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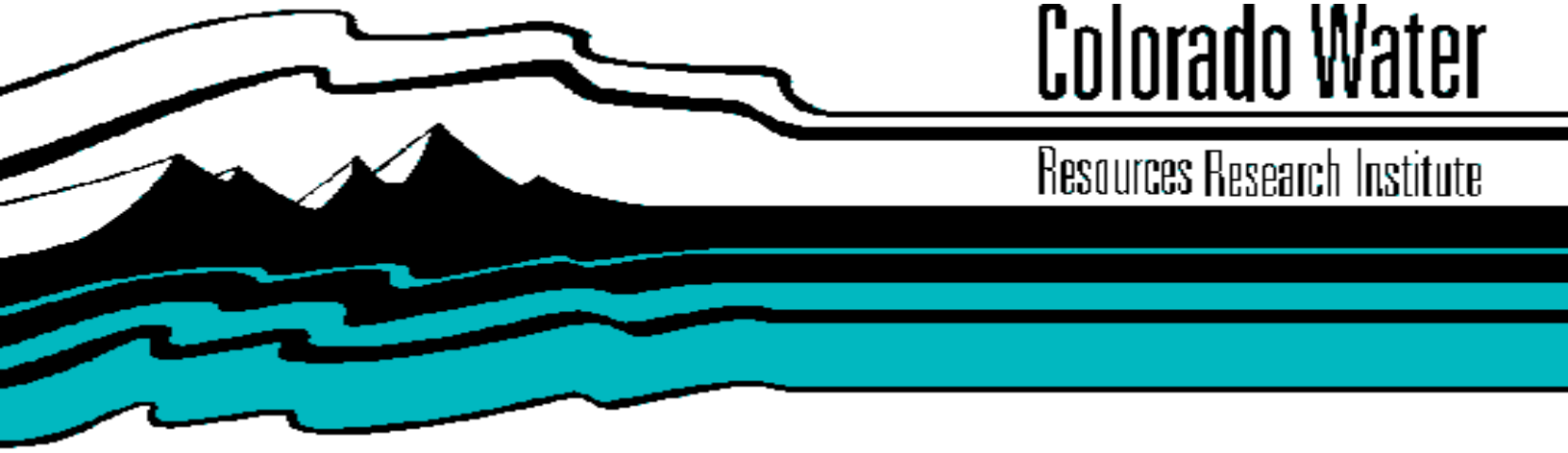

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THE ENDANGERED SPECIES ACT AND WATER DEVELOPMENT WITHIN THE SOUTH PLATTE BASIN

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I. Introduction

Western water development is in the throes of change. While an expanding population increases the demand for water, water storage projects are more difficult to build. The federal government is withdrawing from its traditional role in financing and building large projects. Environmental considerations in the siting of such projects and the impact of these projects on other values further complicate such development. A major example of changes underway substantially affecting traditional water development is provided by the Endangered Species Act (ESA).[1]

The ESA seeks to provide federal protection for threatened and endangered animal and plant species. Its major provision prohibits federal actions the effect of which is likely to adversely affect such species.[2] Because some kind of federal action is almost always involved in water development, this provision has had a considerable impact.

In this report, the effect of the ESA on water development in Colorado is considered. Although the focus of our report is water development within the South Platte River Basin we necessarily address the effects on water development within the upper Colorado River basin. In what follows (Part II), we first set out the factual setting for our subsequent legal analysis.

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[1] Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884, 16 U.S.C. §§ 1531-1543.

[2] 16 U.S.C. SS 1536 (a)(2).

The Platte River Basin is described, including the whooping crane habitat in central Nebraska and the proposed major water storage projects in Colorado that have been found to be in conflict with the maintenance of that habitat. Next (Part III), we turn to a consideration of the Endangered Species Act. The legislative evolution of this law is presented at some length. In Part IV we address the manner in which the ESA has been applied to water development on the Colorado River and the Platte River.

The core of the report is contained in Part V where several important legal issues are explored. Our primary focus is on Section 7 of the Act. In this section we consider the reach of the ESA as expressed in the Act itself, as interpreted by the courts, and as implemented by the concerned federal agencies--especially the United States Fish and Wildlife Service (FWS). To the extent feasible we consider these matters in the context of water development and, in particular, development in the Colorado and Platte Basins. Our purpose in this investigation is to explore the legal requirements of the ESA as well as the legal limits that must be considered. We thus consider what activities are subject to the ESA, what is the proper basis for determining if these activities conflict with provisions of the ESA, what must be done to cure such conflicts, and what limits on curative requirements may exist.

In Part VI we consider the broader purposes of the ESA. In

this context, we discuss the provisions of the ESA which authorize and require such affirmative approaches to endangered species protection. We then review the efforts presently underway to develop a broad-based, cooperative approach to resolving conflicts between water development and endangered species protection.

Finally, we sum up our findings in Part VII. Major conclusions of our research are that the ESA has an extraordinarily broad reach, that because of the many conflicts resulting from that reach and the extreme uncertainties involved in its application, its scope has been narrowed somewhat in recent years, and that its potency for preventing development should be redirected to seek more broad-based solutions.

II. The Setting

A. The South Platte Basin

The South Platte River and its tributaries drain the most populous region of Colorado as well as one of its most productive agricultural areas. Total surface water supplies in the South Platte River basin in Colorado average approximately 1.8 million acre-feet per year, with about 450,000 acre-feet coming from transbasin imports[3]. Reliable surface flows in the South Platte

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[3]Woodward-Clyde Consultants, South Platte River Basin Assessment Report (August 1982), pp. 26-27; Colorado Department of Natural Resources, Colorado Water Study: Background Volume -- Draft (September 1981), p. 7.

basin were fully appropriated by the 1890's. Water availability was increased first by storage projects, then transbasin diversions and groundwater development. It is estimated that consumptive water uses in the basin now total about 1.5 million acre-feet per year.[4] Although basin outflow averages roughly 300,000 acre feet per year, the year-to-year variation is extreme, ranging--for example--from effectively no outflow in 1978 to over 1 million acre-feet in 1973.[5] Irrigation accounts for 82.5 percent of the water consumption in the South Platte basin; municipal and industrial uses represent about 15 percent of total consumption.[6]

B. Proposed Water Storage Projects

There is considerable interest in building additional storage capacity along the South Platte to make available supplies currently leaving the basin. Under the South Platte River Compact, Colorado must assure an average flow of 120 cubic feet per second into Nebraska between April 1 and October 15 of each year.[7] Otherwise no significant restrictions exist.[8] Available undeveloped streamflows vary depending upon the point along the river where they are measured. Estimates of the annual undeveloped streamflows between 1953 and 1978 at several gauging

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[4]South Platte River Basin Assessment Report, supra note 3, p. 26.
[5]South Platte River Basin Assessment Report, supra note 3, Table 4-5, Annual Historical Undeveloped Streamflows at Julesberg.
[6]Colorado Water Study, supra note 3, Table 2, p. 8.
[7]South Platte River Compact, Article IV.
[8]Special provision is made for Lodgepole Creek which actually begins in Nebraska and flows into the South Platte River in Colorado. Id., Article III.

stations on the South Platte are shown in Table 1.

However, two proposed projects within the South Platte basin are being held up because of expected impacts on an important whooping crane habitat along a 53 mile reach of the Platte River in central Nebraska (see map, Figure 1). Riverside Irrigation District and Public Service Company of Colorado (PSC) plan to build a reservoir with a capacity of 60,000 acre-feet on Wildcat Creek, a tributary of the South Platte, near the town of Brush, Colorado. PSC would use its share of the stored water for the Pawnee Power Project. Riverside would use its water to supplement present water deliveries. The U.S. Fish and Wildlife Service (FWS) has determined that the 11,000 acre-feet per year depletion of flows that would result from this project is likely to jeopardize the endangered whooping crane.[9] Issuance of a required permit under Section 404 of the Clean Water Act[10] has been made contingent on the performance of certain habitat improvement measures in the crane habitat in Nebraska.[11]

The second project--the Narrows--is proposed to be built by the U.S. Bureau of Reclamation (BOR). The project site is on the South Platte River, about 7 miles northwest of Fort Morgan,

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[9]Letter from Don W. Minnich, Regional Director, U.S. Fish and Wildlife Service to Colonel V. D. Stipo, District Engineer, U.S. Corps of Engineers, April 12, 1982, p. 4 [hereinafter Wildcat Biological Opinion].

[10]33 U.S.C § 1344.

[11]Wildcat Biological Opinion, supra note 9, pp. 14-15.

Table 1. ANNUAL HISTORICAL UNDEVELOPED STREAMFLOWS AT KEY GAGING STATIONS ON THE SOUTH PLATTE RIVER

Undeveloped Streamflow (Acre-Feet)

Water Year	Waterton	Denver	Henderson	Kersey	Weldona	Balzac	Julesburg
1953	1,300	1,300	1,300	1,300	1,300	1,300	97,420
1954	0	0	0	0	0	0	66,130
1955	0	0	0	0	0	0	26,520
1956	0	0	0	0	0	0	11,100
1957	1,900	240,900	269,900	269,900	269,900	269,900	312,840
1958	165,200	207,300	260,400	425,070	425,070	425,070	605,790
1959	3,800	52,500	52,500	94,790	94,790	94,790	190,070
1960	21,500	59,370	59,370	59,370	59,370	59,370	144,700
1961	7,600	135,800	149,800	195,160	195,160	195,160	259,480
1962	41,800	202,100	257,700	441,210	441,210	441,210	542,950
1963	2,700	39,220	39,220	39,220	39,220	39,220	137,360
1964	0	0	0	0	0	0	48,630
1965	60,800	194,000	194,000	194,000	306,780	306,780	350,590
1966	8,800	68,700	68,700	180,300	195,430	195,430	297,120
1967	4,100	83,260	83,260	83,260	83,260	83,260	179,560
1968	0	0	0	0	0	0	110,660
1969	9,800	300,230	300,230	300,230	300,230	300,230	394,100
1970	202,400	517,100	628,900	651,800	651,800	651,800	746,890
1971	19,800	185,400	298,100	470,490	470,490	470,490	528,060
1972	15,600	75,000	75,000	75,000	75,000	75,000	127,230
1973	210,200	561,700	695,800	918,770	918,770	918,770	1,033,320
1974	10,700	201,000	278,000	318,250	318,250	318,250	416,530
1975	7,800	106,950	106,950	106,950	106,950	106,950	161,070
1976	6,200	15,600	15,600	15,600	15,600	15,600	77,320
1977	0	0	0	0	0	0	17,210
1978	0	0	0	0	0	0	0[1)]
1953-1978 Average	30,800	125,000	147,000	186,000	191,000	191,000	265,000
1965-1978 Average	39,700	165,000	196,000	237,000	246,000	246,000	317,000

1) Zero streamflow at Julesburg after subtracting transbasin import return flows from the Denver Wastewater Treatment Plant.

Source: South Platte River Basin Assessment Report, Table A-5

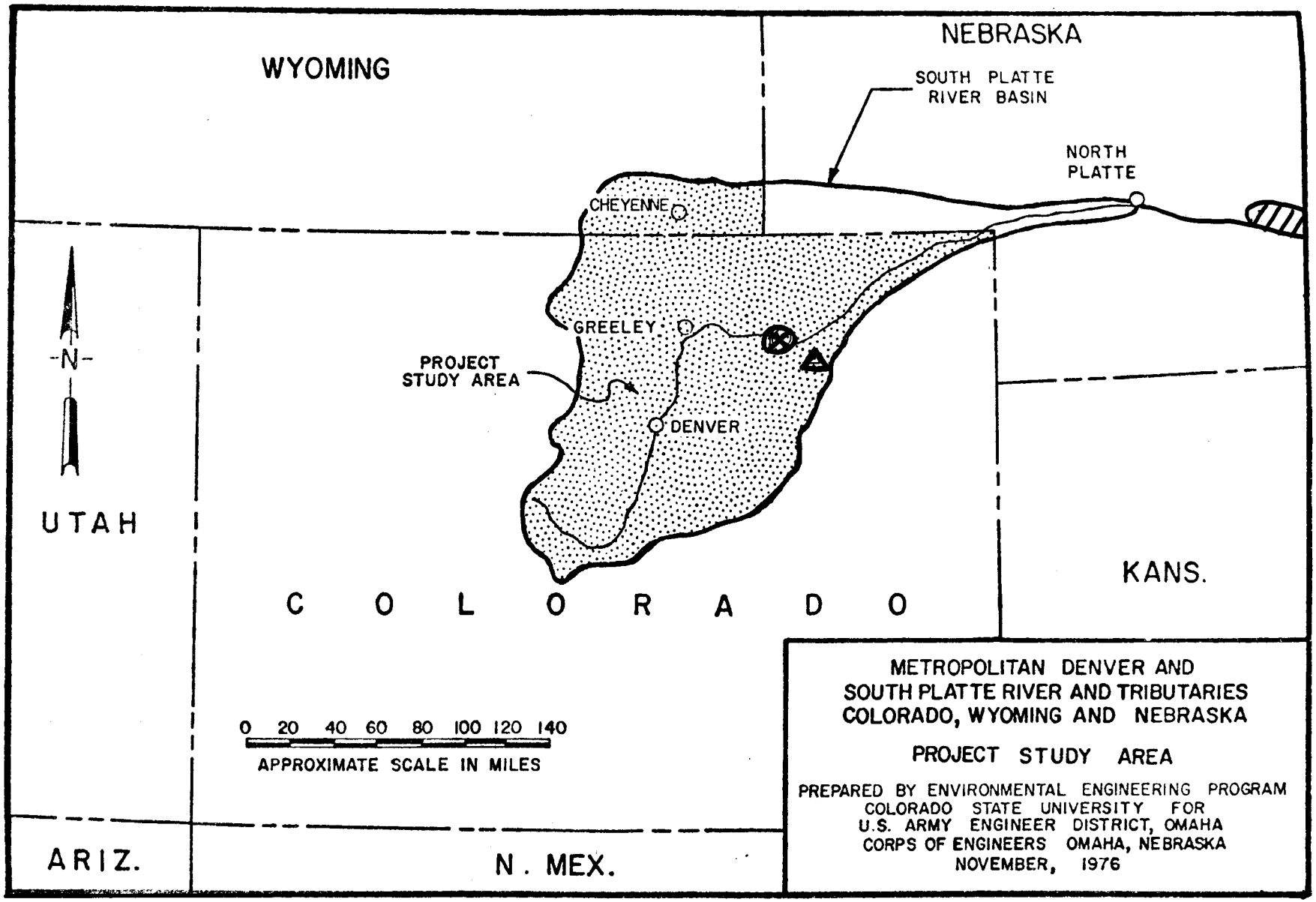

Figure 1. Location Map

Narrows Project

Riverside

Crane Habitat area, Nebraska

Colorado. The reservoir would store 1,609,000 acre-feet at maximum capacity. Primary use of the water would be for irrigation. FWS has calculated the net annual depletion of streamflows in the area of the crane habitat that would result from this project to be 91,900 acre-feet per year.[12] Such a depletion "will likely jeopardize" the whooping crane, according to FWS, and so should not be allowed unless a portion of the storage is dedicated to maintaining specified streamflows in certain periods.[13]

C. Whooping Crane Habitat

The designated critical habitat for the whooping crane covers a 53 mile reach of the Platte River between Lexington and Shelton, Nebraska (see Figure 2). This area is sometimes visited by whooping cranes during their spring and fall migrations between Texas and Canada (see Figure 3). Considerable attention has been focused on the endangered status of the whooping crane.[14] Special protection and management of this species has

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[12]Memorandum, Narrows Unit Biological Opinion--Whooping Crane, from Regional Director, Region 6, U.S. Fish and Wildlife Service, Denver, Colorado to Regional Director, Lower Missouri Region, U.S. Bureau of Reclamation, Denver, Colorado, January 20, 1983, p. 2 [hereinafter Narrows Biological Opinion].

[13]Id., p. 14.

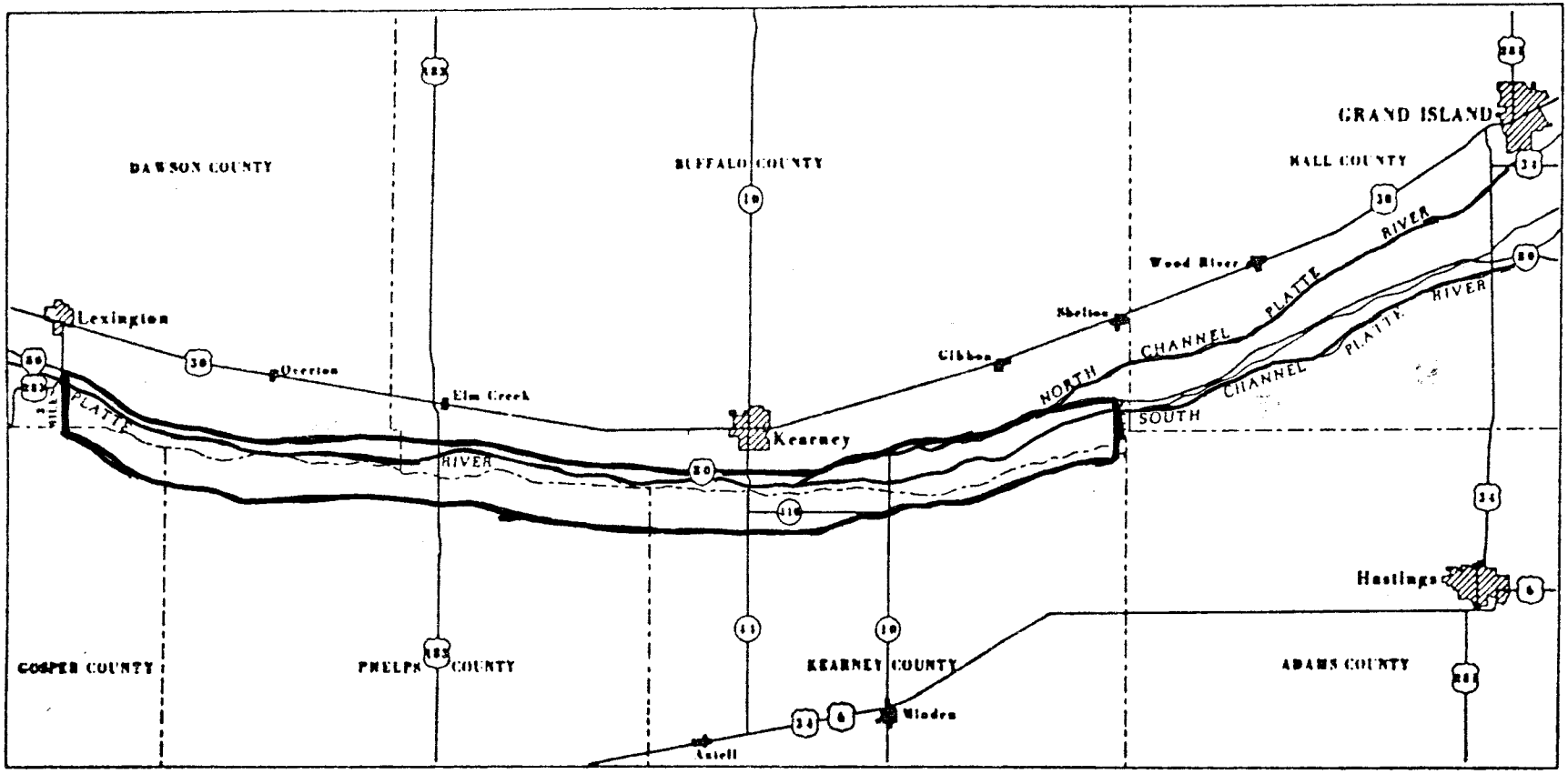
[14]The National Audubon Society has been especially active in working to protect the whooping crane. An important early effort to focus attention on the plight of the whooping crane was the writing of Robert Porter Allen. See R. Allen, The Whooping Crane, National Audubon Society Research Report No. 3 (1952). For another more popular account, see F. McNulty, The Whooping Crane (1966).

Figure 2.

