

CRS Report for Congress

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The Endangered Species Act and “Sound Science”

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Summary

The Endangered Species Act is a strong statute enacted to save and recover dwindling species. Decisions to list species are to rest only on the best available scientific data, and science plays a part in other important aspects of the Act. Yet many times the best available science may be sketchy. Recent situations involving economic and social conflicts over resources have resulted in a renewed focus on the use of science under the ESA and several proposals are before Congress. This report provides background on the issues and will be updated as circumstances warrant.

The Endangered Species Act (ESA)¹ was enacted to conserve listed species – to bring them to the point where they do not need the special protections of the Act² – and to protect the ecosystems of which dwindling species are a part.³ Dwindling species often reflect endangered resources or ecosystems. Recent situations⁴ in which there have been economic and social disruptions as a result of listings under the ESA have resulted in a renewed focus on the protective posture of the Act⁵ and on the use of science under it. All agree that ESA decisions should be based on “sound science,” but that phrase can mean different things to different people.

¹ Pub. L. No. 93-205, 87 Stat. 884, 16 U.S.C. §§1531 *et seq.*

² Section 3(3), 16 U.S.C. §1532.

³ Section 2(b), 16 U.S.C. §1531(b).

⁴ See, e.g. CRS Report RL31098, *Klamath River Basin Issues: An Overview of Water Use Conflicts*, which discusses the conflicts over water use in that area.

⁵ See *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978).

The ESA requires that decisions to list a species be made “solely on the basis of the best scientific and commercial data available” There is no elaboration on the meaning of this phrase in the law itself or in agency regulations. The decision of whether to list a species or not has been analogized to diagnosing and treating cancer: whether a patient has cancer should be a strictly scientific decision; other factors can be considered in deciding how to treat the cancer. Similarly, science alone is to be the basis for listing decisions, but other factors may be considered in post-listing decisions and action. Moreover, science can also play a role in post-listing decisions and procedures under the ESA: 1) science informs the designation of critical habitat for listed species; 2) science is the basis for the evaluations during the consultation process of whether a proposed agency action may jeopardize the continued existence of a species or result in destruction of critical habitat, and assists in the development of suggestions for “reasonable and prudent alternatives” to a proposed agency action so as to avoid jeopardy; 3) it is used to develop habitat conservation plans and incidental take permits under §10 of the Act; and 4) it is used to develop recovery plans to bring the species to the point where the protections of the Act are no longer needed.

The word “solely” was added in the 1982 amendments to the ESA⁶ to clarify that the determination of endangered or threatened status was intended to be a biological decision made without reference to economic or other “non-biological” factors. A committee report discussed why listing was to be solely a scientific decision and also interpreted “commercial data” as meaning trade data.⁷ The Conference report in 1982 confirms that

⁶ Act of October 13, 1982, P.L. 97-304, 96 Stat. 1411.

⁷ In discussing the addition of the word “solely,” H.R. Rep. No 567, 97th Cong., 2d Sess. (1982) at 19-20 stated:

... The principal purpose of the amendments to Section 4 is to ensure that decisions pertaining to the listing and delisting of species are based solely upon biological criteria and to prevent non-biological considerations from affecting such decisions. To accomplish this and other purposes, Section 4(a) is amended in several instances.

Section 4(b) of the Act is amended in several instances by Section 1(a)(2) of H.R. 6133. First, the legislation requires that the Secretary base his determinations regarding the listing or delisting of species “solely” on the basis of the best scientific and commercial data available to him. The addition of the word “solely” is intended to remove from the process of the listing or delisting of species any factor not related to the biological status of the species. The Committee strongly believes that economic considerations have no relevance to determinations regarding the status of species and intends that the economic analysis requirements of Executive Order 12291, and such statutes as the Regulatory Flexibility Act and the Paperwork Reduction Act not apply. The committee notes, and specifically rejects, the characterization of this language by the Department of the Interior as maintaining the status quo and continuing to allow the Secretary to apply Executive Order 12291 and other statutes in evaluating alternatives to listing. The only alternatives involved in the listing of species are whether the species should be listed as endangered or threatened or not listed at all. Applying economic criteria to the analysis of these alternatives and to any phase of the species listing process is applying economics to the determinations made under Section 4 of the Act and is specifically rejected by the inclusion of the word “solely” in this legislation.

