Testimony for the Subcommittee on Forests and Forest Health,
US House of Representatives, Committee on Resources

Subject: Issues Affecting Rural Communities in the Southwest—
National Forest Management and the Endangered Species Act

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I would like to thank the Subcommittee and our Congressmen for the opportunity to address the importance of rural communities, forest/range issues, and the Endangered Species Act. As a citizen of both Arizona and the US, I hope to be practical and real in understanding how the ESA has played out in our area.

Compared to Congressional acts that established national forests as the property of all American citizens, and the Homestead Act, that helped foster rural communities, the ESA is still young. It is only thirty-one years old. Its meaning and importance to citizens, courts, Congress, and other government agencies have not been fully realized. Some Americans are concerned how to best protect our national heritage. They are patriotic about common lands such as National Forests and our heritage of unique species and ecosystems. Others feel ethical imperatives to save and protect non-human species. They rest their commitment on God's creation and the sin of letting one of His creations go extinct, or on the Great Spirit, or other deeply American commitments to respect and to learn from Nature. Still others wish to insure that yet unknown economic values of rare and sensitive species (their opportunity costs) will not be lost. (Many unexpected species have become the basis for profitable medicines or tourist revenues.) In Arizona, all these approaches can be found within rural communities and contribute to the support of the ESA.

It is important to dispel various myths about the ESA.

Myth #1: The ESA is a major cause for economic decline in rural areas in the southwest.

Mining has been lost to globalization, reduced quality of ores, substitution for copper by new materials, high US wages compared to lesser developed nations, and, at times, low mineral prices. The mining industry in Arizona began its decline before the ESA had major influence. It was not an issue in the closing of the smelters in Douglas (AZ), San Manuel (AZ) nor Playas (NM) or the reduction of operations at the Pima Mine (AZ). If any laws are to be blamed, the Clean Water and Clean Air Acts (which try to insure minimal off-site damage) can be finger-pointed. In Arizona, the ESA has not been a major driving force in mining decline.

Commercial agriculture has suffered from high water costs, competition between water users, water quality degradation, and global price competition (especially in the cotton markets) much more than the ESA. Competition between urban water users and Native American treaty allocations is much more important than the ESA. Among farmers, the ESA is a small headache compared to crop prices, subsidy politics, water prices, and the priority given to urban water rights.

Ranching is declining throughout Arizona but not because of the ESA. The major threat to ranching is housing subdivision development. Other threats include price competition from imported beef, mad cow disease, increased property taxes, feedlot and meat packing conglomerates, and prolonged drought. To combat housing subdivisions, groups like the Malpai Group have formed in Cochise and adjacent Hidalgo Counties. A group of over

20 ranches, covering a bit less than one million acres, and including deeded, BLM, FS and State lands, the Malpai group has spearheaded conservation ranching and private sector leadership. Its core goal is to slow down and prevent housing developments that threaten rural economies. Over half of the group's deeded land is now in conservation easements, not because of the ESA, but to prevent housing development. The Malpai Group has also developed grass banking and fire management programs to help ranch productivity. Here, private sector rural economics have used conservation-friendly methods to help itself, and indirectly help sensitive and rare species. These private actions help both the goals of the ESA and rural communities.

On one ranch, a private sector initiative, the Grey Ranch and Animas Foundation (Hidalgo County) have returned candidate species, black-tail prairie dogs, to some of their grasslands. Studies have shown that this species can help reduce shrub and tree encroachment. In the past, they were considered pests. Now, a rancher may help keep prairie dogs from being listed. On another ranch, the Magoffins have volunteered to maintain their population of the threatened Chiricahua Leopard frog and have sponsored classes with the Douglas High School. Another rancher is now selling "predator-friendly" beef, guaranteeing consumers that they protect and will not harm mountain lions and wolves. Predator-friendly beef is a new market niche that will help maintain rural life ways and endangered species. The Malpai Group has also stated that they will not shoot endangered jaguars (first seen on a ranch in 1997) even if they kill a cow. These few stories point to the new direction of conservation ranching. Part of the rural community does not see itself opposed to the goals of the ESA. At times (see below), the ESA can be an enormous headache, but the headache usually involves the implementation of the law, not the law itself.