WHOOPING CRANE

NEBRASKA

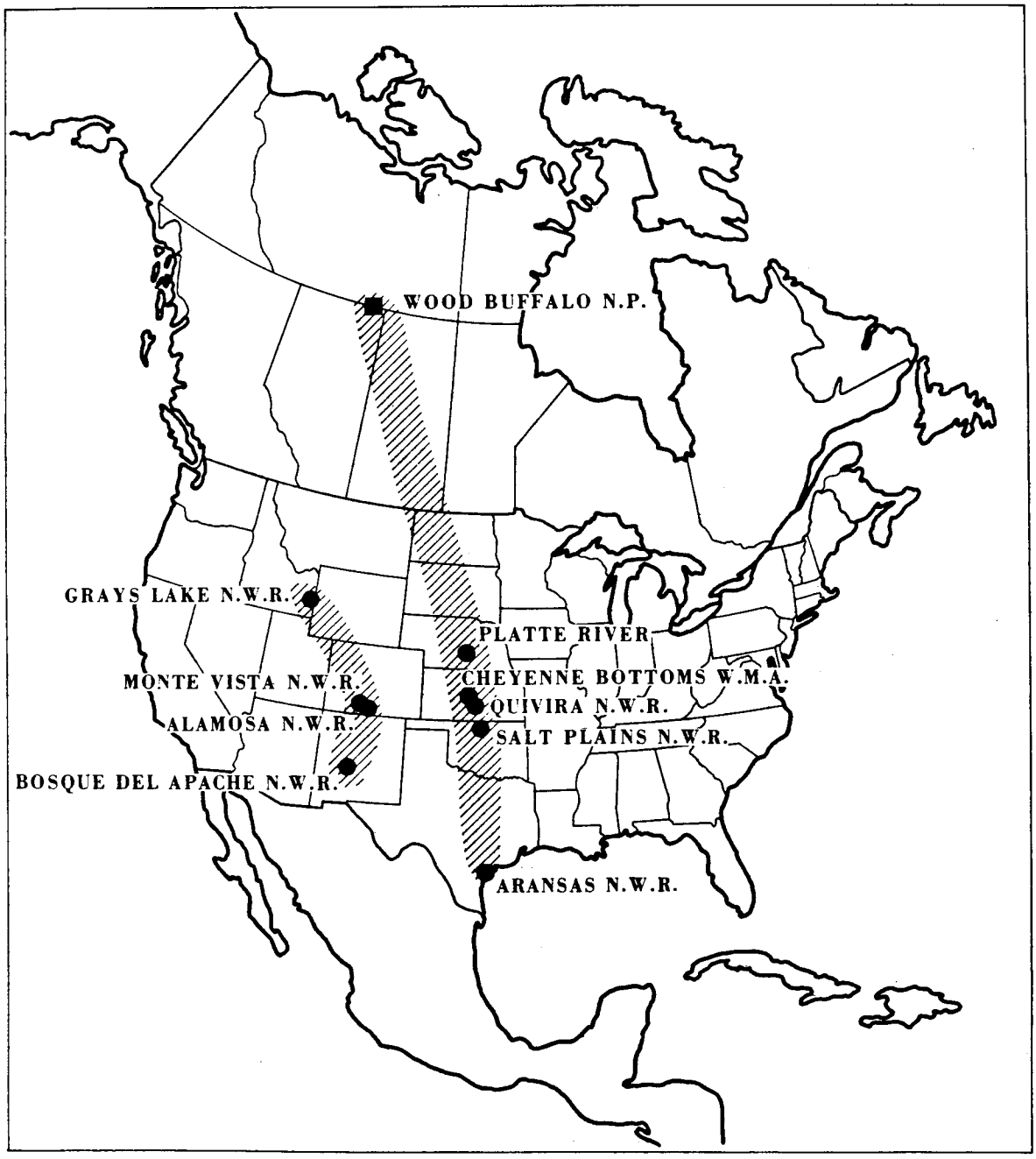
DESIGNATED CRITICAL HABITAT



Source: FWS Wildcat Biological Opinion, April 12, 1982

Figure 3.

WHOOPING CRANE



Source: Determination of Critical Habitat for the Whooping Crane, 43 Fed. Reg. 20938 (1978).

increased its numbers from only 21 in 1941 to 108 in 1981[15]. The designated habitat area along the Platte River is a desirable roosting area for the whooping cranes because its wide channels and shallow waters offer isolation, good visibility, and appropriate food.

However, according to FWS, the suitability of this habitat for use by whooping cranes has been deteriorating over time. During the period between 1938 and 1976 there was a 39 percent loss of wet meadow habitat within the designated area.[16] From 1938 to 1969 there was a 62 percent loss of open water and sandbar habitat within this area due to decreases in streamflows.[17] The critical habitat area has lost 60 to 70 percent of the pre-1930 mean annual flow.[18] The result has been a noticeable shrinkage of the size of the channel and an increase in vegetative encroachment in the part of the channel which no longer carries water.[19]

To preserve and restore the quality of the habitat FWS has determined that certain types of streamflows are required.

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[15]U.S. Fish and Wildlife Service, Whooping Crane Recovery Plan, January 1980, p. 1; Wildcat Biological Opinion, supra note 9, p. 5.
[16]Letter from Lynn A. Greenwalt, Director, U.S. Fish and Wildlife Service to Lt. General John W. Morris, Chief, Army Corps of Engineers and Robert Feraagen, Administrator, Rural Electrification Administration, December 8, 1978, p. 9 [hereinafter Grayrocks Biological Opinion].
[17]Id., p. 10.
[18]Wildcat Biological Opinion, supra note 9, p. 8.
[19]Id., p. 8.

First, specified flows are needed during crane migration periods (determined to be 1,100 cfs between March 23 and May 10 and between September 16 and November 15). Second, specified flows are required to maintain the wet meadow lands in the area (determined to be 1,100 cfs between February 1 and March 22). Third, specified flows are needed to maintain channel width (determined to be 3,800 cfs for 23 days each year).[20]

Based on these estimated streamflow requirements, FWS presently opposes any additional depletions from the Platte River. Proponents of water development projects in Colorado point out that the effect of this position is to preempt state water law by demanding a federal instream flow right to these amounts of water. They also argue that such an action amounts to a taking of established water rights, that it interferes with water allocation arrangements under interstate compacts, and that Congress, in the ESA, never intended to interfere with state water rights in this way. FWS, on the other hand points to the mandate in the Endangered Species Act to use "all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary"[21] and to ensure that federal actions will not "jeopardize the continued existence of any endangered species or threatened species or result in the

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[20]Narrows Biological Opinion, supra note 12, pp. 8-10.
[21]16 U.S.C. § 1532(3).

destruction or adverse modification of habitat of such species ...."[22] We turn next to a consideration of the law that is the center of this controversy.

III. The Law

A. Evolution of the ESA

1. Pre-1973

The first piece of federal legislation to broadly address endangered species protection was the Endangered Species Preservation Act of 1966.[23] This Act directed the Secretary of the Interior to "carry out a program in the United States of conserving, protecting, restoring, and propagating selected species of native fish and wildlife that are threatened with extinction."[24] The native wildlife to be protected by this program were those whose "existence is endangered because its habitat is threatened with destruction, drastic modification, or severe curtailment, or because of overexploitation, disease, predation, or because of other factors, and that its survival requires assistance."[25] In support of this program the Secretary was authorized to purchase needed lands, apparently for habitat protection. Moreover, the Secretary was to utilize existing

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[22] 16 U.S. § 1536(a)(2).
[23] Pub. L. No. 89-669, §§ 1-3, 80 Stat. 926 (repealed 1973) [hereinafter cited as 1966 Act]. A major congressional finding prefacing this piece of legislation is that "one of the unfortunate consequences of growth and development in the United States has been the extermination of some native species of fish and wildlife." § 1(a).
[24] Id. § 2 (a).
[25] Id. § 1(c).

programs under his authority "to the extent practicable" in support of the endangered species program and to "encourage other Federal agencies to utilize, where practicable, their authorities in furtherance of " that program.[26] Finally, cooperation with the states "to the maximum extent practicable" in carrying out the program was required.[27]

The Endangered Species Conservation Act of 1969[28] significantly expanded the scope of protection by including wildlife threatened with extinction anywhere in the world and generally prohibiting their import into the United States.[29] Species determined by the Secretary to be "threatened with worldwide extinction" were to be listed in the Federal Register.[30] The 1969 Act also modestly expanded the land acquisition authority established in the 1966 Act.[31] Finally, it extended the prohibition on commercial activities involving certain types of unlawfully taken animals to all wildlife protected under state, federal, or foreign laws.[32]

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[26] Id. § 2(d).
[27] Id. § 2(d).
[28] Pub. L. No. 91-135, 83 Stat. 275 [hereinafter cited as 1969 Act].
[29] Id. § 2.
[30] Id. § 3(a). In making this determination, the Secretary was to consider several factors: "(1) the destruction, drastic modification, or severe curtailment, of its habitat, or (2) its overutilization for commercial or sporting purposes, or (3) the effect on it of disease or predation, or (4) other natural or man-made factors affecting its continued existence."
[31] Id. § 12(b).
[32] Id. § 7(a) & (b).

2. The 1973 Act

The Endangered Species Act of 1973 (ESA)[33] substantially expanded the efforts underway to protect endangered species. It did this in four major ways. First, it expanded the listing authority of the Secretary to include "threatened" as well as "endangered" species.[34] Second, the 1973 Act prohibited any person subject to the jurisdiction of the United States to import or export, to "take," or generally to engage in commercial activities involving listed endangered species.[35] Third, it contemplated a substantially increased role for the states both in protecting listed species and in administering management

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[33]Pub. L. No. 93-205, 87 Stat. 884 [hereinafter cited as 1973 Act].
[34]An endangered species was defined as one "which is in danger of extinction throughout all or a significant portion of its range" (Id. § 3(13)). Any species--plant or animal (except insect pests)--could be considered for protection (§ 3(4)). In addition to the four factors listed in the 1969 Act to be considered by the Secretary in determining whether a species is threatened or endangered it added "the inadequacy of existing regulatory mechanisms." (§ 4(a)(4)).
[35]Id. § 9(a)(1) & (2). The term "take" was defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." (§ 3(14)).

programs.[36] Finally, the 1973 Act removed the limitations on expenditures for habitat acquisition contained in the 1969 Act.[37]

It is evident that Congress intended to expand the scope of federal protection by creating the "threatened" category. It is also clear that Congress was concerned primarily with the threat to endangered species caused by hunting and commercial activities and by habitat destruction.[38] Thus Section 9 prohibited takings

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[36] Id. § 6. The legislative history emphasizes the importance attached to this state role:

> The Committee finds that the most efficient way to enforce the prohibitions of this bill and to develop the most appropriate and extensive programs is through utilization of the agencies already established for such purposes within the States and development of the potential for such State programs where they do not already exist or have less than sufficient authority to meet the need. (S. Rep. No. 307, 93d Cong., 2d Sess., reprinted in 1973 U.S. Code Cong. & Ad. News 2989, 2992.)

The Secretary of the Interior is authorized to enter into "management agreements" with any state for areas established for the conservation of endangered species; to enter into "cooperative agreements" with any state which "establishes and maintains an adequate and active program for the conservation of endangered species," and to provide financial assistance to states involved in such cooperative agreements up to a maximum of two thirds of the estimated program cost. 1973 Act. § 6(b),(c) & (d).

[37] 1973 Act, supra note 33, § 5(a) & (b). The 1966 Act directed the Secretary to use existing land acquisition authority to carry out a protection program and authorized the use of funds from the Land and Water Conservation Fund up to $5 million per year not to exceed a total of $15 million with no more than $750,000 to be spent on any single area. § 2(a), (b), & (c). The 1969 Act increased the $750,000 limitation to $2,500,000 and specifically appropriated funds not to exceed $1 million for 1970, 1971, and 1972. § 12(b) & (c).

[38] The Senate Commerce Committee report stated: "The two major causes of extinction are hunting and destruction of natural habitat." S. Rep. 307, 93d Cong., 2d Sess., reprinted in 1973 U.S. Code Cong. & Ad. News 2989, 2990.

and commercial activities involving endangered species and Section 11 established both civil and criminal penalties for knowingly violating the provisions of Section 9.[39]

Protection of needed habitat was recognized as important in the 1966 Act.[40] Indeed, the only specific guidance given to the Secretary for implementing the required program for protecting endangered species was to "utilize the land acquisition and other authorities of the Migratory Bird Conservation Act, as amended, the Fish and Wildlife Act of 1956, as amended, and the Fish and

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[39]As the Senate Commerce Committee noted: "The bill makes violation of conduct prohibited under the bill subject either to civil penalties up to $10,000 or, to criminal penalties with fines levied up to $20,000 and/or imprisonment for up to one year. For the first time, the knowing taking of an endangered animal in violation of the law is a criminal offense where the Federal government has retained management power." S. Rep. No. 307, 93d Cong., 2d Sess., reprinted in 1973 U.S. Code Cong. & Ad. News 2989, 2992.

[40]For example, the 1966 Act stated that "[a] species of native fish and wildlife shall be regarded as threatened with extinction whenever the Secretary of the Interior finds, after consultation with the affected States, that its existence is endangered because its habitat is threatened with destruction, drastic modification, or severe curtailment ...." § 1(c). Land acquisition was authorized to protect endangered species--certainly to purchase essential habitat areas. § 2(b) & (c). Finally, this Act established the National Wildlife Refuge System into which were placed "all lands, waters, and interests therein administered by the Secretary as wildlife refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, or water fowl production areas ...." § 4(a) (emphasis added).

Wildlife Coordination Act ...."[41] It is not coincidental that this Act established the National Wildlife Refuge System in which were included lands and waters administered by the Secretary as "areas for the protection and conservation of fish and wildlife that are threatened with extinction ...."[42] The creation of the National Wildlife Refuge System in 1966 provided a coordinated management structure and established the following protective prohibitions: "No person shall knowingly disturb, injure, cut, burn, remove, destroy, or possess any real or personal property of the United States, including natural growth, in any area of the System; or take or possess any fish, bird, mammal, or other wild vertebrate or invertebrate animals or part or nest or egg

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[41] § 2(a). As discussed, additional land acquisition authority also was established as was the use of funds from the Land and Water Conservation Fund. § 2(b) & (c). The only other guidance given the Secretary was the rather feeble direction to utilize other programs administered by him "to the extent practicable" and to "encourage" other agencies to do the same. § 2(d).

[42] 1966 Act, supra note 23, § 4(a). The 1969 Act separated out the 1966 provisions relating to the creation of the National Refuge System into a separate act, the "National Wildlife Refuge System Administration Act of 1966." § 12(f). The federal government began to take an active role in wildlife management in the Lacey Act of 1900 (Ch. 553, 31 Stat. 187, presently codified at 16 U.S.C. § § 701, 3371-3378 and 18 U.S.C. § 42). According to M. Bean, The Evolution of National Wildlife Law 18 (1983) [hereinafter cited as Bean]: "[I]n direct response to the decimation of the passenger pigeon and the depletion of a number of other birds, the Lacey Act authorized the Secretary of Agriculture to adopt all measures necessary for the `preservation, distribution, introduction, and restoration of game birds and other wild birds,' subject, however, to the laws of the various states and territories." A 1906 congressional enactment generally prohibited the hunting of birds on lands of the United States set aside as breeding grounds for birds by "any law, proclamation, or Executive order." Act of June 28, 1906, ch. 3565, 34 Stat. 536, presently codified at 18 U.S.C. § 41. Such federal refuges began to be established as early as 1892. See Bean at 22, note 59.

thereof within any such area; or enter, use, or otherwise occupy any such area for any purpose ... ."[43] By this means Congress sought to assure that the habitat needs of endangered species on federal lands would be safeguarded.

A more difficult problem is presented in situations where the essential habitat being destroyed is on private lands. One means of protecting such areas, of course, is to purchase them. Beginning with the Migratory Bird Conservation Act in 1929[44] Congress passed a series of laws authorizing the acquisition of wildlife habitat.[45] Such acquisition authority for the protection of endangered species was a major feature of the 1966, 1969, and 1973 Acts.[46] In the legislative history accompanying the 1973 Act it is noted: "Often, protection of habitat is the only means of protecting endangered animals which occur on non-public lands. With programs for protection underway, and worthy of continuation into the foreseeable future, an accelerated land acquisitions program is essential."[47]

Almost unnoticed at the time were the provisions of Section 7 in the 1973 Act entitled "Interagency Cooperation." This section consisted of two sentences:

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[43] 1966 Act, supra note 23, § 4(c).
[44] 16 U.S.C. §§ 715-715d, 715e, 715f-715k, and 715n-715r.
[45] For a discussion of the Conservation Act and other similar laws see discussion in Bean, supra note 42 at 120-121.
[46] See note 37, supra.
[47] S. Rep. 307, 93d Cong., 2d Sess., reprinted in 1973 U.S. Code Cong. & Ad. News 2989, 2992.

> The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical.[48]

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[48] 1973 Act, supra note 33, § 7. "Secretary" under the 1973 defined as either the Secretary of the Interior or the the Secretary of Commerce. § 3(10). Generally, marine species are under the jurisdiction of the Secretary of Commerce (National Marine Fisheries Service). Other species are the concern of the Secretary of the Interior (Fish and Wildlife Service).

In the legislative history accompanying the 1973 Act there is no special discussion of this section. The section-by-section analysis merely states that all Federal agencies and departments are "to cooperate in the implementation of the goals of this Act" and that each agency is to "take steps" to insure that its actions do not jeopardize endangered species or result in destruction of their habitat.[49] Although this section was apparently considered unexceptional at the time of enactment, it has of course proved to be the most far reaching part of the Act.

The first sentence of Section 7 is also found in the 1966 Act with one important change. The language in the 1973 Act omits the qualifying phrase "to the extent practicable." Thus Congress was strengthening its directive to the Secretary of the Interior to protect endangered species. The first part of the second sentence is also a modification of the language contained in the 1966 Act. There, the Secretary was to "encourage other Federal agencies to utilize, where practicable, their authorities in furtherance of the purposes of this Act" and was to "consult with and assist such agencies in carrying out endangered species program."[50] In 1973 Congress explicitly made it the duty of Federal agencies to so utilize their authorities. In addition,

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[49]S. Rep. 307, 93d Cong., 2d Sess., reprinted in 1973 U.S. Code Cong. & Ad. News 2989, 2997. There is no mention of this section in the conference report, suggesting that the House and Senate versions were substantially alike.

[50]1966 Act, supra note 23, § 2(d).

Congress added the specific requirement that has become the driving force in endangered species protection: the requirement to take "such action necessary to insure" that the federal agency's actions do not jeopardize endangered and threatened species.

The shift in approach is important to consider. In 1966, Interior was to encourage other agencies to help in its efforts to protect endangered species. Under the 1973 changes the Secretary of the Interior no longer had to "encourage" other agencies to utilize their authorities. Now all departments and agencies "shall" do this. Nor is this to be done only "where practicable." Now all agencies must take whatever action is "necessary to insure" that their activities do not jeopardize endangered species.

Moreover, reflecting the concern about habitat impairment, federal agencies were directed to insure that their actions do not adversely affect designated critical habitat. As indicated, protection of habitat for endangered species has been a long-standing congressional policy.[51] The 1966 Act ensured that habitat protection on the public lands was established federal

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[51]See text accompanying notes 45-46, supra.

policy.[52] The more difficult problem of habitat protection on private lands was addressed only through limited authorization to purchase lands needed to protect endangered species.

In the 1973 Act, however, Congress introduced a novel approach by which habitat protection on private lands might be achieved, at least from activities involving federal action. The Secretary was authorized to determine "critical" habitat for listed threatened and endangered species.[53] Such a determination must involve "consultation as appropriate with the affected states." Such designated critical habitat then receives special protection because federal agencies must insure that no activities involving federal action "result in [its] destruction or modification."

3. Post 1973 Developments

In the landmark case of Tennessee Valley Author-

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[52]In addition to establishing the National Wildlife Refuge System in which were to be included areas administered for protection of endangered fish and wildlife, the 1966 Act (§ 1(b) states:

> It is further declared to be the policy of Congress that the Secretary of the Interior, the Secretary of Agriculture, and the Secretary of Defense, together with the heads of bureaus, agencies, and services within their departments, shall seek to protect species of native fish and wildlife, including migratory birds, that are threatened with extinction, and insofar as is practicable and consistent with the primary purposes of such bureaus, agencies, and services, shall preserve the habitats of such threatened species on land under their jurisdiction.

