sizes are not required to meet the increasing demands for pulpwood and kindred products, for which shorter rotation periods and younger trees are more suitable. These changes in the demand for wood products should be reflected in allowable cut determinations.

We have also noted that the demand for wood products tends to fluctuate with changes in the economic cycle, and the availability of construction credit. Since the existing allowable cut policies are designed to lead to approximately equal timber sale offerings each year, fluctuations in the demand for timber are not taken into account in any important sense. The restriction on sales offerings in any one year or period tends toward greater fluctuations in the cut of non-Federal timber and greater fluctuations in prices of all timber than would be the case if Federal policies were more flexible.

Sales Procedures

Recommendation 32: Timber sales procedures should be simplified wherever possible.

At present, timber from the public lands is generally sold at market value, and the market itself usually determines the price through competitive processes. However, the Commission found that the process of selling timber is confusing in its complexity and ambiguity.

Much of the confusion arises because of statutory requirements that timber be sold at not less than its appraised value. The Commission believes that the Federal Government should receive the same price for its timber as would be received by a private landowner. Therefore, the competitive market should serve as the guide for the price that is received by the Federal Government. In fact, it appears that in many cases, competition can be relied on to set prices without resort to costly appraisals. Appraisals should be viewed as a means of establishing a minimum price for timber wherever competition cannot be relied on to set a price that reflects the value of the timber. But in all cases, the pricing objective should be to obtain the competitive price.

There must be flexibility in both the timing and the size of sales. Because of varying needs in different regions and at different times, we do not believe that detailed statutory directives can be devised. The land management agencies must recognize this and adjust their offerings accordingly.

In particular, we note the problems caused by the very long-term commitments of public land timber in large sales in Alaska. These sales, some of which have committed national forest timber to a single firm for 55 years, greatly limit the flexibility of the public land agencies in meeting changing conditions and changing timber values.

Coupled with flexibility there should, nonetheless, be some degree of regularity. The assurance of regular sales would complement our earlier observation that the establishment of timber production units on an economic basis would promise the availability of a continued supply, by providing the vehicle to move that supply to the market.

We agree with those who have urged that bidders show financial responsibility and, where applicable, a satisfactory past performance on timber sales operations. Among the reasons for this are: (1) the degradation of the environment that ensues from an incomplete job or from failure to clean up the site; and (2) extensions of time for completion of contracts, which also have the effect of withholding timber from the consumer. It follows, as a corollary, that land management agencies should carefully scrutinize any request for extensions of time, and grant such extensions only when specific conditions set forth in the regulations are met.

Methods of Sale

We recommend that, for both economic reasons and in the interests of conservation, the method of selling timber on the lump sum, or cruise, basis be adopted generally by the Federal land management agencies when selling timber. The Forest Service and Bureau of Land Management differ in the basis on which each sells timber. The Forest Service generally uses scale selling, in which payment is based on the measurement of the volume of each log removed from the forest. The Bureau of Land Management, on the other hand, uses a "cruise," or estimate of the total volume of timber in a sale, as the basis for a lump sum payment.

The economics of logging is such that fewer logs and marginal trees are left in the woods under cruise, or lump sum, sales than under scale sales. The interests of the purchaser, once he has paid for all the timber in a lump sum sale, encourage him to utilize all of the timber that will pay the direct costs of logging. This leads to complete utilization with a minimum need for administrative surveillance. Not only does the better utilization leave the forest less susceptible to insect, disease, and fire, but the lack of a need to scale each log results in lower costs in administering timber sales. Lump sum sales encourage more thorough logging and, therefore, produce more favorable environmental conditions than scale sales.

Access Road Construction

Recommendation 33: There should be an accelerated program of timber access road construction.

The practice followed by the public land management agencies of having timber access roads constructed in large part as an adjunct of timber sales has limited the construction of those roads. By requiring timber operators, who are not, or do not desire to become, road builders, to handle road construction activities, the agencies have also limited some legitimate operators from obtaining public timber sales. In many instances roads are required to a standard higher than necessary merely to harvest timber.

Agency reliance on purchaser-built timber access roads has a number of other serious disadvantages. First, road development must be keyed to timber sales which can lead to inefficient design and size specifications. Second, it can lead to undesirable harvest schedules. And third, lack of suitable access road networks has made salvage of dead or dying timber impossible as well as inhibiting measures to control or prevent disease and fire losses. Timber saved as a result of suitable access would be reflected subsequently in net growth computations and allowable cuts.

The Commission believes that a "catch-up" program of access road construction must be authorized and supported with appropriations. These access roads would make available merchantable timber within the dominant timber production units recommended above. The initial funding for these roads will have to come either from direct appropriations from the Treasury, or from the revolving fund we have proposed, if that fund in its inception is granted borrowing authority.

In addition, by making these new areas available for the protection, management, and harvesting of public land timber, this accelerated road program, which we believe could be completed in a 10-year period, would each year permit the salvage and sale of considerable timber that must now be abandoned after it has either fallen or been blown down. As part of the protection of the lands, these roads would provide access for fire, insect, and disease control. It would also allow the agencies to make economic investments and carry on management programs in areas that cannot be reached now. Finally, it would simplify existing timber sales programs by separating road construction from timber harvesting, and eliminating allowances for road construction costs from the timber sales procedures, a practice we suggest earlier in this chapter as one to be ended.

Dependent Communities and Firms

Recommendation 34: Communities and firms dependent on public land timber should be given consideration in the management and disposal of public land timber.

Many communities and firms, particularly in the western United States, are dependent on public land timber. If the public lands were suddenly eliminated as a source of timber, some of these communities and firms would cease to exist. Others would experience very difficult times.

Through its timber management and sales policies, the Federal Government over the years has in effect made a commitment to communities and firms that it will make timber available to assure their continued existence. The provision of the 1968 Foreign Aid Act [9] that limits exports of logs to Japan from the western public lands and the long-standing primary processing requirement for timber harvested from the national forests in Alaska [10] are examples. The Small Business Administration set-aside program to limit eligibility for some timber sales to firms having less than 500 employees is an example of a regulatory commitment to small firms.[11]

The Commission recognizes that changes are continually taking place both in the structure of the timber industry and in the viability of particular firms and communities. But we also recognize that the Federal Government has an obligation to those who depend on public lands for their livelihood. Federal policy should be directed at achieving a balance between healthy change and the assurance of opportunity for existing users and communities dependent on Federal timber.

The use of a procedure whereby timber "quotas" were allocated to dependent areas was attempted in the past to provide an assured supply of timber to firms in each designated area. The Sustained Yield Unit Act of 1944 [12] provided a statutory basis for assigning quotas to areas established under that Act. A number of units were established, one of which involves joint consideration for management purposes of public and private timberlands in an area. We have found that these attempts to use quotas as a means of assuring timber supplies to a firm or an area have not been entirely successful. Their usefulness is limited by changing conditions.

Obviously, where there is a limited timber supply, the allocation of timber to one firm restricts the opportunities for another. The long-term commit-

[9] 16 U.S.C. § 617 (Supp. V, 1970).
[10] 36 C.F.R. § 221.3(c) (1970).
[11] George Banzhaf & Company, *Public Land Timber Policy*. PLLRC Study Report, 1969.
[12] 16 U.S.C. §§ 583–583i (1964).

A "catch-up" program of access road construction on Federal forest lands should be authorized by Congress. Such roads facilitate forest management and forest fire-fighting, as well as timber harvesting, recreation, and other uses of public lands.

ment of Federal timber to the existing sustained yield units under the 1944 Act has limited the flexibility of the Government and of the involved firms and communities to meet changing conditions. We do not believe that a quota system is a necessary tool for Federal policy and, furthermore, we believe that it is inconsistent with our free enterprise system. For the foregoing reasons, *we recommend that the 1944 Act be repealed with provisions, of course, for units now in operation to continue until terminated in ordinary course.*

Timber harvested from public lands should ordinarily be processed by domestic mills, but interstate shipment should not be limited. The export of unprocessed logs from public lands damages those firms and communities dependent on a public land timber supply.

Therefore, the ban on exports of public land logs should be continued. Those who export logs from their private lands should be prohibited from evading this policy by purchasing public land timber for their domestic needs.

The Commission believes that the United States should assure that small firms and dependent firms be given some opportunity to obtain public land timber. The current definition by the Small Business Administration of small firms as having less than 500 employees sets this limit at an unrealistically high level for the timber industry, where most firms have fewer employees. Accordingly, *the size limit for this industry in terms of qualifying for Small Business Administration assistance should be flexible enough to recognize actual conditions and to give real advantages to small firms when conditions warrant.*

The Commission also believes it desirable to allow

oral competitive bidding in public land timber sales. Oral auction, starting from a base fixed by sealed bids, permits the firm dependent on Federal timber to engage in bidding on sales it believes necessary to its existence, and limits the ability of other firms to squeeze it out of the market. Whenever it appears that smaller firms or dependent mills are disadvantaged by sealed bidding, the public land agencies should allow oral auction procedures.

Acquisition and Disposal

Recommendation 35: Timber production should not be used as a justification for acquisition or disposition of Federal public lands.

The Commission believes that neither increasing nor decreasing the area of Federal public forest lands can be justified on the basis of need for timber production. As stated earlier, the Federal Government already owns 20 percent of the Nation's forest land, 40 percent of its merchantable timber, and over 60 percent of its softwood sawtimber. The acquisition of additional forest land by the United States would not, in our opinion, improve the timber production potential of the country.

If there is a need to acquire additional land, it should be done; but the United States should not acquire private lands under the guise of a need for timber production when in fact the land is to be used for some other purpose.[13] While timber production should continue to be an authorized use of acquired forest lands, it is no longer by itself an appropriate reason for acquiring lands.

Public lands should not be transferred to state or private ownership simply to reduce the proportion of timber producing land in Federal ownership. We have found no significant differences between Federal and other lands in the manner in which timber is produced or sold that would require that public lands be transferred to the states or private ownership. Nor would "monopoly" be the basis for such transfer because, as indicated earlier in this chapter, no evidence was found that the Federal Government is exerting monopoly control over markets.

The many other public values that also occur on forest lands may themselves justify the retention of much of the Federal timberlands in public ownership.

We believe, however, that the public land agencies should be authorized to exchange, acquire, and dispose of forest lands when necessary to improve ownership patterns and to ease administrative problems. Limitations on general disposal and acquisition authority should not preclude meeting the necessities of administration.

Environmental Impacts

Recommendation 36: Controls to assure that timber harvesting is conducted so as to minimize adverse impacts on the environment on and off the public lands must be imposed.

The cutting of timber has substantial adverse effects on environmental values on a large area of public lands each year. The immediate environmental impacts of timber cutting are often dramatic, particularly where the technique of clear-cutting is used, although new growth may alleviate the situation in a relatively short time and restore the area to a substantial extent within a decade or two.

Where all the timber on an area is cut, the effect on scenic values and the quality of water flowing from the area is significant under many conditions typically encountered in logging public lands. Even on areas where only a portion of the trees are cut, effects on scenery and other environmental factors can be substantial. Inasmuch as logging is conducted to one degree or another on about a half million acres of public lands each year, it is evident that the potential for problems is great.

We realize, of course, that to halt all timber cutting on the public lands would not be in the public interest. We also note that the public land agencies have used roadside and streamside strip zones, in which cutting practices are prohibited or modified, to reduce some of the undesirable effects of logging on what they believe to be the visible scenery and water quality conditions.

In addition, they have planned timber harvesting and road construction to minimize environmental impacts, and have included provisions in timber sale contracts to control adverse impacts.[14] While such provisions generally might be adequate to accomplish environmental protection objectives, their enforcement, for various reasons, leaves much to be desired.[14] *Consequently, we conclude, consistent with the recommendations contained in the chapter on Public Land Policy and the Environment, that even greater efforts must be made in the future.*

[13] Acquisition of forest lands by the Forest Service is accomplished under the authority of the 1911 Weeks Law (16 U.S.C. §§ 500, 513–519, 521, 552, 563 (1964)). This provides for acquisition of forest lands "necessary to the regulation of the flow of navigable streams or for the production of timber." Forest Service acquisitions that are actually being accomplished for recreation purposes, as was the case of the Sylvania tract in Michigan, now must be justified on the basis of either timber production or watershed protection.

[14] Ira M. Heyman and Robert H. Twiss, *Legal and Administrative Framework for Environmental Management of the Public Lands.* PLLRC Study Report, 1970.

The results of most logging are esthetically unattractive to many people. The fact that future stands of timber will be attractive is not an acceptable rationale to them to tolerate unnecessary environmental effects now. The United States has an affirmative obligation to minimize the impact on the environment from logging on public lands, even though this is a complex task. *Such efforts should be directed not only to scenic effects, but air, soil, and water quality as well.*

The development of new multipurpose road systems and widespread public travel by air means that nearly all forest lands are visible to the public at large. Logging systems and layouts, in addition to protective roadside strips, must be designed to minimize scenic impacts. Logging practices must be such that waste is minimized, that logged areas are restored as soon as possible to an esthetically pleasing condition, and its effects, as well as those of road construction, on stream quality are minimized. We believe the agencies should make a continuing effort to improve controls over logging practices to assure that these desirable results are achieved. Further, a continuing research effort is necessary to find techniques and design systems that will help meet environmental quality objectives. Timber harvesting must also be recognized as a means of improving the condition and appearance of average forests. Public land forests must be managed through harvesting and regeneration so that we have an improved living resource for producing the multitude of values that can be obtained from healthy, growing woodlands.

Timber purchasers should be required to comply with Federal, state, and local environmental quality standards in processing plants using timber from the public lands. Timber processing plants, particularly pulp and paper mills, contribute to both air and water pollution. Regardless of whether plants that process timber in the first manufacturing stage are on or off the public lands, compliance with established environmental quality standards should be required as a condition of obtaining a timber sale contract. We believe this is a desirable way to help enforce established standards for air and water quality and other aspects of environmental quality.

Inasmuch as most environmental quality standards are established and policed by the states or local governments insofar as timber processing plants are likely to be concerned, we believe that close cooperation by the public land management agencies with the states and local governments can provide a workable means of implementing this recommendation. Responsibility for establishing that a plant is violating standards should generally rest with the state or local government. The public agencies would then

Clearcutting in patches (above) is vital to achieve natural reseeding in Douglas-fir stands. Not so in Ponderosa pine forests (right) where selective cutting is practiced.

use state or local actions as a basis for qualifying possible timber purchasers and for enforcing their failure to comply with contractual provisions.

We believe that this recommendation should be applied only to those plants that convert logs, pulpwood, or other roundwood products from the public lands into a new form. Thus, sawmills using logs from the public lands would be subject to such restrictions, but plants using lumber from these sawmills would not be. Since most plants using timber from the public lands are located close to their source of timber, the practical effect of this restriction would be felt mainly in public land areas. But we see no reason why plants that are further from the public lands should not be similarly restricted if a part of their timber comes directly from public lands.

We believe implementation of this recommendation will provide a practical means of requiring timber processing firms to comply with established environmental quality standards. We see it as an important adjunct to other methods of improving the quality of our day-to-day life.

Range Resources

GRAZING HAS ALWAYS been part of the western scene, and livestock ranching has had a major role in public land use. Prior to the arrival of settlers, buffalo and other wild animals were found wherever there was grass or browse. As settlement progressed, cattle and sheep replaced much of the wild animal population on the plains and deserts and on the mountain meadows, both on lands transferred to private ownership and on the gradually diminishing public domain. Now, cattle and sheep are not only an important foundation of western economy, but their presence is an accepted feature of the scenery and the environment.

Today, in the 11 coterminous western public land states, the Federal Government owns and administers approximately 273 million acres on which grazing is allowed. At one time or another during the year, domestic cattle and sheep graze on about half of these public lands. More of the public lands, in fact, are used for this purpose than for any other economic activity. The acreages are not generally grazed throughout the year, but at different seasons. Lower elevation lands are used primarily during the spring, while the higher elevation meadows in the national forests are used mainly in the summer.

