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**Testimony**

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Views on Fish and Wildlife Service's  
Biological Opinion Addressing  
Mt. Graham Astrophysical Facility

Statement of  
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Natural Resources Management Issues  
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Before the  
Subcommittee on National Parks and  
Public Lands  
Committee on Interior and Insular Affairs  
and the  
Subcommittee on Fisheries and  
Wildlife Conservation and the  
Environment  
Committee on Merchant Marine  
and Fisheries  
House of Representatives



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Dear Messrs. Chairmen and Members of the Subcommittees:

I am pleased to appear before you today to discuss our findings concerning the biological opinion rendered by the Department of the Interior's Fish and Wildlife Service (FWS) on the Mt. Graham astrophysical project. Such opinions are required by the Endangered Species Act when federal agencies propose actions that might jeopardize endangered species. This opinion found that the University of Arizona could locate three telescopes on Mt. Graham's Emerald Peak without jeopardizing the continued existence of the Mt. Graham red squirrel, a federally listed endangered species, if terms of a "reasonable and prudent alternative" offered by the FWS were met. With this biological opinion in hand, the Congress enacted the Arizona-Idaho Conservation Act of 1988, which mandated federal agency approval of the project's construction in accordance with the terms of the FWS alternative.

My remarks today are based on work we performed at the request of Senators Dennis DeConcini and John McCain. They asked us to determine (1) whether the FWS biological opinion, in particular the Emerald Peak development alternative, was prepared inconsistent with both the Endangered Species Act, as amended, and FWS' implementing regulations and (2) if so, whether the conclusions set forth in the opinion were affected by any of the inconsistencies we observed.

In responding to these questions, I believe it would be useful to state at the outset that passage of the Arizona-Idaho Conservation Act of 1988 moots the question concerning whether the biological opinion met Endangered Species Act and related regulatory standards because it declared those standards to be satisfied. However, absent the 1988 act and based on the information available to us, we believe that the government would have had difficulty in demonstrating to a court that the Emerald Peak development alternative was prepared in accordance with

Endangered Species Act requirements for two principal reasons. First, the alternative is not supported by prior biological studies of Mt. Graham. These studies indicated that any development on Emerald Peak posed an unacceptable risk to the red squirrel's survival. Second, the FWS Regional Director who mandated inclusion of the alternative in the opinion informed us that he had no additional biological studies to clearly support the Emerald Peak development alternative and made his decision, in part, on the basis of nonbiological considerations. These concerns, together with recent evidence indicating that the Mt. Graham red squirrel's prospects have worsened since the FWS opinion was issued, lead us to believe that an updated biological opinion is warranted.

BACKGROUND ON THE MT. GRAHAM  
BIOLOGICAL OPINION

The FWS biological opinion addressing the Mt. Graham red squirrel arose from an application by the University of Arizona to the Forest Service for a permit to build a 7-telescope astrophysical facility atop Mt. Graham's Emerald and High Peaks. While deemed by the university to be an ideal location for an astrophysical facility, the two peaks are situated in the only known habitat of the Mt. Graham red squirrel, a federally listed endangered species. The facility is proposed to be located in the 2,000 acres that constitutes the squirrel's critical habitat.<sup>1</sup> The Endangered Species Act required the FWS to render a biological opinion on whether the facility would likely "jeopardize

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<sup>1</sup>The Endangered Species Act defines "critical habitat" as the specific areas within the geographic area occupied by a species at the time it is listed as endangered that have those physical or biological features essential to conserve the species and that may require special management consideration or protection.

the continued existence"<sup>2</sup> of the species or result in the destruction or adverse modification of its critical habitat.

The FWS July 1988 biological opinion concluded that the destruction of habitat and the increased human presence necessary to place an astrophysical facility on both peaks would jeopardize the red squirrel's continued existence. When rendering such an opinion, the Endangered Species Act requires the FWS, where possible, to suggest "reasonable and prudent alternatives" to the proposed action that can be taken to avoid the likelihood of jeopardizing the species' continued existence. FWS biologists initially proposed two such alternatives: (1) relocating the facility outside the Mt. Graham area and (2) locating the facility on the more degraded High Peak. The FWS Regional Director subsequently mandated inclusion of a third alternative that located three telescopes, requiring 8.6 acres, on Emerald Peak and deferring consideration of the remaining telescopes. This third alternative ultimately provided the basis for the Congress' decision to approve the project.

The third alternative required a number of actions to mitigate the loss of red squirrel habitat resulting from the project's construction. These actions centered on restoring damaged habitat in the High Peak area by closing and reforesting roads and closing the Emerald Peak area to recreation and other uses. The Arizona-Idaho Conservation Act required the Forest Service to approve the facility's construction on Emerald Peak in accordance with the conditions set forth in the FWS Emerald Peak development alternative.

