

The National Agricultural
Law Center



University of Arkansas School of Law
NatAgLaw@uark.edu ☎ (479) 575-7646

An Agricultural Law Research Article

The Effect of the Federal Endangered Species Act on State Water Rights

by

Melissa K. Estes

Originally published in ENVIRONMENTAL LAW
22 ENVTL. L. 1027 (1992)

www.NationalAgLawCenter.org

COMMENTS

THE EFFECT OF THE FEDERAL ENDANGERED SPECIES ACT ON STATE WATER RIGHTS

By
MELISSA K. ESTES*

The Endangered Species Act, in protecting imperiled plants and animals, prohibits the taking of listed species and any destruction of habitat that adversely affects the species. In its recent proposals to place the Snake River sockeye and chinook salmon on the Lists of Endangered and Threatened Wildlife and Plants, the National Marine Fisheries Service cited inadequate stream flows in the Columbia River Basin as one factor for the species' decline. The author argues that the salmon's habitat must include adequate stream flows, and that the overappropriation of water, by either federal agencies or private water rights holders, may constitute a taking under the ESA. The author concludes that holders of state water rights may be forced to yield to the purposes of the ESA, and suggests that water appropriators and managers in the Columbia River Basin cooperatively reallocate water to ensure sufficient flows for salmon.

* Student, Northwestern School of Law of Lewis and Clark College, J.D. with environmental certificate expected 1992; student, Boise State University, M.P.A. in Natural Resources expected 1992; M.S. in Biology 1985, Portland State University; B.S. in Biology 1978, Portland State University. The author is a member of the National Marine Fisheries Service Endangered Species Technical Committee.

The author thanks Professor Craig Johnston and Michael Huston for their helpful advice and suggestions on this Comment, and especially thanks Professor Anne Squier for her many helpful ideas and her countless hours of legal discussion, thorough reading, and comments.

I. INTRODUCTION

In 1973 Congress enacted the Endangered Species Act (ESA)¹ to prevent the extinction of various species of fish, wildlife, and plants as a result of economic development pressures untempered by conservation. The ESA protects species that are threatened or in danger of extinction by constraining federal agencies from engaging in activities that have adverse impacts on the protected species, and by prohibiting all persons under the jurisdiction of the United States from "taking" members of the protected species.

Prompted by the ESA, the National Marine Fisheries Service (NMFS) and the Fish and Wildlife Service (FWS) initiated an evaluation of Columbia River salmon and steelhead populations in 1978 to determine whether these populations needed to be protected to prevent their extinction. Before this evaluation was completed, Congress in 1980 passed the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act).² The Northwest Power Act created the Northwest Power Planning Council (Council), and directed the Council to develop a Columbia Basin Fish and Wildlife Program (Fish and Wildlife Program) to enhance fish and wildlife in the Columbia River and its tributaries.

Anticipating that the Council's Fish and Wildlife Program would preclude the necessity for a listing, the NMFS and the FWS suspended their evaluation of the status of Columbia River salmon. After waiting ten years for the Council's Fish and Wildlife Program to improve salmon runs, the Shoshone-Bannock Tribe, with copetitioners Oregon Trout, the Idaho and Oregon chapters of the American Fisheries Society, the Northwest Environmental Defense Center, American Rivers, and the Oregon Natural Resources Council, petitioned the NMFS to list selected Columbia River Basin sockeye, chinook, and coho salmon populations as endangered³ or threatened⁴ under the ESA. On

1. Pub. L. No. 93-205, 87 Stat. 884 (codified as amended at 16 U.S.C. §§ 1531-1544 (1988)).

2. Pub. L. No. 96-501, 94 Stat. 2697 (1980) (codified at 16 U.S.C. §§ 839-839h (1988)).

3. "Endangered" means a species is in danger of extinction. 50 C.F.R. § 424.02(e) (1990).

4. "Threatened" means a species is likely to become endangered in the fore-

April 5, 1991, the NMFS proposed to list the Snake River sockeye as endangered.⁵ On June 27, 1991, the NMFS proposed to list Snake River fall chinook as threatened and the Snake River spring and summer chinook as a single threatened species.⁶ The NMFS determined that lower Columbia River coho populations had been extensively interbred through hatchery management programs, and thus no wild coho population remained that constituted a species eligible for protection under the ESA.⁷

The NMFS determined that the three species proposed for listings are threatened or endangered due to several factors, including a lack of adequate stream flow in the Columbia River and its tributaries.⁸ Further, the NMFS found that hydropower development contributed to the imminent extinction of the salmon by destroying habitat, causing turbine-related mortality, and providing inadequate flows for upriver spawning and downstream outmigration.⁹ The NMFS also identified other factors contributing to the decline of the Columbia River salmon, including water withdrawal and storage, irrigation, and destruction or modification of habitat from timber management, grazing, and mining.¹⁰

Because the NMFS has identified stream flow depletion from irrigation and hydropower development as one of the factors for the salmon's decline, adequate stream flow must be restored in order to allow these species to recover from the danger of extinction. To restore stream flow, the overallocation of water from the Columbia River and its tributaries through state water rights

seeable future. *Id.* § 424.02(m).

5. Endangered and Threatened Species; Proposed Endangered Status for Snake River Sockeye Salmon, 56 Fed. Reg. 14,055 (1991) (to be codified at 50 C.F.R. pt. 222) (proposed Apr. 5, 1991) [hereinafter Snake River Sockeye Listing].

6. Endangered and Threatened Species; Proposed Threatened Status for Snake River Spring and Summer Chinook Salmon, 56 Fed. Reg. 29,542 (1991) (to be codified at 50 C.F.R. pt. 227) (proposed June 27, 1991) [hereinafter Snake River Chinook Listing].

7. Endangered and Threatened Species; Lower Columbia River Coho Salmon, 56 Fed. Reg. 29,553 (1991) (to be codified at 50 C.F.R. pt. 227) (proposed June 27, 1991).

8. Snake River Chinook Listing, *supra* note 6, at 29,545-46.

9. *Id.*

10. *Id.* See also ENVIRONMENTAL AND TECHNICAL SERVS. DIV., NATIONAL MARINE FISHERIES SERV., FACTORS FOR DECLINE: A SUPPLEMENT TO THE NOTICE OF DETERMINATION FOR SNAKE RIVER SPRING/SUMMER CHINOOK SALMON UNDER THE ENDANGERED SPECIES ACT (1991).

must be curtailed or reapportioned—at least during those stages of the protected species' life cycles when adequate flows are imperative for the species' survival and recovery.

This stream flow depletion, which has left insufficient water for habitat maintenance, may be a taking under ESA section 9.¹¹ If stream flow depletion by existing water rights holders is a taking under the ESA, then which water rights holders have committed the taking? How should established water rights be curtailed or reapportioned to prevent the continued taking of endangered or threatened species? After examining existing law, this Comment seeks to answer these questions.

If a listing of Columbia River salmon under the ESA would necessitate enhancement of flows,¹² then some entity, agency, or court must determine how to reapportion water rights in the Columbia River Basin. The Council already exists as a multistate compact and is charged with enhancing Columbia River Basin fish and wildlife. In fact, the Council was created to prevent the danger of extinction for Columbia River salmon. Although the Council has not fulfilled that directive, it may be the appropriate entity to arbitrate among existing water rights holders and interested parties to find a solution that provides adequate stream flow in the Columbia Basin for salmon habitat. As for the source of flows, a recent study commissioned by the NMFS determined that water supplies could be obtained from changes in existing water storage, marketing, and reservoir operations, and from irrigation water and conservation.¹³ These sources, the report concluded, could fully meet the necessary increase in flows identified in the Council's Fish and Wildlife Program without substantial impact on other water users.¹⁴

The role of the agency chosen to reapportion the water rights would be complicated by a mandate to enhance flows. This might

11. 16 U.S.C. § 1538 (1988). A "taking" of a protected species includes killing, harming, or harassing a member of the species as well as destroying or adversely modifying the species' habitat. *Id.* § 1532(19); *see also* 50 C.F.R. § 17.3 (1990) (further defining "harm" and "harass").

12. This Comment assumes that flows will have to be enhanced.

13. HYDROSPHERE, WATER SUPPLIES TO PROMOTE JUVENILE ANADROMOUS FISH MIGRATION IN THE SNAKE RIVER BASIN, at Abstract (Nat'l Marine Fisheries Serv. Contract No. 50ABNF900105, 1991).

14. *Id.*

require curtailment of established state water rights, including rights to consumptive use of Columbia Basin water in Idaho, Oregon, and Washington. In the past, courts have ordered operational changes in water projects to preserve protected species' habitat, and have upheld the preference of water for fisheries over water for other uses, but have protected established water rights. However, a federal district court recently curtailed an existing water right by granting the NMFS a permanent injunction stopping an irrigation district from pumping water out of its water diversion facility on California's Sacramento River,¹⁵ which serves as habitat for the threatened winter run chinook salmon. This Comment examines that court's ruling as well as a recent action filed in federal district court charging that the Bureau of Reclamation, rather than a state water rights holder, violated the ESA because the Bureau, as the agency responsible for diversions from Upper Klamath Lake, allowed appropriations which depleted habitat of protected species.¹⁶ These cases will be important precedent for the reallocation of Columbia River water.

In reallocating Columbia River water, the responsible agency will be able to draw on the experience of reallocation schemes for established water rights that have been developed in similar situations to provide sufficient stream flow as habitat for fish species protected under the ESA. In other western river basins, agencies and water rights holders have developed reallocation schemes to avoid the destruction of endangered species habitat by the depletion of streams and lakes under existing water rights. Under the Truckee-Carson-Pyramid Lake Settlement Act,¹⁷ interested and affected parties formed a multistate and multiparty compact to resolve water rights in the Truckee River and Pyramid Lake that were jeopardizing habitat for protected fish species. Similarly, when state-allocated water rights and water rights obligations under Colorado River compacts were jeopardizing endangered species in the Colorado River Basin, interested and affected parties formed the Upper Colorado River Basin Coordinating Committee (UCRBCC) to develop and implement a plan to preserve

15. *United States v. Glenn-Colusa Irrigation Dist.*, No. S-91-1074 DFL-JFM, slip op. (E.D. Cal. Jan. 9, 1992).

16. *Oregon Natural Resources Council v. Bureau of Reclamation*, No. 91-6248 (D. Or. filed July 10, 1991).