As Mark Twain has said: "Whisky is for drinking; water for fighting." And, in Arizona, *water* fights include five states, two nations, and a dozen Native American reservations. Rural communities are at a disadvantage because water rights favor urban development and groundwater laws are contentious. The main connection to the ESA has occurred when river flow was needed for endangered fish such as the endangered Humpback chub in the Colorado or the need for cottonwood-willow forests by the endangered southwest willow flycatcher and various fish in the Gila basin. *River flow allocations have yet to be adjudicated in the Gila River basin nor finalized for the Colorado.* These decades long fights over adjudication are at the heart of the problem, *not* the ESA. Urban expropriation of rural community water is far more important than the ESA. The ESA is, at times, one player. It may recommend a minimal in-stream flows to help the whole ecosystem and recover a species like the Humpback chub. In the Colorado, these requirements support and are in harmony with a major, local recreational economy. The ESA may recommend scheduling water releases from dams to consider both fish/bird needs as well as many diverse (not rural) downstream users.

It is crucial to understand the context for these ESA recommendations. Arizona has lost over 90% of its cottonwood/willow forests., the major habitat of the will flycatcher. Only about 1% fully functions in a healthy manner. These fish and bird species are "canaries in the mine" – early indicators that water (as much as oil) and water-dependent habitats

must be seriously considered in the twenty-first century. This is most apparent in the San Pedro River where every respected hydrologist warns that groundwater is running out and there is a conflict between the federal National Conservation Area and development. We must ask: Does Arizona and New Mexico want one or five per cent of our wetland heritage forests to remain for future generations? How much water should be allocated to public uses paid for by the nation's taxpayers and how much for private development? This question should not be trivialized by calling the ESA a demon. Nor, should issues of water resources management be artificially reduced to ESA issues. Competing surface, conjunctive, in-stream and priority water rights and over-subscription of water will be the defining issue of the southwest in the next twenty years.

In the southwest (as opposed to northern Arizona), the timber industry declined before the ESA had major impacts on harvest rates. For instance, the last lumber mill near Mt. Graham had closed before anyone re-discovered the endangered Mt. Graham red squirrel. The threatened Mexican Spotted Owl has been most entwined in the timber industry in the northern part of Arizona. In the southwest, its nesting in canyons and the much reduced timber prospects have created little conflict. No mills or jobs have been lost on the southwest from this species.

In conclusion, the ESA has not hurt rural economies in the southwest. (It has influenced the timber industry to the north.) It is a myth to claim that the ESA is responsible for rural decline. In fact, the new environmental-friendly tourist industry has been a major savior to some rural communities as the commodity-based economy declines. A fine example of this new rural economy is Portal, AZ. During the Rattlesnake fire in the Chiricahuas, all residents talked to the fire crews (who were not local) about saving south fork of Cave Creek. This riparian forest is the economic heart of Portal that services over 10,000 birdwatchers each year. The fire crews listened and did a good job of directing their fire lines saving both economics and species.

Myth #2: Congress and federal agencies make ESA decisions on the best science.

It is crucial to distinguish between the law itself and the implementation of the law by federal agencies. If we look at actual forest issues in Arizona and New Mexico, it is obvious that the major threat to forests comes from special favor politics, compromised biological science (and agency biologists), and under-funding of various programs. This trio of sins is vastly more important than any changes in the law and its regulations. These obstacles to good science are NOT faults within the ESA law itself but in the arena of inappropriate political influence.

An Example: The Forests of Mt. Graham

In the southwest, the Mt. Graham red squirrel, southwestern flycatcher, Mexican spotted owl, and various native fish can be found near or in forests. In Arizona, many bitter fights

concerning forests have occurred because the biological science needed to implement the law has been inappropriately impeded.

I served as an expert biologist in one such bitter battle over forest health and quality: the Mt. Graham red squirrel and astrophysical development (see Disclosure Document), have written the only peer reviewed article on the subject (Warshall, 1994), and was the team manger on the only comprehensive ground-truthing forest assessment of the upper elevation forests. I will quickly sketch how the best biological science was blocked and distorted.

