# **ARTICLE: NATURAL ENVIRONMENTS AND NATURAL RESOURCES: AN ECONOMIC ANALYSIS AND NEW INTERPRETATION OF THE GENERAL MINING LAW.**

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**Text**

**[\*1133]** INTRODUCTION

Seven hundred and twenty-five million acres, an area the size of India, are owned by the United States government. This vast public domain, mostly located in twelve western states, [[1]](#footnote-2)1 contains some of the most prized natural environments in the United States. The Grand Canyon, the National Parks, the Grand Tetons, and all of the National Forests, to mention only a few, are located on these federal lands. [[2]](#footnote-3)2 These lands also contain the richest natural resource deposits in the United States. [[3]](#footnote-4)3 Accordingly, they have frequently **[\*1134]** been the subject of conflict and competition between those who want to develop them for their natural resources and those who want to preserve them. These controversies are often characterized as conflicts between developers and conservationists, [[4]](#footnote-5)4 but all of us have a stake in adequate natural resource development and in appropriate conservation of the public lands.

The general mining law [[5]](#footnote-6)5 is frequently at the center of these controversies. This federal statute is a relic of an earlier age. Enacted in 1872, [[6]](#footnote-7)6 it was the product of a national policy that strongly favored the conversion of the federally owned public lands into private ownership. Today, this law governs the disposition of most of the mineral resources found on the public lands. In the eleven decades since its enactment legislative amendments have withdrawn some minerals from its control: The "fuel and fertilizer" minerals, such as coal, ***oil***, gas, and potash, are subject to disposition only pursuant to the Mineral Leasing Act of 1920; [[7]](#footnote-8)7 The "common varieties," such as building stone, sand, and gravel are subject to disposition primarily by sale pursuant to the Materials Act of 1947. [[8]](#footnote-9)8 The rest of the mineral resources of the public lands, the so-called hard rock minerals, however, are still subject to disposition under the general mining law. Among these are minerals essential to the economy and the security of the United States, including gold, silver, nickel, uranium, molybdenum, and cobalt. [[9]](#footnote-10)9

The general mining law is an invitation to prospectors to enter the public lands and search for mineral deposits. [[10]](#footnote-11)10 The successful **[\*1135]** prospector who discovers a valuable mineral deposit is entitled to "locate" [[11]](#footnote-12)11 a mining claim and, if the claim is valid, to patent the claim. A patent is a deed from the United States conveying a portion of the public domain. For a claim to be valid, it must be both supoorted by a discovery and located in accordance with the procedural requirements of the mining law. [[12]](#footnote-13)12

Questions about the validity of mining claims arise in three contexts: (1) in disputes between rival claimants to the same land, (2) in proceeding the government initiates to contest a claim and clear its title to the claimed land, and (3) in proceedings the miner initiates to obtain a patent for his claim. This Article will not consider disputes between rival claimants, because their resolution affects only the rivals' right to possession *inter sese,* and not the title or interest of the United States. This Article is concerned exclusively with claims to mining law entitlements that may result in divesting the United States' title to part of the public domain, the second and third of the contexts enumerated above. The discussion that follows, however, is limited almost entirely to the mining claimant's entitlement to a patent. This limitation avoids repetition, because the applicable legal standard is exactly the same whether validity is questioned in a patent proceeding or a government-initiated contest. [[13]](#footnote-14)13

The thesis of this Article is that the mining law is ill-suited to perform the tasks presently demanded of it, and accordingly should be repealed and replaced with a law more responsive to contemporary concerns. Short of repeal, a reinterpretation of the law to reflect current public land policies would substantially reduce the wastefulness of the law. These policies require responsiveness to the public interest in the disposition of public land. This construction of the statute can be reached by interpreting the discovery requirement of the mining law to condition the validity of mining claims on a showing that the reasonably anticipated revenue from mining the claims is at least equal to the full social cost that will be incurred in mining them.

The analysis presented here has three parts. Part I outlines the **[\*1136]** mechanics of the operation of the mining law and appraises and critiques the law's efficienty. [[14]](#footnote-15)14 Part II analyzes the history and economic rationality of the present interpretation of the most important concept of the mining law -- discovery. Finally, Part III proposes a new interpretation of the mining law.

I. AN APPRAISAL AND CRITIQUE OF THE MINING LAW

An appreciation of the operation of the mining law requires at the outset a recognition that it is a subsidy. [[15]](#footnote-16)15 Its purpose is to encourage citizens of the United States [[16]](#footnote-17)16 who wish to engage in mineral exploration. [[17]](#footnote-18)17 The law accomplishes its purpose by transferring wealth, in the form of minerals and the land in which they are found, to those who discover valuable mineral deposits and otherwise satisfy its requirements. The discovered minerals are transferred from public ownership to private ownership without payment or royalty of any kind. Only a token payment [[18]](#footnote-19)18 is charged for the transfer of the land in which the minerals are discovered. [[19]](#footnote-20)19

Thus, the mining law is nothing less than a codification of the rule of "finders keepers" for the mineral wealth of the federal public **[\*1137]** domain. This first part of the analysis begins by examining in broad outline the operation of this unique, if antiquated, law and then critiques the law, examining the costs it imposes on the public and the mining industry.

A. *The Operation of the Mining Law*

The discussion of the mining law of 1872 is best begun with a discussion of what is missing from it. One troubling absence is the lack of any definition of essential terms. The key to the mining law and the acquisition of entitlements under it is the *discovery* of a "valuable mineral deposit." [[20]](#footnote-21)20 The law, however, defines neither "discovery," "valuable," "mineral," nor "deposit." As a result, the mining law has become a fertile source of litigation. In many cases one of the issues, and often the controlling one, is the definition of an essential term.

Less predictably, this failure to provide definitions has probably been responsible, at least indirectly, for the longevity of the mining law. With only a few minor amendments, [[21]](#footnote-22)21 the mining law in force today is that enacted in 1872. Because the mining law does not define its terms it has proved sufficiently malleable not only to accommodate but also to serve as an instrument for the differing and sometimes contradictory policies that have evolved over time with respect to its proper application. Supporters of miners and the mining industry often bemoan the law's failure to provide "fixed, objective rules" [[22]](#footnote-23)22 and definitions, without seeming to recognize that but for this failure the mining law likely would have been repealed long ago. Indeed, one suspects that their true complaint is not with the mining law's capacity for adaptive change, but with the direction that change has taken; and not with the latitude that has been given to the courts and the Interior Department to interpret the mining law, but with the refusal of the courts and the Interior Department to interpret the mining law in the 1980's in the same way, and with the same bias in favor of mining, that they did in the 1880's. [[23]](#footnote-24)23

A second troubling absence is the failure to describe the paradigm from which the statute is derived: the lone miner wandering **[\*1138]** the public domain in search of minerals, using the technology of the pick and shovel. The law, like the technology of the nineteenth century miner for whom it was designed, is predicated on the existence of surface outcroppings of valuable minerals [[24]](#footnote-25)24 and thus presumes that the discovery of a mineral will be the initiating act of the mining claim. Indeed, the concept of discovery as the initial act of location was so compelling to the drafters of the mining law that no provision was made for the tenure of the prospector on the public domain prior to discovery. [[25]](#footnote-26)25 Thus, a literal reading of the law yields a conclusion that in advance of discovery the prospector has no rights in the public domain, not even the right to exclude others from the spot where he is diligently working toward the discovery of minerals. This conclusion follows from the characterization of the prosepctor by the courts as a licensee of the United States. [[26]](#footnote-27)26 A license is not an interest in land, and the common law does not protect it from interference by either the grantor or third parties. [[27]](#footnote-28)27

It soon became apparent, however, that such a literal reading would eviscerate the mining law "since, as a practical matter, exploration must precede the discovery of minerals, and some occupation of the land ordinarily is necessary for adequate and systematic exploration." [[28]](#footnote-29)28 In response, the courts developed the doctrine of *pedis possessio.* [[29]](#footnote-30)29 *Pedis possessio* confers no enforceable property rights upon the prospector against the United States. The doctrine operates exclusively against rival claimants, by granting the prospector the limited right to "hold the place in which he may be working against all others having no better right, and while he remains in possession, diligently working towards discovery . . . to be protected against forcible, fraudulent, and clandestine intrusions upon his possession." [[30]](#footnote-31)30

**[\*1139]** Three requirements must be satisfied to trigger the application of the doctrine. [[31]](#footnote-32)31 First, the claimant must be in actual physical possession of the ground. Constructive possession will not suffice. [[32]](#footnote-33)32 Second, the claimant must be engaged diligently in exploration for minerals. Third and finally, the claimant must seek to exclude other rivals from entering the claim. The senior claimant need not use or threaten force to exclude others. A statement will suffice if it demonstrates that the senior claimant does not acquiesce to the entry. [[33]](#footnote-34)33

Because the doctrine of *pedis possessio* tends to undermine the competition mandated by the mining law, courts have sought to tailor its requirements to prevent abuse by those who seek to "hold vast amounts of land by merely claiming it without doing the work required." [[34]](#footnote-35)34 *Ranchers Exploration & Development Co. v. Anaconda Co.,* [[35]](#footnote-36)35 is illustrative. Anaconda had located hundreds of mining claims encompassing more than five square miles. Anaconda employed roving armed guards to prevent Ranchers Development from exploring and locating competing claims. When Ranchers learned that the area from which it had been excluded overlay a rich beryllium field, it brought suit to establish its rights. Anaconda **[\*1140]** defended in part on the ground that it was in *pedis possessio* at the time of the attempted entry by Ranchers, and therefore, had a right to exclude Ranchers from the disputed territory. The court rejected Anaconda's *pedis possessio* claim, concluding that Anaconda was not in actual occupancy and was not diligently working toward the discovery of minerals:

*It cannot be accepted that the guns of the defendants could be substitutes for picks, shovels or drills or for proceeding diligently with discovery,* or that roving guards patrolling several square miles of desert could be in actual occupancy for the purpose of discovery within the meaning of the doctrine. [[36]](#footnote-37)36

While conceding the necessity of the doctrine of *pedis possessio,* the court in *Ranchers* thus sought explicitly to limit the abuses to which it could be subjected.

A third troubling absence is the mining law's failure to specify its procedural requirements in any meaningful detail. Discovery, although the *sine qua non* of a valid mining claim, is not itself sufficient to validate the claim. Once a discovery has been made, the claimant must complete a series of procedural steps, called the acts of location, in order to validate and hold the claim. As a general matter, the mining law does not specify the acts of location but instead incorporates them by reference from state law.

State regulation and the regulation of the mining districts preceded the enactment of the general mining law. Gold was discovered in California in 1848, and by 1849 the gold rush had started in earnest. During the almost two decades between the discovery of gold and the enactment of the first federal mining law, [[37]](#footnote-38)37 the miners formed themselves into mining districts and made provision for their own governance. A romantic account of this period appears in an 1878 case:

The discovery of gold in California was followed, as is well known, by an immense immigration into the State, which increased its population within three or four years from a few thousand to several hundred thousand. The lands in which the precious metals were found belonged to the United States, and were unsurveyed, and not open, by law, to occupation and settlement. Little was known of them further than that they were situated in the Sierra Nevada mountains. Into these mountains the emigrants in vast numbers penetrated, occupying the ravines, gulches, and canons, probing the earth in all directions for the **[\*1141]** precious metals. Wherever they went, they carried with them that love of order and system and of fair dealing which are the prominent characteristics of our people. In every district which they occupied they framed certain rules for their government, by which the extent of ground they could severally hold for mining was designated, their possessory right to such ground secured and enforced, and contests between them either avoided or determined. [[38]](#footnote-39)38

The mining law not only ratified the regulations of these districts and the states, it also recognized their prospective effectiveness insofar as they were compatible with the policies and basic requirements of the mining law. [[39]](#footnote-40)39 The mining law thus delegated authority to the states to supplement its procedural requirements.

Each of the western states has exercised this delegated authority by enacting statutes which typically specify both the acts of location that must be performed to perfect a valid mining claim and the order in which those acts must be performed. [[40]](#footnote-41)40 These statutes should not be read literally, however. So long as a miner completes all of the required acts of location before the rights of third parties intervene, it is immaterial whether he performed them in a sequence other than the one specified. [[41]](#footnote-42)41

Further, the courts have generally interpreted these statutes as requiring only substantial compliance. [[42]](#footnote-43)42 The effect of this interpretation **[\*1142]** is a tendency to favor the senior over the junior locator. This bias is consistent with the purpose of the mining law to reward prospectors for taking the risk inherent in the search for minerals. The senior locator is the one who has discovered the valuable claim, [[43]](#footnote-44)43 while the junior locator is seeking to take advantage of some technicality to obtain the minerals without having taken the risk. [[44]](#footnote-45)44 To permit the junior locator to achieve his objective would create a disincentive for future exploration.

The acts of location fall into three categories: first, those designed to provide actual notice to prospectors exploring in the area; second, those designed to provide record notice to those interested in ascertaining the existence of claims and the status of title to the public domain; and third, those designed to demonstrate the good-faith intent of the locator to exploit his claim for its mineral values.

The first category includes the two requirements of posting a notice of location and staking the claim. While the degree of detail required varies from state to state, [[45]](#footnote-46)45 the posted notice of location is simply a statement by the claimant, placed conspicuously on the claim, that he intends to appropriate the ground under the mining law. The staking procedures require that the boundaries of the claim be marked in such a manner that they can be "readily traced" on the ground. [[46]](#footnote-47)46 Because the purpose of the stakes and posted location notice is to impart notice to other prospectors, their function is less important (and the claimant is not required to maintain them) once record notice has been given. [[47]](#footnote-48)47

The second category of acts of location (those designed to give record notice of the claim) include the interrelated recording requirements **[\*1143]** of the mining law and the Federal Land Policy and Management Act [FLPMA] of 1976. [[48]](#footnote-49)48 While "[t]here is no requirement of recording a location notice" under the general mining law, [[49]](#footnote-50)49 each western state has adopted regulations requiring that the miner do so. These notices, or location certificates as they are commonly called, must be recorded in the county in which the claim is situated. The required content of the certificate varies from state to state, but at a minimum it must "contain the name or names of the locators, the date of the location, and such a description of the claim or claims located by reference to some natural object or permanent monument as will identify the claim." [[50]](#footnote-51)50

This system of decentralized recording proved inadequate. First, the record was unreliable. Even though state statutes required that a location notice be recorded, the failure to do so did not always work a forfeiture of the claim. [[51]](#footnote-52)51 Thus, one who had actual or, presumably, inquiry notice of the claim was not entitled to rely on the public records. [[52]](#footnote-53)52 In addition, courts construed the recording requirement, as they did the staking and posting requirements, in favor of the senior locator. As a result, the courts were quite lenient in judging the adequacy of the description contained in the recorded notice. In *Dennis v. Barnett,* [[53]](#footnote-54)53 for example, the court held that a general description of a claim, including its dimensions in relation to a monument "on the north side of the Mojave river about 400 yards from the Union Pacific track and in the Cave Canyon Mining District" was adequate. [[54]](#footnote-55)54 A record built on such imprecision was of only limited use. Further, many matters affecting the validity of a claim did not have to be recorded in the county records. For example, the county records did not show whether a contested claim had been declared null and void, patented, or limited because of conflicts with other prior claims. [[55]](#footnote-56)55 These matters **[\*1144]** could only be determined by an examination of the records maintained by the Bureau of Land Management (BLM).

While the absence of a centralized and comprehensive federal record presented some problems for the miner, these problems were not severe. [[56]](#footnote-57)56 Whether he was considering the purchase of an existing claim or the location of an original one, the miner could be expected to make a physical inspection of the area involved. Because the continued validity of a claim required the performance of annual assessment work, it would be unlikely that his physical inspection would fail to reveal the existence of competing claims.

The federal government, however, was in a much more difficult position. While the mining claimant was usually interested in one or a few claims, the government needed to know the status of thousands or even tens of thousands of claims in order to make informed decisions and land use plans for the public lands. "The potential existence of unknown mining claims made it difficult for federal land managers to take actions affecting federal lands for fear of interfering with the rights accorded to claimants under the federal mining laws." [[57]](#footnote-58)57 In addition, the government could not rely on the failure to perform assessment work revealed by a physical inspection of the area because, while such failure rendered the claim subject to relocation by a rival claimant, it did not invalidate the claim as against the United States. [[58]](#footnote-59)58

FLPMA, enacted in 1976, responded to this problem by providing for an annual federal filing requirement and by declaring that "[t]he failure to file such instruments as required . . . shall be deemed conclusively to constitute an abandonment of the mining claim." [[59]](#footnote-60)59 The primary purpose of the filing requirement was to assist **[\*1145]** the Interior Department in making land use plans for the public domain. The Interior Department was seriously handicapped in carrying out this planning function by the lack of a centralized, current, and accurate public record of mining claims' status. [[60]](#footnote-61)60

Although the Interior Department was not an early supporter of the filing provisions of the FLPMA, [[61]](#footnote-62)61 it enforced them vigorously once they were in effect. In an early solicitor's opinion the Department of the Interior concluded that the failure to comply punctually with FLPMA rendered a claim void. [[62]](#footnote-63)62 This opinion goes further than FLPMA requires, because it concludes that the claim is void not just against the United States, but presumably against rival claimants. Congress designed the FLPMA filing provisions for the benefit of the government in its land use planning. There is no compelling reason why they should be given effect in disputes between rival claimants, at least in the absence of prejudice to one claimant resulting from the other's failure to file. Nevertheless, the Interior Department views the FLPMA filing requirements the way courts traditionally have viewed statutes of limitation, and applies them mechanically without much concern for the equities. [[63]](#footnote-64)63

This rigidity is illustrated by *Locke v. United States.* [[64]](#footnote-65)64 In the 1979-1980 assessment year [[65]](#footnote-66)65 the claimants had extracted and sold gravel and building materials worth more than one million dollars from the claims in question, and had earned their livelihood from them for the previous twenty years. Notwithstanding the claimants' obvious intention to hold the claims, the Interior Board of **[\*1146]** Land Appeals (IBLA) held them "abandoned and void" [[66]](#footnote-67)66 under FLPMA because the affidavit of assessment work was filed one day late. [[67]](#footnote-68)67

FLPMA has effected a remarkable transformation of mining claim records. Since its enactment, the "chaos" [[68]](#footnote-69)68 that formerly existed has been replaced by an orderly and computerized registration system. The BLM enters each FLPMA filing it receives into its computerized records, which are then used to generate comprehensive microfiche indices of all unpatented mining claims. These indices include a tract index (called a geographic index by the BLM) which divides the public domain into quarter sections [[69]](#footnote-70)69 and shows all claims made to any lands situated within each division. Using these indices, it is a simple matter to ascertain the existence of all claims in a given locale based just on the legal description of the land in question. The BLM also indexes the claims by the serial number assigned to the claim by the BLM, the claimant's name, and the claim name. The microfiche indices are updated periodically and are available for sale to the public and use by the public in BLM state offices. [[70]](#footnote-71)70

The third category of acts of location (those designed to demonstrate the good faith of the miner) includes the requirements of discovery work and assessment work. [[71]](#footnote-72)71 State law requires discovery **[\*1147]** work, and federal law requires assessment work. The state law discovery *work* requirement should not be confused with the federal law *discovery* requirement. [[72]](#footnote-73)72 "A locator may have a [valid discovery] although technically he had no discovery shaft." [[73]](#footnote-74)73 For example, if a miner discovered a valuable gold deposit on the surface of the ground or on a stream bottom, the discovery requirement of the federal mining law would be satisfied, but the discovery *work* requirement of state law (if applicable) would not be satisfied because no shaft or pit had been dug.

At one time every western state had a discovery work requirement. While the requirements varied, every state law prescribed that a shaft or pit be drilled or excavated on each claim. [[74]](#footnote-75)74 One of the primary purposes of the requirement was to demonstrate the good-faith intent of the miner to work the claim and not hold it for speculation. [[75]](#footnote-76)75 The depth of the shaft or pit required by state law, typically ten feet, was unrelated to the depth at which minerals were likely to be found. The state law discovery work requirement thus led to the ridiculous spectacle of shallow pits being dug on claims that contained minerals, if at all, at depths many hundreds of times that of the discovery pits. [[76]](#footnote-77)76 The recognition of the futility of the requirement and its irrelevance to meaningful exploration, combined with the substantial damage that it has caused the environment, [[77]](#footnote-78)77 has resulted in a movement to repeal the requirement. [[78]](#footnote-79)78

The federal assessment work requirement is subject to the same **[\*1148]** criticisms as the state discovery work requirement. [[79]](#footnote-80)79 The assessment work requirement, however, remains very much alive. The origin of the assessment work requirement is the mining law itself. [[80]](#footnote-81)80 The purpose of the requirement, like the discovery work requirement under state law, is to make the mineral claimant "demonstrate that he was holding [the claim] in good faith and to further advise others interested in the same ground that the claim was being asserted." [[81]](#footnote-82)81 To satisfy the requirement, the "work must be of such a character as directly tends to develop and protect the claim and to facilitate the extraction of minerals." [[82]](#footnote-83)82 Qualifying work includes digging tunnels, [[83]](#footnote-84)83 discovery shafts, [[84]](#footnote-85)84 prospect holes, [[85]](#footnote-86)85 drill holes; [[86]](#footnote-87)86 developing a water supply to be used in mining the claim; [[87]](#footnote-88)87 and building a road to be used in hauling ore from the claim. [[88]](#footnote-89)88 Although the cases are not entirely consistent, most courts hold that to qualify the work must result in some physical change to the premises. [[89]](#footnote-90)89 Assessment work, like discovery work, is not necessarily related to actual development of the claim. As will be seen in the next section, the assessment work requirement imposes a staggering cost on the mining industry and the public with very little compensating benefit.

B. *The Inefficiency of the Mining Law*

The present section evaluates the efficiency of the mining law **[\*1149]** as a whole. Parts II and III discuss related questions, but focus on the discovery requirement of the mining law.

The mining law as a whole is wasteful in four major respects. First, the law excessively rewards prospecting. A reward is excessive when it is greater than the amount that a competitive market would establish to induce the activity in question. For reasons developed later in this article, [[90]](#footnote-91)90 it is at beat unlikely and probably impossible that an efficient market could be developed to allocate the resources that are contained in the public lands of the United States. If we assume, however, that markets achieve efficient allocations of resources, then in situations such as the present one, in which markets either do not or cannot operate, the law ought to simulate the result that would be achieved by a hypothetical [[91]](#footnote-92)91 market operating in that situation. The discussion that follows compares the mining law with the private rewards market, the outer continental shelf ***oil*** and gas leasing system, and the law of salvage. This comparison reveals that the mining law, rather than simulating the operation of a market, is seriously out of sync with any reasonable prediction of market behavior. [[92]](#footnote-93)92

The private reward system may seem an unlikely subject for comparison to the mining law. Nevertheless, the classified advertisement offering a reward for the return of a lost wallet and its contents is analogous to the mining law. [[93]](#footnote-94)93 In both cases an offer is made to the public by means of a publication or broadcast. In one case the publication is by a newspaper, in the other by a statute. In **[\*1150]** both cases the purpose of the publication is "to excite many people to action," [[94]](#footnote-95)94 specifically, to find a thing whose present whereabouts are unknown to the offeror. In both cases, the offer may be accepted only by performance, and in both cases the completion of performance entitles the offeree to a judicially enforceable property right: [[95]](#footnote-96)95 in the reward system to the sum offered for return of the lost article, in the mining law to the minerals and the land containing them.

The significant difference between the mining law and the offer of reward (and an indicator of the mining law's excessiveness) is the amount of the reward. The person who loses his wallet does not offer the wallet and all the contents for its return. While the amount of the reward might increase periodically to attract more resources to the search, the reward will never equal much less exceed the value of the object sought. Not so with the mining law. In order to "excite" people to find minerals, the law offers a reward that exceeds the value of the object sought: the finder keeps the minerals, and can purchase the land in which they are found for less than market value. [[96]](#footnote-97)96

The federal leasing program for ***oil*** and gas deposits located on the outer continental shelf (OCS) is also analogous to the mining law. Offshore ***oil*** exploration, like onshore mineral exploration, involves high search costs, significant uncertainty concerning the presence of mineral in any given location, and the additional risk (even assuming that a mineral deposit is located) that high extraction and transportation costs will make exploitation of the deposit uneconomic. Notwithstanding these similarities, OCS ***oil*** development has been accomplished by means of a competitive system that unlike the mining law, rewards the successful prospector with substantially less than the full value of the minerals discovered, and, of course, with no title at all to the ocean floor where they are found. [[97]](#footnote-98)97

The offshore ***oil*** and gas lessee pays a fixed royalty to the government for the privilege of exploring and exploiting these deposits. This royalty, typically 16-2/3%, is calculated as a percentage of the value of the minerals produced from the leasehold. [[98]](#footnote-99)98 The lessee's take is further reduced by the government's practice of awarding **[\*1151]** OCS leases by competitive bidding. The lessee whose bid offers the highest bonus is awarded the lease. [[99]](#footnote-100)99 The bonus is payable in addition to the royalty. [[100]](#footnote-101)100 Although the OCS leasing system undoubtedly has resulted in fewer bidders, presumably the demand for OCS leases would be greater if they cost less, the leasing system has not resulted in a lack of potential lessees willing to explore for ***oil*** and gas. Indeed, the demand for these leases far exceeds the supply that the government has made available, and critics of the leasing system complain not that the government takes too much and stifles incentive for further exploration and development, but that the government takes too little. [[101]](#footnote-102)101 The Outer Continental Shelf Lands Act Amendments of 1978, [[102]](#footnote-103)102 which authorize a variety of alternative leasing techniques designed to increase the government's share, [[103]](#footnote-104)103 were enacted partly in response to this criticism. [[104]](#footnote-105)104

Finally, the law of salvage, which also is analogous to the mining law, governs the relationship between the owners of sunken or imperiled vessels at sea and their rescuers. The salvage award is based on some percentage less than the full value of the goods saved. Experience with this has proven that an award of less than the whole is sufficient to attract an efficient amount of resources to the salvage business. [[105]](#footnote-106)105

Not only is the reward offered to prospectors by the mining law too much, it is much too much. The social value of the prospector's find is not the value of the minerals discovered, but rather **[\*1152]** "the [much smaller] benefit of recovering the property before the next finder who would have come along." [[106]](#footnote-107)106 *Berto v. Wilson* [[107]](#footnote-108)107 furnishes an interesting example. Berto sued to quiet his title to certain uranium mining claims. In 1955 the Atomic Energy Commission (AEC) was engaged in aerial explorations in Nevada designed to identify and locate radioactive anomalies which revealed the location of potentially valuable uranium deposits. The AEC gave notice that a completed map of the anomalies would be posted on October 17, 1955, at the post office in Tonopah, Nevada. Wilson had observed an AEC exploration plane in the vicinity of Austin, Nevada, and "gambled" [[108]](#footnote-109)108 that the AEC map would show an anomaly near there. On the morning of the 17th, Wilson stationed himself near Austin, while his partner Woods waited in Tonopah for the anomaly map to be posted. As soon as the map was posted, Woods telephoned Wilson and gave him the precise location of the anomaly. Wilson had gambled correctly. The anomaly was located near Austin, and Wilson raced to it at seventy-five miles per hour. [[109]](#footnote-110)109

Berto, meanwhile, had waited in Tonopah for the map to be posted. He had stationed a plane at the Tonopah airport, and as soon as the map was posted he took off for the designated area. Berto suffered time-consuming mechanical difficulties, however, and Wilson beat him to the site of the anomaly by a few hours.