17. Pub. L. No. 101-613 §§ 201-210, 104 Stat. 3294 (codified at 16 U.S.C. § 668dd note, 43 U.S.C. § 614 note (1988)).

habitat for protected species. The UCRBCC produced the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, which provides adequate stream flow for fish habitat under a cooperative reallocation scheme for water rights. This Comment concludes that the responsible agency could effectively implement a similar reallocation scheme in the Columbia Basin to enhance flows for the protection of salmon.

Section II of this Comment presents those provisions of the ESA relevant to maintaining habitat for protected species, together with court decisions that have interpreted and applied those provisions. Section III describes the development of the doctrine of prior appropriation in the American West, and also assesses the effect of judicial doctrines and federal statutes other than the ESA on western water rights. Section IV analyzes the effect of the ESA on state water rights, concluding that depleting stream flows necessary for protected species habitat is a taking precluded by the ESA. Finally, this Comment describes water management schemes that have been used in other western river basins to alleviate the jeopardy to essential habitat of protected species from stream flow depletion.

II. ENDANGERED SPECIES ACT

In 1973 Congress enacted the ESA¹⁸ to protect and preserve species in danger of extinction.¹⁹ The ESA establishes a classification scheme for fish, wildlife, and plants that protects both endangered and threatened species. The ESA protects more stringently as "endangered" those species that are in danger of becoming extinct throughout all or a significant portion of their range,²⁰ and protects as "threatened" those species that are likely to become endangered in the foreseeable future.²¹ This Section discusses how a population is defined as a species for protection under the ESA, and how the responsible agency determines if the species is in danger of extinction.

18. Pub. L. No. 93-205, 87 Stat. 884 (codified at 16 U.S.C. §§ 1531-1554 (1988)).

19. 16 U.S.C. § 1532.

20. *Id.* § 1532(6).

21. *Id.* § 1532(20).

A. Definition of Species

Any interested person may submit a petition to the Secretary of the Interior or Commerce requesting that a species be listed as endangered or threatened.²² The Lists of Endangered and Threatened Wildlife and Plants are published in the *Code of Federal Regulations*.²³ Upon receiving a petition, the first task of either the FWS or the NMFS in deciding whether to list a species under the ESA is to determine whether the organism proposed for a listing meets the statutory definition of a species. The agency has ninety days after the initial petition to make a finding as to whether the petition warrants action, and then has twelve months from the receipt of the initial petition to decide whether to list the petitioned species.²⁴ If the agency decides to list a species, it must publish a proposal to designate a species as endangered or threatened, and has one year thereafter in which to publish a final rule.²⁵

Under ESA section 3, the definition of "species" includes "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature."²⁶ The statutory definition, which does not rely on a strict scientific definition, includes a "subspecies" or a "distinct population segment." While biologists frequently differ about what criteria define a species, the FWS in the past has protected population segments under the ESA.²⁷

For the petitioned Columbia River salmon, the debate over what constitutes a species or a population has been continuing since before the initial petition in 1980.²⁸ After the 1991 petitions for ESA protection for Columbia River salmon species, the NMFS released a Technical Memorandum applicable only to Pa-

22. 50 C.F.R. § 424.14 (1990).

23. *Id.* § 17.11(h).

24. *Id.* §§ 424.14, 424.16.

25. *Id.* § 424.17.

26. 16 U.S.C. § 1532(16) (1988).

27. DANIEL J. ROHLF, *THE ENDANGERED SPECIES ACT 38-40* (1989) (discussing protection of population segments of the bald eagle, peregrine falcon, grizzly bear, brown pelican, and other species).

28. See F. Lorraine Bodi, *Protecting the Columbia River Salmon Under the Endangered Species Act*, 10 ENVTL. L. 349 (1980).

cific salmon.²⁹ This memorandum stated that a group of organisms would be considered a species for purposes of conservation under the ESA if it comprised an evolutionarily significant unit (ESU). An "ESU is a population (or group of populations) that 1) is reproductively isolated from other conspecific population units, and 2) represents an important component in the evolutionary legacy of the species."³⁰

For Pacific salmon, reproductive isolation is the key to designation as an ESU because anadromous salmon populations can be distinguished by seasonal and geographical spawning behavior, as well as criteria such as ocean migration patterns, time of out-migration and return, and other life history traits. Hence, a definition of a population segment under the ESA that allows distinctions based on spawning time or spawning location is significant in the Columbia River Basin because Columbia River salmon return to spawn in specific tributary streams in distinct seasonal runs. The NMFS considered the interaction among these seasonal and geographic factors in developing its definition of a species under the ESA for Pacific salmon.

B. *Decision to List*

After determining that a group of organisms fits within the ESA's definition of a species, the agency must decide whether the species should be listed under the ESA based on the following factors: The present or threatened destruction, modification, or curtailment of the species' habitat or range; its overutilization for commercial, recreational, scientific or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms; or other natural or manmade factors affecting its continued existence.³¹ Any one or a combination of these factors justifies listing a species as threatened or endangered under the ESA.³² Though the NMFS considered all these factors in proposing to list the Columbia River salmon, this Comment focuses on its finding that inadequate stream flows contributed to the spe-

29. ROBIN WAPLES, DEFINITION OF SPECIES UNDER THE ENDANGERED SPECIES ACT: APPLICATION TO PACIFIC SALMON (1991) (NOAA Technical Memorandum NMFS F/NWC-194).

30. *Id.* at 3.

31. 16 U.S.C. § 1533(a)(1) (1988).

32. 50 C.F.R. § 424.11(c) (1990).

cies' decline.

C. *Protection of Listed Species*

Once a species is listed as threatened or endangered, federal agencies must comply with certain procedures specified in ESA section 7. Prior to any federal agency action, including licensing of private activities, federal agencies must consult with the FWS or the NMFS to determine if any listed species are present in the area of the proposed agency action.³³ If listed species are present, the agency proposing the action must prepare a biological assessment to determine whether the proposed action is likely to affect any listed species.³⁴ If the biological assessment indicates that the action is likely to affect a listed species, then the agency must consult with the FWS or the NMFS to determine whether the action jeopardizes the continued existence or adversely modifies critical habitat of the species.³⁵ If, after the consultation process, the proposed action would jeopardize the species or its habitat, the FWS or the NMFS must suggest reasonable and prudent alternatives to the proposed action to avoid the impacts.³⁶

This section 7 consultation process affects western water rights through the licensing or operation of dams built in navigable waters. Several federal agencies are involved in the dams on navigable waters, including the Federal Energy Regulatory Commission (FERC), which licenses dams that generate hydroelectricity. Also, the Bureau of Reclamation operates many dams in the West that were constructed under the Reclamation Act³⁷ to provide irrigation and storage water. The Corps of Engineers (Corps) builds and operates dams for flood control and navigation. Further, under the Clean Water Act (CWA),³⁸ the Corps and the U.S. Environmental Protection Agency (EPA) issue permits for activities that affect wetlands and the water quality of navigable

33. 16 U.S.C. § 1536(c).

34. *Id.*

35. 50 C.F.R. § 402.14.

36. *Id.* § 402.14(g). Also, during the consultation process, the agency proposing the action may not make any irreversible or irretrievable commitment of resources to the proposed action that would eliminate feasible alternatives. 16 U.S.C. § 1536(d) (1988).

37. Act of June 17, 1902, 32 Stat. 388 (codified as amended at 43 U.S.C. §§ 371-616yyy (1988)).

38. 33 U.S.C. §§ 1251-1387 (1988).

streams. These and other federal agencies must meet the ESA section 7 consultation requirements when a listed species may be affected by any of their activities.

Additionally, although ESA section 7 only applies to federal agencies, section 9³⁹ prohibits certain acts by all persons within the jurisdiction of the United States. All persons are prohibited from taking any endangered species,⁴⁰ importing or exporting any endangered species or their products, engaging in commerce in such species, or possessing any unlawfully taken endangered species.⁴¹ These prohibitions also apply to threatened species, unless regulations specifically provide otherwise.⁴²

D. Critical Habitat

1. Definition of Critical Habitat

When Congress enacted the ESA, it identified destruction of habitat as the primary reason for the extinction of species: "In many cases the process of extinction has been associated with an increase in man's ability to alter habitat for his own devices."⁴³ To address this concern, Congress provided for the protection of "critical habitat" for protected species.⁴⁴ In later amendments, Congress required designation of critical habitat concurrently with a listing of a species.⁴⁵ The federal agency responsible for the listing, either the NMFS (acting for the Department of Commerce) or the FWS (acting for the Department of the Interior), must designate critical habitat to the "maximum extent prudent and determinable" at the time of the proposed listing.⁴⁶

39. 16 U.S.C. § 1538 (1988).

40. Takings are discussed *infra* notes 60-83 and accompanying text.

41. 16 U.S.C. § 1538(a)(1).

42. *Id.* § 1533(d); 50 C.F.R. § 17.21 (1990).

43. HOUSE MERCHANT MARINE AND FISHERIES COMM., ENDANGERED SPECIES ACT AMENDMENTS OF 1978, H.R. REP. No. 1625, 95th Cong., 2d Sess. 5 (1978), reprinted in 1978 U.S.C.C.A.N. 9453, 9455.

44. 16 U.S.C. §§ 1532(5), 1533(b)(2) (1988).

45. *Id.* § 1533(b)(6)(C).

46. *Id.* § 1533(a)(3). In the recent *Northern Spotted Owl v. Lujan*, 758 F. Supp. 621 (W.D. Wash. 1991), a federal court found that the FWS had been arbitrary and capricious in failing to designate critical habitat simultaneously with listing the northern spotted owl. In doing so, the court rejected the argument that the habitat was not determinable.

To alleviate fears that an agency might abuse its discretion by designating too much critical habitat, Congress qualified this provision by allowing agencies to refrain from designating any critical habitat if, as a result of insufficient knowledge, the critical habitat is not determinable.⁴⁷ To protect species and habitat from vandalism by bounty hunters and treasure seekers, the responsible department is authorized to exclude any area from critical habitat designation if the benefits of the exclusion outweigh the conservation benefits and doing so would not result in the extinction of the species.⁴⁸

Shortly after the ESA's passage, the FWS and the NMFS published regulations defining critical habitat as "the entire habitat or any portion thereof, if, and only if, any constituent element is necessary to the normal needs and survival of that species."⁴⁹ The agencies added that critical habitat "may not be restricted to the habitat necessary to maintain a minimum viable population."⁵⁰ Hence, in designating critical habitat for Pacific salmon, the NMFS must assess the geographical areas occupied by the species and the physical or biological features essential to the species that may require special management considerations,⁵¹ including adequate stream flow to maintain salmon habitat.

