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*26 Environs Env'tl. L. & Pol'y J. 147***LENGTH:** 22124 words**ARTICLE:** Rethinking the Endangered Species Act: Moving Beyond Conflicts and Promoting Positive Efforts for Conservation**NAME:** Jakki McDonald***BIO:**

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SUMMARY:

... Thirty years ago, Congress acted upon a growing concern for resource depletion and species extinction by drafting a species-focused Endangered Species Act (ESA). ... Therefore, Reclamation's actions to protect listed fish species are directly adverse to other at-risk wildlife. ... The federal government should also supplement private landowners and conservation groups' existing knowledge of the land by educating them about effective biodiversity conservation measures. ... If so, does biodiversity conservation equate to species-by-species conservation through micro-management? Alternatively, does biodiversity conservation equate to a broader focused attempt to conserve ecosystems? ... Particularly in a country with limited and dwindling resources, prioritizing species based on their value to the ecosystem as a whole could reap awesome benefits to biodiversity conservation. ... This policy would result in the federal government paying landowners and groups who "grow" habitat and manage biodiversity. ... The federal government should also provide these officials as a reference source for landowners and conservation groups involved in biodiversity conservation practices. ... Under the existing ESA policy, the federal government acquires land or water at a price and then starts over with a new learning curve to obtain knowledge of the land for biodiversity conservation. ... The proposed solution offers tactics to move forward with biodiversity conservation by keeping land and water resources in the control of the "expert" landowner or conservation group. ...

TEXT:

[*147] I. INTRODUCTION

Thirty years ago, Congress acted upon a growing concern for resource depletion and species extinction by drafting a species-focused Endangered Species Act (ESA). To emphasize the severity of the national problem, Congress set out to penalize those who harm certain protected species and to mandate protection at all cost. This new law was a wake up call to those involved in rampant development. To the public at large, this Act began a new era of emphasizing the environment in government decisions and private actions. The ESA has changed and expanded over time, as has the environment and public perspective. Unfortunately, the ESA and the political and physical environment have grown apart. It is time to rethink the dated law and make proactive steps towards creating a law that will resolve conflicts and promote positive efforts for conservation. A government that continues to use this worn-out law is like a parent

enforcing the same childhood rules rather than helping his or her teenagers grow into adulthood.

The environmental movement of the 1970's sprouted an awareness of the country's depleting natural resources and of increased harm to wildlife. The ESA has expanded over the last three decades to have great effect on all public and private decisions. As citizens come across the ESA mandate in their daily lives, conflicts arise. Citizens directly affected by the law build up resentment and drag their feet to comply. Those not physically, but emotionally affected, respond with resentment and citizen suits. The agencies trapped in the middle, those ultimately responsible, try to avoid lawsuits in carrying out their administrative duties by reacting to complaints from both sides. Meanwhile, the law supports human intervention through regulations that prioritize certain species of natural resources and wildlife over others. The result? Conflict. Unfortunately, the ESA has become the greatest instigator of this conflict. The ESA allows ample opportunity for litigation but provides minimal solutions.

[*148] In order to offer the reader a framework by which to understand this analysis, the discussion begins with some background information about the ESA and its effects on private individuals. The second part of this analysis seeks to unveil the primary problems with the current ESA and identify the conflicts that arise. Due to our country's depletion of its limited natural resources, these conflicts promise not to improve or dissolve, but to worsen. Such a fate is inevitable unless the conflicting sides come together and focus their efforts on resolution instead of litigation. Rather than dwell on the problems and setbacks, this analysis seeks to offer solutions. Therefore, the third part of this analysis discusses existing positive methods for promoting conservation and presents a new solution for biodiversity conservation. My primary goal is to propose a federal environmental law concerned with conserving biodiversity by facilitating conflict resolution and providing positive steps towards effective conservation. The final part of this analysis engages in a comparative analysis between the proposed solutions and the existing ESA policy.

II. BACKGROUND INFORMATION

In an effort to ensure the survival of all species, the federal ESA secures special protection for plant and animal species that are vulnerable to extinction. n1 At the heart of the ESA is Section 9's prohibition against "take." n2 Section 9 makes it unlawful to "harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect" certain federally protected species. n3 Violating the ESA's prohibition of take can lead to criminal and civil penalties. n4

For federal agencies, the ESA sets a higher standard. Any "action" by a federal government agency, encompassing agency actions or private actions with government involvement, must not be likely to jeopardize the continued existence of a threatened or endangered species. n5 A proposed action would trigger "jeopardy" if such action results in a decrease [*149] in the chance of the species' continued existence or in an adverse modification of the critical habitat of a threatened or endangered species. n6 To ensure against jeopardy, the acting agency must first conduct a biological assessment to determine whether its action may affect any endangered or threatened species. n7 Section 7 then requires consultation with the Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS), depending on the species involved. n8 The appropriate Service must address the impact in a report of its biological opinion, which must include "reasonable and prudent" alternatives to any proposed federal action expected to cause jeopardy. n9 The acting agency is ultimately responsible for ensuring compliance with Section 7, and adopts the Service's reasonable and prudent alternative before proceeding with an action that the Service believes will result in jeopardy. n10

The two ESA provisions addressed above, prohibiting take and jeopardy, have a substantial effect on the actions of private individuals, particularly rural landowners. The take provision obviously disallows hunting and intentional harm to the protected species. However, individuals face the civil and criminal consequences of take even if such harm was done unintentionally and within the context of normal agricultural practices. The take provision can put an end to otherwise beneficial functions of private landowners. For example, it is conceivable that land management practices, focusing on the needs of all natural resources and creatures in the area, could cause some harm to one protected species in order to help others. Additionally, experimentation with ways to desalinate water could probably cause a hazard and eventual take of species by trapping a high degree of salt into one confined area through the desalination process. In this way, the Section 9 take provision has a substantial effect on the daily activities of private individuals.

Though Section 7's prohibition of jeopardy aims to give the federal agencies a higher standard of protection for species, this provision affects private individuals as well. Often times, a government agency acts in response to a request by contract with a private individual. When a federal agency sits in the line of approval for a private action, the Section 7 provision is triggered and the private individual's action must pass the jeopardy test before approval. Additionally, when a government contracts [*150] with a private individual, the creation, renewal, and carrying-out of this contract are all subject to the Section 7 jeopardy test. In these two ways, Section 7 also affects the daily activities of private individuals.

The effect of the ESA on rural landowners is best exemplified by the Klamath Basin along the California-Oregon border. Klamath Basin has been a long-time home to farmers and ranchers dependent upon government contracts for water. The United States Bureau of Reclamation ("Reclamation") was authorized to collect water from the Basin's natural waterways into the "Klamath Project" to provide irrigation water to nearby farmers and ranchers. n11 Reclamation's operation of the Klamath Project allows nearby farmers and ranchers to purchase the rights to seasonal water diversions pursuant to established contracts. However, Reclamation must monitor the Klamath Project's effects on endangered and threatened species by complying with Section 7 upon enacting new operations plans. Therefore, the annual water rights of these farmers and ranchers along the California-Oregon border are subject to the Section 7 provision.

During the summer of 2001, Reclamation complied with two biological opinions that cried Section 7's magic word, "jeopardy," and in one instant brought quiet conflicts to the surface with a loud bang. The reasonable and prudent alternative set out by the United States Fish and Wildlife Service (FWS) demanded increased lake levels for the endangered suckerfish. n12 Meanwhile, the reasonable and prudent alternative of the National Marine Fisheries Service (NMFS) mandated increased instream flows for the threatened coho salmon. n13 Water disputes arose between the protected species, between protected species and non-protected species, between human stewards, and between various scientific interpretations. All parties involved had valid expectations of water under law or contract.

III. ESA PROBLEM: CONFLICT OVER LIMITED AND DWINDLING NATURAL RESOURCES

The Klamath Basin situation serves as a case study of the misfit between the present ESA and our society. According to the Oregon governor, "the current water crisis in the Klamath Basin has been 150 years in the making and serves as a reminder to us all that we are stretching our [*151] natural resources beyond their limits. . . . Even in a normal year, the water in the Klamath Basin cannot meet the current, and growing, demands for tribal, agricultural, industrial, municipal and fish and wildlife needs." n14 The governor's words highlight the conflict between various parties in a nation with limited natural resources.

Since Klamath Project Authorization in 1905, Reclamation has had to balance diverse, and often times competing, demands for its project water. n15 Water for the Klamath Project is stored primarily in Upper Klamath Lake, which is on the Klamath River. n16 Reclamation owns Link River Dam, which sits at the mouth of Upper Klamath Lake. n17 The dam allows the lake to be drawn below its natural level as well as to increase its storage capacity for irrigation and other purposes. n18 Therefore, the dam also regulates flows in the Lower Klamath River. n19 Since the lake and river maintain a hydrological connection, Reclamation's control of lake diversions and capacity affect a number of interests. n20 Specifically Reclamation's actions in Klamath Basin can potentially affect the threatened coho salmon that depend on the river, the endangered suckerfish that live in the lake, the wildlife dependent on nearby wildlife refuges, and the farmers and ranchers with contractual water rights. n21 The result? Conflict. The interdependent nature of these habitats depicts the limitation of the ESA--to help certain habitat means to harm other habitats.

With the backdrop of Klamath River Basin, the following discussion raises several problems with the present ESA that center around the overall limitation of "conflict." This part addresses each conflict in turn. First, it walks through the conflicts between listed species and other listed species. Second, it recognizes the conflicts among listed species and non-listed natural resources and creatures. Third, it lays out the growing tension between listed species and human stewardship of land. Finally, it [*152] addresses the increasing disputes among science. This analysis will not be able

to address every intricate detail of these four tensions, but will highlight the ESA's limiting reliance on litigation for solutions. Though the conflict may be inevitable, the ESA-mandated governmental reactions are not.

A. Listed Species v. Other Listed Species

The situation at Klamath Basin involves four species listed under the ESA: coho salmon, two species of suckerfish, and bald eagles. n22 Two biological opinions triggered Reclamation's water allocation changes. FWS warned of jeopardy for the suckerfish, while NMFS cried jeopardy for the coho salmon. The drought, in conjunction with the need to provide for the species, resulted in an availability of only 70,000 acre-feet of water for irrigation from Reclamation's Klamath Project, versus the usual 500,000 acre-feet. n23 In addition, the area's wildlife refuges did not receive the lake water and agricultural runoff depended on by hundreds of bald eagles. n24

The biological opinions demanded more water in both Klamath Lake and the river below the lake. FWS stated that in order to avoid jeopardy Reclamation must follow the reasonable and prudent alternative of maintaining minimal lake elevations, which would require 200,000 acre feet of water. n25 NMFS also required minimum river flows for salmon. n26 However, due to the interconnected nature of the lake and river, asking for an increase in both the lake and river created an impossible demand for water in the region. n27 Since the coho salmon depend on river flows and suckerfish depend on lake water, giving more to one species directly conflicts with allocating water to the other. n28 Additionally, [*153] by allocating more water to the lake level and river flows, water was not given to the farmers or to the wildlife refuges. n29 Bald eagles are dependent upon the moist wildlife refuge for habitat and on the croplands to attract their prey. Therefore, though the water allocation may be favorable to fish it is definitely adverse to the bald eagles. Even without the presence of humans, the Services would have had to choose between species because the drought left the region with so little water. n30

At first glance, the ESA's species-by-species approach to avoiding extinction may seem to have an obvious benefit to biodiversity. n31 However, efforts to protect a single species can have adverse effects on other species or ecosystems, as shown by the conflicts among the four species at Klamath. n32 Therefore, the net biodiversity effect of ESA conservation measures may not always be positive, which evidences the need for a better way to address conflicts among species. n33

Another conflict among species arises over the Department of Interior's ("Department") money and resources. Time and finances exhausted on litigation over already listed species prevent the Department from listing other species, which creates a conflict between listed species and "proposed" listed species. The administrative handling of species listings evidences this conflict. In November 2000, the Clinton administration announced that it would be unable to consider any new species for listing, except for emergencies, saying all of its time and money were being sapped by compliance with legal actions. n34 The Bush administration followed along the lines of the Clinton moratorium by limiting new listings. n35 By exhausting all agency money and time on litigation over some species, the Services exacerbate the conflict among species because [*154] the Services are unable to tend to the listing needs of other species. If the goal of the ESA is to promote abundant biodiversity, then to meet that goal the Department must balance its resource needs and not disproportionately favor one vulnerable species over others.