Because Wilson was the first to reach the claims, the court concluded that title should be quieted in him and that he was entitled under the mining law to all of the uranium located within the claims as well as the right to purchase the land. The social value of Wilson's gamble and seventy-five mile per hour drive certainly was much lower than the economic value of his claim. [[110]](#footnote-111)110 Neither Berto nor Wilson found the deposit; the AEC did. While Wilson arrived at the scene first, Berto was only a few hours behind. The effect of the mining law was to induce investment by Berto and Wilson in fast trucks and airplanes in which to race to the deposit, and thus to encourage not exploration but waste. [[111]](#footnote-112)111

Second, the mining law is wasteful because it discourages socially desirable prospectiing by failing to provide adequately for the **[\*1153]** status of the prospector on the public domain prior to discovery, relying instead on the judicially created doctrine of *pedis possessio.* [[112]](#footnote-113)112 Because the courts are unable to monitor exploration activities on the public domain to make sure that the protection of *pedis possessio* is extended only to good faith prospectors, they have severely limited the scope of the doctrine. Thus, courts generally hold that *pedis possessio* protects only those claims on which work leading toward discovery is actually being performed. [[113]](#footnote-114)113 This limitation reflects judicial concern that the doctrine might be abused by those who want to obtain vast tracts of public domain for speculative [[114]](#footnote-115)114 and other nonmining purposes. This concern is well founded. [[115]](#footnote-116)115 The courts have also expressed concern that without such a limitation **[\*1154]** the mining law might permit leisurely and inefficient prospectors to exclude hard-working and efficient ones from large areas of the public domain. [[116]](#footnote-117)116

Although it is necessary, this limitation of *pedis possessio* is itself the cause of significant inefficiency. Modern exploration methods often require the exploration of large tracts as a single block:

The types of minerals being sought by exploration of the block claims, the form and circumstances in which the substances are found in nature, the great depth at which they may exist, and the complexity and expense of the means necessarily used to discover and produce them require comprehensive area development as distinguished from the historical means of working individual claims. [[117]](#footnote-118)117

While they concede the legitimate needs of the mining industry, courts have tended to preserve the traditional limitations. [[118]](#footnote-119)118 Consequently, an overall plan of exploration that requires working systematically from one claim to another will not satisfy the requirements of the doctrine and will not afford the prospector the needed security during the exploration stage. [[119]](#footnote-120)119 Thus, *pedis possessio,* as applied, tends to discourage the use of the most efficient exploration techniques.

The limitations placed on the doctrine of *pedis possessio* also discourage desirable exploration. Because *pedis possessio* does not protect the prospector on a block basis, it increases the risk that a significant portion of the block will be lost to claim jumpers during the exploration stage. As a result, a large scale prospector may require higher returns to compensate for the risk posed by claim jumpers. [[120]](#footnote-121)120 The need for higher returns to counterbalance this **[\*1155]** higher risk can result in a failure to explore for deposits and pursue geological indications that otherwise would be attractive. These limitations and the waste that they cause could be avoided if Congress would amend the mining law to permit the Interior Department to issue exploration permits. These permits could give the prospector the exclusive right to explore a tract of economical size for a specified period of time on condition that the exploration is conducted diligently. Because the Interior Department could monitor exploration activity, the judicially imposed limitations on *pedis possessio* would be unnecessary.

Third, the mining law is wasteful because it encourages prospectors and others who pretend to be prospectors to cloud the government's title to the public domain with millions of invalid mining claims. [[121]](#footnote-122)121 As noted previously, FLPMA cured the problems attendant upon the failure of the law to provide for a centralized filing system. FLPMA, however, did not impose any substantive restrictions on the filing of claims. [[122]](#footnote-123)122 Nevertheless, the filing of a claim has important consequences for the government. [[123]](#footnote-124)123 Each claim is a cloud on the government's title. If the government wants to withdraw a particular tract from the operation of the mining law and devote it to some competing use incompatible with mining, it must first clear its title.

Clearing the government's title of the shadow cast by invalid mining claims presently of record is costly. In 1983, the most recent year for which statistics are available, there were 1,387,074 unpatented mining claims of record. [[124]](#footnote-125)124 In 1969, the Department of the Interior estimated that under the most favorable circumstances it would cost between fifty and one hundred dollars to clear title to each invalid claim then extant. [[125]](#footnote-126)125 On the basis of the 1969 estimates, **[\*1156]** and assuming five percent of the recorded mining claims are supported by a valid discovery, [[126]](#footnote-127)126 the cost of clearing the government's title to the invalid claims of record in 1983 would be between $ 65,886,000 and $ 131,772,000 in 1969 dollars. In 1985 dollars the cost would be twice as much. This sum represents the damage caused by the mining law's overly permissive attitude toward the filing of claims. This cost could be largely eliminated if the mining law were amended to require, as a condition to filing a claim, a statement by the claimant under penalty of perjury that the claim shows objectively verifiable evidence of value for mining.

Fourth, and finally, the mining law is wasteful because it encourages claimants to spend money on assessment work and to damage the public lands in circumstances where *any* corresponding public benefit is highly unlikely. As noted previously, the mining law conditions the validity of a claim prior to patent on the performance by the miner of $ 100 worth of assessment work annually. The failure to do the assessment work subjects the claim to cancelation by the government and relocation by rival claimants. [[127]](#footnote-128)127 Additionally, the failure to file an annual affidavit that assessment work has been performed renders the claim void under FLPMA. [[128]](#footnote-129)128 Based on the 1,387,074 claims of record in 1983, the total annual expenditure for assessment work is not less than $ 138 million. Assuming that assessment work has been performed at this level during each of the past ten years, the cumulative expenditure for assessment work during the period 1975 to 1985 exceeds $ 1.3 billion. If this level of assessment work continues for the next fifteen years until the end of the century, the total cumulative expenditure during the period 1975 to 2000 will exceed $ 3.4 billion.

This is just the beginning of the waste resulting from the assessment work requirement. On most claims, assessment work does not ultimately lead to the production of minerals. A random examination of 240 mining claims by the Government Accounting Office revealed that only one claim was being mined and only three had ever been mined. [[129]](#footnote-130)129 Indeed, "much of the [assessment] work has **[\*1157]** nothing to do with minerals. The costs result from the need of prospectors to secure some priority and semblance of tenure in advance of actual prospecting, or to provide an advertising gimmick for the peddling of shares." [[130]](#footnote-131)130 This means that the more than $ 3.4 billion dollars expected to be spent or already spent on assessment work in the last quarter of this century will serve very little or no useful purpose.

Moreover, assessment work, while it need not be performed on the claim itself, must generally be performed on the ground. [[131]](#footnote-132)131 Assuming that only half the assessment work performed results in some damage to the land on which it is performed, and assuming further that the land can be rehabilitated at a cost equal to the cost of the assessment work, [[132]](#footnote-133)132 then the cost of correcting the damage caused by the unnecessary assessment work during the past ten years is more than $ 600 million. The cost of correcting the harm to be done during the next fifteen years will exceed $ 1 billion. The total cost of performing the annual assessment and correcting the degradation it has and will cause during the period from 1975 to 2000 will exceed five billion dollars, again on the assumptions stated.

The wastefulness of the mining law argues for its repeal. Yet the law seems indestructible. Despite urgings from the Secretary of the Interior, [[133]](#footnote-134)133 recommendations from the Public Land Law Review Commission, [[134]](#footnote-135)134 and the predictions of commentators, [[135]](#footnote-136)135 the law survives. If we accept that in the near future the mining law will continue in its present form, the function of the courts in interpreting the law becomes crucial.

The inefficiency of the law gives rise to two propositions that ought to govern its interpretation. First, courts should not use the mining law as a general land law, but should award entitlements under the law only when it is likely that the entitlement will actually result in mining. [[136]](#footnote-137)136 A necessary implication of this proposition **[\*1158]** is that even though the most efficient use of certain public lands might require their transfer to private ownership for a nonmining purpose, it would be inappropriate to use the mining law to effectuate the transfer. Second, courts should interpret the mining law to minimize the waste resulting from its application. A necessary implication of this proposition is that sometimes courts should deny entitlements under the mining law even in circumstances when mining will almost certainly occur. Part III of this Article examines the susceptibility of the mining law to an interpretation that incorporates these principles.

II. THE EVOLUTION OF THE DISCOVERY STANDARD UNDER THE MINING LAW: THE PROBLEM WITH PRUDENCE

The biggest problem with the mining law is that the courts and Interior Department have construed it in a way that leaves little room for consideration of the public interest in awarding mining entitlements. The problem began with a small mistake. Early on the Interior Department decided that mining law entitlements should be awarded on the basis of private rather than public utility. If a prudent man would be justified in spending his time and money with a reasonable prospect of success in developing a paying mine on the claimed land then the entitlement would be granted. Whether the public interest was better served by another mine or by continued public ownership of an unspoiled natural environment was not considered. This was an easy mistake, because in the late nineteenth century when these decisions were made the public interest so strongly favored mining and other development of the public lands that it would have seemed odd to consider development decisions on a case by case basis. The public interest has changed however, and in some cases is no longer furthered by development of the public lands. Unfortunately, rather than admit their early mistake and correct it with a new interpretation of the mining law, the courts and Interior Department have clung to their original interpretation based on individual utility and attempted, with various degrees of success, to avoid its most outrageous consequences through "refinements" and exceptions.

Section A of this Part traces the development of the prudent man rule in the mining law. Section B develops the reasons why prudence is an unsatisfactory standard for decisions affecting the public lands, and section C describes and criticizes the marketability **[\*1159]** rule, which attempts to solve the problems with prudence by refining the prudent man rule and stating it with greater precision.

A. *The Rule of Prudence*

*Castle v. Womble,* [[137]](#footnote-138)137 the fountainhead of the law of discovery, introduced the rule of prudence into the mining law in 1894. *Castle* concerned a conflict between an agricultural and a mineral entry, and the issue for decision was whether the mineral claim was supported by a valid discovery of a valuable mineral deposit. The Secretary held that

where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine, the requirements of the statute [with respect to discovery] have been met. [[138]](#footnote-139)138

This holding became known as the prudent man rule, and in 1905 the Supreme Court approved it in *Chrisman v. Miller.* [[139]](#footnote-140)139 The prudent man rule of *Castle* facilitated the acquisition of entitlements under the mining law by permitting their transfer to mining claimants notwithstanding the existence of high levels of uncertainly concerning both (1) the intent of the claimant to develop the claim for mining and (2) the existence within the claim of commercially exploitable deposits of mineral.

*United States v. Iron Silver Mining Co.* [[140]](#footnote-141)140 is illustrative of the Supreme Court's early indifference to the true intent of the mining claimant. The United States attempted to set aside two patents on the ground that the mining company had obtained them "upon false and fraudulent representations." [[141]](#footnote-142)141 One of the government's contentions was that the mineral claimants were motivated "as much by the existence of the valuable growth of timber on the land as by the existence of gold in the ground." [[142]](#footnote-143)142 The Court dismissed this contention, and concluded that "[a] prudent miner acting wisely in taking up a claim . . . would not overlook such circumstances, and *they may in fact control his action in making the location.*" [[143]](#footnote-144)143

The early courts were equally tolerant of uncertainty about the existence of commercially exploitable deposits of mineral. *Castle v.* ***[\*1160]*** *Womble,* for example, contemplates the issuance of a patent during the exploratory stage. The Secretary thought this necessary to encourage mining

[f]or, if as soon as minerals are shown to exist, *and at any time during exploration,* before the returns become remunerative, the lands are to be subject to other disposition, few would be found willing to risk time and capital in the attempt to bring to light and make available the mineral wealth, which lies concealed in the bowels of the earth . . . . [[144]](#footnote-145)144

The prudent man rule, therefore, rather than requiring that the acquisition of entitlements await the discovery of commercially exploitable mineral deposits, allows a patent to issue for a claim on which such deposits may ultimately be determined not to exist, and requires only a "reasonable hope" that a paying mine will be developed. [[145]](#footnote-146)145 The Department has repeatedly affirmed that the claimant is not required "to show the finding of ore of proven commercial value." [[146]](#footnote-147)146 Indeed, some decisions of the Department have indicated that the prudent man rule does not require a showing even that "the deposit is one which is '. . . *probably* capable of sustaining a paying mining operation.'" [[147]](#footnote-148)147

The liberal standard applied in discovery cases by the early decisions also extended to the type of evidence that the courts and the Interior Department received to establish compliance with that standard. [[148]](#footnote-149)148 They did not require direct and unequivocal evidence **[\*1161]** of discovery. Prospectors could show compliance based on an inference of discovery derived from such matters as a claim's proximity to other paying mines, [[149]](#footnote-150)149 its location in an established mining district, [[150]](#footnote-151)150 geological conditions in the area, [[151]](#footnote-152)151 discovery of mineral on adjacent lands, [[152]](#footnote-153)152 the "belief of mining men in th[e] region," [[153]](#footnote-154)153 or the opinion of geologists that a well known lode extends under the claim in question, although not yet disclosed on that claim. [[154]](#footnote-155)154

The capacity of the courts and Interior Department to tolerate high levels of uncertainty while converting public lands that the United States "holds in trust for all the people" [[155]](#footnote-156)155 into private entitlements may seem surprising to modern observers. Yet, *Castle v. Womble* and its "prudent man" rule were a product of their times. The case was decided in 1894. The broad reading it gave to the mining law was consistent with the probable intent of the law's drafters. In 1872, the same year the mining law was enacted, the Secretary of the Interior called on the Attorney General to render an opinion concerning whether public lands containing diamonds were subject to location under the mining law. [[156]](#footnote-157)156 The Attorney General concluded that they were, stating "*I think these acts ought to be most liberally construed, so as to facilitate the sale of such lands;* for in that way, and not otherwise, can they be made to contribute something to the revenue of the Government . . . ." [[157]](#footnote-158)157

The broad reading *Castle v. Womble* gave the mining law was also consistent with the Building Stone Act, [[158]](#footnote-159)158 an 1892 amendment to the mining law. The purpose of this Act was to broaden the scope of the mining law to include lands chiefly valuable for building stone. The Building Stone Act legislatively overruled *Conlin v.* ***[\*1162]*** *Kelley,* [[159]](#footnote-160)159 which had held that stone chiefly valuable for building material was not locatable. [[160]](#footnote-161)160 "Congress regarded that case as a departure from the liberal construction theretofore adopted by the Land Department, to such an extent as to demand legislative action disapproving the result thereof." [[161]](#footnote-162)161

Finally, and in a more profound sense, *Castle v. Womble* was a product of its time in that it reflected a strong tradition of public land policy designed to further the cause of national expansion and settlement. Certainly the standard of discovery introduced by *Castle v. Womble* resulted in the misappropriation of some public lands. That standard, however, also encouraged mineral exploration on the public domain and played a role in the settlement of the West. A contemporary perspective may too easily overlook the importance of this function. As unspoiled natural environments have become increasingly rare, the despoliation caused by early land laws has been increasingly deplored. But these same laws were also responsible for beneficial development, and may well have saved the country far more than they cost. [[162]](#footnote-163)162 As one commentator has noted,

Consider, for example, that as late as 1840 Russia had a "permanent" settlement on the northern California coast, which was abandoned because it was thought that the sea otter population, sought for its valuable fur, had been exhausted to the point of unprofitable further exploitation. Had Russia hung on for another decade until after gold was discovered in California, or had the American settlements of California been delayed for several decades, Russia might never have relinquished its territory. Are we better pleased today to have our country in our own hands, a little scarred from its rapid pioneer exploitation, or would we now prefer a less scarred countryside in the hands of another nation.? [[163]](#footnote-164)163

**[\*1163]** As long as the policy of the federal government continued in this tradition, *Castle v. Womble's* prudent man rule worked well. It is not a coincidence that the rule was developed in the context of a dispute between rival private claimants. In a dispute of this sort the land involved will surely be awarded to one party or the other; the only question is to whom. While the United States conceived of its role as owner of the public domain as little more than that of an escrow agent "pending transfer of title," [[164]](#footnote-165)164 the central concern, necessarily, was to dispose of the land pursuant to the proper statutory scheme. Whether the land should be disposed of at all, or whether it should continue in public ownership, was not a matter of significant concern.

Before *Castle v. Womble,* a number of courts had held that the subjective willingness of a claimant to use the land for a particular purpose was sufficient to determine which statutory scheme of disposition should apply. [[165]](#footnote-166)165 One of *Castle v. Womble*'s major contributions was that it introduced an objective basis on which to make this determination. *Castle* accomplished this by phrasing the rule in terms of what an objectively defined hypothetical prudent man would do under the circumstances, rather than what any particular mining claimant would do. [[166]](#footnote-167)166 If a prudent man would be justified in expending his time and effort to develop a mine, then an entry under the mining law was appropriate. Otherwise, an entry under some other public land law, such as the Homestead Acts, [[167]](#footnote-168)167 was required.

Indeed, it was the existence of these other land laws that created the need for an objective test of intent. Differences between the **[\*1164]** mining law and other donative public land laws offered, in some cases, a substantial incentive for fraud. [[168]](#footnote-169)168 Differences in the price charged for land, [[169]](#footnote-170)169 the qualifications of the claimant, [[170]](#footnote-171)170 the number of acres that could be claimed, [[171]](#footnote-172)171 and the number of claims that could be made, [[172]](#footnote-173)172 all might induce a claimant to misrepresent his true intention. The prudent man rule prevented this type of abuse more effectively and at less administrative cost than a subjective test of intent.

B. *The Retreat from Prudence*

Problems with the prudent man rule began to appear as the policy of the Federal Government changed from one of disposal of public lands to one of retention. While the prudent man rule could adequately prescribe how to dispose of land based on how it would be used after transfer, it was inadequate to determine whether that land ought to be transferred at all. What is prudent for a particular individual may not be in the best interests of other members of the community who are affected by the individual's decisions. [[173]](#footnote-174)173 Indeed, the Secretary in *Castle v. Womble* was able to articulate a rule of discovery in terms of prudence only because the public interest was assumed to favor disposition so strongly that there was no need to consider it explicitly. As courts and the Interior Department began, with some hesitation, to call the realism of this assumption into **[\*1165]** question, explicit consideration of the public interest began to appear in the decisions.

This change in public land law policy occurred gradually. The idea that the public welfare might best be served by a policy of management and retention rather than disposition emerged, [[174]](#footnote-175)174 and began to gather increasing numbers of supporters in the last quarter of the 19th century. In 1872, the same year that the mining law was enacted, Congress established Yellowstone National Park. [[175]](#footnote-176)175 In 1891 Congress enacted the Forest Reserve Act [[176]](#footnote-177)176 which created the predecessor of the present national forest system. Notwithstanding these early efforts, government policy in the first quarter of the twentieth century continued heavily to favor disposition of the public lands. In 1916, for example, the Stock-Raising Homestead Act (SRHA) was passed. [[177]](#footnote-178)177 The SRHA provided for the establishment of homesteads 640 acres in size on land that was "chiefly valuable for grazing and raising forage crops." [[178]](#footnote-179)178 The purpose of the SRHA was the privatization of the remaining public domain, so that the western states might have "more people, more homes and more property on the tax roles." [[179]](#footnote-180)179

The SRHA had an unexpected consequence. The lands that remained in public ownership when the SRHA was enacted in 1916 largely consisted of picked over remnants -- the deserts and the mountains of the west. Accordingly, even 640 acres were not enough to support a family. [[180]](#footnote-181)180 "It naturally followed that those who did not give up in despair did just what the other stockmen **[\*1166]** did -- grazed their stock on the public domain." [[181]](#footnote-182)181 The overgrazing brought about by the SRHA caused serious damage to the public lands.

The problem of overgrazing caused by the SRHA was worsened by the Depression. As livestock prices fell in the period between 1931 and 1933, stockmen increasingly relied on the free grazing offered by the public lands. [[182]](#footnote-183)182 By 1934 the devastation had become intolerable. In that year an act "To Provide for the Orderly Use, Improvement, and Development of the Public Range" was introduced in the House of Representatives. [[183]](#footnote-184)183

That act, which subsequently became known as the Taylor Grazing Act of 1934, [[184]](#footnote-185)184 had profound significance in effecting the change in public land policy from one favoring disposition to one favoring retention. The Act was partially responsible for the closing of the public domain. [[185]](#footnote-186)185 It caused vast areas of the public domain to be withdrawn from the operation of the various donative public land laws, such as the homestead acts and the SRHA. [[186]](#footnote-187)186 The Act accomplished this by authorizing the Secretary of the Interior to create grazing districts, impose grazing fees, grant grazing permits, and otherwise regulate grazing on the public domain. [[187]](#footnote-188)187 The Act did not itself close the public domain to further agricultural entries. It did, however, authorize the Secretary of the Interior to classify the remaining public lands. [[188]](#footnote-189)188 In late 1934 and early 1935, President Roosevelt, pending classification, withdrew from settlement all of the remaining public lands in the western states. [[189]](#footnote-190)189 Although these withdrawals were not intended to be permanent, they became so, thereby closing the public domain to agricultural entries. [[190]](#footnote-191)190 These withdrawals, however, did not affect entries under **[\*1167]** the mining law. [[191]](#footnote-192)191

The Taylor Grazing Act bears the name of its chief sponsor in the House of Representatives, Edward T. Taylor of Colorado. The radical shift in public land policy observable between the enactment of the SRHA in 1916 and its virtual repeal by the Taylor Grazing Act less than twenty years later is paralleled in microcosm by a similar change in Representative Taylor himself. This shift is worth pausing to examine, because the same forces that caused it are responsible for the current judicial and administrative dissatisfaction with *Castle v. Womble*'s prudent man rule. Taylor had long been intolerant of federal ownership of the western public lands, and as late as 1914 had declared that he was opposed "to having the resources of the West withheld from private ownership . . . and I cannot reconcile myself to believe that it is for the welfare . . . of our Western States to have our internal affairs governed by Weshington bureaus." [[192]](#footnote-193)192 Taylor had been a staunch supporter of the SRHA, and "was always to be found among the supporters of bills . . . which would tend to speed land into private ownership." [[193]](#footnote-194)193

By 1934, however, Taylor had been forced to concede the necessity of continued federal ownership and regulation of the public domain. He explained his sudden about-face in the following way:

[C]onservation of the public domain under Federal leadership [was necessary] because the citizens were unable to cope with the situation under existing trends and circumstances. The job was too big and interwoven for even the States to handle with satisfactory coordination. On the western slope of Colorado and in nearby States I saw waste, competition, overuse and abuse of valuable range lands and watersheds eating into the very heart of the western economy. . . . The livestock industry, through circumstances beyond its control, was heading for self-strangulation. [[194]](#footnote-195)194

The "self-strangulation" observed by Taylor was the result of an attempt by each user of the public domain to maximize his own gain. [[195]](#footnote-196)195 The western ranchers recognized that the gain to each of them of adding a head of cattle to the number already grazing on the public domain outweighed the cost to them, individually, of doing so. The gain derived was the net proceeds from the sale of the additional animal. All of this gain could be retained by the individual rancher. The cost of adding to the herd was the damage resulting from overgrazing. The individual rancher did not have to bear all of this cost, however, because it was shared by each of the other **[\*1168]** ranchers using the public domain for grazing. In sum, the use of the public domain as a grazing commons rewarded unproductive behavior. It also penalized productive behavior. If the rancher decided to reduce the size of his herd by one animal, he bore the entire burden of lost proceeds from the sale of that animal. He received only a small fraction of the gain, however, because all the ranchers shared in the improvement to the range which resulted from a reduction in herd size. In this way the individual self-interest of the ranchers led them to the precipice of self-destruction. Only the intervention of the federal government, in the form of the Taylor Grazing Act, prevented this result. [[196]](#footnote-197)196

While the intervention accomplished by the Taylor Grazing Act marked a radical shift to a new policy of federal retention and regulation of the public domain, it was not the culmination of that policy. Congress continued the process of closing the public domain in a piecemeal fashion. [[197]](#footnote-198)197 The most recent expression of this policy is in FLPMA of 1976, which provides that "it is the policy of the United States that . . . the public lands be retained in federal ownership." [[198]](#footnote-199)198

The Interior Department and courts readily adapted to the changes in policy dictated by the Taylor Grazing Act. Indeed, one of Taylor's principal supporters in the fight for the passage of the Act was President Roosevelt's newly appointed Secretary of the Interor, Harold L. Ickes, [[199]](#footnote-200)199 who believed the Taylor Grazing Act was necessary for "preserving and redeeming the range which is rapidly being destroyed as a result of overgrazing, with resulting erosion." [[200]](#footnote-201)200 While Ickes was lobbying Congress for passage of the Act, his Interior Department was acting independently, yet consistently with the spirit of the Act, to restrict the operation of yet another **[\*1169]** donative public land law, the mining law of 1872. [[201]](#footnote-202)201 When the Solicitor of the Interior Department was called upon in 1933 to render an opinion on the locatability of deposits of sand and gravel, he used the opportunity to shorten the reach of the mining law. [[202]](#footnote-203)202 The Solicitor's opinion purported to affirm *Layman v. Ellis,* [[203]](#footnote-204)203 which four years earlier had held that sand and gravel were minerals and that the lands in which they were located were mineral lands. *Layman* was significant because sand and gravel deposits were so widespread throughout the west. By holding that these deposits were locatable, *Layman* had greatly expanded the effective reach of the mining law.

