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THE WILD HORSE CONTROVERSY:
AN IRONY OF THE COMMONS

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John L. Dobra and George A. Uhimchuk *

I. Overview

The so called "wild horse controversy"(1) has recently attracted considerable public attention as a result of various consequences of the Wild Free-Roaming Horses and Burros Act of 1971 (PL 92-195). Briefly, the Act gives the Bureau of Land Management (BLM) of the Department of the Interior a mandate to perform the very difficult task of managing these animals, most of which range on BLM lands. The difficulty of this task is indicated by the fact that actions taken pursuant to the Act seem to have drawn criticism from all sides of the issue. The BLM is apparently left with a problem that it has neither the resources nor the authority to deal with in a satisfactory manner. As a consequence, the first

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(1) Heather Smith-Thomas, The Wild Horse Controversy, (New York: A. S. Barnes, and Co., 1979). Also see Phillip B. Davis, "Impacts of Federal Land Ownership and Management on Nevada's Ability to Manage Wildlife," in Phillip B. Davis, Robert E. Dickens, John L. Dobra, Richard Ganzel, and George A. Uhimchuk, "Report on State Sovereignty as Impaired by Federal Ownership of Land," Bulletin no. 82-1, Legislative Counsel Bureau, State of Nevada, (January, 1982).

point of our discussion is that the BLM is not the object of our criticisms of the Wild Horse Act.

Before turning to the consequences of the Wild Horse Act, and to present the extreme dimensions of the wild horse controversy, it is useful to note the love - hate nature of public perceptions of the mustangs. We can begin with the words of the Act which states that: "...wild free-roaming horses and burros are living symbols of the historic and pioneer spirit of the west,... and enrich the lives of the American people..."(2)

From this perspective, which we are not unsympathetic to, the sight of a herd of wild horses in flight is a unique and awe-inspiring experience. There is clearly a sense in which the free spirit of the horses symbolizes the free spirit of a free people.

Patriotic symbolism notwithstanding, history reminds us that the west was won with sterner stuff. And, while there may be nothing quite so eloquent as the sight of free-roaming mustangs, we know of no statement more eloquent for the other side of this controversy than that which appeared in the Pioche, Nevada Record August 24, 1972 protesting the passage of the Wild Horse Act. We quote at length:

"There were a few individuals that were somewhat "wild" in deportment, but the pioneer spirit is

(2)Section 1, PL 92-195.

not characterized by a spirit of wildness and adventure. The pioneer came west to improve his economic status - the commendable and major ambition of civilized man. He left home, friends, relatives, and security, with little but his courage and ambition, to suffer hunger, hardship and peril to attain his purpose. Such was the historic spirit of the pioneer... The wild horse was one of the major 'perils' of the pioneer in his trek to the West. His horses - draft and saddle - must get their food by being allowed to graze during the night with as little restraint as possible. This necessity, in wild horse country, exposed them to the enticement of the wild horse herds... When at last the pioneer reached the one hundred sixty where he settled, the wild horse 'peril' was increased. His meager resources were generally exhausted. There was no money for shelter or fences...(and) his horses must be unfettered on unfenced pastures where they were again the unprotected prey of the wild horse. Not the least of the chronicled struggles of the pioneer was his injury by 'free-roaming' horses. Perhaps he fought no greater pest; as the loss of even one horse from his team sometimes spelled his failure. It would take a distorted imagination to arrive at a conclusion that the wild horse is a living or any symbol of the spirit of the pioneer. The toil, labor and privation of the pioneer's tame horse would more nearly symbolize the spirit of the pioneer." (3)

Hence while some are inclined to view the mustangs romantically, others are inclined to see them as vermin, like wolves and coyotes that have been the traditional enemies of the livestock industries. Not only were the mustangs an "enticement" and threat to the security of ranchers' domesticated stock, but as the west was settled and the numbers of privately owned stock on the range increased, the horses became viewed as competitors for the dwindling supply of forage on the range. And, since horses are particularly destructive to the range relative to other livestock and

(3) Smith-Thomas, op. cit. at (1); pp. 71-2.