[53]1973 Act, supra, note 33, § 7.

ity v. Hill[54] the United States Supreme Court took a careful look at Section 7. That case involved the construction of the Tellico Dam in Tennessee by the Tennessee Valley Authority, a federal entity. At the time of the decision the dam was largely complete, at a cost of $100 million.[55] Nevertheless, Chief Justice Burger found that because the dam and reservoir would result in the extinction of the only known population of the snail darter, a listed endangered fish, it must be enjoined. The Court stated that "examination of the language, history, and structure of the legislation under review here indicates beyond doubt that Congress intended endangered species to be afforded the highest of priorities."[56] Noting the affirmative "command" to federal agencies to insure that their actions do not jeopardize an endangered species or result in the destruction or modification of designated critical habitat, Chief Justice Burger concluded: "This language admits of no exception."[57]

If Congress had not fully understood the implication of Section 7 in 1973 it certainly did following this decision. Nevertheless, in the 1978 Amendments[58] Congress did not alter the basic thrust of Section 7. It did, however, much more explicitly define the consultation process and, in response to the TVA

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[54]437 U.S. 153 (1978) [hereinafter TVA v. Hill].
[55]Id., at 172.
[56]Id., at 174.
[57]Id., at 173.
[58]Endangered Species Act Amendments of 1978, Pub. L. 95-632, 92 Stat. 3751 [hereinafter cited as 1978 Amendments].

v. Hill decision, it established an exemption process whereby federal actions of overriding importance could be permitted to go forward in spite of their conflict with Section 7.[59]

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[59]Advertised as a means of adding "flexibility" to the ESA, the exemption procedure provides a means by which federal actions may still go forward even if they are found to conflict with the requirements of Section 7. Initially an exemption request is made to the Secretary of the Interior or Commerce, as appropriate, who assures that certain minimum requirements are met. If this initial screen is passed, the Secretary is then to hold a formal hearing and prepare a detailed report reviewing the availability of reasonable and prudent alternatives, summarizing the significance of the proposed action, presenting possible mitigation and enhancement measures, and discussing whether the agency has complied with the requirement not to make any irreversible or irretrievable commitment of resources. This report and other evidence is reviewed by the Endangered Species Committee, a seven member body composed of senior U.S. government officials together with one appointed representative from the affected state. The Committee may grant an exemption upon a finding by at least five of its members that:

> (1) there are no reasonable and prudent alternatives to the agency action;
> (2) the benefits of such action clearly outweigh the benefits of alternative courses of action consistent with conserving the species or its critical habitat, and such action is in the public interest;
> (3) the action is of regional or national significance; and
> (4) neither the Federal agency concerned nor the exemption applicant made an irreversible or irretrievable commitment of resources prohibited by subsection (d). (16 U.S.C. 1536(h)(1)(A)).

It should be noted that this procedure has been utilized only twice--to review the proposed Tellico Dam and Grayrocks Dam. The use of the exemption procedure was specially provided for in the case of these two projects by the 1978 Amendments. 1978 Amendments, supra note 58, § 5.

Although development of the exemption procedure dominated the amendment efforts, the 1978 Amendments also significantly developed the existing procedural requirements of Section 7 by formalizing the consultation process. It may be recalled that under the 1966 Amendments the Secretary of the Interior had to take the initiative in consulting with other federal agencies.[60] The 1973 Act made it the responsibility of other agencies to protect endangered species "in consultation with and with the assistance of the Secretary." Considerable informal consultation apparently did occur following passage of the 1973 Act[61] but procedures were not formalized until regulations were issued in January 1978.[62] These regulations established a review role for FWS in all cases where a proposed agency action could affect an endangered species or result in the destruction or modification of designated critical habitat. FWS was to render a "biological opinion" as to whether the proposed activity is or is not likely to jeopardize an endangered species or adversely modify critical habitat. Until completion of the biological opinion, "good faith consultation shall preclude a Federal agency from making an irreversible or irretrievable commitment of resources which would foreclose the consideration of modification or alternatives to

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[60] See text accompanying note 50, supra.
[61] See, e.g. H. Rep. 1625, 95th Cong., 1st Sess., reprinted in U.S. Code Cong. & Adm. News 9453, 9461 where it is noted that about 4500 consultations had occurred between 1973 and 1978.
[62] 43 Fed. Reg. 869, January 4, 1978, codified at 50 C.F.R. Pt. 402.

the identified activity or program."[63]

The 1978 Amendments greatly expanded Section 7. The consultation requirement regarding agency actions that might jeopardize endangered species or adversely modify designated critical habitat was clearly established.[64] The Amendments then go on to require the consultation to be completed within 90 days and to require a "written statement setting forth the Secretary's opinion, and a summary of the information on which the opinion is based, detailing how the agency action affects the species or its critical habitat" promptly at the conclusion of the consultation.[65] If a "negative" biological opinion is rendered, reasonable and prudent alternatives must be suggested to avoid jeopardizing protected species and their habitat.[66] A "biological assessment" is to be undertaken by federal agencies proposing construction in an area where the Secretary advises that a listed

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[63]50 C.F.R. § 402.04(3).

[64]1978 Amendments, supra note 58, § 3. The consultation requirement in the 1973 Act was positioned in that part of the sentence concerning the duty of federal agencies to utilize their authorities in furtherance of the purpose of the Act to carry out conservation programs. The 1978 Amendments separated the duty to carry out conservation programs and the duty to insure that its actions do not jeopardize endangered species. The Amendments explicitly incorporate the consultation requirement into each of these duties.

[65]1978 Amendments, supra note 58, § 3.

[66]The reasonable and prudent alternatives suggested must be ones which FWS "believes would avoid jeopardizing the continued existence of any endangered or threatened species or adversely modifying the critical habitat of such species, and which can be taken by the Federal agency or the permit or license applicant in implementing the agency action." 1978 Amendments, supra note 58, §3.

species may be present. The assessment is to be completed within 180 days. Finally, after the initiation of consultation, the involved federal agency (and the permit applicant, if any) "shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures ...."[67]

Two other changes worthy of mention in this survey are the incorporation of the critical habitat designation into the listing process[68] and the addition of a requirement that the Secretary develop and implement "recovery plans" for listed species.[69]

The major purpose of the 1979 Amendments[70] was to increase the funding support needed to implement the terms of the ESA.[71] The Section 7 consultation provision was amended by changing the phrase "does not jeopardize" to "is not likely to jeopardize" and adding that "[i]n fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data

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[67] Id.
[68] Id., § 11(1). The Secretary is directed "to the maximum extent prudent" to specify critical habitat at the same time he publishes a regulation listing a species. A definition of critical habitat also was added. Id., § 2(1).
[69] Id., § 11(5). See the discussion of recovery plans in text accompanying notes 287-292, infra.
[70] Pub. L. 96-159, 93 Stat. 1225 (1979) [hereinafter cited as 1979 Amendments].
[71] H. Rep. 167, 96th Cong., 2d Sess., reprinted in 1979 U.S. Code Cong & Ad. News 2557, 2558.

available."[72] The Conference Report notes that this change was made merely to bring "the language of the statute into conformity with existing agency practice" and does not "alter this state of the law or lessen in any way an agency's obligation under Section 7(a)(2)."[73]

The 1982 Amendments[74] contain a number of important changes. Substantial congressional attention was directed to the listing process which, it was noted, had slowed down markedly since 1981.[75] Amendments were aimed at expediting this process, primarily by ensuring that only biological factors are considered in making listing or delisting decisions.[76] Cooperation with the states was further encouraged by increasing the federal share of

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[72]1979 Amendments, supra note 70, § 4(1).

[73]House Conference Report 697, 96th Cong., 2d Sess., reprinted in 1979 U.S. Code Cong. & Ad. News 2557, 2576. The evident concern was that FWS might be reluctant to issue a biological opinion with a finding of no jeopardy unless it had absolutely conclusive evidence. The Conference Report notes: "The amendment will permit the wildlife agencies to frame their Section 7(b) opinions on the best evidence that is available or can be developed during consultation .... This language continues to give the benefit of the doubt to the species, and it would continue to place the burden on the action agency to demonstrate to the consulting agency that its action will not violate Section 7(a)(2). ... If a Federal agency proceeds with the action in the face of inadequate knowledge or information, the agency does so with the risk that it has not satisfied the standard of Section 7(a)(2) and that new information might reveal that the agency has not satisfied the standard of Section 7(a)(2)." Id.

[74]Endangered Species Act Amendments of 1982, Pub. L. 97-304, 96 Stat. 1411 (1982) [hereinafter cited as 1982 Amendments].

[75]H. Rep. 567, 97 Cong., 1st Sess., reprinted in 1982 U.S. Code Cong & Ad. News 2807, 2811: "One of the principal problems noted was the decline in the pace of listing species which has occurred in recent years. Since 1981, only two species have passed through the entire proposal and listing processes."

[76]1982 Amendments, supra note 74, § 2.

program grants from two-thirds to three-quarters.[77]

Further refinements were added to the Section 7 consultation process. Provision was made for early consultation in situations where a permit application is involved and the prospective applicant "has reason to believe that an endangered species or a threatened species may be present in the area affected by his project and that implementation of such action will likely affect such species."[78] No specific time limits were established for such consultations.[79] The biological opinion resulting from such consultation may become the final opinion "if the Secretary reviews the action before it is commenced by the Federal agency and finds, and notifies such agency, that no significant changes have been made with respect to the action and that no significant change has occurred regarding the information used during the 'initial consultation'."[80] Moreover, in consultations involving federally permitted actions, a rather complex set of restrictions

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[77] Id., § 3. The federal share can be 90 percent in the case of multi-state projects.

[78] Id., § 4(a)(1). Codified at 16 U.S.C. §1536(a)(3). Through guidelines, the Secretary is to define the types of activities eligible for early consultation. The Conference report adds: "The Secretary should exclude from such early consultation those actions which are remote or speculative in nature and include only those actions which the applicant can demonstrate are likely to occur. The guidelines should require the prospective applicant to provide sufficient information describing the project, its location, and the scope of activities associated with it to enable the Secretary and the Federal agency to carry out a meaningful consultation." House Conference Report 835, 97th Cong., 1st Sess., reprinted in 1982 U.S. Code Cong. & Ad. News 2807, 2867.

[79] 1982 Amendments, supra note 74 §4. Codified at 16 U.S.C. §1536(b)(2).

[80] Id., §4, codified at 16 U.S.C. §1536(b)(3)(B).

was enacted regarding extensions beyond the normal 90 day period.[81]

B. A Summary of the ESA

Federal law protecting endangered species has been evolving since the early 1900's. Earlier laws were directed primarily at aiding state efforts in protecting wildlife. In 1966, Congress finally directly addressed endangered species protection by giving the Secretary of the Interior the responsibility of establishing a program for the conservation of such species. A listing process was established to identify "species

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[81]The Conference Report offers this statement:

> The Committee adopted the Senate timetable, which authorizes the Secretary and the Federal agency to agree to one extension of up to 60 days without the agreement of the permit applicant. The only condition for such an extension is that the Secretary before the close of the original 90 day period, must submit to the applicant a written statement that specifies the reasons why a longer period is needed, what additional information is needed to complete consultation and the estimated date on which the biological opinion will be rendered. Extensions of the consultation period for longer than 60 days beyond the original 90 day period require the consent of the permit applicant. If the initial extension will be for more than 60 days, the Secretary must obtain the applicant's consent before the close of the original 90 days. If, during an initial extension, it becomes clear that a second extension is needed, the Secretary must obtain the applicant's consent before the close of the initial extension period.

House Conference Report 835, 97th Cong., 1st Sess., reprinted in 1982 U.S. Code Cong. & Ad. News 2807, 2867-2868.

of native fish and wildlife found to be threatened with extinction."[82] The only explicit means of conservation suggested by Congress was to purchase land necessary to protect essential habitat of these species. Budget support for such purchases was limited.

In 1973 Congress considerably expanded the federal role in endangered species protection. Of particular relevance to this report, Congress placed a duty on federal agencies and departments to insure that their actions do not jeopardize a listed species or result in the adverse modification of critical habitat. Agencies contemplating such actions were to consult with the FWS. The force of this duty was made clear in TVA v.Hill where a federal action that would extinguish the only known population of a listed species was prohibited.[83]

The 1978 Amendments sought to provide some flexibility by establishing an exemption procedure. However, this procedure is rather complex and has only been utilized twice. These Amendments also firmly established the consultation process, giving FWS an important review role while still maintaining the primary duty within the proposing agency to ensure compliance with Section 7. Consultation has to be completed within 90 days immediately following which a written biological opinion is to be

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[82] 1966 Amendments, supra, note 23, §1(c).
[83] See text accompanying note 54, supra.

rendered by FWS. If a jeopardy finding is made, reasonable and prudent alternatives must be suggested. During the consultation, the proposing agency may not make any irreversible or irretrievable commitment of resources that might preclude such alternatives. The 1979 Amendments required the use of the best scientific and commercial data available in Section 7 decision making. The 1982 Amendments sought to alleviate some of the Section 7 conflicts by providing for early, informal consultations for prospective permit applicants and further limiting the circumstances under which a consultation could last longer than 90 days.

Thus the objective of the ESA is the "conservation" of threatened and endangered species and their critical habitats. Conservation is defined in the Act to mean "the use of all methods and procedures which are necessary to bring any endangered species to the point at which the measures provided pursuant to this [Act] are no longer necessary."[84] As the foregoing discussion indicates, this objective is to be achieved through affirmative federal agency conservation programs including cooperative efforts with the states, through prohibition of potentially jeopardizing effects resulting from federal agency action, and through the prohibition of specified private actions such as certain types of hunting and commercial activities involving endangered species.

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[84] 16 U.S.C. § 1532(3).

IV. Application of the ESA to Water Development in the Upper Colorado and Platte River Basins

When Congress in the Endangered Species Act of 1973 stated that the purpose was "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved ... "[85] and required that federal actions not jeopardize endangered species or adversely modify designated habitat[86] it almost certainly did not contemplate the effect of these provisions on water development in the western United States. The general scarcity of water resources in the West heightens the competition for their use. The ESA, by giving priority to the conservation of endangered fish and wildlife (and plants), creates a special position for such species in this competition. Because some federal action is almost always involved in western water development, endangered species considerations are an inescapable part of such development. In this section we consider the way in which the ESA has been applied to water development activities in the upper Colorado River basin and the Platte River basin.

A. The ESA and the Upper Colorado River

The major endangered species problem in the upper

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[85] 1973 Act, supra note 33, § 2(b), codified at 16 U.S.C. § 1531(b).
[86] Id., § 7, codified at 16 U.S.C. § 1536(a)(2).

Colorado River system concerns two endangered fish species--the Colorado squawfish and the humpback chub.[87] The endangered status of these species is believed to have resulted primarily from the construction of several large water projects in this river system by the Bureau of Reclamation.[88]

Proposals involving the development of water resources in the upper Colorado River basin were especially widespread during the 1970's.[89] To address potential conflicts with the protection of endangered fishes, a Colorado River Fishes Investigative Team was established in 1979 "to determine the causes for the rapid decline in these indigenous species and to devise a strategy for

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[87]A third endangered species, the bonytail chub, is now considered extinct in the upper basin. Memorandum, Biological Opinion for Windy Gap Project, Colorado, from Regional Director, Region 6, U.S. Fish and Wildlife Service, Denver, Colorado to Regional Director, Lower Missouri Region Water and Power Resources Service, Denver, Colorado, March 13, 1981, p. 1, [hereinafter cited as Windy Gap Biological Opinion].

[88]Memorandum, Water Developments and Endangered Fish in the Upper Colorado River Basin, from Director, Fish and Wildlife Service to Assistant Secretary for Fish and Wildlife and Parks, February 17, 1981, p. 1.

[89]Id. As of 1981 there were 22 proposed projects in the upper Colorado River basin area requiring some kind of federal action and thus subject to a Section 7 review under the ESA.

their preservation."[90] FWS developed a general "management plan" intended to accommodate the proposed development while providing protection for selected populations of the endangered fish species. Beginning with the biological opinion issued for the Windy Gap project[91] the FWS established a policy of allowing projects to be built if project proponents agreed to contribute toward the cost of implementing the management program.

1. The Windy Gap Project

The Windy Gap project involved the diversion of water from the Colorado River to the front range counties of Boulder, Larimer, and Weld utilizing portions of an existing BOR project.[92] FWS staff review of the project during the Section 7 consultation indicated that the major impact of the project, i. e., depletion of flows, was not likely to threaten

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[90] Id. As described, for example, in the Dominguez Reservoir Project Biological Opinion, U.S. Fish and Wildlife Service, May 19, 1982, p. 8: " [t]he team, staffed with FWS personnel, received funding from FWS, Bureau of Land Management (BLM), and the BR [Bureau of Reclamation]. Other participants were the Colorado Division of Wildlife (DOW) and the Utah Division of Wildlife Resources (DWR). The major objective of the team's study was to learn additional life history requirements of the listed fishes. Under our funding agreement with BR and BLM, most of the field work was in the sections of the Upper Colorado River system where impacts from BR and BLM actions were greatest. Information obtained during the study via field, laboratory, and hatchery work has made it possible to provide recommendations in this opinion to maintain and develop more favorable habitat for the preservation and recovery of listed fishes." The results of this project are presented in W. Miller, J. Valentine, D. Archer, H. Tyus, R. Valdez, and L. Keading, (1982). Colorado River Fishery Project Final Report. U.S. Fish and Wildlife Service and Bureau of Reclamation. Salt Lake City, Utah.

[91] Windy Gap Biological Opinion, supra, note 87 at 8-10.

[92] Id., at 1-2.

the continued existence of the endangered fish but it would affect the likelihood of achieving their recovery.[93] Agreement was reached with the project proponent, the Northern Colorado Water Conservancy District, whereby an "is-not-likely-to-jeopardize" opinion would be issued in return for a contribution not to exceed $550,000 for habitat manipulation, monitoring, and research.[94] The activities to be carried out under this agreement were referred to as "conservation and recovery measures" in the biological opinion.[95]

Shortly therafter, this approach was endorsed by Undersecretary of the Interior Hodel in connection with the Cheyenne Water Supply Project. In a letter to the president of the Cheyenne Board of Public Utilities he explained:

> There are three elements to this proposal:
>
> 1. The FWS will continue with the field studies and issue a determination upon their conclusion as to whether the Cheyenne Water Project is likely to jeopardize the continued existence of the endangered fishes.
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> 2. Immediately upon written acceptance by the City of Cheyenne of the course of

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[93]Memorandum, Section 7 Consultation on Proposed Windy Gap Project, From Regional Director, Region 6, U.S. Fish and Wildlife Service to Regional Director, Lower Missouri Region, Water and Power Resources Service, February 26, 1981, "Summary of Staff Analysis of Windy Gap Project's Effect on the Endangered Colorado River Fishes"

[94]Windy Gap Biological Opinion, supra note 87 at 8-9.

[95]Id.

> action outlined in this letter, FWS will issue a biological opinion which, because of the commitment on the city's part outlined in number three, will find that the project is not likely to jeopardize the continued existence of the endangered fishes.
>
> 3. The City of Cheyenne will agree that in the event the results of the ongoing FWS studies do not permit the agency to conclude that the project is not likely to jeopardize the endangered species, the city will participate in the funding of the fish management plan in an amount not to exceed $180,000. However, if the studies confirm that the project is not likely to jeopardize the endangered fishes, no participation and no expenditure will be required.
>
> In this way the project can proceed without objection under the Endangered Species Act because either the project will be found not to jeopardize the endangered fishes or the fishes will be afforded protection by means of habitat development and other provisions of the management plan.[96]

2. The Depletion Charge Approach

This pattern of issuing biological opinions which state that the project "is not likely to" jeopardize any endangered species so long as the prescribed "conservation measures" are included has been followed since 1981. Generally the conservation measures include an agreement to fund efforts by FWS aimed at working toward recovery of the endangered fish species. The funding amount, referred to sometimes as a depletion charge, is established by determining the amount of streamflow depletion

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[96]Letter from Donald Paul Hodel to Elmer Garrett, April 17, 1981.

attributable to the project in proportion to available developable flow and then multiplying this percentage times the estimated total cost of the management plan to obtain recovery of the endangered fishes.[97]

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[97]A detailed explanation of the depletion charge approach is provided in Memorandum, Section 7 Consultation, Belina Mine Complex, from Field Supervisor, Endangered Species Office, U.S. Fish and Wildlife Service, Salt Lake City, Utah to Robert Schuenemon, Chief Technical Support Branch, Office of Surface Mining, Denver, Colorado, April 19, 1984:

> "FWS believes that any further water depletions from the upper basin may have detrimental effects on listed fishes; however, it is believed that certain management techniques can be implemented to offset harmful effects from additional development....
>
> Since such measures will develop critically important data on the survival needs of the fish, attempt to restore essential habitat, and allow a recovery program to be implemented, funding of these activities by project sponsors is considered a reasonable and prudent alternative designed to compensate or prevent the adverse effects of water depletion. Under a procedure developed by the FWS, Upper Basin project sponsors are assessed a proportion of the total cost needed to support these conservation measures, currently estimated at approximately 25 million dollars.
>
> The cost assessed any particular project is based upon the amount of water that the project would annually deplete from the upper Colorado River System in proportion to the amount available for development. It has been estimated by the Bureau of Reclamation that a total of 1.906 million af (maf) remains available for development in the Upper Basin under the Colorado River Compact. Of this amount, 231,000 af are allocated to Arizona and New Mexico and will eventually be diverted from the San Juan River and would not affect areas currently occupied by the endangered fishes in the Upper Basin. This leaves 1.675 maf in the Upper Colorado River as the value against which project depletions are assessed in calculating a projects proportion of the conservation measures. Based upon the use projection of 49 af/year for the BMC, the amount of contribution to the conservation measures would not exceed $730. A contribution of this amount to the conservation fund will offset the impacts of the depletion of water on the Colorado squawfish and will not jeopardize the continued existence of this species."