The Solicitor's opinion actually restricted *Layman v. Ellis,* by holding that only sand and gravel "which can be *extracted, removed, and marketed at a profit* . . . may be lawfully disposed of" under the mining law. [[204]](#footnote-205)204 The expressed purpose of the Solicitor in adding the requirement of marketability was to prevent "the acqui[sition] of title to numerous areas" of the public domain from being "render[ed] facile." [[205]](#footnote-206)205

C. *The Confusion Over Marketability*

While there is some evidence that the marketability rule was originally conceived as an alternative to the prudent man rule of *Castle v. Womble,* [[206]](#footnote-207)206 it soon became established that the marketability rule, consistent with its purpose, was an additional requirement applicable in controversies involving nonmetallic minerals of widespread occurrence. Thus, in *United States v. Heirs of John D. Stack* [[207]](#footnote-208)207 the IBLA stated:

**[\*1170]** There are *two tests* to determine whether a discovery has been made. The particular test to be applied depends on the character of the minerals involved. Where the minerals are of limited occurrence, and in and of themselves have intrinsic value, such as gold, the "prudent man" test set forth in *Castle v. Womble* is applied . . . . However, with respect to minerals of widespread occurrence, such as sand and gravel, it is necessary to show *aditionally* that the deposit can be extracted, removed, and marketed at a profit. [[208]](#footnote-209)208

The use of the marketability rule as an additional requirement to the prudent man rule was approved by the federal courts for the first time in *Foster v. Seaton,* [[209]](#footnote-210)209 a per curiam opinion of the D.C. Circuit involving a deposit of sand and gravel. [[210]](#footnote-211)210 The court decided that even though the claimant may have satisfied the prudent man rule, that was not sufficient to validate his discovery because "the *additional* requirement of present marketability" had to be satisfied to establish a valid discovery of a mineral of widespread occurrence. [[211]](#footnote-212)211

The existence of a dual standard of discovery, one for rate minerals and another for those that were widespread, soon came under attack on the ground that the mining law did not permit this type of discrimination. [[212]](#footnote-213)212 The Secretary of the Interior apparently accepted the validity of this argument, and in 1962 Solicitor Barry issued an opinion [[213]](#footnote-214)213 in which he asserted that, notwithstanding appearances to the contrary, [[214]](#footnote-215)214 there was only one true rule of discovery.

This marketability test is in reality applied to all minerals, although it is often mistakenly said to be applied solely to nonmetallic minerals of wide occurrence. Many minerals are deemed intrinsically valuable.

An intrinsically valuable mineral by its very nature is deemed marketable, and therefore merely showing the nature of the mineral usually meets the test of marketability. On the other hand where we are concerned with a nonmetalic mineral found in a great many places, application of the prudent man test requires **[\*1171]** that a market for the mineral be shown by the locator. The extreme example is probably sand and gravel, which are found in every State. There is a demand for sand and gravel, but in many areas the available deposits far exceed the market. In such cases we must insist that the locator show that there is a market actually existing for his minerals. To validate any sand and gravel claim proof of present marketability must be clearly shown. [[215]](#footnote-216)215

Solicitor Barry's opinion failed to end the controversy over the marketability rule mostly because the opinion sidestepped the hard issues. The rule, as developed in the Interior Decisions and cases through *Foster v. Seaton,* required that profitability be shown, that "the deposit [be] of such value that it can be mined, removed and disposed of *at a profit.*" [[216]](#footnote-217)216 The Solicitor's opinion, however, dealt with the marketability rule as though it required simply that the prospector show salability -- that is, that a market, but not necessarily a profitable one, exists for the mineral in question. [[217]](#footnote-218)217

Shortly after the publication of Solicitor Barry's marketability opinion, the case of *United States v. Coleman* [[218]](#footnote-219)218 reached the United States Supreme Court. Coleman had applied for a patent to a number of claims he had located in a scenic national forest two hours from Los Angeles. The claims were for quartzite, "one of the most common of all solid materials." [[219]](#footnote-220)219 The Ninth Circuit had upheld the validity of the claims, [[220]](#footnote-221)220 "holding specifically that the test of profitable marketability was not a proper standard for determining whether discovery of 'valuable mineral deposits' . . . had been made." [[221]](#footnote-222)221 The Ninth Circuit's holding was based on its view that the mining law contemplated only one test for all minerals, and that the imposition of additional requirements for minerals of wide occurrence was not in accordance with the law. [[222]](#footnote-223)222 The Supreme Court reversed, [[223]](#footnote-224)223 but apparently agreed with the Ninth Circuit that only one test was appropriate for all minerals. Thus, although **[\*1172]** the Supreme Court upheld the application of the marketability rule, unlike the D.C. Circuit in *Foster v. Seaton* [[224]](#footnote-225)224 the Court found that marketability was not an additional requirement but "a *logical complement* to the 'prudent-man test' which the Secretary has been using to interpret the mining law since 1894." [[225]](#footnote-226)225 Specifically, the Court held that it was proper for the Secretary to require "that to qualify as 'valuable mineral deposits' under [the mining law] it must be shown that the *mineral can be 'extracted, removed and marketed at a profit' -- the so-called 'marketability test.'*" [[226]](#footnote-227)226

Although *Coleman* is thought of as a leading case, to a large extent it is only a symptom and not the source of the confusion that surrounds the issue of discovery under the mining law. *Coleman* is symptomatic because it perpetuates the confusion regarding the meaning of the word 'marketability' introduced by Solicitor Barry's earlier opinion. The *Coleman* Court failed to make clear whether the term marketability, as used in its opinion, meant profitability or saleability. Although early in the opinion the Court referred to "profitable marketability" [[227]](#footnote-228)227 it neglected to use this term consistently. The Court's failure to distinguish between the two meanings of "marketability" led it to conclude erroneously that:

While it is true that the marketability test is usually the critical factor in cases involving nonmetallic minerals of widespread occurrence, this is accounted for by the perfectly natural reason that precious metals which are in small supply and for which there is great demand, sell at a price so high as to leave little room for doubt that they can be extracted and marketed at a profit. [[228]](#footnote-229)228

This conclusion is unsound. Many abandoned mines bear silent witness that not all deposits of precious metals can be extracted and marketed at a profit. The precious metals, unlike some of the nonmetallic minerals such as sand and gravel, can always be marketed in the sense that they can be sold, but this does not mean they can be sold at a profit. [[229]](#footnote-230)229 The Court's equivocation with respect to the meaning of marketability has been the source of much of the criticism of its decision. [[230]](#footnote-231)230

**[\*1173]** *Coleman,* however, is vulnerable to more substantial criticism. *Coleman* attempts to obviate the problems of the prudent man standard [[231]](#footnote-232)231 by "identify[ing] with greater precision and objectivity the factors relevant to a determination that a mineral deposit is 'valuable'" [[232]](#footnote-233)232 and that the public lands containing it therefore should be transferred into private ownership. But *Coleman* is an imperfect solution to the problems it addresses. First, the verbal formulation which it introduces is unworkable. Second, the marketability rule, at least as interpreted, perpetuates the problems with the prudent man standard by again failing to give explicit consideration to the public interest in making decisions regarding the disposition of public lands.

The verbal formulation introduced by *Coleman* is unworkable because it treats the prudent man rule and the marketability rule as logical complements when, in fact, they are irreconcilable. Thus, notwithstanding the Court's assertion to the contrary, *Coleman* represents a departure from and not a "refinement" [[233]](#footnote-234)233 of *Castle v. Womble.* The marketability test requires proof of profitability as a *present fact;* the prudent man rule requires proof only of a reasonable prospect of success *in the future. Castle v. Womble* contemplated the transfer of entitlements for claims on which valuable deposits do not actually exist. [[234]](#footnote-235)234 *Coleman* requires that the transfer of entitlements await proof of the existence of a commercially exploitable deposit. [[235]](#footnote-236)235 The marketability rule is thus much more conservative than the prudent man rule in awarding entitlements.

This conservatism reflects the fundamental policy shift that occurred during the seventy-five years between *Castle v. Womble* and *Coleman.* In *Castle v. Womble* the concern was how to dispose of the public lands, whether pursuant to the mining law or some other donative statute. [[236]](#footnote-237)236 But by the time *Coleman* was decided the concern had shifted to whether the public lands should be disposed of at all. "A patent passes ownership of public lands into private **[\*1174]** hands. So irrevocable a diminution of the public domain should be attended by substantial assurance that there will be a compensating public gain in the form of an increased supply of available mineral resources." [[237]](#footnote-238)237

This shift in policy reflects a profound change in the perceived value of the public lands. When *Castle v. Womble* was decided in 1894, the value of the public lands at the margin [[238]](#footnote-239)238 was thought to be little or nothing. This perception is evident in an 1872 opinion of the United States Attorney General concerning the mining law. [[239]](#footnote-240)239 *"Mineral lands,"* the Attorney General wrote, *"exclusive of their valuable deposits, are generally worth little or nothing."* [[240]](#footnote-241)240

The Attorney General's opinion accurately reflected the attitude of the American people at the time. The wild western lands in their natural condition were despised. "How frontiersmen described the wilderness they found reflected the intensity of their antipathy. The same descriptive phrases appeared again and again. Wilderness was 'howling,' 'dismal,' 'terrible.'" [[241]](#footnote-242)241 In his 1830 inaugural address, for example, President Andrew Jackson asked "what good man would prefer a country covered with forests and ranged by a few thousand savages to our extensive Republic, studded with cities, towns, and prosperous farms, embellished with all the improvements which art can devise or industry execute." [[242]](#footnote-243)242 Against this background, it is hardy surprising that the 19th century courts and Interior Department were able to tolerate a great deal of uncertainty in awarding entitlements under the mining law. Almost any private use was considered preferable to leaving the land in its wild and natural state.

Contemporary perceptions of the value of the public lands are very different. Today the same lands despised by the frontiersmen are thought of as highly valuable and even priceless. Thus, the National Parks have recently been described as "one of the few unambiguous triumphs of American public policy. Carved out of a vast **[\*1175]** public domain that was being cruelly exploited and recklessly given away, the parks stand as a rare monument of national concern for posterity." [[243]](#footnote-244)243 The idea that the public lands are so valuable that we have a duty to preserve them for future generations is a recurring theme. Thus, it is not unusual to find the public lands described as "a natural heritage and national asset that belong to all of us. Each American should cherish them . . . ." [[244]](#footnote-245)244 The late Justice William O. Douglas thought the undeveloped wilderness areas of the public lands were inextricably related to our continued freedom as a people. "Roadless areas are one pledge to freedom," he wrote. [[245]](#footnote-246)245

Perhaps the best evidence of contemporary perceptions of the value of public lands is found in recent legislation concerning them. The Federal Land Policy and Management Act of 1976 [[246]](#footnote-247)246 recognizes this value by declaring that the retention of these lands in public ownership is a public policy of the United States, [[247]](#footnote-248)247 and also by requiring a comprehensive inventory of these lands and "their resource and other values," [[248]](#footnote-249)248 so that land use plans for their future governance can be developed. [[249]](#footnote-250)249 The Wild and Scenic Rivers Act of 1968 [[250]](#footnote-251)250 recognizes that certain rivers "possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, [and ought to] to preserved . . . and . . . be protected for the benefit and enjoyment of present and future generations." [[251]](#footnote-252)251 And in a rare outpouring of Congressional eloquence, the Wilderness Act of 1964 [[252]](#footnote-253)252 proclaims that "[a] wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." [[253]](#footnote-254)253 Certainly, this is the description of a highly valued asset.

The primary consequence for the mining law of this changed perception is that where the courts and Interior Department were tolerant of uncertainty in the past, they are highly intolerant now and have become increasingly circumspect in making decisions affecting public lands. This has led one commentator to note that **[\*1176]** "[o]ver the years the prudent man rule has required an ever-increasing amount of prudence." [[254]](#footnote-255)254

In this light it is clear that *Coleman,* by necessity, does not refine the liberal discovery rule of *Castle v. Womble* but overrules it and replaces it with a conservative rule. As a result, it is unworkable to maintain, as *Coleman* does, that the marketability rule is a refinement of the prudent man rule. These two rules are no more complementary than speed limits of 35 miles per hour and 55 miles per hour for the same stretch of highway. Although they overlap substantially, where the rules conflict, they conflict irreconcilably. The extent of this conflict can be demonstrated with a few examples.

In *Barton v. Morton* [[255]](#footnote-256)255 the mineral claimant, Barton, had discovered mineralized veins of gold and silver. Although the material exposed at the time Barton applied for a patent was not of sufficient value to be profitably mined, Barton had reasonable expectations that he would find profitable ore shoots. The court conceded that Barton's prospects for success were bright. Barton was nevertheless denied a patent. The Ninth Circuit held that notwithstanding Barton's reasonable prospects for success in the future, he had not demonstrated a present ability to mine the claim at a profit. All that Barton had demonstrated according to the Ninth Circuit, was that further exploration of the claim was warranted, and this was not enough to satisfy the marketability rule. [[256]](#footnote-257)256 Barton's discovery would almost certainly [[257]](#footnote-258)257 have been sufficient under *Castle v. Womble,* which requires only a reasonable prospect of future success. [[258]](#footnote-259)258 Indeed, the marketability rule was used in *Barton* to eliminate from consideration the very facts -- prospects that future exploratory work would result in a rich find -- that would have justified the issuance of a patent under the prudent man rule. [[259]](#footnote-260)259

**[\*1177]** *Ideal Basic Industries, Inc. v. Morton,* [[260]](#footnote-261)260 provides a second example of the conflict between the prudent man rule and the marketability rule. *Deal* involved a patent application for forty-five limestone mining claims located in the Tongass National Forest in Alaska. Ideal intended not to sell the limestone, but to use it in its own operations in making cement. There would seem to be no question that Ideal was acting prudently in locating the claims; Ideal was attempting to vertically integrate its operations by capturing a source of essential raw materials. Thus, if compliance with the prudent man rule were the only issue, Ideal would have been entitled to a patent. Ideal also asserted that its mining claims satisfied the marketability rule. It contended that because the cement that it sold could be marketed at a profit, and because the cement contained the limestone which it mined, that the limestone could be removed and marketed at a profit. The Ninth Circuit disagreed. It concluded, based on the stipulation of facts on which the case was tried, that Ideal might actually be losing money on the limestone mining and was showing an overall profit only because of "large profits it derives from either the manufacturing or selling processes or from both. Profits derived from sources other than the limestone itself cannot be imputed to the material for the purpose of satisfying the 'marketability test.'" [[261]](#footnote-262)261

The ***oil*** shale cases provide a third example. In *United States v. Winegar,* [[262]](#footnote-263)262 the Interior Department had to determine whether ***oil*** shale claims were patentable. Relying on the *Coleman* requirement of profitability, the Department held that they were not.

First, as a historical fact, the commercial production of ***oil*** from ***oil*** shale has never been competitive with the liquid petroleum industry. Second, the hypothetical studies [introduced by the claimant at the hearing] at best confirm that the commercial exploitation of ***oil*** shale would not be competitive with the liquid **[\*1178]** petroleum industry. Third, without exception, every ***oil*** shale operation that has been attempted in this country has failed to show profitable production. [[263]](#footnote-264)263

It is difficult to imagine a more compelling case of unprofitability than the Department described with respect to these claims. Yet, ***oil*** shale claims have enormous value. In November of 1973, just a few months before the decision in *Winegar,* the Department of the Interior began a prototype leasing program for ***oil*** shale. "The high bid on January 8 [1974] for Colorado Tract C-A encompassing 5,089.70 acres was *$ 210,305,600.*'" [[264]](#footnote-265)264 The presence of such great value would have been more than sufficient to satisfy the prudent man rule. [[265]](#footnote-266)265 After all, the value reflects the probability of future profitable activity, [[266]](#footnote-267)266 and the prudent man rule does not require "that the mineral *in its present situation* can be immediately disposed of at a profit." [[267]](#footnote-268)267 The existence of such value, however, is irrelevant to the determination of whether these claims satisfy the marketability rule, because that rule does require proof of present profitability. The marketability rule treats the possibility of changed conditions that might result in future profits as too speculative to be considered in making the patent decision. Thus, under *Coleman*'s marketability rule ***oil*** shale claims are not patentable, while under the prudent man rule of *Castle v. Womble* they are. [[268]](#footnote-269)268

III. INTEGRATING THE PUBLIC INTEREST AND THE MINING LAW: CONSIDERING SOCIAL COST

The marketability rule approved by the Supreme Court in *Coleman* has been misinterpreted by the lower courts and particularly by the Interior Board of Land Appeals (IBLA). They have defined the concept of profitability the way accountants do, that is, as revenue less expenditures. The first section in this Part examines the problem that this interpretation leads to and how these problems can be avoided by defining profitability the way economists do, that is as revenue in excess of opportunity cost. The second **[\*1179]** ond section focuses on the divergence between the private and social cost of mining, while the third section develops the rationale for conditioning the transfer of mining entitlements on a showing that mining will generate revenues in excess of social cost.

A. *The Misinterpretation of the Marketability Rule*

The problem with *Coleman* is not only that its formulation of the marketability rule is unsound, but also that *Coleman*'s marketability rule, at least as interpreted, fails to give explicit consideration to the public interest in disposing of public lands. *In re Pacific Coast Molybdenum Co.* [[269]](#footnote-270)269 is illustrative. Pacific Coast Molybdenum (PCM) had applied for a patent to thirty-two lode claims in the Tongass National Forest in Alaska. After PCM had located the claims, but prior to patent, the land on which the claims were situated was included within the Misty Fjords National Monument. As a result, the appellants, United Southeast Alaska Gillnetters and Southeast Alaska Conservation Council, protested [[270]](#footnote-271)270 the issuance of the patent. The Alaska State Office of the Bureau of Land Management denied the protest and the losing parties appealed to the IBLA.

Appellants contended, *inter alia,* that because of the inclusion of the lands within the National Monument area and pursuant to the Alaska National Interest Lands Conservation Act [[271]](#footnote-272)271 the marketability rule ought to be "strictly" applied. [[272]](#footnote-273)272 It was their contention that "a stronger showing of marketability is required for [the patenting of a mining claim in] important recreation areas, such as Misty Fjords, than for other public lands." [[273]](#footnote-274)273 The IBLA rejected this contention and held:

As a conceptual matter, the theory that the situs of the land **[\*1180]** alters the nature of the test [for discovery] applied is untenable. *Where the mining laws apply, they necessarily apply with equal force and effect, regardless of the characteristics of the land involved.* The test of discovery is the same whether the land be unreserved public domain, land in a national forest, or even land in a national park. [[274]](#footnote-275)274

The Board's holding is unsound and results, in part, from a misconception of the meaning of "profit." In computing whether PCM could derive a profit from the claims, the Board subtracted total cost from total revenue. Total cost was based on PCM's actual or anticipated out-of-pocket expense for each of the inputs, including land, consumed in its mining operation. The Board then estimated how much molybdenum the claim would produce, and divided total cost by this figure, thereby yielding a cost per unit of weight. This figure was then subtracted from the market price for molybdenum to determine if the claim could be profitably operated. Because the resulting figure was positive, the Board concluded that the marketability test was satisfied. [[275]](#footnote-276)275 The Board's conclusion was based on its implicit assumption that cost should be determined by reference to the amount paid for a particular input. Because the land cost for all mining claims of the type located by PCM is set by statute at five dollars per acre, [[276]](#footnote-277)276 only that figure was relevant, according to the Board's logic, in determining profitability. [[277]](#footnote-278)277

While the formula used by the Board in *In re PCM* to determine profitability -- total revenue less total cost -- is correct, total cost should have been calculated differently. Instead of basing land cost on purchase price, [[278]](#footnote-279)278 the Board should have based land cost on the opportunity cost incurred in consuming the *in situ* resources [[279]](#footnote-280)279 **[\*1181]** of the land by mining. The opportunity cost for a given activity is the most valuable alternative that must be foregone in order to engage in that activity. [[280]](#footnote-281)280 For example, if a particular tract of land with its *in situ* resources intact could be sold for ten dollars per acre, then in determining whether a mining operation that would preclude such a sale was profitable, the ten dollar figure should be used in determining total cost, even if the resources had been purchased for some lesser amount. [[281]](#footnote-282)281 Under this analysis, the particular characteristics of a parcel of land are relevant to the proper application of the marketability rule. If we assume that National Park land is more valuable than National Forest land, and that National Forest land is more valuable than unimproved rangeland, [[282]](#footnote-283)282 then the characteristics of the land, including its situs, while they do not alter the test to be applied, do have a significant impact on the outcome of that test.

The Board's refusal to use the opportunity cost to determine land value in *PCM* is perplexing because its use is supported by a long line of authority. [[283]](#footnote-284)283 In *Savage v. Boynton,* [[284]](#footnote-285)284 for example, the Interior Department used opportunity cost to determine the mineral character of land claimed under the mining law, stating that the mineral must exist on the land "in sufficient quantity to make the [land] more valuable for mining than for agriculture." [[285]](#footnote-286)285 Since **[\*1182]** mining the land would preclude farming it, the value of the land for agriculture was an opportunity cost of the mining. Opportunity cost has also been used to determine profitability in cases involving the valuation of the miner's labor. In *United States v. Alexander,* [[286]](#footnote-287)286 the Board agreed with the government's contention that

[t]he fact that a mining claimant is willing to operate a claim on a "do it yourself" basis and expend his time and money for a meager return which would not result in a *profit in the economic sense* does not warrant the conclusion that a person of ordinary prudence would be justified in so doing. [[287]](#footnote-288)287

The reference to economic profits in the emphasized language is significant because economic profits are defined as revenues in excess of opportunity costs rather than out-of-pocket or accounting costs. [[288]](#footnote-289)288

The use of opportunity cost to determine whether a mineral claim meets the marketability test finds further support in a line of cases in which the issue was the quantum of revenue required to satisfy the marketability rule. These cases uniformly hold that a "meager" return is not sufficient. [[289]](#footnote-290)289 "[W]hile technically a mining claim might be profitable if it shows a gross return of the dollar per day, this would not satisfy the test [of discovery] . . . ." [[290]](#footnote-291)290 Rather, the Board has uniformly required revenue in excess of opportunity cost, including opportunity cost of invested capital. Thus, the Board concluded in *United States v. Kottinger* [[291]](#footnote-292)291 that "a prudent man would not develop a mine which promised a profit below the return for a commercial venture," [[292]](#footnote-293)292 and in *United States v. Jackson* [[293]](#footnote-294)293 that the mining law requires a discovery "valuable enough to yield a fair market value in excess of the costs of extraction, removal, and sale." [[294]](#footnote-295)294

Not only is the use of opportunity cost to establish land cost supported by precedent, it is also supported by reason, [[295]](#footnote-296)295 and it offers **[\*1183]** a number of distinct advantages in applying the marketability rule. First, the use of opportunity cost permits a more accurate prediction of whether mining will actually occur on the claimed land [[296]](#footnote-297)296 because a rational prospector will not undertake a mining operation buless it promises expected returns adequate to cover both out-of-pocket and opportunity costs. It is only when profit is considered as a function of opportunity cost that it provides an incentive for an activity to take place. An example will illustrate.

Suppose that a wealthy conservationist owns a hillside, but that the scenic valley at the foot of the hillside, which is visible from every portion of the conservationist's land, is unappropriated public domain. Suppose further that the valley contains a mineral deposit that can only be obtained by strip mining, which would completely destroy the valley's value to the conservationist. If the strip mining operation will yield total revenues of $ 1000 per acre per year, and total mining costs are $ 500 per acre per year, then under *Coleman,* as interpreted by *In re PCM,* the marketability rule is satisfied and a mineral claimant would be entitled to commence mining operations and obtain a patent to the valley floor. But would mining actually occur?

The answer to that question depends on what alternative uses the miner might make of the valley. As discussed earlier, once a discovery is made and the formalities of location complied with, the miner obtains a property right in his claim that does not depend for its continued validity on undertaking actual mining operations. [[297]](#footnote-298)297 Once the miner acquires this property right, he is free to use the land embraced by the claim in any lawful manner, like any other owner or private property. If the wealthy conservationist is willing to pay the miner not to mine and to leave the valley in its natural condition, then the amount of that payment will have to be taken into account by the miner in deciding how to proceed.

The payment, which will be permanently lost once operations **[\*1184]** are commenced and the valley floor disturbed, becomes an opportunity cost of the mining. If the payment the conservationist offers is, say, $ 750 per acre per year, then the cost of mining would be $ 1250: $ 500 in out-of-pocket expenses plus the $ 750 opportunity cost. Because the mining revenues are only $ 1000, the miner would lose $ 250 per acre per year even though the project yields an apparent profit of $ 500, exclusive of the opportunity cost. By deciding not to mine, the miner would earn $ 750 from the conservationist. Because a rational miner would prefer a $ 750 gain to a $ 250 loss, no mining would take place, and the original transfer of the land into private ownership pursuant to the mining law would have been inappropriate.

For this reason the use of opportunity cost is necessary to the proper application of the marketability rule. Indeed, the *Coleman* Court justified the marketability rule in the following language:

Under the mining laws Congress has made public lands available to people for the purpose of mining valuable mineral deposits and not for other purposes . . . .

