Lobbying for biological diversity to Republican legislators: A strategy utilizing economic theory

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LOBBYING FOR BIOLOGICAL DIVERSITY

TO REPUBLICAN LEGISLATORS:

A STRATEGY UTILIZING ECONOMIC THEORY

by

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:</td>
<td></td>
</tr>
<tr>
<td>STATEMENT OF THE PROBLEM</td>
<td>1</td>
</tr>
<tr>
<td>The State and Importance of Biological Diversity</td>
<td></td>
</tr>
<tr>
<td>The Republican Party and Biological Diversity</td>
<td></td>
</tr>
<tr>
<td>Environmental Organizations and Biological Diversity</td>
<td></td>
</tr>
<tr>
<td>Economic Theory as a Solution</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>16</td>
</tr>
<tr>
<td>GENERAL USE OF ECONOMIC THEORY AS A LOBBYING STRATEGY FOR BIOLOGICAL DIVERSITY: HOW AND WHY IT WOULD BE AN EFFECTIVE TOOL WITH REPUBLICANS</td>
<td></td>
</tr>
<tr>
<td>The Inside Strategy</td>
<td></td>
</tr>
<tr>
<td>Republicans as the Lobbying Target</td>
<td></td>
</tr>
<tr>
<td>Influencing by Informing Legislators of Economically Oriented Proposals</td>
<td></td>
</tr>
<tr>
<td>Influencing by Lobbying for Economically Oriented Proposals</td>
<td></td>
</tr>
<tr>
<td>Influencing by Negotiating for Economically Oriented Proposals</td>
<td></td>
</tr>
<tr>
<td>The Outside Strategy</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>29</td>
</tr>
<tr>
<td>THE ECONOMICALLY ORIENTED PROPOSALS: REPUBLICAN ACCEPTABILITY WITH INCREASED BIOLOGICAL DIVERSITY</td>
<td></td>
</tr>
<tr>
<td>The Current State of Legislation</td>
<td></td>
</tr>
<tr>
<td>Important to Biological Diversity</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER ONE

STATEMENT OF THE PROBLEM

If efforts to protect rare species are not to be derailed by a Republican Congress, environmental organizations must develop lobbying strategies that will prove effective with Republican legislators. This opening chapter describes the need for protection of biological diversity and the political problems associated with such protection. The chapter then concludes with an introduction of a possible solution to these problems—incorporating economic incentives into species protection measures.

The State and Importance of Biological Diversity

The extinction of rare plants and animals is one of the most critical environmental problems facing humanity today. The gravity of this issue is due to its irreversible nature. Once a species vanishes from the earth it is gone forever. Although other environmental problems are also serious, with diligence they can be repaired over time. The Cuyahoga River in Ohio is a classic example. Less than three decades ago, the Cuyahoga was so polluted that it caught on fire. However, in recent years local authorities have deemed it swimmable. Such a success story is not possible with extinct species. The world will never again benefit from the passenger pigeon or the ivory-billed woodpecker. They are gone.

Of course, extinctions have occurred throughout history. The difference today is that the rate of extinction is proceeding thousands of times faster than the production of
new species. A complete inventory of the earth’s species has never been accomplished. Most biologists estimate the total to be about 10 million species, only about 1.5 million of which have been scientifically described and named.\textsuperscript{1} While these might seem like large figures, extinctions are very quickly reducing the numbers. A conservative estimate of the number of species doomed to extinction world-wide is 27,000 per year.\textsuperscript{2} If that rate continues, within 40 years over 10 percent of the earth’s species will have disappeared.

The United States is not immune to such extinction problems. About 150,000 species of plant and animal are estimated to inhabit the United States.\textsuperscript{3} The Center of Plant Conservation believes that 4000 species of plant life alone are imperiled.\textsuperscript{4} The Department of Interior, the agency in charge of implementing the Endangered Species Act, has more conservative estimates. It lists more than 950 plant and animal species as endangered or threatened. However, nearly 4000 more are candidates for listing. Since passage of the Endangered Species Act in 1973, 15 species have been delisted due to extinction.

The severity of these extinctions is immeasurable. The benefits of biological diversity to humanity take a myriad of forms. The most cited examples involve advances

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\textsuperscript{2}Edward O. Wilson, \textit{The Diversity of Life} (New York: W.W. Norton & Company, 1992), 280.

\textsuperscript{3}Douglas Chadwick, "Dead or Alive," \textit{National Geographic}, March 1995, 8.

\textsuperscript{4}Ibid., 31.
\end{small}
in medicine. The Rosy Periwinkle plant provides an illustration of these medicinal advances. Rare in its native Madagascar, the Rosy Periwinkle was found to provide extracts for drugs important for treating leukemia and Hodgkin's disease.\(^5\) By 1979 the sales of vincristine, the extract used in the treatment of Hodgkin's disease, totaled $35 million.\(^6\)

Natural biological products constitute a major portion of the market for medicines. In total, a quarter of prescriptions dispensed by pharmacies in the United States are extracted from plants; 13% of the prescriptions come from microorganisms; and, 3% are derived from animals.\(^7\) Furthermore, of the 150 top-selling prescription drugs sold in the United States in 1993, 75% percent were linked to natural biological products through use directly or as a semisynthetic.\(^8\) Not surprisingly, the market for such medicines involves big money. The value of medicines derived from higher plants alone is around $10 billion per year.\(^9\)

Although biologically-related drugs dominate today's pharmaceutical market, the usefulness of the great majority of plant and animal species as medical products is still unknown. For instance, the National Cancer Institute program has only crudely screened

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\(^6\)Ehrlich, 53.

\(^7\)Wilson, 283.

\(^8\)Walter Reid, "Biodiversity and Health," \textit{Environment} 37 (July/August 1995): 15.

about 10% of flowering plants species for potential anticancer drugs. Only 2% of flowering plants have been tested for their alkaloid properties. Surely, unimaginable medicinal benefits are contained in currently untapped sources. Yet, as the number of species is reduced through extinctions, possibilities for such medicinal benefits are eliminated.

The benefits of rare species are not limited to medicines. Another of the many blessings of biological diversity concerns food production. In order to increase yields, modern agriculture selectively breeds cultivated species by choosing from different strains' genetic traits that lead to higher productivity. It is estimated that crop species owe roughly 50% of their increased productivity to selective breeding and hybridization. Unfortunately, much of the intraspecies diversity is lost in the process. This leaves the resulting high-yielding strain vulnerable to disease, pests, and weather stresses. For example, the life-span of newly developed wheat strains in the American Northwest is only about five years. After that, parasitic fungi adapt to the strains and destroy the crop.

In order to develop strains resistant to these continuing attacks, wild varieties of these crops must be utilized. Only the wild strains still have the needed genetic diversity. However, many of these wild strains are extremely rare. Recently, in order to protect the $960 million California barley crop from Yellow Dwarf virus, the United States

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11Wilson, 301.

Department of Agriculture searched through 6,500 varieties of barley before locating a single Ethiopian barley plant that contained the needed genetic material.\textsuperscript{13} If that plant had gone extinct, the problem might remain unsolved to this day. Many cultivated crops’ wild strains are located within the United States. These species include blueberry, cranberry, artichoke, pecan and sunflower.\textsuperscript{14}

The usefulness of rare species for food purposes need not end with crops that are presently cultivated. Currently, only 20 of the 30,000 edible species of plants on earth provide 90\% of the world’s food.\textsuperscript{15} Many of these 20 species are produced in areas not conducive to their growth. Factors such as weather and soil type might be drastically different from where the species originated. It makes sense that domestication of noncultivated, wild species is one answer to these problems of compatibility. This logic applies to the domestication of wild animals as well as wild plant species. But again, the threats of extinction loom important. The greater the number of wild species from which to select, the greater will be the chances of finding wild species worthy of such domestication.

Aside from the direct, market-oriented benefits such as food and medicine, the current full array of biological diversity also serves mankind indirectly by stabilizing the planet’s life support systems and thereby making it more hospitable for human beings. The inner workings of our planetary system are enormously complicated and

\textsuperscript{13}Al Gore, \textit{Earth in the Balance} (New York: Plume Books, 1993), 139.

\textsuperscript{14}Ibid., 134.

\textsuperscript{15}Wilson, 287.
interconnected. The role of biological diversity in these inner workings includes control and amelioration of climate, maintenance of soils, disposal of wastes, purification of water, cycling of nutrients, pollination, the control of pests and disease, and many more functions.

A useful analogy to help understand these biological life support systems is the ecological web. The earth's estimated 10 million species all fill a niche in the planet's ecosystem, or ecological web. Removal of a species from its niche leaves a vacancy if no redundant species is able to step into the niche to fill it. To use the web analogy, a strand in the web is ripped out. The result of a vacant niche may have untold dire consequences for humanity. This is especially true if the removed organism is a keystone species. In such instances, a domino effect results in many extinctions. A keystone strand that is ripped out might have numerous other strands attached to and dependent on it. If this is the case, these attached strands are also ripped from the web. The end result of such situations is not just a small niche vacancy. Instead, it is a gaping hole.

Borneo's use of DDT to control flies a couple of decades ago provides an illustration of such untold consequences. The DDT did indeed kill millions of flies. But, the DDT filled corpses of flies were eaten by geckos which, in turn, started dying. These afflicted geckos were eaten by cats. This led to a substantial reduction in the number of cats. With the cats gone, the rat population flourished. The end result was such a massive scare of Bubonic plague that cats had to be parachuted into the country.

Although biological diversity's direct and indirect benefits to humanity are vitally important, another reason also exists to protect rare plant and animal species--ethics. All
life forms have a right to exist. Aldo Leopold is largely responsible for bringing this philosophy into prominence in the twentieth century. His writings espouse a land ethic in which the earth and all its life forms interact as a community. Ironically, the foundation for Leopold's writings is based on rationality. Man will best be able to survive within this complex, interdependent earthly system if a land ethic is heeded.