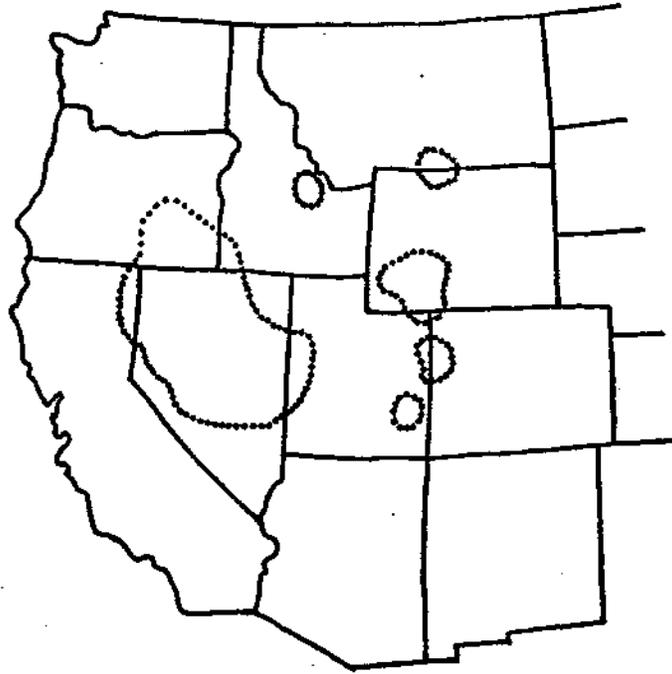
wildlife, they have generally been considered a nuisance except when they could be used by ranchers for private breeding purposes. Consequently, even before the wild horses became valuable as pet food which led to large scale round ups in the 1920's, some ranchers were known to take every opportunity to shoot them on sight. (4)

Under these circumstances, it was the wild horses' ability to traverse rugged terrain and their fleetness of foot that saved them from the fate of the buffalo. Consequently, the pre-Wild Horse Act ranges of the mustang herds were, and still are, some of the remotest areas of the west (see Figure 1). The propensity of the horses to multiply quickly as well as their free-roaming behavior, however, continued to bring them into contact with man. And, with the emergence of markets for their carcasses in the pet food industry came increased pressure from large scale round up activity. It is impossible to determine what impact these round ups had on the numbers of mustangs on the range. What is clear about these round ups, however, is that the techniques used aroused the extreme anger and moral indignation of individuals wishing to protect the horses. Section II briefly presents the story of the mustangs and their "protection."

Section III below examines the wild horse controversy

(4) Smith-Thomas, 1979, op. cit. at (1); pp. 32-43.

FIGURE 1
Major Wild Horse Ranges



○ - Major Wild Horse Ranges

(Source: Adapted from H. Smith-Thomas op. cit. at (1).)

in the framework of Garret Hardin's (5) classic in the environmentalist literature, "The Tragedy of the Commons." Our focus is on what Alchain (6) has called the "property aspects of behavior" toward common pool and private property resources. By this phrase Alchain refers to a focus on "constraints and classes of permissible action" respecting property. Hence, the focus is on the nature of civil and economic rights that led to Congressional action and the consequences of the property rights arrangements that the the Act has wrought.

We do not believe that it is either inaccurate or unfair to say that the Wild Horse Act and subsequent actions by various interests have generated an ecological, legislative and administrative disaster. It is argued that responsibility for this lies in the extremist positions that have been taken on various sides of the issue. Outraged environmentalists, and outraged users of the range lands are locked in a struggle that can have no winners. The competition over rights to use the public lands is clearly "negative sum," a characteristic of "rent-seeking" activity. (7) That

(5) "The Tragedy of the Commons," Science, 162:1243-1248, 1968.

(6) Armen A. Alchain, "Some Economics of Property Rights," in Economic Forces at Work, (Indianapolis: Liberty Press, 1977); pp. 127-150. The quotation in the text is from p. 128.

(7) James M. Buchanan, Robert D. Tollison, and Gordon Tullock, Towards a Theory of a Rent-Seeking Society, (College Station, TX: Texas A & M University Press, 1980).

is, there is a tendency for the net gains of "winners" to be outweighed by the costs of rent-seeking incurred on both sides of the controversy. The ultimate irony of the commons is when these scarce resources are squandered in the process of protecting them. Our efforts below, besides relating the story of the mustangs, are directed at finding some middle ground in this controversy and towards identifying some reasonable policy alternatives.

In anticipation of objections that our discussion merely reflects a peculiar economic philosophy, we note that the cornerstone of our analysis, that opportunity costs have behavioral implications, is the cornerstone of positive economic analysis. This presents a sharp contrast to Hardin's normative approach. Hardin opened his analysis of the "tragedy of the commons" by asking "What do we Maximize?" He concludes that there are no technical solutions to the problems of the commons, that the only solutions are moral and coercive in nature. In contrast, a positive response to Hardin's question can be presented in a skeletal form on Table 1, "What do we Maximize?" In response to this question we argue that the maximand is dependent upon the resource type and the legal property status of the resource.