The public lands account for about 3 percent of all the forage consumed by livestock in the United States. Although the total proportion contributed has been gradually decreasing, the public lands are still an important source of forage requirements in the West, where they supply some 12 percent of the total forage.

In addition, despite the apparent indication that the public lands are relatively unimportant to the national livestock economy, they do, for a number of reasons, play a significant role. In the first place, they are often crucial to individual ranch operations, supplementing the feed of private lands by supplying seasonal grazing. Without the privilege of grazing public lands, many ranches would cease to exist as economic units, or would be forced out of business due to the high cost of substituting other sources of feed. The western range livestock industry, which is built around the public lands, also must be viewed as an important source of range livestock for feeder lots throughout the West and Midwest.

The establishment of policies for the use of public lands for grazing recognized the integral relationship between public range land and private ranches. At one time, the public lands comprised a vast commons for grazing domestic livestock. These lands were also opened to settlement, which occurred generally along water courses in the semi-arid regions west of the 100th meridian. The settled lands were transferred into private ownership and became the base ranches to which was tied much of the use of the lands that remained in public ownership. Some use of those lands was also made by itinerant bands of sheep—driven from one area to another, depending on the availability of grass and browse.

The reservation of large areas of national forests was the first major action that led to the control of grazing on public lands. It provided the basis for the imposition of controls on the level of grazing use of the national forests, and also for the charging of fees for that use. Fees for national forest grazing were first adopted in 1905. (As pointed out below, it was not until 1934 that fees were also charged for grazing on remaining unappropriated public lands.) Grazing permits for forest lands were issued for specific numbers of animals using the lands per month (animal unit months, known as AUMs) and were granted to operators who owned sufficient "base property" to support that number of livestock when it was not on public land. Thus, public land grazing rights became linked to individual private ranches. The permitted levels of grazing in the national forests were reduced below the existing levels in an attempt to prevent damage to the forage resource.[1]

[1] Paul Wallace Gates and Robert W. Swenson, *History of Public Land Law Development*. PLLRC Study Report, 1968, Ch. XXI.

In 1934, with the passage of the Taylor Grazing Act,[2] much the same system of control was adopted for the remaining unappropriated public domain lands which are now administered by the Bureau of Land Management. The range livestock industry at that time was facing disaster because of the combination of the Depression, the results of uncontrolled use of the public range, and the deterioration of the range and the industry caused by severe weather conditions. In instituting a system for allotting grazing permits similar to that used on the national forests, the Taylor Act favored use of the public range by established ranch operations rather than by itinerant operators.

Some of the lands administered by Federal agencies other than the Forest Service and BLM are also grazed by domestic livestock when compatible with their basic missions. Both the Forest Service and BLM administer lands acquired for Land Utilization Projects in the 1930's—mostly in the Dakotas, Montana, Nebraska, and Wyoming. Although used primarily for grazing, they are not under the same policy structure that applies to the other grazing lands, but the differences are not important for our purposes.

Role of the Retained Public Lands

> Recommendation 37: Public land forage policies should be flexible, designed to attain maximum economic efficiency in the production and use of forage from the public land, and to support regional economic growth.

As one of its purposes, forage resource management on the public lands retained in Federal ownership has been designed to stabilize the livestock industry. Preference for grazing permits issued under the Taylor Grazing Act was given to landowners who were engaged in the livestock business, or to owners of water rights using the public lands prior to 1934. Those holding original permits, or those who succeed them, are given preference for the renewal of permits. In this way the pattern of livestock ranching, which was dependent upon public land grazing when the Act was passed, has been held constant.

Base property and commensurability requirements of the Forest Service have had much the same effect as the policies adopted under the Taylor Act.[3] Forest Service policies have resulted broadly in the continuation of ranching patterns that existed at the time permits for grazing in national forests were first issued in 1905.

Under the existing system, consolidation and expansion of ranching operations through the accumulation of public land can only be effected by the accumulation of unused base properties or acquisition of existing base property.

A more flexible policy, which would allow grazing privileges to be fully transferable upon request of the permittee, would result in transfer of privileges to those who are able to make more efficient use of them. Under such a policy the Government would remain neutral, and the market would control the allocation of public land forage. The Commission supports a policy which, while taking into consideration existing users, will provide flexibility in the future allocation of grazing privileges and equity for all users.

Public land forage policies are important to the regional economy. Income resulting from increases in the production and use of public land forage tends to spread through the regional economy rather than be siphoned off for the purchase of goods and services from other regions.[4] A policy which provides generally for the efficient use of forage resources will, therefore, be in support of regional economic growth. Such regional economic growth is a proper objective of public land forage policy and is a basis for many of the recommendations which follow.

Protection and Conservation of Range Lands

> Recommendation 38: The grazing of domestic livestock on the public lands should be consistent with the productivity of those lands.

The Taylor Grazing Act and the control of grazing on the national forests were directed at the conservation of natural resources as well as at the stabilization of the western livestock industry.

There are still substantial areas of land administered by the Bureau of Land Management and some managed by the Forest Service that are in a deteriorated condition. The deterioration of such areas is not easily abated.

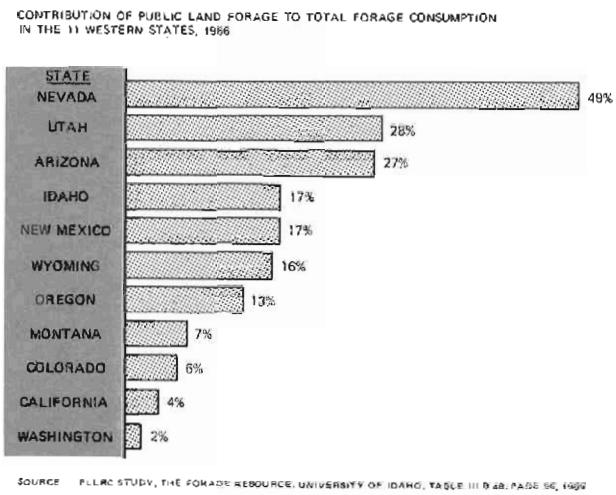
Some lands respond to positive rehabilitation efforts. Others, however, have less productive soil and receive less precipitation. On these a delicate eco-

[2] 43 U.S.C. § 315 et seq. (1964).

[3] The capacity of the permittee's base property (the non-Federal land owned or controlled by the permittee) to support the permitted livestock during the period such livestock are off public land. For a discussion of these requirements, see University of Idaho, *The Forage Resource*, Ch. II. PLLRC Study Report, 1969.

[4] Consulting Services Corporation, *Impact of Public Lands on Selected Regional Economies*. PLLRC Study Report, 1970. A dollar increase in output of the range livestock industry will typically have a greater effect on the regional economy than a dollar increase in most manufacturing activities, for example.

Overgrazing (practiced at right of the fence line) spells suicide to a ranching operation (above). At left, a National Forest permittee and a District Ranger examine range condition.



Western ranches depend on forage consumed on public lands as a portion of their year-round supply.

logical balance exists which, once upset, may not be reestablished easily, if at all. The so-called frail lands in the more arid sections of the West, and the steep mountainous areas which have shallow soils and a short growing season, are examples.

The result of this deterioration in many areas has been degradation of the environment. Congressional guidelines for correcting such situations are minimal.

The objectives of public land policy should be explicit and not only place priority on the rehabilitation of deteriorated rangeland where possible, *but should exclude domestic livestock grazing from frail lands where necessary to protect and conserve the natural environment.*

Allocation of Grazing Privileges

Recommendation 39: Existing eligibility requirements should be retained for the allocation of grazing privileges up to recent levels of forage use. Increases in forage production above these levels should be allocated under new eligibility standards. Grazing permits for increased forage production above recent levels should be allocated by public auction among qualified applicants.

When initial allocations of grazing privileges were made, upper limits on the size of permits established by the Forest Service prevented large ranchers from dominating the range. Although there is no upper limit on the number of permitted livestock under the Taylor Grazing Act, the practices adopted under the Act effectively stabilized ranch sizes and operations as they existed when the Act was passed. Permit renewal policies, giving existing permittees preference, assure that these initial allocations will be continued.

The effect of the initial allocation system was to commit all of the rangeland area under the Forest Service and the Bureau of Land Management to actual or potential use for domestic livestock. First determinations of ranch base property capacity (commensurability) fixed a ceiling on the amount of potential public land grazing privilege to be allocated to each ranch.

Since administering agencies soon found that their public land range was not capable of supporting grazing to the extent of the sum total of all commensurability ratings, public land capacity was allocated proportionately to those ratings among all of the qualifying ranch properties. The maximum limit of public land grazing capacity, on both good and poor condition range, was allocated to individual ranch properties which, in most cases, qualified for more actual use than permitted.

As forage production from public land increased, the stated policy is to allocate the increase to each base property to the limit of its commensurability rating. However, we find that this policy has not always been observed in practice. At the same time, initial determinations of permitted use have generally been decreased when necessary to adjust use pressures to range capability in order to achieve natural restoration of vegetation.

The result of present practice is an over-commitment of land to support recognized dependent properties; continued pressure to upgrade forage production on land that should be removed from the recognized grazing land base; and a continuous pressure to satisfy the standing deficit of permitted use grazing capacity assigned to qualified base properties many years ago.

Forage for Wildlife

We recommend that in allocating forage for domestic livestock, forage necessary for support of wildlife in a particular area should be taken into consideration. Regulations under the Taylor Grazing Act provide for the allocation of a reasonable amount of forage to wildlife.[5] But there is no statutory provision requiring such allocation. The regulation is directed primarily to protecting big game. There are, however, other forms of wildlife which are subject to adverse competition from domestic livestock. Forage allocations are as appropriate to these species as to big game.

While forage consumption by wildlife can only be estimated, more specific statutory direction to consider all species in allocating forage would provide a basis for cooperation with state game and fish

[5] 43 C.F.R. § 4111.3–1 (1969).

officials in determining the amount of forage necessary to sustain game and the level of game harvest required to control the amount of game to be supported.

Because dependent base property and public grazing lands are so closely linked, removal of all requirements for obtaining and holding grazing permits would be undesirable. However, the system of keeping deficit records for unused grazing privileges is also undesirable.

The retention of existing eligibility requirements for the allocation of privileges up to the recent levels of forage use would not impair the rights of current users. Guidelines would be established to specify the obligations to present users. One way of doing this would be to set each present permittee's obligated use at the average level of actual use during the last 5-year period. Forage that became available beyond this level would be subject to allocation to new applicants.

Increases in forage production beyond the level of present actual use should be allocated through the operation of the market. This would add flexibility to the system of allocation, would benefit the general public as public landowners and consumers, and would encourage efficiency of operation by ranchers using public land grazing.

The principal requirement we propose would be operation of a bona fide ranch in the area in which the public lands are located. It is not proposed to bar presently qualified users from participating in allocation of the increased forage.

Since competition for grazing privileges, at least in some areas, would be limited, a minimum price should be established to protect the public interest.

Tenure

> Recommendation 40: Private grazing on public land should be pursuant to a permit that is issued for a fixed statutory term and spells out in detail the conditions and obligations of both the Federal Government and the permittee, including provisions for compensation for termination prior to the end of the term.

Under present law, grazing privileges are generally awarded under term permits or leases of specified duration. Grazing district permits issued under the Taylor Grazing Act may not exceed 10 years. A 10-year maximum primary term also has been established administratively for permits issued by the Forest Service and the National Park Service. Department of Defense agencies issue permits for 5 years, and the Bureau of Reclamation may issue 50-year permits, but does not do so in practice.[6]

In the case of permits within grazing districts under the Taylor Grazing Act, permittees have a statutory preference right of renewal over other applicants for grazing permits, although the granting of the renewal itself is discretionary.[7] Forest Service permits are granted administratively in a manner essentially the same as under the Taylor Grazing Act. In practice, grazing use of public lands is quite stable because permits are generally renewed unless there is another Federal use for the land, or the permit terms have been violated.

Downward adjustments in permitted use because of range conditions are provided for in most agency permits and, when range becomes badly deteriorated, the practice is to make such adjustments rather than to refuse to renew permits. Additionally, allocation of the available forage to another use, such as wildlife, may be made.

Permits may also be terminated for failure to comply with the terms of the permit. Most disturbing to permittees, however, is the fact that permits may be cancelled at any time if the land covered passes from the administrative control of the particular agency issuing the permit, as by withdrawal or exchange.

Permittees are not usually entitled to compensation for reduction of use or permit termination. There are limited exceptions to this. When the land is directed to use for defense projects, the loss of the permit may be compensated.[8] Also, when a permit is terminated, in some instances the permittee may be compensated for loss of improvements he has placed on the land.[9]

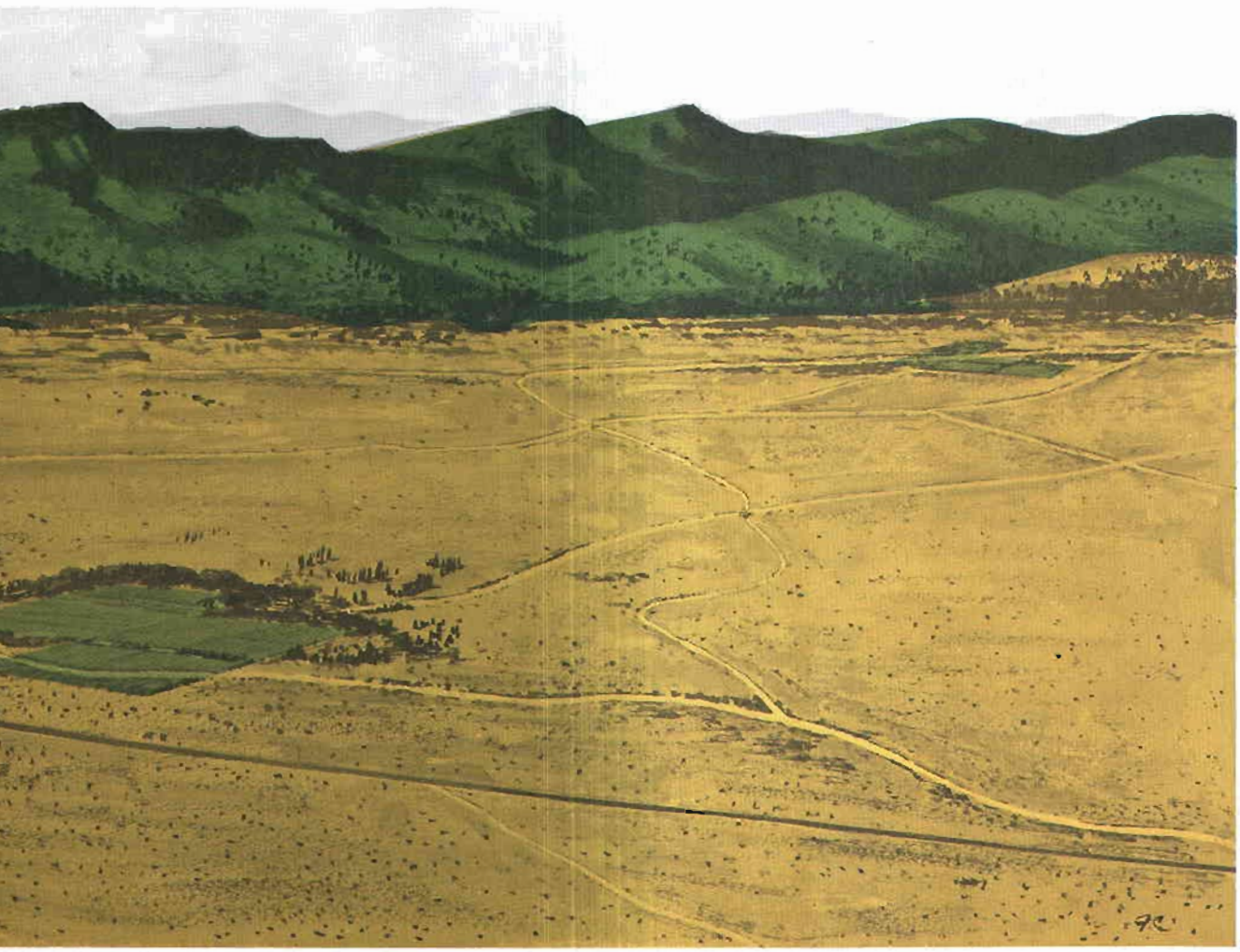
We recommend that the term of grazing permits should be established by statute. A fixed statutory permit term would give administering agencies some guidance as to planning land uses and providing for changes in use. Agencies would have to plan land use adjustments around times at which permits are terminated, rather than make decisions on a largely *ad hoc* basis. Permittees would have a greater assurance of use during the life of the permit and thus make more efficient use and improvement plans for the permitted lands. Assurance of tenure for a fixed period of time would also increase the permit value as security for operational and improvement loans.