Leopold's land ethic is not new. Historically, most theologies espouse some form of respect and benevolence for other life forms. A typical non-Western example of such an ethic is found in most Native American philosophies. Chief Seattle spoke, "We are part of the earth and it is part of us. The perfumed flowers are our sisters. The bear, the deer, the great eagle, these are our brothers...all belong to the same family."\(^{16}\)

Many Western religions also contain some form of altruism regarding the earth's biological organisms. Within the Judeo-Christian theology, the book of Genesis contains the story of Noah assembling all the earth's creatures on the ark in order to save them from the great flood. Also in the book of Genesis is God's directive to Adam to "serve" and "keep" the garden of Eden.\(^{17}\) Clearly, religious philosophies such as those advocated by Genesis and Chief Seattle combined with secular humanist philosophies such as Leopold's provide a formidable ethical argument for species preservation.

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\(^{17}\)Gen 2:15.
The Republican Party and Biological Diversity

In total, the reasons for species preservation are overwhelming. They include the direct and indirect benefits to humanity as well as the ethical arguments. But the threats to biological diversity grow every day. What is needed is a concerted effort to reverse these alarming trends. However, the environmental movement is currently somewhat hamstrung. The recent Republican takeover of Congress is seen by most people as detrimental to biological diversity and the environment in general. Although the Contract with America never mentions the environment directly, many reasons warrant this opinion. Republican Representative Sonny Bono typifies a large portion of the current legislature. He recently joked that the best way to deal with endangered species is to "give them all a designated area and then blow it up."18

In general, the voting record of Republican leadership and committee chairs shows a strong anti-environment stance. The League of Conservation Voters tallies an environmental scorecard for every legislator. The ratings range from 1 to 100. During the 103rd Session Senate Majority Leader Bob Dole received a score of 3. House Speaker Newt Gingrich's score was 13. Chairman of the Senate Energy and Natural Resources Committee Frank Murkowski attained a score of 3, while Chairman of the House Resources Committee Don Young achieved a score of 2.19

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Low environmental protection scores such as these are a result of the current G.O.P. platform. A major part of this platform champions free market economics. Speaker Gingrich believes, "The spirit of free enterprise remains at the heart of American civilization." Market oriented programs do not necessarily lead to environmental damage. What creates environmental abuse is the Republican's current strategy to promote market oriented economics—no regulation at all. When asked if there were any regulations he would keep, Republican Representative Tom DeLay replied, "not that I can think of." Environmentally, policies guided by DeLay's line of thinking are destructive. Most of the environmental improvements of the last thirty years are the result of government regulations. The Endangered Species Act alone is responsible for the current existence of hundreds of species once thought certain to become extinct.

So far, the environmental results of the 104th Session of Congress are not encouraging. Immediately upon gaining power House Republicans proposed slicing environmental spending by 44%. During the budget negotiations this past January some of the dollars were restored to the Department of Interior and the Environmental Protection Agency, but the intentions of the G.O.P. are clear. Environmental programs are not a fiscal priority.

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Budget constraints are not the only Republican attacks on the environment and species protection. Since the Summer of 1995, a moratorium on additional listings to the Endangered Species Act has been in place. This moratorium was established in order to buy time while Congress discussed amendments to the Act. Many Endangered Species Act overhaul bills have been introduced this session. None is friendly to rare species. The most publicized bill is Senate Bill 768 sponsored by Republican Slade Gordon. This bill would revoke all existing species recovery plans and replace them with "conservation objectives". One option under these "conservation objectives" would be to provide no protection. Senate Bill 768 would also alter the definition of a species "take", the denotation that establishes criminal liability under the Act. Destruction of a species habitat would no longer be considered a "take". Furthermore, Senate Bill 768 would require "takings" compensation to any private landowner who was adversely affected economically by endangered species protection. The fiscal strain of such a provision would assure that species protections would be weak in such instances. Senate Bill 768 would also eliminate most of the remaining protections for newly listed species for up to thirty-six months. Many other bills weakening the Endangered Species Act have been introduced this session. Most share some of the characteristics of Senate Bill 768. Many bills would make species protection on private land voluntary. Another popular provision would involve cost-benefit stipulations. Nearly all the bills would make listing species more difficult and time consuming.

It is important to remember that very few of these anti-environment bills have actually been passed into law. Since the beginning of the 104th Session, many
Republicans have come to realize that environmental protection is an issue important to many constituents. A Newsweek poll commissioned in December of 1994 found that 73% of the public would be upset if government cutbacks seriously weakened or eliminated environmental regulations. More specifically, regulations that involve the conservation of rare species are also highly valued by the voting public. An opinion poll conducted in the early 1980s found that 80% of the respondents agreed with the statement, "We must prevent any type of animal from becoming extinct, even if it means sacrificing some things for ourselves." In fact, according to a Time/CNN poll taken in 1995, two-thirds of voting Republicans opposed reducing protection for endangered species. The Democrats are seizing the opportunity by trying to make the environment an election-year issue. Democratic Congressman Henry Waxman spoke to this point, "I think the environment is going to be a bigger issue in this re-election campaign. I think the moves by Republicans to gut certain environmental protections have gotten across to people."

This issue is not lost on the Republican leadership. For example, House Speaker Newt Gingrich has stifled all attempts to bring any of the endangered species bills onto

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the floor. Even the Speaker's rhetoric regarding the environment and endangered species has changed. Recently he stated, "I am very committed to having a strong and effective environmental policy....This is about the fungi and the various things that produce the medicine of the future."\textsuperscript{27} It is obvious to outside observers that the G.O.P. leadership is currently investigating ways to mesh their party's platform with the public's resolve to protect the environment.

**Environmental Organizations and Biological Diversity**

Meanwhile, the environmental community is searching for ways to protect the environment's biological diversity. But many of the large environmental organizations are in a state of crisis. Memberships are down. For example, the Sierra Club's numbers have declined from 650,000 in 1990 to a current membership of 500,000.\textsuperscript{28} Loss of members is largely due to issues of credibility and human empathy. The movement is perceived by some as being dominated by caucasian, upper-middle class, white-collar yuppies who are more concerned with dogma than with a healthy environment.

Historically, environmentalists have relied on altruism, aesthetics, and ethics to promote conservation. Such messages carry a connotation of right and wrong—if one is not with the environmentalists, then one has a character defect. One critic of this approach goes


so far as to state that the environmentalist movement's values are "narrow, self-serving and elitist."29

Advocation of command-and-control regulations is the logical outcome of the environmental movement's right/wrong, ethics-oriented strategy. The structure of the Endangered Species Act and most other environmental laws follow this command-and-control format. The government sets one-size-fits-all rules and procedures, and then it enforces them. This leaves little room for adjustment due to individual extenuating circumstance. According to the argumentation of the current environmental movement, no need exists for such flexibility. Environmental protection is ethically right. Any flexibility injures the environment or is an admission that other, non-environmental values are important.

The end result of this strategy has been a polarization of the issue of environmental protection. A backlash is now occurring. The current strength of the property rights and wise-use movements is partial testimony to this fact. Such groups complain about the overbearing, bureaucratic and inflexible nature of environmental laws. These groups are the driving force behind the anti-environment platform of the Republican Congress. Commenting on this backlash and the historical strategy of environmental organizations, National Aububon Society's Brock Evans states, "There's no making excuses. We deserve some of this."30

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30Ibid., 61.
Economic Theory as a Solution

This current backlash begs a few questions. Is a strategy available that would reestablish credibility for environmental organizations? If the answer is yes, would this strategy be acceptable to the Republican leadership in Congress as a way to mesh their party's platform with the public's resolve to protect the environment? If this answer is yes, would the strategy optimally protect biological diversity? An answer to these conundrums involves the environmental movement incorporating economic theory into its lobbying strategy. This contention is the subject of this paper. Economics is the study of human material well-being. Proposals including economic theory would counter assertions that the environmental movement does not care about the material necessities of people. Certain segments of the environmental community are beginning to discover this fact. Roberts of the Environmental Defense Fund acknowledges, "In order to sell our policies to Congress, we must be better advocates on the economic issues."31 Furthermore, proposals incorporating economic theory and incentives are likely to be effective when lobbying most Republicans. A few G.O.P. legislators are starting to acknowledge this reality. When writing about environmental protection legislation Speaker Gingrich professes, "Wherever we can, we should adopt decentralized, market-oriented approaches."32 Lastly, as Chapter Three explains, economic theory often leads to excellent solutions to the problems of rare species conservation. The following is the


32Gingrich, 199.
general thesis of this paper: to regain the support of the American public, and to focus the attention of the current Republican Congress on the issue of biological diversity, and thereby best secure rare species protection, environmental organizations should incorporate into their lobbying strategy theories involving economic incentives.
CHAPTER TWO

GENERAL USE OF ECONOMIC THEORY AS A LOBBYING STRATEGY FOR BIOLOGICAL DIVERSITY: HOW AND WHY IT WOULD BE AN EFFECTIVE TOOL WITH THE G.O.P

According to Robert Dahl, power occurs when A "can get B to do something that B would not otherwise do." Boiled down to its essence, lobbying for biological diversity is just such an exercise in power. An environmental lobbyist's job today is to get elected officials to pass legislation favorable to rare species protection in a congressional climate hostile to such protection. To this end, use of economic theory would be helpful. The subject of this chapter is to explain how and why general use of economics as a lobbying strategy would be an effective tool in the lobbying/legislative power game. The specific economically oriented proposals are covered in the next chapter.

The Inside Strategy

To be effectual, any strategy which is to influence the legislative process must incorporate both an inside and an outside strategy. An inside strategy concerns direct contact with legislators and staff. An outside strategy involves grassroots work with the general public. In turn, the general public applies positive pressure upon legislators.

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inside and outside strategies are interdependent but involve entirely different tactics. Both strategies fit nicely into an economics-based mold.

**Republicans as the lobbying target**

Development of an inside, direct contact strategy begins with selection of a target. Who should be lobbied? The answer to this question is simple—those legislators with the greatest ability to control the legislative process. At least through the duration of the 104th Session of Congress, this means Republican leadership. As Bruce Wolpe states, "any lobbying initiative must...be sensitive to the prevailing balance of political power and its ideological atmosphere." But for the most part, environmental organizations have been hesitant to court the Republican leadership. There is a reasoning behind this hesitancy. As mentioned in Chapter One, the G.O.P. platform is largely hostile to the environment. Environmental organizations are simply following the traditional adage not to lobby strong opponents because such lobbying might excite them into oppositional action. But by following this traditional maxim, the environmental organizations are relinquishing a leadership role and thereby giving up hope for any additional, constructive environmental protection legislation. It leaves them with only the defensive tactic of trying to save current pro-environment legislation from repeal. However, the incorporation of economics into conservation proposals might allow environmental

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organizations to effectively lobby the G.O.P. leadership without fear of reprisal. This ability would enable lobbying proposals which provide more environmental protection than current legislation. An offensive position would be regained.