In general terms, the columns of the Table distinguish between resources that are renewable and those that are non-renewable. The rows of the table distinguish three legal property types: (1) exclusive private ownership and

TABLE 1

"WHAT DO WE MAXIMIZE?"

LEGAL PROPERTY STATUS	<u>RESOURCE TYPE</u>	
	RENEWABLE	NON-RENEWABLE
PRIVATE	sustainable rent	present value of rent
MIXED	?	?
COMMON	present value of rent	present value of rent

use rights; (2) "mixed" exclusive and non-exclusive private and public ownership and use rights, and (3), non-exclusive public ownership and use rights to resources.

The response to the question of what to maximize that is presented on Table 1 attempts to show how people actually respond, i.e., treat resources, under these alternative institutional arrangements. According to the literature (8) individuals that hold title to exclusive ownership and use of a renewable resource maximize the present value of the sustainable rent, or expendable surplus, of the property.

In the case of the non-renewable resource where exclusive ownership and use rights exist, individuals simply maximize the present value of the rent. That is, they extract the value of the resource at a rate that is determined by the market rate of interest, the cost of extraction, and current and expected prices. Accordingly, we find that in order for these non-renewable resources to be preserved for the future, their prices must be expected to rise. (9)

The third row of the Table, the case of "common" or public property resources, captures the essence of Hardin's

(8) See, e.g., Colin W. Clark, "The Economics of Overexploitation," Science, 181:630-634, 1974, or in Garret Hardin and John Baden, Managing the Commons, (San Francisco: W.H. Freeman and Co., 1977); pp. 82-95.

(9) See, e.g., Clark, op. cit. at (8). Or, E. A. Mishan, Introduction to Normative Economics, (New York: Oxford University Press, 1981); pp. 483-6.

"tragedy." Hardin pointed out that in the case resources whose benefits are non-exclusive, or "public goods" (10) like air and water quality, sufficient resources to sustain an expanding global population, safety from the threat of nuclear war, and other "public goods" problems that Hardin refers to, it does not matter whether resources are renewable. Individuals' have an incentive and a tendency to treat renewable resources as if they were non-renewable resources under these "institutional arrangements". They simply maximize the present value that may be extracted for their personal gain without regard for future demands for these resources other than that dictated by the market rate of interest and the personal discount rate of the resource extractor. This problem is created and compounded when large numbers of non-exclusive users are involved in the extraction process. Large numbers of users increase the costs of collective enforcement and reduce incentives to conserve.

Hence, on the third row of the Table we have Hardin's central claim, that people will treat publicly owned renewable resources as if they were private non-renewable resources and extract the maximum value of the resource as fast as possible for their private gain. This is the

(10)Hardin's contribution is undoubtedly an important application of the economic theory of "public goods." See, e.g., James M. Buchanan, The Supply and Demand for Public Goods, (Chicago: Rand McNalley and Co., 1968).

"tragic" vision of the commons being abused: individuals are figuratively, "mining" the timber from the forests, the forage from the range, air and water quality, etc.

Under the "mixed" property category, the literature and the specific arrangements implied by the middle row of Table 1 are not sufficiently precise to allow us to unambiguously state what is actually maximized. However, it is quite clear that the property aspects of behavior operate. Hence, it becomes a matter of the institutions, the rules, and the incentives created by the institutions of property that determine behavior. We argue below that the assignment of exclusive use and title rights, even on a mixed basis such that each parcel of land may have more than a single use right assigned, individuals will tend to maximize the value of their own particular rights to the land.

We have, then, a different approach to the commons than that presented by Hardin. Rather than argue that the tragedy of the commons is a moral issue and that we are destined to doom by our greed, we assert that the tragedy of the commons does have technical solutions and that these solutions must take into account the incentives of individuals when they are faced with alternative institutional arrangements.

The case of the mustangs is an irony of the commons because efforts to aid them have seemingly only increased the sum of their miseries. Section III then turns to the

more serious and perplexing issue of whether "We the People" are destined to become future victims of the same political institutions that gave us the tragedy of the mustangs.

Indeed, the irony of the commons does have tragic dimensions and even apocalyptic political implications when moral extremism is decisive in these decisions. While moral implications may be drawn from any set of circumstances, our complaint is simply that it is not very useful. Our assessment is that this moral perspective on these problems contributes nothing towards their solution and, because of the extremist nature of this moralizing, this perspective actually enlarges the problems of the commons. Further, we argue, this moral extremism will present a major stumbling-block for the "environmentalist" movement in the 1980's.