B. Listed Species v. Non-Listed Natural Resources and Creatures

Klamath Basin also presents a tension between federally protected listed species and other non-listed natural resources and creatures. Over 430 species of wildlife thrive in the Klamath Basin, which depend on Klamath Basin water for support throughout the year. n36 According to Bob McLandress, research scientist and current California Waterfowl president, the withholding of water from the Klamath Basin's farms and wetlands affects the vegetation of the whole region, including wetlands, grasslands, farms, and ranches. n37 Specifically, Reclamation affected migratory birds in denying water to the wildlife refuges of Klamath Basin. The wildlife refuges serve as a major waterfowl stopover on the Pacific Flyway. n38 Without water, the refuge does not offer habitat for the migrating birds. Therefore, Reclamation's actions created a direct conflict between migratory birds and the listed species.

Though not listed under the ESA, the Klamath Basin's birds have long been threatened by disease. The wetlands of the Klamath Basin have historically been the site of severe avian botulism and cholera outbreaks, resulting in an annual loss of thousands of waterfowl and other birds. n39 The drought of summer 2001, combined with Reclamation's reallocation of water, has increased the potential for explosive die-offs. Reduced water in the Klamath Basin wetlands causes overcrowding, which may exacerbate the spread of these avian diseases. n40 The effects of such impacts do not necessarily surface immediately. Avian botulism, for example, is most severe when wetlands are re-flooded after a dry-period, as the Klamath Basin wetlands will be in Summer 2002. n41 Therefore, Reclamation's actions to protect listed fish species are directly adverse to other at-risk wildlife.

Reclamation's denial of water to Klamath Basin farmers also had a huge impact on a major part of the area's ecosystem, crops. The loss of [*155] water to the farmland affected not just the farmers, n42 but also the wildlife dependent on their irrigated fields. n43 Nearly twenty-seven percent of Klamath Basin's crop acreage is used to produce alfalfa. n44 Wildlife benefit from the significant habitat that alfalfa production provides in nesting cover, abundant species, a perennial growth pattern, and feeding opportunities. n45 Alfalfa has unique characteristics that make it particularly good habitat. The perennial nature of the crop provides a stable, relatively undisturbed home for wildlife. n46 The palatable nature of alfalfa, shown by its purpose as dairy feed, extends a high feeding value to other herbivores such as insects, rodents, and grazing animals. n47 Hidden beneath the ample ground cover is diversity, such as herbivore and predator insects. n48

The cyclical nature of alfalfa farming allows wildlife to react to events and adapt their actions for survival, similar to the adjustments wildlife make in anticipation of seasonal weather changes. The frequent irrigation cycles for alfalfa crops serve an important role in flushing insects and rodents to the surface, which are food sources for birds, snakes, eagles, and hawks. n49 Some alfalfa growers enhance the already beneficial open space for raptor hunting by planting trees, providing raptor poles, or building owl boxes. n50 Additional measures are available to counteract any potential harm caused by farming practices. For example, farmers can alert wildlife with bells before harvests, and plan such harvests for [*156] less-intensive wildlife seasons, if feasible. n51 Due to the conservation value of cropland, the loss of water to crops exacerbated a tension between the conservation of listed species and other wildlife.

In addition to the direct physical effects the ESA has on non-listed natural resources and wildlife, Services' implementation of the ESA creates indirect effects on these non-listed species. Services' reactionary response to threats of "jeopardy" conflict with Congressional mandate that federal agencies make environmentally-informed decisions to not substantially affect natural resources and wildlife. In 2001, the implementation of the ESA in the Klamath Basin conflicted with the goals of the National Environmental Policy Act (NEPA). NEPA requires federal agencies to prepare a detailed Environmental Impact Statement (EIS) "for every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment." n52 However, Reclamation did not complete an EIS for the 2001 plan for the Klamath Project. n53

The District Court judge in *Kandra v. United States* upheld Reclamation's decision to rely on the less detailed review of an Environmental Assessment (EA). However, NEPA does not support such a position. The 2001 Plan represents a complete abandonment of the authorized purpose of the Project and a major change in historical operations, constituting a "major federal action." n54 The District Court judge did not see reason to support requiring an EIS because of the time required to complete that environmental review. n55 However, the spirit of NEPA demands complex thought processes for federal decision-making. Though courts have held an EA to be adequate for "continuing operations," Reclamation's actions at the Klamath Project did not continue but rather ceased operations. n56 Uninformed decisions like this exacerbate the conflict between species protection and conservation of natural resources and creatures in the aggregate.

[*157] *C. Listed Species v. Human Stewardship of Land*

The current ESA does not offer private landowners and privately run conservation groups positive incentives to conserve biodiversity. Though the ESA has been amended to offer private individuals some relief from its strict

prohibitions, the ESA still limits incentives to promises of no further regulation. Rewarding proactive efforts with promises for less regulation does not offer a great enough incentive to take large conservation steps. Rather, this policy encourages caution and continual searching for ways to avoid regulation.

Without some exception to the ESA's Section 9 "take" provision, non-federal landowners undertaking otherwise lawful activities likely to take listed species risk civil and criminal penalties for violating of the ESA. n57 Therefore, Section 10 provides an exception through an incidental take permit, which allows a non-federal landowner to legally proceed with an activity that would otherwise result in the illegal take of a listed species. n58 Former President Clinton supported the Section 10 exception by encouraging agency actions with habitat conservation plans (HCPs) and the No-Surprises Policy.

Under Section 10(a)(1)(B) of the Endangered Species Act, the Services are authorized to issue to non-federal entities a permit for the "incidental take" of endangered and threatened wildlife species. n59 This permit allows a non-federal landowner to proceed with an activity that is legal in all other respects, but that results in the "incidental" taking of a listed species. n60 The ESA defines incidental take as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." n61 The HCP must accompany an application for an incidental take permit. The purpose of the HCP is to ensure that the effects of the permitted action on listed species are adequately minimized and mitigated.

Under the HCP Program, the federal government will allow incidental take in exchange for a conservation plan showing adequate mitigation to counter the wrongs of its "take." n62 Mitigation serves as a tool to counter environmental harm with other acts favorable to the environment. The federal government will attach a "No Surprises" policy to this device. The No Surprises policy allows a landowner the security of knowing that he or she will not be responsible for any expense or liability due to additional species on the property. Private landowners are assured that if "unforeseen circumstances" arise, the Services will not require the [*158] commitment of additional land, water or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed to in the HCP without the consent of the landowner. n63 As long as the landowner implements the HCP in good faith, the government will honor these assurances.

Under the Safe Harbor Program, any private landowner who voluntarily creates, restores, or improves endangered species habitat on his or her land is guaranteed freedom from additional obligations under ESA if new species are attracted to improved habitat. n64 Rather than trying to limit take, the Safe Harbor Program seeks to encourage positive actions. The Safe Harbor Agreements are supposed to maintain habitat that would otherwise be destroyed by farmers fearing that occupation by a species would deny them use of the land. The Safe Harbor Program came into existence because the federal government recognized that "much of the nation's current and potential habitat" for protected species exists on private land. n65

Though the incentives provided for landowners through the Safe Harbor Program do focus on positive land improvements, landowners are only encouraged to use positive acts to offset the desired "bad" act or relieve future legal obligations. Landowners' proactive conservation efforts merely result in no further restrictions on land-use activities. Though this system may lessen the speed of wildlife and natural resource loss, the policies do not carry enough incentives to produce an overall improvement in wildlife habitat. The main purpose behind the existing programs is to reduce disincentives, the fear of regulatory restrictions, rather than to increase incentives for the creation of more habitat. n66

Despite the federal government's attempts to make the ESA landowner-friendly, the continual fear of expensive litigation, penalties, and cumbersome processes create many negative incentives. The negative incentives indirectly caused by the ESA are exemplified in the United States Department of Interior's Environmental Assessment for the Mendota Pool 2002 water exchange agreement. n67 The Department created an Environmental Assessment (EA) describing the groundwater conveyance project, proposed by a group of California farmers with groundwater wells in western Fresno County. n68 The group, namely the "Mendota Pool Group," proposes to pump groundwater from their

wells into the Mendota Pool and exchange it with water from Reclamation's [*159] Central Valley Project. n69 The Department of Interior's EA discussed the difference between idle and fallow agricultural lands. n70 Idled agricultural lands are areas removed from production for extended periods and generally remain unmanaged. n71 The document goes on to describe how "idle lands near known special-status populations have a higher probability of being recolonized with endangered species than fallow lands that are a part of normal farm operations." n72 On the other hand, fallow lands are temporarily removed from production and are a normal part of agricultural processes in the San Joaquin Valley. n73

The EA asserted that due to fear of the ESA, many farmers continued to rotate fallow lands rather than to let them go idle to avoid attracting endangered species. Therefore, the harsh penalties of the ESA actually discourage farmers from idling lands for species because of the risk of increased regulation, loss of land, and cost of losing crop production. Landowner actions that purposely avoid allowing endangered or threatened species to flourish represent an unintended consequence of the ESA. Fear of ESA's penalties and citizen suits instigates conflicts between species protection and private landowners' stewardship of the land. The California Farm Bureau echoes this disincentive. "In most cases farmers and ranchers are cautious about giving information concerning endangered species on their property, fearing that if too much information goes out, they risk the possibility of having their right to farm or otherwise manage their land taken away." n74 It seems some farmers would rather eliminate habitat on their property altogether than have their right to manage their land taken away. This tension undermines the stewardship potential of private landowners.