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<sup>2</sup>This is defined in the FWS regulations as an action that reasonably will be expected to reduce appreciably the likelihood of both the survival and recovery of an endangered species in the wild.

THE SOUNDNESS OF THE EMERALD PEAK  
DEVELOPMENT ALTERNATIVE IS QUESTIONABLE

The Endangered Species Act and FWS regulations require FWS to "use the best scientific and commercial data available" in rendering a biological opinion. Our work has shown that a considerable amount of biological information available at the time the FWS rendered its opinion indicated that constructing the facility on Emerald Peak would further jeopardize the squirrel's survival. Although the FWS Regional Director considered the available information in reaching his decision, he ultimately weighed an increased risk to the species with his perception of the facilities' significance, among other things, and decided to include the third alternative allowing construction of three telescopes on Emerald Peak.

Federal and State Reports  
Had Raised Biological Concerns

Prior to the FWS biological opinion, several federal and state reports had concluded that constructing the facility on Emerald Peak presented an unacceptable risk to the red squirrel's survival. For example, a 1985 Arizona Game and Fish Department study of the Mt. Graham red squirrel conducted for the FWS recommended that no habitat-altering activities be allowed in the upper elevations of Mt. Graham where the facility is planned. The study viewed the removal of the forest stands upon which the squirrel depends as the greatest threat to the species' existence.

Similarly, an August 1987 FWS evaluation of astrophysical developments in the Mt. Graham area noted that "given the [squirrel's] current severely endangered status, the loss of even a few acres could be critical to the survival and recovery of this species." Regarding Emerald Peak, the evaluation stated that no

alternative could be developed that would remove the jeopardy to the species.

A February 1988 biological assessment of the impact of astrophysical development on Mt. Graham conducted by the Forest Service also raised serious concerns about the effect of development on the red squirrel's survival. It concluded that any change to the amount of habitat was significant because the number of squirrels was so small and because the "threshold of extinction," that is, the minimum number of squirrels needed to survive, was not known. It further concluded, "Since the population size and the total habitat available are so small, the margins of safety are also small. The importance of each acre of habitat lost increases as the population approaches this threshold. At the threshold, one or two animals or small amounts of acreage can make a difference."

The FWS draft designation of critical habitat<sup>3</sup> for the Mt. Graham red squirrel, prepared prior to the biological opinion, also stressed the extreme importance of Mt. Graham's spruce and fir forest. It stated that the proposed astrophysical facility on Mt. Graham could be a factor that would adversely affect the squirrel's chances of survival because it lies in the heart of the species' best habitat. The University of Arizona had requested the FWS to except the facility site from the area to be designated as critical habitat; however, FWS concluded in its final designation of critical habitat that such an exception would render the squirrel population more vulnerable. Moreover, FWS stated that because of the squirrel's low population level, no reduced protection of important habitats could be supported biologically.

Finally, the July 1988 biological opinion states that the project on Emerald Peak would make about 47 acres permanently

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<sup>3</sup>FWS officially designated critical habitat on January 5, 1990.

unsuitable for squirrel habitat because opening the tree canopy exposes many adjoining acres to heat and drying, thereby destroying food supplies the squirrel needs to survive the winter.

FWS' Biological Opinion Based on  
Other Than Biological Information

According to the FWS Regional Director, while he was aware of the information contained in the available federal and state reports, he was not convinced by it. He told us that he could not conclude that a small habitat loss such as that associated with the Emerald Peak alternative would appreciably reduce the chances of the squirrel's survival.

The FWS Regional Director also said that he considered several other factors in reaching his decision. These included (1) the need to make an expeditious decision, (2) the university's vigorous insistence on the Emerald Peak area as the only viable site for the facility, (3) his belief that the university would probably win in a court of law, and (4) his perception that one of the telescopes represents a world-class scientific development. He continued that he would not have authorized development on Emerald Peak if the proposal was to build housing or to use the area for some other ordinary use. However, weighing his perception of the facility's significance against the potential for increased risk to the species, he was willing to permit the facility to be constructed on Emerald Peak. He said the challenge of the Endangered Species Act is to devise compromises that accommodate both needed projects and endangered species.

We have several concerns about the FWS Regional Director's decision. First, the alternative of locating three telescopes on Emerald Peak was not supported by the FWS biologists preparing the biological opinion. According to the FWS Regional Director and FWS biologists, as well as Forest Service and university officials, the

alternative resulted from a meeting between the Regional Director, Regional Forester, and university officials wherein the university officials rejected the alternatives of locating the facility either outside the Mt. Graham area or on High Peak. The FWS biologists informed us that they disagreed with the Regional Director's decision to add the third alternative and did so only at his specific direction.<sup>4</sup> They have since stated to us that, in their opinion, constructing the facility on Emerald Peak is not biologically supportable and will likely increase the threat to the squirrel, a species on the brink of extinction.