The Mt. Graham red squirrel was proposed for endangered status by the Arizona Game and Fish Department, not environmentalists. The US Fish and Wildlife Service did not list the squirrel within the time limit required by law. It is not known if this was for political or budgetary reasons. The Sierra Club (1987) threatened a lawsuit and, by June, the squirrel was listed. Ironically, the University of Arizona astronomers should be grateful to the Sierra Club for speeding the process of good biological science.

Two major issues existed for the ESA: how many squirrels existed and how much upper-elevation forest of what qualities existed? In addition, educated guesses had to be made of how stable the forest types might be over the next one hundred years. The more unstable the forest, the larger the protected zone required and the stricter the limitations on forest cutting.

Between 1986 and 1988, the Coronado National Forest, as lead agency, wrote three distinct versions of the Biological Assessment. Each edition had a different Forest Service biologist as team leader. One team leader retired and another was moved off the project. This led the public to question the integrity of the agency's biological science. Delays occurred, not because of the ESA, but because each edition had a different number and configuration of telescopes in different areas of forest. Each new configuration had to be re-analyzed for its impact on different areas of forest by a new team leader.

In 1988, the Biological Assessment was sent to the US FWS. The agency rejected the Biological Assessment and proposed another project which they had originally rejected (US Congress 1990: 39 – 55) and in a forest area that had not been previously assessed. This rejected project became the preferred alternative and confused biologists from the Forest Service and university. (I was then a University-hired biologist.) Two biologists requested data on the forest areas that would be impacted. US FWS had no data. The public now thoroughly questioned the integrity of the science.

About June 1988, the University of Arizona made the most controversial decision. They abandoned the standard procedural rules and pursued a strategy to exempt the project from the ESA. They paid Patton, Boggs, and Blow (a Washington lobbying firm) over $1 million with federal taxpayer funds through a research and study grant. The proviso (a rider) was attached to a popular bill (the Arizona-Idaho Conservation Act) and, on the last day of Congress, it passed. By this act, special favor politics immunized the project

from a design based on good biological science and dashed hopes of a credible assessment of forest health and quality. The rider also immunized the astronomical consortium from Section 4 of the ESA , the section that might have reduced telescopes in Critical Habitat. The exemption pushed a local project into national controversy.

In a lawsuit, two US FWS biologists testified that there was no good science behind the telescope site decision and that, contrary to Section 4(3) of the ESA, the decision was based on non-scientific considerations. (Section 4 says the decision should be based "solely on the best scientific and commercial data available.") Congressmen requested an investigation by a US FWS blue-ribbon committee to review the data and application of the law. The team reported even greater and more extensive tampering with the data than an earlier analysis by the GAO. At that point, the astronomical consortium had a decision to make: Should they request a new Biological Opinion based on good science? They did not and a group of over 200 scientists (including some astronomers) protested. Various astronomy departments (Smithsonian, Harvard, NOAA) withdrew from the project.

In short, we see that the ESA was not at fault but that special favor politics, inter-agency delays, distortion of science, and perhaps agency budgetary limitations created the controversy. Similar refusals to follow biological science have occurred with the listed Alabama flattened musk turtle and, in Texas, with the Concho River snake. Special favor lobbyists are perhaps the forests worst enemy.

The lacks of timely biological science and budgetary faux pas have continued on Mt. Graham. In 1993, the US FWS Recovery Plan set as a high priority (Priority 131), a fire management plan that "minimizes fire in all squirrel occupied areas." If the Coronado National Forest had made such a plan, it might have protected both squirrels and telescopes. The ESA was not a barrier to the plan, which cost an estimated $10,000 in 1993. Nor did neither the Red Squirrel Committee nor the University of Arizona fund any studies on fire management and insect studies. (It spent hundreds of thousands on other study projects.) The Forest Pest Management Team of the USDA did begin studying the spruce beetle in 1992. Recommendations were published for the roundheaded pine beetle but, as far as I know, no recommendations were published for the spruce beetle. The pine beetle recommendations alternatives included salvage, mechanical controls, sanitation/salvage, and insecticides. These methods could have been used for the spruce beetle and insect control would have provided local employment. Nothing was done and telescopes, taxpayer and squirrels suffered (the squirrels, the most). The issue was not the ESA nor the accumulated debris and dead-and-down but the inability of the agency and the US to appropriately study and implement a fire program.