However, the Mendota Pool water exchange agreement also showed an example of agriculture's important stewardship role. The EA laid out a substantial list of species dependent on agriculture in the area. n75 The tricolored blackbird feeds on insects, seeds, and cultivated grain. The western pond turtle, giant garter snake, and northwestern pond turtle all inhabit irrigation ditches. The long billed curlew and Aleutian Canadian goose inhabit croplands and pastures. The Swainson's hawk hunts in alfalfa and grain fields. A common conservation practice used to promote Swainson hawks among farms is the strategic placement of large poles [*160] suitable for nesting. The white tailed kite is "rarely found away from agricultural areas." n76

This case study in agricultural-based wildlife habitat proves yet another possible tension in the Klamath Basin. Loss of water to agriculture equates to loss of stewardship of and habitat for other wildlife, including endangered or threatened species. For example, approximately 200 million pounds of food resources are available to wildlife in California rice fields each year. n77 A study by the United States Department of Interior showed that 80% or more of wildlife in the continental United States is dependent on private land for food, water and shelter. n78 Rice fields provide habitat for about 60% of the waterfowl on the Pacific Flyway during the winter months. n79

Agricultural stewardship of the land is also prevalent along the Oregon-California Border. Herb Jasper's hay and cattle ranch is located south of the Oregon Border in Modoc County. n80 Mr. Jasper makes management decisions that will benefit and improve all aspects of his ranch, including wildlife. Mr. Jasper's conservation philosophy is "total resource management." n81 His ranch houses populations of mule deer, antelope, elk, geese, ducks, pheasants, quail, and at least eight species of fish. n82 Mr. Jasper's practices also support predators, including mountain lions and coyotes. n83 He works closely with California Department of Fish and Game to establish vegetation along the banks of the creeks that cross his land, and he is using rock wings to control erosion and provide pools for the trout. n84 He was involved in successful efforts to protect the red band trout, a species previously proposed for listing under the ESA. "The trout populations have bounced back so dramatically, they decided not to list it." n85

Additionally, a third generation Oregon farming family received the American Farmland Trust 2002 Steward of the Land Award. The mission of the American Farmland Trust is to stop the loss of productive farmland and promote farming practices that lead to a healthy environment. n86 The winning Stewards farm 1,400 acres of fruit trees and harvest more [*161] than 3,200 tons of sweet cherries every year, using Integrated Fruit Production practices. n87 Integrated Fruit Production practices include "more efficient and responsible pest management, irrigation practices and control of weeds without residual herbicides." n88 The family has used its experience to teach other growers how to implement the Integrated Fruit Production program.

Evident at Klamath and elsewhere is the growing loss of agricultural land. Farmers and ranchers faced with expensive regulatory compliance and the added expense of contract water are selling their land and halting production. Though farmers and ranchers receive discounted government water, agriculture's slim profit margins make even these prices hard to afford. n89 Additionally, the water actually received according to the government water contract rarely renders the full contract amount. n90 The expense and uncertainty leads to an increasing loss of rural landowners in farming and ranching. Government acquisitions have come in to rescue "willing sellers" who cannot afford to maintain their land any longer. n91 This proves to be one of the most unrecognized biodiversity problems. Though agriculture has not always been known for its environmental benefits, a new generation of farmers and ranchers has emerged who are putting their hands into the conservation movement. n92 Therefore, rampant loss of resources to agriculture, as in Klamath Basin, could very well create an "endangered" species out of these rural landowners.

[*162] The conflict between the current law's species protection practices and human stewardship is also shown in the resulting uncertainty landowners face when the government lists species. For example, recent salmon, steelhead, and bull trout listings affect nearly every watershed in the Pacific Northwest from tidewater areas to the headwater streams in Montana. n93 A new ESA listing effectively places a "cloud of uncertainty" over the economic and social activities where the species may occur. n94 This uncertainty is caused by Section 9's legal consequences for private action and Section 7's potential to frustrate existing contractual water rights. n95 For that reason, the Governor of Oregon believes that "the dynamics of present ESA impacts stifle cooperative agreements and innovative ways to restore healthy populations." n96 Ninety percent of endangered and threatened species have some habitat on nonfederal land. n97 Therefore, it is detrimental to biodiversity conservation that the ESA lacks the tools and incentives to encourage private landowners organizations to work with government agencies in undertaking conservation measures before a crisis exists. By creating this uncertainty and not promoting positive efforts for conservation, the ESA deepens an existing conflict between human stewards and the protection of species.

Losing the stewardship of farmers and ranchers is a setback to biodiversity because development or federal ownership typically supercede the rural land managers, who already know and love the land. Some people may view the superceding development as superior to agriculture if done in an environmentally friendly manner. Though development can leave considerable green space, farms and ranches have the potential to put the entire open-space area to use for conservation practices. For example, 10 acres of agriculture has substantially more habitat potential than 9 acres of development with 1 acre left as open space. Therefore, losing farmers and ranchers to development does decrease the conservation opportunities for that particular land.

Others may support the federal government acquiring the land from agriculture. Such rampant acquisition will not produce favorable results for several reasons. First, federal ownership of the distinct refuges, national parks and forests, and other natural wonders allows the government to focus its efforts and financial resources on environmental [*163] treasures. The services responsible for public lands already maintain that the congressional budget does not appropriate enough funding for the proper maintenance of their existing public lands. n98 Rather than spread the federal government thin by pushing all open space and rural lands into federal ownership, time and federal tax dollars would be better spent improving and maintaining the already vast federal land holdings.

Second, agriculture has been a part of our nation's ecosystems for so long that the farmers and ranchers have developed land management expertise. Many farms and ranches have been passed on through the generations and so families know every aspect of the land, including the actions and reactions of plants and wildlife. Whether managing the land by hand or machine, farmers and ranchers know the soils and the grasses and closely monitor their land. Furthermore, individual commodity groups and coalitions have acquired extensive information specific to the environment surrounding production of their commodity. To replace these rural land managers would be to embark upon a whole new learning curve rather than maximize the knowledge of experts on the land.

Third, the money exhausted for federal buyouts could be used more effectively to educate and compensate private landowners and conservation groups for biodiversity protection practices. Though the agriculturists and other private individuals may know and love the land, some may lack expertise in beneficial conservation practices. However,

commodity groups, private organizations, and individual farmers have been seeking out more information and experimenting with better ways to conserve biodiversity on their land. The federal government should also supplement private landowners and conservation groups' existing knowledge of the land by educating them about effective biodiversity conservation measures.

D. Science v. Science

The fourth conflict instigated by the present ESA arises among differing interpretations of scientific evidence. This conflict is also evident in the Klamath Basin controversy. The Section 7 jeopardy decision of Reclamation was a reaction to the two biological opinions created by NMFS and FWS. However, the biological assessments were inconsistent with other scientific reports available to Reclamation at the time of its 2001 water allocation decision. For example, Klamath Water Users, comprising [*164] the irrigation districts of the Klamath Basin, submitted a scientific report to Reclamation before the shut off. This submission, "*Protecting the Beneficial Uses of Waters of Upper Klamath Lake: A Plan to Accelerate Recovery of the Lost River and Shortnose Suckers*," comprises the analysis and recommendations of a respected professor at University of California, Berkeley. n99 The plan suggests that more water in the lake actually harms the suckerfish because of oxygenation. n100 Therefore, Reclamation's decision was based on science that was contrary to the conflicting opinion of other existing scientific knowledge.

However, the courts are not authorized to disagree with an agency's expertise, despite the existence of such conflicting science. Section 706 of the Administrative Procedure Act controls judicial review of agency action under the ESA. n101 The United States Supreme Court, applying the Administrative Procedure Act, maintains that as long as agencies do not act arbitrary or capriciously in using their expertise to carry out their delegated authority, the agencies decisions must be upheld. n102 Under this "arbitrary and capricious" standard, an agency decision must be upheld unless it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." n103 "When specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own qualified experts even if, as an original matter, a court might find contrary views more persuasive." n104 Therefore, the court is not empowered to substitute its judgment about contested science for that of the agency. n105

For that reason, it was not until after the Klamath crisis of Summer 2001, that the Department of Interior began to reconsider the science used in determining Reclamation's water allocation. The Department asked a committee appointed by the National Research Council to review the science underlying the Klamath basin biological opinions. In February 2002, the committee put out a preliminary report which stated that there was "no substantial scientific basis for" the demand for increased lake levels for the suckerfish or increased streamflows for the [*165] coho salmon. n106 The Committee went on to suggest that the "best available science" suggests that it would be sufficient for Reclamation to maintain streamflows and lake levels consistent with operations over the last ten years. n107 The committee's disagreement with the biological opinions epitomizes the scientific tension created by the existing ESA. The ESA demands that the "best available science" be used for ESA decisions, yet eliminates all means to test the science in practice by way of the "arbitrary and capricious" review of agency decisions.

IV. PROPOSED SOLUTION: A BALANCED APPROACH TO ENHANCING BIODIVERSITY

A remedy for the above limitations of the current ESA lies in a balanced approach to enhancing biodiversity. Such an approach does not equate to the traditional balancing of "economic" and "environmental" interests surrounding environmental policy making. Rather, the legal structure must balance the solutions presented from the various perspectives, which actually possess more common ground than presently recognized. This common ground has become more apparent over the years, and many groups are embracing collaboration to find solutions. A federal district court judge recognized this movement in describing the environment of a timber project. "Everyone was concerned about the environment, the wildlife, and the health of the trees. In short there are no 'bad guys' in this case, just dedicated professionals who happen to disagree on how to handle the complicated ecosystem." n108 Therefore, the solution lies in shifting the negative presumption about certain groups, and viewing those with conflicting opinions as dedicated professionals with different answers to the same problem.

This balanced approach demands several changes to the existing ESA. Whether it requires a revamping of the current law or merely a regulatory and policy shift depends upon the particular problem addressed. Some "quick fixes" exist within the present law, but in other areas the current law is the biggest obstacle to enhancing biodiversity. Complete implementation of the following proposed solution may require a new federal environmental law specifically concerned with biodiversity conservation. The first step is to define a clear national goal pertaining to biodiversity conservation. Second, we should utilize various human interest and efforts in serving that clearly defined purpose. [*166] Third, we should promote collaboration among the differing perspectives. Fourth, we should establish incentives for private landowners interested in enhancing biodiversity. Finally, we should change the existing decision-making process by including accountability and positive outcomes. The following discussion addresses these recommended changes and proposes strategies to include each in a federal law.

A. Defining the Purpose

Before devising any solutions, the goal must be clear. Despite the common belief that ambiguity best serves law enforcement, clarity of purpose is essential to meet any societal goal. n109 A law without a clear purpose can never achieve its goal, because no one will know exactly what success means. In order to explain the appropriateness of ambiguity, goals must be distinguished from objectives. For a runner, the goal is the finish line. An objective is the desired split times for each mile of the race. That is, the goal determines where he or she wants to end up, and the objectives set out how he or she intends to get to that place, and at what pace. For conservation, conflict should be directed towards objectives, not towards the goal. An ambiguous goal may create a system of discontentment that promotes ongoing efforts under the law, but it lacks accountability. Alternatively, conflicting objectives may serve one clear goal, and still remain within the desired outcome of the law. In this manner, the effectiveness of controversial objectives can be held accountable against the goal. An effective biodiversity solution must define a clear national purpose at the outset. Therefore, any political battle over what goal to pursue must take place at the outset so that the nation can move forward within the framework of that policy decision.

In *Tennessee Valley Authority v. Hill*, the United States Supreme Court ruled that the plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost. n110 This keystone ESA case overturned the lower court decision that looked to the positive measures taken by Tennessee Valley Authority to help the species. n111 The Supreme Court did not agree with the lower [*167] court's balancing of interests and costs. n112 *Tennessee Valley Authority v. Hill* now stands for the "Noah's-ark" mandate read into the ESA, which asks for at least two of each species and avoiding extinction at all costs. Theoretically, this concept seems to further the ESA. However, in its application, such a theory faces failure when narrowly-focused decisions help some species to the detriment of wildlife and natural resources as a whole. Since the federal government's monitoring efforts focus on the endangered and threatened species, cumulative effects on other non-protected natural resources and wildlife may go unnoticed until it is too late. This is exemplified by the Klamath situation, where onlookers predict many future harms are in store for the Klamath Basin's migratory birds. n113 The quandary at Klamath leads us to ask whether biodiversity conservation is the goal of ESA. If so, does biodiversity conservation equate to species-by-species conservation through micro-management? Alternatively, does biodiversity conservation equate to a broader focused attempt to conserve ecosystems?