The marketability test also has the advantage of throwing light on *a claimant's intention,* a matter which *is inextricably bound together with valuableness.* For evidence that a mineral deposit is not of economic value and cannot in all likelihood be operated at a profit may well suggest that a claimant seeks the and for other purposes. Indeed, as the Government points out, the facts of this case . . . might well be thought to raise a substantial question as to respondent Coleman's real intention. [[298]](#footnote-299)298

*Coleman,* thus, proposes an economic test of discovery that determines both the value of the minerals and good faith of the claimant in one stroke. In the Court's opinion, inability to generate a profit indicates that the mineral values are incidental to the claimant's true purpose in seeking to obtain the land. [[299]](#footnote-300)299 In order for an economic test of good faith to work, however, opportunity cost rather than out-of-pocket cost must be used.

The Board in *In re PCM* misapprehended this aspect of *Coleman.* The Board stated that while "proof of bad faith can invalidate a claim, . . . this is, essentially, an *independent question* from that involved in determining the existence of a discovery." [[300]](#footnote-301)300 This misapprehension **[\*1185]** leads to an incongruous result; a claim will be held valid under the mining law even though the land involved "may possess a possible or probable greater value for agriculture or other [nonmining] purposes." [[301]](#footnote-302)301 Under the board's reasoning, land that no economically rational person would mine will be transferred from public to private ownership *unless* the government can prove that the mining claimant fails the second part of the *In re PCM* test by demonstrating that the mining claimant is acting in bad faith. [[302]](#footnote-303)302 In many cases the government will be unable to carry this burden because land values, the most persuasive evidence of bad faith, will apparently not be considered by the Board in making the determination. Moreover, in an important class of cases where the existence of externalities [[303]](#footnote-304)303 causes the miner to perceive land values at less than their true value, it will be impossible for the government to prove bad faith, because in these cases mining will occur, although sometimes at a social loss. [[304]](#footnote-305)304

A second advantage of using opportunity cost is that it requires the explicit consideration of the public interest in applying the marketability rule. As noted, the opportunity cost of a particular mining venture is the highest valued alternative precluded by that venture. The use of opportunity cost thus requires the consideration of the value of all alternatives to mining, including the value of continuing to hold the land in public ownership in its natural state. An elaboration on the preceding example illustrates this point.

Assume now that the hillside, rather than the property of a wealthy conservationist, is a publicly owned national park. Assume further that the park users as a group believe that the eyesore caused by mining would diminish the park experience, and, therefore, are each willing to make a small payment to the miner not to mine. Assuming no transaction costs and no strategic behavior, [[305]](#footnote-306)305 the amount the park users are willing to pay must be considered by the miner in deciding whether to commence operations, and represents **[\*1186]** an opportunity cost of the venture. Thus, the use of opportunity cost in applying the marketability rule requires the courts and the Interior Department to consider the value to the public of the valley floor in its natural condition in determining whether a claim is valid.

A third advantage of using opportunity cost in determining profitability is that in this way the marketability rule creates an incentive to explore for minerals first on those lands having the lowest nonmineral values. The marketability rule as construed in *In re PCM,* on the other hand, creates an incentive to explore for minerals first on precisely those lands having the *greatest* nonmineral values.

For example, assume that two parcels show identical potential for presence of a certain mineral, such as copper, but that one of the parcels is located in a scenic area highly valued for the amenities that it provides while the other parcel is located in the midst of unimproved rangeland, only marginally valuable for cattle grazing. Preliminary reconnaissance work indicates that the likelihood of discovering copper on either parcel is the same. If the marketability rule is interpreted to require only accounting profits, the rational prospector will tend to look for the mineral on the most valuable land first. If he finds minerals there, he will acquire not only the minerals, but also the highly valuable land in which they are located. In this way, if mining the land will destroy its nonmineral value, the miner obtains an option. If the land is more valuable for mining he will mine it; if it is more valuable for some other use he will devote it to that use, but he will have used the mining law as a pretext to acquire it. If the miner restricts his search to the marginal land, however, he has the same chance of discovering the copper deposit, but no chance of discovering it on highly valuable land. Thus, the mining law imposes a cost on prospecting marginal land equal to the value of the option forgone.

This misincentive is eliminated by interpreting the marketability rule to require economic profits. This interpretation imposes a cost, in the form of increased risk, on prospecting the more valuable land because a discovery there is less likely to benefit the miner: the more valuable the land the more onerous the requirement of an economic profit and the greater the risk that the miner will be unable to satisfy the marketability rule. Accordingly, less valuable land will tend to be explored and mined first. This result is desirable because, even assuming that the valuable land will eventually be mined, the public will be able to continue to use that land for its valued amenities in the meantime.

Thus, the use of opportunity cost provides clear advantages over the use of out-of-pocket land cost in applying the marketability **[\*1187]** rule. Moreover, the use of opportunity cost permits at least this aspect of the mining law to be brought into line with contemporary policies and methodology by subjecting it to cost-benefit analysis. [[306]](#footnote-307)306 Although the courts and the Interior Department have ignored it, economists have been performing this type of analysis of mining law questions for some time. [[307]](#footnote-308)307

B. *The Problem of Social Cost*

While the advantages of using opportunity costs are clear, there are disadvantages that require discussion. The disadvantages derive from the lack of an efficiently functioning market to establish the amount of the opportunity cost. Because no market sets these costs, we must estimate them when using economic profit to determine marketability. The discussion that follows first examines the principal reasons why it is not possible for an efficient market to allocate the resources comprising the public lands. It then considers the implications of the potential divergence between private and social opportunity cost for the interpretation of the mining law.

Not only is there no efficient market for the resources comprising the public lands, there is no prospect for the development of such a market. A market of this sort presupposes large-scale transfers of public lands into private ownership, and the development of secondary markets to allocate these lands amount competing uses. In this secondary market, lands most highly valued for mining, it might be supposed, would be devoted to the extraction of their mineral resources, while lands most highly valued for their environmental amenities would be devoted to uses consistent with the preservation of those resources, and so on.

Such large-scale transfers, however, are politically infeasible. As recently as 1976, Congress declared it was the policy of the United States to retain the public lands in public ownership. [[308]](#footnote-309)308 Further, **[\*1188]** in 1982 a proposal by then Secretary of the Interior Watt to sell even a relatively small portion of the public domain met with strong public resistance, and had to be abandoned. [[309]](#footnote-310)309

Moreover, even if large-scale transfers could be achieved, it is unlikely that an efficient allocation of resources would result. First, many of the most valued resources in the public domain are "public goods." [[310]](#footnote-311)310 Markets do not allocate public goods efficiently. The purpose of markets is to allocate scarce resources by excluding those consumers unwilling or unable to pay the market price. "However, in the case of pure public goods the exclusion of anyone reduces the aggregate welfare realized from them. Thus, the market's rationing feature tends to reduce rather than increase the benefits that potentially can be derived from public goods." [[311]](#footnote-312)311

Second, privatization would not lead to an efficient allocation of public land resources because the interaction of high transaction costs, strategic behavior, and ownership externalities would prevent the formation of an efficient market. How this would occur can be shown by recalling the example of the national park overlooking a valley rich in minerals. The destruction of the *in situ* resources of the valley by mining would, it is assumed, diminish the park experience for all park users. Let us further assume that the **[\*1189]** park users are of three types: [[312]](#footnote-313)312

1. One-site users: people who visit the park and take direct advantage of the amenities it provides.

2. Off-site users: people who will not visit the area, but who nevertheless derive some benefit from knowing it exists. [[313]](#footnote-314)313

3. Potential users: people who are unsure whether they will ever visit the area but who nevertheless derive some benefit from knowing they have the option to visit it in the future if they choose.

All of these users will be injured to some extent if the park is mined, and all of them, it might be supposed, would be willing to pay something to the miner to keep the valley in its natural condition. Although the amount each user is willing to pay may be small, the total payment might well be sufficient to induce the miner not to mine. Even so, and contrary to the best interests of all the parties involved, as defined by their willingness to pay, mining might well take place. Transaction costs are partly responsible for this mischief.

Transaction costs are "costs of communication and information, including both the supplying and learning of the terms on which transactions can be carried out." [[314]](#footnote-315)314 In this example, the transaction costs would consist of the expense of all the parties involved learning each other's identity and communicating their willingness to negotiate, plus the actual costs of conducting the negotiations. Given the large numbers of people who can be expected to come within one or more of the categories described above, these costs could be expected to be quite high. Indeed, the cost of identifying and contacting each user would in many cases exceed the amount that user was willing to pay to prevent the mining. The example we have been using assumes that the minimum payment the miner would accept to forgo mining is $ 500 per acre per year and the maximum the park users would pay was $ 750. Therefore, if transaction costs exceed $ 250 per acre per year no transaction will occur.

**[\*1190]** Even if transaction costs are not otherwise high enough to prevent the making of a bargain, the parties' strategic behavior might nevertheless do so. Strategic behavior occurs when parties to a proposed transaction, in an attempt to maximize gain, act in a way that belies their true valuation of the transaction. [[315]](#footnote-316)315 The effect of strategic behavior is to increase transaction costs. A useful example of strategic behavior in the context of natural resources development is found in *Carter* ***Oil*** *Co. v. Dees.* [[316]](#footnote-317)316 Carter ***Oil***, the lessee under an ***oil*** and gas lease, sued its lessor, Dees, for a declaratory judgment that its lease permitted it to convert one of the four producing wells on Dees' land to an input well. The purpose of the conversion was to inject gas into the underlying ***oil*** reservoir as part of a secondary recovery program. The direct result of injecting gas through the converted well would be to force approximately five thousand to seven thousand barrels of ***oil*** to migrate from under Dees's land to under neighboring lands. By operation of the rule of capture, whatever title Dees had to the migrating ***oil*** would be lost. [[317]](#footnote-318)317 Dees contended that the conversion of the well breached the implied covenant of the ***oil*** and gas lessee to protect its lessor from drainage.

Carter ***Oil***'s defense was that other input wells that it was creating off Dees' land would cause an amount of ***oil*** to migrate *to* Dees' land equal to the amount which would migrate *from* it. Further, the secondary recovery program would increase the total recoverable ***oil*** from Dees' land by "not less than 14,437 barrels, and may be as much as 34,800 barrels." [[318]](#footnote-319)318

At first blush, Dees' opposition to the secondary recovery program appears irrational. The migration of ***oil*** caused by the program would result in no net loss to Dees, and the program as a whole would result in a substantial net gain to him. Dees' objection is understandable, however, when viewed as strategic behavior. Carter ***Oil*** had ***oil*** and gas leases on lands surrounding Dees'. [[319]](#footnote-320)319 Once Carter ***Oil*** provided the secondary recovery program it proposed to any of the landowners interested in the reservoir, the benefits of the program could not feasibly be denied to any other landowner, including Dees. Further, Dees could expect Carter ***Oil*** to proceed with the program by converting wells on the other leaseholds that it owned to input wells even without his participation. [[320]](#footnote-321)320 **[\*1191]** By refusing to participate, Dees would get a free ride. He would reap all the benefits of the secondary recovery program -- migration of ***oil*** to his land and increased recovery -- without having to suffer migration from his land, or conversion of one of his producing wells to an input well. While Dees' behavior is both understandable and rational, if all the landowners in the area behaved similarly, the entire secondary recovery program would be jeopardized and all parties might end up losers. [[321]](#footnote-322)321 In this way, strategic behavior, even in the context of otherwise low transaction costs and an efficiently operating market, can result in market failure and inefficiency. [[322]](#footnote-323)322

A strategy similar to the one at play in *Dess* is that of the "hold out." Assume, for example, that a particular mining operation requires the assembly of a hundred small tracts into one large one. If each of the owners of the small tracts valued his land at, say, $ 1000, for a total of $ 100,000, and if the miner was willing to pay up to $ 200,000 to acquire the tracts, then all parties to the transaction would benefit if it were consummated at any price between $ 100,000 and $ 200,000. Even so, the transaction might not occur if some of the small tract owners guess that the miner is willing to pay more than $ 1000 per tract, and hold out for a premium. If enough of the owners do this and the premium they hold out for is substantial, the total price demanded will be more than $ 200,000, the maximum the miner is willing to pay. [[323]](#footnote-324)323

Returning to the example of the national park overlooking a potential mine site, the previous assumption of no transaction costs may be discarded in favor of the more realistic assumption of significant positive transaction costs. With no transaction costs, the park users and the miner continued the bargaining process until all gains from exchange were exhausted, that is, until an agreement was reached that permitted the valley floor to be devoted to its highest **[\*1192]** valued use. With positive transaction costs assumed, however, bargaining will stop prematurely, before all gains are exhausted. [[324]](#footnote-325)324 The potential gain left unrealized is an externality. [[325]](#footnote-326)325 The miner who claims the valley floor confers a benefit on all the park users by not strip mining it. The existence of this benefit, however, is external to the miner's decision to engage in strip mining. This externality exists whenever (1) the minimum payment that the miner will accept to forgo mining a less than the maximum amount the park users are willing to pay to keep the valley in its natural condition, but (2) the minimum the miner will accept plus transaction costs is greater than the maximum amount the park users will pay. Since in this case the miner receives no or only an insufficient payment from the park users in exchange for the benefit he confers on them, he disregards this benefit in making decisions concerning the future of the valley.

As a result of externalities, there are two opportunity costs that could be used in applying the marketability rule. One is the opportunity cost perceived by the miner in making the decision whether to commence mining. While this cost is based on the consideration of alternative uses of the valley floor, it does not take into account all of the alternatives, such as the use of the valley floor in its natural condition. Therefore, the opportunity cost perceived by the miner may, but does not necessarily, take into account the *highest valued* alternative use. Even though certain costs are external to the miner, none are external to society as a whole. [[326]](#footnote-327)326 Leaving the valley in its natural condition confers a benefit on some people who will be worse off if the valley is mined. Thus, from a social perspective the loss of these benefits must be taken into account and is the second opportunity cost of the mining. The discussion that follows refers to the opportunity cost perceived by the miner as private cost, and refers to the opportunity cost perceived by society as social cost.

The existence of these two opportunity costs creates an issue of interpretation of the mining law. A choice must be made between them. In many cases, it will not matter which figure is used because private and social cost will tend to be equivalent. For those public lands subject to entry under the mining law that are unremarkable and unlikely to be used by significant numbers of people for purposes that would be precluded by mining, mining will not generate **[\*1193]** externalities. For example, if a mining claim is located on a prairie whose only alternative productive use is for grazing cattle, the private cost perceived by the miner, the value of the right to graze cattle on the land which is precluded by the mining, will equal the social cost because the *in situ* resources of the tract have no value to society that cannot be appropriated by the miner.

The primary concern of this analysis, however, is situations in which private and social cost diverge significantly so that the choice of one or the other in applying the marketability rule will affect the outcome of the case. The argument for using private cost is that doing so furthers the policy of the mining law to encourage mining. Assuming only that the miner behaves in an economically rational way, the use of private cost ensures, so far as human foresight can be relied upon, that the entitlement will actually be used for mining. Conditioning the transfer of mining law entitlements on the more difficult showing of revenue in excess of social cost would frustrate the policy of the law by withholding from private development mineral lands that miners are ready and willing to exploit.

The argument for using social cost is that doing so forces the miner to take into account all the costs generated by the mining enterprise. If the miner is not compelled by the law to take these costs into account, he will not be compelled to do so by the market. As a result, he will tend to undervalue the *in situ* resources consumed by mining, and will, therefore, overconsume them. In cases where anticipated revenue is greater than the private but less than the social cost, mining will take place at a net social loss.

At this point it might be objected that the gap between private and social cost could be closed if the goverment would act as the agent of the park users in negotiating with the miner. This approach would eliminate transaction costs and externalities with them, by reducing the number of parties involved to two. This is precisely what this article proposes. In deciding whether to award entitlements under the mining law the courts and the Interior Department should recognize that once the entitlement is awarded, it will not be feasible for the public to bargain for itself. Therefore, in making the decision to award the entitlement, these agencies should consider what result would likely be achieved by the interested parties if transaction costs did not prohibit them from bargaining directly. If the result would be mining, then, assuming the other requirements of the law were satisfied, the entitlement should be granted. But if the result would be some use of the claimed land inconsistent with mining, such as preservation, then the entitlement should be withheld. It is certainly possible, indeed plausible, that in **[\*1194]** many cases multiple use [[327]](#footnote-328)327 of the public lands would be appropriate. In such cases, in a two-party negotiation, the parties would consider all alternatives, including the possibilities of mutual coexistence and mitigation of damages. To the extent permitted by law, the courts and the Interior Department should approach the task of awarding entitlements under the mining law with the same flexibility. [[328]](#footnote-329)328

C. *A Proposed Interpretation*

The conclusion that the transfer of entitlements under the mining law should be conditioned on a showing that the value of the claim for mining is equal to or greater than the social cost that will be incurred by the mining is consistent with and derived from generally accepted principles of statutory interpretation. This section will develop this idea at some length, partly for the sake of completeness, but primarily to address repeated suggestions in the literature of the mining law that the content of the discovery requirement today is somehow fixed by its content more than a century ago, when the law was originally enacted. [[329]](#footnote-330)329 By way of introduction, it will be helpful to dismiss three unhelpful approaches to the interpretation of the mining law.

First, the interpretation of the discovery requirement of the mining law is not furthered much by consideration of the law's age. That the law is over one hundred years old is as suggestive of its senility as of its wisdom. Indeed, the durability of the law may be accounted for almost entirely by its ambiguity. [[330]](#footnote-331)330 Second, the resolution of this issue is not advanced by consideration of equity. Even if one were to accept as a principle of statutory interpretation that distributions which deviate from equality are acceptable only if they improve the lot of the worst off in society, [[331]](#footnote-332)331 the debate over the proper interpretation of the mining law takes place far out of the reach of this group, and its resolution one way or the other is unlikely to have much effect on them. This conclusion stands although the primary beneficiaries of the mining law are likely wealthy and, thus, the effect of the law is for the rich to get richer. **[\*1195]** The primary beneficiaries of a repeal of the mining law would also tend to be wealthy, the people who would have the opportunity to enjoy lands that would otherwise have been devoted to mining. Since these lands are usually located in remote areas and can be reached only at significant expense, it is improbable that the most disadvantaged members of society will benefit in any measurable way from their preservation. [[332]](#footnote-333)332 The repeal of the mining law would simply result in a different subset of the rich getting richer.

Third and finally, the resolution of this issue of statutory interpretation is not furthered by a search for the meaning of the law in a literal reading of its words. "There is no more likely way to misapprehend the meaning of language -- be it in a constitution, a statute, a will or a contract -- than to read the words literally, forgetting the object which the document as a whole is meant to secure." [[333]](#footnote-334)333 Although courts sometimes engage in the process of statutory interpretation in a way that suggests that they are strictly neutral [[334]](#footnote-335)334 with respect to the statute under consideration, in fact neutrality is neither possible nor desirable.

The undesirability of neutrality is best illustrated by cases that raise extraordinary problems of interpretation. These cases involve a statute whose words seem unambiguously to dictate a result so harsh or unjust when applied to a particular fact situation that the judge uses the process of statutory "interpretation" to contradict or ignore the precise words selected by the legislature. *Riggs v. Palmer* [[335]](#footnote-336)335 is an example. Palmer was the residuary legatee under the will of the plaintiff's father. The will complied with every statutory requirement for its validity. The court, nevertheless, disregarded the will and prevented Palmer from taking under it for the reason that he had murdered the testator in order to accelerate his enjoyment of the estate. [[336]](#footnote-337)336 The court accomplished the invalidation of the will through a process that it called "rational interpretation," stating: "When we make use of rational interpretation, sometimes we restrain the meaning of the writer so as to take in less, and sometimes we extend or enlarge his meaning so as to take in more than **[\*1196]** his words express." [[337]](#footnote-338)337

This extraordinary type of interpretation, though sometimes controversial, [[338]](#footnote-339)338 is not novel. St. Thomas Aquinas wrote "the lawgiver . . . shapes the law according to what happens most frequently, by directing his attention to the common good. *Wherefore, if a case arises which would be hurtful to the common welfare, it should not be observed."* [[339]](#footnote-340)339 Learned Hand quoted Aristotle to the same effect, when he describes how a statute prohibiting the use of weapons should be applied in the case of a man who strikes another with no more on his hand than a "finger ring." [[340]](#footnote-341)340 Even though the aggressor in that situation appears to be guilty, "he is innocent really, and it is equity that declares him to be so." [[341]](#footnote-342)341

Because neutrality is not possible in cases where the legislature has spoken unambiguously, it is not surprising that it is also not possible in cases where the words used reasonably admit of more than one meaning. The late Professor Llewellyn demonstrated convincingly the hollowness of the idea that judicial decisions could be dictated by impartial "Canons of Construction." [[342]](#footnote-343)342 Llewellyn did this by constructing a table showing that for each canon of construction dictating one result, there was another canon dictating the contrary result.

Plainly, to make any canon take hold in a particular instance, the construction contended for must be sold, *essentially, by means other than the use of the canon:* The good sense of the situation and a *simple* construction of the available language to achieve that sense, *by tenable means, out of the statutory language.* [[343]](#footnote-344)343

Llewllyn's dictum is particularly pertinent to the mining law, because the statutory interpretation that the mining law requires is the ordinary type with which Llewellyn was primarily concerned. As **[\*1197]** noted previously, [[344]](#footnote-345)344 the mining law, perhaps more than other laws, fails to define its essential terms, leaving the task of definition and interpretation to the courts.

In approaching this task the courts should be flexible. The mining law, after all, is a codification of the customary law of the miners extant at the time of the federal law's enactment. The law was designed to be responsive to future changes in this customary law. [[345]](#footnote-346)345 Indeed, the mining law is little more than a ratification of this body of customary law and a recognition of the "obligation of the government to respect private rights which had grown up under its tacit consent and approval. It proposed no new system, but sanctioned, regulated, and confirmed a system already established . . . ." [[346]](#footnote-347)346 When Congress codifies an evolving body of customary law, even more than when it codifies a common-law rule, "that is a clue that the courts are to interpret the statute with the freedom with which they would construe and apply a common law principle." [[347]](#footnote-348)347

In performing this task, however, little guidance can be gleaned from an inquiry into Congress' intent in enacting the mining law. In the best of circumstances, an analysis of legislative intent involves "unanswerable questions" and "guesswork." [[348]](#footnote-349)348 With respect to the mining law, ascertaining legislative intent is not only difficult but futile, because the Congress of 1872 could not have anticipated the kinds of problems the courts must resolve today. In 1872, Congress could not have foreseen the intensity of the competition over land use that has since developed. [[349]](#footnote-350)349 Nor could any member of Congress in 1872 have conceived of the existence of minerals such as uranium and molybdenum, or that geiger counters and satellites would be used to explore for these minerals, much less of their importance to twentieth century technologies. [[350]](#footnote-351)350

Although legislative intent cannot be the touchstone for interpreting **[\*1198]** the mining law, the preservation of congresional options can be. Congress is charged by the Constitution with making all necessary rules and regulations for the governance of the public lands. [[351]](#footnote-352)351 Although Congress has legislated with respect to the mineral resources of the public lands, changed circumstances have made that legislation seem ill-fitting and out of place in the contemporary legal landscape. The courts should not apply the mining law mechanically to these changed circumstances. In fact, the courts and the Interior Department historically have treated the mining law as an instrument of policy responsive to changed conditions and, therefore, the fitting object of creative interpretation.

The mining law reflects a set of beliefs, widely shared in 1872, about the value (or lack of value) of the public lands. These beliefs are fundamentally inconsistent with contemporary beliefs about that value, and the courts and Interior Department should, therefore, take notice that the mining law may not have current majoritarian support. This is not to advocate that a court overrule an outmoded statute, such as the mining law, in the same way it might overrule an outmoded common law precedent. [[352]](#footnote-353)352 But a court, when faced with a statute such as the mining law, should select from among available, reasonable interpretations, that interpretation which best preserves Congress' option to adopt later a different scheme of regulation for the resource in question. Indeed, a court should be especially reluctant to infer a Congressional intent to transfer entitlements at a net social loss, where, as here, once the entitlement is transferred and the *in situ* resources are consumed, the damage cannot be undone, and Congress' option to preserve the resources will have been irreversibly lost.

The loss that follows the transfer of mining law entitlements based on private cost is irreversible not because the mining claim cannot be condemned and "taken" by the government, but because if a mining entitlement is transferred based on private opportunity cost, we can expect that mining will take place, and consequently **[\*1199]** that the *in situ* resources of the claim will be consumed. [[353]](#footnote-354)353 By definition the social value of these resources is greater than the value of the mining enterprise, [[354]](#footnote-355)354 and so mining is being "pursued beyond the socially efficient point." [[355]](#footnote-356)355 If, on the other hand, the courts refrain from transferring entitlements based on private cost, irreversibility [[356]](#footnote-357)356 is less of problem. If Congress later decides that the courts have been overly strict in interpreting the marketability rule to require revenue in excess of social cost, it can amend the mining law and provide new direction. The minerals will have been preserved for future exploitation.

Critics of this Article's proposal might assert that no decision required by the mining law is truly irreversible, because all physical impacts can be reversed with sufficient time, money, and technology. This assertion, although plausible in theory, is unhelpful in practice. If the development of a certain tract will result in the destruction of the last habitat of a species, and its consequent extinction, then the development decision is not reversible within any reasonable time frame. [[357]](#footnote-358)357

Yellowstone National Park provides a less dramatic example. [[358]](#footnote-359)358 The natural geothermal energy that the geysers in the park represent could be converted into a source of electricity. In that event, the landscape of the park would be largely despoiled by the attendant roads, structures, and transmission wires and poles. More significantly, "[t]he withdrawal of the steam for electric power [would cause] the geyser action to stop. . . . Reestablishment or replacement of the geyser and spring vents would probably **[\*1200]** require hundreds of years." [[359]](#footnote-360)359

The legislation creating Yellowstone preserves the geysers. That legislation, however, is not irreversible. If a national emergency should require increased energy production, for example, Congress could repeal the legislation and authorize geothermal mining.