Both the Council and the NMFS have identified the reduction in flows as a cause of the decline of Columbia River salmon.⁵² Thus, adequate stream flows are necessary to the normal needs of the Pacific salmon, and the NMFS could designate minimum stream flows in the Columbia and its tributary salmon spawning streams as critical habitat or constituent elements of critical habitat.

There is precedent for designating stream flows as constitu-

47. 16 U.S.C. § 1533(a)(3); 50 C.F.R. § 424.12(a)(2) (1990).

48. 16 U.S.C. § 1533(b)(2).

49. Endangered and Threatened Species, Notice on Critical Habitat Areas, 40 Fed. Reg. 17,764 (1975).

50. *Id.* at 17,765.

51. 50 C.F.R. § 424.12(b) (1990). Special management considerations include any method or procedure useful in protecting the physical and biological features of the environment. *Id.*

52. NORTHWEST POWER PLANNING COUNCIL, INTEGRATED SYSTEM PLAN 202-03 (1990); Snake River Chinook Listing, *supra* note 6, at 29,545; ENVIRONMENTAL AND TECHNICAL SERVS. DIV., *supra* note 10.

ent elements of critical habitat. For the protected Concho water snake, the FWS designated specific minimum flows and continuous daily flows as constituent elements of the designated habitat.⁵³ When listing the little Colorado spindace and the Warner sucker, the FWS designated constituent elements as clean, permanent flowing water or unpolluted flowing water.⁵⁴ However, as demonstrated below,⁵⁵ stream flow depletion by water rights holders would constitute a taking under the ESA irrespective of whether stream flow is listed as critical habitat or a constituent element of critical habitat for Pacific salmon.

2. Designation of Critical Habitat

In determining what areas constitute critical habitat, the FWS and the NMFS must use the best scientific data available.⁵⁶ This includes identifying geographic areas containing the physical and biological features considered to be essential to the conservation of the species.⁵⁷ If the available scientific data is weak or uncertain, the agency must give the benefit of the doubt to protection of the species.⁵⁸ Constituent elements of the critical habitat may be designated if they are necessary for the survival of the species. Finally, while economic criteria cannot be considered in the decision to list a species, economic criteria can be considered in the decision to designate critical habitat.⁵⁹ Therefore, in designating critical habitat for salmon, the agency can address economic concerns, such as increases in electric power rates caused by operating hydroelectric dams in the Columbia River system in a less economically efficient manner in order to preserve salmon habitat.

The NMFS did not designate critical habitat for the Columbia River salmon simultaneously with its proposal for a listing. However, the NMFS is currently gathering information through a

53. 50 C.F.R. § 17.95(c).

54. *Id.* § 17.95(e).

55. See *infra* notes 60-83 and accompanying text.

56. 16 U.S.C. § 1533(b)(2) (1988).

57. 50 C.F.R. § 424.12(b) (1990).

58. AUTHORIZATION, APPROPRIATIONS—ENDANGERED SPECIES ACT OF 1973, H.R. CONF. REP. NO. 167, 96th Cong., 1st Sess. 1 (1979), reprinted in 1979 U.S.C.C.A.N. 2557, 2576; Endangered and Threatened Species; Notice on Critical Habitat Areas, 40 Fed. Reg. 17,764 (1975).

59. 16 U.S.C. § 1533(b)(2).

Technical Committee and an Economics Committee in preparation for designating critical habitat.

E. Taking Endangered or Threatened Species

Under ESA section 3, "taking" a species is "to harass, harm, pursue, hunt, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."⁶⁰ "Harm" is "an act which actually kills or injures wildlife. Such [an] act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."⁶¹ Thus, the ESA definition of "taking" includes any action which adversely modifies the species' habitat if that modification impairs essential behavioral patterns. In the case of the Columbia River salmon, the reduction in stream flows caused by water storage behind dams has impaired essential behavioral patterns of the species by slowing the outmigration of juvenile fish to the ocean.⁶²

As part of the agency consultation process, section 7 prohibits agency actions that are likely to jeopardize the continued existence of the protected species or result in adverse habitat modification.⁶³ Further, the ESA prohibits activities that directly or indirectly cause adverse modification of "physical or biological features that were the basis for determining habitat to be critical,"⁶⁴ where the alteration "appreciably diminishes the value of [the] critical habitat for both the survival and recovery of a listed species."⁶⁵ The ESA also prohibits indirect adverse effects that constitute impairment of critical habitat, including depletion of ground water from adjacent pumping and contamination of water or air within critical habitat as a result of activities that occur outside the area.⁶⁶ Thus, the ESA prohibits destruction of critical habitat, and regardless of whether the habitat is designated as critical, a taking includes directly or indirectly destroying or ad-

60. 16 U.S.C. § 1532(19).

61. 50 C.F.R. § 17.3.

62. *HYDROSPHERE*, *supra* note 13, at i-2, i-3.

63. 16 U.S.C. § 1536(a)(2) (1988).

64. 50 C.F.R. § 402.02 (1990).

65. *Id.*

66. Interagency Cooperation; Endangered Species Act of 1973, as Amended; Final Rule, 51 Fed. Reg. 19,935 (1986) (codified at 50 C.F.R. pt. 402).

versely modifying the habitat upon which a listed species depends for recovery, as well as actually harming or killing a member of the protected species.

1. *Destruction of Critical Habitat*

The federal courts have affirmed that habitat modification may constitute a taking under the ESA. In the seminal case, *Palila v. Hawaii Department of Land and Natural Resources (Palila I)*,⁶⁷ the Sierra Club, on behalf of the palila bird, a member of the Hawaiian honey-creeper family, sued the Hawaii Department of Natural Resources to remove a herd of feral goats and sheep that were destroying the mammane trees and thus the forest habitat of the palila. The sheep and goats were held in a game reserve that overlapped the designated critical habitat of the palila. The district court held, and the Ninth Circuit affirmed, that ESA section 9 prohibits habitat modifications in addition to prohibiting actions that directly kill a member of a protected species, and that the destruction of critical habitat is a taking.⁶⁸ The court cited the FWS regulations that defined "harm" as "significant habitat modification or destruction,"⁶⁹ and found that habitat destruction had harmed the palila.

After the *Palila I* decision, the FWS promulgated new regulations clarifying that "harm" means "actual harm."⁷⁰ Upon retrial in *Palila II*,⁷¹ the court held that not all destructions of critical habitat constitute a taking and that there must be a showing of injury. However, the court found that the actions of the Hawaii Department of Natural Resources had "actually harmed" the palila by destroying habitat, and therefore were still a taking under ESA section 9.⁷²

A similar holding dealt with instream water depletion as an adverse habitat modification. In *Riverside Irrigation District v.*

67. 471 F. Supp. 985 (D. Haw. 1979), *aff'd*, 639 F.2d 495 (9th Cir. 1981).

68. *Id.* at 995.

69. *Id.* (citing 50 C.F.R. § 17.3 (1979)).

70. Endangered and Threatened Wildlife and Plants; Final Redefinition of "Harm," 46 Fed. Reg. 54,748 (1981) (codified at 50 C.F.R. pt. 17 (1990)).

71. *Palila v. Hawaii Dep't of Land and Natural Resources*, 649 F. Supp. 1070 (D. Haw. 1986), *aff'd*, 852 F.2d 1106 (9th Cir. 1988) (*Palila II*).

72. *Id.* at 1075, 1077.

Andrews,⁷³ the Tenth Circuit found that an earthen fill to build a dam and reservoir on the South Platte River would deplete the stream flow in the river, and thus would adversely affect the habitat of the endangered whooping crane. Since the reduction in stream flow would destroy or modify the critical habitat, the court held that it was prohibited under the ESA.⁷⁴

2. Destruction of Nondesignated Habitat

In addition to holding that the destruction of designated critical habitat is a taking, courts have also held that destroying habitat not designated as critical can be a taking. In an action under the Wild Free-Roaming Horses and Burros Act,⁷⁵ the Tenth Circuit suggested that adverse modification of the species' habitat constitutes a taking, even though the habitat had not been designated as critical.⁷⁶ The court cited the definition of harm from *Palila I*, and referred to the ESA, stating that "one who maintains on his own land grazing animals that so modify natural habitat as to cause indirect injury to endangered species can be required to remove those grazing animals from his land."⁷⁷ In a similar holding, a federal district court in Texas held that the logging practices of the U.S. Forest Service had adversely affected the habitat of the endangered red-cockaded woodpecker, and thus constituted a taking.⁷⁸ In this case, the Forest Service had destroyed habitat that had not been designated as critical under the ESA.

Congress identified habitat destruction as the primary factor leading to the extinction of species and creating the need for the ESA.⁷⁹ Commentators have suggested that the prohibition against habitat destruction has merged into the prohibition against jeopardizing the continued existence of a species, since habitat destruction would necessarily jeopardize a species.⁸⁰ This conclusion

73. 758 F.2d 508 (10th Cir. 1985).

74. *Id.* at 514 (citing 33 C.F.R. § 330.4(b) (1985)).

75. 16 U.S.C. § 1331 (1988).

76. *Mountain States Legal Found. v. Hodel*, 799 F.2d 1423, 1427-28 (10th Cir. 1986).

77. *Id.* at 1427-28.

78. *Sierra Club v. Lyng*, 694 F. Supp. 1260 (E.D. Tex. 1988).

79. H.R. REP. No. 1625, *supra* note 43, at 4-5, *reprinted in* 1978 U.S.C.C.A.N. at 9455.

80. See James Salzman, *Evolution and Application of Critical Habitat*

naturally follows from the definition of "jeopardizing the continued existence," which includes any action that would reasonably be expected to reduce the "likelihood of both the survival and recovery of a listed species . . . by reducing the reproduction, numbers, or distribution of that species."⁸¹ Loss of habitat would result in reduction of distribution, and could also be a factor in or even the direct cause of a reduction in numbers or the ability to reproduce. The NMFS identified stream flow depletion as a factor contributing to the decline of the Columbia River salmon.⁸² This depletion of stream flow is jeopardizing the continued existence of the species because it is reducing the likelihood of the survival and recovery of the salmon. Thus, even if stream flow is not designated critical habitat, the lack of stream flow has been identified as a factor causing the decline of the species, and therefore federal and federally licensed entities responsible for the stream flow depletion may be responsible for jeopardizing the salmon in violation of ESA section 7.