The depletion charge approach rests upon obtaining voluntary agreement from the project proponent. The ESA itself makes no provision by which a project proponent can be required to incorporate so-called "conservation measures" into its plan.[98] It will be recalled that under Section 7(a)(2)[99] FWS is to provide expert review to determine whether a proposed federal action is likely to jeopardize an endangered species or adversely affect designated critical habitat. Its written opinion is to conclude either that jeopardy is or is not likely to result. If it concludes that jeopardy is likely to result, then reasonable and prudent alternatives must be presented. In fact, however, FWS has been issuing biological opinions stating that the action is not likely to jeopardize endangered species so long as certain conservation measures--generally the payment of the depletion charge--are included.

3. Colorado River Coordination

Considerable effort has been expended to create a cooperative approach to address the endangered fishes problem in the upper Colorado River basin. The Colorado River Fishes

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[98]In 16 U.S.C. § 1539(a), provision is made for allowing an otherwise prohibited taking under § 1538(a)(1)(B) if the taking is "incidental." Section 1539(a)(2)(A) requires the submission of a "conservation plan" in such situations. The plan is to include, among other things, "steps the applicant will take to minimize and mitigate such impacts ...." The activities proposed on the Colorado River do not involve such incidental takings.

[99]16 U.S.C. § 1536(a)(2). See text accompanying notes 64-66, supra.

Investigation Team was created in 1979, staffed with FWS personnel and funded by the Bureau of Reclamation, Bureau of Land Management, and FWS with participation by the Utah Division of Wildlife Resources and the Colorado Division of Wildlife. This group's report was completed in 1982.[100] Since then, two technical working groups have been working on developing additional information necessary for establishing a program to protect the endangered fishes.

While working level coordination has been proceeding, policy level agreement has been slower in coming. Initially there was an attempt to establish a "memorandum of understanding" between FWS, Bureau of Reclamation and the states of Colorado, Utah, and Wyoming that was aimed at developing a "plan for conservation of endangered Colorado River fishes."[101] However, the final Memorandum of Understanding has a much more narrow purpose:

> to cooperate in discussions seeking ways to develop and implement a program of reasonable and prudent alternatives which will enable Federal agency actions associated with water project development and depletions in the Upper Basin of the Colorado River to proceed pursuant to

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[100]Miller et al. Colorado River Fishery Project Final Report, supra note 90.
[101]Draft, Memorandum of Understanding, May 17, 1984, p. 3.

> Section 7 of the Endangered Species Act without the likelihood of jeopardizing the continued existence of any threatened or endangered fishes, while fully acknowledging and considering the beneficial uses of water pursuant to the respective State water rights systems and the use of water apportioned to a State pursuant to the compacts concerning the waters of the Colorado River.[102]

The emphasis is clearly on finding ways to allow individual projects to proceed. The coordinating committee is to identify "reasonable and prudent alternatives," suggesting that a situation of jeopardy is presently considered to exist. Thus it appears that things will continue much as they have been with water project proponents able to avoid a jeopardy opinion by paying for the development and implementation of "reasonable and

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[102]Memorandum of Understanding, effective Sept. 3, 1984, p. 1.

prudent alternatives."[103] It remains to be seen if this effort will evolve into something more akin to a true management approach for achieving recovery of the protected species.

B. The ESA and the Platte River

As with the Colorado River, the Platte River is the subject of extensive development interest. Existing development already has drastically altered the character of the river.[104] Most

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[103] See, e.g., statements in recent FWS memoranda such as this:

> "The FWS is currently attempting, with the assistance and input of other Federal and State agencies as well as the private sector, to review and further develop conservation measures which will provide for the conservation and recovery of the endangered Colorado River fishes. If the results of this coordinated effort is [sic] a continuation of minimum flows and contributions of funds towards the conservation effort, then the approach outlined above [payment of depletion charge] as an alternative precluding jeopardy to listed fishes will remain valid. If a different approach is developed it would then be used in future consultations."

Memorandum, Section 7 Consultation, Red Canyon Mine, from Field Supervisor, Endangered Species Office, U.S. Fish and Wildlife Service, Salt Lake City, Utah to Robert Schuenemon, Chief Technical Support Branch, Office of Surface Mining, Denver, Colorado, August 2, 1984, p. 4.

[104] According to one description: "The Platte River of the 1800's was a broad, open channel with some vegetated islands. River breadth varied greatly, but exceeded a mile at several locations and probably averaged at least one-half mile. Vegetation was scarce along the river banks and essentially non-existant [sic] in the channel, although some islands were well-wooded. Historical accounts and flow records from the late 1800's indicate that the Platte River was intermittent above Grand Island, experiencing both great floods and periods of no flows." Biological Assessment, Potential Effects of the Narrows Project on the Platte River Migratory Habitat of the Endangered Whooping Crane, Bureau of Reclamation, Lower Missouri Region, Denver,Colorado, June 30, 1982, p. 18.

significant in terms of impacts on the habitat of the whooping crane are the narrowed river channel and the increased vegetative encroachment.[105] In the mid-to-late 1970's there were three proposed projects on the Platte River basin requiring Section 7 review by the FWS--the Grayrocks Dam and Reservoir in the North Platte River basin in Wyoming and the Narrows and Wildcat Project in the South Platte River basin in Colorado.

1. The Grayrocks Project

The Basin Electric Power Cooperative and other utilities committed in the early 1970's to the construction of a large coal-fired electric power facility near Wheatland, Wyoming.[106] Known as the Missouri Basin Power Project, this facility would supply electricity to members' customers in an eight-state area. To supply needed cooling water the Grayrocks Dam and Reservoir would be constructed on the Laramie River 10 miles downstream from the plant and 10 miles from the junction of the Laramie River and the North Platte River.

In December 1976, the Rural Electrification Administration (REA) granted a loan guarantee for two-thirds of the cost of the project. In March 1978, the U.S. Army Corps of Engineers issued a Section 404 dredge-and-fill permit. Lawsuits challenging both

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[105] Id. p. 24.
[106] Grayrocks Dam and Reservoir, Staff Report to the Endangered Species Committee, January 19, 1979, p. i [hereinafter Grayrocks Report].

of these federal actions were brought by the state of Nebraska and a number of environmental groups.[107]

The REA was the lead agency in the preparation of the environmental impact statement (EIS) required under the National Environmental Policy Act.[108] Its draft EIS did not discuss at all any adverse effects from the Grayrocks Project on whooping cranes or other downstream environmental resources.[109] In November 1977, FWS requested that REA initiate formal consultation regarding the Grayrocks Project under Section 7 of the ESA. The Corps had itself requested such consultation in October. In December, FWS responded to the Corps that "[i]n view of the evidence currently available, it is our opinion that construction and operation of the Grayrocks Dam and Reservoir may jeopardize the continued existence of the endangered whooping crane or result in the destruction or adverse modification of its critical habitat."[110] However, more information was required to give a final opinion. Three studies were proposed to supply this information. The FWS response then added: "We believe that when these studies are completed, estimated to take 3 years, we will

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[107]These cases were consolidated and decided as Nebraska v. Rural Electrification Administration, 12 ERC 1156 (1978) [hereinafter Nebraska v. REA].

[108]42 U.S.C. § 4332(2).

[109]Nebraska v. REA, supra note 107, at 1161. It was noted in the opinion that REA did not seek assistance in considering these issues from FWS or the state agencies. Id. at 1158.

[110]Letter from James C. Gritman, Acting Regional Director, U.S. Fish and Wildlife Service to Colonel James W. Ray, District Engineer, Corps of Engineers, December 15, 1977.

have the answers to the questions posed above and be able to give you a biological opinion on the effects of the proposed project."[111]

In May 1978, FWS published its final rule establishing designated critical habitat for the whooping crane.[112] Included was an area along the Platte River in Nebraska between Lexington and Shelton.[113] In July 1978, the Solicitor of the Department of the Interior issued an opinion concluding that the cumulative effects of other projects--federal, state, or private-- must be considered during consultations under Section 7.[114]

On October 2, 1978 the federal district court in Nebraska enjoined further work on the Grayrocks Project because of inadequacies in the EIS and failure to comply with the require-

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[111] Id., at 3. Additional studies were undertaken by FWS, the USGS, and BOR. FWS completed the Platte River Ecology Study in 1981. USGS issued a series of 12 reports analyzing the hydrologic aspects of the Platte River system. BOR undertook studies related to water management within the Platte River system.

[112] Determination of Critical Habitat for the Whooping Crane, 43 Fed. Reg. 20938 (1978) codified at 50 C.F.R.

[113] See Figure 3, supra p. 6.

[114] 85 Interior Dec. 275 (July 19, 1978) (supplemented July 24, 1978. As discussed infra, text accompanying note 167, this opinion has been withdrawn. Memorandum, Withdrawal of Prior Solicitor's Opinion on Cumulative Effects Analysis Under Section 7 of the Endangered Species Act, from Solicitor William H. Coldiron to Director, Fish and Wildlife Service, August 26, 1981. A new opinion, issued the following day, concluded that the effect of each proposed project should be considered "sequentially rather than collectively ...." Memorandum, Cumulative Effects to Be Considered Under Section 7 of the Endangered Species Act, from Associate Solicitor to Director, Fish and Wildlife Service, August 27, 1981.

ments of Section 7 of the ESA, among other reasons.[115] On November 10, 1978 Congress passed the 1978 Amendments[116] which included in Section 5 a requirement that the newly created Endangered Species Committee consider the exemption of the Grayrocks (and Tellico) Projects from the requirements of the ESA. If a decision regarding such exemption was not made within 90 days, the projects would be deemed to be exempted.[117]

On December 8, 1978, the FWS issued its biological opinion for the Grayrocks project concluding that "the project in combination with other water development reasonably expected to be completed during the life of the project is likely to jeopardize the continued existence of the whooping crane and is likely to adversely modify or destroy the whooper's critical habitat unless one of the recommended alternatives is followed as detailed in this opinion."[118] The opinion noted an expected 20 percent loss of annual flow for the Platte River near Overton, Nebraska (within the designated critical habitat for the whooping crane) in the year 2000 and a 35 percent reduction in flow by

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[115] Nebraska v. REA, supra note 107.
[116] Supra note 58.
[117] An additional special section relating to the Grayrocks Project stated that after the FWS issued its biological opinion, "the responsible officers of the Rural Electrification Administration, the Secretary of the Interior, and the Secretary of the Army, shall require such modification in the operation or design of the project ..." as necessary to avoid jeopardy. 1978 Amendments, supra note 58, § 5.
[118] Grayrocks Biological Opinion, supra note 16 at 4.

2020.[119] This additional depletion beyond the estimated 60 to 70 percent of the pre-1930 mean annual flow already lost was deemed unacceptable by the FWS.[120] The reasonable and prudent alternative required of the project proponent to avoid the jeopardy conclusion was either total replacement of water removed by the project so that there would be no change in the streamflow or creation of an irrevocable trust fund with sufficient income in any year "to provide for measures which offset the impact on the critical habitat of all water removed by the Grayrocks Power Project in that year."[121]

Just prior to the issuance of the Grayrocks Biological Opinion, the parties to the Grayrocks dispute reached a settlement which put a maximum limit on annual water use by the project, provided for releases of water during certain periods of the year, assured the replacement of specified amounts of water withdrawn by a nearby irrigation district, and provided for the establishment by the project proponent of a $7.5 million trust fund for the maintenance and enhancement of the whooping crane critical habitat.[122] On January 23, 1979 the Endangered Species Committee granted an exemption to the Grayrocks Project con-

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[119] Id. at 16. The Grayrocks project itself would account for about 13 percent of the total additional depletion in 2000 and about 8 percent in 2020. The major source of depletion will be groundwater pumping for irrigation in Nebraska.
[120] Id. at 17.
[121] Id. at 18. The trust fund approach had already been agreed to by the parties involved as a result of ongoing negotiations.
[122] Grayrocks Report, supra note 16, at iv.

ditioned on the implementation of the terms of the settlement.[123]

2. The Wildcat Project

The Wildcat Dam and Reservoir, proposed for construction near Brush, Colorado on Wildcat Creek, a tributary of the South Platte River, is a joint project of the Riverside Irrigation District and the Public Service Company of Colorado. The reservoir would have a storage capacity of 60,000 acre feet (a/f). Public Service Company will pay the costs of construction in exchange for a 50-year lease for 14,000 a/f of water annually to be used as an exchange for cooling water pumped from wells near the Pawnee Power Plant.[124] In April 1982, FWS issued a biological opinion concluding that the Wildcat project was likely to jeopardize the continued existence of the whooping crane and adversely modify designated critical habitat.[125] FWS determined that the annual loss of streamflow in the South Platte River basin resulting from this project would be 11,000 acre feet.[126] Its assessment of the impacts of this depletion on the crane habitat about 260 miles downstream concluded:

> The new water consumption attributed to the project, though small in magnitude,

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[123]Department of the Interior News Release, Endangered Species Committee Completes Report on Grayrocks and Tellico, February 8, 1979.
[124]Wildcat Biological Opinion, supra note 9 at 2-3.
[125]Id. at 2.
[126]Id. at 4.

> is nonetheless detrimental to the whooping crane habitat. The major impact of Wildcat Reservoir on the 88.9 miles of whooping crane habitat is that more vegetative encroachment will result from the construction and operation of the project. In addition, the likelihood of maintaining river channel width (suitable for crane usage) with adequate scouring flows is diminished since any water removed from the basin is that much less water which could have been redistributed to provide needed scouring flows.[127]

In discussing reasonable and prudent alternatives FWS noted that the "preferred" approach to protect the crane habitat is to guarantee specified flows during migration periods, to maintain adjacent wet meadow areas, and to scour the vegetative encroachment by ensuring specified large flows during a 23-day period each year.[128] However, since the size and location of this project make it unable to "contribute in any meaningful way to help accomplish a reorientation of the timing of the flows in the basin,"[129] the proposed alternative is to give the project proponent responsibility for clearing approximately 102 acres of

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[127] Id. at 14.
[128] Id. at 14.
[129] Id. at 15.

vegetative encroachment annually in the crane habitat area.[130]

The project sponsors are challenging the refusal of the Corps of Engineers to allow construction of the Wildcat Dam under Section 404 of the Clean Water Act[131] because of the jeopardy finding by FWS. A federal district court decision in 1983 held that the Corps of Engineers properly considered the adverse effects on the whooping crane habitat in preventing the project from proceeding.[132] This decision recently was affirmed by the 10th Circuit.[133]

3. The Narrows Unit

The Narrows Dam and Reservoir is proposed for construction on the South Platte River near Fort Morgan, Colorado. The project would be constructed and operated by the U.S. Bureau of

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[130] Id. This figure was arrived at by establishing the average annual flow of water in the habitat considered available for development (assuming the maintenance of certain minimum flows and mechanical clearing of the unwanted vegetation), determining what percent of this total amount was accounted for by the Wildcat project depletion, and multiplying this percent times the habitat miles that need to be kept clear of vegetative encroachment for a minimum width of 500 feet.

[131] 33 U.S.C. § 1344. Section 404 governs the issuance of permits by the Army Corps of Engineers for the discharge of dredge and fill materials into the waters of the United States. To determine whether to issue a permit the Corps undertakes what is termed a "public interest review." The issuance of such a permit constitutes a federal action triggering a consultation with FWS under Section 7(a)(2) of the ESA.

[132] Riverside Irrigation District v. Andrews, 568 F. Supp. 583 (D. Colo. 1983). This case is discussed in text accompanying notes 154-158 infra.

[133] Riverside Irrigation District v. Andrews, 758 F.2d 508 (10th Cir. 1985).

Reclamation (BOR). Storage capacity of the reservoir would be about 1, 609, 000 a/f, affording a supply of 157,000 a/f of supplemental irrigation water annually on 287,070 acres of land in the Lower South Platte Water Conservancy District and the Central Colorado Water Conservancy District.[134]

On January 20, 1983, FWS also issued a "jeopardy" opinion for the proposed Narrows Unit.[135] FWS found that the net annual depletion of flows in the designated whooping crane habitat in Nebraska resulting from this project would be 91,900 acre feet.[136] Just as with the Wildcat project, FWS noted that reduced flows will jeopardize the whooping crane by causing loss of suitable roosting habitat during the spring and fall migrations and loss of necessary channel width in the critical habitat area. As a reasonable and prudent alternative, FWS proposed "that water storage be designated in the Narrows Unit Reservoir to provide needed supplemental flows for roosting habitat and for channel width maintenance."[137] Moreover, as a "conservation measure," FWS proposed that the BOR work with FWS to improve the Platte River habitat as needed to support recovery of the whooping crane.[138]

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[134]Narrows Biological Opinion, supra note 12 at 2.
[135]Id.
[136]Id.
[137]Id. at 14. The amount of storage required to satisfy these requirements was left to be determined by subsequent study.
[138]Id.

4. Platte River Coordination

On March 25, 1983, the regional directors of the BOR and FWS signed a memorandum establishing a "cooperative working group composed of FWS and BOR representatives who will be charged to develop recommendations delineating a course of action that will accommodate present and future water development necessities and the protection of fish and wildlife resources in the system."[139] In spite of this broad initial charter, the memorandum then goes on to limit the inquiry to developing measures for "preserv[ing] an appropriate level of the desired habitat [for whooping cranes] along the Platte River in central Nebraska."[140]

A draft proposed plan of action aimed at removing the jeopardy opinion for the proposed Narrows project was issued in October, 1983.[141] It proposed to:

> identify and quantify existing and potential roosting and feeding habitat, refine the habitat-flow relationship information currently available, identify and test on-site management techniques to

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[139]Memorandum, Platte River Coordination, from Regional Director, Bureau of Reclamation and Regional Director, Fish and Wildlife Service to Work Group for Platte River System, March 25, 1983.
[140]Id.
[141]Platte River Management Joint Study--Narrows Option(Draft), October 20, 1983.

> aid in providing the desired habitat characteristics, develop a Platte River Management Plan for whooping crane habitat, and define that portion of the plan that would be the responsibility of the Narrows Unit.[142]

The proposal later states: "Using this and other information to be developed and assessed, a management plan for Platte River whooping crane habitat in central Nebraska requiring a minimum amount of water is to be defined."[143]

In December 1984, the final plan of action was issued.[144] Activities are to proceed in two phases. Phase I focuses on finding acceptable alternatives that will enable the Narrows Project to proceed without violating the ESA. The statement accompanying the plan outline notes that "none of the alternatives, including the plan recommended in the biological opinion issued January 20, 1983, are completely satisfactory due to the lack of certainty that, if implemented, the desired results of

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[142] Id. at 2.
[143] Id. at 6 (Emphasis added).
[144] Platte River Management Joint Study, December 18, 1984.

providing for whooping crane habitat would be achieved."[145] Current plans call for completion of this phase by spring, 1986.[146]

Phase II entails a much more broadly-based effort that will result in a plan for management of migratory and resident wildlife dependent on the Platte River. Authority to undertake this effort is provided in the congressional authorization of a feasibility study for the proposed Prairie Bend Unit in Nebraska.[147]

V. Selected Section 7 Legal Issues

The ESA is a complex law that addresses an even more complex problem. Congress has added to its complexities through a series of amendments. FWS, the primary implementing agency, has been faced with the sometimes unhappy task of carrying out its commands in the face of considerable uncertainty. As the power of the Section 7 requirements to significantly affect development became evident, resistance to what is perceived as overzealous

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[145] Id. at 1. The statement goes on to repeat the generally proposed objectives cited from the draft plan at text accompanying note 142 supra, but adds that these actions will be taken "while fully acknowledging and considering the beneficial uses of water pursuant to the respective State water rights systems and the use of water apportioned to a State pursuant to the compact and U.S. Supreme Court decrees concerning the waters of the Platte River and its tributaries." Id. at 2.