II. Wild Horses and Their "Protection"

The story of the protection of wild horses is undoubtedly incomplete without mention of "Wild Horse Annie," Velma B. Johnston, whose efforts deserve a considerable measure of credit for making the public aware of the unnecessarily cruel treatment of the horses by "Mustangers" who rounded them up for sale as pet food. "Wild Horse Annie's" efforts began in the early 1950's and contributed to the passage of two Acts of Congress. The first of these Acts, PL 86-234, the "Save the Mustang Bill," or the "Wild Horse Annie Law,"

was passed into law in 1959, and forbade the use of aircraft and other motorized vehicles in round ups. The second of these Acts, The Wild Horse Act, was much more far reaching and its affects are examined below.

While the horses undoubtedly suffered abuse at the hands of "Mustangers," the "tragedy" and the "irony" of the mustangs derives from our inability to manage the wild horse herds: both the size of the herds and the destructive consequences of their free-roaming behavior. An indication of the magnitude of these problems can be seen in the population counts conducted since the passage of the Wild Horse Act.

The first census of the wild horse herds after the passage of the Wild Horse Act was conducted in the 1972-73 grazing year and indicated the presence of some 25,121 wild horses region-wide. (11) From this initial count, the BLM's "Third Report to Congress" concerning its administration of the Wild Horse Act (12) shows increases to 42,666 by 1974 and to 52,374 by 1980. It must be noted that the actual rate of increase in the sizes of the horses herds is undoubtedly exaggerated by these figures. Each count was apparently based on improved techniques, and research (13)

(11)Smith-Thomas,op.cit. at (1); p. 105.

(12) United States Department of the Interior, Bureau of Land Management, "Third Report to Congress," (Washington: U. S. Government Printing Office, 1980).

(13) Davis, op. cit. at note (1).

has indicated that the earlier techniques led to substantial under-counting. Hence, while we do not wish to debate whether the population has actually doubled, we can point out that the increase has been detrimental to the range cattle, wildlife, and to the horses themselves. Incidents of wild horse deaths due to starvation and lack of forage and water have occurred with alarming regularity and are documented in sometimes gruesome detail in Heather Smith-Thomas' authoritative work.(14)

Even those horses that escape the hardship of the over-crowded range because of 3L.M round ups, sometimes suffer serious physical damage from long detention without adequate care (principally, lack of exercise). There are, of course, a fortunate few that will be adopted through the "Adopt a Horse or Burro" program. (15) Indeed, almost 14,000 horses were "placed in private maintenance" between 1971 and 1978 through this program. (16) However, this rate of adoption is less than the natural rate of increase in the size of the free-roaming horse herds. And, since the adoption fee has recently been raised from \$25 to \$200 (or, about \$50 above the auction price of similar horses), it is likely that this adoption rate will fall even farther behind

(14) Op. Cit. at (1).

(15) Media reports have suggested that horses adopted through this program have sometimes been abused and, presumably, supplied to the pet food market. Greenville News, April 11, 1930; p. ID.

(16) Op". Cit. at (12) .

the fertility rates in the herds.

To understand how these circumstances came about it is useful to look briefly at the system of range management used in the western U.S. of which the management of horses is a small part. Range and resource management have been the subjects of extensive studies (17) and has been the source of controversy over issues other than horses. (18) The general pattern, however, has been one of abuse of common property resources, because the system of property rights has not provided adequate incentives to users of these resources to preserve them. That is, the commons are treated like a non-renewable resource and "mined" as shown on the third row of Table 1 above. The case of the wild horses conforms to this pattern because, when we spoke of 26,121 "wild" horses on the range in the first count after the passage of the Wild Horse Act, we were actually referring to horses that were largely privately owned and allowed to "free-ride" off the public domain. This free-riding behavior is the epitome of the "tragic" behavior described

(17) E.g., Public Land Law Review Commission, One Third of the Nation's Land: A Report to the President and Congress, (Washington: U. S. Government Printing Office, 1970).

(18) E. g., John L. Dobra and George A. Uhimchuk, "Property Rights, Legal Efficiency, and the Political Economy of the Sagebrush Rebellion," Nevada Review of Business and Economics, Winter, 1981-82; pp. 2-13. Or, Sabine Kremp, "A Perspective on BLM Grazing Policy," in John Baden and Richard L. Stroup, Bureaucracy vs. Environment: The Environmental Costs of Bureaucratic Governance, (Ann Arbor: The University of Michigan Press, 1981); pp. 124-153.

by Hardin.