In summary, taking an endangered species in violation of the ESA includes actually harming a member of a protected species. It also includes directly or indirectly destroying or adversely modifying the habitat upon which the species depends for existence, regardless of whether the habitat has been designated as critical. Depletion of stream flow which constitutes habitat for the species, if that depletion adversely modifies the species' habitat or jeopardizes its existence, is a taking under the ESA, according to the standard the court applied in *Riverside Irrigation District*.⁸³

Under the Endangered Species Act, 14 HARV. ENVTL. L. REV. 311 (1990); Katherine S. Yagerman, *Protecting Critical Habitat Under the Federal Endangered Species Act*, 20 ENVTL. L. 811, 839 (1990).

81. 50 C.F.R. § 402.02 (1990).

82. Snake River Chinook Listing, *supra* note 6, at 29,545.

83. 758 F.2d 508, 514 (10th Cir. 1985). To soften the prohibitions on takings, Congress provided an exemption for incidental takings in the 1982 amendments, and the FWS modified its regulations to require "actual" harm after the *Palila* decisions. Pub. L. No. 97-304, 96 Stat. 1411. Under the 1982 amendments to the ESA, the secretaries of Interior or Commerce may grant an exemption for a § 9 taking if the taking is incidental and will not appreciably reduce the likelihood of the survival and recovery of the species in the wild, and if the applicant will minimize and mitigate the impacts of the taking and assure adequate funding for the mitigation plan. 16 U.S.C. § 1539(a)(1)(b) (1988). These amendments thus provide exemptions for takings if the species can survive. Presumably state water rights holders may still remove water from streams if they establish that the water removed from the stream is an incidental taking under the ESA.

III. WESTERN WATER LAW

A. *The Development of Western Water Law*

Aquatic species need water in streams to provide sufficient habitat for feeding, spawning, or migration. Conversely, water rights holders need water for a variety of beneficial uses that require diversion of water out of the stream. Where there is insufficient water for both purposes, how shall the balance be struck? This need to maintain sufficient instream water for habitat may affect existing state-allocated water rights. Traditional views of western water rights hold that these rights are inviolate,⁸⁴ yet the ESA, as well as other federal statutes and judicial doctrines, have intruded into the sacrosanct field of western states water law. After a brief discussion of the development of western water law, this Section reviews a few of the federal statutes and judicial doctrines which have impacted state water allocation systems.

The American West is characterized by water scarcity. Consequently, settlers in most western states developed a different water law from the riparian rights doctrine used in water-rich eastern states. The doctrine of prior appropriation developed by custom, and was later recognized under common law and statute.⁸⁵ Other doctrines, such as the navigational servitude, the public trust, equitable apportionment, and reserved rights, have influenced rights acquired by prior appropriation. Thus, the possibility that the ESA might affect state water rights is neither original nor unique.

1. *Riparian Rights*

American colonists in the East established water rights based on traditional English common law. This "riparian rights" doctrine recognized that private landowners owned the banks and beds of nonnavigable streams and had the right to use all of the water in the streams so long as the "natural flow" of the streams was not diminished.⁸⁶ "Navigable waters" were all waters affected

84. Harold A. Ranquist, *The Winters Doctrine and How it Grew; Federal Reservation of the Right to the Use of Water*, 1975 B.Y.U. L. REV. 639, 642.

85. *Jennison v. Kirk*, 98 U.S. 453, 459 (1879); WILLIAM GOLDFARB, *WATER LAW* 21, 32 (2d ed. 1989).

86. WESTERN STATES WATER COUNCIL, *THE DOCTRINE OF PRIOR APPROPRIATION*

by the ebb and flow of the tide.⁸⁷

2. *Prior Appropriation*

In the West, settlers and miners developed the water rights doctrine of "prior appropriation." This principle of "first in time, first in right" established a hierarchy of water appropriators based on the initial date of acquisition of the water right. The prior appropriation doctrine established the concepts of property rights in water, equal footing for uses, and transferable ownership rights, although many states retained preferences for uses and did not allow changes in uses.⁸⁸ The system of water law which evolved defined property rights that:

- 1) granted to the first appropriator an exclusive right to the water and granted water rights to later appropriators on the condition that prior rights were met;
- 2) permitted the diversion of water from the stream so that it could be used on nonriparian lands;
- 3) forced the appropriator of water to forfeit his right if the water was not used; and
- 4) allowed for the transfer and exchange of rights in water between individuals.⁸⁹

However, rights perfected under prior appropriation in the West did not operate free of federal influence. Several federal statutes and court doctrines have influenced state water law.

B. Federal Law and State-Allocated Water Rights

1. Federal Statutes

Several early federal statutes affecting state water law contained provisions that recognized and protected state water rights in the federal courts. Both the Mining Act of 1866⁹⁰ and the De-

IN THE CHANGING WEST 1 (1987).

87. *Id.*

88. TERRY L. ANDERSON, WATER CRISIS: ENDING THE POLICY DROUGHT 29 (1983).

89. *Id.* at 30.

90. Act of July 26, 1866, ch. 262, § 9, 14 Stat. 252 (codified as amended at 43 U.S.C. § 661 (1988)).

sert Lands Act of 1877⁹¹ recognized state law as the appropriate governing doctrine for water rights. In the Mining Act, Congress confirmed mining water rights that had been acquired under common law or statute.⁹² Under the Desert Lands Act, Congress recognized the prior appropriation doctrine on arid lands.⁹³ In addition, the U.S. Supreme Court held that the Desert Lands Act severed water rights from the public domain, and that water rights were established under state law.⁹⁴

In section 8 of the Reclamation Act of 1902, Congress stated that nothing in the Act "shall be construed as affecting . . . the laws of any state or territory relating to the . . . appropriation" of any water.⁹⁵ The full import of this provision was confirmed by the U.S. Supreme Court in *California v. United States*, in which the Court held that "[t]he legislative history of the Reclamation Act makes it abundantly clear that Congress intended to defer to the substance, as well as the form, of state water law."⁹⁶

By contrast to these early statutes, the ESA contains a much weaker provision which simply requires federal agencies to cooperate with state and local agencies to resolve water resource issues concerning endangered species.⁹⁷ The ESA does not require deferral to the substance or form of state water law.⁹⁸ It is significant that the ESA mandates cooperation with state agencies rather than deference to state law when resolving water resource issues.

2. Federal Water Rights Doctrines

In addition to federal statutes, the federal courts have recognized several doctrines that modified the exercise of state water rights. Any one of these could be extended to authorize a curtailment of state allocated water rights to protect an endangered species.

91. Act of March 3, 1877, ch. 107, 19 Stat. 377 (codified as amended at 43 U.S.C. §§ 321-323 (1988)).

92. 43 U.S.C. § 661.

93. *Id.* § 322.

94. *California Oregon Power Co. v. Beaver Portland Cement Co.*, 295 U.S. 142 (1935).

95. 43 U.S.C. § 383.

96. 438 U.S. 645, 675 (1978).

97. 16 U.S.C. § 1531(c)(2) (1988).

98. *Id.*

a. *Reserved Water Rights*

The Supreme Court, in *Winters v. United States*, recognized "reserved water rights" for federal reserved land and held that "[t]he power of the Government to reserve the waters and exempt them from appropriation under the state laws is not denied, and could not be."⁹⁹ In *Arizona v. California*,¹⁰⁰ the Court reaffirmed this reserved rights doctrine, stating that when Congress reserved land for federal purposes such as Indian reservations, national forests, and national parks, it also reserved sufficient water to carry out the purposes of this reserved land.¹⁰¹

By analogy, under the ESA it has been argued that when Congress passed the ESA to preserve species in danger of extinction, its purpose included providing sufficient habitat for species preservation and recovery.¹⁰² When designating critical habitat, the FWS or the NMFS must consider the physical or biological features essential to the species.¹⁰³ It logically follows, therefore, that if one of the physical features essential for the species' survival is adequate stream flow to provide habitat, then the reservation of sufficient water to provide adequate stream flow is inherent in protecting the species under the ESA.

b. *Equitable Apportionment*

Another federal doctrine modifying state water rights is equitable apportionment. The Supreme Court, acting under its original jurisdiction,¹⁰⁴ has employed this federal common-law doctrine to resolve water rights disputes between states, ordering the division of water rights among them. For example, water rights in the Laramie River were equitably apportioned among competing

99. 207 U.S. 564, 577 (1908).

100. 373 U.S. 546 (1963).

101. *Id.* at 601; see also Walter Rusinek, *A Preview of Coming Attractions? Wyoming v. United States and the Reserved Rights Doctrine*, 17 *ECOLOGY L.Q.* 355 (1990).

102. SENATE COMMERCE COMM., ENDANGERED SPECIES ACT OF 1973, S. REP. NO. 307, 93d Cong., 1st Sess. 2, reprinted in 1973 U.S.C.C.A.N. 2989, 2990; See also Federico Cheever, *An Introduction to the Prohibition Against Takings in Section 9 of the Endangered Species Act of 1973: Learning to Live with A Powerful Species Preservation Law*, 62 *U. COLO. L. REV.* 109, 129 (1991).

103. 50 C.F.R. § 424.12(b)(5) (1990).

104. U.S. CONST. ART. III § 2.

interests in *Wyoming v. Colorado*,¹⁰⁵ and waters from the Arkansas River were equitably apportioned in *Kansas v. Colorado*.¹⁰⁶ The Court has held that the states and other parties are bound by the apportionment.¹⁰⁷

Applying the doctrine of equitable apportionment to state water law causes states to adjust state allocated water rights to meet the requirements of the apportionment under federal law.¹⁰⁸ This may lead to results different from those that might be expected under state law. For example, in resolving a dispute between two prior appropriation states, the Court did not strictly apply prior appropriation principles, but rather considered the impacts of its apportionment on the economies of the two states.¹⁰⁹ In a more recent apportionment, the Court analyzed the dispute and applied a conservation standard to the beneficial use of water.¹¹⁰ One commentator has suggested that a broader significance of this later case is the imposition of conservation responsibilities to preserve supplies of water for instream uses.¹¹¹ Such responsibilities might be imposed in the interest of preserving salmon if waters needed for habitat were ever equitably apportioned.

c. Navigational Servitude, the Commerce Clause, and the Supremacy Clause

The federal doctrine of navigation servitude has also had an impact upon state-allocated water rights. This doctrine acknowledges that the federal government can exercise its regulatory power over navigation and take certain private property rights without compensation.¹¹² For example, the Supreme Court ap-

105. 259 U.S. 419 (1921), *modified*, 260 U.S. 1 (1922).

106. 206 U.S. 46 (1907).

107. *Nebraska v. Wyoming*, 295 U.S. 40 (1935).