We recommend also that grazing permits should detail with greater precision the range conditions which will trigger use changes (both increases and decreases). If the permit term is to be fixed by statute, then there must be assurance that the land will be properly used during the life of the permit.

[6] University of Idaho, *The Forage Resource*, Ch. II.
[7] 43 U.S.C. § 315b (1964)
[8] 43 U.S.C. § 315q (1964).
[9] 43 C.F.R. § 4115.2–5(a)(7)(i)

PRIVATE RANCHES DEPEND ON GRAZING USE OF PUBLIC LANDS FOR YEAR ROUND OPERATIONS

Forest Service BLM Privately Owned



Terms of permits now in use provide in broad language that use levels may be adjusted for "conservation and protection of the resource" or that they are subject to temporary adjustments to "protect and conserve the public lands affected." We view the absence of precise standards in these provisions as objectionable.

Lack of specific standards to determine the level of permitted use contributes to uncertainty in the conditions of the permittee's tenure. Furthermore, it generates disputes between the managing agencies and permittees.

Ranch operators have become better equipped technically in modern times to manage their own range. There is today a better understanding of the necessity for conserving the forage resources than existed before 1934. The range users have a vital personal interest in maintaining the resource at a high level of productivity.

It is desirable that permittees be given greater control and more flexibility over range use. If more precise standards of permitted use for the maintenance of range conditions are incorporated in permits, the objectives of more certainty in tenure and greater permittee control over range can be obtained.

The detailed unit management plans which have been in use by the Forest Service for some time, and are coming into increasing use by the Bureau of Land Management, provide much of the kind of specificity as to terms and conditions of use to which we refer. These plans attach to and are considered part of the grazing permit. According to information supplied by the administering agencies, this approach has led to greater mutual understanding of the responsibility of both the Government and the range user, and is contributing substantially to improved grazing use and range conditions.

We recommend furthermore that, whenever practicable, rangeland should be allocated on an area basis to a permittee, and he should be required to maintain a specific range condition regardless of the number of animals grazed. This would place the range management responsibility squarely with the permittee. No limits would be placed on the number of animals to be grazed, but the permittee would be required to maintain carefully specified range conditions. Failure to do so would subject the permittee to penalties, including possible cancellation of the permit.

While, under the Commission recommendations, if the permittee maintains proper range conditions he will not be limited in numbers of animals to be grazed, the administering agency should have the authority to lower the level of permitted use if range conditions fall below the level specified in the permit. This authority would be in addition to the right to cancel the permit under proper conditions. The agency would have the right also to increase permitted use, as conditions warrant, in areas where it has been lowered. This authority, however, should be granted only on condition that, to the extent practicable, the agency specify in detail those range conditions which will trigger a permitted use level change.

We recommend too, that the kind of public purposes for which a grazing permit may be cancelled should be identified in the permit. In present practice there appears to be an assumption that grazing has the lowest priority of use on public lands and may be displaced on the slightest pretext and wholly within agency discretion.

That there are land uses which may be incompatible with grazing and which may deserve a higher priority must be recognized. Not all of such uses will be easily anticipated or described. However, to the extent possible those uses which may require cancellation of the permit should be identified and set forth in the permit. Those which can be anticipated but not precisely defined should be described at least in general terms.

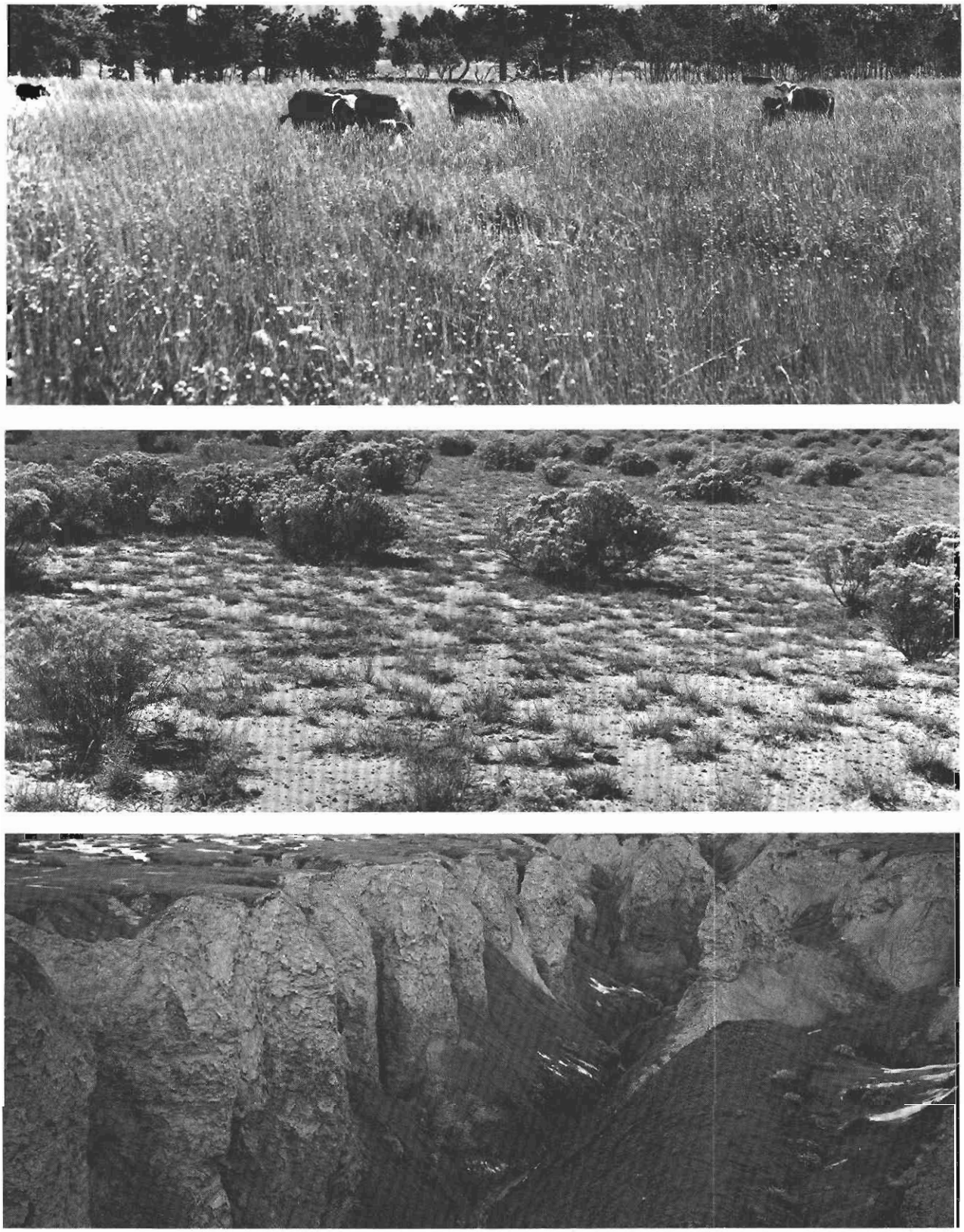
We believe that this requirement is essential even in those areas on which domestic livestock grazing is declared as a dominant use under a subsequent recommendation in this chapter. The very essence of our recommendations for classification and designations are not immutable.

We recommend that permittees should be compensated when permits are cancelled to satisfy other public uses. The Taylor Grazing Act requires a permittee to be compensated for his range improvements if the permitted land is allocated to another permittee.[10] Regulations under the Act also provide that an applicant for disposal of land covered by a permit may be required to compensate the permittee for permanent range improvements.[11]

If the curtailment or cancellation of any agency grazing permit is the result of dedication of the land to national defense purposes, the acquiring agency is required to determine an amount of compensation which is "fair and reasonable for the losses suffered" to be paid from funds appropriated for the defense project.[12] The practice under this requirement has been to allow severance damages related to permit value in addition to compensation for range improvements. This practice should be extended to permit losses occurring whenever the permitted lands are diverted to other public uses as well, including disposals to third parties.

Permit loss decreases base property value, and permits may be included with base property as loan security. The statutory and administrative practices

[10] 43 U.S.C. § 315c (1964).
[11] n. 9, supra.
[12] n. 8, supra.



Overgrazing benefits neither the livestock operator nor the public. The healthy range (above) contrasts starkly with the overgrazed range and eroded lands.

of the Government have contributed to the concept of "permit value," whether or not the permit has the attributes of a property right. Loss of the permit prior to its expiration, therefore, should be compensated for, and the compensation standard should take into consideration the value of the base property with and without the permit.

Grazing may be permitted as a secondary use in an area that has been classified for some other use as the dominant one in accordance with recommendations in the chapter Planning Future Public Land Use. Where that occurs, we would expect that the possibility of conflict between the dominant and secondary uses would be indicated as a cause for termination of the permit; but we would also expect that, in that particular instance, no compensation would be permitted. At the same time, we observe that the possibility of conflict in such a situation would be obvious and would influence the level of the fee to be paid for the grazing privilege as recommended in this chapter.

Investment in Range Improvement

> Recommendation 41: Funds should be invested under statutory guidelines in deteriorated public grazing lands retained in Federal ownership to protect them against further deterioration and to rehabilitate them where possible. On all other retained grazing lands, investments to improve grazing should generally be controlled by economic guidelines promulgated under statutory requirements.

There is general statutory authority for the investment of funds for range improvement purposes on the public lands.[13] There are, however, no statutory guidelines for the allocation of such funds.

In the case of the rehabilitation of deteriorated or frail lands, investments are generally related to the restoration of the lands to a minimum condition to serve a conservation objective. Investment in higher quality lands is related to providing improved grazing conditions and increased level of use.

Investment policy criteria should be established by statute requiring that both land and investments be classified according to either of the objectives to be served.

The Federal Government has generally supplied funds for the restoration and rehabilitation of badly deteriorated public range lands. Improved forage production will rarely justify such expenditures at least until the condition of the range has been improved to the extent that the lands are no longer classed as deteriorated.

On the other lands, investments above the level required to restore and protect the resource are made with the objective of increasing the production of forage. But even on these lands, improved forage production will not always justify the investment if judged on economic grounds.

Use of economic guidelines for the allocation of investments aimed at increasing forage production will assure that available funds are used most profitably, and that available resources will be allocated to opportunities that are economically feasible.

We believe that procedures for financing investment in forage producing lands should be changed: range investments should be shared between the Federal Government and users on the basis of identifiable benefits to each.

There is no consistent policy governing public range improvement financing. Investment has been by the Government, the range user, or cooperative agreement involving both parties. The absence of a fixed policy leads to uncertainty over who should bear the cost and who owns the improvement. Understandably, users are reluctant to undertake improvements in the absence of assurance that they will be able to recover all or a part of their costs if the permit is terminated or cancelled.

An explicit determination of expected benefits from each investment should be made and costs should be allocated on that basis. To prevent double charging, the user should be credited for his investment as he pays his grazing fee. This cost sharing policy should be mandatory and applied in all cases to maintain equity among users and between users and the Federal Government.

Federal financing of investment in forage-producing lands should not be from earmarked receipts. The Commission opposes earmarking of public land receipts in most cases and sees no reason why an exception should be made in the case of investments in public grazing lands.[14] The existing range improvement funds that are made up of a portion of the receipts from grazing fees should be discontinued. Parenthetically we note that such funds have been inadequate, and further that the desirable level of investment is not necessarily related to fees collected. Federally financed investments should come wholly from the general fund of the United States.

[13] See 43 U.S.C. § 315i(b).

[14] For the Commission's general recommendation on earmarking, see Chapter Twenty, *Organization, Administration, and Budgeting Policy.*

Identification of Lands Valuable for Grazing

> Recommendation 42: Public lands, including those in national forests and land utilization projects, should be reviewed and those chiefly valuable for the grazing of domestic livestock identified. Some such public lands should, when important public values will not be lost, be offered for sale at market value with grazing permittees given a preference to buy them. Domestic livestock grazing should be declared as the dominant use on retained lands where appropriate.

Although it is known that substantial portions of the public lands are chiefly, although not solely, valuable for the production of forage for domestic livestock, the extent of such lands is not known. These areas should be identified and at the same time other public values should be identified.

Modern land management methods, developed to prevent the recurrence of conditions which existed between 1900 and the 1930's, preclude the necessity for the Government to continue to control lands that are primarily valuable for grazing.

Disposal of those lands which are principally valuable for grazing would reduce Federal administrative costs. More importantly, it would place the management and use of the forage resource in the hands of those who normally manage productive resources in a free enterprise economy, and thus provide an incentive for the investment needed to make those lands fully productive. In private ownership, economic efficiency would tend to cause the lands to move into the hands of more efficient operators and thus lower the cost of livestock and improve the health of the industry.

The Commission's recommendation to dispose of lands chiefly valuable for grazing is qualified. Consideration must be given to the fact that the public forage lands are often productive of other values.

There is no good information available to define and identify that portion of the 273 million acres under grazing permit that are chiefly valuable for domestic livestock. Some of the grazing land has important watershed values. Wildlife and outdoor recreation are also important uses on parts of the public grazing land.

Therefore, some standards will have to be established to identify those grazing lands which are suitable for disposition. The basic criteria for classification should be that the lands be chiefly valuable for grazing livestock, that they have few or no other valuable uses which would not be equally, or as well, realized under private ownership, and that their disposition would not be likely to complicate unduly the management of retained public lands. In identifying those lands that are to be transferred to private ownership, no distinction should be made among unappropriated, unreserved public domain, Land Utilization Project lands, and Forest Service grazing lands.

Lands of substantial value for purposes other than grazing should be retained. In addition, if important values for public use would be lost, disposition should not be made as, for example, if disposition would result in inroads in a national forest that would increase the difficulty of administration of the forest.

As indicated earlier in this chapter, permit policies of both the Bureau of Land Management and the Forest Service favor the use of public range by established ranchers rather than itinerant operators. Permittees on both Forest Service and Bureau of Land Management lands are accorded a preference right of renewal. This, together with base property and commensurability requirements discussed previously for the issuance of permits, has generally resulted in stabilization of the patterns of ranching as related to public lands. Usually there is a natural relationship between the public land grazing allotment and the associated base property, and the value of each is dependent on the other.

To minimize the disruption of ranching operations which depend upon public land grazing allotments, holders of existing base properties should be given a preference right to purchase at the appraised full market value, when it is decided to dispose of grazing land for which the base property owner holds a permit. This right, which the rancher should be required to exercise within a reasonable period of time, would encourage the continuation of efficient ranching operations and honor the Government's longstanding commitments. Such a policy would also prevent the destruction of values of base properties.

Establishment of market value could be done either through appraisal or at public auction. The acceptable price should take into consideration any restrictions on the lands. Whatever method of sale is used, there should be provision for payment to be made over a period of time, if desired by the purchaser. *Reasonable rights to public access across lands that are disposed of should be retained by the Federal Government when necessary to make values on other public lands available to the using public.* While the retained easement must be for the benefit of the public, it should provide that the Government may control its use when necessary. Thus, if the public interest requires periodic closing of the access route, this could be accomplished by administrative action.