If mining in Yellowstone seems farfetched, consider a current controversy over proposed mining in Big Sur, California. Big Sur has one of the most beautiful coastlines in the United States. The Granite Rock Company proposes to mine limestone from claims that it owns on Pico Blanco mountain, "one of the most famous mountains in Big Sur." [[360]](#footnote-361)360 The mining, if permitted, [[361]](#footnote-362)361 would alter the shape of the peak, and so much of the mountain would be removed that it would be rendered "little more than a facade visible from [the h]ighway." [[362]](#footnote-363)362 If mining is permitted, this natural landmark will be destroyed, and the Big Sur coastline will be irreversibly altered. If mining is not permitted, the limestone will remain in place, still amenable to use if future scarcity requires its removal.

The implications of irreversibility, although based on a variety of philosophical premises, [[363]](#footnote-364)363 have influenced public land policies in the United States for most of this century. This influence found its most significant expression to date in the Mineral Leasing Act of 1920, [[364]](#footnote-365)364 which withdrew ***oil***, gas, coal, and other minerals from the operation of the mining law. The leasing act was justified, in large part, on the basis of irreversibility. "If this government sells its remaining fuel lands [as required by the mining law] they pass out of its future control. If it now leases them we retain control, *and a* ***[\*1201]*** *future Congress will be at liberty to decide whether it will continue or change this policy.*" [[365]](#footnote-366)365

CONCLUSION

This Article proposes the following interpretation of the mining law: a discovery is not sufficient under the mining law unless the mining claimant can establish [[366]](#footnote-367)366 that the revenue reasonably anticipated from mining the claim equals or exceeds the full cost that will be incurred as a result of mining, including the social opportunity cost of consuming the *in situ* resources of the land on which the claim is located. What a prudent miner would or would not be justified in doing is irrelevant. Prudence evaluates the private utility to the actor of taking or refraining from certain action. The rule proposed here evaluates the social utility of that action. This interpretation does no violence to the language or the purpose of the mining law. It harmonizes the law with contemporary perceptions of the value of the public lands and the need to take care in their disposition.

Conditioning the transfer of entitlements on social cost rather than private cost recognizes that the mining law, in some cases, has irreversible consequences for the environment. The requirement to evaluate social cost compensates for irreversibility by deferring the transfer of mining law entitlements for a longer period than either the prudent man rule or the use of private cost would require. If we assume that the passage of time results in new information about the relative benefits of conserving a resource and developing it, that information can be useful only to the extent that development has not already taken place. Once the development occurs, it is too late to act upon information indicating that the development decision was improvident. Accordingly, the courts and the Interior Department should exercise restraint in awarding entitlements under the mining law. The proposed interpretation achieves this restraint.

Further, the proposed interpretation can be implemented without congressional action. Should the Interior Department be reluctant to adopt the proposed interpretation, it can be compelled to do so by an announcement from the federal courts that they intend to adopt it. If the past is a guide, a refusal by the Interior Department to heed this announcement would result in the filing of protests by **[\*1202]** the usual plaintiffs in public interest environmental litigation, and, ultimately, in a review of the Interior Department's decision by the federal courts. [[367]](#footnote-368)367

The proposed interpretation, however, is only a partial solution. To eliminate all of the waste caused by the mining law, congressional action is required. The form that action should take, whether a reform of the location system, or its repeal and replacement with a leasing system, is a subject for another article.

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1. 1 They are Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Over 50% of the public lands are located in Alaska. More than 90% of the federal lands located of Alaska are found in the other eleven western states. PUBLIC LAND LAW REVIEW COMMISSION, ONE THIRD OF THE NATION'S LAND 22 (1970) [hereinafter cited as PUBLIC LAND LAW REVIEW]. [↑](#footnote-ref-2)
2. 2 The terms "federal lands," "public lands," and "public domain" are interchangeable and refer to those lands administered primarily by the Forest Service and the Bureau of Land Management, and to a lesser extent by the Fish and Wildlife Service, the National Park Service, and the Bureau of Reclamation. *See generally* 1 ROCKY MOUNTAIN MINERAL LAW FOUNDATION, AMERICAN LAW OF MINING § 3.02 (2d ed. 1984) [hereinafter cited as AMERICAN LAW OF MINING (2d ed. 1984)]. [↑](#footnote-ref-3)
3. 3 PUBLIC LAND LAW REVIEW, *supra* note 1, at 121. The Public Land Law Review Commission was established by Act of Congress on September 19, 1964. The Commission culminated its work with the publication of *One Third of the Nation's Land* in 1970. The Commission was composed of six members each from the House and the Senate, six presidential appointees, and a chairman, Congressman Wayne N. Aspinall, selected by the 18 commissioners. The pages that follow frequently cite the work of the Commission. *One Third of the Nation's Land* is significant not only for the wealth of factual information it contains about the public lands, but also because the policies that it advocates have significantly influenced recent public lands legislation. [↑](#footnote-ref-4)
4. 4 *See, e.g.,* Short, *Wilderness Policies and Mineral Potential on the Public Lands,* 26 ROCKY MTN. MIN. L. INST. 39 (1980). [↑](#footnote-ref-5)
5. 5 30 U.S.C. §§ 21-54 (1982). This federal statute is sometimes referred to as the general mining law to distinguish it from the various state mining laws. [↑](#footnote-ref-6)
6. 6 Act of May 10, 1872, ch. 152, 17 Stat. 91 (codified as amended at 30 U.S.C. §§ 21-54 (1982)). [↑](#footnote-ref-7)
7. 7 30 U.S.C. §§ 181-287 (1982). The Mineral Leasing Act of 1920 withdrew deposits of coal, phosphate, some sodium compounds, ***oil***, ***oil*** shale, and gas from location. Amendments in 1927, Act of Feb. 7, 1927, ch. 66, 44 Stat. 1058, and 1960, Act of Sept. 2, 1960, Pub. L. No. 86-705, 74 Stat. 781, withdrew potassium compounds, native asphalt, solid and semisolid bitumen, and bituminous rock. [↑](#footnote-ref-8)
8. 8 30 U.S.C. §§ 601-604 (1982). Although the common variety minerals are disposed of pursuant to the Materials Act of 1947, they were not actually withdrawn from the general mining law until the enactment of the Surface Resources Act of 1955, 30 U.S.C. §§ 611-615 (1982) (§ 611 of which is sometimes referred to as the Common Varieties Act). [↑](#footnote-ref-9)
9. 9 *See generally* National Materials and Minerals Policy, Research and Development Act of 1980, S. REP. NO. 897, 96th Cong., 2d Sess. 1-16, (1980), *reprinted in* 1980 U.S. CODE CONG. & AD. NEWS 4871-86. [↑](#footnote-ref-10)
10. 10 Section 22 declares that "all valuable mineral deposits in lands belonging to the United States . . . shall be free and open to exploration and purchase, and the lands in which they are found to occupation and purchase . . . ." 30 U.S.C. § 22 (1982). [↑](#footnote-ref-11)
11. 11 The terms "locate" and "location" refer to the act or series of acts by which the miner marks the boundaries of the claim, posts and records notices, and performs the labor necessary to preserve or protect the claim. Cole v. Ralph, 252 U.S. 286, 296 (1920); Smelting Co. v. Kemp, 104 U.S. 636, 649 (1881). All these steps together comprise the "acts of location." The acts of location add to rather than substitute for a discovery of a valuable mineral deposit. Both location and discovery are "essential to a valid claim." Cole v. Ralph, 252 U.S. at 296. [↑](#footnote-ref-12)
12. 12 The mining law's requirements for the location of a claim are discussed *infra* text accompanying notes 40-89. [↑](#footnote-ref-13)
13. 13 United States v. Carlile, 67 Interior Dec. 417 (1960). [↑](#footnote-ref-14)
14. 14 A result is efficient when it allocates a resource to its most valued use. [↑](#footnote-ref-15)
15. 15 For present purposes, a subsidy may be defined as a transfer of wealth by a government to a nongovernmental entity for the purpose of inducing the recipient to engage or refrain from engaging in some activity. [↑](#footnote-ref-16)
16. 16 The mining law's benefits are available only to citizens and those who have declared their intention to become citizens. 30 U.S.C. § 22 (1982). [↑](#footnote-ref-17)
17. 17 United States v. Coleman, 390 U.S. 599, 602 (1968) ("The obvious intent [of the mining law] was to reward and encourage the discovery of minerals . . . ."). [↑](#footnote-ref-18)
18. 18 Lode claims may be purchased for $ 5.00 per acre and placer claims for $ 2.50 per acre. 30 U.S.C. § 37 (1982). The distinction between lode and placer is hazy at best. A lode is a vein of mineralization encased in surrounding country rock; a placer is a deposit of mineral not "in place" within country rock, but scattered along the ground or on a stream bottom, usually by mechanical deposition, like loose gravel. *See* Iron Silver Mining Co. v. Cheesman, 116 U.S. 529 (1886); Bowen v. Sil-Flo Corp., 9 Ariz. App. 268, 451 P.2d 626 (1969). In fact, these distinctions serve little purpose and their incorporation into the mining law is primarily the result of historical accident. 1 ROCKY MOUNTAIN MINERAL LAW FOUNDATION, AMERICAN LAW OF MINING § 5.9A (1983) [hereinafter cited as AMERICAN LAW OF MINING (1983)]. Although it was fairly easy to distinguish bwtween lode and placer with respect to minerals that were of major importance when the mining law was enacted, such as gold and silver, it is extremely difficult to distinguish the two for a number of minerals of great current interest, such as uranium. *See* Globe Mining Co. v. Anderson, 78 Wyo. 17, 27-32, 318 P.2d 373, 376-80 (1957); Bowen v. Sil-Flo Corp., 9 Ariz. App. 268, 273-77, 451 P.2d 626, 631-35 (1969). Although location procedures for lode and placer claims are similar, they are not identical. The miner draws the distinction at his peril, for if he misclassifies a deposit, and locates a lode as a placer or vice versa, his claim will be invalid and subject to relocation. "A placer discovery will not sustain a lode location, nor a lode discovery a placer location." Cole v. Ralph, 252 U.S. 286, 295 (1920). [↑](#footnote-ref-19)
19. 19 While there is no limit on the total number of claims a person may make under the mining law, each mining claim is limited in size to approximately 20 acres. 30 U.S.C. §§ 23, 35 (1982). [↑](#footnote-ref-20)
20. 20 30 U.S.C. § 22 (1982). [↑](#footnote-ref-21)
21. 21 The only amendments to the mining law of immediate significance are The Building Stone Act of 1892, 30 U.S.C. § 161 (1982), The Materials Act of 1947, 30 U.S.C. §§ 601-604 (1982), and the Surface Resources Act of 1955, 30 U.S.C. §§ 611-615 (1982) (§ 611 of which is sometimes referred to as the Common Varieties Act). [↑](#footnote-ref-22)
22. 22 Reeves, *The Law of Discovery Since* Coleman, 21 ROCKY MTN. MIN. L. INST. 415, 415 n.1 (1975). [↑](#footnote-ref-23)
23. 23 Strauss, *Mining Claims on Public Lands: A Study of Interior Department Procedures,* 1974 UTAH L. REV. 185, 187 (1974). [↑](#footnote-ref-24)
24. 24 SENATE COMM. ON ENERGY AND NATURAL RESOURCES, 95TH CONG., 1ST SESS., REVISION OF THE MINING LAW OF 1872 iii (Comm. Print 1977). [↑](#footnote-ref-25)
25. 25 The mining law does provide for the tenure of the prospector prior to discovery with respect to tunnel sites. "Where a tunnel is run . . . for the discovery of mines, . . . locations on the line of such tunnel of veins or lodes not appearing on the surface, made by other parties after the commencement of the tunnel, and while the same is being prosecuted with reasonable diligence, shall be invalid . . . ." 30 U.S.C. § 27 (1982). This provision is of little practical importance, however, since virtually all current exploration work at depth is accomplished by drilling and not by tunnelling. For a general discussion of the predecessor of 30 U.S.C. § 27, see Enterprise Mining Co. v. Rico-Aspen Consol. Mining Co., 167 U.S. 108 (1897). [↑](#footnote-ref-26)
26. 26 *See* Cole v. Ralph, 252 U.S. 286, 294-95 (1920). [↑](#footnote-ref-27)
27. 27 Comment, *Interference By Third Parties with thed Privilege of a Licensee,* 33 YALE L.J. 642 (1924). [↑](#footnote-ref-28)
28. 28 Union ***Oil*** Co. v. Smith, 249 U.S. 337, 346 (1919). [↑](#footnote-ref-29)
29. 29 *Pedis possessio* literally means possession by foothold, or actual possession. BLACK'S LAW DICTIONARY 1019 (5th ed. 1979); *see* Goldberg v. Bruschi, 146 Cal. 708, 713, 81 P. 23, 25 (1905). [↑](#footnote-ref-30)
30. 30 Union ***Oil*** Co. v. Smith, 249 U.S. 337, 346-47 (1919). [↑](#footnote-ref-31)
31. 31 For a thoughtful discussion of the doctrine of *pedis possessio* and a detailed examination of the requirements for its application, see Fiske, Pedis Possessio -- *Modern Use of an Old Concept,* 15 ROCKY MTN. MIN. L. INST. 181 (1969). [↑](#footnote-ref-32)
32. 32 *But see* MacGuire v. Sturgis, 347 F. Supp. 580 (D. Wyo. 1971) (finding that the possession requirement could be satisfied constructively). MacGuire had located several hundred lode claims allegedly valuable for uranium, but on which no actual discovery of the mineral had been made. When Sturgis overstaked some of MacGuire's claims, MacGuire brought suit for a declaratory judgment that he was entitled to the exclusive possession of the claims under the doctrine of *pedis possessio.* The court found that MacGuire was entitled to the protection of *pedis possessio* for the entire block of claims even though he was not in actual possession of all of them. The court held that constructive possession was sufficient to hold a block of claims under *pedis possessio* when, among other qualifications,

    an overall work program is in effect for the area claimed; . . . such work program is being diligently pursued, *i.e.,* a significant number of exploratory holes have been systematically drilled; and . . . the nature of the mineral claimed and the cost of development would make it economically impracticable to develop the mineral if the locator is awarded only those claims on which he is actually present and currently working.

    Id. at 584-85.

    Although MacGuire v. Sturgis was tacitly approved by the Tenth Circuit in Continental ***Oil*** Co. v. Natrona Serv., Inc., 588 F.2d 792 (10th Cir. 1978), *MacGuire* remains a minority position. For a tally of the jurisdictions refusing to follow *MacGuire,* see Geomet Exploration, Ltd. v. Lucky Mc Uranium Corp., 124 Ariz. 55, 58, 601 P.2d 1339, 1342 (1979), *cert. dismissed,* 448 U.S. 917 (1980). [↑](#footnote-ref-33)
33. 33 Cole v. Ralph, 252 U.S. 286 (1920); *cf.* Adams v. Benedict, 64 N.M. 234, 327 P.2d 308 (1958) (holding, by implication, that force was required). [↑](#footnote-ref-34)
34. 34 Adams v. Benedict, 64 N.M. 234, 247, 327 P.2d 308, 317 (1958); *see also* Geomet Exploration Ltd. v. Lucky Mc Uranium Corp., 124 Ariz. 55, 601 P.2d 1339 (1979), *cert. dismissed,* 448 U.S. 917 (1980). [↑](#footnote-ref-35)
35. 35 248 F. Supp. 708 (D. Utah 1965). [↑](#footnote-ref-36)
36. 36 Id. at 726 (emphasis added). [↑](#footnote-ref-37)
37. 37 30 U.S.C. § 21 (1982) provides that federal mineral lands are "reserved from sale, except as otherwise expressly directed by law." Section 21 derives from the Act of July 4, 1866, ch. 166, § 5, 14 Stat. 86, reserving mineral lands in Nevada. United States v. Sweet, 245 U.S. 563, 569 (1918), held that this section expressed Congress' intent to reserve all mineral lands. The Act of 1866 subsequently became the basis of the general mining law of 1872, 30 U.S.C. §§ 21-54 (1982). [↑](#footnote-ref-38)
38. 38 Jennison v. Kirk, 98 U.S. 453, 457 (1879). A somewhat darker and probably more realistic version of this epoch of American history is found in the Report of Col. R. B. Mason on the Gold-Fields of California (Aug. 17, 1848), *reprinted in* T. DONALDSON, THE PUBLID DOMAIN 312 (1884). Rather than conditions of equality and order, Mason describes runaway inflation and the impoverishment of the local Indians. For example, Mason witnessed the sale of a box of Seidlitz powders worth 50 cents for an ounce and a half of gold, *id.* at 314, and recounts how "rock and ore are removed [from the mines] on the backs of Indians in raw-hide sacks." *Id.* at 316. [↑](#footnote-ref-39)
39. 39 30 U.S.C. § 22 (1982) (codifying Act of May 10, 1872, ch. 152, § 1, 17 Stat. 91) provides that mining claims shall be located "under regulations prescribed by law, and according to the local customs or rules of miners in the several mining districts, so far as the same are applicable and not inconsistent with the laws of the United States." *See* Butte City Water Co. v. Baker, 196 U.S. 119, 123 (1905) ("While in [an earlier codification of the above section] there is not that direct grant of authority to the State to legislate respecting locations as there is to miners to make regulations, yet there is a clear recognition of such legislation."). The mining law also incorporates state laws affecting possessory rights and titles. 30 U.S.C. § 26 (1982). Finally, regulations promulgated by the Bureau of Land Management (BLM) have made compliance with state law location requirements a prerequisite to the validity of claims under the federal law. For a discussion of these regulations, see Roberts v. Morton, 549 F.2d 158 (10th Cir. 1976), *cert. denied,* 434 U.S. 834 (1977). [↑](#footnote-ref-40)
40. 40 *See, e.g.,* WYO. STAT. §§ 30-1-101 to 30-1-105 (Supp. 1983). [↑](#footnote-ref-41)
41. 41 Brewster v. Shoemaker, 28 Colo. 176, 63 P. 309 (1900); Whiting v. Straup, 17 Wyo. 1, 95 P. 849 (1908). [↑](#footnote-ref-42)
42. 42 *See, e.g.,* Hickel v. ***Oil*** Shale Corp., 400 U.S. 48 (1970); White v. Ames Mining Co., 82 Idaho 71, 349 P.2d 550 (1960); Hedrick v. Lee, 39 Idaho 42, 227 P. 27 (1924); Kramer v. Sanguinetti, 33 Cal. App. 303, 91 P.2d 604 (1939); Western Standard Uranium Co. v. Thurston, 355 P.2d 377 (Wyo. 1960). [↑](#footnote-ref-43)
43. 43 Presumably, the claim is valuable; otherwise, it is unlikely that the junior claimant would try to jump it. [↑](#footnote-ref-44)
44. 44 This is not to say that the junior locator does not perform a valuable function. The possibility of claim jumping if the senior locator does not comply with state law serves as an enforcement mechanism for state law. [↑](#footnote-ref-45)
45. 45 *See* 1 AMERICAN LAW OF MINING (1983), *supra* note 18, § 5.51. [↑](#footnote-ref-46)
46. 46 30 U.S.C. § 28 (1982). The states tend to particularize the requirement. Oregon, for example, requires that the claim be marked by

    six substantial posts, projecting not less than three feet above the surface of the ground and not less than four inches square or in diameter, or by substantial mounds of stone, or earth and stone, at least two feet in height, to wit: one such post or mound of rock at each corner and at the center ends of such claims.

    OR. REV. STAT. § 517.010(2) (1983). Absent such particularization, what will constitute a sufficient marking of the claim depends on the topography of the area in which the claim is located. "A location on a hill covered by a dense forest might require more definite marking than a location on a bald mountain, where the stakes, wherever placed, could be readily seen." Book v. Justice Mining Co., 58 F. 106, 113 (1893). [↑](#footnote-ref-47)
47. 47 Book v. Justice Mining Co., 58 F. 106, 114 (1893). The locator is, however, obliged not to obliterate or destroy them by his own fault. Bender v. Lamb, 133 Cal. App. 348, 24 P.2d 208 (1933), *cert. denied.* 291 U.S. 662 (1934). [↑](#footnote-ref-48)
48. 48 43 U.S.C. §§ 1701-1784 (1982) [hereinafter referred to as FLPMA]. [↑](#footnote-ref-49)
49. 49 Atherley v. Bullion Monarch Uranium Co., 8 Utah 2d 362, 365, 335 P.2d 71, 73 (1959). 30 U.S.C. § 28 (1982) does specify the minimum contents of the recorded certificate of location. This section has been held not to require the recording of location certificates, however, and is effective only if recording is required by state law. Haws v. Victoria Copper Mining Co., 160 U.S. 303 (1895). [↑](#footnote-ref-50)
50. 50 30 U.S.C. § 28 (1982). [↑](#footnote-ref-51)
51. 51 Atherley v. Bullion Monarch Uranium Co., 8 Utah 2d 362, 365, 335 P.2d 71, 74 (1959). [↑](#footnote-ref-52)
52. 52 *Id.* [↑](#footnote-ref-53)
53. 53 30 Cal. App. 2d 147, 85 P.2d 916 (1938). [↑](#footnote-ref-54)
54. 54 Id. at 151, 85 P.2d at 918-19. [↑](#footnote-ref-55)
55. 55 *See* Meek, *Federal Land Office Records,* 43 U. COLO. L. REV. 177 (1971). Meek describes the plight of a purchaser who bought a patented mining claim at a tax sale in reliance on county records showing the claim to contain approximately 20 acres. What the county records did not show, however, were 39 exclusions from the patent totaling 19.5 acres. The unlucky purchaser actually bought a claim of slightly less than one-half acre. Id. at 197. [↑](#footnote-ref-56)
56. 56 *Id.* [↑](#footnote-ref-57)
57. 57 Brief for Appellants at 4, United States v. Locke, 105 S. Ct. 1785 (1985) [hereinafter cited as *Locke* Brief]. [↑](#footnote-ref-58)
58. 58 In Wilbur v. United States ex rel. Krushnic, 280 U.S. 306, 317 (1930), the Supreme Court concluded that "annual performance of labor was not necessary to preserve the possessory right, with all the incidents of ownership . . . as against the United States, but only as against subsequent locators. *So far as the government was concerned, failure to do assessment work for any year was without effect.*" (emphasis added). *See also* Ickes v. Virginia-Colorado Development Corp., 295 U.S. 639 (1935). Both *Krushnic* and *Virginia-Colorado* were limited by the Supreme Court in Hickel v. The ***Oil*** Shale Corp., 400 U.S. 48 (1970). *TOSCO,* as this case is commonly known, involved locations made before ***oil*** shale was withdrawn from the mining law by the Mineral Leasing Act of 1920, 30 U.S.C. § 241(a) (1982). After 1920, ***oil*** shale lands were not subject to disposition by location, but only by lease. It is unsettled whether *TOSCO* applies to all minerals, therefore, or only to Leasing Act minerals. The Interior Department, in apparent reliance on *TOSCO,* now takes the position that failure to perform the annual assessment work does not result in the automatic cancellation of a claim but "render[s] the claim subject to cancellation" by the United States. 43 C.F.R. § 3851.3(a) (1985). [↑](#footnote-ref-59)
59. 59 Pub. L. No. 94-579, tit. III, § 314 (c), 90 Stat. 2769 (codified at 43 U.S.C. § 1744(c) (1982). 43 U.S.C. § 1744(b) (1982) provides:

    The owner of an unpatented . . . mining claim . . . located after October 21, 1976 shall, within ninety days after the date of location of such claim, file in the office of the Bureau designated by the Secretary a copy of the official record of the notice of location or certificate of location . . . .

    Other provisions of FLPMA impose similar filing requirements for claims located prior to the October 21, 1976, date of approval of FLPMA. 43 U.S.C. § 1744(a) (1982). [↑](#footnote-ref-60)
60. 60 Congress designed FLPMA to enable the Interior Department to create such a record and thereby eliminate "[o]ne of the most persistent and significant roadblocks to effective planning and management of most Federal lands, including the national resource lands . . . ." S. REP. NO. 583, 94th Cong., 1st Sess. 64-65 (1975). The House report is to the same effect, stressing requirements for filing of mining claims and assessment affidavits. H.R. REP. NO. 1163, 94th Cong., 2d Sess. 11 (1975); *see also* PUBLIC LAND LAW REVIEW, *supra* note 1, at 124; Topaz Beryllium Co. v. United States, 479 F. Supp. 309, 312 (D. Utah 1979), *aff'd,* 649 F.2d 775 (10th Cir. 1981). [↑](#footnote-ref-61)
61. 61 *See* Strauss, supra note 23, at 198. [↑](#footnote-ref-62)
62. 62 Solicitor's Opinion, Effect of Failure to Record Timely Under § 314(b) Federal Land Policy and Management Act of 1976, 84 Interior Dec. 188 (1977). [↑](#footnote-ref-63)
63. 63 *See, e.g.,* Henry D. Friedman, 49 I.B.L.A. 97, GFS(Min) 178 (1980) (the Alaska office of the BLM rejected the claimant's proof of claim because it was received five days beyond the 90-day period set forth by statute, and declared the claim abandoned). [↑](#footnote-ref-64)
64. 64 573 F. Supp. 472 (D. Nev. 1983), *rev'd,* 105 S. Ct. 1785 (1985). [↑](#footnote-ref-65)
65. 65 The assessment year for mining claims runs from noon on September 1 of one year to the next. 30 U.S.C. § 28 (1982). [↑](#footnote-ref-66)
66. 66 Locke, 573 F. Supp. at 474. [↑](#footnote-ref-67)
67. 67 The affidavit had been filed by the Lockes *on* December 31, 1980, instead of *prior* to December 31, 1980, as required by FLPMA. The district court in *Locke* overruled the IBLA and found for the mining claimant on the ground that FLPMA's conclusive presumption of abandonment constituted an unconstitutional impairment of due process. 573 F. Supp. at 478. The government appealed the decision to the Supreme Court. The Court reversed, holding that the plain language and intent of Congress in passing the law authorized its enforcement precisely as written. United States v. Locke, 105 S. Ct. 1785, 1795-96 (1985). The FLPMA filing provisions were held unconstitutional on similar grounds in Rogers v. United States, 575 F. Supp. 4, 11 (D. Mont. 1982) ("43 U.S.C. § 1744(c) (1976) is an unconstitutional violation of due process insofar as it creates an irrebuttable presumption of abandonment."). "The government did not seek review of the judgment in *Rogers* because it failed to file a notice of appeal to th[e Supreme Court] within the 30-day time limit set by 28 U.S.C. § 2101(a)." Locke Brief, supra note 57, at 10 n.9. [↑](#footnote-ref-68)
68. 68 Strauss, supra note 23, at 197. [↑](#footnote-ref-69)
69. 69 A quarter section is 160 acres or one-quarter of a square mile. [↑](#footnote-ref-70)
70. 70 In visits to both the Wyoming and Colorado offices of the BLM during December 1984, local personnel were cooperative and knowledgeable, and seemed eager to help the public use these records. Because filing requirements are strictly interpreted, the accuracy of the information given by BLM personnel is of paramount importance. *See supra* note 67 (discussing United States v. Locke, 105 S. Ct. 1785 (1985) (holding a mining claim extinguished for late filing where BLM officials in Nevada gave incorrect instructions to the plaintiff regarding filing of the statutorily-required assessment notice)). [↑](#footnote-ref-71)
71. 71 An objection might be raised that assessment work is not technically an act of location because the law requires it only after there has been a discovery and, presumably, the location is complete. In fact, the miner usually performs assessment work on claims on which there has been no discovery, as part of his effort to gain tenure on the public domain. *See infra* text accompanying notes 129-30. [↑](#footnote-ref-72)
72. 72 The courts do not always strictly observe the distinction between discovery and discovery work. *See, e.g.,* Adams v. Benedict, 64 N.M. 234, 327 P.2d 308 (1958). [↑](#footnote-ref-73)
73. 73 United States v. Arizona Manganese Corp., 57 Interior Dec. 558, 564-65 (1942). [↑](#footnote-ref-74)
74. 74 *See, e.g.,* Creede & Cripple Creek Mining & Milling Co. v. Uinta Tunnel Mining & Transp. Co., 196 U.S. 337, 347 (1905); Globe Mining Co. v. Anderson, 78 Wyo. 17, 33-37, 318 P.2d 373 (1959). [↑](#footnote-ref-75)
75. 75 A commentator made the following observation:

    The purposes of the discovery work requirement are to demonstrate the good faith intention of the locator to claim and develop the ground for its mineral value and not for speculative purposes and to demonstrate more clearly the existence of the vein or lode on the claim, and, perhaps, to serve as a [permanent] monument upon the ground.