At first, the targeting of Republicans for lobbying attention would be difficult. Access to G.O.P. offices may not be easily obtained. The historical distrust between Republicans and the environmental community might be difficult to reverse. Congresspersons are busy people and might view appointments with environmental lobbyists as a waste of time. In order to gain access and take advantage of the economically oriented lobbying proposals, a good tactic for lobbyists visiting Republican legislators would be to bring along constituents. Few legislators are too busy to visit with constituents. The desire for reelection supersedes nearly all legislative business. Constituents with two specific attributes would be particularly helpful--persons that would benefit from the economically oriented lobbying proposals on their private land and persons that have directly benefitted medically or financially from biological diversity. If the internal operations of environmental organizations were altered slightly so that identification of such constituents became a priority, many such persons could be found on membership roles alone.

Influencing by informing legislators of economically oriented proposals

Once access is established, lobbyists face the question of how to influence the legislators. Charles Miller asserts that this process of direct influence should contain
three components—to inform, to lobby, and to negotiate. All three components mesh effectively with an economically oriented strategy. The first component, to inform, is straightforward. Lobbyists should first introduce the incentive-based proposals to the legislators. By starting in this manner, it would immediately show the Republican legislators a new, less oppositional side of the environmental community. This should help garner the attention of the legislators. While introducing the proposals, the lobbyist must tiptoe along a slippery slope, lest the legislators only selectively remember the fact that existing legislation is not optimal. Emphasis should be placed on the new proposals and not the drawbacks of the existing legislation. Additionally, during the information stage lobbyists should apprise the legislators about voter positions on the subject of rare species protection. Providing opinion poll figures such as those mentioned in Chapter One would accomplish this task. Opinion poll figures broken down by legislative district would be even more informative.

Influencing by lobbying for economically oriented proposals

Miller's second component of influence is lobbying. This is the heart of the influencing process. It involves persuasion. The incorporation of economics into lobbying proposals would be a powerful tool of persuasion. Many different disciplines can be used to back this assertion. For example, the field of social psychology contains many applicable concepts. One such concept is Roger Brown's theory of differentiation.

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Underlying this theory are two basic human behaviors. The first behavior, that individuals who have well-established attitudes and beliefs act to maintain them, is at times in conflict with the second behavior, that individuals are motivated to maintain consistency in their beliefs and attitudes. If a well-established attitude or belief (B1) is inconsistent with a different well-established attitude or belief (B2), an unpleasant state of cognitive dissonance arises. According to Brown's theory of differentiation, this unpleasant state is relieved by differentiating one of the well-established beliefs (B2) into two separate beliefs (B2a and B2b). Resultantly, B1 is perfectly compatible with B2a, and B2b is discarded.37

Brown's theory of differentiation provides an academic framework germane to the persuasive power of economics as a lobbying strategy. Republican legislators believe that they act on their constituents' behalf. They also consider environmental legislation an anathema. These two beliefs are incompatible. As stated in Chapter One, poll after poll suggests that American citizens hold environmental legislation in high regard. Republicans are currently in a state of cognitive dissonance. By furnishing conservation proposals that incorporate economic incentives, the lobbyist would be providing the differentiating factor thereby eliminating the discomfort of G.O.P. held cognitive dissonance. Republican legislators could separate environmental legislation into two schools—an acceptable school incorporating economic incentives and an unacceptable school comprised of historical command-and-control environmental legislation. The

acceptable, economically oriented school would be perfectly congruous with constituents’ desire for environmental protection and with the party’s platform.

The field of social psychology contains ideas other than the concept of differentiation relevant to the persuasive power of incorporating economics into rare species protection proposals. The social judgment theory is also extremely applicable. Central to this theory is the concept of ego involvement. Ego involvement relates to the degree to which a person finds an issue personally relevant. In short, social judgment theory predicts that the effects of a persuasive measure correlate to the magnitude of the listener’s ego involvement. If the ideas contained in a persuasive measure fall within a range of positions close to an object of ego involvement, then those ideas are within the listener’s latitude of acceptance. But if those ideas do not fall within a range of positions close to an object of ego involvement, then those ideas lie within the listener’s latitude of rejection. Only if the communicated ideas fall within the recipient’s latitude of acceptance will an assimilation effect occur. An assimilation effect means that the listener perceives the message as being more similar to her attitude than it really is, and as such the listener accepts the message as true. The higher the degree of ego involvement in the core object, the smaller is the listener’s latitude of acceptance.38

The social judgment theory shows the persuasive nature of incorporating economic incentives into rare species protection proposals. Republicans have an enormous amount of ego involvement in free market economic theory. As mentioned in Chapter One, it is

at the heart of their platform. Because their ego involvement in free market economic theory is so high, Republicans have a small latitude of acceptance. Therefore, few, if any, noneconomically oriented proposals for rare species protection would fall within most G.O.P. legislator's small latitude of acceptance. Such measures would be unpersuasive. On the other hand, if the proposals incorporated economic theory, they should fall within the latitude of acceptance and therefore be persuasive.

Another concept from social psychology that sheds light on the persuasive nature of economically oriented, rare species protection proposals is Daniel Katz's theory of attitude change. According to this theory, attitudes serve as mediators between the psychological demands on a person and the reality of her external environment. Attitudes perform certain functions for an individual which enable that person to adjust to a changing environment. One of these functions is value expression. Such attitudes are developed in order to maintain self-identity, enhance favorable self-image, and promote self-expression. The value expression attitude function is aroused upon the presentation of cues associated with an individual's values. Free market economic theory is such a value for the majority of Republican legislators. Lobbyists presenting this value might arouse the value expression attitude function. Proposals incorporating economic theory would help Republicans maintain their self-identity, enhance their self-image, and promote their self-expression. In this manner, such proposals would be very persuasive.

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In addition to social psychology, other disciplines also substantiate the persuasiveness of economically oriented conservation proposals. One such discipline is the ancient philosophy of rhetoric. Use of motivation is one important canon of rhetoric. Economically oriented conservation proposals are well suited to use of motivation as a rhetorical tool. Basically, motivation entails stirring up the desires and wishes of the listener in such a way as to cause her to wish to believe that the proposition is valid. It is a play on emotions. In De Oratore, Cicero wrote, "Men make a decision oftener through feeling than through fact or law." In order to have an emotional effect, the message must be adapted to the audience. Historically, environmentalists have played to people's ethical and aesthetic heartstrings when lobbying for biological diversity. But Republicans are much less prone to be emotionally affected by such tactics. However, the inviolability of the market is an emotional subject for the G.O.P.. As mentioned in Chapter One, Speaker Gingrich speaks of it as "the heart of American civilization." Incorporation of economics into rare species protection proposals would take advantage of this emotionalism.

Information which supports the persuasiveness of economically oriented proposals for species conservation does not come solely from the academically natured schools of rhetoric and social psychology. The lobbying profession itself has created some tactical literature pertinent to the subject. One maxim of the lobbying profession is that

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politicians want to deliver benefits, not constraints.\textsuperscript{42} Current conservation legislation is structured to allocate only constraints. It is undeniably true that the end results of the legislation provide substantial benefits to the public, but the direct implementation of the legislation involves command-and-control. If structured correctly, incorporation of economic incentives into species conservation legislation would provide benefits to those persons affected by direct implementation. The ability to provide these benefits would be a powerful incentive for legislators to pass such legislation.

Another adage of the lobbying profession is that knowledge of the opposition's arguments leads to approaches that silence them. Jeffrey Birnbaum wrote, "The object of lobbying is to surround the enemy completely, cut him off from any avenue of escape, and thus defeat him....Equally important is not to allow the decision maker to know that he or she is being entrapped."\textsuperscript{43} Incorporation of economics into conservation proposals makes use of this tactic. Legislative opponents of current conservation legislation point to the economic hardships that these laws sometimes produce. By incorporating economics into conservation proposals, their fire is being usurped. Opponents of conservation legislation can not logically maintain that proposals which provide economic incentives would lead to economic hardship. It would not make sense.

\textsuperscript{42}McNeeley, 27.

Influencing by negotiating for economically oriented proposals

The fields of lobbying, rhetoric, and social psychology create an alluring argument for the use of economically oriented proposals for species conservation. This is due to their persuasive nature as a lobbying tool. The proposals would be equally effective for Miller’s third component of direct lobbying influence—negotiation. The Principled Negotiation Method created by Roger Fisher and William Ury contains three approaches that are applicable to the issue of rare species protection. The first applicable technique is to separate the people from the problem.44 Currently, a great deal of animosity exists between environmentalists and Republican legislators. This animosity inhibits both sides’ ability to deal with the issues. By proposing species conservation measures that incorporate economic incentives into the calculus, environmentalists would be offering an olive branch to the Republicans, thereby assuaging the animosity. This would enable both sides to better focus on the real problem—protection of biological diversity in a manner that is fair to all citizens.

The second technique of the Principled Negotiation Method that is pertinent to the issue involves focusing on interests, not positions.45 At present, both environmentalists and Republican legislators are focusing on positions. Environmentalists are struggling to keep current conservation laws on the books, while Republicans are striving to gut these same conservation laws. However, a problem exists with these positions. They do not


perfectly correlate with the interests of each group. The interest of environmentalists is to protect biological diversity. The interest of G.O.P. is to alleviate the economic hardships caused by command-and-control regulations and thereby gain a political advantage. Introduction of economically oriented ideas into the lobbying calculus would break the current emphasis on the nonoptimal positions.

This leads to the third pertinent technique of the Principled Negotiation Method—the invention of options for mutual gain.\textsuperscript{46} If interests are the focus of negotiation instead of positions, the ability to invent options for mutual gain is greatly enhanced. The incorporation of economic incentives into conservation legislation would be one such mutually advantageous invention. By assuming that the pie would not be fixed, a win/win situation would be created. Environmentalists would gain by a higher degree of protection for rare species, and Republican legislators would gain by the knowledge that fewer economic hardships would occur. In this way, the negotiation process inherent in direct lobbying influence would be a success.