The question of "what is biodiversity" has perplexed many, but a universal answer is yet to be established. According to a member of the Environmental Protection Agency, "biodiversity means different things to different people." n114 The creation of a solution begins with a universally accepted definition of biodiversity. California often leads policy in the United States; environmental law and policy is no exception to that general rule. California currently faces a severe conservation challenge as one of the most biodiversity-rich states, the fastest growing states, and the most productive agricultural state. For that reason, the California Biodiversity Council lays out its understanding of the meaning of biodiversity.

The Council defines biodiversity as "diversity, or variety, of plants and animals and other living things in a particular area or region." n115 Under this definition, endangered or threatened plants and animals should be included.

However, the definition also states "other living things," which suggests that the ESA's scope is too narrow. The interdependency of modern day ecosystems involves not only plants and animals, but also involves humans themselves. Under the Council's definition, biodiversity conservation should look at all the factors within an ecosystem. In expressing the importance of biodiversity, the Council [*168] states that "everything that lives in an ecosystem is part of the web of life, including humans." n116 This perspective acknowledges that each has a place on earth and plays a vital role in the circle of life.

Federal lawmakers have also tried to define a national definition of biodiversity. In 1987, the United States Congressional Office of Technology Assessment sought to provide a definite answer to the biodiversity question. n117 In a report on biodiversity, the Office defined biological diversity as "the variety and variability among living organisms and the ecological complexes in which they occur." n118 Diversity can be defined as the number of different items and their relative frequency. n119 For biological diversity, these items are organized at many levels, ranging from complete ecosystems to the basic chemical structures. n120 Thus, the term encompasses the diversity of ecosystems, species, and genes. n121

In 1998, the United States Biodiversity Act followed the same biodiversity definition as provided by the Office of Technology Assessment." n122 The bill, which was proposed but not enacted, also addressed the three specific classifications of biodiversity through a discussion of ecosystem diversity, species diversity, and genetic diversity. n123 Ecosystem diversity encompasses the variety of habitats that occur within a region. n124 Species diversity focuses on the variety and abundance of different types of organisms that inhabit an area. n125 Genetic diversity is the combination of different genes found within a single population and within different populations of the same species. n126

The present ESA emphasizes genetic diversity at the expense of ecosystem and species diversity, by micro-managing conservation at a species by species level. This micro-managing system serves the principle of Aldo Leopold, who once said the first rule of intelligent tinkering is to keep all the pieces. n127 The notion of "keeping" or preserving one of each species may not be the best approach in promoting species or ecosystem diversity. Species diversity focuses on the "variety" and "abundance" of different types of species, not on the mere existence of different types. Leopold's puzzle pieces concept suggests a constant natural state in [*169] which pieces fit. However, the processes of life evidence not stagnancy but change. Therefore, incompatible pieces that thrived fifty years ago may no longer fit the puzzle that exists today. To ensure species diversity the law should focus on a specific area to determine which inhabited organisms should be helped in order to promote the abundance of all the organisms in the area. Furthermore, ecosystem diversity covers the variety of habitats within a region, not just critical habitat of a prioritized species. A law that favors one habitat over the other may quickly find itself damaging all of the habitats within the region.

Such region-wide damage is evident in the Klamath Basin situation. There, the federal government attempted to prioritize the habitat of the coho salmon and suckerfish but found themselves harming farmers dependent on the land, wildlife dependent on the crops, and bald eagles. Additionally, the Basin did not even hold enough water to meet FWS and NMFS' original requests for the coho salmon and suckerfish. n128 By mandating water in the lake and the river, Reclamation did not allocate water to the nearby wildlife refuge habitat for bald eagles. Therefore, the regulatory "tinkering" did not keep all the pieces, but rather harmed the whole region. n129

This misallocation of resources based on a species focus can be solved within the existing statute or with the development of a multispecies approach. The existing ESA may not actually mandate the present emphasis on listing each individual threatened or endangered species. In fact, one of the stated purposes of the ESA is to conserve the "ecosystems upon which the endangered and threatened species depend." n130 Therefore, the ESA does not necessarily "require federal land managers to adopt such narrow, single species management strategies." n131 Rather, the text of the ESA should be interpreted to encourage the promotion and enhancement of entire ecosystems. The ESA regulations should emphasize the protection of "indicator species," which are those species that are so closely tied to its environment that fluctuations in its population directly effect environmental changes that impact other species as well.

n132 Particularly in a country with limited and dwindling resources, prioritizing species based on their value to the ecosystem as a whole could reap awesome benefits to biodiversity conservation. For that reason, in the event that the present ESA law does not allow for [*170] such an ecosystem focus, an alternative law should be devised to broaden the focus of national biodiversity conservation.

B. Maximizing Use of Human Interest and Efforts

United States citizens are working independently and jointly to conserve natural resources throughout our nation. An effective federal law directed at biodiversity conservation must aim to maximize these interests and efforts. Effective conservation measures and creative solutions devised by non-profit organizations and conservation-minded individuals should be tapped into for biodiversity conservation. For example, groups such as the Nature Conservancy, the American Farmland Trust, and other smaller land trusts, put time and money into securing open space and habitat through conservation easements. These legal devices effectively transfer the development rights of rural acreage to trusts, who are mandated to hold these rights in perpetuity without future development on the property. The federal government does filter substantial funding to the purchase of the development rights, but not in conjunction with the existing ESA. A new or revised ESA should place greater emphasis on creative measures such as conservation easements when trying to secure critical habitat for threatened or endangered species.

The departments of agriculture from New Mexico, Florida, Arizona, California, and Texas have formed a coalition (NFACT) to provide an important opportunity for the agricultural, environmental, and academic communities to have a unified voice in crafting recommendations surrounding agriculture. n133 Among the recommendations, NFACT stresses that voluntary incentive-based programs that enhance agriculture's positive contribution to the environment are the most efficient approach to conservation. n134 NFACT stresses the success of the United States Department of Agriculture ("USDA") and encourages an increase in federal government appropriations for the USDA's incentive programs. n135 Notably, market-based economic returns from farming and ranching do not reflect the full range of benefits provided by these lands to the environment and public, including wildlife habitat, water supply, open space and rural economic activity. n136 NFACT asks for recognition of the unique agricultural and environmental diversity of its participant states and need for special flexibility in conservation programs. n137 One of NFACT's recommended solutions is the Agricultural Stewardship Program, proposed [*171] by the National Association of States Departments of Agriculture. The proposal uses a block grant approach to give state and local governments greater flexibility, innovative tools, and resources to implement agricultural conservation practices. n138

The ESA crafted powerful citizen suit provisions to allow citizen participation in biodiversity protection. However, this avenue for participation leads only to the courtroom, not to any positive, proactive conservation measures. Lawsuits are retroactive in that they challenge past decisions or actions, rather than taking proactive steps for biodiversity conservation. If the quest to save species was like that of establishing a hospital for injured people, what would be the most effective way to use all of the volunteers for help? Under the existing ESA, the apparent answer is to have the various environmental activists, interested landowners, and other concerned citizens sue others to do more work on the hospital. An alternative answer under the existing ESA is to sue the agency for every wrong turn taken during the course of the hospital generation. Even suits directed at agencies stigmatize private individuals who rely on the agency's challenged determination. However, under new ESA policy, the answer would be to collect ideas from the onset, show volunteers how to build the hospital, teach citizens the needs of the patients, and encourage all interested parties to stay until the project's completion.

Therefore, in order to maximize the potential of all the interested citizens, the citizen suit provisions of the ESA must be changed. The existing provisions place too much liability on landowners who try to do positive things. n139 The provisions exhaust private conservation funding and efforts on litigation rather than land acquisitions, conservation easements, monitoring, and conservation practices. The provisions also exhaust agency efforts and financial resources on litigation and reacting to political pressures rather than on listing species, educating the public on conservation practices, compensating private conservationists, and monitoring. Though the provisions may have some merit, the ESA must not give them so much power as the sole citizen participation measure. The federal law needs to incorporate

positive, proactive avenues for citizen participation.

C. Collaboration

Various parties, particularly conservation opponents but also affected landowners, have initiated litigation in response to the conflicts in the Klamath Basin. However, in recognizing the devastating conflicts [*172] over water, the Oregon governor looks to collaboration, not litigation, to identify a workable remedy. "All of these efforts, however, will not solve the underlying problem in the Klamath Basin: A demand for water that exceeds the supply of water. No court can solve this problem; no one person can solve this problem. It will take all the parties coming to the mediation table--leaving their positions at the door--ready to roll up their sleeves and design a long-term solution that will sustain the Klamath Basin for the benefit of communities, the economy and the environment." n140 The main obstacle to collaboration has been the polarized interests of potential conservationists. This obstacle must be torn down through continued attempts to focus, not on ideological differences, but on the problems that need to be solved. The question surfaces whether agriculturists, government agencies, foresters, and environmentalists all care more about their land or their politica, position and ideological stance.

Throughout the past decade, a northern California coalition has attempted to move beyond conflict to find positive forest-management solutions. The Quincy Library Group (QLG) has approached the interdependent goals of forest health and community stability from the different angles of foresters, government agencies, and environmental activists. n141 In 1993, QLG adopted its Community Stability Proposal, which recommended improvements for management of the Lassen National Forest, the Plumas National Forest, and the Sierraville Ranger District of the Tahoe National Forest. The unlikely partnership of QLG members formed as a reaction to three years of intense conflict between environmentalists, timber groups, and Forest Service. n142 The parties realized that even if solutions were eventually found for spotted owl and other forest problems, the solution might not surface until there was no longer a local forest management infrastructure in place capable of implementing the solutions. n143

The important lesson for Klamath in QLG's attempts at collaboration is the potential for finding common ground among historical opponents. "Some people in each camp began to recognize, but not yet clearly articulate, that our forests, our communities and the Forest Service had an unbreakable relationship of mutual inter-dependence." n144 The parties realized that goals for stable and healthy communities cannot be achieved without assuring long-term health of the surrounding forests, [*173] as demanded by environmentalists. n145 Nor can the long-term health of our forests be restored without the large-scale participation of an industrial infrastructure largely dependent on a profitable timber base. n146 Finally, neither of those goals can be achieved unless the Forest Service can implement greatly improved forest management. n147 Former President Clinton also saw the potential for collaborative groups such as QLG by maintaining his motto of "out of courtroom and into meeting rooms." n148

This cooperation between various parties needs to take place, not only among the various interested private actors, but also between state and federal agencies. Discussions between federal and state agencies would be effective because state governments have land use authority along with their state endangered species laws that protect a greater number of species. State measures to motivate private individuals to initiate proactive conservation efforts can be undermined when litigation is still available under the federal ESA. Therefore, working together would allow federal and state agencies to devise solutions that minimize litigation and maximize the government efforts made.