Second, the FWS Regional Director informed us that he had no additional biological studies to clearly support the Emerald Peak development alternative. Since this alternative was inconsistent with his own field biologists' views and with the conclusions of prior biological studies, we believe it would have been prudent to develop this support.

Lastly, we do not believe that it is appropriate for an FWS official to consider nonbiological information in reaching an opinion that could jeopardize a species' existence. In a report issued 11 years ago on management improvements needed to the FWS endangered species program, we stated that the program manager considered it his responsibility to decide which species to save and which ones to render extinct.<sup>5</sup> Last year we reported that

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<sup>4</sup>The FWS biologists initially made their views publicly known in depositions taken in conjunction with a recent court action brought by the Sierra Club Legal Defense Fund (Mt. Graham Red Squirrel, et. al., Plaintiffs/Appellees vs. Clayton Yeutter, et. al., Defendants, and State of Arizona Board of Regents, University of Arizona, Defendant-Intervenor/Appellant). In our opinion, the statements made in these depositions were not sufficiently clear for us to determine their precise views. Consequently, we conducted lengthy interviews with the biologists. The statements we make in this testimony are based on these interviews.

<sup>5</sup>Endangered Species--A Controversial Issue Needing Resolution (CED-79-65, July 2, 1979).



nonbiological considerations led another FWS official to deny listing of a species as endangered.<sup>6</sup> We believe now as we did then that biological decisions should be based on biological information. Weighing the risk of a species' extinction with the benefits of a project is a policy decision and should be left to a high-level Endangered Species Committee<sup>7</sup> to which the act assigns responsibility for granting exemptions to the act's protective provisions. The act also establishes a process for federal agencies or project applicants to initiate exemption reviews by the committee.

Alternatively, the Congress, through legislation, can exempt a project from the protective provisions of the Endangered Species Act. In passing the act authorizing construction of the astrophysical facility on Emerald Peak, however, the Congress concluded that the Endangered Species Act's requirements had been satisfied for three telescopes and that no exemption was necessary. It did so largely on the basis of the FWS biological opinion that was based, in part, on the Regional Director's perception that the facility's benefits outweighed the increased risk to the endangered Mt. Graham red squirrel.

RED SQUIRREL'S STATUS HAS  
BECOME MORE PRECARIOUS

Since the biological opinion was rendered and the act directing approval of the facility on Emerald Peak was passed, the status of the Mt. Graham red squirrel has become more precarious.

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<sup>6</sup>Endangered Species: Spotted Owl Petition Evaluation Beset by Problems (GAO/RCED-89-79, Feb. 21, 1989).

<sup>7</sup>Members are the Secretaries of the Interior, the Army, and Agriculture; the Chairman of the Council of Economic Advisers; the Administrators of the Environmental Protection Agency and the National Oceanic and Atmospheric Administration; and a representative from the affected state.

Available data suggest that squirrel numbers have dropped from about 215 in 1988 to between 132 and 146 in May 1990. Although the exact cause of the population decline is not known with certainty, biologists we talked with generally agree that the reduction in available food sources, particularly spruce and fir tree cones, is a major contributing factor. They contend that removing trees that produce these cones in order to build the astrophysical facility is not biologically sound.

Moreover, the 1988 act authorizing construction of the facility delayed by at least a decade one of the long-term actions intended to mitigate the loss of red squirrel habitat. This mitigation measure would have involved the closure of 14 summer residences and a church camp in the squirrel's habitat outside the astrophysical area. The biologists believe that removing this human presence and reclaiming the area may enhance the squirrel's ability to intermingle and seek food. However, the 1988 act required that the existing summer residences and church camp remain open for at least 10 years while additional data are collected on their impact on the red squirrel.

FWS, Forest Service, and state government biologists pointed out that the other major mitigating action required by the biological opinion, that is closing and reforesting roads in the High Peak area, also exchanges possible long-term improvements for an immediate loss of a portion of the species' critical habitat. These biologists stated that because reforestation of the mature spruce and fir stands that constitute the red squirrel's critical habitat will take between 150 and 400 years, the squirrel may not survive the immediate deprivation of habitat to benefit from the long-term growth that may ultimately occur.

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In conclusion, we believe that the soundness of the Emerald Peak development alternative is questionable. That the squirrel's prospects have worsened since the opinion was rendered and the act was passed is another factor raising questions about the soundness of the alternative.

From our vantage point, we believe that the Congress faces a policy decision. It can allow construction of the facility on Emerald Peak to continue as planned. Alternatively, it can consider mandating the FWS to update its biological opinion in light of the designation of the squirrel's critical habitat, the significant decline in the population, and our concerns about the process used to arrive at the July 1988 biological opinion. This may require additional legislation to hold construction in abeyance until a new biological opinion is rendered.

Messrs. Chairmen, this concludes my prepared remarks. I will be pleased to respond to any questions you or other members of the Subcommittees may have at this time.