\textbf{The Outside Strategy}

But even if the negotiation, lobbying, and information processes are all successful, these inside strategies might not lead to passage of the economically oriented proposals. An outside strategy should be implemented coterminously. Congressman Thomas Railback spoke to this need, "The most effective lobby campaigns involve the local

\textsuperscript{46}Ibid., 56.
constituency... He is somebody who votes for or against you." Grassroots networks should be set up. Considering that these ideas are new, the first step for the outside strategy should be to educate the public about the merits of the economically oriented proposals for rare species conservation. Press releases, press conferences, letters to the editor, op-ed pieces, radio spots, and cultivation of individual reporters are ways in which organizations could use the media to educate the public. In addition, most environmental organizations have a magazine and/or newsletter which should be utilized for the education process.

The reception of the economically oriented proposals might be cool at first in some sectors of the environmental community. Economics is often associated with business and industry. These institutions are often to be blamed for environmental degradation, and the dogma of certain segments of the environmental community holds that these institutions should be greatly circumscribed. But, if the education campaign is undertaken with due diligence, these environmentalists and the public in general should be won over by the merits of the proposals. After all, the proposals would create win/win situations.

If and when popular opinion accepts the economically oriented proposals, networks should be created to make sure that legislators are cognizant of the public support. This could be accomplished through letter writing campaigns, public encouragement of phone calls and visits to legislators, advertisement of legislative hearings, development of opinion polls, and many other ways. If grassroots support backs the persuasive nature of

47Hrebenon, 83.
the economically oriented proposals, the likelihood of passage would be high.
Chapter Two emphasized the compatibility between the current Republican Congress and economically oriented rare species preservation proposals. The advantages of such proposals would not stop with this compatibility. Proposals incorporating economic incentives would also better protect rare species than current legislation. In order to achieve both these benefits, the proposals must be artfully crafted. Many Republican sponsored bills incorporate economic ideas that are not preservation friendly. The key is to find the elusive overlap between preservation friendliness and Republican objectives. Development of proposals that fall into this overlap is the subject of Chapter Three.

The Current State of Legislation Important to Biological Diversity

In order to assess the effectiveness of economically oriented proposals as preservation tools, a baseline understanding of current legislation is needed. Of course, the most relevant piece of legislation is the Endangered Species Act. Sections 7 and 9 provide the teeth to this Act. Both sections are of a command-and-control nature. Section 7 involves federal interagency cooperation. In short, no federal agency is to take
any action that jeopardizes the continued existence of an endangered species or its legally designated "critical habitat". The prohibition includes any actions authorized, funded, or carried out by federal agencies. While the bulk of Section 7 concerns federally owned land, the wide breadth of federal involvement in the personal affairs of citizens ensures that it has vast implications for private property as well. For example, certain building permits are withheld if issuance of the permit would jeopardize an endangered species.

Section 9 directly affects use of private property as well as public lands. This section outlaws the "taking" of any endangered species. The definition of "taking" has been construed liberally by the courts. In addition to direct killing, it applies to the harassment and harming of an endangered species. This includes destruction of habitat. Therefore, if an endangered species is located on private land, use of that land may be greatly restricted. Any person who willfully "takes" an endangered species is subject to civil and criminal penalties.

It should be noted that one section of the Endangered Species Act does afford some flexibility. Section 10(a) tolerates "takes" of listed species if they occur incidentally to otherwise lawful activities. Permits for such "incidental takes" are allowed by the Secretary of the Interior only if a mutually agreed upon habitat conservation plan has been implemented. The flexibility of Section 10(a) has rarely been utilized. Only a handful of permits have been issued.

The results of the Endangered Species Act as to species protection are a mixture of success and failure. It has been a success in that many species once thought certain to become extinct continue to exist. Since the enactment of the Act in 1973, only 15
animal species in North America have disappeared. Nearly 99% of all listed endangered species still survive. Nevertheless, a few aspects of the Endangered Species Act have been failures. One of the Act’s inadequacies is its inability to forestall population declines of species before they become listed under the Act. The end result of this inadequacy is that more and more species are added to the Endangered Species List. An addition to the List symbolizes that a crisis situation has been reached for the population of the added species. Over 950 plants and animals are now listed as endangered or threatened. This figure suggests that many crisis situations exist. However, population biologists estimate that it is only 25% of the number of species that deserve listing. Furthermore, trends show that the numbers will continue to grow if the current approach continues. Once these emergency situations are created, it has proven difficult to reverse the process. Few species recover to populations of long-term viability. Only 8 species have ever been delisted as a result of recovery. In fact, only 10% of the currently listed species are improving.

Many biologists believe that such weaknesses of the Endangered Species Act result from its deficiencies regarding habitat. Ecological principles assume that in order for a healthy population of a species to exist ample habitat is needed. In spite of these principles, nothing in the Act promotes habitat integrity if no listed species is present in

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50 Rauber, 32.
an area; and, even if a listed species is present, Sections 7 and 9 only concern habitat
destruction. No consideration is given to habitat creation and restoration.

Why is there so little protection, creation and restoration of habitat as a result of
the Endangered Species Act? One answer involves the concept of motivation. The
reasoning behind nearly all legislation involves motivating the public to act in a desired
manner. The goal of rare species protection legislation is to motivate the public to act
in a manner favorable to rare species. The method which the Endangered Species Act
uses to motivate is command-and-control, also known as legal compliance. Essentially,
the Act sets forth rules and then supplies mechanisms to enforce these rules. If persons
break the rules, they are punished. Citizens are motivated to comply with the rules for
two reasons. The first is the fear of punishment. The second involves an internalized
acceptance of legitimate authority.\(^{51}\) This second reason is similar to Rousseau's
doctrine of the social contract. In order to receive the benefits of social cooperation,
citizens voluntarily relinquish some of their individual rights by obliging themselves to
follow systemic demands.

The Endangered Species Act has troubles involving habitat because command-and-
control has limitations as a motivating tool. While it is quite sure to obtain the bare
minimum of compliance, command-and-control provides no incentives to go beyond this
bare minimum.\(^{52}\) Sections 7 and 9 of the Endangered Species Act prohibit the

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\(^{51}\) Daniel Katz and Robert Kahn, *The Social Psychology of Organizations*, (New York:

\(^{52}\) Ibid., 343.
Jeopardizing and/or taking of endangered species and the habitat on which they depend. Enforcement of this prohibition has been somewhat successful. As mentioned previously, the Endangered Species Act has been effective for stabilizing species populations once they reach a crisis stage. But, it has not been effective for anything other than this bare minimum goal. Inadequate habitat continues to be a problem. The number of species reaching a crisis stage continues to increase, and the rate of recovery of endangered species continues to be poor.

**Economically Oriented Proposals and Motivation**

It is obvious that a mechanism in addition to command-and-control is needed in order to motivate property owners to act in a manner that remedies these problems. One alternative would be an economically oriented approach. In general, such an approach would provide better motivation than an approach based solely on a command-and-control setup. In psychological jargon, economic incentives involve positive reinforcement while command-and-control setups involve punishment. Psychological studies show that positive reinforcement is more effective than punishment in eliciting target behavior.53

Furthermore, a system incorporating economic incentives would be more conducive to habitat preservation, creation, and restoration. The reasons for this again involve motivation. Basic utilitarian, behavioristic principles are the basis for such motivation. In order to best satisfy physiological drives and safety needs, a person acts

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in a manner which optimizes her cost/benefit calculus. Rewards inherent in economic incentives would serve to shift this cost/benefit calculus towards a more preservation friendly decision process. If the rewards from benefiting a particular piece of habitat outweigh the costs of such actions, then a landowner would act in a more habitat friendly manner. This is simple profit maximization. The key is to set the reward at a level high enough that some landowners would benefit from taking advantage of it. In order to do so, it must be set higher than the combination of a landowner's marginal costs of habitat improvement and marginal opportunity costs.

An important advantage of a motivational system based on economics involves the incentive for landowners to find ways to reduce the marginal costs of habitat preservation, creation, and restoration. If the marginal costs of these activities are reduced, landowners would increase their profits. As a result of this incentive, it is quite possible that a new, habitat oriented market would be created. Landscape architecture, restoration ecology, preservation management, population biology, and many more fields would have added financial incentive to concentrate on rare species preservation. Such a stimulus might be the very thing needed to restore endangered species populations and halt the decline of species not yet endangered.

**Elimination of Perverse Incentives**

The ecological benefits of a general program incorporating economic incentives having been established, the question then arises as to the specific forms such incentives should take. In assessing the forms of incentives, special consideration should be given
to Republican acceptability. The first logical step for deriving a program involves the elimination of perverse incentives written into current legislation. According to environmentalist Jeffrey McNeely, a perverse incentive is "one which induces behavior which depletes biological diversity." In order to help eliminate perverse incentives, environmental groups should target any legislation that motivates a person to take an action that is destructive of biological diversity.

Perverse government subsidies

Government subsidies to resource extractive industries are such perverse incentives. Examples of such subsidies include those to the well connected and well funded industries of mining, logging, and cattle. Subsidies to these three resource extractive industries were passed into law in a different era. They are no longer advantageous to the general public. All three were passed into law for two reasons—to provide jobs for rural Americans and to provide the natural resources needed to fuel the nation's manufacturing sector. The current situation is different. Mechanization of production methods have reduced employment opportunities in most extractive industries, and the resource dependent manufacturing sector no longer dominates the economy. Furthermore, the federal budget deficit has become an enormous drag on the national economy. Take 1992 as an example. In that year the federal budget deficit was 290.4 billion. In spite of this fact, the National Forests of the Idaho Panhandle spent $4.5

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million more administering timber sales and building logging roads than it made from their timber sales.\textsuperscript{55}

The subsidies to extractive industries seem even more misguided when the harmful affects to biological diversity are considered. In total, more than 500 of the 777 listed species as of 1993 were jeopardized in whole or in part by subsidized mining, logging, and grazing.\textsuperscript{56} Such jeopardizations result in the need for Endangered Species Act mandated Recovery Plans. The full cost of the Recovery Plans that can be attributed to resource extraction on federal lands is between $24 million and $45 million.\textsuperscript{57} For example, in those same Idaho Panhandle National Forests, $4 million was spent between 1988 and 1992 for the protection of two listed species, the Woodland Caribou and the Grizzly Bear.\textsuperscript{58} Much of this money would have been saved if timber cutting had not been subsidized. The public is a double loser.