Because a substantial portion of the free-roaming "wild" horses were privately owned yet free-riding off of the public lands, significant claiming problems arose after the passage of the Act. In the period of transition to BLM management claims for 17,165 horses, or almost two-thirds of the estimated population, were filed with the BLM. (19) In the six BLM districts of Nevada, where 17,972 of the 26,121 horses ranged, 80 claims were filed for 7,800 horses in the 90 day claiming period following the publication of regulations promulgated under the Act. (20)

Whatever the exact proportion of privately owned stock, it is clear that it was high - a fact that increased animosity towards ranchers. Since there was a \$10 minimum fee per animal claimed, and, more importantly, the possibility of substantial trespass fees being assessed, it has been claimed that ranchers were reluctant to claim all of their stock.(21)

The combination of claiming and trespass fees being assessed against ranchers guilty of large scale trespassing, and difficulties in rounding up the animals led to

(19)Smith-Thomas,op.cit. at (1); pp. 132-6.

(20) Personal communication with the Nevada State BLM Office.

(21) Fees for trespass during the 90 day claiming period following the publication of the regulations were assessed at the normal grazing fee level. After this 90 day period, however, trespass fees rose. Ibid.

substantial abandonment of claims. For example, in the Battle Mountain, Nevada BLM district, there were claims for 1,241 horses, most of which were claimed by two individuals. As of January 1975, however, only 10 of these horses had actually been rounded up. (22) Hence, while trespassing by ranchers increased animosity towards them, the ranchers perceptions of their horses being "ransomed" increased their animosity toward the BLM and the wild horse enthusiasts.

In spite of the obvious short-comings of the range management system in place before the passage of the Wild Horse Act, which allowed substantial trespassing ("mining") of the public lands, there are clearly ways in which the system compares favorably with the one that has evolved since the passage of the Act. Putting aside the issue of trespass for a moment, private property rights in these horses meant that the herds benefited from usual livestock management and breeding practices. Further, the herds were limited by ranchers to an acceptable size determined by the ability of the land to support the horses and competing livestock. Because local ranchers could monitor the herds at relatively low cost and because they possessed the necessary skills in the management of livestock, the "wild" horses were efficiently managed. "Truly" wild horses, of course, were not private property so that this fraction of the horses did not enjoy the full benefits of management.

(22) Smith-Thomas, op. cit. at (1); p. 135.

Nevertheless, the spill-overs from the management of private horses, especially population control, were beneficial to truly wild horses. Perhaps the most significant criticism of the pre-Wild Horse Act range management related to horses, is that their "free-riding" behavior occurred primarily at the expense of other wildlife. (23)

The Wild Horse Act altered this range management scheme by empowering the BLM to manage these animals. While it is clear that the results have been catastrophic, we emphasize that this cannot reasonably be blamed on the BLM. From their perspective the fundamental problems have been funding and litigation that have limited its ability and blocked its attempts to manage the horses. No less than eleven major lawsuits concerning horses have been filed and have brought restraining orders, required Environmental Impact Statements, and have generally hampered the BLM's efforts. (24) From our perspective, however, funding and litigation issues are secondary problems, consequences of the common property status of the land and the common property status given to the horses by the Act.

(23) Davis, op. cit. at (1).

(24) See discussion of litigation in the BLM's "Third Report to Congress," op. cit. at (15).

III. The Irony of the Commons: Beyond the "Environmental Decade"

Those concerned with the welfare of horses now have more to be concerned about. Public administrators at all levels of government are increasingly harried and frustrated as moral extremists demand action yet, at the same time, bring legal actions that leave officials powerless to act on behalf of the horses. In addition, the ranchers have not only lost their trespassing private horses but now suffer from the trespassing public horses (25) on their private lands and the reduction of grazing allotments on public lands to provide forage for "wild" horses. This is what we have labeled the "irony of the commons," and our efforts here are directed towards understanding what went wrong, how this "irony" affects the management of other common property resources more generally, and possible solutions.

In our comparison of pre- and post- Wild Horse Act horse and range management, our brief account has been biased in its focus on the "property aspects of behavior" (26) in the "wild horse controversy." We have focused on the property relations between resources - horses, wildlife,

(25) A recent ruling that has yet to be finalized in U. S. District Court has required the BLM to remove wild horses from private lands. The difficulty of this task on unfluenced lands and where land ownership patterns are haphazard or in "checkerboard" patterns can scarcely be over-stated. The Nevada State Journal, February 3, 1982; p. 8B.