[146] Telephone conversation with Roger Weidelman, BOR Regional Office, Denver, Colorado, March 17, 1985.

[147] Platte River Management Joint Study, supra note 144, at 2.

implementation has grown. Nevertheless, the amount of litigation involving the ESA is not exceptional.

Certainly there are a substantial number of very important legal issues under the ESA, especially related to Section 7, yet to be settled. Several key decisions already have provided some shape to the requirements of Section 7. The foremost example is TVA v. Hill.[148] In this section, we highlight several broad legal issues raised by Section 7 with special reference to those involved in the current water development activities on the Colorado and Platte Rivers.

First, we take up the issue of the federal connection necessary to trigger the requirements of Section 7. Next we consider the fundamental problem of what constitutes jeopardy. In this connection we discuss the impacts that are considered, the findings that must be made, and the quality of information required. Finally we take up the question of what may be done--and what must be done--to meet the duty regarding endangered species imposed on all federal agencies under Section 7.

A. The Federal Connection

With the passage of the Endangered Species Act of 1973[149] Congress dramatically altered the role of the federal government

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[148]See discussion in text accompanying notes 54-57, supra.
[149]Supra note 33.

in endangered species protection. Instead of the rather ill-defined responsibilities assigned to the Department of the Interior and vague exhortations to other agencies to help out "where practicable," Congress now stated unequivocably that all federal agencies and departments have the responsibility to carry out programs for the conservation of endangered species and to take "such action necessary to insure that actions authorized, funded, or carried out by them ..." do not result in jeopardizing protected species.[150] By thus subjecting all federal agency actions "authorized, funded, or carried out" to this absolute prohibition Congress greatly extended the reach of the ESA.

Congress has not yet seen fit to offer a definition of the actions contemplated in this command. Certainly where the federal agency is itself the proponent of the activity potentially jeopardizing an endangered species there is little question of the applicability of Section 7. Moreover, where the activity of concern would not occur without direct federal assistance such as financial support, the appropriateness of applying Section 7 seems clear enough. As the degree of federal involvement becomes more remote the applicability of Section 7 becomes less certain. For example, a private activity subject to federal regulation and requiring federal permission in order to proceed seems clearly to come within the ambit of Section 7. Where, however, the federal permission required involves only a

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[150]1973 Act, supra note 33, § 7.

relatively minor part of the activity and clearly not the part of the activity potentially posing a threat to a protected species the federal connection is more tenuous.

FWS has proposed a definition for "action" as meaning:

> all activities of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies--Examples include, but are not limited to: (a) the promulgation of regulations; (b) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (c) actions directly or indirectly causing modification to the land, water, or air.[151]

Such a definition takes a broad view of the kinds of federal actions that should trigger Section 7 considerations. Indeed, the example of actions indirectly causing modifications to land, water, or air would appear to leave out nothing that might conceivably relate to an endangered species. Such a broad view may very well be appropriate given the evident intention of Congress to use its control over federal activities to pursue its

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[151] 48 Fed. Reg. 29990, 29998 (1983) (to be codified at 50 C.F.R. § 402.2) (proposed June 29, 1983) [hereinafter cited as Proposed Section 7 Regulations].

objective of conserving endangered species.

The relationship that the federal action must bear to the direct cause of jeopardy to protected species is unsettled. Is it enough that the adverse effects would not result if the federal action had not occurred or must the federal action itself be the direct cause of these effects? Litigation arising out of the proposed Wildcat Project has raised this issue in the context of Section 404 dredge-and-fill permits. Construction of a dam nearly anywhere in the United States requires permission of the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.[152] In general, it is contemplated that specific permit applications will be made. However, the law authorizes the Corps to issue general permits on a state, regional, or nationwide basis.[153] If the proposed dredge-and-fill activity comes under the definition of such a general permit, no application is necessary. Compliance with the conditions of the general permit is all that is necessary.[154]

The Corps of Engineers has determined that the Wildcat Project does not qualify for nationwide permit status and that,

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[152] 33 U.S.C. § 1344.
[153] 33 U.S.C. § 1344(e)(1). Activities that are "similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment" qualify for such permits.
[154] 33 C.F.R. § 321.1(c).

instead, an individual permit application must be filed.[155] The basis for this decision was the expressed concern that operation of the reservoir could adversely affect the whooping crane.[156] The project proponents brought suit against the Corps asserting that the District Engineer exceeded his authority in considering these impacts.

For purposes of the ESA, the federal action in this situation is a dredge-and-fill permit for construction of a dam on an intermittent stream[157] located 250 miles upstream from the designated critical habitat that is the object of federal protection. The adverse effects on the habitat are expected to result not from construction of the dam (the subject of the dredge-and-fill permit) but from its subsequent operation. Nevertheless, Judge Kane had no trouble in concluding that since the Clean Water Act allows the consideration of such subsequent

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[155] Riverside Irrigation District v. Andrews, 568 F. Supp. 583, 585 (1983).

[156] As the federal district court noted: "It is thus clear that the Engineer did not base his decision on the issue of whether the placement of fill material during the construction of the dam would have an adverse effect on the environment but rather on whether the operation of the dam and the altered water flow would have an adverse impact on an endangered species whose critical habitat exists some 250 to 300 miles downstream." Riverside Irrigation District v. Andrews, 568 F. Supp. 583, 585 (1983).

[157] Wildcat Creek is estimated to have an average annual yield of 1.1 cubic feet per second. Plaintiffs-Appellants Opening Brief at 7, note 2, Riverside Irrigation District v. Andrews, 758 F.2d 508 (10th Cir. 1985).

impacts the ESA requires that they be considered.[158] The holding was affirmed recently by the Tenth Circuit Court of Appeals.[159]

The clearly stated intention of the ESA is conservation of endangered species. Under Section 7, federal agencies are given special responsibilities--one of which is to insure that actions authorized, funded, or carried out by them are not likely to jeopardize endangered species. In view of the "priority" afforded endangered species protection in agency decision making[160] it seems unnecessarily restrictive to cut off the

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[158]Thus Judge Kane held:

> Because the Clean Water Act allows federal agencies to consider deleterious downstream environmental effects from a project and because the Endangered Species Act requires federal agencies to take whatever measures are necessary, within their authority, to protect an endangered species and its habitat, the defendant in the present case was required to halt the plaintiffs from proceeding under the nation-wide permit when their project had the potential of adversely affecting the whoopers and their habitat downstream from the project.

Riverside Irrigation District v. Andrews, 568 F. Supp. 583, 589 (1983).

[159]Riverside Irrigation District v. Andrews, 758 F.2d 508 (10th Cir. 1985).

[160]This characterization of congressional intention was offered by the Supreme Court in TVA v. Hill, supra note 54 at 174.: "But examination of the language, history, and structure of the legislation under review here indicates beyond doubt that Congress intended endangered species to be afforded the highest priorities" and at 185: "The pointed omission of the type of qualifying language previously included in endangered species legislation reveals a conscious decision by Congress to give endangered species priority over the `primary missions' of federal agencies."

Section 7 inquiry through some narrow interpretation of federal action. The protection of endangered species does not seem to be well-served by such an approach. Rather it seems more appropriate to move ahead to the more fundamental question concerning impacts on the species and their habitat. We turn next to the issue of jeopardy.

B. What is Jeopardy?

The heart of Section 7 is found in the directive to federal agencies not to "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [designated] habitat of such species ...."[161] At the outset it is useful to note that there are two separate directives here--not to jeopardize protected species and not to destroy or adversely modify their habitat. To this point, however, the courts have not distinguished these two requirements. Moreover, it has been argued that

> the former duty completely subsumes the latter, for any action that destroys or adversely modifies the critical habitat of a listed species must necessarily jeopardize its continued existence. This is so because any area of habitat can be

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[161] 16 U.S.C. § 1536(a)(2).

> designated as critical habitat only if it is essential to the survival and recovery (i.e. "conservation") of a listed species, and any modifications of such habitat should be considered "adverse" only if it diminishes the value of the habitat for the survival and recovery of that species. Any action that appreciably reduces the likelihood of survival or recovery of a listed species, however, must be considered to jeopardize its continued existence. Thus any action that adversely modifies the critical habitat of any listed species must also jeopardize its continued existence.[162]

Congressional concern about protecting the habitat of endangered species is longstanding.[163] Earlier efforts to protect habitat located on private lands were limited to modest programs for land acquisition. In the 1973 Act Congress sought

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[162]Bean, supra, note 42 at 359 (footnotes omitted). Compare Coggins and Russell, Beyond Shooting Snail Darters in Pork Barrels: Endangered Species and Land Use in America, 70 Georgetown L.J. 1433 (1982) [hereinafter cited as Coggins and Russell] at 1462: "In some reported cases, courts have tended to lump together the prohibition against critical habitat modification and species jeopardization without differentiating between them. Although closely related, they are nevertheless analytically distinct, and the distinction can have practical importance." (footnotes omitted).

[163]See discussion in text accompanying notes 40-47 supra.

to broaden its approach by authorizing the Secretary of the Interior to designate certain areas of critical habitat and then requiring that federal actions cause no destruction or adverse modification of such designated habitat. Congress knew that habitat destruction was a major factor causing the loss of species. Other reasons (aside from hunting and other commercial activities) were less evident. Perhaps what Congress really intended to say was that habitat destruction--and other actions jeopardizing the continued existence of endangered species--are prohibited.

At any rate it is clear that federal actions resulting in the destruction or adverse modification of designated critical habitat are absolutely prohibited by Section 7. At a minimum this provision puts everyone on notice that special protection is to be given to such areas and that activities affecting these areas in any way are likely to be subjected to special scrutiny.[164]

In the following discussion, our inquiry is aimed at understanding how a federal agency determines if it is violating

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[164]This is the position taken by Bean, supra note 42 at 359-360: "If the duty to avoid adverse modification of critical habitat is entirely redundant of the duty to avoid jeopardy to a listed species, then it can fairly be asked whether the designation of critical habitat serves any useful purpose. In the author's view, it clearly does because it gives advance notice of those areas in which federal activities will require especially close scrutiny to determine whether they meet the requirements of the jeopardy prohibition."

either of these requirements--that is, what does it mean to jeopardize the continued existence of an endangered species or adversely modify critical habitat? First we address the legally required scope of analysis. Then we consider the standard of evaluating impacts. Finally we consider the quality of information required and the related problem of uncertainty.

1. The Scope of Analysis

In determining the impact of a proposed federal action on an endangered species or its habitat it is necessary to frame the analysis--to construct a set of boundaries determining the scope of the analysis. Should the analysis include the effects of the proposed action in conjunction with the impacts from other related types of activities also expected to occur--a cumulative impacts analysis--or should the analysis consider only the incremental impact caused by the proposed federal action? If a cumulative impacts analysis is to be undertaken, should it include all reasonably foreseeable activities in the area of concern? Should it be restricted to just those involving some federal action? Should it consider only those for which some federal action is already underway? How certain of occurrence must these other activities be to be included in the analysis?

Originally, the Department of the Interior took the position that a broad-based cumulative impacts analysis was required:

> In our view, Section 7 and the Secretary's regulation require the consideration of not only the impacts of the particular project subject to consultation, but also the cumulative effects of other activities or programs which may have similar impacts on a listed species or its habitat. The focus of Section 7 consultations should not be limited to the individual impacts of the activity under review. Rather, consultation should also look at the cumulative impacts of all similar projects in the area.[165]

Moreover, following the approach under NEPA, Solicitor Krulitz concluded that a "rule of reason" should be applied in determining which additional proposed projects and activities should be considered in the analysis.[166]

In 1981 the Krulitz Memorandum was withdrawn and in its

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[165]Memorandum, Cumulative Impacts--Section 7 of the Endangered Species Act, from Solicitor, Department of the Interior to Director, Fish and Wildlife Service, July 19, 1978, p. 2 [hereinafter cited as Krulitz Memorandum].

[166]Id. at 4-6. Thus the Krulitz Memorandum states: "This test should take into consideration and give appropriate weight to the likelihood that the impact from other projects or activities will occur, the sequence of those impacts and the degree of administrative discretion which can be exercised in those projects or activities to diminish the impact on the subject species. Impacts which are unlikely to occur or projects and activities which have little probability of being undertaken need not be considered in determining the cumulative impact." Id. at 6.

place was substituted a Solicitor's Opinion which concluded:

> [T]he impact of future federal projects should each be addressed sequentially rather than collectively, since each must be capable at some point of individually satisfying the standards of section 7. Thus for federal projects, section 7 provides a "first-in-time, first-in-right" process whereby the authorization of federal projects may proceed until it is determined that further actions are likely to jeopardize the continued existence of a listed species or adversely modify its critical habitat.[167]

Under this approach, the impact analysis is limited to existing activities, the proposed project, other proposed projects which have already received approval under Section 7 but have not yet been undertaken, and other state and private actions "reasonably certain to occur prior to completion of the federal project."[168]

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[167]Memorandum, Cumulative Effects to be Considered Under Section 7 of the Endangered Species Act, from Associate Solicitor, Conservation and Wildlife to Director, Fish and Wildlife Service, August 27, 1981, p. 4 [hereinafter referred to as the Spradley Memorandum].

[168]Id. at 7. Guidance in the form of "indicators" is provided regarding the determination of whether other state or private actions are "reasonably certain." It is stated: "Those indicators must show more than the possibility that the non-federal project will occur; they must demonstrate with reasonable certainty that it will occur." Id.

In response to this and other shifts in position as well as developments in the law, FWS issued new proposed regulations implementing Section 7 in 1983[169] Under these regulations, during a consultation FWS is to "evaluate the effects of the action and any cumulative effects on the listed species or critical habitat ...."[170] However, cumulative effects are defined as "those effects of future State or private actions which are reasonably certain to occur prior to completion of the Federal action subject to consultation."[171]

The reasoning of the Spradley Memorandum relies on the view that broad-based cumulative impacts analysis under NEPA is appropriate because an environmental impact statement is merely procedural while Section 7 imposes a specific substantive duty to protect endangered species. A NEPA inquiry is intended to inform and should be as broad as possible. However, findings of jeopardy under a Section 7 inquiry require that the action not be taken. Considering the effects of "other speculative and unrelated future actions"[172] could result in denying activities

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[169]Proposed Section 7 Regulations, supra note 151. Although these regulations have not yet been promulgated as final, FWS is effectively operating under them. Interview with Margot Zallen, Regional Solicitor's Office, Denver, Colorado (June 27, 1984).

[170]Proposed Section 7 Regulations, supra note 151 at 30003.

[171]Id. at 29998. The interested reader is then referred to the Spradley Memorandum "[f]or a more complete analysis on how the Department of the Interior interprets this concept."

[172]Spradley Memorandum, supra note 167 at 4.

that do not jeopardize protected species. Moreover, since each federal action must undergo this inquiry there will be future opportunities to review the status of the species and their habitat.

In contrast, the Krulitz Memorandum started from the position that the purpose of the ESA was to provide a means "whereby the ecosystems upon which endangered and threatened species depend may be conserved ...."[173] Based on this broader view,

> it is apparent that Congress intended that the Department not limit its consultation role to a piece-meal analysis of the impacts of individual projects or activities on endangered species habitat. Rather, a reasoned interpretation of these provisions requires an analysis of all pending impacts upon the ecosystems, before determining whether the more limited impacts of any one particular proposal will violate the prohibitions of Section 7.[174]

It is certainly true that the ESA has the broad purpose of

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[173]16 U.S.C. § 1531(b).

[174]Krulitz Memorandum, supra note 165 at 4.

conservation of endangered species. However, Section 7 is only one of the means provided by Congress for achieving this objective. Indeed, when originally formulated in the 1973 Act it probably was not viewed as the most important of the several approaches offered.[175] Cumulative impacts analysis is required in the preparation of an EIS. Federal actions requiring a Section 7 consultation will necessarily have been considered in an EIS.[176] Thus federal decision makers should be aware of other proposed activities and their possible impacts. It may well be that because federal agencies have a duty to insure that their actions do not jeopardize endangered species or adversely modify their habitat this cumulative impacts analysis will affect their decisions. However, the absolute prohibitions of Section 7 should not depend upon the very difficult analysis of potential impacts from possible projects or activities--even those that appear likely at the time of analysis.[177]

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[175]See text accompanying note 49, supra.

[176]An EIS is required in the case of all major federal actions significantly affecting the environment. 42 U.S.C. § 4332(2)(C). Given the special protection afforded endangered species under the ESA, proposed federal actions potentially affecting endangered species would usually fall under this category.

[177]Projected economic activity often comes in waves, responding to some crisis or major change. Thus the energy "crisis" of the 1970's resulted in hundreds of proposed activities thought at the time to be very "likely." As the economy slowly but inevitably adjusted to the changes in energy prices most of these "likely" proposals faded away. Long-term analysis is essential and requires making "best guesses" under considerable uncertainty. In close cases, endangered species protection should be given the benefit of the doubt. However, long run cumulative impacts are better addressed in the context of more

At the same time, it is appropriate to consider both the direct and indirect effects of the proposed federal action. Thus, in the 1976 case of National Wildlife Federation v. Coleman[178] the court held that the responsibility of the Department of Transportation to insure that its action (financial support to the Mississippi State Highway Department to build an interstate highway) complied with the requirements of Section 7 necessitated a consideration of the indirect as well as the direct effects of that highway on the endangered Mississippi Sandhill Crane and its designated critical habitat. Of major concern was the private development that would accompany the highway if an interchange were built in the habitat area of the crane.[179] The Proposed Section 7 Regulations adopt this approach by stating that the indirect effects are to be considered in analyzing the effects of the proposed action, defining indirect effects as "those that are caused by the proposed action and are

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broadly-based management programs than under Section 7. See discussion in text accompanying notes 312-315 infra.

[178]529 F.2d 359 (5th Cir. 1976).

[179]The opinion noted: "The relevant consideration is the total impact of the highway on the crane. ... Although it is clear that the crane can survive the direct loss of 300 acres of habitat, the evidence, including the FEIS, shows that it is questionable whether the crane can survive the additional loss of habitat caused by the indirect effects of the highway, coupled with the excavation of and drainage drainage caused borrow pits." Id. at 373.

later in time, but still are reasonably certain."[180]

The Tenth Circuit Recently adopted this position in the case of Riverside Irrigation District v. Andrews.[181] Plaintiffs had argued that the Corps of Engineers should consider only the direct effects associated with the placement of fill material in construction of the Wildcat Dam. At the urging of FWS, the Corps determined that it must also consider the indirect effects--that is, the downstream effects of the depletion of water that would result from the dam. As the court stated:

> In the present case, the depletion of water is an indirect effect of the discharge, in that it results from the increased consumptive use of water facilitated by the discharge. However, the Corps is required, under both the Clean Water Act and the Endangered Species Act, to consider the environmental impact of the discharge that it is authorizing. To require it to ignore the indirect effects that result from its actions would be to require it to wear blinders that Congress has not chosen to impose. The fact that the reduction in

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[180] Proposed Section 7 Regulations, supra note 151, at 29999. Also to be considered are the effects of actions that are "interrelated or interdependent" with the action. Id.

[181] 758 F.2d 508 (10th Cir. 1985).

> water does not result "from direct federal action does not lessen the appellee's duty under §7 [of the Endangered Species Act]." National Wildlife Federation v. Coleman, 529 F.2d 359, 374 (5th Cir. 1976). The relevant consideration is the total impact of the discharge on the crane. Id. at 373.[182]

Thus the scope of the inquiry regarding jeopardy is to be limited to the incremental effects associated with the proposed federal action. Effects of other actions not likely to be undertaken before the action under review occurs should not be considered. However, the effects of the proposed action should not be limited to the direct ones but should include reasonably certain indirect effects as well.

2. The Standard for Evaluating Impacts of Actions.

Under Section 7, a federal agency has the duty to insure that any of its actions "is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modifications of [designated critical] habitat of such species ...."[183] Although the words "is not likely" were substituted for "does not jeopardize" in the 1979 Amendments, the legislative history makes it

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[182] Id. at 373.