The rights to public access across those lands which are disposed of must be reasonable. They should not take the form of "floating" easements. Before the lands are sold, an examination of the

land should be made to determine which route is most feasible for an easement and least disruptive to the future use of the land by the purchaser. The easement should then be surveyed and precisely described in the instrument of transfer.

Lands disposed of for grazing purposes should be on conditions designed to minimize land speculation. Selling the lands at market value will not only help to assure that they are put to their highest and best use, it will also reduce speculation. However, additional measures should also be taken.

To some extent, the problem of speculative purchases will be alleviated by a careful selection of the lands that are designated for disposal. But if lands are identified for disposal because their chief value is grazing, then there should be some assurance that, for at least a reasonable period of time, they will be used for that purpose. *We, therefore, recommend the imposition of use restrictions which, if violated, could subject the title holder to injunctive action or to reversion of the title.* Thus, a use or threatened use of the land for a purpose other than grazing could be enjoined during a reasonable period of restriction. The land should not, however, be kept frozen forever in one use because changing conditions will demand different uses.

Grazing as a Dominant Use on Retained Lands

Few statutory guidelines exist for allocating public land resources between domestic livestock and other uses. Without such guidelines the range manager is hindered in fixing the limits of competing use. The result is that pressures, unrelated to the true capabilities of the land, may be the determining factors in allocation of the land.

This situation will be corrected, in our view, by classifying for grazing as the dominant use those lands retained in Federal ownership and identified as being chiefly valuable for grazing of domestic livestock. Classification of lands chiefly valuable for grazing as dominant grazing use areas does not mean that other uses would be eliminated. It would, however, give the land managers a more precise basis upon which to allocate the land resources among competing uses. If the accommodation of competing use requires reduction in grazing, the manager would have a more meaningful standard for determining the necessary adjustment. Furthermore, the classification would give the livestock industry assurance that the land would not be shifted to another use, at least until such time as there is a clear, technically supportable determination that the lands are no longer chiefly valuable for grazing.

Historically, all public lands which could be physically negotiated by livestock have been grazed. Lands with steep topography and unsuitable soils, as well as lands in delicate ecological balance have been subjected to such use. Failure to recognize the limitations imposed by nature on lands of this sort has caused extensive damage to property and other resources and has required massive expenditures for rehabilitation. The results have not been desirable for either the livestock operators or society.

Such frail and deteriorated lands should be identified, as well as those chiefly valuable for grazing. Once identified they should be classified as lands not suitable for grazing, and we recommend that grazing in such areas should be prohibited to the fullest extent practicable.

Control of Competing Uses

Recommendation 43: Control should be asserted over public access to and the use of retained public grazing lands for non grazing uses in order to avoid unreasonable interference with authorized livestock use.

The public lands are generally open to unrestricted public use. Many areas that are suitable for domestic livestock grazing are also capable of supporting other uses, and a portion of Federal investments in these lands goes to the benefit of non-grazing uses.

The degree of interference among competing uses varies. Much of the grazing land is unsuitable for any other use; some of it, however, is susceptible to mineral production and many areas support game and may be used for recreation. For example, of the total public land area which has been withdrawn or reserved for recreation purposes, grazing is permitted on approximately one-fourth of the area.

The use of forage resources on public land by wildlife species has increased sharply over the past few years. Game use on the national forests has in recent years surpassed the use made by domestic livestock, and the game use of lands managed by the Bureau of Land Management more than doubled between 1947 and 1967.

Pressures on public lands for non-grazing use have inevitably led to conflicts between permittees and other users. Wherever possible, a balance between competing uses of public lands which is fair to all users must be achieved.

Resolution of the conflict between grazing and other use will be largely dependent upon public understanding and acceptance of reasonable ground rules governing use. There are, for example, certain times, such as periods of drought, when unrestricted hunting or recreation use offers a real threat to the forage source. On the other hand, ranchers often close the permitted lands to such uses without legal authority.

The Federal agencies do not now have positive policies for conducting any effort in localities to make rules of use known to other users, or for arranging to see that the rules are understood and complied with. Congressional action should supply ground rules of use, together with the necessary authority for use regulation.

Pricing

> Recommendation 44: Fair market value, taking into consideration factors in each area of the lands involved, should be established by law as a basis for grazing fees.

Prior to 1905, as stated earlier, no charge was levied for livestock grazing on any of the public domain. After that, by administrative action, permits were required and fees levied for grazing on the national forests. These fees were nominal for many years, but in 1931 a scale of fees was established for each area, based upon charges for private lands adjusted for differing conditions. The fees were adjusted annually to reflect changes in beef cattle and lamb prices, and the system was applied through 1968.

Grazing on the unreserved public domain under the jurisdiction of the Department of the Interior continued free of charge until enactment of the Taylor Grazing Act which gave the Secretary authority to charge a "reasonable fee in each case to be fixed or determined from time to time." [15]

In administering the Taylor Act during its early years, grazing fees were not related to cost of administration. In 1947 the Act was amended to provide that in determining "reasonable" fees the Secretary must take into account the extent to which grazing districts yield public benefits over and above those accruing to the users of the forage resources for livestock purposes. Also, the Act provided that "such fees shall consist of a grazing fee for the use of the range, and a range improvement fee." [16]

It is clear that Congress assumed that the administrative costs would be used as a yardstick in fixing fees, and that the 1947 amendment to the Taylor Act was designed to assure that administrative costs were properly allocated between grazing and other purposes of the Taylor Act.

In administering the Taylor Grazing Act, the Department of the Interior has not interpreted the Act to be a revenue producing measure. This interpretation, which finds support in the legislative history of the Act, has been reflected in level of fee receipts. From 1947 to 1957, fees charged by the Bureau of Land Management increased from 5 cents per animal unit month to 15 cents by negotiation with the industry. Beginning in 1958 and continuing through 1968, fees were set in relation to the previous year's livestock prices. In 1968 the fee was 33 cents per animal unit month.

A study of user charges released by the Bureau of the Budget in 1964, recommended that an interagency group develop a uniform system for establishing grazing fees based on the economic value of the forage to the user. The group submitted a report in 1967 recommending a fee system which was adopted by the Forest Service and Bureau of Land Management in 1969. The system adopted provides for increasing grazing fees over a period of 10 years by annual increments to $1.23 per AUM.[17]

Over the years, attempts to establish fees for public land grazing have been fraught with confusion. The statutory mandate that fees be "reasonable," qualified by a direction to take into account "the extent to which districts yield public benefits over and above those accruing to the users" is largely responsible for this confusion.

Obviously, what might be considered as reasonable to non-users, may well seem unreasonable to grazing permittees. While some public benefits may be identified, they are not easily quantified, *i.e.,* translated into specific monetary terms. Furthermore, not all of these benefits are common to all grazing areas.

A proper statutory basis for grazing fees on land retained in Federal ownership would be "fair market value" and the Commission recommends the adoption of this standard. Fair market value, however, is only valid as a standard if it provides a measure of the value of what is sold to the purchaser who knowingly takes into account the advantages and disadvantages of product or services.

Fair market value for public land grazing is not necessarily the same as the value of private grazing land. It is the price which would be paid for public land grazing, given all of the advantages and disadvantages of grazing domestic livestock on the public lands. It is the value that ordinarily would be established by operation of the open market.

Application of a "fair market" value standard to grazing fees would protect the interest of the public as landlord. Equity to the users, however requires consideration of some qualifying factors in determining fair market values.

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[15] 43 U.S.C. § 315b (1964).

[16] Act of August 6, 1947, 61 Stat. 790.

[17] Commission staff, *User Fees and Charges for Public Lands and Resources,* Ch. IV. PLLRC Study Report, 1970. This report provides a detailed description of the procedures followed in establishing the new fee system. Implementation of the system announced in 1969 has been suspended for a period of 1 year pending the receipt of this Commission's report.

When market and other conditions in the vicinity of permitted lands are taken into consideration for each permit, grazing fees will vary based on conditions in each permit area. The fee schedules used for lands under the jurisdiction of the Bureau of Land Management have always been for a uniform, universal fee. The schedule adopted for public land grazing in 1969 was similarly a single fee for all lands.

It is unrealistic to charge the same fee without consideration of variances in operating and economic situations or differences in the quality of public range land and forage yield. The fallacy of the uniform, universal fee approach is even more evident if the fee schedule is truly designed to achieve comparability with private charges, which vary from locality to locality.

Forage in an arid or semiarid area simply is not worth as much as forage in a humid area of lush vegetation. This fact should be recognized and fee schedules should be varied accordingly.

We believe that an equitable allowance should be afforded to current permittees for permit values in establishing grazing fees. As a matter of law, public land grazing permittees do not acquire any right in the permitted land. Federal land management agencies have objected to any proposal to consider permit cost or value in fixing grazing fees which, they say, would thereby recognize an interest in the permitted land.

It is argued that, while permits are assigned a value in transfers of base properties and as loan collateral, these involve transactions between private parties not involving the Government.

As has been pointed out previously, the Government has contributed to the concept of permit-value in the administration of the statutory preference right of renewal, the payment of compensation upon permit termination for defense purposes, and statutory recognition of a right to include the permit as loan security. And, since a purchaser of base property can be almost certain that he will qualify for and be awarded the permit, it is only a technical question as to whether the permit is "sold."

The recommendations of this Commission, if adopted, will establish more stability of tenure for permittees. The permittee will obtain compensation when the permit is terminated by diversion of the permitted land to another Federal use. However, the value of permits in the market is affected by the fee rates which are charged for grazing on the permitted lands. An increase in grazing fees will tend to decrease the value of permits. As the cost of operating on the permitted land is increased by higher fees, the value of the permit to the operator will be correspondingly less. Accordingly, the overall value will become unimportant once an equitable adjustment has been made for current holders.

Recognition must also be given to the fact that a portion of the public land would be relatively worthless after the expiration of some period of time unless operated as a unit with base properties.

Uniformity of Policies

> Recommendation 45: Policies applicable to the use of public lands for grazing purposes generally should be uniform for all classes of public lands.

There are significant differences in grazing policies employed by Federal land management agencies. Fee schedules vary, for example, as do methods of allocation and terms of permits or leases. These are differing policies within agencies for different classes of lands.

The use of different policy systems unnecessarily complicates administration. Ranchers who use more than one type of Federal land must adjust their operations to conform to different sets of rules.

While it may be necessary to vary permit requirements in some areas in which grazing is not a dominant use, such as in military installations, the policies applicable to public land grazing should be as uniform as possible in such matters as initial allocation, pricing systems, terms of permits or leases, compensation, investment, and financing.

Mineral Resources

OUR STANDARD of living and our national defense are heavily dependent upon the availability of fuel and nonfuel minerals. National requirements for these products are an essential factor in the development of a rational policy for mineral development on our public lands. While it is apparent that mineral development is important to regional growth and other factors, we have given primary weight to the overriding national requirements.

The fuel and nonfuel mineral industries have provided an ever larger proportion of the raw materials base of the American economy since the turn of the century. In that period of time they have increased until they represent at least one-third of the total value of all raw materials used in the United States.

To the total gross national product in 1966, fuel mineral production contributed $15 billion and nonfuel mineral production contributed $7.5 billion. In percentage terms mineral production is not a large part of our national income or employment. Nevertheless, the mineral industries require a much greater expenditure for capital and equipment than is needed for the manufacturing industries. In 1963 their capital expenditures amounted to 22 percent of the total for mineral and manufacturing industries even though the value added by the mineral industries was only 8 percent of the total.

Our industrial dependency on the production of fuel and nonfuel minerals is more significant than the substantial monetary values they contribute. Many of the factors we take for granted in our standard of living would be impossible without reliable and economic supplies of minerals.

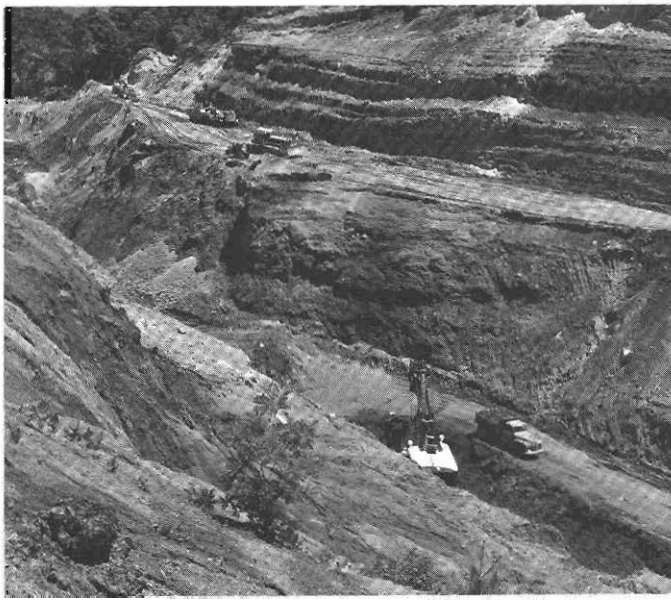
Likewise, our survival as a leading nation depends on our mineral supplies. The close relation between minerals and our national security is too apparent to require detailed explanation.

As our demands for minerals have grown, we have become more dependent on foreign sources of supply. Over one-third of our mineral supplies are imported. This reliance on foreign sources may well increase according to current indications. Experience in Peru, the Middle East, and elsewhere demonstrates that total reliance on foreign sources would be a hazardous economic and political policy. We strongly favor, therefore, an overriding national policy that encourages and supports the discovery and development of domestic sources of supply.

Public land mineral policy should encourage exploration, development, and production of minerals on the public lands. Oil production on Federal land (other than the Outer Continental Shelf) in 1968 amounted to between 6 percent and 7 percent of the national total and was valued at over $570 million. This figure does not include any production from the recent discoveries in Alaska which are not on Federal lands and are said to be the largest U.S. deposits since the East Texas fields. Perhaps of even more importance is the fact that large areas of the public lands not yet drilled are deemed favorable to the occurrence of oil and gas. Over 64 million acres of Federal land were under lease for oil and gas in 1968, of which over 90 percent was in the 11 western contiguous states and Alaska.

Substantial deposits of coal, phosphate, and sodium compounds are also known to exist in public land areas and some are under lease. Accurate data concerning production of the metallic and other minerals subject to claim location under the General Mining Law [1] are not available since there are no Federal records segregating production among private, state, and Federal lands. However, in 1965, the western public land states, in which over 90 percent of the public lands lie, produced over 90 percent of the Nation's domestic copper, 95 percent of the mercury and silver, 100 percent of the nickel, molybdenum, and potash, and about 50 percent of the lead. In fact, most of the known domestic resources of metallic minerals other than iron are situated in the West.

[1] 30 U.S.C. §§ 22 et seq. (1964).



Present knowledge about the geology of mineralization in the United States, combined with the geographic pattern of established mining districts, indicates a strong probability that the public land areas of the West generally hold greater promise for future mineral discoveries than any other region.

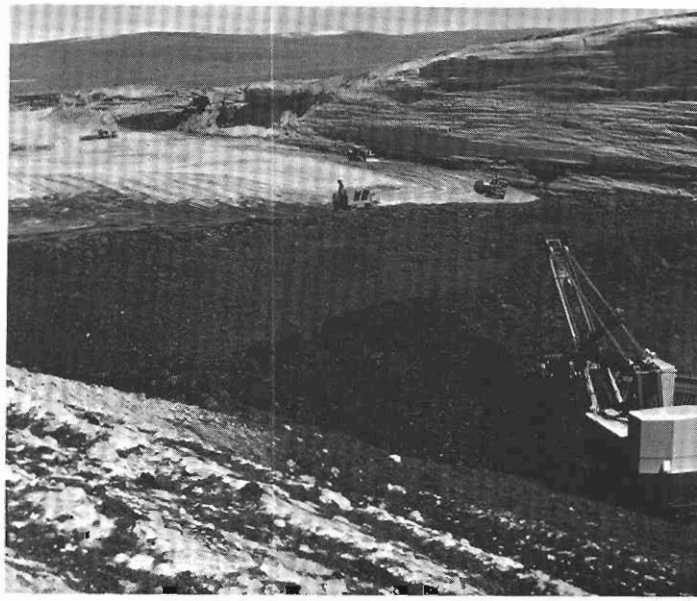
Consequently, we have concluded that it is in the public interest to acknowledge and recognize the importance of mineral exploration and development in public land legislation. Also, a decision to exclude mineral activity from any public land area should never be made casually or without adequate information concerning the mineral potential.