The fact that extractive industry subsidies are ecologically destructive and fiscally burdensome has not been lost on environmental lobbying organizations. Such subsidies have been a lobbying target for environmental organizations for years. What has been missing is a big-picture, economic analysis of the subsidization. In using the term "subsidy" as a rallying cry against corporate greed, environmental organizations have simply condemned the concept of "subsidies" without realizing the possible value of well


\textsuperscript{56}Ibid., 9.

\textsuperscript{57}Ibid.

\textsuperscript{58}Ibid. 8.
crafted ones. This has created an ironic situation in which environmental organizations are unknowingly defending the free market, a situation that runs contrary to most of their historic lobbying strategies. Such an unknowing contradiction has discredited environmental organizations’ reputations and helped create an atmosphere of distrust in the legislative arena.

Environmental organizations need to articulate themselves better on the concept of subsidies. In certain circumstances, subsidies hurt the public welfare; and in others, they help it. It is true that any time the government creates a subsidy, the market does not function at the private optimum. But makers of public policy should not be unduly concerned with private optimality. Public policy should promote societal optimums. In one scenario, a situation where the market functions properly, the subsidy causes a decline in overall societal welfare. The subsidized market is unable to set the correct price for the good or service in question. The result is a deadweight loss.

But in a second scenario, a situation where the market does not function properly, a subsidy may be desirable. At times, the private optimum does not coincide with the public optimum. This occurs when an activity by one private agent causes a loss of welfare to another private agent that is left uncompensated. Such a situation is called a negative externality.59 Many reasons could exist for such an occurrence. This is a topic covered in Chapter Four. For now, all that is needed is acceptance of the fact that such situations do occur. In situations where the private market does create negative

59David Pearce and Kerry Turner, Economics of Natural Resources and the Environment (Baltimore: Johns Hopkins University Press, 1990), 61.
externalities, some form of government intervention is proper in order to reach the public optimality. Such government intervention should limit the amount of activity by the private, negative externality-inducing agent to a level where the marginal net private benefits are equal to the marginal external costs. A subsidy is one form of government intervention that might accomplish such a task.

Environmental organizations need to recognize that the second scenario is not applicable to the three subsidized extractive industries. The first scenario is. The mining, logging, and grazing industries are causing uncompensated losses of welfare on public lands. They are the ones creating the negative externalities. Their effect on endangered species is substantial. Government subsidies to these industries only exacerbate this problem. The initial reasoning for the subsidies has faded into history. Providing jobs for rural areas and natural resources to the manufacturing sector are not as important to the nation as they once were. There is no longer any need to manipulate the market to accomplish such tasks. In essence, the subsidies currently result in the deadweight loss inefficiency of the first scenario and the negative externalities of the second scenario.

In order to overcome well connected and well funded resource extractive lobbying tactics, environmental organizations need to couch their lobbying strategy against these subsidies in such terms. As stressed in Chapter Two, Republican legislators relate to a vocabulary involving economic analysis. Stressing the deadweight loss inefficiencies might be a particularly effective strategy with conservative legislators who are known to be deficit hawks.
As a whole, Congress currently seems amenable to reducing outdated subsidies. In March Congress passed a farm bill that ended the six decade old practice of boosting farm income with federal subsidies. The main reasoning behind the bill was to reduce the budget deficit and create better economic incentives for farmers.

**Perverse tax laws**

The government subsidies to extractive industries are not the only forms of perverse incentives written into current legislation. The tax code also contains many perverse incentives. For instance, mortgage payments on second homes are tax deductible. The costs of such a policy have come to outweigh the benefits. Second homes are often located in ecologically sensitive rural areas. Often, habitat conducive to endangered species is damaged. In addition to this damage, tax revenues to the government are lost. In short, the social costs are great. Compare these costs with the advantages. Most second homes are recreational. Therefore, their importance to owners is not as great as with a residence home. The construction industry does benefit, but often at the expense of rare species. In short, in order to eliminate the incentive to destroy sensitive habitats, the deductibility of mortgage payments on second homes should be repealed in total, or at least in cases involving important habitat.

Due to the recent, highly visible presidential campaign of Steve Forbes, closing tax loopholes is currently in vogue among a portion of the Republican party. In their lobbying strategy, environmental organizations should characterize the repeal of the tax deduction in loophole terms. Efforts should made to avoid depiction of the repeal as a
tax increase. Such a characterization would make it contrary to the Republican platform of fewer taxes.

Another manner in which the tax codes provide perverse incentives involves inheritance taxes on large estates. Currently, federal inheritance taxes kick in when the estate of the deceased is worth more than $600,000. Often, the only way in which the beneficiaries can pay the inheritance taxes is by selling all or part of the estate. Herein lies the problem. The buyers of the estate in such cases are often development oriented. In situations where the estate contains habitat important to rare species, the results are devastating. Examples of this type occur regularly on large ranching or agricultural operations with a close proximity to urban areas. A possible solution to this problem might include breaks on inheritance taxes in return for contracts specifying ecologically friendly actions. Examples of such actions might involve programs of prescribed burning, restrictions on logging, and promises not to subdivide. A solution such as this might be received warmly by Republicans. Tax breaks fit their platform. While lobbying for such a solution, environmental organizations should paint the proposal as a tax break furthering a public need, not as the creation of a loophole.

**Perverse incentives in the Endangered Species Act**

Perverse incentives are not limited to taxes and subsidies. Contrary to what one might expect, another piece of legislation that contains perverse incentives is the Endangered Species Act, the preeminent law designed to protect biological diversity. The Endangered Species Act produces perverse incentives in three ways. The first involves
rare species that are candidates for listing but have not yet officially received listing. In such a situation, a property owner who knows her land is home to a candidate species that is soon to receive official listing often has an incentive to destroy the habitat in order to reap the financial rewards from nonhabitat oriented uses of the land which would be outlawed if the species was officially listed. The possible nonhabitat oriented uses of the land precluded by the Endangered Species Act are myriad, from subdivision to logging to building a golf course. A true life example illustrates this type of perverse incentive. In 1978 a private real estate developer deliberately destroyed one of only three known populations of a candidate species, San Diego Mesa Mint. The developer wanted to ensure that subsequent requests for federal construction permits would not be delayed.\textsuperscript{60} Examples such as this are not uncommon. Bruce MacBryde, a botanist for the United States Fish and Wildlife Service, has found that several candidate species on private lands have been intentionally destroyed in the last few years.\textsuperscript{61}

The second manner in which the Endangered Species Act produces perverse incentives involves private property that is not currently inhabited by an already listed species, but is likely to be in the near future. In such a situation, the property owner has an incentive to destroy the habitat in order to avoid the possibility of a listed species moving to the property and bringing with it the land use restrictions of the Endangered Species Act. Again, an example illustrates such a situation. Benjamin Cone owned 8000


acres of prime habitat for the endangered red-cockaded woodpecker. Historically, he managed it for multiple uses. By 1991, 21 red-cockaded woodpeckers had come to reside on his property. The federal government mandated that 2000 acres of his property were to be managed solely for habitat. Fearing that he would lose revenue producing uses to all of his property if the woodpecker populations spread throughout the rest of the 6000 acres, Cone proceeded to clear cut the majority of the rest of his property. Ironically, Cone had historically managed his property in a conservation friendly manner. He preserved old growth and set controlled burns, both of which are conducive to red-cockaded habitat. His good conservation practices are the reason why much of his land lost its revenue producing potential. The Director of Resource Protection for the Texas Parks and Wildlife Department, Larry McKinney, wrote about this type of perverse incentive, "Currently, good land management practices that result in the creation of habitat for endangered species is understandably considered a liability by most landowners."63

Good land management practices are also involved in the third perverse incentive written into the Endangered Species Act. Because certain, natural, ecological processes can be detrimental to rare species, good land management at times means active manipulation of habitat. But, the Endangered Species Act does not allow for this reality. In fact, in some ways it discourages the needed manipulation. An example of this point involves the Silverspot Butterfly. This listed species inhabits only open coastal grasslands


that contain the common blue violet. In 1990 Frank Hildreth and Donald Wudtke wanted to develop a golf course on private land that contains the Silverspot Butterfly. In order to receive an incidental take permit allowed under Section 10 of the Endangered Species Act, the two developers created a Habitat Conservation Plan that would situate the golf course around the bulk of the Silverspot habitat. Also included in this Plan was a program of prescribed burns that would keep the grassland habitat from being overrun by Scotch Broom, a tall brushy shrub. Without such prescribed burns, the Silverspot will soon disappear from the property. In spite of this fact, the federal government turned down the developers' Habitat Conservation Plan. A double loss situation has been created. The developers lose. The Silverspot Butterflies lose.

Proposals Creating Economic Incentives

Rare species habitat would benefit if the three perverse incentives of the Endangered Species Act were eliminated. Providing economic incentives is one way to remove them. Several varieties of economic incentives are available. The ones described in this chapter include direct compensation, tax breaks, strengthening of property rights, and tradeable credit systems.

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Direct compensation proposals

The first of the varieties is direct compensation. The theory is simple. If a property owners acts in a manner which benefits rare species, she would receive money. Of course, not every act benefitting rare species would be compensable. However, certain actions could be.

**Compensation for listed species residing on property.** For example, an instance where a listed species resides on a person's land could justify a reward. Residence of an endangered species on private property is usually the result of a history of conservation friendly actions undertaken by the landowner. Currently, the Defenders of Wildlife has a fund which pays $5000 to landowners who successfully have wolves breed on their private land and raise the pups to adulthood. Reward systems for other listed species could be modelled after the Defenders of Wildlife program. An important advantage of this type of program involves its freedom. Landowners could use any legal means necessary to improve the habitat of their property. Entrepreneurship and creative thinking would likely be the result. Dispensation mechanisms and the amount of reward could be tailored differently for different species. The key would be to set the amount of reward higher than landowners' combination of marginal conservation costs and marginal opportunity costs. Otherwise, landowners would not have an incentive to take stewardship actions.

