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Holly Doremus

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WATER, GROWTH AND THE ENDANGERED SPECIES ACT

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Water and Growth in the West

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Water, Population Growth and Endangered Species in the West

by Holly Doremus

I. Introduction

It would be difficult to find three more controversial topics in the American west today than water, urban growth, and the protection of endangered species. These three topics are intimately linked in a see-saw relationship, with water as the pivot point. Limited water defines the west. Human settlement of the west was made feasible by engineering marvels that brought water where nature had not. Those transfers, however, have turned out not to be as costless as they once appeared. Other species depend on the natural quantity and quality of water. Human consumption, redistribution, and alteration of western water have brought many of those species to the brink of extinction.

We are used to thinking of endangered species as a consequence of the old west's resource industries. The historic decline of western species, including aquatic species, is primarily attributable to agriculture, logging, and hydropower. But the new, urban west makes its own demands on water, and poses its own threats to species. With western population growth accelerating, and more and more aquatic species reaching the endangered and threatened list, conflicts between the two are virtually certain to intensify.

Endangered species problems will be part of the picture of western growth for the foreseeable future. Whether and how we solve those problems will have a lot to do with the future of the west's human communities as well as its natural ones.

II. Conflicts Between Population Centers and Water-Dependent Species in the West

Notwithstanding its lingering cowboy image, the west has long been the most urbanized region of the country. It is also the fastest growing region. The major cities of the west,

especially those in the intermountain region, continue to grow explosively. The residents of these cities and suburbs consume water, not just for their basic needs, but also for the industries that employ them, to generate the electricity that lights their homes and, in vast quantities, to keep their landscapes green and lush.

Competing for that same water are an ever-growing number of species listed as federally endangered or threatened. Of the 495 U.S. animals currently included on the federal protected list, 112 are fishes. Many others are aquatic or highly water-dependent. Overall, according to the Biological Resources Division of the U.S. Geological Survey, freshwater fishes are the single most imperiled vertebrate group in the United States. Fully 57% of California's historic fish taxa are either extinct or on the road to extinction. The fishes of the Great Basin have fared no better. Of 131 historic taxa, 10 are extinct and 75 are listed under the Endangered Species Act (ESA), candidates for listing, or considered species of concern by the U.S. Fish and Wildlife Service.

The most dire threat to western aquatic species is the invasion of exotic species, many deliberately imported, which compete with, prey on, and hybridize with the natives. See Brian D. Richter et al., *Threats to Imperiled Freshwater Fauna*, 11 *Conservation Biology* 1081 (1997). But alterations of habitat and hydrology by surface water removal and impoundment are also critical threats to a large proportion of the region's imperiled aquatic species. Dams built to supply hydropower, control floods, and store water for agricultural and municipal uses block access to miles of streams, and change water temperatures and chemistry. Water withdrawals can be so extreme that they leave streambeds dry. Short of that, they too alter water temperatures, flow regimes, and quality. Irrigated agriculture remains by far the largest consumer of western water. Municipal water consumption, though, accounts for an ever-larger share of the total. Between 1960 and 1990, however, the amount of water withdrawn for domestic use more than doubled, growing at a rate even faster than the region's population.

Water pollution, primarily in the form of addition of sediment and nutrients to waterways, is also a significant threat to aquatic species. As with water withdrawals, agriculture remains the primary culprit for water pollution, but urban run-off is a growing problem.

A quick survey of several current conflicts between endangered species and the growing population centers of the west over the region's limited water resources illustrates the pervasiveness of those conflicts. They span the west, extending from the Pacific Coast to the hundredth meridian, and from the Canadian border in the north to the Mexican border in the south.

Our quick tour begins in San Antonio, just east of the hundredth meridian that marks the boundary of the mythical west. San Marcos and Comal Springs, the largest springs in the southwestern United States, flow out of the Edwards Aquifer to feed the Guadalupe River. The springs support a unique aquatic ecosystem, including seven endangered species (the San Marcos gambusia, fountain darter, Texas blind salamander, Peck's cave amphipod, Comal Springs riffle beetle, Comal Springs dryopid beetle, and Texas wild rice), and one threatened species (the San Marcos salamander). The aquifer, however, also supplies the sole source of drinking water for San Antonio's two million residents. Pumping from the aquifer has diminished the flow from the springs, putting species that depend on that flow at risk. Although the aquifer also provides water for agricultural and industrial users in the region, municipal use accounted for more than half of the pumping in the 1980s. Stress on the region's water resources will surely increase; its population is expected to increase 40% or more by 2010.