(26) Alchain, op. cit., at (6).

land, and livestock; resource owners - the U. S. government, and various private interests; and resource users - the public and various private interests. This focus is consistent with Garret Hardin's seminal discussion of "The Tragedy of the Commons" (27) where he argued persuasively that common property ownership and use rights leads to the abuse of common property resources.

We agree entirely with Hardin's diagnosis that the problem has its roots in the common property status of the resources. However, we reject entirely his prognosis of inevitable doom and the necessity of characterizing the problem as a tragic moral dilemma. In other words, we have the seeds of the moral extremism that has plagued the management of the horses in Hardin's seminal statement. It lies in his essentially normative approach to the question of "What do we Maximize?"

Examining the property aspects of behavior towards the commons reveals that their abuse was due to the inability of individuals to exclude others users and because these common pool resources have been given over by their guardians with little, if any, incentives for resource users to conserve. We should add that the abuse of the commons is difficult to blame on a tragic moral flaw in the human character. The same men and women who abused the land and the horses

(27) Op. Cit., at (5).

probably exercised a high degree of responsible stewardship towards their own land just as the mustangers who abused other' peoples' horses treated their own horses with great care and respect. Clearly, the problem of the commons is not usefully viewed as a moral issue. We are not denying that there are moral considerations, but they simply ignore the practical issues of incentives, rules, and the institutions of property that create these incentives.

Considering the property aspects of behavior, we offer two explanations for the ecological, economic, and legal catastrophe precipitated by the Wild Horse Act. The first is that we failed to grasp the full implications of the commons. While recognizing that resources users mistreat common property resources, we failed to recognize the potential of the obverse - that they tend to preserve what is theirs.

In his discussion of property institutions and proprietary behavior John Stuart Mill quotes an observation quite relevant here:

" 'The magic of property turns sand to gold... Give a man secure possession of a bleak rock, and he will turn it into a garden; given him nine years lease of a garden, and he will convert it into a desert.¹" (28)

The second explanation offered for the consequences of the Wild Horse Act is that we also failed to recognize the extent of the commons. That is, the public law and public

(28) John Stuart Mill, Principles of Political Economy, (London: Longmans, Green and Co., 1848); pp. 278-9.

monies sought to protect the horses are also common property resources. (29)

Prior to the passage of the passage of the Wild Horse Act there were two principle common property resources involved in the management of the mustangs: the land and wildlife. Consistent with Hardin's tragedy, these resources have been abused. By converting the horses into a common property resource, the Wild Horse Act has brought additional common property resources into the range and horse management process. The public property mustangs are now managed by a public agency which relies on public decision making bodies for public policies and public monies. These public policies are subject to public laws and may be challenged by any member of the public.

Under these circumstances, every aspect of range and horse management are subject to the same incentive problems and are susceptible to private exploitation. It is not the least bit surprising that the management of the mustangs has suffered from funding and litigation problems. The mustangs have entered "...the world of pure publicness,... universal externality,...reverse laissez-faire, where nothing can be done independently by any individual." (30) This is the

(29) John Baden and Rodney D. Fort, "The Federal Treasury as a Common Pool Resource and the Development of a Predatory Bureaucracy," in Baden and Stroup, op. cit. at (21); pp. 9-21.

(30) Buchanan, op. cit. at (10); p. 101.

Hobbesian world where every individual's rights infringe on everyone else's'.

Our understanding of Hardin's tragedy and the consequences of the Wild Horse Act suggests that private exploitation and public mis-management have expanded. This conclusion is consistent with theories of collective choice (31) and theories of economic organization (32) which combine to suggest that collective management of range resources will not only work poorly but will be expensive to administer.

A standard explanation of the tragedy of the commons is that it is the result of the market's inability to produce efficient economic results such that the external costs of resource use are internalized, or borne, by the users of the resource. However, the roots of the problem go beyond the mechanisms of the market. The market fails in this case and cases like it because of a lack of institutional arrangements through which agreements to distribute these costs can be made. The root of the problem lies in the inability of the political process to produce a solution that is

(31) The argument that extremist positions on issues is likely to lead to a failure of public choice mechanisms is a longstanding one. For example, see Duncan Black, The Theory of Committees and Elections, (Cambridge: The University Press, 1958). For a more recent discussion of the same phenomenon, see W. H. Riker, Liberalism Against Populism, (San Francisco: W. H. Freeman, 1981).
(32) F.A. Hayek, "The Use of Knowledge in Society," American Economic Review 35, no. 4 (September 1945); 519-530.

acceptable to all individuals concerned, stable, and immune from the wastes of rent-seeking.