[183] 16 U.S.C. § 1536(a)(2).

clear that this change was not intended to weaken the requirements of Section 7. Rather, the intention was to permit decisions to be made even when the evidence is not absolutely conclusive.[184] Thus the benefit of the doubt is still to be given to the protection of the species and the burden is on the action agency to demonstrate that its action will not violate Section 7.[185]

With this understanding there remains the fundamental question of the meanings of "jeopardize the continued existence of an endangered species" and "result in the destruction or adverse modification" of designated critical habitat. Although the meanings of these phrases would seem to be essential to the application of Section 7, no case has attempted a definition. However, definitions are provided in the Proposed Section 7 Regulations. Thus, "jeopardize the continued existence of" is defined as "to engage in an action which reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of listed species in the wild by reducing the reproduction, numbers, or distribution of a listed species or otherwise adversely affecting the species."[186] A somewhat parallel definition is provided for

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[184]See discussion in note 73, supra.

[185]House Conference Report 697, 96th Cong., 2d Sess., reprinted in 1979 U.S. Code Cong. & Ad. News 2557, 2576.

[186]Proposed Section 7 Regulations, supra note 151, at 29999.

destruction or adverse modification: "a direct or indirect alteration of critical habitat which appreciably diminishes the value of the habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical."[187]

First, it is important to note that in both cases the action must be found to adversely effect both the survival and recovery of protected species. The language in Section 7 refers to the "continued existence." Read literally, this language suggests that only federal actions jeopardizing the survival of the species are prohibited. Indeed, it was precisely such a factual situation in TVA v.Hill that prompted the Supreme Court to affirm an injunction against the operation of a largely completed dam the result of which, it was thought, would totally extinguish the endangered snail darter.[188]

However, the ESA also declares a policy that all federal

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[187] Id.

[188] See text accompanying notes 54-57, supra. Chief Justice Burger stated: "We begin with the premise that operation of the Tellico Dam will either eradicate the known population of snail darters or destroy their critical habitat." TVA v. Hill, supra note 54 at 171. The opinion comes back to this essential factual finding numerous times, emphasizing its importance to the subsequent legal conclusions.

agencies shall seek to conserve endangered species[189] and commands these agencies to utilize their authorities in carrying out conservation programs.[190] Mindful of these provisions, Region 6 of FWS had taken the position that "jeopardize the continued existence" should apply to actions that appreciably reduce the chances of recovery of protected species--as well as to those that appreciably reduce the likelihood of survival.[191] In other words, an action may be prohibited by Section 7 if it either jeopardizes the existence of a protected species or jeopardizes the recovery of that species.[192]

As reflected in the Proposed Section 7 Regulations, the

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[189]16 U.S.C. § 1531(c)(1).

[190]16 U.S.C. § 1536(a)(1).

[191]Memorandum, Need for Clarification of "Jeopardize the Continued Existence," From Regional Director, Region 6, Denver to Director, FWS, Washington, D.C., Dec. 9, 1981. As this memorandum notes, Region 6 had already issued four biological opinions regarding actions in the upper Colorado River basin where payments were made by the project proponents in order to avoid a finding of jeopardy because of negative impacts on recovery of endangered fishes. "If we flip-flop our position on handling these opinions, we believe that this will give us more problems and will furnish ammunition for groups like the Colorado River Water Conservation District to have us back into court." The memorandum also noted: "The basic policy of the ESA is that we seek to conserve threatened and endangered species. Conserve is defined in the Act to include recovery. Section 7 mandates that all Federal agencies use their authorities to conserve these species. That is our approach in Region 6. If we eliminate recovery from consideration under Section 7 we're in big trouble."

[192]An action may adversely affect the recovery of an endangered species without impacting its survival. Scrutinizing the effect of an action strictly on the basis of its impact on the recovery of protected species results in a much tougher Section 7 standard.

current FWS position is that the proposed action must be found to appreciably reduce the likelihood of both the survival and recovery of a listed species. Adverse impacts on the opportunities for recovery alone are not enough. It must also be shown that the action will appreciably reduce the likelihood of the survival of the protected species.

The only additional guidance provided in the regulations is the phrase "by reducing the reproduction, numbers, or distribution of a listed species or otherwise adversely affecting the species."[193] Thus actions reasonably expected, directly or indirectly, to reduce reproduction, numbers, or distribution may be prohibited under Section 7. In the case of designated critical habitat, prohibited actions "include, but are not limited to, alterations adversely modifying, any of those physical or biological features that were the basis for determining the habitat to be critical."[194] Such direct or indirect alterations must "appreciably" diminish the value of the habitat for both survival and recovery.[195]

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[193]Proposed Section 7 Regulations, supra note 151 at 29999.

[194]Proposed Section 7 Regulations, supra note 151 at 29999.

[195]Still unsettled is the extent of the impact that must be found to result in a jeopardy finding. Coggins and Russell, supra note 162 at 1465, make the following argument for permitting only a "de minimus" impact:

> A reasonable definition of "jeopardize" is any substantial harm to any population segment of any listed species. That a

Section 7(a)(2) is a limiting provision. It seeks to assure that federal actions are not contributing to the further extinction of endangered species. Every safeguard is required to assure that this is the case. The recovery objectives of the ESA are much broader. The primary means set forth to achieve this recovery objective are found in other provisions.[196] Recovery can best be achieved through the development and implementation of broader management approaches than through a piece-meal, case-by-case effort under Section 7.

> species is listed as endangered itself indicates that any adverse effect could contribute to its extinction. The use of "jeopardize" in the statute instead of "result in extinction" suggests that Congress contemplated a less demanding standard. The administrative interpretation, which is entitled to some deference, takes a middle-of-the-road approach: an agency action does not "comply if it might be expected to result in a reduction in the number or distribution of that species of sufficient magnitude to place the species in jeopardy, or restrict the potential and reasonable expansion or recovery of that species ... " Since an endangered species is already in jeopardy and a threatened species is close to it, only a de minimus impact on the species should be tolerable in applying section 7. [footnotes omitted].

As discussed, the current FWS interpretation is that the action must have an "appreciable" effect, suggesting more than a de minimus impact.

[196] The most significant are those providing for recovery plans (16 U.S.C. § 1533(f)), for the implementation of conservation programs including land acquisition (16 U.S.C. § 1534(a)), and for cooperative programs with the states (16 U.S.C. § 1535). These provisions will be discussed at length in Part VI infra.

Although the prevention of jeopardy to protected species from federal actions is the core of Section 7, the litigation almost never reaches this essential substantive issue. One relatively early case, Sierra Club v. Froehlke,[197] involved a situation where a proposed dam project by the Corps of Engineers would result in the flooding of caves sheltering the Indiana Bat, a listed endangered species. The Court noted that there was very little scientific information available regarding this bat.[198] The Interior Department was considering designation of caves in this area as critical habitat, and it had requested a moratorium on construction.[199] The Court, however, concluded that the flooding of caves affecting ten to fifteen thousand of the 30,000 bats in the area (out of a total population of 700,000) was not prohibited under Section 7.

In Roosevelt Campobello International Park Commission v. United States Environmental Protection Agency[200] the Court

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[197] 534 F.2d 1289 (8th Cir. 1976).

[198] Id. at 1296: "One of the problems here is that there is little precise knowledge in the scientific world regarding the behavior and habitat of the bat."

[199] Id. at 1303. The Court noted that the Secretary of the Interior had not chosen to exercise his authority to so designate these caves as he had done for the critical habitat of the Mississippi Sandhill Crane which was threatened by highway construction. Id. at 1302, note 37. See discussion of National Wildlife Federation v. Coleman, supra note 179 and accompanying text.

[200] 684 F.2d 1041 (1st Cir. 1982) [hereinafter cited as Roosevelt Campobello v. EPA].

faced a situation in which the Administrative Law Judge (ALJ) for the Environmental Protection Agency (EPA) rejected findings of jeopardy by both the FWS and the National Marine Fisheries Service (NMFS), resulting in the issuance of a National Pollutant Discharge Elimination System (NPDES) permit to a company planning to construct and operate an oil refinery on the coast of Maine.[201] The major factual issue concerned the likelihood of oil spills from tankers bringing crude oil to the refinery. Although the Court did not overturn the finding of the ALJ that the risk of such spills was minute, thus presenting no threat to endangered species, it did require that better information be developed to fully assess the risk.[202]

As the designated expert agency it is to be expected that the findings of the FWS regarding jeopardy will be accorded considerable judicial deference. A federal agency proceeding with an action in the face of a negative finding by the FWS must be prepared to meet demanding standards regarding the evidentiary

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[201] The endangered species issues concerned the potential jeopardy to the bald eagle (the focus of the FWS) and to the right and humpback whales (the focus of the NMFS). For a discussion of the divisions of responsibilities between the Department of Interior and Commerce see note 48 supra.

[202] Roosevelt Campobello v. EPA, supra note 200 at 1052. In a footnote the Court stated: "We read the requirement that the agency, here EPA, use such quality of data in the consultation process, as applying not only to such matters as the presence, vulnerability, and criticality of the endangered species, but also to the likelihood of an occurrence that might jeopardize it." Id., note 9.

basis for its decision.[203] Similarly, a challenge by outside parties to an FWS determination regarding jeopardy will also carry a heavy burden of proof.[204]

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[203]The Court in Roosevelt Campobello v. EPA, supra note 200 at 1049, quoting language from a 1979 House Report accompanying amendments to ESA, stated: "Moreover, the legislative history emphasizes that '[c]ourts have given substantial weight to these biological opinions as evidence of an agency's compliance' with the Act, ... , and that a federal agency which 'proceeds with [an] action in the face of inadequate knowledge or information ... does so with the risk that it has not satisfied the standard of' § 7(a)(2)."

[204]For a somewhat different view see Coggins and Russell, supra note 162 at 1502:

> Several arguments militate against the conclusion that the biological opinion is conclusive. First, courts are aware that the FWS, although certainly the "expert" agency in wildlife matters is neither infallible nor immune from the influence of political pressure. Second, Congress did not say that the biological opinion would be conclusive. Instead, the standard remains that the action agency must insure against dire consequences, and the burden of persuasion is still on the agency to demonstrate that insurance. In other words, if the litigant can demonstrate the possibility of jeopardization, habitat modification, or taking, the agency thereafter has the burden of persuading the court that the dire effects will not occur. The FWS opinion may be evidence tending to prove that no jeopardization will occur, but the statute does not warrant finding the opinion conclusive. [footnotes omitted].

3. Risk and Uncertainty

A major difficulty in the implementation of Section 7 is the insufficiency of the kind of scientific and technical information required to make informed judgments about the needs of the protected species and the real impacts on these species likely to result from a given action. In most cases, very little is known about endangered species. As their endangered status indicates, their numbers are likely to be small. In many cases, a major cause of their decline is encroachment by human activity. Such species are not likely to tolerate intensive scientific scrutiny of the kind needed to determine the requirements for their continued existence.

When a proposed agency action triggers the need for a consultation, FWS has 90 days in which to prepare a biological opinion concluding whether the action is likely to jeopardize a protected species or adversely modify its critical habitat. If a jeopardy finding is made, FWS must propose reasonable and prudent alternatives in its biological opinion. Moreover, its findings and recommendations must be based on the best scientific and commercial data available.

Presently, there are 256 species listed as either threatened or endangered.[205] Any of these species may be affected by a

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[205]As of January 31, 1985, a total of 256 species have been listed as either endangered or threatened in the United States. 10 Endangered Species Technical Bulletin at 12 (February 1985).

proposed federal action. Although recovery plans are to be prepared for listed species, recognition of limited agency resources led to a 1982 amendment providing: "The Secretary, in developing and implementing recovery plans (1) shall, to the maximum extent practicable, give priority to those endangered species or threatened species that are, or may be, in conflict with construction or other development projects or other forms of economic activity, ..."[206] Thus research is to be prioritized to address the needs of species already involved in conflicts.

Even so, research needed to provide the kind of information required in such consultations is likely to take several years.[207] Moreover, such research is technically difficult and very expensive.[208] In the face of these difficulties, FWS generally has taken a conservative approach.[209] While it is easy

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[206] 1982 Amendments, supra note 74, § 2(a)(4)(D), codified at 16 U.S. C. § 1533(f).

[207] In the Grayrocks situation, FWS requested three years to develop the information it felt it needed to address the impacts involved. See text accompanying note 111 supra. At the time the whooping crane was probably the most thoroughly researched of all endangered species. For a discussion of earlier research activities see Whooping Crane Recovery Plan, supra note 15.

[208] The research program underway to determine the needs of the Colorado squawfish and the humpback chub in the upper Colorado River basin is estimated to cost approximately $25 million. See Memorandum, Section 7 Consultation, Belina Mine, supra note 96.

[209] See, e.g., Harrington, The Endangered Species Act and the Search for Balance, 21 Natural Resources J 71 (1981), esp. pp. 83-84 (activities of FWS on the Platte River show a strong aversion to risk). On the Colorado River, FWS issued a draft plan in 1982 specifying certain stream flows as necessary to protect the

to criticize this approach, especially if it adversely affects one's interests, in fact the ESA places extraordinary demands on the FWS. All of this has led one writer to ask: "What do you do when you don't know?"[210]

There is an unavoidable tension arising under Section 7 between the need to make timely decisions and the need to make good decisions regarding impacts on endangered species. The clearly stated purpose of the ESA is not only the protection of such species but, ultimately, their recovery. In TVA v.Hill[211] the Supreme Court emphasized the special concern evidenced by Congress for protection of such species, noting that "Congress intended endangered species to be afforded that highest of priorities"[212] and the "conscious decision by Congress to give endangered species priority over the 'primary mission' of federal agencies."[213] In its review of the legislative history the Court

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[210]Houck, The 'Institutionalization of Caution' Under § 7 of the Endangered Species Act: What Do You Do When You Don't Know?, 12 ELR 15001 (1982) (recommending a "best guess" biological opinion with restraints on irreversible and irretrievable commitments of resources in situations of substantial uncertainty) [hereinafter cited as Houck].

[211]Supra note 54.

[212]Id. at 174.

[213]Id. at 185.

quoted extensively from a House Report accompanying the 1973 Act, including the following point: "Sheer self-interest impels us to be cautious. The institutionalization of that caution lies at the heart of [the 1973 Act]."[214]

Reference has already been made to the discussion in the Conference Committee report on the 1979 Amendments regarding the problem of issuing biological opinions in the face of uncertainty.[215] The Conference Committee noted:

> As currently written, however, the law could be interpreted to force the Fish and Wildlife Service and the National Marine Fisheries Service to issue negative biological opinions whenever the action agency cannot guarantee with certainty that the agency action will not jeopardize the continued existence of the listed species or adversely modify its critical habitat. The amendment will permit the wildlife agencies to frame their Section 7(b) opinions on the best evidence that is available or can be

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[214] Id. at 178 (citing H.R. Rep. No. 93-412 at 5).

[215] See note 73 supra. (Discussion concerning the meaning of the amended language "is not likely to jeopardize.")

developed during consultation.[216]

Thus decisions are to be made on the basis of the best information available at the time of consultation and not await the completion of long term research projects.[217]

At the same time, Congress has been tightening up on extensions to the 90-day consultation period when permit applicants are involved. Now, if FWS and the permitting agency wish to extend consultation beyond 90 days (but not more than 150 days) the Secretary must submit a written statement to the applicant explaining why the longer period is required, stating the information needed, and providing the estimated date of completion.[218] To extend consultation beyond 150 days, FWS must

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[216]House Conference Report No. 697, 96th Cong. 2d Sess., at 12, reprinted in 1979 U.S. Code Cong. & Ad. News 2557, 2576. The House Report accompanying the 1982 Amendments also states: "The Committee specifically intends that the Secretary must determine, using the best available information, if such jeopardy or adverse modification will occur and does not intend to allow the Secretary to avoid or delay making a finding based on an absence of information." House Report No. 567, 97th Cong., 1st Sess., at 26, reprinted in 1982 U.S. Code Cong. & Ad. News 2807, 2826.

[217]However, the report goes on to note that if the biological opinion is rendered on the basis of "inadequate information," then the proposing agency must make a "reasonable effort" to develop that information. Moreover, "[i]f a Federal agency proceeds with the action in the face of inadequate knowledge or information, the agency does so with the risk that it has not satisfied the standard of Section 7(a)(2) and that new information might reveal that the agency has not satisfied the standard of Section 7(a)(2)." Id. The case of Roosevelt Campobello v. EPA, supra note 200, presented such a situation.

[218]16 U.S.C. § 1536(b)(1)(B).

obtain the consent of the applicant.[219] The House Report from the Merchant Marine and Fisheries Committee accompanying the 1982 Amendments noted that "[t]he consultation process has built a strong record of timeliness ... " and that the average time for completion of a formal consultation in the three preceding years had been 56.6 days.[220] Nevertheless, noting the desire for "finality," the Committee accepted the need for tighter limits on extensions.

To summarize, proposing agencies must base their decisions on the best information available. If this information is inadequate, they must seek to develop better information to be able to discharge their duty under Section 7(a)(2). Similarly, FWS in its consulting role must prepare its biological opinions on the basis of the best information available. Insufficiency of information does not discharge FWS from its responsibility to determine whether the proposed action is--or is not--likely to jeopardize protected species or adversely modify their designated critical habitat. Such a determination must be made within the time limits prescribed for consultation. Although a decision must be made, if the information is inadequate the proposing agency must seek to develop better information to meet the

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[219] Id.

[220] House Report No. 567, 97th Cong., 1st Sess., at 13, reprinted in 1982 U.S. Code Cong. & Ad. News 2807, 2813.

agency must seek to develop better information to meet the requirements of Section 7. In situations of uncertainty, the strong emphasis on conservation of endangered species pervading the ESA indicates that the benefit of the doubt should be given to endangered species.

C. The Duty to Insure

Section 7 creates a legally enforceable duty on the part of all federal agencies and departments to avoid jeopardizing protected species. In TVA v. Hill, the Supreme Court stressed the importance of this duty:

> One would be hard pressed to find a statutory provision whose terms were any plainer than those in §7 of the Endangered Species Act. Its very words affirmatively command all federal agencies "to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence" of an endangered species or "result in the destruction or modification of habitat of such species ...." This language admits of no exception.[221]

In this section we address how a federal agency discharges its duty to insure. We consider first what an agency must do to

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[221] TVA v. Hill, supra note 54, at 173 (emphasis in original).

fulfill its duty. We then turn to the question of the limits that exist to what an agency may do in this same connection.

1. What Must Be Done

We know that in certain circumstances the agency must prepare a biological assessment "for the purpose of identifying any endangered species or threatened species which is likely to be affected by [its proposed] action."[222] The agency must consult with FWS regarding its proposed action.[223] During the consultation period the proposing agency must refrain from making any irreversible or irretrievable commitment of resources which might foreclose necessary alternatives.[224] The FWS concludes that the action as proposed should not be undertaken it must recommend reasonable and prudent alternatives.[225] The final administrative determination regarding whether the action can be undertaken and meet the duty to insure rests with the proposing agency.[226] In any case its decision must be based on the best scientific and commercial data available.[227] Such are the now familiar statutory requirements under Section 7.

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[222] 16 U.S.C. §1536(c).

[223] 16 U.S.C. §1536(a)(2).

[224] 16 U.S.C. §1536(d).

[225] 16 U.S.C. §1536(b)(3)(A).

[226] 50 C.F.R. §402.04(g).

[227] 16 U.S.C. §1536(a)(2).

Where the federal agency is itself the proponent of the activity potentially jeopardizing an endangered species, the commands of Section 7 would appear to be paramount. In TVA v. Hill[228] the Supreme Court required that completion and operation of a major dam by a federal entity be enjoined because of conflicts with the requirements of Section 7 even though $100 million had been expended and the project was substantially complete. The Court emphasized the "priority" to be given to endangered species protection over the "primary missions" of federal agencies.[229]

In dissent, Justice Powell stated: "The Court today holds that §7 of the Endangered Species Act requires a federal court, for the purpose of protecting an endangered species or its habitat, to enjoin permanently the operation of any federal project, whether completed or substantially completed."[230] In his view, the duty of the agency under Section 7 exists only at the time the agency is "deciding whether to authorize, to fund, or to carry out" an action.[231] Addressing this issue in a footnote, Chief Justice Burger concluded that such an interpretation is "flawed:"

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[228] Supra note 54.

[229] Id. at 185.

[230] Id. at 195. It is interesting that Justice Powell here puts the duty on a federal court to enjoin such activities rather than on the federal agency to cease them.

[231] Id. at 205.