108. Federal law governs the apportionment, but the Court may consider local substantive law. *Illinois v. City of Milwaukee*, 406 U.S. 91, 107 (1972).

109. *Nebraska v. Wyoming*, 325 U.S. 589 (1945).

110. *Colorado v. New Mexico*, 459 U.S. 176 (1982).

111. A. DAN TARLOCK, *LAW OF WATER RIGHTS AND RESOURCES* 10-23 (1991).

112. The Supreme Court has greatly expanded the regulatory power over navigation. In 1851, the Supreme Court expanded the effect of the tides as a test for navigability for title purposes, and defined "navigable waters" to include all waters used for foreign or interstate commerce, regardless of tidal effects. See *Jackson v. The Steamboat Magnolia*, 61 U.S. 296 (1857); *The Propeller Genesee*

plied this doctrine in *United States v. Chandler-Dunbar Co.*,¹¹³ and held that the government had the right to remove a dam that Chandler-Dunbar had built across a previously navigable stream without compensating the company. The Court asserted that this authority flows from the Commerce Clause of the Constitution¹¹⁴ and from the public interest in supporting public navigation in interstate waters.

Similarly, in *United States v. Willow River Power Co.*,¹¹⁵ the Supreme Court held that water rights on a navigable stream must bow to the government's superior interest in improving navigation. In that case, a power company which was a riparian owner along the Willow River claimed that the United States had to compensate it for taking the power company's compensable property right to the flow of the river for power generation. The Court noted that "[r]ights . . . which are absolute against all the world are certainly rare, and water rights are not among them."¹¹⁶ The Court held that the Government had a right to interfere with advantages enjoyed by riparian owners, and this did not require compensation because it was not a taking of property.¹¹⁷

Thus, under the Commerce Clause, the federal interest in navigation subsumes the private interest in hydropower generation, as the Court ruled in both *Chandler-Dunbar* and *Willow River*. Additionally, under the Supremacy Clause, the federal interest in navigation subsumes state-allocated water rights because these rights are granted under state law, which is subordinate to

Chief v. Fitzhugh, 53 U.S. 443 (1851). For regulation under the Commerce Clause, U.S. CONST. art. I, § 8, the test for navigability became whether waters were navigable in fact, also regardless of the effect of the tide. The *Daniel Ball*, 77 U.S. 557 (1870). This definition was further clarified and expanded in *United States v. Appalachian Elec. Power Co.*, 311 U.S. 377, 407 (1940), in which the Court held that waters currently not navigable in fact, but which could be made navigable by means of improvements, are included within the term "navigable waters." By these decisions, the Court expanded the scope of navigability and thus concurrently expanded the scope of federal regulatory power over state waters. Additionally, under the Supremacy Clause of the Constitution, U.S. CONST. art. VI, state-allocated water rights are subordinate to federal statutes regulating navigable waters.

113. 229 U.S. 53 (1913).

114. U.S. CONST. art. I, § 8.

115. 324 U.S. 499 (1945).

116. *Id.* at 510.

117. *Id.*

federal law.¹¹⁸ By analogy, the federal authority in preserving endangered species should subsume not only private interests in hydropower generation and the federal interest in navigation under the commerce power, but also state-allocated water rights under the Supremacy Clause.

d. Public Trust

Finally, the public trust doctrine influences water law. The public trust doctrine emanated from the English common-law idea that all lands not belonging to individuals were held in trust by the king for the public.¹¹⁹ This doctrine was enunciated in a landmark case, *Illinois Central Railroad Co. v. Illinois*,¹²⁰ in which the U.S. Supreme Court invalidated a grant of land beneath the Chicago harbor to Illinois Central Railroad Company. The Court held that the lands under navigable waters are held in trust by the state and that the state cannot abdicate to private parties its control over these lands or the waters above them.¹²¹

State courts have expanded the public trust doctrine. For instance, in *National Audubon Society v. Superior Court of Alpine County (Mono Lake)*,¹²² the California Supreme Court applied the public trust doctrine to prevent the depletion of Mono Lake. The court held that a water rights holder could not divert water from tributaries so that a downstream river or lake was destroyed, because the state had an obligation under the public trust doctrine to protect the lake.¹²³ The court thus extended the public trust doctrine to mandate the allocation of water rights to protect the public interest in land and water held in the public trust.

Like the protection of a lake under the public trust doctrine,

118. Eva H. Morreale, *Federal Power in Western Waters: The Navigation Power and the Rule of No Compensation*, 3 NAT. RESOURCES J. 1, 65 (1964).

119. JOSEPH J. KALO, COASTAL AND OCEAN LAW 731 (1990).

120. 146 U.S. 387 (1892).

121. The Court stated

[t]he control of the State for the purposes of the trust can never be lost, except as to such parcels as are used in promoting the interests of the public therein, or can be disposed of without any substantial impairment of the public interest in the lands and the water remaining.

Id. at 453.

122. 658 P.2d 709 (Cal. 1983), *cert. denied*, 464 U.S. 977 (1983).

123. *Id.* at 727-28.

the protection of stream flow to provide adequate water for habitat of protected species should be provided under the ESA. It logically follows that the ESA would curtail state-allocated water rights that have depleted stream flow under the same reasoning that the public trust curtails state-allocated water rights to protect a lake.

3. *Summary*

The application of these federal and common-law doctrines to state water law demonstrates that the doctrine of prior appropriation is not an unassailable system of water rights based exclusively on "first in time, first in right." Rather, it has been influenced by several federal statutes and doctrines, only a few of which have been discussed here. The strongest influences emanate from the Desert Lands Act,¹²⁴ the Mining Act,¹²⁵ the Reclamation Act,¹²⁶ and the doctrines of navigational servitude, reserved water rights, equitable apportionment, and the public trust. The ESA is a more recent federal statute that also may affect the exercise of state water rights and western water law.

IV. THE ENDANGERED SPECIES ACT AND STATE WATER RIGHTS

The ESA superimposes new demands upon a complex system of water allocations and interests that developed under state law. The section 7 restraints on federal agencies curtail federally funded or federally licensed state water projects that may jeopardize a protected species. In addition, section 9 may be applied to state-allocated water rights if exercising these rights by stream flow diversion causes a taking through habitat destruction for a protected species.¹²⁷

A. *Curtailement of State Water Rights: The Authority to Reallocate*

Although there is no explicit provision in the ESA allowing the curtailment of state water rights, a reading allowing such ac-

124. 43 U.S.C. §§ 321-329 (1988).

125. 43 U.S.C. § 661 (1988).

126. 43 U.S.C. §§ 371-616yyy (1988).

127. See *supra* notes 60-83 and accompanying text.

tion follows naturally from the prohibition against placing a species in jeopardy or destroying its habitat. If depletion of stream flow is destroying habitat and placing a species in jeopardy, then the depletion is prohibited under the ESA.

One federal court decision dealt with stream flow depletion that was destroying habitat for protected species under the section 7 constraints on federal agencies. In *Carson-Truckee Water Conservancy District v. Watt*,¹²⁸ the water conservation district sought to compel the Secretary of the Interior to operate the Washoe Project on the Stampede Reservoir for reclamation purposes rather than for the protection of habitat of two species of fish, cui-ui and cutthroat trout, protected under the ESA. The court held that the Secretary was required under section 7 of the ESA to use all methods and procedures to bring any listed species to the point where protective measures are no longer necessary.¹²⁹ The court further stated that the Secretary was required to institute measures to conserve species as required under the ESA.¹³⁰ However, the Ninth Circuit held that, because the Washoe Project Act does not require the Secretary to sell water for municipal and industrial use, it did not have to decide whether, in the face of conflicting statutory directives, the ESA would require the Secretary to use the water entirely for conservation purposes.¹³¹ The Secretary had already correctly interpreted the ESA to give priority to protection of species habitat, and had correctly curtailed the reclamation purposes of the project to conserve species habitat.

In an effort to avoid the impacts of the ESA on state water rights, some members of Congress sought to amend the ESA to include a savings provision similar to that in the Reclamation Act, which states that nothing in the Act would supersede, abrogate, or impair state authority to allocate water within its jurisdiction.¹³² A similar provision had been added to the CWA to ease

128. 549 F. Supp. 704 (D. Nev. 1982), *aff'd in part and vacated in part sub nom.* Carson-Truckee Water Conservancy Dist. v. Clark, 741 F.2d 257 (9th Cir. 1984).

129. *Id.* at 710.

130. *Id.* (citing 16 U.S.C. § 1531(b) (1988)).

131. Carson-Truckee Water Conservancy Dist. v. Clark, 741 F.2d 257, 262 n.5 (9th Cir. 1984).

132. 43 U.S.C. § 383 (1988).

the restraints that its pollution provisions place on state law.¹³³ However, the proposed ESA amendment was defeated, leaving the Act with a provision that provides only that federal agencies must cooperate with state and local agencies to resolve water resource issues.¹³⁴ Thus, the ESA requirement to maintain critical habitat so as to avoid jeopardizing a protected species is not superseded by a provision deferring to state water law. Requiring cooperation with, rather than deference to, state and local agencies is not a radical departure from the impact of other federal legislation and doctrines on state water law. It is merely another requirement in a series of federal laws—from the Mining Act through the Desert Lands and Reclamation Acts to the CWA—which has influenced state water law.

The wetlands protections under section 404 of the CWA¹³⁵ are similar to the ESA's habitat protections in that they require the preservation of habitat in order to protect species. Courts have upheld these protections as constitutional although they constrain uses of property to achieve environmental protection goals.¹³⁶ Noted authorities have supported the wetlands provisions under the public trust doctrine and the police powers of the state.¹³⁷

In preserving habitat for protected species, the ESA extends the public trust concept from its original application to navigable waters and the underlying lands to protecting the natural environment for listed species. Congress clearly stated that the intent of the ESA is the public interest in protecting the natural environment and fish and wildlife. Protection of stream flow as habitat is a protection of the natural environment under the public trust doctrine, and is merely reiterated in the ESA as preservation of habitat for protected species.

The ESA's protection of habitat and the natural environment

133. 33 U.S.C. § 1251(g) (1988).

134. 16 U.S.C. § 1531(c)(2) (1988).

135. 33 U.S.C. § 1344.

136. *Riverside Irrigation Dist. v. Andrews*, 758 F.2d 508 (10th Cir. 1985); *Nebraska v. Rural Electrification Admin.*, 12 Env't Rep. Cas. (BNA) 1156 (D. Neb. 1978), *appeal vacated and dismissed*, 594 F.2d 870 (8th Cir. 1979).