Mineral exploration and development should have a preference over some or all other uses on much of our public lands. As a land use, mineral production has several distinctive characteristics. Mineral deposits of economic value are relatively rare and, therefore, there is little opportunity to choose between available sites for mineral production, as there often is in allocating land for other types of use. Also, development of a productive mineral deposit is ordinarily the highest economic use of land.

While mineral exploration activities are conducted over substantial areas of land, experience has demonstrated that mineral production requires less surface area than most other land uses. For example, in 1966 Arizona was the western state in which mining was conducted over the largest area. Nevertheless, only 0.13 of one percent of the state's area was actually used for this purpose. Therefore, a use preference is warranted by nature's sparse and random distribution of valuable mineral deposits and the vital relationship between our national welfare and assured supplies of minerals. Furthermore, a worthwhile mineral deposit is usually concealed and becomes available to meet our national needs only as the result of an expensive, long-term and high risk search effort.

The Federal Government generally should rely on the private sector for mineral exploration, development, and production by maintaining a continuing invitation to explore for and develop minerals on the public lands. We are satisfied that private enterprise has succeeded well in meeting our national mineral needs, and we see no reason to change this traditional policy. Existing Federal programs to develop nationwide geological information should be continued and strengthened. These Federal programs should serve to identify general areas favorable to mineral occurrence with detailed exploration and development left to private enterprise. The efforts of private enterprise will be effective only if Federal policy, law, and administrative practices provide a continuing invitation to explore and develop minerals on public lands.

Even though we are concerned about various impacts on the environment, and make recommendations in this report for the strengthening of the Federal Government's authority to regulate such impacts, we recognize that mineral exploration, development, and production will, in most cases, have an impact on the environment, or be incompatible with some other uses. By its very nature, mineral activity alters the natural environment to some degree, and if no such impact were to be tolerated, it would be necessary to prohibit the activity. Mineral exploration, development, and production are essential to our na-



Fuel and nonfuel mineral industries are responsible for one-third of the total raw material value produced in the United States each year.

tional economic and strategic well-being, however, and such activities cannot be barred completely.

Accordingly, our emphasis must be on minimizing impacts. These impacts range from tracks left by exploration vehicles to large production pits. Because of the national requirement for the development of domestic mineral sources, development will frequently have to proceed, subject to reasonable controls designed to lessen the adverse impacts, even though those impacts exist. Stated another way, we believe that the environment must be given consideration, but regulations must not be arbitrarily applied if the national importance of the minerals is properly weighed.

Exclusion from Development

Recommendation 46: Congress should continue to exclude some classes of public lands from future mineral development.

With few exceptions, mineral leasing and mining laws do not apply in national parks and monuments. Certain other specific exclusions are contained in various laws. We do not favor opening these areas to mineral development, and we recognize that other similar areas should be and no doubt will be established which have such unique public values that it would not be in the national interest to permit such operations.

In connection with consideration of statutory exclusion of mineral activity from designated public land areas, Federal agencies should make mineral examinations which will provide reliable information concerning their mineralization. Too often in the past exclusions have been accomplished with little or no knowledge of mineral values. *Since it is often essential to act promptly in deciding whether mineral activity should be excluded, we urge dispatch in making these mineral surveys before an urgent situation arises. This will permit not only more efficient and more economical action, but reviews that can be accomplished carefully without jeopardizing the environment.*

We also urge the establishment of a program to determine the extent of mineralization of public land areas where mineral activities are presently excluded but mineralization appears to be likely. In most cases, this type of mineral survey can be executed with modern geochemical and geophysical techniques so as not to interfere with other uses of these areas. Even though we oppose opening these areas to development, the resulting information would be of substantial value for the identification of standby reserves that might be needed in national emergencies. It would also advance the knowledge of geology in regions where these areas are located. Any such program would be of a long-range nature, and areas created by administrative action should be examined first consistently with our recommendations for review of withdrawals and reservations.

We recognize that the Federal Government in most cases would have to assume financial responsibility for these mineral surveys, since private enterprise

without assurance of development rights will not have the incentive to finance such surveys. However, it would be feasible to contract for services of this kind to be performed under close supervision of the management agency.

Modification of Existing System

> Recommendation 47: Existing Federal systems for exploration, development, and production of mineral resources on the public lands should be modified.

There are three distinctly different existing policy systems providing for the exploration, development, and production of minerals on the public lands. The first came into being under regulations established by miners in the western mining districts before any Federal law had been enacted. These rules were subsequently embodied in the General Mining Law of 1872.[2]

Under the General Mining Law locators are able to initiate rights to public land mineral deposits merely by discovery and without prior administrative approval if the lands have not been closed to mineral location by withdrawal, reservation, or segregation. Where the deposits are valuable, the locator may acquire legal title to the land within his claim or claims through issuance of a Federal deed known as a "patent" upon payment of a nominal sum. Even without a patent a locator may produce minerals without any payment in the form of a royalty or otherwise. This system generally applies to the metallic or hardrock minerals.

The second system as it exists today was established in 1920 when specific minerals were removed from the General Mining Law's coverage and placed under a leasing system.[3] Leasing acts generally require annual rentals until production and the payment of royalties thereafter. Nearly all public lands may be leased for those minerals coming under a leasing system, but the responsible administrators have complete discretion to accept or reject offers to lease, and large areas have been closed to leasing. Noncompetitive oil and gas leases and prospecting permits for other leasable minerals are available on a first-come, first-served basis, except in certain situations in which oil and gas leases are awarded in a drawing procedure. Competitive oil and gas leasing only applies where the area is within the known geologic structure of a producing oil or gas field. With respect to other leasable minerals, workable deposits are leased on a competitive-bid basis. Furthermore, operations under a mineral leasing system are subject to detailed regulation over all operations of the lessees.

The third system, the materials disposal system, came into being in recent years to provide for the sale of specific common commodities. This system is authorized in the Materials Act [4] and involves a rather simple procedure in making available common materials (such as sand and gravel) at a market price usually determined by competitive bidding.

Under the leasing systems and the Materials Act, administrative permits are required prior to any exploration activity.

Some of these systems are applicable to some lands and not to others. For example, the General Mining Law is not applicable to acquired land or public domain land in 5 midwestern states.[5] *We believe that Federal mineral legislation, if our recommendations are adopted, should be equally applicable to all federally owned land where the type of mineral activity involved is permitted by law.*

The Location-Patent System

The General Mining Law of 1872 [6] has been abused, but even without that abuse, it has many deficiencies. Individuals whose primary interest is not in mineral development and production have attempted, under the guise of that law, to obtain use of public lands for various other purposes. The 1872 law offers no means by which the Government can effectively control environmental impacts. Other deficiencies include the fact that claims long since dormant remain as clouds-on-title, and land managers do not know where claims are located.

For all of these reasons, some have advocated the replacement of the existing system by leasing, the only other system now in effect for the exploration, development, and production of major minerals.

In addition to the general deficiencies of the Mining Law, there are other weaknesses from the standpoint of the using industry in that there is (1) no certainty of tenure before meeting the qualifications for a discovery of a deposit, even though large expenditures are involved in exploration and development before the discovery can be proved; (2) no certainty at this time as to what constitutes a discovery; and (3) inadequate provision for the acquisition of land for related purposes such as locating a mill. *For these reasons, and because operators believe they must continue to obtain title to mineral deposits even if not the surface of the land, the industry generally prefers amending rather than replacing the 1872 Mining Law.*

We see merit in both of the positions—maintenance of the location-patent system and a leasing

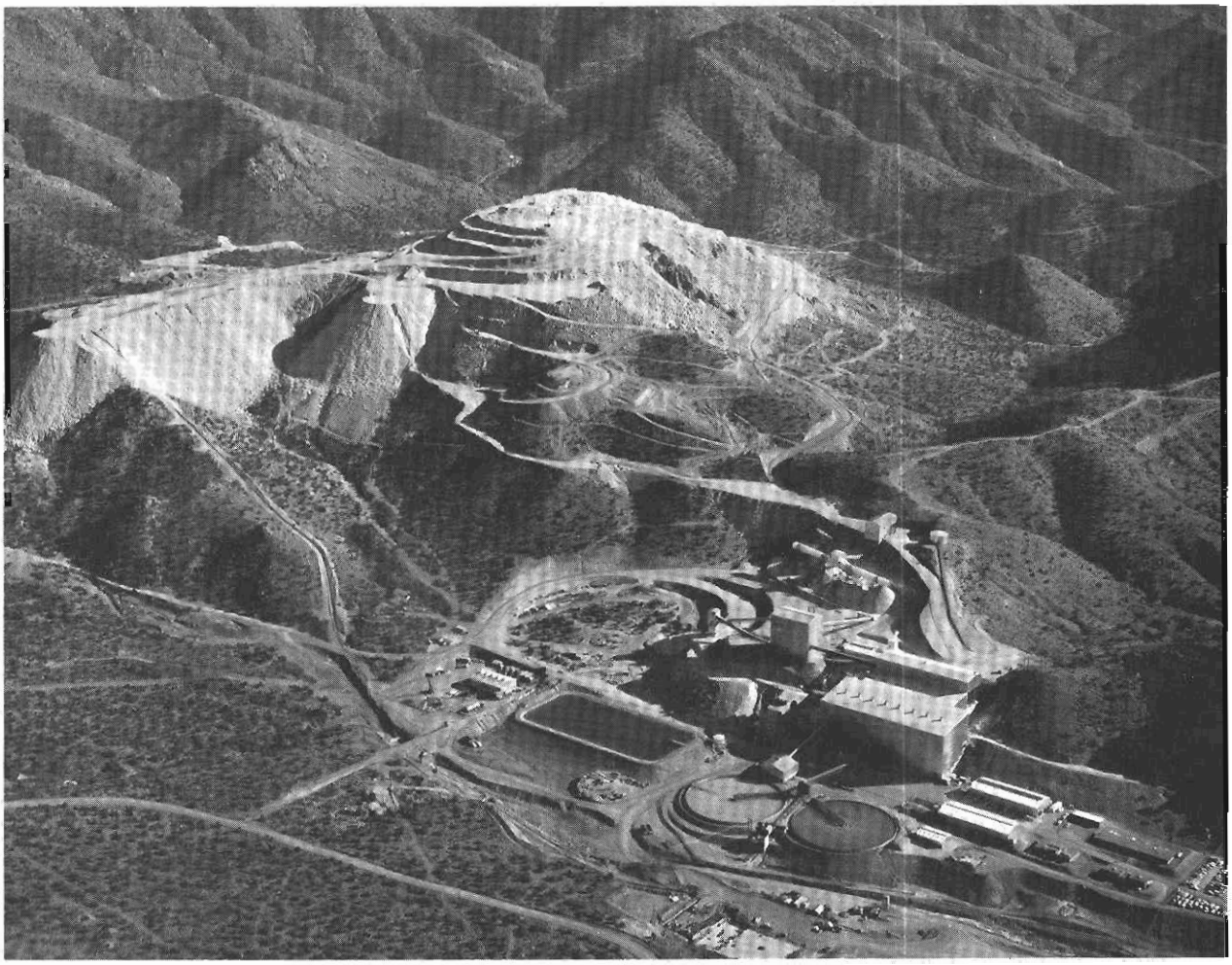
[2] *Ibid.*

[3] The reference is to the Mineral Leasing Act, 30 U.S.C. §§ 181 et seq. (1964).

[4] 30 U.S.C. §§ 601–603. (1964).

[5] Kansas, Minnesota, Missouri, Nebraska, and Wisconsin.

[6] n. 1, supra.



Minerals are where you find them. The importance of minerals to the national economy calls for a public land policy that encourages the search for new deposits.

system—but believe that a system should be established that incorporates the desirable features of both.

Public Lands Open to Prospecting

The public interest requires that individuals be encouraged—not merely permitted—to look for minerals on the public lands. The traditional right to self-initiation of a claim to a deposit of valuable minerals must be preserved. This does not weaken or dilute our concern for protection of the environment or other public land values, because we believe that we have other means with which to safeguard the environment against major adverse impacts.

Unless a public land area is closed to all mineral activity, *we believe that all public lands should be*

open without charge for nonexclusive exploration which does not require significant surface disturbance. However, we also conclude that different conditions should prevail if the prospector desires an exclusive right, or if heavy equipment is to be used that will result in significant disturbances of the surface.

Perfecting A Claim

Recommendation 48: Whether a prospector has done preliminary exploration work or not, he should, by giving written notice to the appropriate Federal land management agency, obtain an exclusive right to explore a claim of sufficient size to permit the use of advanced methods of exploration. As a means of assuring exploration, reasonable rentals should be charged for such claims, but actual expenditures for exploration and development work should be credited against the rentals.

Upon receipt of the notice of location, a permit should be issued to the claimholder, including measures specifically authorized by statute necessary to maintain the quality of the environment, together with the type of rehabilitation that is required.

When the claimholder is satisfied that he has discovered a commercially mineable deposit, he should obtain firm development and production rights by entering into a contract with the United States to satisfy specified work or investment requirements over a reasonable period of time.

When a claimholder begins to produce and market minerals, he should have the right to obtain a patent only to the mineral deposit, along with the right to utilize surface for production. He should have the option of acquiring title or lease to surface upon payment of market value.

Patent fees should be increased and equitable royalties should be paid to the United States on all minerals produced and marketed whether before or after patent.

As indicated above, the General Mining Law provides inadequate protection to the explorer until he has made a discovery of a valuable mineral deposit. Throughout his prediscovery prospecting effort, he is subject to adverse actions by Federal land managers allocating the land for other uses such as withdrawals from mineral entry for an administrative site. With regard to third parties, he is protected only to the extent that he can prove the area was in his actual possession, which may be difficult under prevailing legal concepts.[7] This approach is inadequate for a typical exploration effort today because an area large enough to warrant the expenditures for modern technological methods will nearly always be much larger than that which can be held effectively in actual possession. As we have noted, Federal policy should invite mineral exploration in order to encourage future mineral discoveries.

Unlike the present Mining Law, claims should conform to public land subdivisions in all cases. In many cases, mining claim descriptions under existing law are totally inadequate to permit Federal agencies or other interested persons to find them on the ground.

The locator of a mining claim on public land records his claim under state law, usually with a county recorder. Federal land agencies often have no knowledge of his activities unless he applies for a patent. In our view, this is not consistent with sound land management. We do not favor any change in the title consequences which flow from recordation under state law. *However, we do recommend that locators be required to give written notice of their claims to the appropriate Federal land agency within a reasonable time after location.* This ordinarily could be accomplished simply by mailing a copy of the documents filed with the county recorder.

So-called assessment or performance work is required under present law only to prevent third parties from preempting a claim and to obtain a patent.[8] *To prevent speculation and assure diligent effort, an explorer should be required to pay rental, subject to offsetting credits for the actual performance work completed.*

Terms of Exploration Permit

Congress should: (a) establish the maximum size of an individual exclusive exploration right and the aggregate acreage held by one person; (b) specify the period of time for which that exploration right is granted; and (c) establish performance requirements designed to assure diligent exploration as a condition of retaining or renewing the exploration right.

Maximum sizes for claims and other holdings will avoid monopolistic tendencies in the operation of this system.