Hence, we argue that political efficiency will lead to economic efficiency under the appropriate arrangements that take advantage of self-interest behavior on the part of individuals. If individuals are moral such that they do the "right thing" in the absence of the "proper incentives," so much the better. The constraints and incentives will lie dormant in a world of idealized individuals, no one will be harmed. Yet we cannot depend upon moral man to acquiesce, and not all men are moral.

The solution to the tragedy and the irony of the commons is at the Constitutional level of decision making. At the Constitutional level we can all agree upon some set of rules by which the scarce resources of the commons can be allocated, independent of the morality of the particular issue or actor. The irony of the commons is the result of the political game that allocates these resources, i. e., competition for the value of the common pool resources, having begun play without a set of rules and clearly prescribed individual rights that would limit the rent-seeking behavior of interests involved in controversies over common pool resources. The litigation cited above point out that agents in this competition for the value of the commons are scrambling to the courts to assign rights and prescribe rules. And, as always, each group argues for the creation

of rules and rights that bolster their position in the competition.

Since these re-newable range resources are publicly owned, use rights are allocated publicly through political processes where all individuals' rights are in conflict in the Hobbesian sense. This process of competitive rent-seeking is known to waste at least the value of the resources allocated, and possibly more.(33) Our conclusion is that the system of public resource management, particularly in the extreme form that has evolved in the case of the mustangs, is likely to waste a significant proportion of the value extracted from the public lands, forests, wildlife populations, and other public renewable resources by the rent-seeking costs of lobbyists and litigants. These costs are in addition to the costs of public mismanagement that are quite obvious in the case of the mustangs.

From our "constitutional perspective" it is apparent that a solution to the abuse of the commons must satisfy three conditions to reverse the pattern of abuse. First, any assignment of ownership and use rights to the commons must distribute the costs of resource use directly to users, thereby encouraging conservation and resource use consistent with the "sustained yield" concept. Secondly, the property rights arrangement must recognize legitimate multiple use

(33) Buchanan, Tollison and Tullock, op. cit. at (7), especially the articles by Tullock and Posner.

rights to the commons. Note that this condition precludes "pure" private ownership arrangements and requires that any legal title to these resources must recognize public rights of access to recreational and scenic resources, and the preservation of non-renewable resources such as historical and archeological sites, and mineral resources. Thirdly, property rights arrangements in the commons must be permanent, enforceable, and transferable. This will both provide greater incentives for preservation and reduce the rewards of non-productive rent-seeking behavior.

It is argued that an assignment of ownership and use rights satisfying these conditions would constitute a "technical solution" to the tragedy of the commons and a "middle ground" in this debate among extremists. Technical solutions of this type have been offered by Baden (34) and discussed more recently by Francis (35). The proposals are, with respect to Table 1, within the "mixed" legal property status category. The aim of the proposals is to achieve economic efficiency while preserving public rights to public lands. Briefly, these plans call for privatization of certain use rights associated with land as opposed to privatization of the the land (viewed as a bundle of use rights) as

(34) John Baden, "Property Rights, Cowboys, and Bureaucrats: A Modest Proposal," in John Baden, ed., Earth Day Reconsidered, (Washington, D.C.: The Heritage Foundation, 1980); pp. 71 - 82.

(35) John Francis, "Arguing for Privatization of the Public Lands," Wall Street Journal, February 5, 1982; p. 26.

a whole. Baden's example (36) concerns grazing rights and he proposes that current lessees of grazing rights be offered first option to buy permanent and transferable rights to grazing uses of the lands that they now lease at the capitalized value of the leases. Under this scheme the grazing right owner would have exclusive use rights to grazing resources, but no right to limit other uses of the land that are not destructive to its grazing value. (37)

Similar arrangements can be applied to other common pool resources such as timber rights in National Forests. It is argued that permanent, transferable grazing, timber, and possibly wildlife rights will induce resource users to preserve the productivity of range, timber, and wildlife resources while allowing the public to retain its rights of access to scenic and recreational resources. Such protection of public rights would include, the regulation of the use of these resources including the treatment of mustangs which lies at the heart of the wild horse controversy. Public regulation, however, will be much more general since the system of property rights described above is designed to be self-regulating to a large degree.