137. See Ralph W. Johnson, *Water Pollution and the Public Trust Doctrine*, 19 ENVTL. L. 485 (1989); Joseph L. Sax, *The Limits of Private Rights in Public Water*, 19 ENVTL. L. 473 (1989).

is also similar to constraints on the right to pollute under such statutes as the CWA. Professor Sax suggests that water appropriators who destroy fish habitat by depleting a stream or lake are similar to industrial polluters who destroy fish habitat by polluting the water: "Here one might say that the diverter is suffocating the fish while the polluter is poisoning the fish."¹³⁸ There is no constitutional right to pollute habitat by poisoning the stream and, by analogy, it would be illogical for the courts to recognize a constitutional right to destroy a stream by water depletion. This reasoning applies equally whether the stream is protected under the concept of the public trust doctrine or under the habitat protection afforded by the ESA. Thus, there emerges a continuum from the Supreme Court's decision that there can be no private ownership of running water,¹³⁹ extended through the CWA concept of protecting streams from pollution, to the ESA's public interest in protecting habitat from stream flow depletion.

A recent case brought in federal district court clearly demonstrates that stream flow depletion by a water rights holder can be a taking of a protected species, and that state water rights are subordinate to the ESA. In *United States v. Glenn-Colusa Irrigation District*,¹⁴⁰ the NMFS sought to curtail the diversion of water for irrigation from the Sacramento River because the diversion was killing Sacramento River winter chinook salmon, which were protected under the ESA.¹⁴¹ The Glenn-Colusa Irrigation District (GCID) provides irrigation water to farms and wildlife refuges located in Glenn and Colusa Counties in California. Under its contract with the Bureau of Reclamation, the GCID has a water right to divert up to 825,000 acre-feet of water from the Sacramento River through its pumping facility located along the

138. Sax, *supra* note 137, at 273.

139. *United States v. Chandler-Dunbar*, 229 U.S. 53, 69 (1913).

140. *United States v. Glenn-Colusa Irrigation Dist.*, No. S-91-1074 DFL-JFM, slip op. at 1 (E.D. Cal. Jan. 9, 1992).

141. In a previous action involving the GCID's pumping facility, the California Court of Appeals upheld an injunction prohibiting the GCID from diverting water until it constructed a fish screen to prevent the destruction of fish caused by its diversion. *People v. Glenn-Colusa Irrigation Dist.*, 15 P.2d 549 (Cal. App. 1932). In that action, the GCID argued that since it had a right to divert water its actions could not constitute a public nuisance; however, the court held the GCID did not have the right to divert water while ignoring its duty to protect fish. *Id.* at 552.

river four miles north of Hamilton City, California.¹⁴² During the peak irrigation season of April through October, the GCID diverts up to thirty percent of the total flow of the Sacramento River through its pumping capacity of 3000 cubic feet per second (cfs), which causes considerable fish mortality.¹⁴³

The NMFS listed the Sacramento River winter-run chinook salmon as threatened under the ESA pursuant to an emergency rule on August 4, 1989,¹⁴⁴ and a final rule on November 5, 1990,¹⁴⁵ and established by regulation that the same prohibitions apply to threatened species as to endangered species under the ESA.¹⁴⁶ To alleviate the taking of Sacramento River salmon, the NMFS met with the GCID on at least two occasions to inform the irrigation district that its diversion of water from the Sacramento River constituted a taking under the ESA, and offered to assist the GCID in obtaining a permit for an incidental taking.¹⁴⁷ The NMFS determined that the GCID had alternatives to pumping 3000 cfs from its pumping facility. The NMFS suggested that the GCID reduce its diversion to 1100 cfs, obtain additional water from a different source (the Tehama-Colusa Canal), maximize bypass flows, and remove predatory fish.¹⁴⁸ The GCID refused to limit its pumping and offered to repair its fish screens, an action the NMFS considered inadequate to prevent the taking of salmon at the GCID's pumping facility.¹⁴⁹

In response to GCID's refusal to limit its pumping and ob-

142. Bureau of Reclamation, U.S. Dep't of Interior, Central Valley Project, California, Contract Between the United States and Glenn-Colusa Irrigation District, Divertor of Water from Sacramento Sources Providing for Project Water Service and Agreement on Diversion of Water, Contract No. 14-06-200-855A (Apr. 6, 1964).

143. Plaintiff's Memorandum in Support of Motion for Temporary Restraining Order and Motion for Preliminary Injunction at 10-11, *United States v. Glenn-Colusa Irrigation Dist.*, No. S-91-1074 DFL-JFM (E.D. Cal. filed Aug. 9, 1991).

144. 54 Fed. Reg. 32,085 (1989) (to be codified at 50 C.F.R. §§ 226, 227).

145. Endangered and Threatened Species; Sacramento River Winter Run-Chinook Salmon, 55 Fed. Reg. 46,515 (1990) (to be codified at 50 C.F.R. § 227).

146. *Id.* at 46,523 (amending 50 C.F.R. § 227.21 (1990)).

147. Plaintiff's Memorandum in Support of Motion for Temporary Restraining Order and Motion for Preliminary Injunction at 21, *United States v. Glenn-Colusa Irrigation Dist.*, No. S-91-1074 DFL-JFM (E.D. Cal. filed Aug. 9, 1991).

148. *Id.* at 22-23.

149. *Id.* at 22-24.

tain an incidental take permit, The NMFS sought an injunction¹⁵⁰ to prevent the GCID from taking salmon in violation of ESA section 9.¹⁵¹ The GCID responded that its pumping diversion was not the cause of the taking, but instead that the fish screens were responsible for killing the fish.¹⁵² The GCID maintained that if Sacramento River salmon were being taken in violation of the ESA, then the California Department of Fish and Game was responsible because it failed to design, maintain, operate, and adapt an adequate fish screen.¹⁵³

In its order granting the NMFS a temporary restraining order, the court held that the GCID's diversion would cause irreparable harm to the Sacramento River chinook, and that the GCID had sufficient alternative sources of water to compensate for the loss from its pumping station.¹⁵⁴ The court ordered the GCID to reduce its flow to 1100 cfs and to institute a predator removal program at its facility.¹⁵⁵

In a later order granting a permanent injunction restricting the GCID's pumping, the court stated "[t]here is no dispute that the District's . . . pumping station and the associated fish screens kill and harm the winter run salmon. . . . Moreover, it is undisputed that winter-run salmon fry which safely negotiate their way through the screen, are 'taken' by the District's pumps."¹⁵⁶ The court stated that "'Congress intended endangered species to be afforded the highest of priorities,'"¹⁵⁷ and that it had "'fore-

150. See 16 U.S.C. § 1540(e)(6) (1988) (allowing the U.S. Attorney to seek an injunction against alleged violators of the ESA).

151. Plaintiff's Memorandum in Support of Motion for Temporary Restraining Order and Motion for Preliminary Injunction at 1, *United States v. Glenn-Colusa Irrigation Dist.*, No. S-91-1074 DFL-JFM (E.D. Cal. filed Aug. 9, 1991).

152. Defendant's Memorandum of Points and Authorities in Opposition to Motion for Preliminary Injunction and Motion for Temporary Restraining Order at 2-3, *United States v. Glenn-Colusa Irrigation Dist.*, No. S-91-1074 DFL-JFM (E.D. Cal. filed Aug. 9, 1991).

153. *Id.* at 7.

154. *United States v. Glenn-Colusa Irrigation Dist.*, No. S-91-1074 DFL-JFM (E.D. Cal. Aug. 16, 1991) (order granting temporary restraining order).

155. *Id.*

156. *United States v. Glenn-Colusa Irrigation Dist.*, No. S-91-1074 DFL-JFM, slip op. at 2, 14 (E.D. Cal. Jan. 9, 1992).

157. *Id.* at 11 (citing *Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 174 (1978)).

closed the exercise of traditional equitable discretion by courts' faced with a taking under the Endangered Species Act."¹⁵⁸ The court also rejected the GCID's argument that its state water rights should prevail over the ESA. In examining the ESA provision stating federal agencies should cooperate with state and local authorities to resolve water resource issues,¹⁵⁹ the court concluded

[t]his provision does not require . . . that state water rights should prevail over the restrictions set forth in the Act. Such an interpretation would render the Act a nullity. The Act provides no exemption from compliance to persons possessing state water rights, and thus the District's state water rights do not provide it with a special privilege to ignore the Endangered Species Act. Moreover, enforcement of the Act does not affect the District's water rights but only the manner in which it exercises those rights.¹⁶⁰

While the plaintiffs in *Glenn-Colusa* argued that the state water rights holder had committed takings under the ESA, the Oregon Natural Resources Council (ONRC), in a recent action to enjoin a water rights holder from making a diversion from Upper Klamath Lake, alleged that the Bureau of Reclamation (Bureau), is responsible for taking protected species by its operation of the Klamath Project (Project).¹⁶¹ The ONRC's complaint asserted that the Bureau's water diversions into the A Canal and the Link River Dam, in order to supply water to the members of the Klamath Basin Water Users Protective Association (Association),¹⁶² lower the water level in the Upper Klamath Lake and therefore adversely affect the habitat for two species of sucker fish.¹⁶³ Both the shortnose sucker and the Lost River sucker, which occupy

158. *Id.* at 11-12 (citing *Sierra Club v. Marsh*, 816 F.2d 1376, 1383 (9th Cir. 1987)).

159. 16 U.S.C. § 1531(c)(c).

160. *United States v. Glenn-Colusa Irrigation Dist.*, No. S-91-1074 DFL-JFM, slip op. at 17 (E.D. Cal. Jan. 9, 1992).

161. Complaint at 6, 11, *Oregon Natural Resources Council v. Bureau of Reclamation*, No. 91-6248 (D. Or. filed July 10, 1991).

162. The Bureau operates storage reservoirs to provide water for irrigation as well as other purposes. The relationship between federal and state law in the operation of these reservoirs is not clearly defined. See TARLOCK, *supra* note 111, at 5-45.