> First, under its view, the words "or carry out" in §7 would be superfluous since all prospective actions of an agency remain to be "authorized" or "funded." Second, the dissent's position logically means that an agency would be obligated to comply with §7 only when a project is in the planning stage. But if Congress had meant to so limit the Act, it surely would have used words to that effect, as it did in the National Environmental Policy Act ....[232]

Under this interpretation of Section 7, a federal agency's duties regarding protection of endangered species extends even to ongoing activities and operations of those agencies.[233]

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[232] Id. at 173-174, note 18. The case of Carson-Truckee Water Conservancy District v. Clark, 741 F.2d 257 (9th Cir. 1984) presented a situation in which the ongoing operation of a federally constructed reservoir, originally intended to supply irrigation water but being used to maintain water levels needed to protect an endangered fish species in Pyramid Lake, was challenged by those who had expected to receive the water. The federal Circuit Court upheld the authority of the Secretary of the Interior under the ESA to make this use of the reservoir. However, it found this authority not under §7(a)(2) but under the purposes and policy sections and the definition of conserve (16 U.S.C. §1531(c) & (b) and §1532(3)). Id. at 262. The court stated that §7(a)(2) concerns only situations in which an action is to be undertaken. It distinguished such situations from the case at hand in which the action was ongoing and it involved a specific effort to conserve an endangered species. However, applying the reasoning in TVA v.Hill, there is no reason why Section 7(a)(2) should not apply in such a situation.

[233] Since the endangered status of the Colorado squawfish, the humpback chub, the bonytail chub has been determined to be the result of large water storage projects constructed and operated by the BOR on the Colorado River, it would seem that

In cases where the federal role concerns the provision of financial assistance or the granting of permission, the agency's duty is measured by its statutory authority. As Judge Kane stated in Riverside Irrigation District v. Andrews:[234] "While the Endangered Species Act does not expand the scope of federal agency's authority, its clear language 'shall insure' directs them to exercise their authority under other statutes to the fullest extent possible to carry out its aims." Judge Kane went on to suggest that if an agency's authority permitted it to act in a way that would protect endangered species then it was required to do so under the ESA.

It was precisely the issue of agency authority that the 10th Circuit focused on in the appeal of Riverside Irrigation District v. Andrews.[235] This case involved a review of a decision by the Corps of Engineers requiring Riverside to apply for a Section 404 permit because of effects that would result from the operation of the dam. The Court noted the statutory provision in the Clean Water Act requiring that a permit by obtained for any discharge

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their continued operation is potentially susceptible to being enjoined. See note 87 and accompanying text supra. Though such a result is highly unlikely, the existence of the continuing duty under Section 7 suggests a strong federal responsibility to protect and restore these species through positive conservation programs.

[234] 568 F. Supp. 583, 588 (D. Colo. 1983).

[235] 758 F.2d 508 (10th Cir. 1985). See also the discussion in text accompanying notes 152-159, supra.

"incidental to any activity having as its purpose bringing an area of navigable waters into a use to which it was not previously subject, where the flow or circulation of navigable waters may be impaired or the reach of such waters reduced."[236] Based on this provision and its implementing regulations, the court concluded: "Thus, the statute focuses not merely on water quality, but rather on all of the effects on the 'aquatic environment' caused by replacing water with fill material."[237] Given this rather broad reading of the authority of the Corps of Engineers and the pervasiveness of the Section 404 requirement in water development activities, endangered species protection appears certain to be a major consideration in all future water development projects.

In National Wildlife Federation v. Coleman[238] the Department of Transportation (DOT) was required to insure that the Mississippi State Highway Department (MSHD) did not construct an interchange in an area designated as critical habitat for the endangered Mississippi Sandhill Crane. The EIS had noted that private development would accompany highway construction, resulting in further threats to the existence of the crane. Even though the highway construction agencies cannot control such

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[236]Riverside Irrigation District v. Andrews, 758 F.2d 508, 512 (10th Cir. 1985). The statute is cited at 33 U.S.C. §1344(f)(2).

[237]Riverside Irrigation District v. Andrews, 758 F.2d 508, 512 (10th Cir. 1985).

[238]529 F.2d 359 (5th Cir. 1976).

development they can influence it by location of interchanges. The duty to insure required the DOT to modify the highway design accordingly.

In Nebraska v. Rural Electrification Administration,[239] the court found the conditions attached to a section 404 permit by the Corps of Engineers insufficient to discharge its duty under Section 7 of the ESA. According to Judge Urbom:

> The Conditions do not commit the Corps to do anything and the precautions mandated for the permittee are to be triggered, for the most part, if the Corps of District Engineer decides they should be. A declaration by the Corps that it "may" require modification of reservoir operations "if such is deemed to be in the best public interest" does not assure action by the Corps.... Furthermore, it is not up to the Corps of Engineers to determine whether saving a critical habitat is "in the best public interest." Congress has already decided that it is.[240]

Thus the duty to insure requires that conditions added to a permit to make it an acceptable action under Section 7 may not be discretionary.

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[239] 12 ERC 1156 (D. Neb. 1978).

[240] Id. at 1173.

The proposing agency does not have to accept a jeopardy finding made by FWS nor does it have to incorporate the reasonable and prudent alternatives proposed under such circumstances. However, as discussed previously,[241] an agency proceeding in the face of a negative biological opinion will be subject to careful scrutiny by the courts--especially with regard to the quality of the information on which it bases its decision.

On the other hand, incorporation of the reasonable and prudent alternatives suggested by FWS is likely to be highly persuasive to reviewing courts of the reasonableness of an action under Section 7. Thus, in the case of Cabinet Mountains Wilderness/Scotchman's Peak Grizzly Bears v. Peterson,[242] FWS had found that a proposed drilling program in the Cabinet Mountains Wilderness Area was likely to jeopardize the continued existence of the threatened grizzly bear and had developed recommendations for modifying the operation to avoid such jeopardy. The Forest Service subsequently approved a modified drilling plan which incorporated all of the FWS recommendations. The court obviously was impressed by this fact in finding that the Forest Service had fulfilled its duty under Section 7.[243]

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[241] See discussion in text accompanying note 203 supra.

[242] 685 F.2d 678 (D.C. Cir. 1982).

[243] The court applied the arbitrary and capricious standard in reviewing this Forest Service action. Plaintiffs had argued that the special concern for protection of endangered species in

2. What Are the Limits?

Since Section 7(a)(2) does not provide additional authority, the major limitation regarding the actions of an agency to discharge its Section 7 duty comes from its own statutory authority. As in the case of Riverside Irrigation District v. Andrews[244] the courts will refer to the statute under which the permit is to be issued to determine the scope of considerations to be addressed. Given the strong protection policy found in the ESA it is likely that courts will be inclined to take a broader--rather than a narrow--view of the available authority.

Assuming the hurdle of existing agency authority is crossed there still remain questions regarding conflicts with other federal laws, state laws, interstate compacts, and, ultimately, the U.S. Constitution. A full examination of these issues is beyond the scope of this paper. Only preliminary observations will be offered here.

First, regarding conflicts with other federal laws, it seems clear that Congress intended that the ESA override other laws to

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the ESA suggested that a de novo review of agency actions in such situations would be more appropriate. Coggins and Russell, supra note 162 at 1497-1498, argue that the public trust doctrine should be applied in judicial review of such conflicts.

[244] 758 F.2d 508 (10th Cir. 1985).

the extent that they direct activities or actions that would jeopardize endangered species. This fact became so plain following the case of TVA v. Hill[245] that Congress added a special exemption section to the ESA to allow exceptions in special cases.[246]

As a general matter, in instances of specific conflict between a federal and a state law the federal law is supreme.[247] However, the "exercise of federal supremacy is not lightly to be presumed."[248] Wherever possible, courts will seek to accommodate both federal and state interests.[249] In the 1982 Amendments, Congress added the following in the "Policy" section of the ESA: "It is further declared to be the policy of Congress that Federal agencies shall cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered

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[245] Supra note 54.

[246] 16 U.S.C. §1536(a)(2), (e), (p). See discussion in note 59 supra.

[247] The Supremacy Clause of the U.S. Constitution, art. VI, cl. 2 establishes that the U.S. Constitution and laws enacted pursuant thereto are the supreme law of the land. Thus state laws that "interfere with, or are contrary to, the laws of Congress" are invalid. Gibbons v. Ogden, 22 U.S. (9 Wheat.) 1, 211 (1824).

[248] Schwartz v. Texas, 344 U.S. 199, 203 (1952).

[249] See, e.g., the statement in Riverside Irrigation District v. Andrews, 758 F.2d 508, 513 (10th Cir. 1985) concerning the alleged conflict between the ESA and state water law: "A fair reading of the statute as a whole makes clear that, where both the state's interest in allocating water and the federal government's interest in protecting the environment are implicated, Congress intended an accommodation."

species."[250] Moreover, Congress has shown long-standing deference to state law in the water area.[251]

In the Riverside case the question was presented concerning whether Section 7, in combination with Section 404 of the Clean Water Act, was intended to regulate water allocation and use established under Colorado law.[252] In its decision, the Court of Appeals noted the intention of Congress in the Clean Water Act to seek an "accommodation" of the "state's interest in allocating water and federal government's interest in protecting the environment...."[253] However, it felt such an accommodation could best be reached in the subsequent permit process.

The Riverside case also raised the question of the ability of Section 7, in combination with Section 404, to affect the

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[250] 1982 Amendments, supra note 74, §9(a).

[251] California v. United States, 438 U.S. 645 (1978). In 1982, the Assistant Attorney General of the U.S. Justice Department stated that "the federal constitutional authority to preempt state water law must be clearly and specifically exercised, ... otherwise the presumption is that western states retain control over the allocation of unappropriated water within their borders." Legal Memorandum, Federal "Non-Reserved" Water Rights (1982).

[252] Opening Brief for Plaintiff-Intervenor-Appellants at 1, Riverside Irrigation District v. Andrews, 758 F.2d 508 (10th Cir. 1985).

[253] Riverside Irrigation District v. Andrews, 758 F.2d 508, 512 (10th Cir. 1985).

provisions of an interstate compact.[254] It was argued that if the permitting power under Section 404 were to be used to prevent the storage of water in Colorado by the holders of valid water rights the effect would be to abrogate the terms of the South Platte River Compact which allocates the stream flows between Colorado and Nebraska.[255] The Circuit Court did not reach this issue since it noted that

> The action by the Corps has not denied Colorado its right to water use under the South Platte River Compact. All that has

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[254] See especially Brief of Cache La Poudre Water Users Association, Riverside Irrigation District v. Andrews, 758 F.2d 508 (10th Cir. 1985).

[255] See discussion of the South Platte Compact in text accompanying note 7 supra.

> been done is to deny them the ability to proceed under a nationwide permit and to require them to apply for an individual permit under public notice and hearing procedures. As the plaintiffs may receive an individual permit and be able to proceed with the project, a decision on the question of the impact of the interstate compact would be premature.[256]

The South Platte River Compact concerns the division of waters as between the appropriators in the states of Colorado and Nebraska. Appropriations in either state may be subject to federal regulation. Such regulation is not concerned with matters covered in the Compact though it may have important indirect effects. Compacts are a constitutionally authorized[257] method for resolving disputes among the states. Once congressional assent is given, such compacts are given the status of a federal law.[258] While an express intent is most certainly necessary to abrogate a compact, there is no clear reason why the implementation of this law (the compact) should not be subject to the achievement of other federal objectives as expressed in other

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[256] Riverside Irrigation District v. Andrews, 758 F.2d 508, 513-14 (10th Cir. 1985).

[257] U.S. Const. art. I, §10, ch. 3.

[258] Cuyler v. Adams, 449 U.S. 433, 438 (1981).

federal laws such as the ESA.

The ultimate legal limitation is the Fifth Amendment's prohibition against the taking of private property without just compensation.[259] The exercise of governmental power inevitably has some effect on private property rights. The clear trend in the law has been to permit increasing infringement on such property rights to achieve broader public purposes.[260] Although a number of attempts have been made to define the principles under which decisions in this area of the law are being made,[261] the cases appear to be ad hoc determinations not reconcilable on traditional legal grounds.[262] Reflecting on the case of Penn Central Transportation Co. v. City of New York,[263] Professor Sax offered the following explanation:

> We have endowed individuals and enterprises with property because we assume that the private ownership system will allocate and

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[259]U.S. Const. amend. V.

[260]See, Sax, "Takings, Private Property and Public Rights," 81 Yale L. J. 149 (1971).

[261]Good examples include Rose, "Mahen Reconstructed: Why the Takings Issue Is Still a Muddle," 57 So. Cal. L. Rev. 561 (1984); B. Ackerman, Private Property and the Constitution (1977); Michelman, "Property, Utility, and Fairness: Comments on the Ethical Foundations of 'Just Compensation' Law," 80 Harv. L. Rev. 1165 (1967).

[262]Oakes, "'Property Rights' in Constitutional Analysis Today," 56 Wash. L. Rev. 583, 602 (1981).

[263]438 U.S. 104 (1978).

> reallocate the property resource to socially desirable uses. Any such allocational system will, of course, fail from time to time. But when the system regularly fails to allocate property to "correct" uses, we begin to lose faith in the system itself. Just as older systems of property, like feudal tenures, declined as they became nonfunctional, so our own system is declining to the extent it is perceived as a functional failure. Since such failures are becoming increasingly common, the property rights that lead to such failure are increasingly ceasing to be recognized.[264]

Whatever the reason, there is no question that property rights of all kinds are subject to significant restraints and limitations.

Professor Tarlock has suggested that it may be fruitful to consider the reach of the ESA in the context of federal regulatory rights.[265] Thus he argues:

> Regulatory programs such as the Endangered Species Act and section 404 of the Clean

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[264]Sax, "Some Thoughts on the Decline of Private Property," 58 Wash. L. Rev. 481, 484 (1983).

[265]Tarlock, "The Endangered Species Act and Western Water Rights," 20 Land & Water L. Rev. 1 (1985) [hereinafter cited as Tarlock], at 3.

> Water Act create "regulatory property rights." These programs are usually not conceptualized as property rights assignments, but any program that prevents the degradation of commons effectively does this. Modern regulatory programs cancel the historic de facto assignment of property rights in commons to exploiters and reassign them to the government as the agent for the public generally. It is therefore important to characterize the results of regulatory programs as "regulatory property rights" in order to appreciate the potential effect of such programs and to compare the costs and benefits of federal government intervention on a traditional area of private rights.[266]

As discussed, the ESA has been found by one court not to be an independent source of regulatory authority.[267] However, it does require that agencies make full use of existing regulatory authority to meet the requirements of Section 7. In the exercise of this regulatory authority, conflicts with existing private property rights are certain to arise. If takings questions are involved, the courts are likely to be strongly influenced by the

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[266] Id.

[267] Riverside Irrigation District v. Andrews, 568 F.Supp. 583, 588 (1983), aff'd, 758 F.2d 508, 512 (10th Cir. 1985). See discussion in text accompanying note 234 supra.

shifts in thinking noted by Professors Sax and Tarlock.

VI. Achieving the Purposes of the ESA

The stated purposes of the ESA are "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species, ..."[268] At base, then, the ESA seeks the "conservation" of endangered species--that is, to bring such species to the point where the measures of the ESA are no longer necessary.[269] To this point, we have focused almost exclusively on one narrow but obviously very potent part of the ESA--the Section 7(a)(2) duty of federal agencies not to act in a way that is likely to jeopardize the continued existence of protected species. We now turn to the affirmative responsibilities provided in the ESA to achieve its conservation purposes. We discuss first the relevant statutory provisions and the few legal cases that have interpreted these provisions. We then discuss encouraging developments on the Colorado and Platte Rivers in which more broadly-based management approaches are underway.

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[268] 16 U.S.C. §1531(b). A third purpose is to carry out the treaties and conventions entered into to protect endangered species.

[269] 16 U.S.C. §1532(3) (definitions of "conserve," "conserving," and "conservation").

A. Affirmative Agency Responsibilities Under the ESA

Section 5 of the 1973 Act requires the Secretary of the Interior to "establish and implement a program to conserve ..." protected species.[270] Emphasis was placed on land acquisition although the Secretary also was directed to utilize "other authority" under the Fish and Wildlife Act of 1956,[271] the Fish and Wildlife Coordination Act,[272] and the Migratory Bird Conservation Act.[273] The 1978 Amendments added the requirement that the Secretary of Agriculture establish a conservation program "with respect to the National Forest System."[274]

Of these three, the Fish and Wildlife Coordination Act is by far the most significant. This law provides that whenever any waters are "proposed or authorized to be impounded, diverted, the channel deepened, or ... otherwise controlled or modified for any

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[270]Codified as amended at 16 U.S.C. §1534. This section was largely a restatement of Section 2 of the Endangered Species Preservation Act of 1966, Pub. L. 89-669, 80 Stat. 926.

[271]16 U.S.C. §§ 742a et seq. The major accomplishment of this Act was to establish the U.S. Fish and Wildlife Service and create an Assistant Secretary for Fish and Wildlife within the Department of the Interior. There is very little attention given in the provisions for fish and wildlife conservation.

[272]16 U.S.C. §§ 661 et seq. For a good discussion of the evolution and current status of the law, see Bean, supra note 42 at 181-195.

[273]16 U.S.C. §§ 715 et seq. Originally passed in 1929, this act authorized the purchase of areas of land and water necessary for the conservation of migratory birds. Some management authority for these reservations was provided.

[274]1978 Amendments, supra note 58, §12, 16 U.S.C. §1534(a).

purpose whatever, ..., by any department or agency of the United States, or by any public or private agency under Federal permit or license, such department or agency first shall consult ..." with FWS "with a view to the conservation of wildlife resources by preventing loss of and damage to such resources as well as providing for the development and improvement thereof in connection with such water resource development."[275] Furthermore, federal agencies are "authorized" to modify future water development projects to "accommodate the means and measures for such conservation of wildlife resources as an integral part of such projects: ...."[276] Agencies also are authorized to purchase land for the same purposes. An analysis of the wildlife benefits or losses that would result from a new water development project must be submitted to Congress when requesting authorization.[277]

Based on these provisions, FWS is given a substantial role in the planning of major federal water development projects and other water-related activities for which federal permits are required. Such situations provide the FWS with opportunities to further its conservation responsibilities under the ESA.[278]

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[275]16 U.S.C. §662(a).

[276]16 U.S.C. §662(c).

[277]16 U.S.C. §662(f).

[278]However, Bean, supra note 42, at 193 cites a 1974 General Accounting Office study concluding that this act has not been effectively carried out. The reasons given were failure of the construction and permitting agencies to consult with the wildlife agencies, failure of the wildlife agencies to evaluate

When the ESA was enacted in 1973, it was thought that the states would play a major role in the enforcement of the prohibitions in the Act and in implementing the conservation program to be established by the Secretary of the Interior.[279] Section 6 of the 1973 Act provides that "[i]n carrying out the program authorized by this Act, the Secretary shall cooperate to the maximum extent practicable with the States."[280] The Secretary is authorized to enter into management agreements with any state concerning any area established for the conservation of protected species.[281] Finally, the Secretary is authorized to enter into cooperative agreements with states which establish an acceptable conservation program.[282] In a reaffirmation of support for such programs, Congress increased the federal matching share from 66 2/3% to 75% for single state projects and from 75% to 90% for multi-state projects.[283]

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wildlife impacts in an effective and timely manner, and failure of the FWS and NMFS to resolve jurisdictional disputes. As Bean points out, (p. 187) the National Environmental Policy Act has substantially subsumed the requirements of the Coordination Act.

[279] See note 36 supra.

[280] 16 U.S.C. §1536(a). The states are to be consulted before habitat lands are acquired by the federal government.

[281] 16 U.S.C. §1535(b).

[282] 16 U.S.C. §1535(c).

[283] 1982 Amendments, supra note 58, §3; 16 U.S.C. §1535(d)(2)(i) & (ii).

Section 7 of the 1973 Act required the Secretary to "review other programs administered by him and utilize such programs in furtherance of the purposes of this Act."[284] All other federal agencies and departments were to "utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act ...."[285] Thus all federal entities are given an affirmative responsibility to implement programs for the conservation of endangered species.[286]

Finally, in 1978, Section 4 of the ESA was amended to add the following:

> The Secretary shall develop and implement plans (hereinafter in this subsection referred to as "recovery plans") for the conservation and survival of endangered species and threatened species listed pursuant to this section, unless he finds that such a plan will not promote conservation of the species. The Secretary, in

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[284] 1973 Act, supra note 33; 16 U.S.C. §1536(a)(1).

[285] Id.

[286] Under the 1966 Act, supra note 23, the Interior Secretary was to "encourage other Federal agencies to utilize, where practicable, their authorities in furtherance of the purposes of this Act...." §2(a). The 1973 Act substantially altered the responsibility of federal agencies for the conservation of protected species.