In short, the bad reputation of the ESA may not be deserved. The law, like most laws, is imperfect, has loopholes and needs thoughtful critique (see Recommendations). But, certain politicians and citizens fear that good forestry science will always harmful to their desires. This is wrong. Good biological science needs to be allowed to happen. Good science does not play favorites and can change policy to the likings or dis-likings of any or all constituents. (Good science means peer review, proper methodology, transparency

so that scientists outside agencies can review data, and a mechanism to insure that the most accurate data will be considered.)

Special favor politics is hard to overcome and can sour the ability to do things in timely manner because it fosters suspicion. Stopping special favor politics does not require changing the law. It requires whistle-blowers, lawsuits, concerned Congressmen, independent scientists, and an informed press.

Example of Inter-agency Difficulties: Programmatic Fire Plans

In 1995, the Coronado National Forest began a Programmatic Fire Plan. The plan, among its goals, was to have obtained a one-time clearance from the ESA for prescribed burns for private landowners and managers surrounded by federal lands. Without the plan, landowners are required to file for a separate permit for each burn. The process and expense can be so arduous that the burn season is over before the prescribed burn can occur. The burns are to boost the productivity of the rural rancher economy by revitalizing forage, and reduce the opportunities for catastrophic fire and property damage.

In 2004, the fire plan has still not been completed. Ranchers involved with the largest prescribed burn in AZ/NM (the Baker burn of 48,000 acres) had to deal with fourteen agencies in two states. They received easy clearance for Sanborn's long-nosed bat because fire reportedly helps agaves that are a major source of food. They paid for a private survey for threatened Mexican Spotted Owls on the proposed prescribed burn lands in order to speed the process. Nevertheless, a disagreement among the agencies about impacts on the ridge-nosed rattlesnake postponed the burn for two years. The postponement caused ranchers precious time, and money to fund a representative to meetings in two states.

Although the ESA was involved, the delay and its economic consequences stemmed from the Forest Service's inability to complete the fire plan and the inefficiency and inability of the players to work together. There were no environmental groups involved in a major way. The ESA as a law was not at fault.

This inefficiency is, in part, due to lack of adequate Congressional funding and a business-like attitude among the leadership. The most infamous environmental group in the southwest, the Center for Biological Diversity, has won over 80% of its lawsuits concerning the ESA. Most wins have been based on the US FWS inability to complete its job in a timely fashion or do its job correctly. The Center has won on procedural, not science, issues. It is unfortunate that a sound law should be so ridiculed and polarized, when the major problem is not in the wording itself, but the functioning of a government agency.

Myth # 3: The ESA is draconian.

In the democratic process, a law is always tested against very specific realities. The ESA must deal with hundreds of forest types and unique species requiring an open-minded learning process. Contrary to those who feel it needs to be discarded that learning process has occurred.

In the last 30 years, the ESA has nurtured the imagination of landowners, public officials and concerned citizens. In a recent **Nature,** the world's most prominent science journal, President Bush pointed out some of the new "tools" learned to decrease regulatory burdens: habitat conservation plans, conservation banking, voluntary agreements with landowners, and partnerships with states, tribes and nongovernmental organizations. We might add safe harbor agreements and land-use plans such as the Sonoran Desert Conservation Plan just passed by Tucson that includes wildlife corridors, some land purchases, and consideration of endangered wildlife. Unfortunately, neither party will confront the bigger problem of special favor politics.

Although recovery has been difficult, the survival of minimal populations has been very successful. In Arizona, the condor and black-footed ferret have survived near extinction. The southern bald eagle, though in danger once again with no critical habitat, has become the focus of active preservation programs. There is now an active program to monitor and protect jaguars. In Aravaipa Canyon, listed native fish have been protected from invasives by a small dam. Many of the plants listed have received enough attention that their minimal viable populations are secure.