163. *Id.* at 6-7. Lowering water in the Lake adversely affects the sucker fishes' spawning grounds, renders larval and juvenile nurseries inaccessible, causes water quality problems, and kills larval and juvenile sucker fish by siphoning them into the A Canal. *Id.*

habitat in Klamath River Basin, are protected as endangered under the ESA.¹⁶⁴ The ONRC alleged that the Bureau's actions constitute a taking of the sucker fish under the ESA.¹⁶⁵

The ONRC did not name the Association, which holds the water right under the Klamath River Basin Compact,¹⁶⁶ as committing the taking. However, the Association, which is "dedicated to the preservation, protection, and defense of the water and power rights of the landowners of the Klamath River Basin,"¹⁶⁷ moved to intervene in the action, asserting that the Bureau cannot adequately represent its interests because the Bureau, as the Project manager, must consider nationwide policy and competing statutory directives.¹⁶⁸ These competing statutory directives are the ESA as it conflicts with the Reclamation Act¹⁶⁹ and the authorization of the Klamath Project.¹⁷⁰

Thus, unlike the NMFS, the plaintiff in *Glenn-Colusa*, the ONRC has asserted that the project operator has committed the taking, rather than the water rights holder. The Association, however, correctly identifies the issue: if sucker fish are being taken by the diversion of water which serves as their essential habitat, then who is committing the taking? Also, can existing water rights be curtailed to restore habitat for the sucker fish? This action is currently pending in the District Court of Oregon.¹⁷¹

164. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Shortnose Sucker and Lost River Sucker, 53 Fed. Reg. 27,130 (1988) (to be codified at 50 C.F.R. § 17).

165. TARLOCK, *supra* note 111, at 8.

166. 1957 Or. Laws 142 (1957); Pub. L. No. 85-222, 71 Stat. 497 (1957).

167. Plaintiff's Memorandum in Support of Motion to Intervene of Klamath Basin Water Users Protective Association at 3, Oregon Natural Resources Council v. Bureau of Reclamation, No. 91-6248 (D. Or. filed July 10, 1991).

168. *Id.* It should be noted that the Association's argument for intervention is at least tacit acknowledgement that operation of the Klamath Project may impact endangered species and that the Bureau, as project operator, must consider these impacts.

169. Act of June 17, 1902, 32 Stat. 388 (codified as amended at 43 U.S.C. §§ 371-616yyy (1988)).

170. 43 U.S.C. §§ 601, 610-612 (1988).

171. Another case that raised issues concerning the relationship between the ESA and water rights is *Pyramid Lake Paiute Tribe of Indians v. United State Dep't of the Navy*, 898 F.2d 1410 (9th Cir. 1990). The Paiute Tribe alleged that the U.S. Navy was taking protected cui-ui by allowing irrigators to withdraw water from Pyramid Lake, thus lowering the lake level and adversely modifying habitat for the cui-ui. *Id.* at 1419-20. This lowering of the lake placed the cui-ui in jeop-

B. Fifth Amendment Challenge

Some commentators have argued that curtailing property rights to protect endangered species habitat is prohibited under the Fifth Amendment of the Constitution as a taking of property without compensation.¹⁷² Since state-allocated water rights may be regarded as property rights,¹⁷³ abrogation or curtailment of these rights could constitute a Fifth Amendment taking. However, this Section discusses case law that demonstrates the Fifth Amendment does not control the curtailment of property rights to protect endangered species.

In *Christy v. Hodel*,¹⁷⁴ an action under the ESA involving the threatened grizzly bear, the Ninth Circuit held that there is no fundamental right to kill federally protected wildlife in defense of property. In that case, Christy, a rancher, killed a grizzly after bears had killed his sheep. Christy was fined under the ESA for taking a protected species in violation of the ESA. He subsequently sued the FWS, claiming it had taken his sheep without compensation because the ESA prohibited him from killing the bears in order to protect his property interest in the sheep. The court refused to recognize a fundamental right to defend property by killing wildlife or to find that the FWS had committed a taking of Christy's sheep.¹⁷⁵

ardy. Although the district court never reached the issue of whether the Navy's outlease program allowing diversion to irrigators was actually a taking under the ESA, the Ninth Circuit held that the Navy had correctly sought a biological opinion from the FWS. The FWS stated that the Navy's actions would not harm the cui-ui, and the court held that the Navy's reliance on this opinion was not arbitrary and capricious. *Id.* at 1420. Because the FWS was not a named party in the action, the biological opinion was not directly challenged. In any event, the court held that the Tribe did not present any new information challenging the biological opinion's conclusions. *Id.* at 1414-15. Finally, the court noted that the Paiute Tribe also diverts water from the same system, *id.* at 1420, but erroneously considered this relevant to the determination of whether the Navy was committing a taking of the cui-ui or placing the cui-ui in jeopardy.

172. David S. Klain, Note, *Does the Endangered Species Act Deprive an Owner of Fundamental Constitutional Rights: Christy v. Hodel*, 12 GEO. MASON U. L. REV. 421 (1990); but cf. Lauri Alsup, Comment, *The Right to Protect Property*, 21 ENVTL. L. 209 (1990) (arguing the right to protect property qualifies for heightened judicial protection).

173. ANDERSON, *supra* note 88, at 29.

174. 857 F.2d 1324 (9th Cir. 1988), *cert denied*, 490 U.S. 1114 (1989).

175. *Id.*

In an action under the Wild Free-Roaming Horses and Burros Act, *Mountain States Legal Foundation v. Hodel*, the Tenth Circuit held that a property owner can be required to remove grazing animals from his land if the grazing causes indirect injury to an endangered species by modifying natural habitat.¹⁷⁶ Similarly, the Supreme Court held in *Chandler-Dunbar* that the federal doctrine of navigational servitude and the public interest in navigability is superior to any claim of private property rights in a navigable stream, and further that the concept that "the running water in a great navigable stream is capable of private ownership is inconceivable."¹⁷⁷ In *Chandler-Dunbar*, the Court held that an order to remove a hydropower dam that interfered with navigation was not a taking of property requiring compensation under the Fifth Amendment.¹⁷⁸

These decisions acknowledge that the ESA and similar federal statutes codify societal values protecting the natural environment and plants and wildlife.¹⁷⁹ Congress' intent, stated in the preamble of the ESA, is to protect endangered species against competing interests in property.¹⁸⁰ The ESA states that various species of fish, wildlife, and plants have been rendered extinct as a result of economic growth and development. Congress explicitly stated that the ESA was to counter economic pressures that had led to the extinction and depletion of countless species of fish and wildlife.¹⁸¹ Even though a state-allocated water right may be considered a property right, the court decisions discussed above indicate that the ESA protections afforded species on the verge of extinction are superior to economic interests in property. Furthermore, the curtailment of these interests may not be a taking under the Fifth Amendment. As Professor Joseph L. Sax has noted, "[e]very major change in western water law, despite adverse effects on existing claims of right, has been sustained as a

176. 799 F.2d 1423, 1427-28 (10th Cir. 1986).

177. *United States v. Chandler-Dunbar Co.*, 229 U.S. 53, 69 (1913).

178. *Id.* at 69.

179. See Holmes Rolston III, *Property Rights and Endangered Species*, 61 U. COLO. L. REV. 283 (1990). Also, the ESA states species are important to the nation and its people for their "aesthetic, ecological, educational, historical, recreational, and scientific value." 16 U.S.C. § 1531(a)(3) (1988).

180. 16 U.S.C. § 1531(a)(1).

181. *Id.*

valid non-compensable regulation."¹⁸²

Since there is no fundamental right to destroy habitat of endangered species where doing so would be a taking under the ESA, then destruction of critical habitat of Columbia River salmon by stream flow depletion under a state-allocated water right should similarly be prohibited as a taking under the ESA. If habitat for Columbia River salmon must be restored by reversing stream flow depletion in the Columbia River Basin, then state water rights in the Columbia and its tributaries which have caused stream flow depletion must be curtailed.

Although the curtailment of existing water rights may impose a burden on the economic interests of water rights holders, there are procedures under the ESA to consider and accommodate these interests. After *Tennessee Valley Authority v. Hill*,¹⁸³ a case in which protection of the small snail darter fish prevented completion of a major dam, Congress passed amendments to the ESA that created a special Endangered Species Committee to consider economic interests once a species had been listed.¹⁸⁴ This committee, often called the "God Squad" because of its power to determine the fate of a listed species, can balance economic interests against aesthetic, ecological, historical, recreational, and similar interests.¹⁸⁵ However, economic interests are not to prevail easily; they may be considered only after a listing decision has been made based solely on biological and scientific data.¹⁸⁶ In 1988, Congress considered amendments repealing provisions of the ESA that limited the decision to list a species based on biological evidence alone. In refusing to repeal the provision, Congress retained the emphasis on biological evidence and refused to allow consideration of economic effects in the listing process.¹⁸⁷ Thus, the decision to list a species is based "solely" on scientific and commercial information, but after a listing is proposed, the "God Squad" may grant an exemption for economic reasons.

182. Joseph L. Sax, *The Constitution, Property Rights and the Future of Water Law*, 61 U. COLO. L. REV. 257, 259 n.4 (1990).

183. 437 U.S. 153 (1982).

184. 16 U.S.C. §§ 1531-1536, 1538-1540, 1542 (1988).

185. *Id.* § 1536(e)-(h).

186. *Id.* § 1533.

187. *Id.* § 1533(b)(1).

C. Columbia River Salmon and Practicalities of Reallocation

Because the NMFS cited inadequate stream flows when it determined that Columbia River salmon species are on the verge of extinction and therefore should be protected under the ESA,¹⁸⁸ the federal agencies responsible for stream flows in the Basin must determine what changes to make in the Columbia River system to provide adequate water for habitat for those species. There are numerous state, local, and federal entities with jurisdiction over Columbia River salmon from the spawning grounds in tributary streams in Idaho through the salmon migration to the Pacific Ocean.¹⁸⁹ These entities must devise a method for reversing stream flow depletion in the Basin in order to provide adequate habitat for protected salmon.

Because existing water rights can be curtailed under the ESA to avoid a taking of protected species, the government must determine which state-allocated water rights are responsible for the taking and which must be curtailed to avoid jeopardizing the species or destroying its habitat. Under a strict application of the doctrine of prior appropriation, the most recently granted appropriative rights should be curtailed to restore adequate stream flow, because appropriative rights are granted under the presumption that there is sufficient flow remaining in the stream to protect the rights of senior appropriators and allow the new appropriation. If the most junior appropriator were granted a water right when there was insufficient flow to satisfy the rights of senior appropriators as well as to allow a new allocation, then the junior rights would be curtailed under a doctrine of "last in time, last in right."

However, in at least two other western river basins where existing water rights might have been curtailed to avoid the destruction of habitats of endangered species, creative reallocation schemes were developed. One method was the formation of a multistate and multiparty compact under the Truckee-Carson-Pyramid Lake Settlement Act.¹⁹⁰ This compact was organized and en-

188. See *supra* notes 8-10 and accompanying text.

189. See PHILIP R. WANDSCHNEIDER, *WHO CONTROLS THE WATER?: MANAGING THE COLUMBIA-SNAKE SYSTEM* (1985) (Pacific Northwest Cooperative Extension Publication No. 249).