Not far to the west, Albuquerque sits on the banks of the Rio Grande. Nonetheless, it too currently relies entirely on groundwater. Albuquerque does, however, have rights to water brought to the Rio Grande from the Colorado system by the federal San Juan-Chama Project. As required by state law, Albuquerque acquired that water to replace seepage from the Rio Grande that was thought to be recharging its aquifer. It now

appears, however, that the aquifer is not recharging as expected. Consequently, Albuquerque plans to divert its San Juan-Chama water from the Rio Grande for direct consumption. Other New Mexico cities, including Las Cruces, one of the fastest-growing cities in the country, also are counting on water from the San Juan-Chama project to relieve them from their reliance on overtaxed aquifers. Still, agricultural diversions account for about 80% of the water use in the middle Rio Grande. The future of diversions in this stretch has been in doubt since 1994, when the Rio Grande silvery minnow, the only one of five fish native to the middle Rio Grande to survive, was listed as endangered. Once widespread throughout the basin, it is now limited to the middle stretch of the river, portions of which are subject to regular dewatering. During the drought of 1996, more than 1000 silvery minnows reportedly died when irrigators diverted virtually the entire flow of the river.

Moving west and north, we reach the Colorado River system itself, a source of water for more than 25 million people. Denver, Salt Lake City, Phoenix, Tucson, Los Angeles, Las Vegas, Los Angeles and, through the San Juan-Chama project, Santa Fe and Albuquerque, all rely to some degree on Colorado River Water. The Colorado also irrigates agriculture in the seven states it serves, and generates some 12 billion kilowatt hours of electricity annually. Dozens of dams, including giant Hoover and Glen Canyon, dot the Colorado and its tributaries, making it one of the most controlled river systems in the world. Water is diverted hundreds of miles from the river to reach the region's farms and population centers. These dams and diversions have radically altered nearly every feature of the aquatic environment, including water temperature, sediment loads, and accessibility to fish migration. Four native fish, the Colorado pikeminnow (formerly known as the Colorado squawfish), razorback sucker, bonytail chub, and humpback chub, have been listed as endangered. In addition, the endangered southwestern willow flycatcher inhabits the lower Colorado basin, and its fate is tied to management of the river's waters.

Although some Colorado River water goes to slake the thirst of Los Angeles, most of the Colorado water that reaches California is allocated to agricultural use. Moving still further west, we reach a more important source of water for California's cities, the Sacramento-San Joaquin Delta which empties into San Francisco Bay. The Delta is "the hub of California's water distribution system." Elizabeth Ann Rieke, *The Bay-Delta Accord: A Stride Toward Sustainability*, 67 U. Colo. L. Rev. 341 (1996). Nearly half the runoff in the state flows through the Sacramento and San Joaquin Rivers to the Delta. From there, massive pumps divert water to the federal Central Valley Project and the State Water Project. The Delta supplies 40% of the state's drinking water, as well as irrigation for the state's agricultural industry. Diversion of freshwater from the Delta, together with invasion by alien species and other factors, have produced a crisis in the Delta fisheries over the past generation. The Delta smelt, Sacramento splittail, Central Valley steelhead and Central Valley spring-run chinook are listed as threatened. The winter-run chinook are endangered and the fall and late fall runs are considered candidates for listing. Last June, pumping from the Delta had to be slowed, creating a minor water crisis, because Delta smelt had lingered around the pumps later in the season than expected. Environmental groups claimed more than 100,000 smelt were killed in the pumps.

Moving up the coast for our final stop, we reach the Pacific northwest. The plight of the salmon in this region is well known. By 1999, twenty-three salmon runs had been listed under the ESA, ranging from southern California to the border with Canada. Michael C. Blumm & Greg D. Corbin, *Salmon and the Endangered Species Act: Lessons from the Columbia Basin*, 74 Wash. L. Rev. 511, 519 (1999). The Columbia River basin is home to the largest concentration of these listed runs, including various runs of sockeye, chinook, and coho salmon, steelhead, chum, and bull trout. Hydropower dams, fishing, and forest practices have all been implicated as major factors in the decline of the northwest salmon. Urban populations are implicated in the decline of salmon through their consumption of electricity; the Columbia River dams produce about one-third of the

electricity used in the region. In addition, the listing last year of chinook salmon and bull trout in the Puget Sound brought the Endangered Species Act directly to a major metropolitan area, Seattle.