    1 AMERICAN LAW OF MINING (1983), *supra* note 18, § 5.55 (footnote omitted). [↑](#footnote-ref-76)
76. 76 In Adams v. Benedict, 64 N.M. 234, 327 P.2d 308 (1958), for example, the discovery work requirement of local law mandated a ten foot deep discovery pit. The uranium for which the claims were located, however, was found at 2000 feet. Id. at 242, 327 P.2d at 314. [↑](#footnote-ref-77)
77. 77 One can fly over parts of Wyoming, for example, and observe many thousands of acres of apparently abandoned mining claims marred by discovery pits. [↑](#footnote-ref-78)
78. 78 See generally 1 AMERICAN LAW OF MINING (1983), *supra* note 18 § 5.55, for a listing of the states that have repealed the discovery work requirement, as well as a general discussion of the requirement. [↑](#footnote-ref-79)
79. 79 *See infra* text accompanying notes 126-31. [↑](#footnote-ref-80)
80. 80 30 U.S.C. § 28 (1982) provides that "[o]n each claim located after the 10th day of May 1872, and until a patent has been issued therefor, not less than $ 100 worth of labor shall be performed or improvements made during each year." [↑](#footnote-ref-81)
81. 81 Udall v. ***Oil*** Shale Corp., 406 F.2d 759, 760-61 (10th Cir. 1969), *rev'd on other grounds sub. nom.* Hickel v. ***Oil*** Shale Corp., 400 U.S. 48 (1970); *see also* Chambers v. Harrington, 111 U.S. 350 (1884). [↑](#footnote-ref-82)
82. 82 Great Eastern Mines, Inc. v. Metals Corp. of America, 86 N.M. 717, 719, 527 P.2d 112, 114 (1974), (quoting Eveleigh v. Darneille, 276 Cal. App. 2d 638, 640, 81 Cal. Rptr. 301, 303 (1969)). [↑](#footnote-ref-83)
83. 83 30 U.S.C. § 28 (1982). [↑](#footnote-ref-84)
84. 84 Nevada Exploration & Mining Co. v. Spriggs, 41 Utah 171, 178, 124 P. 770, 772 (1912). [↑](#footnote-ref-85)
85. 85 Walton v. Wild Goose Mining & Trading Co., 123 F. 209, 217-18 (9th Cir. 1903). [↑](#footnote-ref-86)
86. 86 East Tintic Consol. Mining Co., 43 Pub. Lands Dec. 79, 80-84 (1914); C. K. McCornick, et al., 40 Pub. Lands Dec. 498, 498-503 (1911). [↑](#footnote-ref-87)
87. 87 Rickard v. Thompson, 72 F.2d 807, 809 (9th Cir. 1934). [↑](#footnote-ref-88)
88. 88 United States v. 9,947.71 Acres of Land, 220 F. Supp. 328, 332-33 (Nev. 1963). [↑](#footnote-ref-89)
89. 89 *See, e.g.,* Lewis v. Carr, 49 Nev. 366, 246 P. 695 (1926); Kirkpatrick v. Curtiss, 138 Wash. 333, 244 P. 571 (1926); Fredricks v. Klauser, 52 Or. 110, 96 P. 679 (1908). *But cf.* 30 U.S.C. §§ 28-1 to -2 (1982) (a limited exception to this rule providing that certain geophysical and geological surveys which do not result in a physical disturbance to the premises qualify as assessment work); James v. Krook, 42 Ariz. 322, 25 P.2d 1026, *modified,* 42 Ariz. 465, 27 P.2d 519 (1933) (holding that the salary of a watchman qualifies as assessment work, although placing a watchman on the premises will not typically result in any physical change). [↑](#footnote-ref-90)
90. 90 *See infra* text accompanying note 325 (dealing with ownership externalities). [↑](#footnote-ref-91)
91. 91 The hypothetical would have to include the assumptions necessary to permit the efficient operation of the market. A common assumption in these circumstances is that there are zero transaction costs. [↑](#footnote-ref-92)
92. 92 The comparison of the mining law with these analogous economic practices also exposes the fundamental inequity of the mining law. The mining law is inequitable because it contains no mechanism to permit the public to share in the profits derived by individuals and private firms from exploitation of the mineral wealth of the public domain. Because the mining law gives everything to the prospector, there is nothing left for the public. If this inequity were necessary to accomplish the purpose of the mining law to subsidize and encourage mineral exploration of the public domain, little more could meaningfully be said than that Congress had in this instance chosen to favor one policy over another. While reasonable minds might differ concerning the wisdom of the choice, it is unlikely that a compelling argument could be made that Congress had chosen wrongly. This is not the case, however. The comparison of the mining law with market-based activities reveals that the inequity implicit in the mining law's failure to share the wealth of the public domain is not necessary to the law's purpose, and, therefore, Congress could revise the law to further both policies: mineral exploration and equitable distribution. [↑](#footnote-ref-93)
93. 93 There are some distinctions between the contract for a reward and the mining law. While these distinctions are not significant for present purposes, they will be pointed out for the sake of completeness. For example, only United States citizens and those who have declared their intention to become citizens may accept the offer made by the mining law. *See supra* note 16. Offers of reward are generally not so limited. [↑](#footnote-ref-94)
94. 94 1 A. CORBIN, CORBIN ON CONTRACTS § 25, at 75 (1963). [↑](#footnote-ref-95)
95. 95 *Id.* at 74-76. Partial performance may make the offer of reward irrevocable. *See id.* at 49, at 187. Partial performance does not have this effect with respect to the mining law. [↑](#footnote-ref-96)
96. 96 *See supra* notes 18-19 and accompanying text. [↑](#footnote-ref-97)
97. 97 Onshore federal ***oil*** and gas leasing was not selected for comparison with the mining law for two reasons. First, the offshore leasing system is newer and more imaginative than the onshore system. Second, onshore leasing involves a lottery system, which introduces complications not relevant to the present discussion. [↑](#footnote-ref-98)
98. 98 Jones, *The Development of Outer Continental Shelf Energy Resources,* 21 PUB. LAND & RESOURCES L. DIG. 36, 84 (1984). [↑](#footnote-ref-99)
99. 99 In 1981, prospectors paid the government more than $ 10 billion in bonus payments and royalties from OCS leases; in 1982, payments totalled more than $ 6 billion. U.S. DEP'T OF THE INTERIOR, BUREAU OF LAND MANAGEMENT, PUBLIC LAND STATISTICS 196 (1983) [hereinafter cited as LAND STATISTICS]. [↑](#footnote-ref-100)
100. 100 Jones, *supra* note 98, at 84 (1984). [↑](#footnote-ref-101)
101. 101 McDonald, *The Economics of Alternative Leasing Systems on the Outer Continental Shelf,* 18 HOUS. L. REV. 967, 972 (1981); Reece, *Competitive Bidding for Offshore Petroleum Leases,* 9 BELL J. ECON. 369, 371 (1978). [↑](#footnote-ref-102)
102. 102 Presently incorporated in 16 U.S.C. §§ 1456-1456(a) (1982); 43 U.S.C. § 1331-1336, 1801-1866 (1982). [↑](#footnote-ref-103)
103. 103 The OCSLA amendments obtain this variety by reducing or eliminating in some cases the size of the front end bonus payment, with the aim of encouraging competition among potential lessees. The amendments assume that a large front end bonus discourages competition by forcing smaller firms out of the bidding. [↑](#footnote-ref-104)
104. 104 *See Federal Leasing and Disposal Policies: Hearings on S. 2401 Before the Senate Common. on Interior and Insular Affairs,* 92d Cong., 2d Sess. 38-39 (1972) (statement of Harrison Loesch). [↑](#footnote-ref-105)
105. 105 *See generally* Landes & Posner, *Salvors, Finders, Good Samaritans and Other Rescuers: An Economic Study of Law and Altruism,* 7 J. LEGAL STUD. 83, 100-08 (1978), and the authorities cited therein. A different rule applies in some American jurisdictions with respect to the recovery of property abandoned at sea. While the British rule awards only a portion of the recovered property to the finder and the remainder becomes the property of the state, the American rule, at least until recently, awards all the lost property to the one who recovers it. Kenny & Hrusoff, *The Ownership of the Treasures of the Sea,* 9 WM. & MARY L. REV. 383, 383 (1967). The American rule has been criticized on this ground. *See* Landes & Posner, *supra,* at 106. [↑](#footnote-ref-106)
106. 106 Landes & Posner, *supra* note 105, at 105. [↑](#footnote-ref-107)
107. 107 74 Nev. 128, 324 P.2d 843 (1958). [↑](#footnote-ref-108)
108. 108 Id. at 130, 324 P.2d at 844. [↑](#footnote-ref-109)
109. 109 *Id.* [↑](#footnote-ref-110)
110. 110 If Wilson's 75 mile per hour drive endangered life and property, his efforts likely had a negative net social value. [↑](#footnote-ref-111)
111. 111 The events described in *Berto v. Wilson* are not exceptional. Similar contests occur in Adams v. Benedict, 64 N.M. 234, 327 P.2d 308 (1958), Ranchers Exploration & Dev. Co. v. Anaconda Co., 248 F. Supp. 708 (D. Utah 1965), and Geomet Exploration, Ltd. v. Lucky Mc Uranium Corp., 124 Ariz. 55, 601 P.2d 1339 (1979), *cert. dismissed,* 448 U.S. 917 (1980), to name just a few. *See also* Strauss, supra note 23, at 189. [↑](#footnote-ref-112)
112. 112 *See supra* notes 28-36 and accompanying text. [↑](#footnote-ref-113)
113. 113 The cases so holding are collected in Geomet Exploration, Ltd. v. Lucky Mc Uranium, 124 Ariz. 55, 601 P.2d 1339 (1979) *cert. dismissed,* 448 U.S. 917 (1980). *But see* MacGuire v. Sturgis, 347 F. Supp. 580 (D. Wyo. 1971), discussed *supra* note 32. [↑](#footnote-ref-114)
114. 114 There is, of course, nothing inherently objectionable about speculation. In many cases, speculation serves the socially useful functions of providing needed liquidity while encouraging both conservation and risk-taking. Speculation has little value, however, in the present context. It is unlikely that speculation will further conservation goals because during speculation, no mineral has been discovered, and no diligent search is underway. If it turns out that there is no mineral on the claim, then the speculation has not resulted in any conservation. Further, speculation does not encourage socially useful risk taking because the only risk that the speculator undertakes is the relatively minor cost of complying with the formal requirements of the mining law. Finally, the social cost of locating invalid mining claims far outweighs any slight social benefit locating them might produce. *See infra* text accompanying notes 121-26. [↑](#footnote-ref-115)
115. 115 *See, e.g.,* United States v. Zweifel, 508 F.2d 1150 (10th Cir.) *cert. denied,* 423 U.S. 829 (1975). *Zweifel* involved thousands of "paper" locations, *i.e.,* the filing of certificates of location without complying with the requirements of staking and posting notices of location on the claims. Zwiefel located the claims in bad faith and for the primary purpose of extorting money and information from firms holding coal prospecting permits or leases for the same lands. Id. at 1155-56. In Cameron v. United States, 252 U.S. 450, 454-55 (1920), Cameron located a mining claim across the main trailhead leading into the Grand Canyon for the purpose of exacting a toll from those who wished to enter.

     An attachment to a letter from then Secretary of the Interior Udall to the Public Land Law Review Commission describes a particularly egregious case in which 8200 acres of land close to Phoenix, Arizona, were patented under the mining law for their high gold content. Letter from Stuart Udall, Secretary of the Interior, to the Chairman and Members of the Public Land Law Review Commission (Jan. 15, 1969), attachment, dated Jan. 1969, entitled "The Mining Law -- An Antique in Need of Repeal" 15 (on file at *UCLA Law Review*) [hereinafter cited as Udall Letter]. As soon as the patent issued, mining ceased and the same firm commenced mining operations on another 13,000 acres located even closer to Phoenix. During a routine examination in connection with a patent application for this second parcel, BLM mineral examiners became suspicious because of the highly irregular manner in which the gold occurred. Upon further examination, the examiners discovered that both claims had been "salted." The patent application for the 13,000 acre claim was rejected and the patent to the 8000 acre claim was ultimately set aside on the ground that it had been fraudulently obtained. If the mining claimants had not been so greedy, however, their deception would likely have gone undetected. Other examples of abuses of the mining law are recounted in D. SHERIDAN, HARD ROCK MINING ON THE PUBLIC LAND (1977). *See also* C.I. SENZEL, 95TH CONG., 1ST SESS., REVISION OF THE MINING LAW OF 1872, STUDY FOR THE SENATE COMM. ON ENERGY AND NATURAL RESOURCES 15, 20-23 (Comm. Print 1977). [↑](#footnote-ref-116)
116. 116 *See, e.g.,* Geomet Exploration, Ltd. v. Lucky Mc Uranium, 124 Ariz. 55, 601 P.2d 1339 (1979), *cert. dismissed,* 448 U.S. 917 (1980). [↑](#footnote-ref-117)
117. 117 Fiske, *supra* note 31, at 209. [↑](#footnote-ref-118)
118. 118 *See* Ranchers Exploration and Dev. Co. v. Anaconda Co., 248 F. Supp. 708 (D. Utah. 1965); Geomet Exploration, Ltd. v. Lucky Mc Uranium Corp., 124 Airz. 55, 601 P.2d 1339 (1979), *cert. dismissed,* 448 U.S. 917 (1980); Adams v. Benedict, 64 N.M. 234, 327 P.2d 308 (1958). In United States v. Jackson, 53 I.B.L.A. 289, 294, GFS(Min) 93 (1981), the mining claimant argued that he should not be prejudiced by failure to work a number of the claims he had located because "[a] small mining operator . . . cannot afford to spread men and equipment over an entire area and work all claims at once. Instead, he will wisely concentrate on one claim or set of claims and move on to others when he has completed his work on the first or at least gotten his first into adequate operation." The Board was unpersuaded. *But see* MacGuire v. Sturgis, 347 F. Supp. 580 (D. Wyo. 1971), discussed *supra* note 32. [↑](#footnote-ref-119)
119. 119 For a general discussion of the need for security during exploration in a slightly different context, see Sweeney, Tollison & Willet, *Market Failure, the Common-Pool Problem, And Ocean Resource Exploitation,* 17 J.L. & ECON. 179 (1974). [↑](#footnote-ref-120)
120. 120 *See generally* W. KLEIN, BUSINESS ORGANIZATION AND FINANCE: LEGAL AND ECONOMIC PRINCIPLES 152-53 (1980). [↑](#footnote-ref-121)
121. 121 LAND STATISTICS, *supra* note 99, at 145 (table 76). [↑](#footnote-ref-122)
122. 122 FLPMA may have resulted in the filing of fewer claims. In 1969 then Secretary of the Interior Udall estimated that there were 6,000,000 extant claims. Udall Letter, *supra* note 115, attachment at 20. There are a variety of possible explanations for the dramatic decline in the number of claims between 1969 and 1983. First, the 1969 estimate may have been wrong. Second, the burden of complying with FLPMA and paying the filing fee it imposes may have proved too much for casual miners. Third, the owners of many of the claims included in the 1969 estimate may actually have intended to abandon them. This intent would not have been apparent, however, until the imposition of the filing requirements of FLPMA, under which failure to file constitutes evidence of abandonment. [↑](#footnote-ref-123)
123. 123 The existence of these claims has significance for rival claimants as well. Even if invalid, a competing claim is a nuisance. Further, if the holder of the claim refuses to sell it for a price approximating the actual value of the claim to him, but instead engages in strategis behavior to ask for a higher price, desirable mineral development may be stymied. See infra text accompanying notes 315-22 for a discussion of strategic behavior. [↑](#footnote-ref-124)
124. 124 LAND STATISTICS, *supra* note 99, at 145 (table 76). [↑](#footnote-ref-125)
125. 125 Udall Letter, *supra* note 115, attachment at 19. [↑](#footnote-ref-126)
126. 126 This is an extremely conservative estimate. "A report from the Department of Agriculture . . . stated that as of January 1, 1952 there were 84,000 unpatented claims, covering 2.2 million acres of national forest but only 2% of these mines were producing minerals in commercial quantities . . . ." United States v. Curtis-Nevada Mines, Inc., 611 F.2d 1277, 1285 n.7 (9th Cir. 1980); *see also* COMPTROLLER GENERAL, MODERNIZATION OF 1872 MINING LAW NEEDED TO ENCOURAGE DOMESTIC MINERAL PRODUCTION, PROTECT THE ENVIRONMENT, AND IMPROVE PUBLIC LAND MANAGEMENT 8 (1974). [↑](#footnote-ref-127)
127. 127 *See supra* text accompanying notes 79-89. Further, a patent will not issue for a claim until at least "$ 500 worth of labor has been expended or improvements made upon [it] . . . ." 30 U.S.C. § 29 (1982). [↑](#footnote-ref-128)
128. 128 *See supra* text accompanying notes 59-63. [↑](#footnote-ref-129)
129. 129 COMPTROLLER GENERAL, *supra* note 126, at 8. [↑](#footnote-ref-130)
130. 130 Udall Letter, *supra* note 115, attachment at 20. [↑](#footnote-ref-131)
131. 131 The mining law creates an exception to this general rule for certain survey work. 30 U.S.C. § 28-1 to -2 (1982). [↑](#footnote-ref-132)
132. 132 Again, this is a very conservative assumption. *See* Udall Letter, *supra* note 115, attachment at 20, which estimated rehabilitation costs at twice the assessment work expenditure. [↑](#footnote-ref-133)
133. 133 *See* Udall Letter, *supra* note 115. [↑](#footnote-ref-134)
134. 134 *See* PUBLIC LAND LAW REVIEW, *supra* note 1. [↑](#footnote-ref-135)
135. 135 In 1973 Reeves predicted the "imminent amendment or repeal of the mining laws." Reeves, *The Origin and Development of the Rules of Discovery,* 8 LAND & WATER L. REV. 1, 1 (1973). The prediction turned out to be inaccurate. [↑](#footnote-ref-136)
136. 136 *See, e.g.,* Andrus v. Charleston Stone Products Co., 436 U.S. 604, 611 (1978) ("yet the federal mining law surely was not intended to be a general real estate law . . . 'the Congressional mandate did not sanction the disposal of federal lands under the mining laws for purposes unrelated to mining'" (quoting 1 AMERICAN LAW OF MINING (1983), *supra* note 18, § 2.4)); United States v. Coleman, 390 U.S. 599, 602 (1968) ("Under the mining laws Congress has made public lands available to people for the purpose of mining valuable mineral deposits and not for other purposes."); Cataract Gold Mining Co., 43 Pub. Lands Dec. 248, 254 (1914) ("[F]or the mineral claimant to remove the minerals from the ground and place the same in the market [is] the evident intent and purpose of the mining laws.") [↑](#footnote-ref-137)
137. 137 19 Pub. Lands Dec. 455 (1894). [↑](#footnote-ref-138)
138. 138 Id. at 457. [↑](#footnote-ref-139)
139. 139 197 U.S. 313 (1905); *see also* Best v. Humboldt Placer Mining Co., 371 U.S. 334 (1963); Cameron v. United States, 252 U.S. 450 (1920). [↑](#footnote-ref-140)
140. 140 128 U.S. 673 (1888). [↑](#footnote-ref-141)
141. 141 Id. at 674. [↑](#footnote-ref-142)
142. 142 Id. at 684. [↑](#footnote-ref-143)
143. 143 *Id.* (emphasis added). A court would naturally be reluctant to set aside lightly a Government patent. Considerations of security of title, however, did not appear to influence the Court with respect to the quoted language. [↑](#footnote-ref-144)
144. 144 Castle v. Womble, 19 Pub. Lands Dec. 455, 457 (1894) (emphasis added). [↑](#footnote-ref-145)
145. 145 Freeman v. Summers, 52 Pub. Lands Dec. 201, 205 (1927) ("It is sufficient . . . if [the claimant] finds mineral in a mass so located that he can follow the vein or mineral-bearing body, with *reasonable hope* and assurance that he will *ultimately* develop a paying mine.") (emphasis added). [↑](#footnote-ref-146)
146. 146 United States v. Smith, Op. Solic. Dept. Interior, A -- 30888, at 8 (1968); *see also* East Tintic Consol. Mining Co., 43 Pub. Lands Dec. 79, 81 (1914) ("[T]he Department did not . . . hold or intend to hold that ore in commercial quantities must be discovered before a valid location could be made"); United States v. Ohio ***Oil*** Co., 240 F. 996, 998 (Wyo. 1916) (quoting approvingly from Book v. Justice Mining Co., 58 F. 106, 120 (D. Nev. 1893): "[w]hen the locator finds rock in place, containing mineral, he has made a discovery, within the meaning of the [mining law] whether the rock or earth is rich or poor, whether it assays high or low."). The *Ohio* ***Oil*** decision demonstrates the extreme liberality shown by the courts to the mining claimant in resolving discovery questions. In fact, the court in *Ohio* ***Oil*** misconstrued the holding in *Justice Mining. Justice Mining* has relevance only in disputes between rival claimants, not in disputes to which the United States is a party. [↑](#footnote-ref-147)
147. 147 United States v. Altman, 68 Interior Dec. 235, 237 (1961) (emphasis added); *see also* United States v. Gold Placer, Inc., 25 I.B.L.A. 368, 380, GFS(Min) 43 (1976) (Stuebing, ALA, dissenting); United States v. Henault Mining Co., 73 Interior Dec. 184 (1966); United States v. White, 72 Interior Dec. 522 (1965); United States v. Smith, 66 Interior Dec. 169, 172 (1959). *But see* Big Pine Mining Corp., 53 Pub. Lands Dec. 410, 412 (1931); Cataract Gold Mining Co., 43 Pub. Lands Dec. 248, 254 (1914). These decisions required a showing that it was more probable than not that a paying mine could be developed. [↑](#footnote-ref-148)
148. 148 United States v. Bunker Hill & Sullivan Mining & Concentrating Co., 48 Pub. Lands Dec. 598, 603 (1922) (the "conclusion [that some of the claims in question were valid] is reached only by considering with *liberality* the testimony adduced and the showing made in the record." (emphasis added)). [↑](#footnote-ref-149)
149. 149 Jefferson-Montana Copper Mines Co., 41 Pub. Lands Dec. 320, 323 (1912). [↑](#footnote-ref-150)
150. 150 *Id.;* Shoshone Mining Co. v. Rutter, 87 F. 801 (1898); ***Kern*** ***Oil*** Co. v. Clotfelter, 30 Pub. Lands Dec. 583, 587 (1901). [↑](#footnote-ref-151)
151. 151 Freeman v. Summers, 52 Pub. Lands Dec. 120, 204 (1927); Jefferson-Montana Copper Mines Co, 41 Pub. Lands Dec. 320, 324 (1912). [↑](#footnote-ref-152)
152. 152 ***Kern*** ***Oil*** Co. v. Clotfelter, 30 Pub. Lands Dec. 583, 587 (1901). [↑](#footnote-ref-153)
153. 153 Rough Rider, 42 Pub. Lands Dec. 584, 587 (1913). [↑](#footnote-ref-154)
154. 154 United States v. Bunker Hill & Sullivan Mining & Concentrating Co., 48 Pub. Lands Dec. 598 (1922). [↑](#footnote-ref-155)
155. 155 Utah Power & Light Co. v. United States, 243 U.S. 389, 409 (1917). [↑](#footnote-ref-156)
156. 156 The issue arose because the mining law refers only to metallic minerals. The question, therefore, was whether nonmetallic minerals were excluded from location under the mining law by implication. [↑](#footnote-ref-157)
157. 157 14 Op. Att'y Gen. 115, 116 (1872) (emphasis added). The opinion is actually dated 1862, but it is clear from the opinion itself as well as the volume in which it appears that this is a typographical error, and that the correct date is 1872. [↑](#footnote-ref-158)
158. 158 Act of August 4, 1892, ch. 375, §§ 1, 3, 27 Stat. 348 (codified at 30 U.S.C. 161 (1982)). [↑](#footnote-ref-159)
159. 159 12 Pub. Lands Dec. 1 (1891). [↑](#footnote-ref-160)
160. 160 Id. at 1-30. [↑](#footnote-ref-161)
161. 161 Pacific Coast Marble Co. v. Northern Pac. R.R., 25 Pub. Lands Dec. 233, 244 (1897). [↑](#footnote-ref-162)
162. 162 *See* PUBLIC LAND LAW REVIEW, *supra* note 1, at 19 ("The policy of making these lands available to those who would develop them must be judged as highly successful. In good part because of this policy, the United States now has the highest standard of living of any nation on earth."). [↑](#footnote-ref-163)
163. 163 M. CLAWSON, THE FEDERAL LANDS REVISITED 25 (1983). Jenks Cameron expressed the same notion in somewhat more evocative language a half century earlier:

     Assuredly America's forests were plundered -- by the American people . . . .