If exclusive rights are to be conferred on prospectors, restrictions designed to assure maximum ex-

[7] For a discussion of prediscovery rights, the doctrine of "discovery," and possessory rights of mining claim locators, see University of Arizona and Twitty, Sievwright & Mills, *Nonfuel Minerals.* PLLRC Study Report, 1970. Vol. II, Chapters 8–14.

[8] See 30 U.S.C. § 28 (1964).

ploration activity should be imposed. Performance requirements could be some combination of time limits, rentals, or work similar to the present Mining Law assessment provision.[9] These requirements would be made conditions of retaining an exploration right during its term or renewing or extending it upon expiration of its initial term. Strict conditions for the renewal or extension of the primary term would also stimulate diligent activity.

There should not be any distinction between lode and placer claims, and no extralateral rights to minerals outside of claim boundaries should be acquired.[10] The reasons for these provisions no longer exist, and the resulting legal uncertainties discourage sound mineral development. The only rationale for these provisions today would be the inadequacy of the 20-acre claim limitation, and our recommendation to provide for exploration claims large enough for modern techniques solves this problem.

Similarly, periodic written notice to Federal and county officials of compliance with performance obligations owed to the United States should be required as a condition to validity of each mining claim.

Protecting the Environment

While the Federal Government today retains the right to manage surface values on unpatented mining claims to the extent the locator does not need them in his bona fide mineral efforts,[11] there are presently no adequate regulations defining the relative rights of the Federal Government and the locator. Furthermore, it is questionable whether such regulations could be adequately enforced, since present law does not require written notice of claim locations to land management agencies.

In our view, this situation is not consistent with reasonable measures to protect surface values, or to maintain environmental quality in the vicinity of such claims. *Upon receipt of the required notice of location, a permit should be issued to the locator, subject to administrative discretion exercised within strict limits of congressional guidelines, for the protection of surface values. While an administrator should have no discretion to withhold a permit, he should have the authority to vary these restrictions to meet local conditions. It is our view that protection of environmental values must cover all phases of mineral activity from exploration, through development and production, to reasonable postmining rehabilitation.* The conditions to be included in permits and other instruments later in the process, except as necessary to accommodate circumstances in a particular locality, should have been established through the formal rulemaking procedure we recommend in the chapter on Administrative Procedures.

We recognize that the on and offsite impacts of mineral operations vary widely according to soil type, drainage relief, topography, rainfall, temperature, seasons, vegetative cover, weather pattern, and proximity of population and travel routes. Because of these differences, flexibility is indispensable to sound administration in these matters; but their discretion should be limited by congressional guidelines.

Where mineral activities cause a disturbance of public land, Congress should require that the land be restored or rehabilitated after a determination of feasibility based on a careful balancing of the economic costs, the extent of the environmental impacts, and the availability of adequate technology for the type of restoration, rehabilitation, or reclamation proposed. Rehabilitation does not necessarily mean restoration, but rather the maximum feasible effort to bring the land into harmony with the surrounding area.

Up to the time commercial production commences, exploration, development, and production plans should be reviewed by the land managing agency for consideration of environmental factors, but administrators should be required to approve or disapprove the plans within a reasonable time. Plans of this kind must be submitted before the development and production of certain minerals under the existing leasing systems, and we believe it is in the public interest to require a similar procedure for locatable minerals. Essentially, this recommendation would merely formalize the voluntary process already employed by some mining companies.[12] Under the principles of our recommendations in Chapter Sixteen, adverse determinations would be subject to judicial review.

Development and Production Rights

Under the existing Mining Law, there has been substantial litigation over the legal requirements for the discovery of valuable minerals. In view of recent judicial and administrative rulings, a mineral ex-

[9] *Ibid.*

[10] A lode claim under the Mining Law of 1872 is required generally where a mineral deposit is held in place by rock in a fashion which permits reasonably distinct identification of its boundaries. A placer claim is any other claim made under the act, but is generally applied to diffused or broken mineral deposits.

For a discussion of the distinction between lode and placer claims see University of Arizona and Twitty, Sievwright & Mills, *Nonfuel Minerals.* PLLRC Study Report, 1970, Chapter 8. For a discussion of extralateral rights see Chapter 12, B, 2 of the same study.

[11] 30 U.S.C. § 612(b) (1964).

[12] See Rocky Mountain Center on Environment, *Environmental Problems on the Public Land,* case study No. 3. PLLRC Study Report, 1970.

plorer has little assurance that his rights to develop minerals will be secure even after he is satisfied that his discovery will support an economically feasible operation. If he must satisfy the legal test of current marketability at a profit,[13] he is then faced with the uncertainties of the cyclical price patterns for minerals, particularly since he cannot control the timing for consideration of his application for patent. If prices are low, there is increased risk that his claim will be held invalid.

To us it seems clear that Federal land agencies are poorly equipped to judge what is a prudent mining investment, and this issue should be closed when the mineral explorer is prepared to commit himself by contract to expend substantial effort and funds in the development of a mineral property.

The review of development plans at this, as well as at other stages, would be the responsibility of trained technical personnel of the United States Geological Survey. That staff performs this function in connection with other minerals at the present time.

Development and production rights should extend to the area necessary for production of the mineral discovery. These rights should embrace use of enough land to meet all reasonable requirements for a mineral operation, such as settling ponds, mills, tailings deposits, etc. Present law allows only 5 acres for each millsite in addition to the actual claim acreages,[14] and this clearly has been inadequate in many cases.

Patent to Minerals Only

Under present law locators may obtain a patent to the mineral lands—both surface and subsurface.[15] The payment of the current fee of $2.50 per acre for placer claims and $5.00 per acre for lode claims is merely nominal and does not justify sale of fee title which may carry valuable surface rights. We recognize that the patent system has provided security of title and has provided an incentive to search for concealed minerals on the public domain. To avoid windfalls and to prevent misuse of the mining laws for nonmineral purposes, we propose that a mineral patent should carry only a right to use the surface necessary for the extraction and processing of the minerals to which patent has been granted.

Market Value for the Surface

Mineral operators, however, should have the option of acquiring title or a lease to the needed land areas when they are willing to pay the market value of the surface rights. We recognize that there may well be circumstances in which the required investment would be so large that business judgment would dictate the need for fee title. In some cases, a lease may be preferred for that purpose, particularly if it is only necessary to permit more extensive use of the land than is conferred by the mineral patent alone.

If the mineral patentee does not acquire title to the surface, the right to the mineral interest should terminate automatically at the end of a reasonable period after cessation of production. It is apparent that a patentee who owns only a mineral interest has no incentive to manage or improve the land when mineral production is no longer attractive to him. These inactive properties are particularly troublesome when they are isolated tracts within a land management area. Such a provision would also encourage more complete use of the mineral deposit and discourage merely speculative holding of such areas.

Payment of Royalties

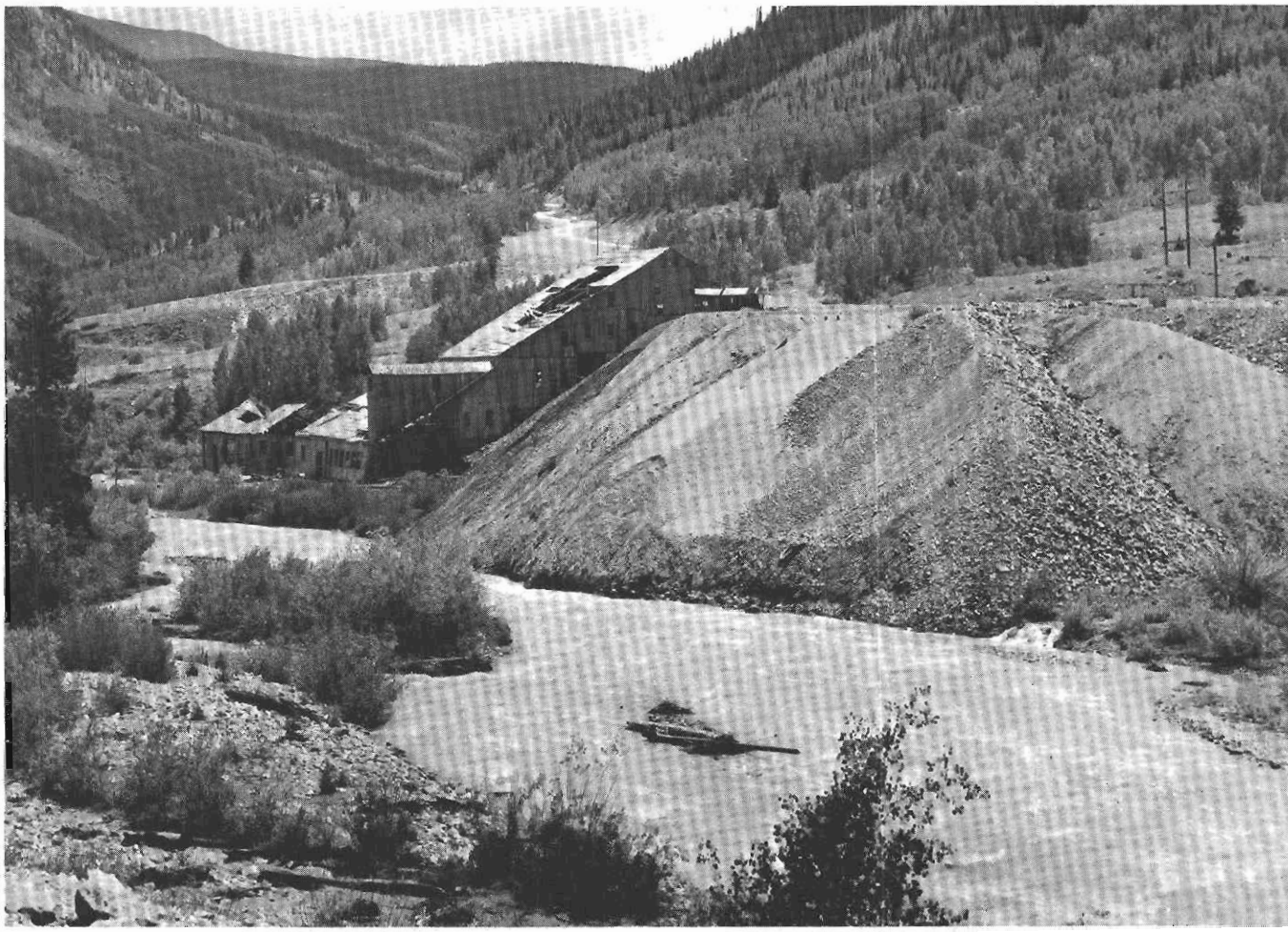
As stated above, the only payment made under the General Mining Law is a nominal fee for obtaining patent for mineral lands.[16] The holder of a mining claim may extract and market the minerals without payment for any portion of their value both before and after patent.

Throughout this report we consistently recommend that every user of the public lands should pay for his right or privilege. As a general standard we recommend fair-market value, unless Congress expressly establishes another guideline for payment. We perceive no reason why those producing minerals from the public lands should not likewise pay a fair value in relation to the product they obtain and market.

We note that payment to the United States is now required for minerals obtained from the public lands under the mineral leasing acts [17] and the Materials Act.[18] Pricing under those acts has been generally accepted and is comparable to prices paid for the same minerals to non-Federal public, as well as private, landowners.

The mining industry usually pays for hard rock minerals taken from private lands and non-Federal public lands either through a royalty or a lump sum payment. The royalty payment, through which a payment is required only on the values produced, is considered by us to be equitable to both the producer and the Government. *We believe that royalty should be collected on production both before and after patent.*

[13] See United States v. Coleman, 390 U. S. 599 (1968).
[14] 30 U.S.C. § 42 (1964).
[15] 30 U.S.C. §§ 29 and 37 (1964).
[16] *Ibid.*
[17] n. 3, supra.
[18] n. 4, supra.



Leaching of minerals and siltation from mine tailings cause serious pollution problems.

The proportion of value should be comparable, but not necessarily equal, to rates being paid to other landowners for the same mineral ore in the region. In suggesting the establishment of this market test, we recognize that royalties on the minerals involved are rather modest and will not be a major source of revenue. Minerals covered at the present time by the 1872 law are, under another law, leased on national forest acquired lands,[19] where experience supports our conclusion that royalties will be modest if they are based on comparable private land transactions. In any event, Congress should specify such royalties at levels that will provide a continuing incentive for mineral exploration, development, and production on public lands.

As we envision the system that we recommend, the United States would reserve a royalty interest in minerals in the development contract, and would then perpetuate it in the patent. In either event, the royalty would be paid only on minerals produced, and not on ore in the ground.

As we have indicated previously, we believe present patent fees to be inadequate. We do not consider charges for mineral patents to be a suitable vehicle for capturing the economic value of mineral deposits, and we do recognize the incentive value of reasonable charges based on the national importance of discovering mineral deposits in our vast public land regions. *Nevertheless, we believe mineral patent fees should be increased at least enough to cover administrative costs associated with the issuance of patents.*

Uniform Federal Requirements

Locators should not be required to comply with state laws relating to the location and maintenance of valid mining claims other than those provisions

[19] Reorganization Plan No. 3, July 16, 1946, 5 U.S.C.A. Appendix, A-188.

requiring recordation. The General Mining Law [20] currently requires compliance with location and discovery requirements of state law. State laws on this subject vary widely and many are obsolete or archaic in light of modern technology. The discovery work required by state law often serves no useful purpose and frequently conflicts with sound land use practices and causes needless harm to the environment. The Constitution gives Congress [21] the basic responsibility for determining the disposition of public lands, and we believe that the development of mineral resources is so important that Federal statutes should fully prescribe uniform methods by which rights in these resources may be acquired.

Elimination of Long-Dormant Claims

Congress should establish a fair notice procedure (a) to clear the public lands of long-dormant mining claims, and (b) to provide the holders of existing mining claims an option to perfect their claims under the revised location provisions we recommend. Under such a procedure, failure to file proper notice of preexisting claims with county and Federal agencies within a reasonable time would constitute conclusive evidence of abandonment. This would be somewhat analogous to state quiet-title actions and to the surface right proceedings authorized by the Surface Use Act of 1955.[22] Clearing the record of an estimated 5.5 million long-dormant claims would assist in achieving more efficient land planning and management by Federal agencies. We also believe that bona fide mineral explorers would often benefit from the prediscovery protection afforded under the procedures we recommend, which is lacking under existing law.

Conclusion

The location-patent system we recommend will, in our opinion, correct the deficiencies and weaknesses of the existing Mining Law while, at the same time, continuing to provide incentive for the exploration, development, and production of valuable minerals.*

[20] n. 1, supra.
[21] Article IV, section 3, Constitution of the United States.
[22] 30 U.S.C. §§ 611–615 (1964).

The Mineral Leasing System

A number of statutes provide for mineral leases applicable to certain minerals and to certain of the public lands. The principal leasing law is the Mineral Leasing Act of 1920 [23] which applies to oil, gas, oil shale, phosphate, sulfur (in two states), potassium, sodium, native asphalt, and solid and semisolid bitumen and bituminous rock (such as tar sands), where found on public domain lands. The Acquired Lands Leasing Act of 1947 [24] extended the 1920 Act authority to acquired lands. Various other authorities for leasing of locatable minerals on most acquired lands were centralized for administration in the Secretary of the Interior by the Reorganization Plan No. 3 of 1946.[25]

Under the leasing system, a distinction is made between areas where workable deposits of minerals are known or judged to exist and areas where workable deposits are not judged to exist. Where minerals are known to exist in workable deposits, leasing is done on a competitive basis with interested parties bidding competitively for the right to develop minerals. For example, in the case of oil and gas, leases are awarded competitively in those limited instances when a geologic structure of a producing oil or gas field is known to exist. Other minerals are leased competitively when the area is judged to contain "workable" deposits.