California, for example, passed Senate Bill 231 to provide an exemption to the California Endangered Species Act for "routine and ongoing agricultural practices." n149 A unique coalition of agriculturists and environmentalists produced a bill to create an incidental take permit for agriculturists. The bill does not take effect until the California Department of Fish and Game adopts regulations for implementation of the voluntary program. Various discussions and compromises are occurring between environmentalists, Agriculture Commissioners, California Department of Fish and Game, and Farm Bureau regarding the implementation of Senate Bill 231. n150 The proposed regulations specifically set out a process for preparation of the voluntary local program. Under the regulations, a group or individual farmers or rancher can undertake a local program. n151 The proposed process allows and encourages groups of farmers and

ranchers or individual ranchers to work together in conjunction with the County Agriculture Commissioner's office in obtaining incidental take authority. The proposed requirements include management practices that will, to the maximum extent practicable, avoid and minimize take of candidate, endangered, and threatened species while encouraging the enhancement [*174] of habitat. n152 The proposed regulations encourage measures that will protect species while maintaining economically viable agricultural operations. n153 Additionally, decisions under the Incidental Take Permit process must be supported by best available scientific information for both agricultural and conservation practices. n154

Senate Bill 231's incidental take program offers assurances and guarantees to landowners while encouraging private parties to take risks in order to promote biodiversity. Unfortunately, all of these efforts to offer some flexibility to agriculturists do nothing to prevent litigation under the Federal ESA. If the federal government decided to embark on such an idea, then the discussions would begin anew, this time towards a federal law. However, with increased cooperation between federal and state governments, these political challenges and negotiations could be done to make positive changes under both laws at the same time.

D. Positive Incentives

The Safe Harbor Program sets a baseline level by which to gauge whether or not to offer individual landowners freedom from ESA obligations. n155 This serves as a constructive measure that only allows regulatory relief to landowners who prove that their actions attract new species. To put the Safe Harbor baseline to use in a more effective strategy, the ESA should create a financial incentive program that uses the baseline to measure compensation for conservation efforts. Private individuals or groups that attract new species would receive dollar allotments or tax breaks based on the maintenance of or improvements on the existing baseline. This incentive program should be progressive, meaning compensation directly parallels the success an individual or group has towards biodiversity conservation.

In response to the Klamath Basin situation, California Waterfowl president, Bob McLandress, has identified positive incentive programs that could most effectively conserve natural resources and allow wildlife to survive on private land. n156 First, programs may pay farmers to remove land from production and provide uplands and small wetlands for wildlife. n157 Additionally, small wetlands could be designed to function as tailwater return ponds by recycling agricultural irrigation waters and sediments captured before releasing waters downstream to the wildlife refuges. n158 [*175] In drought years, some pastures and alfalfa fields need to be assured water, and cereal grains need to be grown just to sustain waterfowl and other wildlife that thrive on agricultural foods. n159 In order to discourage farming practices that are insensitive to biodiversity conservation, farmers must be compensated for sacrifices made for conservation purposes. A new federal biodiversity policy amendment would embrace solutions such as those presented by Mr. McLandress in order to advance efforts towards biodiversity conservation.

The concept of paying landowners for helping the environment is not new. The United States government has already caught on to the positive outcome of providing incentives to private land stewards. In fact, the 1996 Farm Bill created a conservation program for flood risk reduction. n160 The Natural Resource Conservation Service (NRCS) of the United States Department of Agriculture (USDA) may enter into contracts with producers who allow a certain amount of acreage to be flooded. NRCS "compensates" the positive conservation measures through what amounts to a cost-share program. An individual landowner's expenses are paid in part by USDA because the federal government's goals are furthered through the positive actions carried out with that expense. n161 Therefore, the flood risk reduction incentives serve as federal government recognition of private parties rendering beneficial services with their land and resources. Analogously, a private individual or group could be given incentives to maintain their land in such a way as to promote wildlife conservation.

The USDA also provides financial incentives through the Wildlife Habitat Incentives Program (WHIP). n162 The 1996 Farm Bill authorized fifty million dollars in funding through the year 2002 for WHIP to make cost share payments to landowners for the implementation of wildlife habitat improvement activities. n163 To receive payments, the landowner must submit a wildlife habitat development plan. n164 In return, WHIP also provides education regarding

wildlife needs, technical assistance to landowners, [*176] and fosters a positive public attitude regarding wildlife, wildlife habitat, and land stewardship. n165

The USDA has also created the Conservation Reserve Program (CRP). CRP essentially pays volunteer agricultural landowners not to farm certain lands and instead set those lands aside as a conservation reserve in order to enhance the environment. n166 CRP provides annual rental payments based on the agricultural rental value of the land. n167 Additionally, CRP provides cost-share assistance for up to fifty percent of the participant's costs in establishing approved conservation practices. n168 One such example is providing cover on eligible croplands. n169 CRP encourages planting long-term resource-conserving covers to improve soil, water, and wildlife resources. n170

Under CRP, USDA cooperates with states through a Conservation Reserve Enhancement Program (CREP), which is a joint state and federal land retirement conservation program targeted to address state and nationally significant agriculture-related environmental effects. n171 CREP uses financial incentives to encourage farmers and ranchers to enroll in contracts to remove their land from production for ten to fifteen years in duration. n172 CREP's two primary objectives are to coordinate federal and non-federal resources to address specific conservation objectives in a cost-effective manner, and to improve water quality, erosion control, and wildlife habitat in specific areas. n173 Since USDA's Farm Service Agency administers CREP, landowners have been very cooperative in inviting additional federal government involvement onto their land. n174

An effective federal policy directed at biodiversity conservation would embrace the tactics of the USDA in offering positive incentives to private landowners and groups. Three important facets of USDA's conservation incentives programs should be emphasized. First, the programs offer cooperative and non-intimidating government involvement with [*177] federal land. n175 Second, the programs facilitate cooperation between federal and state governments by allowing state implementation of federally mandated programs. Third, the programs recognize agriculturists' need for financial assistance in order to take proactive measures for conservation. Such a program would recognize the importance of California agriculturists who are "environmental stewards" with an important role in the culture, food, and economy of California. n176 Positive incentives for biodiversity conservation should be centered on the above principles, in order to maximize the stewardship role and positive efforts of farmers and ranchers.

Unfortunately, the present ESA does not do enough in terms of positive incentives. The ESA should be changed to provide fewer disincentives and more incentives to private landowners to protect endangered species. Not only would incentives benefit landowners, non-profit conservation organizations, and biodiversity, such a change would eliminate one of the growing problems with the ESA. Since protection of species can require total denial of resource use to rightful owners, individuals will increasingly demand compensation for the "take" of property rights. Unlike government acquisition for schools or roads and other government actions, with the ESA a landowner loses the use of land and is not compensated for his loss by the government. n177 There has been one successful case against this alleged "take", and in that case the U.S. Court of Federal Claims held that a loss of water to farmers and ranchers because of endangered fish constituted a taking deserving compensation. n178 The victorious attorney in that case visited the Klamath Basin farmers during July 2001 and ensured them that "the loss of irrigation water and property values amounts to a 'taking' of personal property" under the U.S. Constitution. n179 Rather than face the retroactive litigation and tension over unexpected loss of resources to landowners, the federal government [*178] should create proactive measures to compensate landowners for using their resources for the sake of biodiversity conservation.

Such a program should incorporate an environmental baseline whereby compensation can be allocated according to improved or maintained habitat. The positive incentives would focus on positive uses of property rights rather than requiring a "take" of the property right itself. This policy would result in the federal government paying landowners and groups who "grow" habitat and manage biodiversity. Under the current ESA, developers seek out farmers and ranchers to conserve land in exchange for money. Biodiversity incentives would essentially result in the federal government participating in the already existing "mitigation" market. However, if the federal government stepped into the market, conservation practices could take place without the accompanying development. Stand-alone positive benefits to the environment will produce biodiversity conservation progress, rather than simply offsetting the environmental cost of

development.

E. Proactive and Accountable Decisions

Finally, decisions made in the name of biodiversity must be accountable to a uniform national biodiversity goal. Therefore, the policy objective of this proposed solution is to eliminate the presently reactive system where one biological opinion, whether solid science or not, can trigger major ecosystem intervention. The situation in Klamath stirred up numerous interpretations of what the "best available science" requires for the water allocation of the Basin. However, rather than improve the final decision, the difference of opinion brought only political heat. The present system of reactionary decisions needs to be changed into an alternative approach that allows for peer review and thorough consideration of alternative science before decisions are made.

The court system is no place to test the science of agency decisions because judges' authority is so limited. The courts can only measure agency decisions against the "arbitrary and capricious standard." In response to the Klamath Basin conflicts, the judicial system produced a complete denial of water to the farmers and ranchers in reliance on the agency's decision. n180 Since the merits of the science are not raised in the courts, and discussion is limited to whether the agency reasonably relied on that particular scientific opinion, the court fails to produce an adequate check on science. Therefore, a new system must be established to hold agencies accountable to the science of their decisions. This review must come before the government intervenes with the physical environment [*179] of an area, whether done willingly by the agency or in compliance with a court mandate.

To meet this desired end, policy makers have offered the idea of a peer review board to test the science of biological opinions. n181 Such peer review could come in the form of an ESA Science Board made up of scientists from diverse backgrounds who review biological opinions to ensure that the science used is acceptable before federal actions are taken. The ESA Science Board would produce positive change in biodiversity conservation because it would take the peer review role away from the courts. Requiring peer approval by the ESA Science Board before agency action takes place would cut back on reactive decisions influenced more by political pressures than true science.

In recent years, the federal government and California have incorporated peer review into efforts to use accountable science in government involvement in California conservation. A combination of federal and state government agencies are working together through the CALFED Bay-Delta program ("CALFED"). n182 The agencies have established the CALFED Science Board to provide guidance to CALFED decision-makers. n183 The Board comprises nationally renowned scientists of varying disciplines. Two relevant aspects of the CALFED Science Program are transparent decisions and staggered terms with a rotating national body of scientists. n184

The CALFED Science Program "will bring world-class science to all elements of the program. . . Performance measures and indicators for each program element will track progress." n185 The purpose of the CALFED Science Program is to provide a comprehensive framework to develop new information and scientific interpretations necessary to implement, monitor, and evaluate the success of the CALFED Program. n186 The program goals are to establish a body of knowledge that is unbiased, relevant, authoritative and integrated, and communicate that knowledge to the scientific community, agency managers, stakeholders and the public. CALFED aims to incorporate independent peer review into all Program activities. n187 Therefore, the Program seeks to develop science-based performance measures for each CALFED Program. n188

[*180] The federal government has required such peer review in other agency decisions. For example, Section 25(d) of the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA") mandated that the Environmental Protection Agency's (EPA) pesticide regulations and rulemaking be submitted to a "Science Advisory Panel" prior to being made public. n189 The Science Advisory Panel must have an opportunity to comment on the health and environmental impact of EPA's actions. n190 The Science Advisory Panel also makes comments, evaluations, and recommendations for operating guidelines to improve the effectiveness and quality of analyses made by EPA scientists. Additionally, Section 104 of the Food Quality Protection Act of 1996 offered the Science Advisory Panel assistance

with their reviews through the establishment of a Science Review Board. n191 The sixty or more scientists on the Science Review Board are available to the Science Advisory Panel on an ad hoc basis. n192 This scientific peer review effectively brings in the best available science by allowing temporary sub-panels to help with specific projects to expedite preparing evaluations, comments, and recommendations. n193

An ESA Science Board that embraces the positive aspects of the CALFED and EPA peer review programs would eliminate the problem of agencies merely "reacting" to biological "opinions" and facing later criticism of the science used. The ESA Science Board would facilitate by assuring dependable science. Incorporating the review of decisions by an independent science panel would ensure that the best investments are being made and results are being achieved. Additionally, the ESA Science Board would play a strategic role in reducing scientific uncertainties. Since the ESA Science Board would not be directly involved in making regulatory decisions, the scientists would be able to ensure that agencies incorporate the best available science into its decisions. The ESA Science Board would be respected as the "supreme court" of biodiversity science by establishing a panel with credible expertise, and to whom agency scientists would be held accountable.