**Compensation for damage done by listed species.** Another instance where direct compensation could be warranted involves compensation payments for damages. Such an insurance program is particularly applicable for listed species that are predators. Once
again, the Defenders of Wildlife has a wolf program that provides a model. If a livestock kill is verified by appropriate authorities, the rancher is compensated the full value of the lost animal. Historically, there has been a problem involving illegal shootings of Wolves and Grizzly Bears. Compensation such as that provided by the Defenders of Wildlife program acts as a disincentive for ranchers to kill legally protected predators. Furthermore, such a program acts as an incentive for ranchers to practice proper conservation techniques. Although the payment to the ranchers is the same as their loss, the added insurance provides valuable information that allows for more efficient planning.

**Compensation in return for specified action.** Direct compensation could also be useful to get landowners to practice particular conservation practices regardless of whether a listed species is present. In fact, conditioning compensation on specified conservation actions has many advantages over conditioning compensation on species residence. In some cases compensation for species residence is not warranted. Species residence could be due to the actions of past owners of the land or even sheer luck. In short, the landowner might not have undertaken any conservation friendly actions deserving compensation. Conditioning compensation on specified actions solves this problem. Such a program could be an important mechanism for the creation and restoration of currently marginal habitat as well as for the preservation of prime habitat. Michael Bean of the Environmental Defense Fund envisions a voluntary enrollment program in which landowners would receive payments in return for managing their lands
in a specified manner. If payments are set at a proper level, such a program would provide incentives for the preservation, creation, and restoration of habitat as well as for sound land management in general. An incentive to develop more efficient land management techniques would also be created.

The downside of this type of program would be the administrative costs. Added labor and funding would be needed for the implementing agency. In order for such a program to be successful, the government must do many tasks. Lands eligible for enrollment must be identified. Land management prescriptions for each eligible parcel land must be discerned. The amount of compensation must be identified. And finally, monitoring mechanisms and penalties for breach of contract must be established.

An offshoot of Bean’s voluntary enrollment program was introduced in a bill during the last session of Congress. Representative Gary Studds and Senator Max Baucus sponsored a proposal that would have had the Department of the Interior pay private property holders to carry out conservation actions for listed species. Applicable actions might include prescribed burning, fencing, field surveys, and similar activities. Payment would have required that the conservation actions went beyond those already compelled by law.

This proposal would have been effective in certain circumstances such as the one involving the Silverspot Butterfly. The federal government may be able to tell private

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property owners what not to do under the authority of the Endangered Species Act, but it does not have the ability to tell them what to do. Paying landowners to carry out proactive management activities at least makes the situation a break even one for the property owner. However, overall the Studds/Baucus proposal would have provided scant incentive for sound land management techniques on land that was not currently inhabited by an endangered species. In those situations, the property owners acting in a habitat friendly manner would still be increasing their susceptibility to the land use restrictions of the Endangered Species Act.

The disadvantage of the compensation proposals. All of direct payment systems mentioned in this chapter have one major disadvantage, finding the money in the budget for the payments. In the name of deficit reduction, the Republican Congress is currently cutting back on environmental programs, not increasing their budgets. Some revenues could be found in existing sources. For example, the Fish and Wildlife Coordination Act, the National Environmental Policy Act, and other federal and state laws require mitigation for environmental impacts. However, sources such as these probably would not provide enough money to implement effective direct payment systems. It is possible that Republicans would increase funds for environmental programs if they incorporated economic ideas such as those mentioned in this paper.

Proposals promoting tax breaks

While the G.O.P. may not be amenable to budgeting direct compensation systems, tax breaks might be looked upon more fondly. This is true even though tax breaks affect
the budget deficit in the same way as direct payments. Tax breaks fit the Republican image of a smaller, less heavy handed government. Similar to the manner in which the inheritance tax proposal mentioned earlier in the chapter reduces perverse incentives, tax breaks could be fashioned to provide incentives. As mentioned earlier, such tax alterations should be painted as tax breaks rather than the creation of loopholes.

**Tax breaks in return for specified actions.** For example, a tax break proposal could be fashioned after Bean's voluntary enrollment program. His program could easily use tax breaks instead of direct compensation. For many landowners, tax breaks would provide an even greater incentive than direct compensation. The 1980s real estate boom created a tremendous increase in property assessment levels, particularly for lands near rapidly developing urban and suburban areas. Property taxes are a local government issue, so the federal government can not affect them directly. But, they can offset them through income tax reductions. Property taxes on land providing habitat for rare species are already deductible from federal income taxes. In order to reduce taxes further and provide a greater incentive to preserve, create, and restore habitat, this deduction could be turned into a credit.\(^6\)

In order to avoid situations such as the one involving the Silverspot Butterfly, federal income tax credits could also be used to promote preservation friendly land management on property that already contains endangered species. A system, similar to that which the Studds/Baucus bill proposed, could be configured using tax credits instead

\(^{66}\)Tax deductions reduce the taxable income from which the tax liability is determined. Tax credits reduce tax liability, or the actual tax owed.
of direct payments. Expenses incurred from proactive management activities could be credited or partially credited. Currently, they are only deductible. Crediting proactive management expenses at least makes such activities a break even situation for the landowner.

**Tax breaks involving donated conservation easements.** Another way that federal income tax reductions could promote rare species preservation involves donated conservation easements. A conservation easement is a legal arrangement in which the fee title owner's use rights of a piece of property are curtailed in perpetuity. Such a reduction in use rights lowers the value of the property. Hundreds of non-profit, land trust organizations have sprung up in recent decades in order to focus on conservation easements. One such organization is the Nature Conservancy, which specializes in conservation easements protecting rare species. If a conservation easement is donated to one of these qualified organizations, the fee title owner receives a deduction in income taxes. The deduction works in the following manner. The difference between the property's value unencumbered by the use right restrictions of the easement and the property's value under the easement is considered a charitable contribution. According to the law, the fee title holder may be able to reduce her taxable income 30% for up to six years.

Currently, many easement donors are unable to take full advantage of the tax deduction because their incomes are too small. In order to promote conservation of rare species, the charitable contribution tax format could be altered. This could be done in
one of two ways. The deduction could be increased from 30%, or the number of years the deduction is allowed could be increased beyond six.

Proposals strengthening certain property rights

While tax breaks are more politically acceptable than direct payments, they still would be harmful to the budget deficit. Considering such a fact, a few incentive based proposals that are more cost-neutral should be pushed by environmental organizations. Strengthening certain property rights would be one alternative agreeable to Republicans. In order to lobby for such a strengthening, environmental lobbyists should fully understand the concept of property rights. A full property right implies that the owner of that right has the exclusive right to use her property in any manner. In order for this to occur, the property right must be well-defined, measurable, and defendable. Furthermore, exclusive use implies the right to transfer the property right.

The benefits of private property are in its utilitarian nature. Private property breeds responsibility, efficiency, and growth. Individual incentives created by the structure of property rights are important determinants of human behavior. The degree to which individuals stand to gain from tending their property strongly correlates to the degree which the property will be tended. Therefore, if the property rights are strong, the property will be tended meticulously. But if the property rights are attenuated, the property will be tended less painstakingly, because the owner has less to gain from her efforts. In short, a strong property right creates a stakeholding; a stakeholding creates discipline; and, discipline creates efficiency and growth.
The "tragedy of the commons" illustrates these points. This scenario involves a pasture open to all. Property rights are largely attenuated. The pasture is at its carrying capacity, but each herder tries to maximize her own gain. If one herder adds one sheep, a few things happen. One additional animal is available for sale, and the herder profits accordingly. The additional animal also creates additional overgrazing. But, since the pasture is open to all, the costs of this overgrazing are spread across all the herders using the pasture. Therefore, the logical herder adds one more animal, and continues to add animals until the pasture is ruined. According to Garrett Hardin, "therein is the tragedy."\(^6\)\(^7\)

**Property rights involved in federal grazing policy.** To avoid these tragedies and benefit rare species, the federal government could strengthen property rights in certain ways. Of course, the negative externalities problem makes strengthening many property rights undesirable. The key is to find property rights that would not suffer from the negative externalities problem if strengthened. A few such property rights involve federal grazing policy. Currently, the Federal Land Policy and Management Act sets ten years as the usual term for grazing permits on Bureau of Land Management (BLM) lands. If the BLM land use plans make livestock grazing unavailable during the ten year tenure of a rancher, then after the ten year permit expires the rancher must find another place to run her cattle. Such insecurity of tenure is not amenable to sound range management techniques. It provides an incentive for ranchers to overgraze. If the government insists that grazing is to be a dominant use of public lands, it should at least provide stronger

incentives to graze properly. In order to do this, the length of tenure should be increased. Furthermore, lease renewals should be made more automatic. Nonrenewal should only occur in serious situations such as when continued grazing would jeopardize rare species. A simple change in BLM land use plans should not be enough to cancel renewal.

Another way in which the property rights of grazing permits are attenuated involves a lack of transferability. A leaseholder is currently not allowed to sublease to other people or organizations for "non-use" preservation. If land's agency-designated highest use is grazing, then that land has to be grazed. Environmental organizations or conservation-minded citizens can not pay the leaseholder to keep domesticated animals from grazing. This restriction should be eliminated. It stifles free market trading and efficient use of resources. If an environmental organization is willing to pay a mutually agreed upon price, then according to the invisible hand of the market, the value of the land for preservation is higher than the value of the land for grazing. Restrictions that do not allow the land to achieve its highest use do not make sense.

**Increasing property rights for recovery purposes.** Property rights are not just applicable to grazing issues. Another way in which they are relevant pertains to endangered species recovery. As it stands now, the Endangered Species Act authorizes only federal agents to pursue and capture individuals of an endangered species for recovery purposes. Anyone else undertaking these projects is acting illegally. They do not have a property right to act in this manner. Such a policy is not making full use of private resources. Many well qualified biologists are currently unable to undertake valuable recovery activities. Chances are, some of these private biologists would perform
recovery functions more cost effectively than government employees, especially if a competitive bidding process was established. In fact, opening up endangered species recovery to the private sector would create incentives to reduce the marginal costs of recovery. But, the current lack of transferability surrounding recovery activities is stifling efficient bargaining.

This policy should be changed. The federal government should be able to transfer their property right in recovery oriented activities to private biologists. If federal oversight of privately run recovery operations would be necessary in order to maintain public values and accountability.