> developing and implementing recovery plans, may procure the services of appropriate public and private agencies and institutions, and other qualified persons.[287]

This amendment gave legislative approval to a practice already underway in FWS. The major purpose of the amendment appears to have been to assure that preparation of such plans would receive adequate budgetary support.[288] In 1982, this subsection was amended to add a requirement that in developing and implementing recovery plans the Secretary "shall, to the maximum extent practicable, give priority to those endangered species or threatened species most likely to benefit from such plans,

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[287] 1978 Amendments, supra note 58, §11(5), codified as amended at 16 U.S.C. §1533(f).

[288] Discussion of this provision in the House Report accompanying the 1978 Amendments is limited. The section-by-section analysis states:

> The bill adds a new subsection (g) to section 4 which would require the Secretary to develop and implement recovery plans for listed species. Such plans would be designed to ensure the conservation or survival of each listed species. Recovery teams may be appointed by the Secretary, where appropriate, to aid in developing or implementing a recovery plan for a particular species. Such plans shall be as long and as detailed as is necessary and consonant with their purpose of providing a framework for actions directed at conserving or, at least, insuring the survival of the subject species. Although recovery plans are implicit in the Endangered Species Act, the Act does not specifically mandate recovery plans. As a result, recovery plans have been given a low priority within the Endangered Species Act budget.

House Report 1625, 19, 95th Cong., 1st Sess., reprinted in 1978 U.S. Code Cong & Ad. News 9453, 9469.

particularly those species that are, or may be in conflict with construction or other developmental projects or other forms of economic activity, ..."[289]

Guidelines for the development of recovery plans were established in 1981.[290] According to these Guidelines, plans are to be built around a step-by-step outline of problems or limiting factors which must be solved or reduced (recovery factors). Actions to correct these factors are to be identified and divided into specific ranked assignments for handling by each agency, organization, and individual participating in the species' recovery (implementation factors). In reality, so little is known about most endangered species that recovery plans operate more like research agendas than implementation plans. Under the prioritization system now in effect, species identified as in possible or actual conflict with proposed construction projects or other forms of economic activity are to be given special attention in the development and implementation of a recovery plan.[291]

While these statutory provisions exist, it is not clear what enforceable duties arise under them. At a minimum, these

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[289]1982 Amendments, supra note 74, §2(a)(4)(D).

[290]U.S. Fish and Wildlife Service, Endangered and Threatened Species Recovery Planning Guidelines, May 29, 1981.

[291]48 Fed. Reg. 43098 (1983).

provisions "may at least establish the authority to carry out endangered species programs in agencies that did not previously have such authority."[292] In addition, at least three federal district courts and one circuit court have relied on the broader language of the ESA in reviewing activities of the Department of the Interior.

In Defenders of Wildlife v. Andrus[293] plaintiffs argued that FWS regulations governing the hours during which sport hunting of migratory game birds may occur violated the ESA and other authorities. FWS responded that the ESA only required that the regulations not jeopardize the continued existence of the protected migratory birds--the Section 7(a)(2) requirement. However, Judge Gesell concluded that "[t]he Service has misinterpreted the Endangered Species Act of 1973."[294] Citing several other provisions of the ESA including Section 7(a)(1) and the definition of "conservation" he noted: "It is clear from the face of the statute that the Fish and Wildlife Service, as part of Interior, must do far more than merely avoid the elimination of protected species. It must bring these species back from the brink so that they may be removed from the protected class, and

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[292]Bean, supra note 42, at 356. Bean is referring to the language of Section 7(a)(1) specifically.

[293]428 F. Supp. 167 (D.D.C. 1977).

[294]Id. at 169.

it must use all methods necessary to do so."[295]

In Connor v. Andrews[296] the federal district court again was reviewing FWS hunting regulations. This time the court upheld the regulations though it cited with approval the holding of Defenders of Wildlife v. Andrus that "the Secretary of the Interior has an affirmative duty under the Endangered Species Act to bring endangered species to the point at which they may be removed from protected status."[297]

The litigation surrounding use of the water in the Stampede Reservoir by the Department of the Interior has provided an unusual opportunity for the courts to consider the implications of the ESA as a source of authority. Plaintiffs brought an action against the Secretary of the Interior to compel him to use the Stampede Reservoir, a project constructed under the Reclamation Act of 1902, for reimbursable reclamation purposes such as irrigation, power generation, and municipal water supply.[298]

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[295] Id. at 170.

[296] 453 F. Supp. 1037 (D. Tex. 1978).

[297] Id. at 1041. Accord, Organized Fisherman of Florida v. Andrus, 488 F. Supp. 1351, 1356 note 10 (D. Fla. 1980).

[298] This litigation has produced three legal opinions to date. The first, Carson-Truckee Water Conservancy District v. Watt and Pyramid Lake Paiute Tribe of Indians, 537 F. Supp. 106 (D. Nev. 1982), held that the plaintiffs have standing and that the Secretary must sell all of Stampede's water except that necessary to fulfill his trust obligations to the Tribe and to protect the listed species in the Lower Truckee River. The second, Carson-Truckee Water Conservancy District

Since its construction in 1970, the primary use had been water releases to protect the fishery in the Little Truckee River and Pyramid Lake in the Pyramid Lake Paiute Indian Reservation. The fishery includes the cui-ui, a listed endangered species, and the Lahontan cutthroat trout, a listed threatened species.[299] Citing the policies, purposes, and definitions sections of the ESA,[300] Judge Solomon found this law required the Secretary of the Interior "to give the Pyramid Lake fishery priority over all other purposes of Stampede until the cui-ui fish and Lahonton cutthroat are no longer classified as endangered or threatened."[301] In an interesting twist, the court specifically found that the Secretary's duty under the ESA is not limited to the

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v. Watt, 549 F. Supp. 704 (D. Nev. 1982) (hereinafter Carson-Truckee v. Watt) held that the Secretary could dedicate all the water in the Stampede Reservoir to the conservation of protected fishes. In Carson-Truckee Water Conservancy District v. Clark, 741 F.2d 257 (9th Cir. 1984) (hereinafter Carson-Truckee v. Clark), the Ninth Circuit affirmed the District Court decision.

[299]Carson-Truckee v. Watt, supra note 298, at 707.

[300]The policy statement is found at 16 U.S.C. §1531(c) ("all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purpose of this chapter"); the purpose statement is at 16 U.S.C. §1531(b) ("the purposes of this chapter are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species, ...); the definition of "conserve" is found at 16 U.S.C. §1532(2) ("The terms 'conserve,' 'conserving,' and 'conservation' mean to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary."

[301]Carson-Truckee v. Watt, supra note 298, at 710.

Section 7(a)(2) prohibition against undertaking actions that are likely to jeopardize the continued existence of a protected species but include the affirmative duty to restore listed species.[302]

The Ninth Circuit affirmed that District Court opinion.[303] Judge Pregerson also found clear statutory authority for the Secretary's actions in the ESA:

> ESA. ..., directs the Secretary to use programs under his control for conservation purposes where threatened or endangered species are involved. Following this directive, the Secretary here decided to conserve the fish and not to sell the project's water. Given these circumstances, the ESA supports the Secretary's decision to give priority to the fish until such time as they no longer need ESA's protection.[304]

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[302] Id. citing Defenders of Wildlife v. Andrus. The central issue in this case concerned the amount of water in Stampede Reservoir that could be dedicated to protection of the fishery. Plaintiffs argued that the Secretary's responsibility was limited to avoiding jeopardy, a standard they argued would not require use of all the water. Interior's position was that restoration of the protected fishes requires all the water in reservoir (and more). It was in this context that the court rejected application only of the Section 7(a)(2) requirement.

[303] Carson-Truckee v. Clark, supra note 298.

[304] Id. at 262. To the provisions of the ESA mentioned in the District Court decision, Judge Pregerson added the Section 7(a)(1) charge to utilize other programs in furtherance of the

Section 7(a)(2) was found inapplicable because it concerns only actions yet to be undertaken.[305]

To summarize, the clearly stated purpose of the ESA is the conservation of threatened and endangered species.[306] Conservation is defined as using all methods necessary to bring about a recovery of such species.[307] Recovery plans are to be prepared and implemented to achieve conservation of protected species.[308] Specific direction is given to the Secretaries of Interior, Commerce and Agriculture to establish and implement a conser-

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conservation purposes of the ESA.

[305] Id. As discussed in note 232 supra this view appears to be contrary to language in TVA v. Hill. A better view is that Section 7(a)(2) represents the minimum requirement and that the other referenced portions of ESA authorize additional activities. The former is limiting and protective; the latter are restorative. It is interesting to note that the court recognized but did not decide the larger question of whether these latter provisions require that conservation actions be undertaken:

> Because we hold that the Washoe Project Act does not require the Secretary to sell water for M & I use, we need not reach the question whether, given competing mandatory statutory directives, the Secretary would be required to use the project's water entirely for conservation purposes under ESA §2(b), (c), §3(3), & §7(a)(1). Similarly, because the Secretary actively seeks to use the project for conservation purposes, we need not consider the extent of his affirmative obligations under ESA §2(b), (c), §3(3), & §7(a)(1) had he decided neither to sell the water nor to protect the fish. Id.

[306] 16 U.S.C. §1531(b).

[307] 16 U.S.C. 1532(2).

[308] 16 U.S.C. §1533(f).

vation program including the purchase of land and water.[309] Cooperative programs with the states are authorized and encouraged.[310] And, finally, all federal agencies are to utilize their authorities to achieve the conservation of protected species.[311] Several courts have determined that the ESA imposes an affirmative duty on the Secretary of the Interior to bring about the restoration of protected species and that the activities of the Department must comport with this requirement. Certainly the ESA provides substantial authority for undertaking conservation activities, perhaps even when such activities conflict with other statutory directives. However, the enforceability of this "affirmative duty" remains unclear.

B. A Management Approach

From a biological standpoint, endangered species conservation requires an ecosystem approach. Thus it has been stated that

> the most effective approach to biological conservation revolves around the preservation of ecosystems rather than species, focusing primary attention on preserving viable, interacting groups of species simultaneously, with subsidiary effort being devoted to

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[309] 16 U.S.C. §1534(a).

[310] 16 U.S.C. §1535(a).

[311] 16 U.S.C. §1536(a)(1).

> protection of individual species within certain guidelines when feasible. By preserving ecosystems rather than species, resources devoted to biological conservation will be used more efficiently, a larger number of viable species will ultimately be preserved, and ecologically sound natural resource development will proceed along more efficient and predictable paths.[312]

Indeed, the ESA's stated purpose is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved ...."[313] However, "we are not sure what integrated ecosystem management means and we are reluctant to make major institutional changes to try and manage our resources to this end."[314]

It is certainly true that ecosystem management for all endangered species is simply not feasible, even if we knew how to do it. However, in situations where there is considerable and continuing conflict involving an identifiable area or ecosystem

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[312]Smith, The Endangered Species Act and Biological Conservation, 57 Southern California L. Rev. 361, 362 (1984).

[313]16 U.S.C. §1531(b).

[314]Tarlock, supra note 265 at 29. Thus he concludes that "[t]he Endangered Species Act will continue to be applied to activities on a case by case basis and water project managers and regulators will be forced to make a number of difficult decisions." Id.

it is obviously sensible to address those conflicts in the context of the entire area or system rather than on a piecemeal basis. River basins present such a coherent system. Rivers in the arid West are inevitably affected by the water depletions accompanying growth and development. In turn these depletions will continue to adversely affect the plant and animal life dependent on the maintenance of original conditions.

It is not enough, in the case of river systems, to focus only on the effect of one project involving a federal action in one location and its impact on the desired conditions in some other particular part of the river. Nor is it sensible to require that new development redress the cumulative adverse effects of all development that has preceded it, even if the new development could somehow manage to do this. If water is required in certain parts of the river in specific amounts and at specific times, the solution should be considered in the context of the entire system. If other options are available, they too should be considered in this broader context.

Such an approach is clearly feasible under the ESA. Recovery plans, rather than being the vague research agendas that they often presently are, should be implementable plans to achieve the recovery of the species. Dependent upon the particular species involved, these plans should be developed not just by the biologists in FWS but also by representatives from other

federal agencies (and state agencies where appropriate) likely to be involved in actually implementing the "methods and procedures" needed to recover the species.[315] In some cases so little may be known that research is essential before anything can be done. However, especially in those situations where considerable conflict has already occurred and the need for action is apparent, it is essential to begin developing coherent strategies aimed at achieving the real purposes of the ESA.

Indeed, as discussed, developments of this sort are already underway on the Colorado River. Although the legal status of this cooperative effort is rather vague, it does offer the important potential of providing solutions to the long-term needs of the endangered fishes in addition to accommodating more immediate conflicts.

In the case of the Platte River, such an approach would open up all the possible ways in which the habitat needs of the whooping crane (and other protected species dependent on the Platte River) could best be met. For example, because of the very specific water levels believed to be desirable for the crane for roosting during its migration it may be most effective to have water storage dedicated to this purpose created just above the critical habitat area. It may also be that a greater need

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[315]State agency biologists often are major members of recovery teams. However, representatives of other implementing instrumentalities may not be included.

for the crane is to have less encroachment on the land adjacent to the habitat. Thus purchases of such land may be important links to providing the conditions needed by the cranes.

The Platte River Whooping Crane Habitat Maintenance Trust, created out of the settlement in the Grayrocks dispute,[316] has been very active in seeking approaches to improve the crane habitat along the Platte River. The Trust has acquired 6,000 acres of land, in fee and easements, along the Platte River in this area.[317] Moreover, it has successfully demonstrated that mechanical clearing can be used to improve the crane habitat.[318] An attorney for Colorado water development interests recently concluded: "Thus, on the basis of actual field work, it appears that water development in the Platte basin can proceed, while the whooping crane habitat is maintained, without conflict between the Endangered Species Act, on the one hand, and state and interstate water allocation systems, on the other."[319]

A broadened working group is now meeting to discuss options

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[316]See discussion in text accompanying note 122 supra.

[317]G. Hobbs, "The Endangered Species Act and State Water Allocation System: Conflict and Resolution in the Platte River and Colorado River Basins," Mimeo of paper presented at Conference on "Water and Colorado's Future, Who Turns the Tap?," Denver, Colorado, April 13, 1985, at 3 (hereinafter cited as Hobbs).

[318]Id.

[319]Id. at 4.

the implementation of which would permit development of the Narrows Project. It is too early in the process to say much about the efforts of this group. It may be that the recent decision by the Tenth Circuit in the Riverside case will end present efforts to resist the intrusion of the ESA on water development on the South Platte by means of litigation. The court's emphasis on seeking accommodation of interests[320] fits well with the broadened working group approach.

The establishment of this working group is no panacea. The similar effort underway on the Colorado River has been at work for two years with little tangible result. FWS has taken a rather rigid position with respect to what must be done to protect the whooping crane. If real accommodation of interests is to take place, flexibility must be demonstrated in this regard. At the same time, water development interests must be willing to recognize the legitimate needs for water in endangered species protection. Without doubt, water is only one of the needs that must be met for protecting the whooping crane but it is an absolutely essential need. Unless this need is recognized and adequately addressed, the outcome of the working group will most certainly be failure.

VII. Summary and Conclusions

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[320] See text accompanying note 249 supra.

The ESA is a remarkably one-pointed law. When a species is listed as threatened or endangered, its protection and recovery generally take precedence over other public and private activities. Though debate undoubtedly will continue regarding its wisdom, there is little doubt at this point that such is our present policy. Congress may not have fully appreciated the impact of its statements in passing the 1973 Act but these consequences have since become very apparent. Subsequent amendments have introduced some opportunities for flexibility[321] and have attempted to avoid or prevent unnecessary delays in decision making.[322] Nevertheless, the fundamental policy of the ESA remains unchanged.

Implementation of the ESA raises very difficult problems. Efforts to accommodate continued development and endangered species protection are adversely burdened by major information deficiencies, resulting in an apparent lack of acceptable options. No one really knows the habitat conditions essential to insure the long-term sustenance of the Colorado squawfish or the whooping crane. Biologists are frantically seeking answers to

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[321] See text accompanying notes 59-60 supra. The exemption procedure is the major example. Requiring reasonable and prudent alternatives is another. Still another is the consideration of economic consequences in designating critical habitat.

[322] See text accompanying note 74 supra. For example, biological opinions must be issued within the tightly prescribed time period even if the available information is limited. Informal consultation is now available at an early stage in the project to help anticipate conflicts.

such questions. Good scientific research may demand 20 years to produce reliable results while developers and regulators want these answers now.

FWS under the Reagan administration has moved to administratively narrow the scope of Section 7. The ambit of review under Section 7(a)(2) is limited effectively to impacts from the proposed action and does not include impacts from expected future activities.[323] A jeopardy finding must be based on an appreciable impact on the survival and recovery of protected species.[324] At the same time, FWS has been following a policy on the Colorado River of allowing water development projects to avoid a finding of jeopardy by payment of a "depletion charge."

Recent court decisions involving the ESA produce a mixed picture. A series of cases involving the endangered species implications of outer continental shelf leasing have allowed initial leasing to go forward on the apparent theory that activities at this stage are not likely to jeopardize endangered species and that impacts from activities in later stages should be addressed if and when these activities are to occur.[325] The

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[323] See text accompanying notes 167-171 supra.

[324] See text accompanying notes 188-192 supra.

[325] Village of False Pass v. Clark, 733 F.2d 605 (9th Cir. 1984); North Slope Borough v. Andrus, 642 F.2d 589 (D.C. Cir. 1980); Conservation Law Foundation v. Andrus, 623 F.2d 712 (1st Cir. 1979).

courts have declined to undertake a more stringent review of agency action under Section 7(a)(2) than the arbitrary and capricious standard under the Administration Procedure Act.[326] Finally, the species protected under Section 7(a)(2) have been held to be only those either listed or proposed for listing under Section 4.[327]

At the same time the ESA has been held to require, as a substantive and a procedural duty, the use of the best available information in discharging agency responsibility to use all methods and procedures to insure the protection of endangered species.[328] In the case of Section 404 permits, the ESA requires consideration of all associated environmental impacts, including those that result indirectly as a consequence of the permit.[329] The ESA has been found to authorize the dedication of a federal reclamation project, originally intended for irrigation purposes, for use in protecting endangered fishes.[330] Finally, a recent

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[326] See, e.g., Cabinet Mountains Wilderness/Scotchman's Peak Grizzly Bears v. Peterson, 685 F.2d 678 (D.C. Cir. 1982).

[327] Wilson v. Block, 708 F.2d 735 (D.C. Cir. 1983).

[328] Conservation Law Foundation v. Watt, 560 F. Supp. 561 (D. Mass. 1983). This decision involves an outer continental shelf lease sale. Judge Maggone appeared to be more impressed with the teachings of Roosevelt Campobello v. EPA, supra note 200, than with Conservation Law Foundation v. Andrus, supra note 324.

[329] Riverside Irrigation District v. Andrews, 758 F.2d 508, 512 (10th Cir. 1985).

[330] Carson-Truckee v. Clark, supra note 298.

federal district court decision has held that federal actions allowing the issuance of oil and gas leases in two Montana national forests must be set aside pending compliance with the ESA and NEPA.[331]

Efforts to achieve protection and recovery of protected species through the use of broad-based, cooperative working groups comprised of the concerned federal agencies, states, and concerned private interests appear to offer some promise. The protection and restoration of threatened and endangered species requires a coordinated management approach. The negative, piecemeal protection arising under Section 7(a)(2) is essential but ultimately insufficient to achieve the fundamental purposes of the ESA. As a matter of equity, efficiency, and good common sense we should be seeking the best long-run solutions to our endangered species problems. We need to be determining our information requirements cooperatively, developing and executing our research programs cooperatively, and implementing acceptable and effective restoration programs cooperatively. In the meantime, case-by-case administration under Section 7(a)(2) must necessarily proceed. To the degree possible, such proposed actions should be integrated into the broader management efforts.[332] Section 7(a)(2), for all of its potency, is only a

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[331] Conner v. Burford, F. Supp. (D. Mont. 1985).

[332] For example, as the necessary habitat conditions to insure a healthy species population are determined individual projects could be required to contribute funds or carry out

defensive effort. The real work under the ESA is to achieve the recovery of these essential parts of our environment.

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specific activities to help achieve these conditions. The depletion charge approach on the Colorado River has been used to raise funds for use in researching the needs of the endangered fishes. Presumably, as the needs are better understood, project proponents will be requested to undertake specific improvement measures. The difficulty of determining the appropriate level of contribution remains.