A new ESA policy would also provide for accountability among private landowners and conservation groups involved in federally compensated conservation practices. In order to ensure that these private actors are accountable for their actions, compensation would be based on evidenced maintenance or improvement of the biodiversity on their lands. Under an ESA positive incentives program, compensation for biodiversity conservation, based on progress or at least maintenance of "baseline," should be given in accordance with the requisite monitoring. Nonthreatening [*181] government officials who enter the property in the hat of a partner rather than a regulator should conduct monitoring science review. The federal government should also provide these officials as a reference source for landowners and conservation groups involved in biodiversity conservation practices. For example, the USDA uses the Natural Resource Conservation Service to give guidance and monitor progress for its existing programs. Private actors appreciate the non-regulatory, consulting role these officials play, and the landowners welcome the government officials onto their land. The NRCS approves experimental conservation-minded farming practices for government funding. Landowners and groups should be allowed independence and autonomy to carry out periodic monitoring. However, this science must be tested by the non-regulatory government officials in order to award compensation.

V. COMPARATIVE ANALYSIS: PROPOSED SOLUTIONS V. EXISTING ESA POLICY

The proposed solution laid out above incorporates a clearly defined goal, maximization of human interests and efforts, positive incentives, collaboration, and accountable, proactive decisions. The following analysis compares the alternative approach with the existing ESA policy. This comparison identifies three distinguishing tensions between the proposed solution and the existing ESA policy. First, the two policies produce different effects on natural resources, creatures and listed species--empowerment v. intervention. Second, the two policies affect human actors involved in biodiversity conservation, whether they be agency employees, landowners, or conservation group members--empowerment v. adversity. Finally, the policies maintain different paths of biodiversity conservation progress on private lands--moving forward v. starting over. The following analysis explains these differences to distinguish the proposed versus the existing solutions for biodiversity conservation.

A. Empowerment v. Intervention

Federal biodiversity policy inevitably affects listed species and natural resources. If federal action and decisions did not cause an effect on the environment, the ESA would be meaningless. However, a difference in national biodiversity policy can have different effects on the environment itself. The above-proposed solution focuses on empowerment through the creation of an atmosphere where species can thrive naturally. The current ESA centers on intervention, whereby the federal government directs resources to protected species, sometimes at the expense of other species.

[*182] The intervention policy of the current ESA results in the federal government controlling nature in order to meet the values humans have placed on species through the "Noah's Ark" principle. Such intervention encourages

federal agencies to direct resources to protected species at the expense of the ecosystem as a whole. The current ESA centers on intervention in reacting to emergencies by making reactionary decisions to counteract the unexpected threats of extinction. This was evidenced at Klamath where the fear of "jeopardy" to sucker fish and coho salmon inspired human intervention that harmed the other wildlife and listed species that depended on the usual allocation of water from the Klamath Project. Rather than focus on the possible ramifications to the entire area, the federal government followed its reactionary intervention policy and upset expectations of water delivery in order to prioritize the needs of the listed coho salmon and sucker fish.

The empowerment focus aims to give all species survival power through the creation of habitat and enhancement of resources. A law focused on positive support to help nature thrive would produce positive effects on natural resources and creatures as a whole. This ecosystem focus would lead to a biodiversity policy that identifies the needs of all the species in an area and seeks to distribute human assistance and respect equally among the species of an area. The ultimate goal of the empowerment policy is to create a "positive net biodiversity effect", which means that in the aggregate all species are better off because of human management of the land.

By seeking a positive net biodiversity effect, the empowerment policy would allow the loss of a species if that loss would produce positive results for the ecosystem as a whole. The empowerment policy would also focus its efforts on those species that are critical to the survival of many other species in an ecosystem. This priority does not effectively control the success of one species over the others, but the opposite, it empowers one particular species to help the entire ecosystem thrive. Most relevantly to the Klamath Basin situation, the empowerment policy recognizes that "critically dry" years are harmful to all species. Water is a unique limited resource because of year-to-year fluctuations in natural waterfall. Therefore, the empowerment policy would take special consideration for the entire ecosystem to guide decisions over uniquely limited water resources. Therefore, the distinction between empowerment and intervention highlights the two distinct resulting effects on the environment itself.

B. Empowerment v. Adversity

Biodiversity policy has a tremendous effect on the human actors involved in its implementation and compliance. The proposed solution focuses [*183] on empowerment of all individuals involved in carrying out the national policy for biodiversity conservation. Conversely, the existing ESA policy provides solutions through courtroom accusations and continual disagreement. The repetitious nature of these disagreements has been evidenced in the Klamath Basin, where the citizen group that brought about the 2001 injunction denying allocation of irrigation water sought another stop to water allocation to farmers and ranchers in 2002. n194

The current ESA's adversity emphasis only offers solutions through courtrooms and continual disagreements among parties. Even the constructive measures used to establish certainty with ecosystem-based conservation fail as lawsuits can still revoke the supposed guarantees of landowners' Habitat Conservation Plans. n195 At the root of the current ESA's adversity emphasis is an assumption of "hostility" among the varying perspectives of private actors. The adversity and hostility result in the unnecessary polarization of interested parties.

The empowerment policy provides a law that allows positive incentives for human stewardship. By benefiting from incentives beyond mere regulatory relief, private landowners and groups are empowered to use their own innovation and resources to conserve wildlife and habitat. By providing positive incentives for private individuals and groups, the government can foster creative conservation solutions without the cost of acquiring property or devising the systems. These incentives are coupled with education rather than government acquisition or Constitutional takings litigation. The proposed solution would not take land and water resources from individuals, nor would economic incentives be lost. Rather, private individuals and groups would be encouraged to use their land and water to benefit the environment. The government would then compensate these individuals and groups, not for their loss, but for their environmental stewardship. Taxpayers would be paying for the biodiversity conservation they receive benefits from and value. The "teach them to fish rather than giving them fish" philosophy is applied to encourage the government to show private landowners how to conserve rather than acquiring [*184] land to conserve for them. The empowerment policy

maintains a firm belief in education with the underlying assumption of the "capability" of private actors.

The proposed and existing ESA policies require significantly different practices from humans both from employees of government agencies and private actors. Under the existing ESA, good stewards are actually disfavored because by enhancing biodiversity they exhaust their own financial and natural resources, and open themselves up to litigation by inviting species onto the property. Conversely, those landowners who do not choose to be stewards of biodiversity simply have to refrain from obvious killing of species and can carry on without additional expense. At Klamath, most nearby landowners lost the value in their land and their pre-purchased contract water. Under the current ESA, good biodiversity stewards are given no assistance to fend off additional risks or expenses. Furthermore, government agency scientists are not held accountable for their actions until after a significant exhaustion of government resources has taken place.

Under the empowerment policy, agencies would be held accountable for their decisions concerning biological opinions prior to their implementation through the scientific peer review. Furthermore, the proposed solution calls for the accountability of private landowners through reviewing the science used in monitoring. This accountability controls not only public perspective of the land steward, but also controls funding of the incentives. Therefore, if the private actor is not maintaining or improving the overall biodiversity baseline, then no compensation would be given. The combined force of accountability and incentives creates an income stream for the environmentally friendly landowners and groups, allowing those positive actors to remain rather than be forced to sell their land. However, the landowners and groups who are not managing the land would not get money and would likely sell or be driven out by bad market conditions. In this way, the empowerment policy seeks to encourage and promote good stewardship rather than only encourage tough conservation advocacy.

C. Moving Forward v. Starting Over

The details and characteristics of a national biodiversity policy also affect the progress of biodiversity conservation itself. Under the existing ESA policy, the federal government acquires land or water at a price and then starts over with a new learning curve to obtain knowledge of the land for biodiversity conservation. This process results in government expenditures for the land or water, for the initial surveying of the conservation needs, for continuing monitoring, and for conservation devices on the land.

[*185] However, the proposed solution derives more positive effects from less government money. The proposed solution offers tactics to move forward with biodiversity conservation by keeping land and water resources in the control of the "expert" landowner or conservation group. The forward-moving policy encourages these experts to use their land and water to benefit biodiversity. Therefore, the two policies have drastically different effects on the progress of biodiversity conservation on private lands.

VI. CONCLUSION

After thirty years under the ESA, public awareness of the need for biodiversity conservation has risen. Acting upon its concern, our nation's people have devised many innovative and creative practices to produce positive results for the environment. However, the current ESA does not allow private individuals and groups the incentives they need to participate in the process. Rather, the law allows only for litigation and instigation of further conflict. Furthermore, the law authorizes government agency actions without accountability. Under the present ESA policy, accountability would be meaningless since there is no clearly defined national biodiversity goal. Therefore, the proposed solution of this analysis comes at a transitional time in our nation's conservation progress. The proposed solution offers a positive, empowering message for private actors by setting out a system that would allow participation, collaboration, and progress.

Applying this new solution to a fictional repeat of the Klamath Basin situation demonstrates the effects of moving beyond conflicts and promoting positive efforts for conservation. If the events of Summer 2001 were to be repeated

with this new ESA policy in place, a more positive outcome would result. First, the ESA Science Board would review the NMFS and FWS biological opinions before any action is taken. This would eliminate the need for subsequent questioning of the science after the fact, and provide for the true "best available science" to prevail. Through collaboration, conflicting perspectives would be heard through more out-of-court discussions to counteract the threat to species before an "emergency" situation arises. Reclamation's decision would be based on the needs of all natural resources and creatures in light of the "critically dry" year. In the event that water needed to be kept in the lake and streams to produce a "net biodiversity effect" in the region, then farmers and ranchers could voluntarily "lease" their contracted water for the species. These and other financial incentives would encourage private actors to use innovation and accept risk in the quest for creative solutions. Additionally, the government would provide education to private actors to help them manage lands and water in a manner most beneficial for the [*186] national goal of enhancing ecosystem biodiversity. For these reasons, the solution proposed raises the key ingredients for positive changes in our existing biodiversity conservation policy.