Tradeable credit system proposals

The creation of property rights plays an important role in another economically oriented proposal, one involving a tradeable credit system. The basic framework of such a system is complicated. The heart of the tradeable credit system would involve a standardized and measurable unit of conservation value for a particular area of land important to an endangered species. Such units would be called credits, and they would entail a property right. A landowner within the specified area who preserves, creates, or restores habitat would receive credits based on the ecological value that the landowner adds to the system. This ecological value would be determined by government ecologists. Important considerations in the determination of ecological value would include the size

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68 For a detailed analysis of this subject see Gregg Schildwachter, "Contracting for Recovery of Endangered Species," [working paper 95-2], 29 March 1995, Boone and Crockett Wildlife Conservation Program, University of Montana, Missoula.
of the newly introduced tract of habitat, the existence of adjacent habitat, the size of
eexisting adjacent habitat, the plant cover, the local weather patterns, the presence of water,
the slope of the land, and countless other factors. Any one of a number of conservation
tools would justify credit receipt, including restrictive covenants, easements, leases, and
contracts. In order for a landowner within the specified area to develop a project causing
a loss of ecological value, a number of credits would need to be purchased. The exact
quantity would depend on the decrease in ecological value that would result from the
development. In order for the total amount of habitat in the specified area to increase,
the ratio of credits offered to credits received would need to be greater than one-to-one.
In other words, development causing one credit's worth of damage would need to be
offset by possibly two credit's worth of preservation.

In this manner, a new market would be created. Facilitation of the buying and
selling of credits would rest with the implementing government agency. It would act like
a miniature stock market. The implementing agency would also be responsible for
monitoring the system to make sure that developers are abiding by the strictures of the
program. The price of the credits would be controlled by supply and demand. If the
supply of credits is low and the demand for them is high, the price of the credits would
be high. If the supply of credits is high and the demand for them is low, the price of the
credits would be low.69

69 For additional information of the forms of tradeable credit systems see Building
Economic Incentives into the Endangered Species Act, 3d ed., ed. Wendy Hudson,
(Washington D.C.: Defenders of Wildlife, 1994); in particular see Todd Olson, Dennis
Murphy and Robert Thornton, "The Habitat Transaction Method," 27-34.; Jon Goldstein
and H. Theodore Heintz, "Incentives for Private Conservation of Species and Habitat,"
The tradeable credit system would create numerous benefits. It would create added flexibility for landowners of endangered species habitat. Under Sections 7 and 9, use of land containing endangered species is severely restricted. Essentially, development is not possible. But under a tradeable credit system, a landowner might be able to develop. All that is needed is the ability to pay the price of the credits.

The flexibility of the tradeable credit system would not lessen the certainty of result as far as habitat quality is concerned. The tradeable credit system would be able to assure a minimum level of habitat. In order for developers to injure habitat, they would need to purchase the appropriate amount of credits. Because the credit ratio for development is more than one-to-one, the total amount of habitat in the area would only be able to increase.

The fact that the tradeable credit system involves a market also would create benefits. The market would be efficient. If land is most valuable as habitat, it would remain habitat. If land is most valuable developed, it would be developed. The market would also create better incentives for landowners to act in a preservation friendly manner. Land inhabited by endangered species would be imbued with financial value. Habitat would become an asset for the landowner. Under Sections 7 and 9 of the Endangered Species Act, prime habitat is a liability. The market would also create competitiveness. This would create an incentive for landowners to try to find better ways

51-62.; and, Michael Bean, "Incentive-Based Approaches to Conserving Red-Cockaded Woodpeckers in the Sandhills of North Carolina," 20-23.
to preserve habitat. In the long run, such an incentive would likely reduce the marginal costs of preservation.

The downside to a tradeable credit system would involve its administrative costs. The implementing agency would face a number of intimidating tasks. One intricate task would involve creation of the credits. Assigning ecological value to a standardized and measurable unit would be difficult. Hours of field work and analysis would be needed. Another complex task would involve its facilitator role. A mechanism that matched buyers of credits with seller would need to be developed. Possible mechanisms would include sealed bid auctions, an electronic iterative bid system, and electronic markets. Establishing any of these systems would be a laborious task. Another problem would involve monitoring and enforcing the system. Such responsibilities would be time consuming and costly.

Lobbying for a tradeable credit system would be challenging. Actually, according to little-used Section 10(a) of the Endangered Species Act, a tradeable credit system is already allowed. But, the Department of Interior resists such a program. Direction needs to come from Congress. If environmental lobbyists pushed such a program, Interior officials would likely mount a campaign against it. Criticism of a lobbying strategy that promotes a tradeable credit system might also come from within the environmental community itself. Any time damage of endangered species habitat is allowed, some environmentalist object on moral grounds. To counter this criticism, the big picture must be stressed. After all, a tradeable credit system contains as much security to overall habitat as command-and-control strategies. The difference is that a tradeable credit
system encourages increases in habitat while command-and-control does not. Another lobbying challenge would involve the complicated nature of the tradeable credit system. Legislators like issues that can be boiled down to fifteen second sound bites. Somehow, environmental lobbyists would have to simplify the message without losing the essence.

**Conclusion**

Environmental lobbyists would increase biological diversity by undertaking a lobbying strategy incorporating economic incentives. Specific proposals could include tradeable credit systems, the strengthening of certain property rights, tax breaks or direct compensation in return for conservation friendly actions, and the elimination of perverse incentives. All such proposals would likely be amenable to the Republican party platform and would overcome the limitations of the command-and-control nature of Sections 7 and 9 of the Endangered Species Act.
Chapter Three demonstrated that proposals incorporating economics can often benefit rare species. But, economics is at times not so kind. Other economically oriented measures would be very destructive to biological diversity. Such proposals often receive backing from Republican legislators. Drastic deregulation and "takings" compensation proposals are two examples. When employing a lobbying strategy involving economics, environmental organizations must be ready to articulate why such measures would be harmful to the environment. Likely to be heard is the argument, "If economic theory fosters biological diversity in the proposals that you promote, then why isn't economic theory good for biological diversity in these other proposals?" This type of argument must be effectively countered. The limitations of economic theory in situations involving rare species must be skillfully described. An analysis of these limitations is the subject of this chapter.

Countering Massive Deregulation Proposals

A major component of the Republican platform involves deregulation. Environmental legislation is a prime target for this deregulation. Some conservatives want to repeal nearly all environmental laws, including the Endangered Species Act.
Edward Hudgins of the conservative Cato Institute wrote, "We're looking for the desocialization of environmental regulations." Republicans promoting such ideas believe that deregulation would free up the market system, spur economic growth, and thereby increase societal welfare.

On the subject of environmental consequences, promoters of deregulation believe that market forces would limit the amount of environmental degradation. The philosophical foundations of such a line of thought are taken from the works of Ronald Coase. His writings postulate that if property rights are fully assigned market trading between the sufferers of a negative externality and the creators of the negative externality would create a socially optimal situation. If the sufferers of a negative externality had the property right, the creators of the negative externality would pay the sufferers in order to have the legal ability to generate the negative externality. If the creators of a negative externality had the property right, the sufferers of the negative externality would pay the creators to diminish production of the negative externality. Regardless of who has the property right, the trading would continue to occur until the marginal external social costs are equal to the marginal private benefits of the activity that generates the negative externality. At this point a socially optimal situation would exist.\(^71\)


The problem of transaction costs

Several problems exist with the application of Coase’s ideas to the preservation of biological diversity. Republican legislators that are pushing massive deregulation of laws important to rare species seem unaware of these difficulties. Environmental lobbyists should explain these problems to the legislators. If the lobbyists’ explanations are framed by an economically oriented vocabulary, Republican legislators might be more susceptible to influence.

The first problem concerns transactions costs. Thousands of private property owners have land that is important to rare species. Millions of citizens desire to preserve rare species. In order for all the preservation-minded citizens to bargain with all of the owners of rare species habitat, billions of transactions would need to occur. Obviously, such a situation is not within the realm of possibility. The logistics would be too intricate. A bargaining party’s decisions would be difficult due to a lack of knowledge. Preservation ecology is a highly complex science. An ordinary conservation-minded citizen would likely only have a basic understanding of its processes. Even if the conservation-minded citizen did fully understand preservation ecology, the time costs in researching all the possible tracts of important habitat would be enormous. Consequently, during a bargaining situation for a parcel of habitat, the derivation of a price that perfectly reflects the habitat’s value would be impossible to achieve. Hence, the market would perform imperfectly. Conservation organizations such as the Nature Conservancy reduce the transaction costs of preservation and thereby reduce the imperfection of the market; but even they face tremendous transaction costs. The Nature Conservancy does not have
the money nor the time needed in order to identify all the possible buyers and sellers of important habitat. Nor do they have a perfect understanding of ecological processes.

The problem of free riding

Another problem with Coase's ideas and the massive deregulation of the environment involves the economic incentive to free ride. Certain products are public goods by their very nature. Two features make products public goods—a nonrival nature and a nonexcluding nature. The classic example is a lighthouse. If one lighthouse operates on a peninsula, no need for another one exists. A rival lighthouse would only be redundant. Furthermore, all sailors near a peninsula are able to benefit from the lighthouse. That is, no sailor can be excluded from seeing the beams from the lighthouse. In a private market, no way exists for the owners of the lighthouse to bill all those benefitting from the lighthouse. Therefore, sailors have an incentive not to pay for the services of the lighthouse even though they benefit from it. Such situations result in free riding. As a result, the true social value of the lighthouse is not reflected in its revenues.

Rare species are also public goods. Some of their precious traits are nonrival in nature. One such valuable trait involves the utility of their genetic codes. Clement Tisdell describes a good as nonrival if it "can be consumed or enjoyed without its available supply being diminished." Genetic information fits such a scenario. For example, if a drug maker utilizes the genetic information of a rare species, its supply is

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not in any way diminished. Crop geneticists, genetic engineers, and other drug makers can still draw from the same genetic information.

Rare species are also nonexcludable. Wild animals are wild. They move around from place to place. A landowner can not fully exclude others wishing to benefit from rare, wild animals. The animals just might jump, gallop, or slither onto another person's property. In a more limited way, the same goes for rare plant species. Although individual plants are stationary, their progeny may sprout up on another's property. Birds have been known to bring seeds hundreds of miles from where they originated.