190. Pub. L. No. 101-613 §§ 201-210, 104 Stat. 3289, 3294-3324 (codified at

acted into federal statute in 1990 to alleviate conflicts over the operation of Lake Tahoe Dam, which releases water into the Truckee River that flows through parts of California and Nevada. Under this plan, the Secretary is authorized to purchase water rights and transfer water in accordance with applicable state law.¹⁹¹ Additionally, the Secretary must negotiate an "Operating Agreement" with the states of Nevada and California to govern the operation of federal reservoirs in the Truckee River Basin. The Act mandates that the agreement must comply with the ESA while "accommodating" state water law. This accommodation provision appears to be a deferential standard, similar to the ESA provision mandating cooperation with state agencies to resolve water resource issues,¹⁹² rather than a strict savings clause similar to that in the Reclamation Act.¹⁹³

In another western river basin, the Upper Colorado River, water projects involving three states—Utah, Colorado and Wyoming—were depleting instream flows and thus destroying habitat for endangered fish protected under the ESA. After extensive studies of the effects of the projects and of the possibility of jeopardizing the listed species and their habitat, the FWS sought an opinion from the Solicitor General of the Interior on how to conduct an analysis of cumulative impacts under the ESA. The opinion stated that the section 7 consultation process required the FWS to consider all "*past and present impacts of all projects and human activities in the area, regardless of whether they are federal, state or private in nature.*"¹⁹⁴ The Solicitor further stated that federal projects could be authorized until it is determined that future actions are likely to jeopardize the species or adversely modify its habitat. Thus, federal projects should be reviewed sequentially under a system of "first in time, first in right."¹⁹⁵

The Solicitor also stated that the FWS had to consider "the cumulative impacts of *future* state or private sections [sic] where such actions are *reasonably certain* to occur prior to the comple-

16 U.S.C. 668dd note, 43 U.S.C. § 614 note (1988)).

191. *Id.* § 207(e), 104 Stat. at 3313.

192. 16 U.S.C. § 1531(c)(2) (1988).

193. *See supra* notes 95-98 and accompanying text.

194. Cumulative Impacts Under Section 7 of the Endangered Species Act, 88 Interior Dec. 903, 907 (1981).

195. *Id.* at 905.

tion of the federal project."¹⁹⁶ The FWS interpreted this opinion as a mandate to consider the impacts on listed species and their habitats of all pending private development projects when determining cumulative impacts. After the Solicitor's opinion was issued, private developers with proposed projects consulted with the FWS, which then determined the remaining flows for habitat for the protected species after each new approved project. This process was viewed by water rights holders and developers as imposing a new hierarchy of "first in time, first in right" for water appropriation, based on who first consulted with the FWS and received approval for their proposed projects, rather than the hierarchy for water rights holders established by state law. In response to criticism that this system preempted existing state-allocated water rights, the FWS developed a system that required new project developers to account for senior appropriators in assessing the impacts of their proposed projects.¹⁹⁷

Shortly after the Solicitor's opinion, the Tenth Circuit decided *Riverside Irrigation District v. Andrews*,¹⁹⁸ concerning the preservation of instream flows to protect endangered whooping cranes in Nebraska. The court upheld the finding that upstream water diversion projects could be constrained in order to preserve downstream habitat for endangered species.¹⁹⁹ Subsequent to the Tenth Circuit ruling and the Solicitor's opinion, affected and interested parties formed a cooperative committee, the Upper Colorado River Basin Coordinating Committee (UCRBCC), to develop and implement a plan to protect habitat of endangered species, while accounting for state-allocated water rights and water rights obligations under Colorado River compacts. The UCRBCC produced the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (RIP).²⁰⁰ Among the tasks recommended in the RIP are habitat management and habitat development and maintenance, as well as a recovery plan

196. *Id.* at 908.

197. Margot Zallen, *Evolution of ESA Consultations on Western Water Projects*, 2 NAT. RESOURCES & ENV'T 41 (1986).

198. 758 F.2d 508 (10th Cir. 1985).

199. *See supra* notes 73-74 and accompanying text.

200. Fish and Wildlife Service, Region 6, U.S. Dep't of the Interior, Colorado Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (1987).

for endangered species.²⁰¹

The RIP recommended that the UCRBCC determine the habitat requirements of the protected fish as well as the flows necessary to maintain the habitat in those streams. To preserve flows in streams identified as fish habitat, the UCRBCC recommended accommodation to state statutes in the affected states.²⁰²

In Colorado, the Colorado Conservation Board, which is responsible for state water rights allocation, will acquire and appropriate water rights under state law for the maintenance of the identified habitat.²⁰³ A Colorado statute allows for the appropriation and acquisition of water rights to preserve the natural environment to a reasonable degree.²⁰⁴

To acquire the necessary instream flows in Utah, the Division of Wildlife Resources is expected to use its authority under state law to protect public fisheries. The Division of Wildlife Resources can hold an instream flow right under state law, which could then be used to protect habitat for the endangered fish.²⁰⁵ The Secretary of the Interior is to develop an agreement with the Water Conservation Board in Colorado and the Division of Wildlife Resources in Utah which would better define their responsibilities under the agreement.

The sources of water to meet instream flows will come from water conservation, releases of water from new and existing storage projects, refinement in the operation of reservoirs, purchases or leases of agricultural water with compensation to irrigators for crop loss, and agricultural water conservation control projects. More innovative methods of acquiring necessary water under the plan include changing the point of diversion for senior water rights holders to downstream locations, appropriating instream flows, and acquiring nontributary ground water to put into the streams.²⁰⁶

The Colorado River Basin program may be the optimum method for meeting the mandates of the ESA. The RIP protects

201. *Id.* at 1-6.

202. *Id.* at 4-2.

203. *Id.* at 4-3.

204. COLO. REV. STAT. § 37-92-102(3) (1990).

205. Fish and Wildlife Service, *supra* note 200, at 4-4.

206. *Id.* at 4-5.

species habitat when water quantity is a habitat constraint and resolves the conflicts and differences between competing water interests. Because Columbia River salmon are listed as threatened or endangered under the ESA, a similar cooperative effort involving all local, state, and federal entities and water rights holders in the Basin may provide a solution which maintains instream flow patterns necessary for habitat under the ESA while minimizing disruption of existing water rights and uses.

V. CONCLUSION

The NMFS's recent proposals to list Snake River sockeye salmon as endangered²⁰⁷ and spring/summer and fall chinook as threatened under the ESA²⁰⁸ means that the NMFS may proceed to its designation of critical habitat. Because the NMFS, as well as the Northwest Power Planning Council, has identified reduced flows in the Columbia River Basin as the primary cause of the decline of the salmon, adequate instream flows should be designated as critical habitat, or at least as constituent elements of critical habitat. However, providing adequate instream flows for critical habitat and salmon recovery cannot be accomplished if existing state-allocated water rights continue to deplete instream flows.²⁰⁹ The over-allocation of water by existing water rights holders has contributed to the reduction in flows in the Columbia River Basin and is jeopardizing the continued existence of Columbia River salmon. Columbia River salmon are now protected under the ESA. Thus, the exercise of existing state-allocated water rights which are destroying habitat and jeopardizing the species will be considered a taking under the ESA.

The courts have refused to recognize a constitutional right to kill species protected under the ESA in order to protect property.²¹⁰ They have also constrained the diversion of water which

207. Snake River Sockeye Listing, *supra* note 5.

208. Snake River Chinook Listing, *supra* note 6.

209. The NMFS has already studied the problem of increasing migration flows and has received a proposed plan which indicates that the enhanced flows mandated in the Council's Fish and Wildlife Program are within reach. See *HYDROSPHERE*, *supra* note 13, at 9-5. However, attaining the necessary flows will require cooperation and coordination among irrigation water users and hydropower generators.

210. *Christy v. Hodel*, 857 F.2d 1324 (9th Cir. 1988).

provides habitat for endangered species,²¹¹ and have constrained a property right to graze animals on habitat occupied by endangered species if that grazing adversely modifies the protected species' habitat.²¹² Also, the Supreme Court has held that there is no private ownership of stream flow as against federal interests in navigation.²¹³ Finally, a federal district court has held that a diversion under a state-allocated water right which depleted stream flow, thereby killing protected species, was a taking under the ESA.²¹⁴

Because the Columbia River salmon are now protected under the ESA, and instream flows are designated as critical habitat, the destruction of that habitat from flow depletion by existing water rights holders is a taking of endangered species. Under the prior appropriation doctrine, water rights of the most junior appropriators could be curtailed to protect endangered species habitat. However, other western river basin states have developed cooperative agreements among water rights holders to protect habitat under state statute and thus avoid a taking under the ESA. In the Colorado River Basin, the FWS formed a cooperative committee to avoid imposing a system of "last in time, last in right" in curtailing or reallocating the water rights responsible for stream flow depletion. A similar method could be employed in the Columbia River Basin because the states of Idaho, Oregon, and Washington have statutes for protecting instream flows similar to the statutes of the Colorado River Basin states.²¹⁵ Since all three Columbia River Basin states recognize instream or minimum flows, such flows can be established under state law utilizing a similar cooperative effort to avoid a taking of endangered or threatened Columbia River salmon.

211. *Riverside Irrigation Dist. v. Andrews*, 758 F.2d 508 (10th Cir. 1985).

212. *Mountain States Legal Found. v. Hodel*, 799 F.2d 1423 (10th Cir. 1986).

213. *United States v. Chandler-Dunbar*, 229 U.S. 53 (1913).

214. *United States v. Glenn-Colusa Irrigation Dist.*, No. S-91-1074 DFL-JFM, slip op. at 19 (E.D. Cal. Jan. 9, 1992).

215. IDAHO CODE § 42-1501 (1990) (stating minimum flow is a beneficial use to protect fish and wildlife habitat in the public interest); OR. REV. STAT. §§ 537.332, 537.336 (1991) (providing instream water rights are held in trust by the Water Resources Department for the benefit of the people and for the public uses of conservation, maintenance, and enhancement of aquatic and fish life, wildlife, and fish and wildlife habitat); WASH. REV. CODE ANN. § 90.03.247 (West Supp. 1991) (authorizing the Department of Ecology to establish minimum stream flows after consultation with the departments of fisheries and wildlife).