It was noted that prior to the Wild Horse Act ranchers

(36) Op. Cit. at (34).

(37) Note that this would likely preclude Off-Road-Vehicle use but there is no reason why O-R-V recreationists could not purchase grazing rights in a designated area to satisfy their recreational needs.

managed the population of horses so as to maintain sufficient forage for their cattle. Trespassing occurred because public rights were costly to enforce relative to other perceived needs of the public, and therefore, they were not enforced. Once all grazing rights have been allocated to the private sector, however, such trespassing is much less likely since it will infringe on private grazing rights that are much less costly to enforce. Hence, a system of private property rights in horses, coupled with private use rights to publicly accessible grazing lands would combine to provide the horses the protection and care they received as private property before the Wild Horse Act, and it will insure that the grazing lands will not be abused as they have been.

Additionally, the proposal of creating private use rights in common pool resources can be beneficially extended to the problem of wildlife management. As noted, neither the pre-Wild Horse Act system of wildlife management nor the system that has developed since the Act have provided adequate habitat and forage for wildlife. Acting on the conventional theory of wildlife management (38) that the landowner can most effectively manage wildlife, and the theory that the owners of grazing rights are entitled to the wildlife supported by their forage, privatization of

(38) Davis, op. cit. at (1), and Aldo Leopold, Game Management, (New York: Charles Scribner's Sons, 1939).

wildlife resources could create a system more conducive to the protection of wildlife resources.

Additionally, privatization of wildlife, along the lines of the English "qualification statutes" but without the aristocratic overtones (39) would not foreclose public regulatory options. Hence, while the grazing right owners would own the wildlife their grazing rights support, the public would still be able to regulate harvesting, seasons, and population sizes through a system of sanctions against abuse and subsidies for wildlife production.

In summary, the story of the mustangs provides a glimpse of the face of the tragedy of the commons that doom-sayers like Malthus (40), Ehrlich (41), and Hardin (42) have been warning us of since the Reverend Malthus' apocalyptic insight. The doom-sayers have been right to the extent that it is not a pleasant story. Life on the Malthusian margin is "nasty brutish, and short" (43) for horses, as we have seen, as well as for men. The latter coupled with the results of regulating the commons that we have seen suggests that there are some important lessons to be learned

(39) Thomas A. Lund, American Wildlife Law, (Berkeley: The University of California Press, 1980).

(40) R. T. Malthus, An Essay on the Principle of Population, (Baltimore: Penguin Books, Inc., 1970).

(41) Paul Ehrlich, The Population Bomb, (New York: Ballantine Books, 1968).

(42) Op. Cit. at (5).

(43) Thomas Hobbes, Leviathan, (New York: E. P. Dutton and Co., 1914); p. 65.

from the story of the horses. Especially if we hope to avoid their fate.

The first of these lessons concerns the "property aspects of behavior." While private exploitation of common pool resources has led to their abuse, private exploitation of private renewable resources has led to their preservation. The major environmental failures of the market, from clean air and water, mistreatment of mustangs, "mining" the range and forest lands, to the buffalo and whales, certainly do not represent a failure of the spontaneous coordination and dis-coordination of the property aspects of behavior. These behaviors have occurred for good or ill. The failure lies in not assigning stewardship of these resources to individuals who are both likely to be relatively more able to capture the benefits of preserving them and who can enforce exclusive use rights relatively more efficiently. Moving beyond the "environmental decade" of the 1970's and its sometimes crude preservationist approach to the problems of the commons, a livable environment in the future will depend critically on harnessing the property aspects of behavior in an appropriate institutional setting.

Another of the lessons of the story of the mustangs is its grim reality. Indeed, the tragedy of the commons is real. Yet, the story of the mustangs suggests that while there are moral dimensions to this tragedy, moral solutions are illusionary, and moral extremism is counter-productive.

A more reasonable approach, we argue, is a technical one directed at understanding the rules and institutions that create behavioral incentives. Hence, the problem is fruitfully viewed as a Constitutional issue, related to the nature of civil and property rights. We need to devise a civil and property rights arrangement that is conducive to the preservation of the commons and stick with it despite the objections of indignant moral extremists. The importance of this final lesson cannot be over-stated. Conflicts in society concerning the allocation of tragically scarce resources will persist and, consequently, the horses present may be our future. Beware that Congress does not pass a law protecting you as a national (common property) resource.