     There is in truth another side to the doleful tale of denudation, devastation, plunderation [sic]. It is possible for a man to squander a fortune and win a greater one in the process. Or to lose in gold and gain in character. Seldom, however, does a spendthrift beat the game spiritually as well as materially. But is not that after all what America has done in the course of her woodland wasting? Measured by the dollar yardstick does the billion or so in timber that has been wasted or stolen compare with the tens of billions of solid values represented by the empire that the spirit of the Borderers has made an accomplished fact since 1850?

     J. CAMERON, THE DEVELOPMENT OF GOVERNMENTAL FOREST CONTROL IN THE UNITED STATES 116-17 (1928); *see also* THE JOURNALS OF LEWIS AND CLARK xxxv (B. DeVoto ed. 1953) (one of Jefferson's purposes in commissioning the Lewis and Clark expedition was to "buttress the American claim to the Oregon Country"). [↑](#footnote-ref-164)
164. 164 E. L. PEFFER, THE CLOSING OF THE PUBLIC DOMAIN: DISPOSAL AND RESERVATION POLICIES 1900-50 5 (1951). [↑](#footnote-ref-165)
165. 165 *See* Chrisman v. Miller, 197 U.S. 313, 322 (1905); *see also* 1 AMERICAN LAW OF MINING (1983), *supra* note 18, § 4.64 n.1; 1 LINDLEY ON MINES § 336 (2d ed. 1903). [↑](#footnote-ref-166)
166. 166 *See* United States v. Airborne Prospectors, 16 I.B.L.A. 403, 409, GFS(Min) 54 (1974).

     The test for determining whether a valuable mineral deposit has been found is not whether the particular mining claimant feels justified in the further expenditures of labor and means, but whether a person of ordinary prudence would, under the circumstances, be justified in undertaking the development of a mine. The test is objective and not subjective.

     *Id.; see also* United States v. Maley, 29 I.B.L.A. 201, 207, GFS(Min) 13 (1977); United States v. Vaux, 24 I.B.L.A. 289, 297-98 GFS(Min) 24 (1976). [↑](#footnote-ref-167)
167. 167 Acts of May 20, 1862, ch. 75, 12 Stat. 392; Mar. 3, 1891, ch. 561, 26 Stat. 1097 (codified as amended at 43 U.S.C. §§ 161, 162, 165, 173, 174, 185, 202, 235, 254, 261, 277 (1982) (repealed 1976)). [↑](#footnote-ref-168)
168. 168 Indeed, the history of the public land laws is, to a large extent, a history of fraud. M. CLAWSON, *supra* note 163, at 124. [↑](#footnote-ref-169)
169. 169 A homesteader could obtain his land free of charge, 43 U.S.C. § 179 (1982) (repealed 1976), while the miner was required to pay up to $ 5 per acre. 30 U.S.C. § 29 (1982). Land purchased under the preemption statutes could be obtained for $ 1.25 per acre. [↑](#footnote-ref-170)
170. 170 The miner need only be a citizen or one who has declared his intention to become a citizen. In order for the homesteader to qualify, however, he had to be a "head of a family," or at least 21. 43 U.S.C. § 161 (1982) (repealed 1976). [↑](#footnote-ref-171)
171. 171 An agricultural entryman could claim 160 acres under the Homestead Act of 1862, 43 U.S.C. § 211 (1982) (repealed 1976) and as many as 640 acres under the Stock-Raising Homestead Act [hereinafter referred to as SRHA], 43 U.S.C. § 294 (1982) (repealed 1976). The miner, however, is limited to a claim of approximately 20 acres. 30 U.S.C. §§ 23, 35 (1982). [↑](#footnote-ref-172)
172. 172 There is no limit on the number of claims the miner can make. The homesteader, however, was limited to one claim. 43 U.S.C. § 161 (1982) (repealed 1976). [↑](#footnote-ref-173)
173. 173 *See* D. LYONS, ETHICS AND THE RULE OF LAW (1984).

     Prudence evaluates actions or decisions in relation to the *agent's* own good or welfare. A person acts prudently when she serves her own best interests; she acts imprudently otherwise. Prudence may or may not require that one serve *other's* welfare; it requires that one do so only as a way of seving one's own welfare most effectively. . . . Utilitarianism, by contrast, evaluates actions or decisions in relation to the *general* welfare. It requires us to take other's welfare into account and to serve welfare generally, to the maximum degree possible.

     *Id.* at 111-12 (emphasis in original). [↑](#footnote-ref-174)
174. 174 As early as 1799 Congress appropriated money for the purpose of acquiring, managing, and protecting live oak plantations. Live oak was the best wood for the construction of was ships. Congress was concerned that the domestic supply of this wood, unless conserved, might not be sufficient for the national defense. P. GATES, HISTORY OF PUBLIC LAND LAW DEVELOPMENT 532-33 (1968). As iron and steel became the preferred material for the construction of naval ships, Congress abandoned this conservation effort. J. CAMERON, *supra* note 163, at 28-99; M. CLAWSON, *supra* note 163, at 27. [↑](#footnote-ref-175)
175. 175 Act of Mar. 1, 1872, ch. 24, § 1, 17 Stat. 32 (codified at 16 U.S.C. §§ 21-22 1982)). [↑](#footnote-ref-176)
176. 176 Act of Mar. 3, 1891, ch. 562, 26 Stat. 1095, 1103 (codified as amended in scattered sections of 16, 25, 30 and 43 U.S.C.). [↑](#footnote-ref-177)
177. 177 Act of Dec. 29, 1916, ch. 9, 39 Stat. 862 (codified as amended at 43 U.S.C. §§ 291-301 (1982) (repealed 1976)). [↑](#footnote-ref-178)
178. 178 43 U.S.C. § 292 (1982). [↑](#footnote-ref-179)
179. 179 53 CONG. REC. 1126 (1916). [↑](#footnote-ref-180)
180. 180 *See* E. L. PEFFER, *supra* note 164, at 188-89 (on the most desirable land to which the law applied, a homesteader could raise 32 head of cattle per 640 acres, not enough to support a family when the land would not also support crops). Some of these lands were so barren that from one to two sections, *i.e.,* one to two square miles, were required for the sustenance of twenty head of cattle. Red Canyon Sheep Co. v. Ickes, 98 F.2d 308, 311 (1938). [↑](#footnote-ref-181)
181. 181 E. L. PEFFER, *supra* note 164, at 189. A 1936 evaluation of the SRHA and similar legislation concluded that

     50 million acres of land, relatively good for grazing but submarginal for crops, had gone to private ownership. Of this quantity 25 million acres had been abandoned for cultivation and 11 million acres additional now constituted acute problem areas. On all of this area the range had been destroyed and will be of little use for years to come unless reseeded.

     THE WESTERN RANGE, S. DOC. NO. 199, 74th Cong., 2d Sess. 13 (1936). [↑](#footnote-ref-182)
182. 182 M. CLAWSON, *supra* note 163, at 66 (fig. 3-1). [↑](#footnote-ref-183)
183. 183 *See* E. L. PEFFER, *supra* note 164, at 216 n.8. [↑](#footnote-ref-184)
184. 184 Act of June 28, 1934, ch. 865, 48 Stat. 1269 (codified as amended at 43 U.S.C. §§ 315-315n, 315o-1, 485, 1171 (1982)). [↑](#footnote-ref-185)
185. 185 E. L. PEFFER, *supra* note 164, at 6. [↑](#footnote-ref-186)
186. 186 *Id.* at 231. [↑](#footnote-ref-187)
187. 187 43 U.S.C. §§ 315, 315a, 315b (1982). [↑](#footnote-ref-188)
188. 188 43 U.S.C. § 315f (1982). [↑](#footnote-ref-189)
189. 189 Exec. Order Nos. 6910 (1934), 6964 (1935), *reprinted in* HISTORICAL RECORDS SURVEY, PRESIDENTIAL EXECUTIVE ORDERS 1862-1938, at 582, 588 (1944); [↑](#footnote-ref-190)
190. 190 Many of the 19th century donative public land laws were not actually repealed until the enactment of the FLPMA in 1976. Pub. L. No. 94-579, 90 Stat. 274 (codified at 43 U.S.C. §§ 1701-1784 (1982)). [↑](#footnote-ref-191)
191. 191 *See supra* note 189. [↑](#footnote-ref-192)
192. 192 51 CONG. REC. 13,680 (1914). [↑](#footnote-ref-193)
193. 193 E. L. PEFFER, *supra* note 164, at 216. [↑](#footnote-ref-194)
194. 194 86 CONG. REC. (app.), at 4198 (1940). [↑](#footnote-ref-195)
195. 195 The analysis in this paragraph borrows from Hardin, *The Tragedy of the Commons,* 162 SCIENCE 1243 (1968). [↑](#footnote-ref-196)
196. 196 The scenario depicted here is not unlike that discussed in Demsetz, *Toward a Theory of Property Rights,* 57 AM. ECON. REV. 347 (1967). The principal distinction is that while Demsetz postulates that similar economic forces lead to the development of private property rights, in the case of the Taylor Grazing Act they led instead to government regulation. [↑](#footnote-ref-197)
197. 197 *See, e.g.,* The Materials Act of 1947, Act of July 31, 1947, ch. 406, 61 Stat. 681 (codified as amended at 30 U.S.C. §§ 601-604 (1982)); The Surface Resources Act of 1955, Act of July 23, 1955, ch. 375, § 3, 69 Stat. 368 (codified as amended at 30 U.S.C. §§ 611-615 (1982)); The Wilderness Act of 1964, Pub. L. No. 88-577, 78 Stat. 890 (codified as amended at 16 U.S.C. §§ 1131-1136 (1982)); The Wild and Scenic Rivers Act of 1968, Pub. L. No. 90-542, 82 Stat. 906 (codified as amended at 16 U.S.C. §§ 1271-1287 (1982)); The Alaska National Interest Lands Conservation Act of 1980, Pub. L. No. 96-487, 94 Stat. 2371 (codified as amended at 16 U.S.C. §§ 3101-3233 (1982) and in scattered sections of 16 and 43 U.S.C.). [↑](#footnote-ref-198)
198. 198 43 U.S.C. § 1701(a)(1) (1982). [↑](#footnote-ref-199)
199. 199 E. L. PEFFER, *supra* note 164, at 218. [↑](#footnote-ref-200)
200. 200 H. L. ICKES, THE SECRET DIARY OF HAROLD L. ICKES: THE FIRST THOUSAND DAYS 1933-1936, at 173 (1953). [↑](#footnote-ref-201)
201. 201 *See supra* text accompanying notes 15-19. [↑](#footnote-ref-202)
202. 202 Solicitor's Opinion, Taking of Sand and Gravel from Public Lands for Federal Aid Highways, 54 Interior Dec. 294 (1933). [↑](#footnote-ref-203)
203. 203 52 Interior Dec. 714 (1929). [↑](#footnote-ref-204)
204. 204 54 Interior Dec. 296 (emphasis added). The emphasized language did not originate in the Solicior's opinion, but is found in *Layman v. Ellis* and in various forms in earlier Departmental decisions. *See* J. Leshy, The Perpetual Motion Machine (An affectionate discourse on the origin, implementation, evolution, and future of the federal mining law of 1872) 212-13 (1984) (unpublished manuscript) (on file at *UCLA Law Review*). In the Solicitor's opinion, however, the language was for the first time a part of the holding, and made profitability determinative of locatability. In *Layman* and the other earlier decisions, profitability was just one factor among many to be considered in determining whether a particular deposit was locatable. [↑](#footnote-ref-205)
205. 205 54 Interior Dec. 296. Although *Layman* does refer to marketability at a profit, 52 Interior Dec. at 720, it is dicta and not central to the opinion. [↑](#footnote-ref-206)
206. 206 *See* 1 AMERICAN LAW OF MINING (1983), *supra* note 18, § 4.82. United States v. Dawson, 58 Interior Dec. 670, 679 (1944), the Secretary held that "[i]n determining whether land is valuable for mineral it must be shown . . . that the removal and marketing will probably yield a profit; *or* that such substance exists in the land in such quantity as to justify a prudent man in expending labor and capital in an effort to obtain it." (emphasis added.) [↑](#footnote-ref-207)
207. 207 Op. Solic. Dept. Interior, A-28157 (1960). [↑](#footnote-ref-208)
208. 208 *Id.* (emphasis added) (citations omitted). [↑](#footnote-ref-209)
209. 209 271 F.2d 836 (D.C. Cir. 1959) (per curiam). [↑](#footnote-ref-210)
210. 210 It is perhaps worth noting that Chief Justice (then Circuit Judge) Burger was a member of the panel that decided *Foster.* Although the case was not decided on that basis, the court in *Foster* may have believed that the mining claimant was acting in bad faith. The court took pains to note, for example, that the deposit of sand and gravel involved was situated only thirteen miles from the center of Las Vegas. Id. at 837. [↑](#footnote-ref-211)
211. 211 Id. at 838 (emphasis added). [↑](#footnote-ref-212)
212. 212 See 1 AMERICAN LAW OF MINING (1983), *supra* note 18, § 4.82, and cases cited therein. [↑](#footnote-ref-213)
213. 213 Solicitor's Opinion, Marketability Rule, 69 Interior Dec. 145 (1962). [↑](#footnote-ref-214)
214. 214 The Solicitor dismissed these appearances, stating that "our decisions may have been misunderstood and an undue rigidity may have been ascribed to them . . . ." Id. at 145. [↑](#footnote-ref-215)
215. 215 Id. at 146. [↑](#footnote-ref-216)
216. 216 Foster v. Seaton, 271 F.2d 836, 838 (D.C. Cir. 1959) (emphasis added). [↑](#footnote-ref-217)
217. 217 That Solicitor Barry was using "marketability" in the sense of saleability is apparent from his references to "demand" and "market" but not to price. This conclusion is reinforced by Solicitor Barry's oral argument before the Supreme Court in United States v. Coleman, 390 U.S. 599 (1968). The Solicitor asserted that the key issue with respect to minerals of widespread occurrence, such as sand and gravel, is whether the miner "is going to be able to sell anything or not." Oral Argument of the United States, United States v. Coleman, 390 U.S. 599 (1968), *reprinted in* 1 AMERICAN LAW OF MINING (1983), *supra* note 18, § 4.81A. [↑](#footnote-ref-218)
218. 218 390 U.S. 599 (1968). [↑](#footnote-ref-219)
219. 219 Id. at 600. [↑](#footnote-ref-220)
220. 220 Coleman v. United States, 363 F.2d 190 (9th Cir. 1966), *rev'd,* 390 U.S. 599 (1968). [↑](#footnote-ref-221)
221. 221 United States v. Coleman, 390 U.S. at 601. [↑](#footnote-ref-222)
222. 222 Coleman v. United States, 363 F.2d at 203. [↑](#footnote-ref-223)
223. 223 390 U.S. 599 (1968). [↑](#footnote-ref-224)
224. 224 271 F.2d 836 (D.C. Cir. 1959); *see supra* text accompanying notes 209-11. [↑](#footnote-ref-225)
225. 225 United States v. Coleman, 390 U.S. at 602 (emphasis added). [↑](#footnote-ref-226)
226. 226 Id. at 600 (emphasis added). [↑](#footnote-ref-227)
227. 227 Id. at 601. [↑](#footnote-ref-228)
228. 228 Id. at 603. [↑](#footnote-ref-229)
229. 229 The prices of precious metals are subject to wide swings. Deposits that can be mined profitably when prices are high may be unprofitable when prices fall. *See generally* Gibson, *No One's Pet Rocks: Why Strategic Minerals Have Fallen From Favor,* BARRONS, Oct. 3, 1983, at 8. [↑](#footnote-ref-230)
230. 230 One commentator found the Court's mistake so egregious that he was led to exclaim: "Anyone who attempts to analyze *Coleman* in any depth soon realizes that either the Supreme Court did not understand the marketability rule or it did not understand the issue involved in the appeal." Reeves, *supra* note 22, at 416-17. [↑](#footnote-ref-231)
231. 231 *See supra* text accompanying notes 173-205. [↑](#footnote-ref-232)
232. 232 390 U.S. at 602. [↑](#footnote-ref-233)
233. 233 United States v. Coleman, 390 U.S. at 603 ("[a]s we have pointed out above, the prudent-man test and the marketability test are not distinct standards, but are complementary in that the latter is a refinement of the former."); United States v. Reynders, 26 I.B.L.A. 131, 133, GFS(Min) 47 (1976) ("[o]ver the years since the promulgation of the prudent man test the Department has *refined* the law of discovery to include what has become known as the 'marketability test' . . . ." (emphasis added)). [↑](#footnote-ref-234)
234. 234 19 Pub. Lands Dec. 455, 456 (1894); *see supra* text accompanying note 145. [↑](#footnote-ref-235)
235. 235 Indeed, one of the most important applications of the marketability rule has been in invalidating "[l]ocations based on speculation that there may at some future date be a market for the discovered material." United States v. Taggart, 53 I.B.L.A. 353, 360, GFS(Min) 100 (1981); *see also* Barrows v. Hickel, 447 F.2d 80, 83 (9th Cir. 1971); United States v. Isbell Constr. Co., 78 Interior Dec. 385, 396 (1971). [↑](#footnote-ref-236)
236. 236 *See supra* text accompanying notes 155-64. [↑](#footnote-ref-237)
237. 237 Barton v. Morton, 498 F.2d 288, 292 (9th Cir.), *cert. denied,* 419 U.S. 1021 (1974). [↑](#footnote-ref-238)
238. 238 The phrase "value at the margin" is used to denote the value of the last unit of public land. *See* A. ALCHIAN & W. ALLEN, EXCHANGE AND PRODUCTION: COMPETITION, COORDINATION, AND CONTROL 21-2 (3d ed. 1983). The value at the margin in this context may be thought of as the amount the government, which already owned more than one billion acres of similar land, T. DONALDSON, THE PUBLIC DOMAIN 527 (3d rev. ed. 1884), would have been willing to pay to acquire 20 acres more. [↑](#footnote-ref-239)
239. 239 14 Op. Att'y. Gen. 114, 116 (1872). [↑](#footnote-ref-240)
240. 240 *Id.* (emphasis added). [↑](#footnote-ref-241)
241. 241 R. NASH, WILDERNESS AND THE AMERICAN MIND 26 (1974). The value of the wilderness lay entirely in its capacity for development and use. *Id.* at 23-43. [↑](#footnote-ref-242)
242. 242 Jackson, *Second Annual Message,* in 2 A COMPILATION OF THE MESSAGES AND PAPERS OF THE PRESIDENTS 521 (J. D. Richardson ed. 1896), *quoted in* R. NASH, *supra* note 241, at 41. [↑](#footnote-ref-243)
243. 243 Sax, *Helpless Giants: The National Parks and the Regulation of Private Lands,* 75 MICH. L. REV. 239 (1976); *see also* McCloskey, *The Wilderness Act of 1964: Its Background and Meaning,* 45 OR. L. REV. 288 (1966). [↑](#footnote-ref-244)
244. 244 PUBLIC LAND LAW REVIEW, *supra* note 1, at 33. [↑](#footnote-ref-245)
245. 245 W. O DOUGLAS, MY WILDERNESS: THE PACIFIC WEST 101 (1960). [↑](#footnote-ref-246)
246. 246 43 U.S.C. §§ 1701-1784 (1982). [↑](#footnote-ref-247)
247. 247 *Id.* § 1701(a)(1). [↑](#footnote-ref-248)
248. 248 *Id.* § 1711(a). [↑](#footnote-ref-249)
249. 249 *Id.* § 1712. [↑](#footnote-ref-250)
250. 250 16 U.S.C. §§ 1271-1287 (1982). [↑](#footnote-ref-251)
251. 251 *Id.* § 1271. [↑](#footnote-ref-252)
252. 252 19 U.S.C. §§ 1131-1136 (1982). [↑](#footnote-ref-253)
253. 253 *Id.* § 1131(c). [↑](#footnote-ref-254)
254. 254 1 AMERICAN LAW OF MINING (1983), *supra* note 18, § 4.67. [↑](#footnote-ref-255)
255. 255 498 F.2d 288 (9th Cir.), *cert. denied,* 419 U.S. 1021 (1974). [↑](#footnote-ref-256)
256. 256 498 F.2d at 291-92; *see* Henault Mining Co. v. Tysk, 419 F.2d 766 (9th Cir. 1969), *cert. denied,* 398 U.S. 950 (1970); *accord* United States v. Fichtner, 24 I.B.L.A. 128, 130, GFS(Min) 68 (1976). [↑](#footnote-ref-257)
257. 257 It is difficult to state with certainty whether or not cases decided after *Coleman* would have been decided differently under *Castle v. Womble.* This is because *Coleman* formulated the marketability rule as a "refinement" of the prudent man rule. Consequently, holdings that are actually based on the marketability rule are frequently cast in terms of the prudent man rule. [↑](#footnote-ref-258)
258. 258 *See supra* text accompanying notes 165-67. [↑](#footnote-ref-259)
259. 259 Although the marketability rule tends to exclude future possibilities from consideration in determining the validity of a claim, it does not require proof that profitable operations have actually been conducted. United States v. Arizona Mining & Refining Co., 27 I.B.L.A. 99, 105-06, GFS(Min) 66 (1976). It does not, therefore, require a showing that minerals have actually been sold at a profit from the claim in question. Id. at 105. Numerous decisions have observed, however, that failure to develop a claim after its location may raise a presumption that the minerals which it contains cannot be sold at a profit. *See, e.g.,* United States v. Barrows, 76 Interior Dec. 299, 306 (1969). While this presumption is rebuttable, proof by the government of a claimant's failure to develop a claim is sufficient to establish the government's prima facie case of invalidity. United States v. Hess, 46 I.B.L.A. 1, 8, GFS(Min) 40 (1980). The burden then shifts to the claimant to establish the validity of his claim. *Id.* If it can be shown that the claim could have been worked at a profit, the claimant's "election to retain that deposit intact as a reasonable reserve for future use will not operate to invalidate an otherwise valid claim." United States v. Oneida Perlite Corp., 57 I.B.L.A. 167, 183, GFS(Min) 278 (1981); *see* United States v. Harenberg, 9 I.B.L.A. 77, 80, GFS(Min) 19 (1973). [↑](#footnote-ref-260)
260. 260 542 F.2d 1364 (9th Cir. 1976). [↑](#footnote-ref-261)
261. 261 Id. at 1369. For analogous holdings that a mining claim from which mineral cannot presently be extracted at a profit, but which is held "as a reserve for future development," is invalid, see United States v. Taggart, 53 I.B.L.A. 353, 360, GFS(Min) 100 (1981); Barrows v. Hickel, 447 F.2d 80 (9th Cir. 1971); United States v. Gibbs, 13 I.B.L.A. 382, 396, GFS(Min) 102 (1973); United States v. Stewart, 79 Interior Dec. 27 (1972). [↑](#footnote-ref-262)
262. 262 81 Interior Dec. 370 (1974). [↑](#footnote-ref-263)
263. 263 Id. at 390. [↑](#footnote-ref-264)
264. 264 Id. at 391 n.54 (emphasis added). [↑](#footnote-ref-265)
265. 265 *See* Andrus v. Shell ***Oil*** Co., 446 U.S. 657 (1980). [↑](#footnote-ref-266)
266. 266 Even claims on which no mineral has been exposed may have value "because of the geology of the area and the possibility that a valuable deposit . . . might be found within the limits of one . . . of the claims." Such value is not sufficient to validate the claims under the marketability rule, however. United States v. Jackson, 53 I.B.L.A. 289, 292, GFS(Min) 93 (1981). [↑](#footnote-ref-267)
267. 267 Andrus v. Shell ***Oil*** Co., 446 U.S. 657, 661 (1980), (quoting Freeman v. Summers, 52 Pub. Lands Dec. 201, 206 (1927)) (emphasis added by the Court). [↑](#footnote-ref-268)
268. 268 Andrus v. Shell ***Oil*** Co., 446 U.S. 657 (1980), approves a different standard of discovery for ***oil*** shale from the one used for all other minerals. *Andrus* may provide authority, therefore, for the development of different discovery standards tailored specifically to certain minerals. [↑](#footnote-ref-269)
269. 269 90 Interior Dec. 325 (1983). [↑](#footnote-ref-270)
270. 270 The "protest" is a procedure whereby "[a]ny person who claims title to or an interest in land adverse to any other person claiming title to or an interest in such land . . . may initiate proceedings to have the claim of title or interest adverse to his claim invalidated for any reason not shown by the records of the Bureau of Land Management." 43 C.F.R. § 4.450-1 (1985). The purpose of the protest is "to assist the Secretary of the Interior in carrying out his duties to protect the interests of the government and the public in public lands." Duguid v. Best, 291 F.2d 235, 242 (9th Cir. 1961) (construing 43 C.F.R. § 221.51, the predecessor to 43 C.F.R. § 4.450-1 (1985)). The protest procedure is discussed exhaustively in In re Pacific Coast Molybdenum Co., 68 I.B.L.A. 325, GFS(Min) 329 (1982). [↑](#footnote-ref-271)
271. 271 Pub. L. No. 96-487, 94 Stat. 2371 (1980) (codified as amended at 16 U.S.C. §§ 3101-3233 (1982) and in scattered sections of 16 and 43 U.S.C.) [hereinafter referred to as ANILCA]. ANILCA withdrew lands located within the Misty Fjords National Monument from the prospective operation of the mining law. Sections 503(f)(2)(A) and (B), however, specifically excepted from the withdrawal valid mining claims located prior to the enactment of ANILCA. [↑](#footnote-ref-272)
272. 272 In re Pacific Coast Molybdenum Co., 90 Interior Dec. at 361. [↑](#footnote-ref-273)
273. 273 *Id.* [↑](#footnote-ref-274)
274. 274 Id. at 363 (emphasis added). [↑](#footnote-ref-275)
275. 275 Id. at 357 n.7. [↑](#footnote-ref-276)
276. 276 The claims involved here were lode claims. Id. at 353. [↑](#footnote-ref-277)
277. 277 The Office of Mining Law and Saleable Minerals of the BLM also takes the position that the statutory price set by the mining law precludes it from using any other cost figure for the land in determining profitability. Indeed, that Office considers the statutory land costs to be *de minimis,* and does not even include them in its calculations in determining profitability. The cost of any reclamation required upon the termination of mining, however, is included. Telephone interviews with the Office of Mining and Saleable Minerals (Oct. 1984).