New proposals, in addition to Critical Habitat, to make recovery more effective are needed. Congress has not discovered them nor passed new laws to encourage them. At this point, most work is to be found in the private sector and among NGOs. Wildlife corridors, allowing safe passage of species between protected areas are one of the most exciting conservation projects. It is crucial as global climate change alters the habitats of the southwest. I have included a series of recommendations concerning the ESA in hopes that they may reduce regulatory burdens and lawsuits and speed survival strategies and recovery programs.

Conclusions

The ESA has provides a table for all players to visit, participate and listen. No other law, except NEPA, provides this opportunity for citizen participation and oversight. Since the ESA concerns the ethical values of governance, it is importance to have a citizen forum. This good news is important and needs to balance the over-stated rhetoric that the ESA is either untouchably sacred or the devil incarnate.

The ESA is the only US law that sets aside habitat for heritage species in danger of extinction. I work in Africa, Mexico, and parts of Latin America. In Africa, coworkers always praise America for its ability to peacefully change governments with no bloodshed and assassinations. Then, they praise America for respecting its national heritage and protecting its habitats and species. Most Europeans come to America to see that heritage. In short, support of the ESA has global repercussions and the US, as world

leader, should be mindful. The protection of coral reefs or rainforests receives support from the US setting an example and support for the ESA.

Recommendations

The ESA process has been an imperfect framework. Issues of language and meaning, especially concerning Critical Habitat, are real and important. Here are a few recommendations to improve the functioning of the ESA.

A. Before the ESA is deemed satisfied for a particular project, Congress should be required to hold Committee hearings.

In this Arizona controversy and others, no committee hearings were held. Exempting a project from the ESA limits Section 7 (formal consultation) from adding new information, which may be helpful in resolving opposing views. Committee hearings constrain the desire of Congress to by-pass its own laws, show respect for local communities and state agencies, and reduces anger and bitterness.

B. If a Biological Opinion has been "predetermined" or deliberately based on non-biological information, a new BO should be required. The choice should not be discretionary.

C. All BOs should have a section on what data is missing or unavailable and its importance to survival and recovery.

Oddly, from my point of view as a scientist, these are rarely in BOs. Missing forestry data do not favor advocates nor opposition to the ESA. It depends on the circumstances. It does provide the public and line-officer with a better understanding of how sure his/her strategy to protect a species will work.

The 1993, Mt. Graham red Squirrel Recovery Plan, for instance, did not mention insect tree disease as a risk of extinction. This embarrassing omission left the agencies unprepared for the plague that killed over ten thousand trees in Critical Habitat. More emphasis on drought, tree stress and disease, and the prospects for a twenty-year drought might have motivated the agencies to take earlier actions to reduce the catastrophic fires and insect outbreaks that did occur.

D. A finer distinction between "Minimal Viable Habitat" and "Critical Habitat."

To provide more flexibility and less fear of the ESA, a smaller area of minimum viable habitat can be distinguished from critical habit in Section 4. Minimal viable habitat would have a no further destruction designation. It would be for survival, a minimal habitat to buffer decadal set backs from natural causes and provide the support for the population size required to survive. Critical habitat would be the habitat required for full recovery. Critical habitat would consider economic development and how severely the development might retard full recovery. Nevertheless, it could allow some economic development. (This closes the legalistic loophole called "friendly jeopardy.")

The jaguar situation in AZ/NM is perhaps a good illustration. The designation of critical habitat appears pre-mature to many because no male and female have ever been seen (only males). An area would become minimum viable habitat when a pair had been observed. The ecological friendly areas would have the looser designation (the new

critical habitat definition). This "modular" approach would allow minimal viable habitat to expand, if jaguar pairs ever showed up.

E. Improved inter-agency deadlines and efficiency

Perhaps the most difficult barrier is accountability and timeliness between agencies. They are, of course, in denial of this problem, a kind of conspiracy of optimism. Some kind of incentive and punishment system for too many law suits because of procedural errors, too many deadlines missed, use of mis-information or avoiding information, and adequate funding available based on more business-like contracts would help.