Legal Topics:

For related research and practice materials, see the following legal topics:

Environmental Law
Natural Resources & Public Lands
Fish & Wildlife Protection
Environmental Law
National Environmental Policy Act
Environmental Impact Statements
Environmental Law
Natural Resources & Public Lands
Endangered Species Act
General Overview

FOOTNOTES:

n1 *See 16 U.S.C. § 1533* (2000) (the Secretary of the Interior shall determine "whether any species is an endangered species or a threatened species because of any of the following factors: the present or threatened destruction, modification, or curtailment of its habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms; or other natural or manmade factors affecting its continued existence").

n2 *See id.* § 1538 (2000).

n3 *See id.* § 1532 (2000); *see id.* § 1538(a)(2) (ESA take prohibition applies to endangered species of animals but does not apply to endangered species of plants). *See also 50 C.F.R. § 17.3* (2001) (extending ESA take prohibition to threatened species).

n4 *See id.* § 1540 (2000).

n5 *See id.* § 1536(a)(2) (2000) (federal agencies must "insure that all actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of or result in adverse modification of threatened and endangered species").

n6 *See id.* § 1536(a)(2).

n7 *See id.* § 1536(c); *see also 50 C.F.R. § 402.12* (2001).

n8 *See* 16 U.S.C. § 1536(b).

n9 *See id.*

n10 *See* Holly Doremus, *Water, Population Growth, and Endangered Species in the West*, 72 *U. Colo. L. Rev.* 361, 384 (2001) ("The federal agency considering an action is responsible for ensuring compliance with Section 7 and may choose to reject the Services' views. As the formal view of any agency with expertise in species protection, however, a biological opinion carries considerable weight with a reviewing court. Not surprisingly, biological opinions are virtually determinative of the outcome").

n11 *See* 32 Stat. 388 (1905) (authorized under the Reclamation Act, 43 U.S.C. § 372 et seq. (1902)).

n12 *See generally* NATIONAL ACADEMY OF SCIENCES, INTERIM REPORT FROM THE COMMITTEE ON ENDANGERED AND THREATENED FISHES KLAMATH RIVER BASIN; SCIENTIFIC EVALUATION OF BIOLOGICAL OPINIONS ON ENDANGERED AND THREATENED FISHES IN KLAMATH RIVER BASIN (2002).

n13 *See generally id.*

n14 *See* Governor John A. Kitzhaber, *Klamath Solution Takes Cooperation by All: There are no easy answers in this drought year or for the future* (June 1, 2001).

n15 *See* Opinion and Order at 6:2-11, *Kandra v. United States*, (D. Or. 2001) (No. 01-6124-AA). ("Reclamation must deliver water to project irrigators in accordance with the rights held by the United States and the irrigators' individual repayment contracts, subject to the availability of water. Plaintiffs Klamath Irrigation District and Tule Lake Irrigation District have rights to receive appropriated water pursuant to their contracts with Reclamation. Two national wildlife refuges, the Lower Klamath and Tule Lake National Wildlife Refuges, depend on the project for water and receive large quantities of return irrigation flows and other project waters").

n16 *See* Opinion and Order at 2:17-23, *Pac. Coast Fed'n of Fisherman's Ass'ns, v. U.S. Bureau of Reclamation*, (N.D. Ca 2001) (No. C 00-01955 SBA).

n17 *See id.*

n18 *See id.*

n19 *See id.*

n20 *See id.* at 3:6-17.

n21 *See id.* at 3:6-17.

n22 See Department of Interior, 53 *Fed. Reg.* 27130, 27131-32 (July 18, 1988). See also Department of Interior, 62 *Fed. Reg.* 24588, 24592 (May 6, 1997).

n23 See Governor John A. Kitzhaber, *Klamath Solution Takes Cooperation by All: There are no easy answers in this drought year or for the future* (June 1, 2001).

n24 *Id.* See also Bob McLandress, *Agriculture and Wildlife in the Klamath Basin*, CALIFORNIA WATERFOWL 16, 19 (Aug./Sept. 2001) (explaining that all the rampant wildlife is "contingent upon water that irrigates crops and sustains habitat for wildlife. This water comes from precipitation, run-off and most importantly, reserves in Upper Klamath and Clear Lakes. Later in summer, precipitation is scarce, and most water for refuge wetlands must be supplied by agricultural runoff and outflows from Upper Klamath and Clear lakes).

n25 Professor Virginia Cahill, University of California, Davis, Water Law Lecture (2001).

n26 See NATIONAL MARINE FISHERIES SERVICE, BIOLOGICAL OPINION -- ONGOING KLAMATH PROJECT OPERATIONS, EXECUTIVE SUMMARY (April 6, 2001).

n27 See Opinion and Order at 6:2-11, *Kandra v. United States*, (D. Or. 2001) (No. 01-6124-AA).

n28 See Opinion and Order at 10: 6-8, *Kandra v. United States*, (D. Or. 2001) (No. 01-6124-AA). ("Upon review of the draft BiOps, Reclamation informed FWS and NMFS that the forecasted water supplies for 2001 were not adequate to meet the needs of both RPAs").

n29 See McLandress, *supra* note 24, at 19.

n30 See Opinion and Order at 6:2-11, *Kandra v. United States*, (D. Or. 2001) (No. 01-6124-AA).

n31 See Bradley C. Karkkainen, *Biodiversity and Land*, 83 *CORNELL L. REV.* 1, 19 (1997).

n32 *Id.*

n33 *Id.*

N34 Testimony of Steven P. Quarles, *Subcommittee on Fish, Wildlife and Water Environment and Public Works Committee*, United States Senate (May 9, 2001) ("Controversy over and attention to the species' listing process are now at hand, however -- triggered by recent actions of both the Clinton and Bush Administrations. On November 17, 2000, FWS Director Jamie Clark announced that the agency lacks sufficient funds to conduct any species' listings, including responding to any listing petitions, in fiscal year 2001 beyond those mandated by court order").

n35 *Id.* ("This Clinton listings moratorium was followed by a legislative proposal in President Bush's budget

to waive for fiscal year 2002 the ESA's statutory deadline for species listings (and designations of critical habitat) and to limit use of the available funding to implementing already issued court orders and those listings (and designations) the Secretary of the Interior in her discretion determines to be important").

n36 Bob McLandress, *Klamath in Jeopardy*, CALIFORNIA WATERFOWL 10, 12 (Aug./Sept. 2001).

n37 *Id.*

n38 *See* Kitzhaber, *supra* note 14.

n39 Bob McLandress, *Disease Threatens Klamath Basin Waterfowl*, CALIFORNIA WATERFOWL, 13 (Aug./Sept. 2001).

n40 *See id.*

n41 *See id.*

n42 Opinion and Order at 14:25-15:10, *Kandra v. United States*, (D. Or. 2001) (Civ. No. 01-6124-AA) ("There is no question that farmers who rely on irrigation water and their communities will suffer severe economic hardship if the 2001 Plan is implemented. The declarations of Steven Kandra and David Cacka, Klamath Basin farmers, describe the hardships they will suffer if their land receive no irrigation water, including loss of income, inability to pay debts, potential loss of land and equipment, and immeasurable harm to their way of living. . . .Local governmental entities in the Klamath River Basin anticipate agricultural losses in the millions of dollars, loss in revenues, and additional burdens on social services").

n43 *See* United States Department of the Interior Bureau of Reclamation, Final Biological Assessment, Effects of Proposed Actions Related to Klamath Project Operations (April 1, 2002 -- March 31, 2002) on Federally Listed Threatened and Endangered Species at 84 (February 25, 2002) (reduction of agricultural water supplies affects the wildlife species preyed upon by bald eagles).

n44 KLAMATH EXPERIMENT STATION, OREGON STATE UNIVERSITY AGRICULTURAL RESEARCH, ANNUAL REPORT, *Klamath Basin Crop Trends* 4 (2000) (51,312 crop acreage in alfalfa, 190,866 total crop acreage).

n45 California Alfalfa and Forage Association, *Wildlife and Alfalfa. . .A Natural Partnership*, ALFALFA, WILDLIFE AND THE ENVIRONMENT 11, 12 (2001) (available at California Department of Food and Agriculture).

n46 *Id.*

n47 *Id.*

n48 *Id.*

n49 *Id.*

n50 *Id.*

n51 Interview with Gerry Miller, Senior Environmental Planner, California Department of Food and Agriculture (Feb. 2002).

n52 42 *U.S.C.* § 4332(c).

n53 *See* Opinion and Order at 20:2-12, *Kandra v. United States*, (D. Or. 2001) (Civ. No. 01-6124-AA). ("Reclamation did not prepare an EIS, it prepared an EA for the 2001 Plan. The EA examined potential environmental effects of proposed operations in 2001 under a critical dry forecast. . . . Reclamation's EA did not conclude with a [Finding of No Significant Impact]. In light of the extreme drought conditions and the proposed RPAs, Reclamation found that the plan could significantly affect the environment. However, the EA did not specifically find that an EIS was required for the 2001 plan").

n54 Plaintiff's Reply in Support of Motion for Preliminary Injunction, *Kandra v. United States*, (D. Or. 2001) (No. 01-6124-TC).

n55 *See* Opinion and Order at 24:6-7, *Kandra v. United States*, (D. Or. 2001) (No. 01-6124-AA).

n56 *County of Trinity v. Andrus*, 438 *F. Supp.* 1368, 1388 (*E.D. Cal.* 1977).

n57 *See* 16 *U.S.C.* § 1538.

n58 16 *U.S.C.* § 1539.

n59 *Id.*

n60 *Id.*

n61 *Id.*

n62 *Id.*

n63 *Id.*

n64 Department of Interior, 64 *Fed. Reg.* 32707 (June 17, 1999).

n65 *Id.*

n66 *See* Habitat Conservation Plan Handbook at 3-38.

n67 U.S. Department of Interior, Bureau of Reclamation, EA Number 01-83, *Mendota Pool 2002 Exchange Agreements Draft* at 3-16 (Jan 28, 2002).

n68 *Id.* at 1-1.

n69 *Id.*

n70 *Id.* at 3-16.

n71 *Id.*

n72 *Id.*

n73 *Id.*

n74 CALIFORNIA FARM BUREAU FEDERATION, FARMERS AND RANCHERS COMMITMENT TO CONSERVATION: A REPORT ON VOLUNTARY ACTIONS CALIFORNIA FARMERS AND RANCHERS ARE TAKING TO ENHANCE WILDLIFE 33 (2002), *available at* www.cfbf.com/issues/conserv.

n75 *See id.* at Table 3-6.

n76 *Id.*

n77 CALIFORNIA FARM BUREAU FEDERATION, HABITAT HEROES (2002) *available at* www.cfbf.com/issues/earthwise/hab/htm.

n78 *Id.*

n79 *Id.*

n80 CALIFORNIA FARM BUREAU FEDERATION, *supra* note 74.

n81 *Id.*

n82 *Id.*

n83 *Id.*

n84 *Id.*

n85 *Id.* at 13.

n86 American Farmland Trust, *Steward of the Land Award; The Bailey Family--2002 Steward of the Land* (2002) available at www.farmland.org/steward/bailey.htm.

n87 *Id.*

n88 *Id.*

n89 See Agricultural Conservation Innovation Center, *Is Conservation Risky* (2002) (available online at www.agconserv.com/risk.html) ("As a business, agriculture historically has had a very low return on capital, the national average being 3% per year").

n90 See *Tulare Lake Basin v. United States*, 49 *Fed. Cl.* 313, 315 (2001) ("the water projects are required to be financially self-sustaining, with the costs of construction and maintenance to be paid entirely by those who ultimately receive the water. The water contractors are thus obligated to pay to maintain the operation of the system regardless of the amount of water actually received. Because the amount of water available to water users in a particular year is largely a function of natural causes, however, the permits explicitly provide that the state will not be held liable for shortages due to drought or other causes beyond its control"). See also Tom Birmingham, General Counsel, Westlands Water District, presentation at 16th Annual Environmental Law Conference, University of California, Davis (March 8, 2002).

n91 See 16 *U.S.C.* § 1534 (2000) (Secretaries of United States Departments of Interior and Agriculture are "authorized to acquire by purchase, donation, or otherwise, land, waters, or interests therein, and such authority shall be in addition to any other land acquisition authority vested in him").

n92 *Id.* at 8 (stating "while many wildlife restoration projects take place on state and federal lands, the majority of our country's wildlife populations spend some or all of their time on private property. This fact puts our nation's farmers and ranchers in a unique position. Many have chosen to take action in order to see native habitat and wildlife populations flourish on their operations").

n93 WESTERN GOVERNORS' ASSOCIATION, A WORKABLE, MORE EFFECTIVE ENDANGERED SPECIES ACT (Dec. 2000).