     If an interest in land outside the mining claim, such as an easement across private land, must be obtained to conduct mining operations, the cost of acquiring that interest is included by the Board in calculating profit. United States v. Taggart, 53 I.B.L.A. 353, 358 n.7, GFS(Min) 100 (1981). The cost of acquiring an access easement across public lands would not be included, however, because "mining claimants . . . have historically been regarded as having a right of access over public lands . . . ." *Id.* [↑](#footnote-ref-278)
278. 278 The discussion that follows ignores reclamation costs because they are constant, and therefore do not affect any of the stated conclusions. Reclamation costs will be considered subsequently in connection with the problems of irreversibility. *See infra* text accompanying notes 359-65. [↑](#footnote-ref-279)
279. 279 The phrase "*in situ* resources" refers to the attributes of a particular tract of land that give it value for some use other than mining. In some cases these resources will comprise the amenities provided by rare natural environments. The phrase is intended to be broad enough to include all alternative uses, such as timber harvesting, livestock grazing, or residential and recreational development. Thus, the *in situ* resources of a tract could just as likely be its suitability for inclusion in a ski area as in a wilderness area. The use of the phrase is more technically accurate than the use of the word "land" in this context, because it is assumed that land cannot actually be consumed. [↑](#footnote-ref-280)
280. 280 *See* A. ALCHIAN & W. ALLEN, *supra* note 238, at 4. [↑](#footnote-ref-281)
281. 281 If nonmining uses are not entirely or permanently precluded, the opportunity cost would equal the highest valued alternative use, less the reduced value of the land for nonmining uses after mining is completed. [↑](#footnote-ref-282)
282. 282 These relative values are supported by the statutes which define these classification. [↑](#footnote-ref-283)
283. 283 The Board specifically overruled a line of Interior decisions that had intimated that the use of opportunity cost was appropriate in determining land cost. In re Pacific Coast Molybdenum Co., 90 Interior Dec. at 362-63. The Board did not refer to the decisions discussed *infra* notes 284-85. [↑](#footnote-ref-284)
284. 284 12 Pub. Lands Dec. 612 (1891). [↑](#footnote-ref-285)
285. 285 Id. at 615. Similar tests appear in early Interior Department decisions concerning the mining law. *See, e.g.,* Winters v. Bliss, 14 Pub. Lands Dec. 9 (1892); Tinkham v. McCaffrey, 13 Pub. Lands Dec. 517 (1891). *Contra* Cataract Gold Mining Co., 43 Pub. Lands Dec. 248 (1914). The comparison of values required by the use of opportunity cost also found favor in the early state court decisions on the subject. In Ah Yew v. Choate, 24 Cal. 562 (1964), for example, the California Supreme Court considered whether certain lands, which were actually being mined for gold, were mineral lands. The court decided that they were not. The test used by the court was "whether upon the whole the lands appear to be better adapted to mining or other purposes." Id. at 567. [↑](#footnote-ref-286)
286. 286 17 I.B.L.A. 421, GFS(Min) 73 (1974). [↑](#footnote-ref-287)
287. 287 Id. at 430 (emphasis added). [↑](#footnote-ref-288)
288. 288 *See* R. MILLER, INTERMEDIATE MICROECONOMICS 226-27 (2d ed. 1982). [↑](#footnote-ref-289)
289. 289 United States v. Harper, 8 I.B.L.A. 357, GFS(Min) 6 (1972). [↑](#footnote-ref-290)
290. 290 United States v. Airborne Prospectors, 16 I.B.L.A. 403, 409-410, GFS(Min) 54 (1974). [↑](#footnote-ref-291)
291. 291 14 I.B.L.A. 10, GFS(Min) 2 (1974). [↑](#footnote-ref-292)
292. 292 Id. at 16. [↑](#footnote-ref-293)
293. 293 53 I.B.L.A. 289, GFS(Min) 93 (1981). [↑](#footnote-ref-294)
294. 294 Id. at 295; *see also* United States v. Edeline, 39 I.B.L.A. 236, GFS(Min) 21 (1979); United States v. Kiggins, 39 I.B.L.A. 88, GFS(Min) 17 (1979); United States v. Melluzzo, 38 I.B.L.A. 214, GFS (Min) 133 (1978); United States v. Harper, 8 I.B.L.A. 357, GFS (Min) 6 (1973); Barrows v. Hickel, 447 F.2d 80 (9th Cir. 1971); United States v. Melluzzo, 76 Interior Dec. 181, 192 (1969); Atchison, Topeka & Santa Fe Ry. v. Cox, 4 I.B.L.A. 279, GFS(Min) 5 (1972). [↑](#footnote-ref-295)
295. 295 Use of an explicit cost figure based on purchase price is especially suspect when the purchase does not occur in the context of an efficiently functioning market. Purchase price and opportunity cost will tend to be the same when the purchase is made in such a market, because the function of the market is to set prices equal to the highest valued use of a particular good. Because all potential users are potential bidders in such a market, the value of the good in alternative uses is automatically considered. No such consideration is given and no such equivalence exists, however, when, as in the case of the mining law, price is fixed by statute. [↑](#footnote-ref-296)
296. 296 All responsible authorities agree that the mining law should be interpreted so that it will result in the conversion of public lands to private entitlements for the purpose of mining and not for other purposes. *See, e.g.,* United States v. Coleman, 390 U.S. 599, 602 (1968). In *In re* PCM the Board stated that even if a valid discovery is shown, a claim would nevertheless be invalid if its "mineral values are *incidental* to the purpose for which the land is claimed." In re Pacific Coast Molybdenum Co., 90 Interior Dec. at 363 (emphasis in original); *see also* 2 AMERICAN LAW OF MINING (1983), *supra* note 18, at § 35.10[4]; *supra* text accompanying note 137. [↑](#footnote-ref-297)
297. 297 *See supra* note 58. [↑](#footnote-ref-298)
298. 298 United States v. Coleman, 390 U.S. at 602-03 (emphasis added). The Board in *In re* PCM implicitly recognized the use of opportunity cost in computing land values in limited circumstances. In re Pacific Coast Molybdenum Co., 90 Interior Dec. at 363. [↑](#footnote-ref-299)
299. 299 United States v. Coleman, 390 U.S. at 603. [↑](#footnote-ref-300)
300. 300 In re Pacific Coast Molybdenum Co., 90 Interior Dec. at 363 (emphasis added). Bad faith, in this context, exists when public lands are claimed under the mining law but, once acquired, will actually be devoted to some nonmining use. Thus, the Board concluded in *In re* PCM that "even if a discovery can be shown to exist, proof of bad faith can invalidate a claim, since in such a situation the mineral values are *incidental* to the purpose for which the land is claimed." *Id.* (emphasis in original). [↑](#footnote-ref-301)
301. 301 Cataract Gold Mining Co., 43 Pub. Lands Dec. 248, 254 (1914) (quoted approvingly in In re Pacific Coast Molybdenum Co., 90 Interior Dec. at 362-63). [↑](#footnote-ref-302)
302. 302 Although the burden of proving discovery is on the mining claimant, the government, as *In re* PCM recognizes, has the burden of proving bad faith. 90 Interior Dec. at 363; *see also* United States v. Prowell, 52 I.B.L.A. 256, GFS(Min) 50 (1981). [↑](#footnote-ref-303)
303. 303 For a definition of "externalities" see infra note 325 and accompanying text. [↑](#footnote-ref-304)
304. 304 The loss is only potential, because even though the mining claimant does not perceive the true social cost of the land, it is nevertheless possible that the claim will generate revenues in excess of that cost. *In re PCM*'s interpretation of the mining law does nothing to ensure that result, however. For more detail on the problems created by the existence of externalities, see *infra* text accompanying notes 325-26. [↑](#footnote-ref-305)
305. 305 These terms are defined *infra* text accompanying notes 314-15. These assumptions are, of course, unrealistic. A more realistic set of assumptions will be introduced subsequently in the discussion of the disadvantages of using opportunity cost. *See infra* text accompanying notes 326-28. [↑](#footnote-ref-306)
306. 306 The National Materials and Minerals Policy, Research and Development Act of 1980, 30 U.S.C. §§ 1601-1605 (1982), acknowledges the relevance of cost-benefit analysis to mining law issues and similar public policy issues. Section 1602 of the Act provides that it is "the continuing policy of the United States to promote . . . a long-term balance between resource production, energy use, a healthy environment, natural resources conservation, and social needs." 30 U.S.C. § 1602 (1982). The purpose of the Public Land Law Review Commission was to propose a public land policy that would "provide the maximum benefit for the general public." Pub. L. No. 88-606, 78 Stat. 982 § 1(b) (1964) (codified at 43 U.S.C. §§ 1391-1400 (omitted 1970)). Finally, President Reagan's Executive Order No. 12291, 3 C.F.R. 127 (1982), *reprinted in* 5 U.S.C. § 601 app., at 431-34 (1982), while not compelling the result suggested here, is certainly consistent with it. [↑](#footnote-ref-307)
307. 307 *See, e.g.,* A. FISHER, RESOURCE AND ENVIRONMENTAL ECONOMICS 10-37 (1981); J. KRUTILLA & A. FISHER, THE ECONOMICS OF NATURAL ENVIRONMENTS 151-88 (1975). [↑](#footnote-ref-308)
308. 308 FLPMA, 43 U.S.C. § 1701(a)(1) (1982). [↑](#footnote-ref-309)
309. 309 This proposal had its origins within the Reagan Administration in a recommendation by the Heritage Foundation transition team. Prior to Secretary Watt's announcement of his intention to implement the recommendation, the administration's intention to do so was reflected in the President's budgets. Krutilla, Fisher, Hyde & Smith, *Public Versus Private Ownership: The Federal Lands Case,* 2 J. POL'Y ANALYSIS & MGMT. 548, 549 (1983) [hereinafter cited as Krutilla]. The outrage that greeted Secretary Watt's proposal is chronicled in Stoler, *Land Sale of the Century,* TIME, Aug. 23, 1982, at 16. This response may have been in part the result of the belief by some people that the public lands are part of our national heritage and birthright. *See generally* R. NASH, *supra* note 241; J. KRUTILLA & A. FISHER, *supra* note 307, at 33. [↑](#footnote-ref-310)
310. 310 The term "public goods" should be distinguished from the terms "public lands" and "public domain." The word "public" in the two latter terms refers to the owner of the asset in question. Public lands are owned by the "public" through the agency of the government. The word "public" in the phrase "public goods," however, refers to the nature of the good itself. A public good is one "in which each individual's consumption leads to no subtraction from any other individual's consumption of that good." J. KRUTILLA & A. FISHER, *supra* note 307, at 23 (referring to Samuelson, *The Pure Theory of Public Expenditure,* 36 REV. ECON. & STATISTICS 387, 387 (1954)). One example of a public good is the national defense. The security which one person derives from expenditures for national defense in no way diminishes the security which another derives. Examples of public goods located on federal lands include the geyser Old Faithful in Yellowstone National Park and the majestic peaks of the Rocky Mountains. In both cases, one person's "consumption" of these natural phenomena (by viewing them, for example) does not subtract from another's consumption of them. It must be noted that Old Faithful is a mixed public good. While the geyser itself is not consumed by those who enjoy it, the viewing area from which it can be observed can accommodate only so many people at a time. In this sense, one person's consumption of the geyser does subtract from another's. [↑](#footnote-ref-311)
311. 311 Krutilla, *supra* note 309, at 551. [↑](#footnote-ref-312)
312. 312 The classifications used here derive from J. KRUTILLA & A. FISHER, *supra* note 307, at 22. [↑](#footnote-ref-313)
313. 313 As to these users, the park is a pure public good, so that by definition, a market will tend to misallocate it. *See supra* text accompanying notes 310-11. While this group of users may be difficult to identify, there is no doubt that the group exists. In 1972, for example, Time-Life Books marketed a volume on wilderness that it billed as capable of providing the reader with an "armchair" wilderness experience. For a detailed account of Time-Life's advertising effort promoting this book, see R. NASH, *supra* note 241, at 237-38. [↑](#footnote-ref-314)
314. 314 Arrow, *The Organization of Economic Activity: Issues Pertinent to the Choice of Market Versus Nonmarket Allocation,* in PUBLIC EXPENDITURE AND POLICY ANALYSIS 59, 68 (R. Haveman & J. Margolis eds. 1971). For other definitions of transaction costs, see Braunstein, *In Defense of a Traditional Immunity -- Toward an Economic Rationale for Not Estopping the Government,* 14 RUTGERS L.J. 1, 22 (1982). [↑](#footnote-ref-315)
315. 315 Calabresi & Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral,* 85 NARV. L. REV. 1089, 1107 (1972). [↑](#footnote-ref-316)
316. 316 340 Ill. App. 449, 92 N.E.2d 519 (1950). [↑](#footnote-ref-317)
317. 317 For a discussion of the rule of capture in the law of ***oil*** and gas, see 1 H. WILLIAMS & C. MEYERS, ***OIL*** AND GAS LAW § 204.4 (1984). [↑](#footnote-ref-318)
318. 318 340 Ill. App. at 453, 92 N.E.2d at 521. [↑](#footnote-ref-319)
319. 319 *Id.* [↑](#footnote-ref-320)
320. 320 This expectation was reinforced by the fact that Carter ***Oil*** had previously lost a federal court suit identical to the instant case and involving the same field but a different landowner. Ramsey v. Carter ***Oil*** Co., 74 F. Supp. 481 (E.D. Ill. 1947), *aff'd,* 172 F.2d 622 (1949). Even though Carter ***Oil*** was unable to convert wells on the Ramsey property to input wells as a result of that suit, Carter ***Oil*** was still proceeding with the recovery program. [↑](#footnote-ref-321)
321. 321 It is entirely possible that the secondary recovery program would not be blocked by strategic behavior if Carter ***Oil***'s interest in the program were so strong that it would be willing to pay Dees and the other landowners for the right to convert some of the producing wells. Carter ***Oil*** would then be faced with the problem of the hold out, however. *See infra* text accompanying notes 323-28. [↑](#footnote-ref-322)
322. 322 In *Dees,* the Illinois court avoided this result by distinguishing contrary authority, *see supra* note 320, on technical and insubstantial grounds, and then holding that the implied covenant to prevent drainage was not violated under the facts presented. 340 Ill. App. at 449, 92 N.E.2d at 523-24. [↑](#footnote-ref-323)
323. 323 It can be argued that the hold out can be dealt with through eminent domain. This argument implicitly admits that the market has failed to allocate the land in question efficiently, requiring nonmarket allocations through the device of government intervention. For a discussion of eminent domain as a response to market failure, see Calabresi & Melamed, *supra* note 315, at 1106-08. [↑](#footnote-ref-324)
324. 324 *See generally* Demsetz, *When Does the Rule of Liability Matter?* 1 J. LEGAL STUD. 13 (1972). [↑](#footnote-ref-325)
325. 325 For a definition of ownership externality, see E.J. MISHAN, COST-BENEFIT ANALYSIS 119 (1982) (an externality is "a direct effect on another's profit or welfare arising as an incidental by product of some other person's or firm's legitimate activity."). [↑](#footnote-ref-326)
326. 326 Demsetz, *supra* note 196, at 348. [↑](#footnote-ref-327)
327. 327 Multiple use, when possible, is mandated for the public lands. *See* FLPMA, 43 U.S.C. § 1712(c)(1) (1982) (governing BLM lands); Multiple-Use Sustained-Yield Act of 1960, 16 U.S.C. § 528-531 (1982) (governing Forest Service lands). [↑](#footnote-ref-328)
328. 328 This flexibility is limited because the mining law does not permit the award of a patent to be conditioned on conduct that minimizes damage to other land users. [↑](#footnote-ref-329)
329. 329 *See e.g.,* Reeves, *supra* note 22, at 415 n. 1; Reeves, *supra* note 135, at 1; Erisman & Williams, *Watt's Up For Patenting,* 29 ROCKY MTN. MIN. L. INST. 321 (1983); 2 AMERICAN LAW OF MINING (2d ed. 1984), *supra* note 2, § 35.10[3]. [↑](#footnote-ref-330)
330. 330 *See supra* text accompanying notes 20-23. [↑](#footnote-ref-331)
331. 331 The reference, of course, is to Rawls's second principle of justice. J. RAWIS, A THEORY OF JUSTICE 302 (1971). [↑](#footnote-ref-332)
332. 332It is well known that the users of rare environments tend to be that small fraction of the population who are better off socially and economically than the majority." Krieger, *What's Wrong With Plastic Trees,* 179 SCIENCE 446, 450 (1973); *see also* Krieger, *Six Propositions on the Poor and Pollution,* 1 POL'Y SCI. 311 (1970). [↑](#footnote-ref-333)
333. 333 Central Hanover Bank and Trust Co. v. Commissioner, 159 F.2d 167, 169 (2d Cir.), *cert. denied,* 331 U.S. 836 (1947). [↑](#footnote-ref-334)
334. 334 By neutrality I mean simply that the matter of interpretation is accomplished solely by reference to the words of the statute under consideration together with certain "canons" of construction. [↑](#footnote-ref-335)
335. 335 115 N.Y. 506 (1889). [↑](#footnote-ref-336)
336. 336 At the time, New York had no statute dealing specifically with this problem. Since the decision in Riggs v. Palmer, 115 N.Y. at 506, however, such statutes have become common. *See* UNIF. PROBATE CODE § 2-803 (1969). [↑](#footnote-ref-337)
337. 337 Riggs v. Palmer, 115 N.Y. at 509-10. [↑](#footnote-ref-338)
338. 338 The court in Deem v. Millikin, 6 Ohio C.C. 357 (1892), criticized the *Riggs* court for overstepping the bounds of its authority, stating "when the legislature . . . speaks in clear language upon a question of policy, *it becomes the judicial tribunals to remain silent."* Id. at 360 (emphasis added); *see* Note, *Intent, Clear Statements, and the Common Law: Statutory Interpretation in the Supreme Court,* 95 HARV. L. REV. 892, 896 (1982) (asserting that the Supreme Court recently has developed the "novel doctrine" that it is not for the Court to depart from the literal meaning of a statute even if its failure to do so causes a harsh result). [↑](#footnote-ref-339)
339. 339 ST. THOMAS AQUINAS, SUMMA THEOLOGICA, Part II (first part) 74 (1915 ed.). [↑](#footnote-ref-340)
340. 340 L. HAND, THE BILL OF RIGHTS 23 (1958). [↑](#footnote-ref-341)
341. 341 *Id.* [↑](#footnote-ref-342)
342. 342 *See* Llewellyn, *Remarks on the Theory of Appellate Decision and the Rules or Canons about How Statutes are to be Construed,* 3 VAND. L. REV 395 (1950). [↑](#footnote-ref-343)
343. 343 Id. at 401 (emphasis added); *see* Posner, *Statutory Interpretation -- in the Classroom and in the Courtroom,* 50 U. CHI. L. REV. 800, 816 (1983). Judge Posner attacks the canons on the grounds that they are not only "vacuous and inconsistent" but also deceptive, because they appear to constrain the judge's decision when in fact they do not. [↑](#footnote-ref-344)
344. 344 *See supra* text accompanying notes 20-23. [↑](#footnote-ref-345)
345. 345 30 U.S.C. § 22 (1982) provides that the mineral lands of the United States "shall be free and open to exploration and purchase . . . under regulations prescribed by law, *and according to the local customs or rules of miners in the several mining districts.*" Section 28 provides that "The miners of each mining district may make regulations not in conflict with the laws of the United States, or . . . the State or Territory in which the district is situated, governing the location, manner of recording, [and] amount of work necessary to hold possession of a mining claim . . . ." *Id.* § 28. [↑](#footnote-ref-346)
346. 346 Jennison v. Kirk, 98 U.S. 453, 459 (1878). [↑](#footnote-ref-347)
347. 347 Posner, *supra* note 343, at 818. [↑](#footnote-ref-348)
348. 348 *See* L. HAND, *supra* note 340, at 18-19. [↑](#footnote-ref-349)
349. 349 Because the likelihood that there is any relevant congressional intent is so small, there is no need to consider the more fundamental question of why a present generation should be bound by the unexpressed intention of a former generation, no member of whom survives. [↑](#footnote-ref-350)
350. 350 Recently, the Supreme Court tacitly admitted the futility of identifying a specific legislative intent in interpreting the mining law. [↑](#footnote-ref-351)
351. 351 U.S. CONST. art. IV, § 3, cl. 2. [↑](#footnote-ref-352)
352. 352 *See* G. CALABRESI, A COMMON LAW FOR THE AGE OF STATUTES (1982). Certainly, the courts to date have shown no inclination, in Calabresi's phrase, to "allocate the burden of inertia" with respect to the mining law. *Id.* at 146. Yet it would probably be appropriate, at least within the framework of Calabresi's argument, for the courts to do so. [↑](#footnote-ref-353)
353. 353 If the *in situ* resources will not be consumed by the mining, then, presumably, social opportunity cost will tend to equal private opportunity cost. This is because mining that does not consume *in situ* resources will tend to generate fewer negative ownership externalities. The mining activity still may generate some negative externalities, such as air pollution, that will keep social cost above private cost. [↑](#footnote-ref-354)
354. 354 This Conclusion follows from the assumption that social cost is greater than private cost, *i.e.,* that the value to the public of the *in situ* resources on the claim is greater than the value of the minerals in the claim. [↑](#footnote-ref-355)
355. 355 F. GLAHE & D. LEE, MICROECONOMIC THEORY AND APPLICATIONS 489 (1981). Glahe & Lee consider that this pursual of the activity beyond social efficiency occurs whenever the benefits are internal or private but some of the costs are external. *Id.* [↑](#footnote-ref-356)
356. 356 Irreversibility refers to the relative difficulty of eliminating the physical impacts on the *in situ* resources of a decision to develop a tract of land, in the event the development decision is later determined to have been improvident. No attempt is made here to identify the level of difficulty that represents the threshold between reversible and irreversible decisions. It is enough to note that wherever the line is drawn mining will, in some cases, cross it. [↑](#footnote-ref-357)
357. 357 Available technologies may be able to save current genetic information. Even so, information that would emerge from future evolution is permanently lost. [↑](#footnote-ref-358)
358. 358 This example is taken from J. KRUTILLA & A. FISHER, *supra* note 307, at 41-42. [↑](#footnote-ref-359)
359. 359 *Id.* at 42 n.2. [↑](#footnote-ref-360)
360. 360 L.A. Times, Nov. 16, 1984, pt. V, at 1, col. 1. [↑](#footnote-ref-361)
361. 361 In Granite Rock Co. v. California Coastal Comm'n, 768 F.2d 1077 (7th Cir. 1985), the validity of the mining claims was not before the court. The Ninth Circuit held that the company's unpatented claims, the legal title to which was still in the federal government, were not subject to a requirement for an independent state permit. Id. at 1083. [↑](#footnote-ref-362)
362. 362 L.A. Times, Nov. 16, 1984, pt. V, at 1, col. 1. [↑](#footnote-ref-363)
363. 363 The conservation movement of the early 19th and 20th century was founded predominantly on notions of utilitarianism. That movement supported the preservation of natural environments in order to maximize their economic usefulness to man. Today, the environmental movement prefers nonutilitarian justifications for the preservation of important natural environments. *See, e.g.,* Sagoff, *On Preserving the Natural Environment,* 84 YALE L.J. 205, 222 (1974); Tribe, *Ways Not to Think About Plastic Trees; New Foundations for Environmental Law,* 83 YALE L.J. 1315 (1974). For a general discussion of irreversibility and its implications for resource development, see A. FISHER, NATURAL RESOURCES AND NATURAL ENVIRONMENTS 138-39 (1984). The effect of irreversibility on development decisions is further explored and quantified in Fisher & Haneman, Option Value and the Extinction of Species (Working Paper No. 29) (unpublished manuscript) (on file at *UCLA Law Review*). [↑](#footnote-ref-364)
364. 364 30 U.S.C. §§ 181-287 (1982). [↑](#footnote-ref-365)
365. 365 Address of President Theodore Roosevelt to a Joint Session of Congress, S. DOC. NO. 310, 59th Cong., 2d Sess., *reprinted in* REFORM OF THE LAND LAWS: CONSERVATION OF NATIONAL RESOURCES 10-12 (1910) (emphasis added). [↑](#footnote-ref-366)
366. 366 The burden of proving the validity of a discovery is on the mining claimant as the proponent of a rule or order within the meaning of the Administrative Procedure Act. 5 U.S.C. §§ 551-559 (1982); *see* Foster v. Seaton, 271 F.2d 836, 837-38 (D.C. Cir. 1959). [↑](#footnote-ref-367)
367. 367 See *supra* note 270 and accompanying text for a discussion of the protest. An appeal of In Re Pacific Coast Molybdenum Co., 90 Interior Dec. 352 (1983), *see supra* notes 269-83, to the federal courts is an example of how the protest might be used in this type of litigation. [↑](#footnote-ref-368)