Noncompetitive leasing is used in all cases where competitive leasing does not apply. In the case of oil and gas, noncompetitive leases are awarded to the "first qualified applicant" who applies except in limited cases where substantial interest is involved. In the latter cases, all persons applying within a specified period are treated as having filed simultaneously and the lease is awarded by a public drawing. In the case of the other leasable minerals, prospecting permits are awarded to applicants solely on a "first come, first served" basis. These prospecting permits carry rights to lease the mineral once a discovery has been made. No bonus is paid for the prospecting permit, but an annual rental is charged

[23] n. 3, supra.
[24] 30 U.S.C. §§ 351–359 (1964).
[25] n. 19, supra.

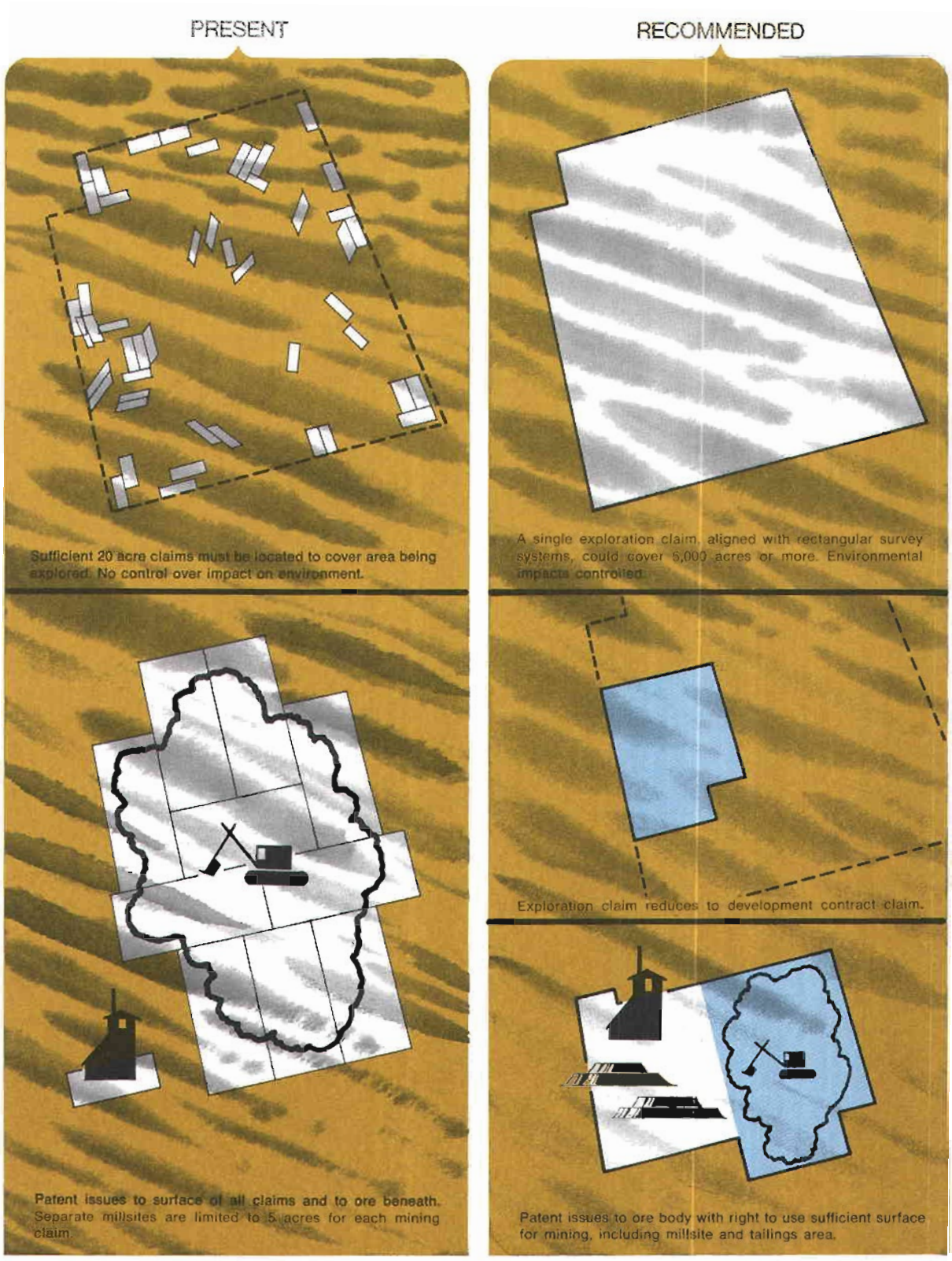
* Commissioners Clark, Goddard, Hoff, and Udall submit the following separate views: The Commission is unanimous in agreeing that existing mineral law should be modified. Many excellent changes are recommended in this report. However, it is our view that more fundamental changes are required. In particular, the dichotomous system that distinguishes "locatable" from "leaseable" minerals should not be continued.

The recommended modifications preserve the location-patent approach devised more than 100 years ago. It served an earlier period but cannot, even as modified, provide an adequate legal framework for the future. Only minor surgery on the Law of 1872 is recommended in this report. In our view a general leasing system for all minerals except those which are made available by law for outright sale should be adopted. Such a system would:

1. Continue to encourage orderly and needed resource exploration and development.
2. Insure better management and protection of all public land values and enhance human and environmental values.
3. Establish a fair and workable relationship between economic incentives and the public interest.

Objections to the location-patent system are numerous, obvious and, in large measure, admitted by industry and

MINING LOCATION PATENT SYSTEMS



and royalties are paid once a lease has been issued and is producing.[26]

Not only does the administrator have broad discretion to refuse to issue prospecting permits or leases, but he also has broad discretion to prescribe operating terms and conditions. Existing law appears fully adequate to authorize supervision over leasable mineral operations as they may affect other land uses and environmental conditions.

While representatives of the oil industry have stated that the leasing system has been generally satisfactory from their point of view, producers of other minerals have stated dissatisfaction with the manner in which broad administrative discretion has been exercised. We recognize that desirable changes in the leasing system can be accomplished by administrative action. However, we have concluded that the system can be improved, and that modifications should be accomplished by statutory action.

As noted above, the Department of the Interior has complete discretion to issue or not to issue a prospecting permit or mineral lease on lands otherwise open to leasing. Administrative discretion to establish operating terms and conditions is almost equally sweeping. Since authority to prescribe operating terms and conditions is manifestly adequate to resolve conflicts with other land uses and provide needed environmental restrictions, *we recommend that Congress prescribe the guidelines under which prospecting permits and leases may be refused on public lands open to mineral exploration.* For example, it might well be provided that the administrator would have the discretion to refuse an application if the areas sought had not yet been classified in accordance with our Planning or Environment recommendations. This type of limitation on administrative discretion would be consistent with our view that Federal mineral policy for public lands should include a continuing invitation to explore and develop minerals on those lands open to mineral activities.

Competitive Exploration Rights

Recommendation 49: Competitive sale of exploration permits or leases should be held whenever competitive interest can reasonably be expected.

We noted above that when certain mineral conditions are known to exist, the existing leasing system requires competitive sale of exploration and development rights. We have concluded that these competitive sale requirements are too narrow in scope, particularly in the case of oil and gas. It appears to the Commission that competitive leasing would be appropriate (1) in the general area of producing wells, (2) for land covered by relinquished or forfeited leases or permits, or (3) where past activity and

[26] For a comprehensive discussion of the competitive and noncompetitive leasing systems for Federal lands see Rocky Mountain Mineral Law Foundation, *Federal Competitive and Noncompetitive Oil and Gas Leasing Systems,* PLLRC Study Report, 1970, Chapters IV and V.

government. Many wholesome *procedural* changes are recommended in this report. But these essential features of the early system are preserved:

1. Hard mineral explorers may go on the public lands and search for minerals except where particular lands are withdrawn or their use restricted.

2. Mineral developers may obtain fee title to the minerals and, if they desire, may purchase so much of the surface as may be needed for a mining operation.

In the past these developers have paid no direct charge to the United States for the removal of locatable minerals. The Commission has recommended that royalty payments be made.

A sound, workable mineral leasing system has been part of the law since 1920. It represented an arduous congressional effort extending over a generation and there is general agreement that the system has worked reasonably well. Leasing and permit systems are the law of many states which own public lands. This approach to the exploration and development of *all* minerals on the public lands of the United States should be adopted, except where minerals are sold outright.

As we understand it, those who oppose the idea have three basic objections: 1) under the present leasing system the Secretary of the Interior has uncontrolled discretion over what land will be made available for mineral development; 2) under the present leasing system the leasehold interest does not provide sufficient security interest for the raising of investment capital since developers are subject to ex post facto regulation; 3) under the present leasing system small developers are handicapped in the competitive bidding situations as the cash bonus offer is the only bidding tool available and small developers may suffer from a lack of capital.

We recognize the legitimacy of these objections and would propose these modifications to the present leasing system: 1) that the Congress list values the Secretary of the Interior will consider when deciding to lease available land and give a right of judicial review for abuse of discretion; 2) that leases be protected from ex post facto regulation of the mineral operation and that the life of the lease be equal with the productive life of the mineral deposit; 3) that in competitive bidding situations the Secretary of the Interior be authorized to consider the royalty offered as well as the cash bonus offered when awarding a lease.

These proposals may not convince vigorous advocates of the location-patent system of the merits of our position. However, to those who maintain that a leasing system for hardrock minerals is inherently incapable of providing sufficient incentive for the mineral development of our public lands, we suggest that quick reference be made to mineral development of Indian lands, where just such a system has worked well, and to the state leasing systems.

general knowledge suggest reasonably good prospects for success.*

To achieve the objective of this recommendation, the administrator should have the authority to segregate public land from mineral exploration for a short period of time. At the end of the prescribed period exploration rights should be available noncompetitively in the same manner that we have recommended with regard to other minerals.

Adoption of this recommendation would eliminate the need for the simultaneous filing system currently in effect. Similarly, this would eliminate the known geologic structure as a standard for competitive allocation of oil and gas leasing rights.[27]

Prospecting permits and leases should apply to all leasable minerals unless expressly excluded by the administrator in accordance with legislative guidelines. Unless a particular mineral or class of minerals is specifically mentioned, it is excluded from permits or leases at the present time. In our view, this practice does not conform to changes in technology and mineral industry patterns in recent years. Diversification has proceeded to the point where, as a general rule, a mineral explorer can be expected to develop any commercially valuable deposit he may find. Of course, the administrator should have carefully defined authority to exclude minerals, particularly when available information indicates that competitive sale of exploration rights for particular minerals would be appropriate.

Congress should provide guidelines to implement this recommendation that would (a) limit the area covered by a single exploration lease or permit and the aggregate acreage any one explorer can hold, (b) specify the period of time for which the exploration right is granted, and (c) establish performance requirements designed to assure diligent exploration as a condition of retaining and renewing the rights conferred. *We are convinced that there should be maximum sizes prescribed for prospecting permits and nonproducing leases to promote competition in mineral exploration and eliminate holding areas without development. Limits should apply only to such situations and should not include producing areas where no maximum acreages are believed necessary.*

In some respects these ends are achieved by law or administrative regulation. However, there is a lack of uniformity which should be corrected. For example, no performance requirements are imposed in oil and gas leases, many of which are issued for 10-year terms, other than a provision that a two-year renewal of a nonproducing lease may be obtained only if actual drilling operations are being diligently prosecuted at the expiration of the primary term.[28] Such a provision does not adequately protect against mere speculation and certainly does not assure diligent exploration efforts.

Under the existing leasing system, administrators have considerable authority through regulation and practice to modify operating conditions unilaterally. This has led to misunderstandings and a lack of confidence in lease tenure, particularly among producers of leasable minerals other than oil and gas. *We recommend that, as nearly as practicable, all rights and obligations, including those related to maintenance of the environment, of mineral explorers and developers be clearly defined at the outset of their undertakings, and the unilateral authority to modify operational and payment requirements should be limited under guidelines to be specified by the Congress.* It is unfair for one party to an arrangement to have the unilateral power to impose higher royalty obligations or more stringent operating conditions on the other party, particularly when no standards are specified for such changes. Even in the case of renewals, we believe revisions of this kind should be authorized only within limitations to be established by law. Limitations of this kind are not provided under the existing law.

Consistent with our recommendations for the location-patent system we, of course, expect that prospecting permits and leases would require compliance with guidelines to minimize use conflicts and protect the environment. Exploration, development, and production plans should be subject to approval in the manner we recommend for the location-patent system. Also, equivalent *rehabilitation requirements should be applied. These matters, now left to administrative discretion, should in our view, be required by statute.*

In the competitive sale of mineral leases, it is common practice for the administrator to reserve the right to reject all bids, even when one or more exceeds the minimum considered acceptable at the time the sale was announced. This right occasionally is exercised and customarily no public reasons are announced for the action. We believe it is in the public interest to reserve this right. *The reasons for rejecting all bids at a competitive mineral lease sale should be made public, but the exercise of this authority should not be legally reviewable except in cases of abuse of discretion.*

Some public lands are in states having laws under

[27] The expanded competitive leasing system we recommend will, we believe, eliminate the improper use of partial assignments discussed in the Comptroller General's Report (B–118678) dated March 17, 1970.

[28] 30 U.S.C. § 266(e) (1964).

* Commissioners Clark, Goddard, and Hoff submit the following separate views: The abolition of all noncompetitive leasing was proposed by us in more than one Commission session. Developments in Alaska and the Report by the Comptroller General, B–118678, dated March 17, 1970, on leasing emphasize this view.

which oil and gas production is prorationed. In some states this prorationing is partially based on estimates of market demand and price levels. Federal administrators are legally charged with responsibility for proper conservation practices in the production of oil and gas from public lands,[29] and state laws are not explicitly mentioned in Federal leasing laws. To date, Federal authorities have permitted state conservation regulations to be applied to public land production. *Conservation of these public land resources is a Federal responsibility, and we oppose any effort to change existing laws to require compliance with state prorationing programs.*

Leasing laws typically establish minimum rentals and royalties on production. While the authority exists to use competitive royalty bidding, competitive sales have been made on the basis of the highest cash bonuses offered. We believe that greater flexibility should be authorized and practiced under the leasing system. *The administrator should have the discretion to employ a combination of bonus, royalty, and rentals, or outright sale of the minerals in place as may be appropriate in particular situations.* The tools available to him should permit the fullest exercise of sound business judgment.

In recommending continuation of three mineral disposal systems, we further recommend that Congress should clearly specify the lands and the minerals to which each of the system applies. At present, the General Mining Law [30] applies to all minerals not covered by the various leasing provisions or the Materials Act.[31] Our studies have established that there are a number of important legal questions concerning the applicability of these systems. For example, definition or identification of a common variety of building stone has been the source of difficult litigation in the administration of the Materials Act. In any event, assurance of environmental quality should be included in the statute setting forth the minerals to be sold under the sale system in a manner similar to that which we recommend under the location-patent and leasing systems.

We recommend that Congress define or list those minerals to which the location-claim and leasing systems apply and provide that all other minerals be subject to sale under an act similar to the Materials Act. Likewise, there should be a statutory delineation of the categories of lands to which each system would be applicable.

Uncertainty has occasionally arisen as a result of the fact that minerals disposable under one system may be found in a deposit also containing minerals disposable under another system. The occurrences of uranium in lignite and dawsonite in oil shale are prominent examples. *A simple, comprehensive procedure should be established for allocating development rights to all intermixed minerals occurring in the same tract of land.*

[29] see 30 U.S.C. § 226(j) (1964).

[30] n. 1, supra.

[31] n. 4, supra.

Items of Special Concern

Hobby Mineral Collections

> Recommendation 50: Statutory provision should be made to permit hobby collecting of minerals on the unappropriated public domain and the Secretary of the Interior should be required to promulgate regulations in accordance with statutory guidelines applicable to these activities.