n94 *Id.*

n95 See *infra* Part I.

n96 WESTERN GOVERNORS' ASSOCIATION, A WORKABLE, MORE EFFECTIVE ENDANGERED SPECIES ACT (Dec. 2000).

n97 UNITED STATES GENERAL ACCOUNTING OFFICE, REPORT TO CONGRESSIONAL REQUESTERS, ENDANGERED SPECIES INFORMATION ON SPECIES PROTECTION ON NONFEDERAL LANDS, GAO/RCED-95-16 (Dec. 1994).

n98 *See* UNITED STATES GENERAL ACCOUNTING OFFICE, PERFORMANCE AND ACCOUNTABILITY SERIES, MAJOR MANAGEMENT CHALLENGES AND PROGRAM RISKS, DEPARTMENT OF THE INTERIOR, GAO/OCG-99-9 (Jan. 1999) (demonstrating the public land managers' need for a basic reexamination of the organization and function of land management agencies, lack of information to properly protect preserve and maintain resources, and need for improved guidance, oversight, and accountability).

n99 Testimony of Alex Horne, Professor, Department of Civil and Environmental Engineering, University of California, Berkeley, Subcommittee on Water and Power Hearing (Mar. 21, 2001) (testimony of the author of *Protecting the Beneficial Uses of Waters of Upper Klamath Lake: A Plan to Accelerate Recovery of the Lost River and Shortnose Suckers*).

n100 *See* Opinion and Order at 3:24-27, *Kandra v. United States*, (D. Or. 2001) (No. 01-6124-AA) (proposed measure to restore and enhance wildlife and fishing habitats throughout Upper Klamath Basin).

n101 *See* 5 U.S.C. § 706 (2000).

n102 *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 373-74 (1989).

n103 5 U.S.C. § 706(2) (2000).

n104 *Marsh*, 490 U.S. at 378.

n105 *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416, (1971).

n106 *See* NATIONAL ACADEMY OF SCIENCES, INTERIM REPORT FROM THE COMMITTEE ON ENDANGERED AND THREATENED FISHES IN KLAMATH RIVER BASIN--SCIENTIFIC EVALUATION BIOLOGICAL OPINIONS ON ENDANGERED AND THREATENED FISHES IN KLAMATH RIVER BASIN, EXECUTIVE SUMMARY (Feb. 6, 2002).

n107 *Id.*

n108 *Greater Gila Biodiversity Project v. U.S. Forest Serv.*, 926 F. Supp. 914, 919 (D. Az. 1994).

n109 *See* Joseph Sax, *Symposium on Law in the Twentieth Century: Environmental Law at the Turn of the*

Century: A Reportorial Fragment of Contemporary History, 88 *CAL. L. REV.* 2375, 2384 (2000) (supporting the statement that the common belief supports ambiguity by quoting Former Interior Department Solicitor John Leshy's observations of ambiguity in law enforcement).

n110 Gina Guy, U.S. Department of Interior, Office of the Solicitor, *The Infamous Snail Darter Case*, STEWARDSHIP AND THE LAW at 8. Note: Congress later amended the ESA to allow for the "God Squad" authority to consider economic costs in extraordinary circumstances.

n111 *Id.* citing *Tennessee Valley Auth. v. Hill*, 419 *F. Supp.* 753 (*E.D. Tenn.* 1976) ("using what are called equitable principles, or balancing of interests and costs, the (trial) court found that the TVA had acted reasonably in trying to protect the fish, most notably by trying to relocate it").

n112 *Id.*

n113 *See* McLandress, *supra* note 36, at 10.

n114 Reed F. Noss, *Indicators for Monitoring Biodiversity: A Hierarchical Approach*, 4 *CONSERVATION BIOLOGY* 4 (1980).

n115 California Biodiversity Council. State of California. *An Applied Definition of Biodiversity* (2000) available at www.ca.gov.

n116 *Id.*

n117 U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT, *TECHNOLOGIES TO MAINTAIN BIOLOGICAL DIVERSITY* at 9 (OTA-F-330) (March 1987).

n118 *Id.*

n119 *Id.*

n120 *Id.*

n121 *See id.*

n122 *See* United States Biodiversity Act, H.R. 1268 (1990).

n123 *Id.*

n124 *Id.*

n125 *Id.*

n126 *Id.*

n127 See W. Wayst Gibbs, *Why Biodiversity Doesn't Yet Pay*, *SCIENTIFIC AMERICAN* 10 (2001).

n128 See Opinion and Order at 10:6-8, *Kandra v. United States*, (D. Or. 2001) (No. 01-6124-AA).

n129 McLandress, *supra* note 24, at 20.

n130 16 *U.S.C.* § 1531(b).

n131 Karkkainen, *supra* note 31 at 19 (quoting 80 *IOWA L. REV.* 297, 301 (1995)).

n132 Greg Corbin, *United States Forest Service Response to Biodiversity Science*, 29 *ENVTL. LAW* 229, 277 (1999).

n133 NFACT, *Framework for the Future of Agriculture* at 4 (July 2001).

n134 See *id.* at 9.

n135 See *id.* See also *supra*, Part IV.C. (for discussion of USDA's conservation incentive programs).

n136 See NFACT, *Framework for the Future of Agriculture* at 9. See also *supra*, Part IV.C (for discussion of benefits from farming and ranching).

n137 See NFACT, *Framework for the Future of Agriculture* at 9.

n138 See *id.* at 10.

n139 Interview with Steve Shaffer, Director of Agriculture and Environmental Policy Office, California Department of Food and Agriculture, Interview (Feb. 2002).

n140 Kitzhaber, *supra* note 14.

n141 See Quincy Library Group, *Quincy Library Group Background* (2002) at www.qlg.org/pub/contents/overview.htm.

n142 George Terhune, *QLG Case Study* (2002) at www.qlg.org/pub/contents/overview.htm.

n143 *See id.*

n144 *Id.*

n145 *Id.*

n146 *See id.*

n147 *See id.*

n148 President Bill Clinton, Address at the Forest Summit (1993).

n149 Letter from Tess Dunham, California Farm Bureau Federation, Director of Water Resources, to Michael Valentine, General Counsel, California Department of Food and Agriculture (Mar. 13, 2002) (comments on proposed regulations for incidental take).

n150 *Id.*

n151 *Id.*

n152 *Id.*

n153 California Dept. of Fish and Game, Prop. Reg. 786.1 (a).

n154 California Dept. of Fish and Game, Prop. Reg. 786.2(d)(5).

n155 NATIONAL WILDLIFE FEDERATION, SAFE HARBOR AGREEMENTS AND THE ENDANGERED SPECIES ACT: IMPROVING CONSERVATION ON PRIVATE LANDS (1997).

n156 *See* McLandress, *supra* note 36 at 12-13.

n157 *See id.*

n158 *See id.*

n159 *See id.*

n160 NATIONAL ASSOCIATION OF STATE DEPARTMENTS OF AGRICULTURE RESEARCH FOUNDATION, NATIONAL CENTER FOR AGRICULTURAL LAW RESEARCH AND INFORMATION, NATURAL RESOURCES CONSERVATION SERVICE, U.S. ENVIRONMENTAL PROTECTION

AGENCY, ENVIRONMENTAL LAWS AFFECTING CALIFORNIA AGRICULTURE at CA-43. (Completed 1999, updated 2002).

n161 *Id.* (Specifically, NRCS funds 95% of participant's market transition contract payments, and may receive 95% of their projected crop insurance payments.)

n162 *See* 7 C.F.R. § 636 (2002).

n163 *NATIONAL ASSOCIATION OF STATE DEPARTMENTS*, *supra* note 160 at CA-43.

n164 *See* 7 C.F.R. § 636.6, § 636.7.

n165 *See* 7 C.F.R. § 610.

n166 *See* 7 C.F.R. § 1410 (2002). *See also* Farm Service Agency, Conservation Reserve Program, (available online at www.fsa.usda.gov/dafp/cepd/crp.htm).

n167 *Id.* *See also* 7 C.F.R. § 636.21 (rental rates, set by Community Credit Corporation, are based on the relative productivity of soils within each county, and an average of the past 3 years of local dry land cash rent or equivalent).

n168 *See* 7 C.F.R. § 636.23.

n169 *See id.*

n170 Farm Service Agency, Conservation Reserve Program, *available at* www.fsa.usda.gov/dafp/cepd/crp.htm.

n171 *See* § 1410.50. *See also* Farm Service Agency, *Conservation Reserve Enhancement Program, Questions and Answers* (2000) *available at* www.fsa.usda.gov/dafp/cepd/crepqnas.htm.

n172 Farm Service Agency, *Conservation Reserve Enhancement Program, Questions and Answers*.

n173 *Id.*

n174 *Id.*

n175 *See generally* 7 C.F.R. § 700 et seq. (2002) (USDA, Farm Service Agency regulations); *See generally* 7 C.F.R. § 600 et seq. (2002) (USDA, Natural Resource Conservation Service regulations).

n176 Michael S. Reid, Professor, Department of Environmental Horticulture. University of California, Davis Presentation at 16th Annual Environmental Law Conference (March 8, 2002).

n177 American Farm Bureau, *107th Congress Backgrounder: Endangered Species Act Reform*, VOICE OF AGRICULTURE (2002) available at www.fb.com/issues/background/esa10.html.

n178 *Tulare Lake Basin v. United States*, 49 Fed. Cl. 313 (2001) (holding that the right to divert water according to contract and in conformance to the state's decision and unmodified by state authority, deserves compensation).

n179 *Lawyer: Water Loss is a 'Taking' Worth \$ 1 Billion*, HERALD AND NEWS (Klamath Falls), July 12, 2001 (quoting presentation by Roger Marzulla, Endangered Species Act law specialist, assistant attorney general for former President Ronald Reagan).

n180 *Pac. Coast Fed'n of Fisherman's Ass'n v. United States Bureau of Reclamation*, 138 F.Supp.2d 1228 (N.D. Ca. 2001).

n181 Interview with Steve Shaffer, Director of Agriculture and Environmental Policy Office, California Department of Food and Agriculture (Feb. 2002).

n182 See CALFED Bay Delta Program, Programmatic Record of Decision, Vol. 1, 74 (Aug. 28, 2000).

n183 *Id.*

n184 *See id.*

n185 *See id.*

n186 *See id.*

n187 *See id.*

n188 CALFED Bay-Delta Program Briefing Book, *CALFED Science Program*, 39 (Sept. 2001).

n189 *See 7 U.S.C. § 136w(d)* (2000).

n190 *See id.*

n191 *See Publ. L. 104-170* (1996).

n192 *See id.*

n193 *See id.*

n194 *See* Plaintiff's Complaint for Declaratory and Injunctive Relief, *Pac. Coast Fed'n of Fisherman's Ass'n v. United States Bureau of Reclamation* (N.D. Ca. 2002) (No. C 022006 SBA).

n195 *National Wildlife Fed'n v. Babbitt*, 128 F. Supp. 2d 1274 (2000). Plaintiffs challenged the United States Fish and Wildlife Service's issuance of an incidental take permit to allow development in the Natomas Basin, a 53,000 acre tract of largely undeveloped land stretching to the North of the City of Sacramento. The Natomas Basin contained habitat of the Giant Garter Snake, a threatened species under the federal Endangered Species Act (ESA), and the Swainson's hawk, a threatened species under the California Endangered Species Act. The court concluded that the Fish and Wildlife Service's determination that no Environmental Impact Statement was required was arbitrary and capricious.