Section 4(b) of the Act, as amended, provides that listings shall be based solely on the basis of the best “scientific and commercial data” available. The Committee did not change this information standard because of its interpretation of the word “commercial” to allow the use of trade data. Retention of the word “commercial” is not intended, in any way, to authorize the use

(continued...)

it was the intent of both chambers that economic factors not play a role in the designation and listing of species for protection.⁸

However, given that the Act addresses species that almost by definition are likely to be rare, there may be little or no information on many of the species facing extinction, and insufficient personnel or funds available to conduct studies on many species, especially those with little charisma or known economic value. What should be done in such instances? Should decisions be weighted in favor of the species, or perhaps irrigators, ranchers, or builders? If species are favored, should all species in all cases enjoy protection, or should only certain species that meet stated criteria be given the benefit of the doubt? The Act does not expressly address this question, but considering the strongly protective purpose of the Act – to save and recover species – with the wording of “best ... data available,” arguably the Act intends that all dwindling species should be given the benefit of the doubt and a margin of safety provided. Many scientists feel this is the appropriate stance – that we should apply the “precautionary principle” to “save all the pieces” since we lack the knowledge to pick and choose among species.

This is the position taken in the *FWS Handbook* at pages 1-6, which states that efforts should be made to develop information, but if a biological opinion must be rendered promptly, it should be based on the available information, “giving the benefit of the doubt to the species,” with consultation possibly being reinitiated if additional information becomes available. This phrase is drawn from H.R. Conf. Rep. No 697, 96th Cong., 2d Sess. 12 (1979), which stated the “best information available” language was intended to allow the FWS to issue biological opinions even when inadequate information was available, rather than being forced to issue negative opinions, thereby unduly impeding proposed actions. But the committee report also states that if a biological opinion is rendered on the basis of inadequate information, the federal agency proposing

⁷ (...continued)

of economic considerations in the process of listing a species.

⁸ H.R. Rep. No 835, 97th Cong., 2d Sess. 19 (1982) states:

Section 2 of the Conference substitute amends section 4 of the Act in several ways. The principal purpose of these amendments is to ensure that decisions in every phase of the process pertaining to the listing or delisting of species are based solely upon biological criteria and to prevent non-biological considerations from affecting such decisions.

The Committee of Conference (hereinafter the Committee) adopted the House language which requires the Secretary to base determinations regarding the listing or delisting of species “solely” on the basis of the best scientific and commercial data available to him. As noted in the House Report, economic considerations have no relevance to determinations regarding the status of species and the economic analysis requirements of Executive Order 12291, and such statutes as the Regulatory Flexibility Act and the Paperwork Reduction Act, will not apply to any phase of the listing process. The standards in the Act relating to the designation of critical habitat remain unchanged. The requirement that the Secretary consider for listing those species that states or foreign nations have designated or identified as in need of protection also remains unchanged.

The Committee adopted, with modifications, the Senate amendments which combined and rewrote section 4(b) and (f) of the Act to streamline the listing process by reducing the time periods for rulemaking, consolidating public meeting and hearing requirements and establishing virtually identical procedures for the listing and delisting of species and for the designation of critical habitat.

an action has the duty to show its actions will not jeopardize a species and a continuing obligation to make a reasonable effort to develop additional information, and that the statutory language “continues to give the benefit of the doubt to the species.”

Recent attention has focused on the use of science in listings, but also in jeopardy determinations and the development of reasonable and prudent alternatives, and especially on how to handle situations when the “available” science is not extensive: what new requirements might be imposed and whether some form of peer review of the science underlying decisions might be advisable. Some suggest that considerations other than species conservation should prevail; still others seek a change in the current posture of the law in this regard by changing the role of “science.” These considerations are complicated by the fact that acquiring more complete science may be extremely costly and time-consuming in connection with many lesser-known species; for example, a requirement for certain data before listing could occur might result in many fewer listings being completed.

Several bills have required some form of peer review, which may encounter practical difficulties. For example, there may be few (or no) people in the world knowledgeable about some species and these specialists often have other duties and may not be available (or willing) to serve governmental regulators – in some cases constituting peer review panels could be difficult. Achieving peer review by impartial, unbiased scientists may also be an issue if the listing or action being reviewed could involve major economic factors in which the scientists have an interest. The press has been replete with accusations of “bad” science from all sides.

The Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) developed a joint policy on Information Standards Under the Endangered Species Act⁹ that might provide useful information on this issue. Under this policy, FWS and NMFS receive and use information from a wide variety of sources, including individuals. Information may range from the informal – oral or anecdotal – to peer reviewed scientific studies, and hence the reliability of the information can also be variable. Service biologists are to impartially review and evaluate all information for purposes of listing, consultation, recovery, and permitting actions, and to ensure that any information used by the Services to implement the Act is “reliable, credible, and represents the best scientific and commercial data available.” Service biologists are to document their evaluations of all information and, to the extent consistent with the use of the best scientific and commercial data available, use primary and original sources of information as the basis of recommendations. In addition, documents developed by Service biologists will be reviewed to “verify and assure the quality of the science used to establish official positions, decisions, and actions”

Another joint policy notes that in addition to the public comments received on proposed listing rules and draft recovery plans, the Services will also formally solicit expert opinions and peer review to ensure the best biological and commercial information. With respect to listing decisions, the agencies will solicit the expert opinions of three specialists and summarize these in the record of final decision. Special independent peer

⁹ 59 Fed. Reg. 34271 (July 1, 1994).

review can also be used when it is likely to reduce or resolve an unacceptable level of scientific uncertainty.¹⁰

Many of these issues were also studied, described, and discussed in a publication of the National Research Council, *Science and the Endangered Species Act*.¹¹ The Council noted that under the current balance, “the structure of hypothesis testing related to listing and jeopardy decisions can make it more likely for an endangered species to be denied needed protection than for a non-endangered species to be protected unnecessarily”¹²

Judicial review can help ensure that agency decisions and their use of scientific data are not “arbitrary or capricious” and that regulations are rationally related to the problems causing the decline of a species, especially when other interests are adversely affected. Courts that have considered the “best data available” language have held that an agency is not obliged to conduct studies to obtain missing data,¹³ but cannot ignore available biological information,¹⁴ especially if the ignored information is the most current,¹⁵ nor treat one species differently from the way other similarly-situated species are treated.¹⁶ The agency may not postpone listing a dwindling species until it is on the brink of extinction in reliance on possible, but uncertain, future actions of an agency.¹⁷ A court also has said that “the ‘best scientific and commercial data available’ is not a standard of absolute certainty, and [is] a fact that reflects Congress’ intent that the FWS take conservation measures before a species is ‘conclusively’ headed for extinction.”¹⁸ If the FWS does not base its listings on speculation or surmise, or disregard superior data, the fact that the studies it does rely on are imperfect does not undermine those authorities as the best scientific data available -- “the Service must utilize the best scientific ... data *available*, not the best scientific data *possible*.”¹⁹

On the other hand, one case struck down regulations that totally banned duck hunting in an area in order to protect one species of duck.²⁰ Another court stated that the bar the FWS has to clear in terms of evidence is very low, but it must at least clear it and, in the context of issuance of “Incidental Take Permits” under §10 of the Act, this means the agency must demonstrate that a species is or could be in an area before regulating it, and

¹⁰ 59 Fed. Reg. 34270 (July 1, 1994).

¹¹ National Academy Press, Washington, D.C. 1995.

¹² *Ibid.*, at 15.

¹³ Southwest Center for Biological Diversity v. Babbitt, 215 F.3d 58 (D.C. Cir. 2000).

¹⁴ Connor v. Burford, 848 F.2d 1441 (9th Cir. 1988).

¹⁵ Southwest Center for Biological Diversity v. Babbitt, 926 F. Supp. 920 (D.C. Ariz. 1996).

¹⁶ *Ibid.*

¹⁷ Biodiversity Legal Foundation v. Babbitt, 943 F. Supp. 23 (D. D.C. 1996).

¹⁸ Defenders of Wildlife v. Babbitt, 958 F. Supp. 670, 680 (D. D.C. 1997).

¹⁹ Building Industry Ass’n of Sup. Cal. v. Norton, 247 F.3d 1241, 1246-1267 (D.C. Cir. 2001), *cert. denied* 2002 U.S. LEXIS 479.

²⁰ Connor v. Andrus, 453 F. Supp. 1037 (W.D. Tx. 1978).

must establish the causal connection between the land use being regulated and harm to the species in question. Mere speculation as to the potential for harm is not sufficient.²¹

Several bills have been introduced in the 107th Congress seeking to clarify the role of science in ESA decisions. H.R. 2829/S. 1912 would require that greater weight be given to scientific or commercial data that is empirical or has been field-tested or peer-reviewed, while H.R. 3705/H.R. 4840 would modify the listing petition process and establish independent review boards. H.R. 4840 would also require collection of field data in all cases before listing could occur.

²¹ *Arizona Cattle Growers Association v. United States Fish and Wildlife Service*, 273 F.3d 1229 (9th Cir. 2001).