We recognize that the number of mineral collectors has increased to the point that regulation is now necessary. The general mineral development systems we propose are not pertinent to these hobbyists. Statutory guidelines and administrative regulations should be flexible in order to meet variable local conditions, but the permit requirements and fees to be charged should be set forth clearly.

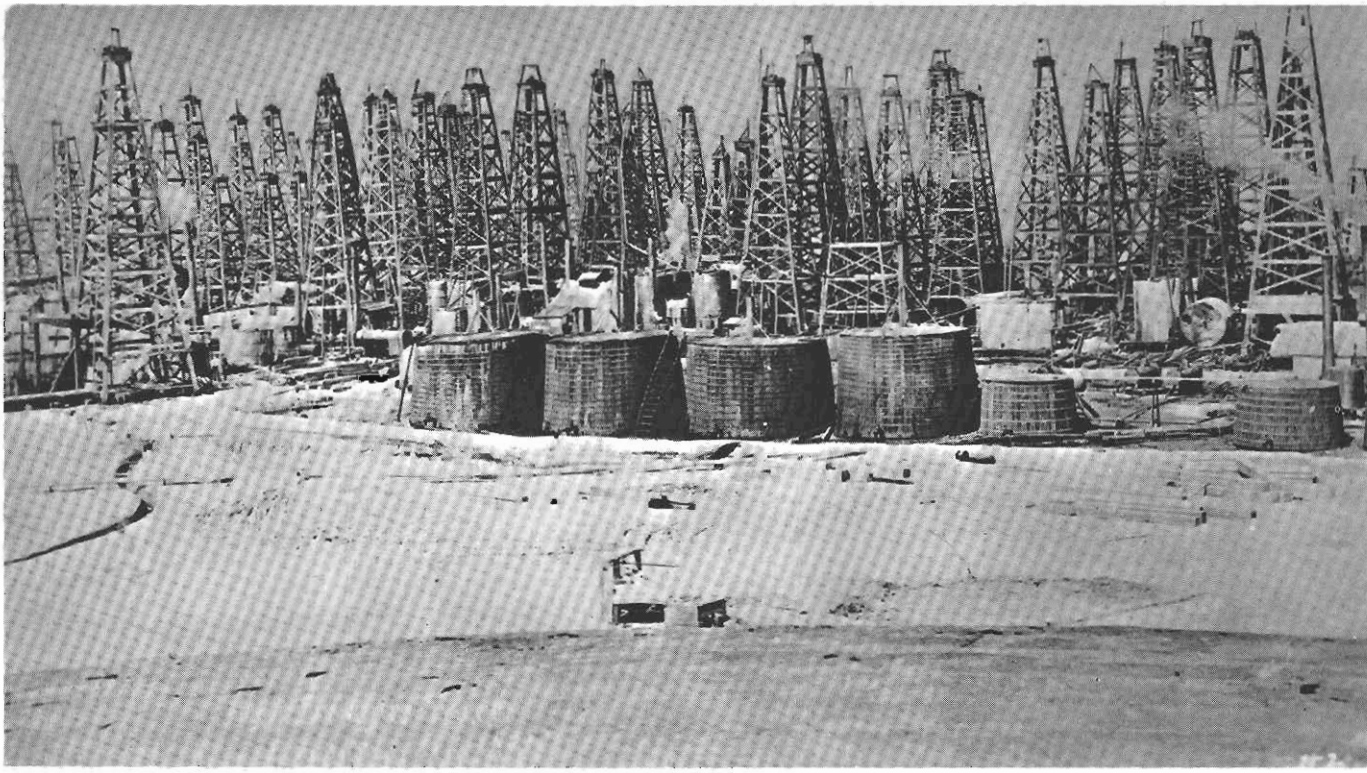
Oil Shale

The reserves of oil shale in Colorado, Utah, and Wyoming constitute a tremendous energy resource. To date they have not been commercially developed, although pilot programs have been conducted from time to time. These deposits are principally on public lands, and our public land laws should provide a climate for their development when economically feasible.

Resolution of Title Problems

> Recommendation 51: Legislation should be enacted which would authorize legal actions by the Government to acquire outstanding claims or interests in public land oil shale subject to judicial determination of value.

At the present time there are serious problems arising from disputes over rights to public lands claimed as a result of mining claims and prospecting permits. Massive efforts have been directed at resolving these title problems through administrative and subsequent judicial procedures, but this is an expensive and tedious process. We believe additional authority to bring legal actions to acquire claimed interests should be granted to expedite resolution of these problems with regard to key tracts of shale-bearing lands. This would facilitate initiation of development programs.



Conservation of oil resources in the United States has progressed dramatically since 1903, when proper spacing of oil wells was not required.

Experimental Commercial Development

> Recommendation 52: Some oil shale public lands should be made available now for experimental commercial development by private industry with the cooperation of the Federal Government in some aspects of the development.

An effort has been made to institute a test lease program which up to the present time has not been fruitful. We believe this program is of sufficient importance to warrant emphasis at an early date. From the results so far is seems clear that to be viable such a program should: (1) offer for lease tracts sufficiently large to permit amortization of investments required for commercial development; (2) give weight to industry nominations relating to location and size of tracts, lease duration, and size of plant; (3) not bar the holder of a test lease from eligibility for leases subsequently issued under a general leasing program; (4) include experimental use of bonuses, royalties, and rentals; (5) provide fixed terms, conditions, and royalty payments for the term of the lease; and (6) not interfere with process patent rights of lessees acquired prior to issuance of the leases.

One troublesome area is the uncertainty surrounding the environmental controls that will be necessary in developing an oil shale industry. For the purposes of the test program the Federal Government should accept partial responsibility for the costs of minimizing environmental impacts and for carrying out rehabilitation of mined areas. This would allow for needed experimentation in the mitigation and prevention of adverse impacts of oil shale development.

Removal of Restrictions

> Recommendation 53: Restrictions on public land mineral activity that are no longer relevant to existing conditions should be eliminated so as to encourage mineral exploration and development and long standing claims should be disposed of expeditiously.

Coal Leases

Provisions of existing law prohibiting the apportionment of royalties and imposing minimum production requirements on each lease [32] *should be modified to permit unitization of public land coal leases.*

[32] 30 U.S.C. § 201–1 (1964).

There is an increasing demand for large consolidated coal reserves, particularly where needed to assure a long-term fuel supply for mine-mouth generating plants. We believe it is in the public interest to permit the same techniques for unitization of coal leases as are now allowed for oil and gas.

Likewise, restrictions upon the leasing of public land coal deposits to railroad companies should be removed.[33] The fears of monopolistic control which led to the enactment of the existing restrictions no longer are applicable. The importance of pipelines and truck transportation and the growing use of mine-mouth generation have materially reduced any competitive advantages railroads may once have had over other coal producers. Furthermore, it appears that other Federal laws, such as the antitrust laws, are far more effective in regulating the competitive position of the railroads than the public land laws.

Geothermal Resources

Congress should provide a specific policy of leasing geothermal resources in which fair and reasonable consideration is given to the equities of holders of asserted prior rights who expended money and effort. It has been held that no existing mineral disposal system applies to geothermal steam available in public lands.[34] One bill that would have authorized leasing of these deposits was vetoed. Some of those who pioneered in an effort to develop these resources under existing law have equitable claims to a priority under new legislation. Although we believe that these equities should be recognized, we would not recognize equities based on actions that took place after introduction of the first bill designed to establish a system for disposal of the geothermal resource.

Geothermal resources may well require tailored acreage limitations and flexible provisions relating to terms and conditions. *Acreage limitations and guidelines for readjustment of terms and conditions in geothermal resource leases should be established with due regard for the nature of the resource.*

It has been held by the Department of the Interior that geothermal steam has never been included in mineral reservations contained in public land patents.[35] Nevertheless, other minerals reserved to the United States, such as potassium and sodium, are frequently found with geothermal steam. *Specific provision should be made to resolve this complication promptly.* Reserved mineral interests in lands containing geothermal resources should be disposed of in the same manner as we recommend at the end of this chapter with regard to reserved minerals generally. However, one who develops geothermal resources on patented lands should have a preference right to a lease of reserved minerals found therein.

Alien Ownership

There are restrictive provisions in public land laws relating to direct and indirect ownership by aliens of interests in public land minerals. In some instances these restrictions apply to minute fractional interests of no significance.[36] *In view of the substantial overseas commercial and investment interests of United States corporations and individuals, we believe existing restrictions on alien ownership should be removed except when required by explicit foreign policy considerations of general applicability to transactions of aliens.* The Commission perceives no reason to single out public land transactions as warranting unusual restrictions on aliens.

Administration

> Recommendation 54: The Department of the Interior should continue to have sole responsibility for administering mineral activities on all public lands, subject to consultation with the department having management functions for other uses.

Although an agency such as the Forest Service, with general administrative responsibility over a particular unit of public land, should be consulted, mineral activities, where allowed, should be uniformly and independently administered. The values involved are large; and substantial policy differences among agencies should not be tolerated. Also, in order to protect interest in these values, minerals expertise should be readily available to administer the mineral laws. Consultation and cooperation among agencies will assure that mineral development is consistent with development of the surface values of the public lands and preclude undesirable impacts on the environment.

Reservation of Mineral Interests

> Recommendation 55: In future disposals of public lands for nonmineral purposes, all mineral interests known to be of value should be reserved with exploration and development discretionary in the Federal Government and a uniform policy adopted relative to all reserved mineral interests.

[33] 30 U.S.C. § 202.

[34] See Opinion of the Solicitor, Department of the Interior M–36625 (August 28, 1961).

[35] See Hearings on H.R. 733 H.R. 10204, S. 1674, before the House Subcommittee on Mines and Mining of the Committee on Interior and Insular Affairs, 89th Cong. 2nd Sess. 122, 170 (1966).

[36] See, for example, as to mineral leases, 30 U.S.C. § 181 (1964).

Reserving valuable mineral interests has the obvious merit of providing potential revenues and permitting consolidation of mineral interests for potential development. Also, it forestalls possible windfalls to surface owners.

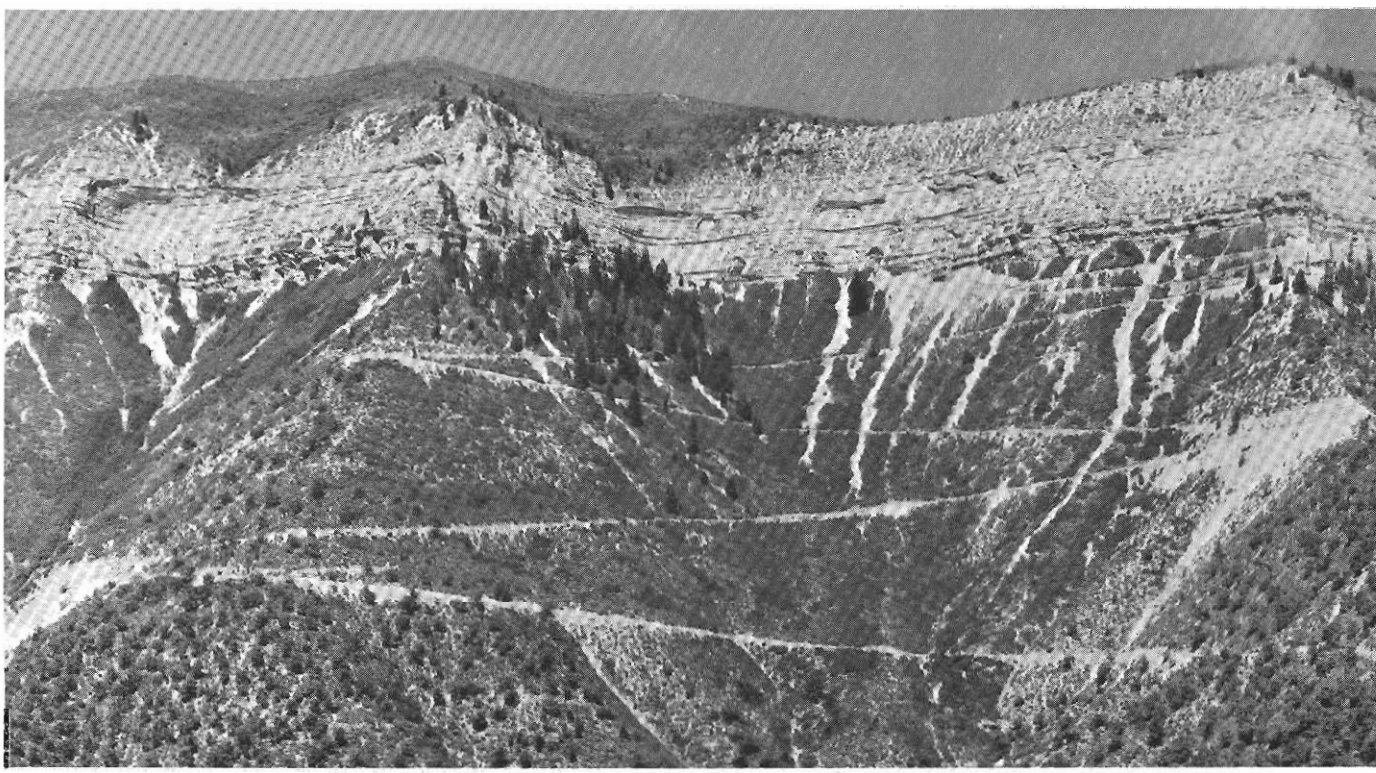
Where there are no known mineral values and if the property is being acquired by payment of full value, the mineral interest should be transferred to the purchaser. As a corollary to this, *we recommend that, upon petition of the surface owner, mineral interests heretofore reserved should be sold to the surface owner at appraised market value if there is a determination that the land is not valuable for minerals.* However, the charge for the conveyance should not be less than the administrative cost to the Government.

Recognizing the pitfalls of reserved mineral interests, we have nonetheless concluded, after considering all factors, that the national interest requires a continued policy of reserving known valuable mineral interests. However, in addition to making provision for sale of previously reserved interests where land is not valuable for minerals, *we also recommend that upon a clear showing of need to unite the surface and subsurface titles in order to permit development of the surface, surface owners should be allowed to acquire valuable mineral interests at their appraised market value.*

Under existing laws, there are a variety of provisions for reservation of minerals. Some, such as the Stockraising Homestead Act [37] and the Public Lands Sale Act of 1964,[38] require reservation of *all* mineral interests. We believe this to be poor policy since reserved interests constitute clouds on title which frequently hinder later shifts of such properties to higher uses. This has required individual relief statutes in order to permit a surface owner to use his property even though there is no known mineral and little likelihood of any interference. Similarly, land that was once agricultural has become suburban residential land for expanding communities in which it would be impractical to develop a mineral deposit in most cases.

There are over 62 million acres of land, the surface of which is in non-Federal ownership, in which the Federal Government holds reserved mineral interests. With respect to those minerals subject to leasing, exploration and development is permitted only with the consent of the United States. However, no such

[37] 43 U.S.C. § 299 (1964).
[38] 43 U.S.C. § 1424 (1964).



The Piceance Basin of Colorado, Utah and Wyoming contains most of the known oil shale deposits (shown in the upper strata) in the United States. These reserves constitute a tremendous energy resource.

consent is required for most of the reserved interests in those minerals covered by the General Mining Law of 1872.[39] Present law is totally inadequate to provide proper consideration of the legitimate interests of surface owners.

In order to permit all concerned to have a clear understanding of the manner in which reserved mineral deposits can be explored and developed, *we recommend enactment of statutory guidelines under which the Secretary of the Interior would establish regulations providing that no mineral activity is permitted without his approval and without the assurance of appropriate compensation for affected surface resources, values, and uses.* Provision should be made for judicial determination if the parties cannot agree on compensation. Such a law should reserve to Congress approval of any mineral activity in areas such as highly industrialized or concentrated residential communities or those containing high quality scenic, recreational, or historical values. Likewise, exploration for and development of reserved minerals should not be permitted if such activities would be inconsistent with local zoning.

[39] n. 1, supra.