Rather than consider a rare species the relevant good, preservation of the rare species could be deemed the issue. If this was the case, the good would still face free rider problems. Preservation of rare species is also nonrival in nature. Many conservation-minded people wish to preserve rare species in order to know that they simply exist. In such instances, species preservation is nonrival in that one person benefitting from the existence of a rare species does not diminish the ability of another person to benefit from the existence of the rare species. Species preservation is also nonexcluding. Persons who do not contribute to preservation can not be kept from enjoying the satisfaction of knowing a rare species still exists.

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The concept of existence value is pertinent here. It allows for altruism to be considered in the market decision calculus. Some goods are never physically utilized. In fact, many people value goods even if they never expect to physically utilize them. The good might have value simply by existing. For example, many conservation-minded people desire to save the grizzly bear from extinction, but they do not necessarily wish to encounter one. In truth, the prospect of such an encounter might terrify them.
The problem of categorical error

Another problem with the massive deregulation of the environment and the application of Coase's work to the issue of species preservation involves a categorical error. This occurs by treating concepts as if they suit one logical category when they actually belong to a different one. This is like comparing apples to oranges. The problem of applying free market economics to the preservation of species is such a categorical error. It involves the mistaking of privately oriented desires for publicly oriented beliefs. Economic markets are fine for measuring desires, but they have problems in measuring beliefs. Economic markets can measure the intensity with which one holds beliefs, but according to Mark Sagoff they "cannot evaluate those beliefs on their merits." Issues of right and wrong cannot be measured. They are philosophical, ethical, and spiritual questions that cannot be answered by a rational, utilitarian market calculus. Coase erred when he assumed that people's ethical desire to save species from extinction could be effectively included in this calculus.

Countering "Takings" Compensation Proposals

Besides massive deregulation of the environment, another economically oriented prong of the Republican platform involves "takings" compensation for lost value of private property due to government regulation. Like massive deregulation, "takings" compensation measures would be harmful to biological diversity. The foundation of the

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"takings" issue is related to the Constitution's Fifth Amendment clause which states "nor shall private property be taken for public use without just compensation." But unlike the Fifth Amendment which compensates only when the economically viable use of the landowner’s property is destroyed or when the property owner actually loses fee title of the land to the government, the current Republican-sponsored "takings" compensation bills would allow landowners to receive compensation for federal regulatory actions that diminish the value of parts of their properties by as little as 20% of their fair market value. Federal regulatory actions authorized by the Endangered Species Act and many other environmental laws would be subject to such compensation measures.

The main issue at stake in this "takings" compensation matter involves the assignment of liability for external costs. Currently, those creating negative external costs are liable for them. That is, if a landowner harms an endangered species or its habitat, she would suffer adverse consequences. If the harm occurred with the government’s consent under Section 10(a) of the Endangered Species Act, the landowner would have to pay mitigation damages. If the harm occurred without the government’s consent, the landowner would be subject to the fines and imprisonment authorized under Sections 7, 9, and 11 of the Endangered Species Act. But if the "takings" compensation measures pass the Congress, this liability would switch from the creator of the external costs to the public. In essence, the public would have to pay the landowner not to harm endangered species or their habitat. While it is true that the public would be paying landowners under the compensation mechanisms outlined in Chapter Three, such a system would be

75See Lucas v. South Carolina Coastal Commission, 112 S.Ct..2886.
a far cry from a "takings" compensation system. Payment under the mechanisms outlined in Chapter Three would be for constructive conservation actions. Payment under a "takings" compensation system, on the other hand, would have to be rendered just to stop a landowner from undertaking actions harmful to biological diversity. No tangible benefits to biological diversity would result. The private landowner would be compensated by the public for doing nothing.

The costs of switching liability in such a manner would be enormous. One of two scenarios would be possible if "takings" compensation measures were passed into law. The federal deficit would balloon, or a de facto repeal of the Endangered Species Act and other environmental laws would result.

Consider scenario one, deficit ballooning. The environmental regulations associated with the Endangered Species Act and other environmental laws would all be enforced. Undoubtedly, compensation claims would pour into the federal government. The owners of all the property that has ever been devalued by the relevant legislation would expect restitution. Furthermore, a mad rush would take place by landowners to find ways in which regulation is affecting their properties. The possible number of dollars needed by the federal government would be tremendous. Under current budgetary circumstances the result might possibly be disastrous. Statements such as the following by Glenn Sugameli of the National Wildlife Federation are typical: "I don't understand how anyone can claim to be for a balanced budget and vote for this bill; this is an
unlimited, massive new entitlement."\textsuperscript{76} Even sponsors of "takings" bills have admitted their significant costs. Representative Billy Tauzin stated that payments for all regulatory action would "bankrupt" the federal government.\textsuperscript{77}

Of course such a "bankruptcy" would never occur. Instead, a de facto repeal of the affected environmental laws would take place. Such an occurrence would create the same problems mentioned earlier in this chapter. Transaction costs and free rider difficulties would combine to produce an inefficient market in which rare species and their habitat are grossly undervalued.

Furthermore, "takings" compensations measures would create administrative nightmares. For example, property value assessment would produce problems. It is a very inexact science. County assessors are often poorly trained and lacking in resources and time. Property is often appraised haphazardly according to a few benchmark rules such as the amount of square-feet. Furthermore, politics is often a key factor in the appraisal process. For instance, houses belonging to newcomers of an area are often assessed at a much greater value than life-long residents. In total, the variability of property value assessment standards would create a situation with imperfect information. Standard variability alone could account for the 20\% reduction conditions found in some "takings" compensation bills.

\textsuperscript{76}"Dole, Gramm Introduce Broad Property Rights Bill," \textit{The Land Letter}, (1 April 1995) 6.

Another problem with the proposed laws and their implementation involves symmetry of government impact. As the proposed "takings" compensation bills now stand, compensation would only be required if government regulation decreased property values. But more often, government regulation and programs increase property values. Such government actions range from road building to tree planting to the purchasing of open space easements. Common sense and mathematical symmetry presume that such improvements should be included in the compensation calculus. However, they would add complexity to this calculus and would have the same appraisal difficulties as projects that decrease property value.

Conclusion

If environmental lobbyists are to counter ill-advised, Republican proposals such as "takings" compensation bills and massive deregulation of environmental laws, they must pick apart the reasons why such measures are detrimental to societal well-being. In order to do so, environmental lobbyists must articulate the full nature of free market economics and how it relates to biological diversity and overall societal welfare. In some instances free market economics does not work well. Without any government guidance or regulation, the free market would grossly undervalue biological diversity and thusly overall societal well-being. Such an undervaluing would be the result of problems with transaction costs, free riding, categorical errors, and the overall lack of correct information. "Takings" compensation measures or the massive deregulation of the
Endangered Species Act and other environmental laws would create this type of situation.
The earth is nearing a crisis. Its biological diversity is dwindling at an unprecedented rate. This reduction is causing drastic problems. Biological diversity is direly important for many things, including medicine, food production, ethics, and the life support systems on which the earth depends. Despite biological diversity's importance, the majority Republicans have done nothing to aid it. In fact, since their recent takeover, the overall environmental record of the Republicans has been poor. Furthermore, the current state of most environmental organizations has limited their influence on Republicans. If environmental lobbying organizations are to benefit biological diversity in this era of a Republican Congressional majority, they need to tailor their lobbying strategies for Republican acceptability.

One possible lobbying strategy involves economic theory. Republicans are enamored with the concept of market incentives. It is an important prong in their platform. By incorporating the theory of market incentives into their lobbying strategy, environmental organizations would likely be more successful in acquiring the attention and support of the Republican majority.

Moreover, many economically oriented proposals would be beneficial to biological diversity. In many instances, the current law's reliance on command-and-control does not provide sufficient motivation to landowners to care for habitat. Economic incentives
would provide the needed motivation. Specific economically oriented proposals beneficial to biological diversity include the elimination of perverse incentives involving unjustified subsidies and perverse tax laws, direct compensation, tax breaks, a strengthening of certain property rights, and a tradeable credit system.

Other economically oriented proposals, such as massive deregulation of environmental laws and "takings" compensation measures, would be destructive to biological diversity. Many Republicans currently back such deleterious proposals. Environmental organizations need to be able to discourage implementation of these harmful economically oriented proposals while at the same time encourage implementation of the beneficial ones.

**The Need for Additional Studies**

A need exists for studies validating the value of the paper's proposals. The economically oriented measures promoted in the paper are based largely on theory. This generates a degree of uncertainty as to whether the proposals would actually benefit biological diversity. Often, theory does not play out as predicted in the real world. Unexpected variables not included in the theory might alter the proposals' outcomes.

In order to lessen this uncertainty, scientific studies would be helpful. However, the complicated nature of population ecology and microeconomic theory creates a problem. It does not lend itself to controlled, scientific research. Nonetheless, creative experimentation may be possible. It should at least be attempted.
One way to get around the lack of empirical data is to implement the measures on a limited basis. Sunset measures could be included in the legislation. Upon expiration, the program could be reevaluated with the help of performance data gathered from the introductory phase. Another way in which to implement the proposals on a limited basis would involve legislated experimental programs. For example, a proposal could be administered for just one species, or the area could be limited to a certain geographic locality. The results of experimental programs such as these would shed light on the real-life value of the proposals. Environmental organizations should not reject these types of limited implementation. They would at least be a step in the right direction.

Questions for the Future

The analysis of this paper hinges partially on Republicans retaining power in Washington. The upcoming November elections should be very telling of the future. Will Republicans retain power in both houses? Will Senator Dole win the presidential election? If these questions are answered in the affirmative, it could be a sign that an era of Republican dominance is beginning. If this turns out to be the case, environmental organizations would definitely need to change their current tack. In order to get any additional measures for biological diversity passed during an era of Republican dominance, proposals incorporating economic incentives would need to be advocated by environmental organizations.
Even if the November elections prove the recent takeover by Republicans to be an anomaly, the economically oriented proposals advanced in this paper would still be worth advocating. Rare species would benefit from them. Environmental organizations should use every tool available in their fight to save biological diversity. The importance of the issue is too great.
REFERENCES


"Dole, Gramm Introduce Broad Property Rights Bill." The Land Letter. 1 April 1995, 6.