III. The ESA and Municipal Water Use

The Endangered Species Act is jointly administered by the U.S. Fish and Wildlife Service (FWS) for the Department of Interior and the National Marine Fisheries Service (NMFS) for the Department of Commerce (together “the Services”). FWS has lead responsibility for the vast majority of listed species, but NMFS is responsible for marine species, including anadromous fish.

The Services maintain a list of species determined to be threatened or endangered. 16 U.S.C. § 1533. The statute defines the term “species” to include subspecies and distinct population segments of vertebrate animals. 16 U.S.C. § 1532(16). A species is “endangered” if it is in danger of extinction throughout all or a substantial portion of its range. 16 U.S.C. § 1532(6). It is “threatened” if it is likely to become endangered in the foreseeable future. 16 U.S.C. § 1532(20).

The ESA directs the Services to designate critical habitat for each species, to the maximum extent prudent and determinable, coincident with listing. 16 U.S.C. § 1533(a)(3). Critical habitat includes areas essential to the conservation of the species which may require special management considerations or protection. 16 U.S.C. § 1532(5)(A). Despite this provision, critical habitat has not yet been designated for the majority of listed species. The Services resist designating critical habitat, in part because the statute requires a time-consuming analysis of economic impacts as a prerequisite to designation. 16 U.S.C. § 1533(b)(2).

Listed species receive the protection of the ESA’s two primary regulatory provisions,

sections 7 and 9. Section 7 requires federal agencies to carry out programs for the conservation of listed species, and to insure that their actions are not likely to jeopardize the continued existence of any listed species or adversely modify its designated critical habitat. 16 U.S.C. § 1536. Section 9 forbids the “take,” broadly defined, of endangered and, in many cases, threatened animals. 16 U.S.C. § 1538.

A. Section 7 applies to municipal water supplies with a federal nexus. It imposes two duties, an affirmative one to conserve listed species, and a negative one not to jeopardize their continued existence.

1. Section 7(a)(1) requires all federal agencies to use their authorities “in furtherance of the purposes of [the ESA] by carrying out programs for the conservation” of listed species. Conservation means “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary.” 16 U.S.C. § 1532(3).

To satisfy the requirements of section 7(a)(1), each federal agency must develop and carry out, in consultation with the Services, programs for the conservation of each and every listed species that its actions may affect. *Sierra Club v. Glickman*, 156 F.3d 606 (5th Cir. 1998). This duty is enforceable through the ESA’s citizen suit provision and the Administrative Procedure Act. *Id.* Although it does not allow the agency to forego conservation in favor of other goals, section 7(a)(1) has been interpreted to leave federal agencies with considerable discretion to determine what specific measures their conservation programs will include. *Pyramid Lake Paiute Tribe v. U.S. Dept. of the Navy*, 898 F.2d 1410 (9th Cir. 1989).

Section 7(a)(1) does not expand agencies' authority beyond existing statutory limits. *Platte River Whooping Crane Critical Habitat Maintenance Trust v. FERC*, 962 F.2d 27 (D.C. Cir. 1992). It does, however, permit agencies to use their existing authorities to provide as much protection as possible for listed species. So, for example, the Ninth Circuit has held that the Interior Department could reserve all of the Washoe Project's water for the conservation of two listed fish, even if not all the water is needed to avoid jeopardy. *Carson-Truckee Water Conservancy Dist. v. Clark*, 741 F.2d 257 (9th Cir. 1984). Where a federal agency is so inclined, therefore, it can use section 7(a)(1) to justify reserving for listed species any water it is not obligated by statute to deliver.

2. Section 7(a)(2) requires that federal agencies, in consultation with the Services, insure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. 16 U.S.C. § 1536(a)(2).

Federal actions are subject to section 7 so long as "discretionary Federal involvement or control" remains. 50 C.F.R. § 402.03. The Supreme Court held in *TVA v. Hill*, 437 U.S. 153 (1978), that closing the gates on the nearly complete Tellico Dam was a federal action subject to the strictures of section 7. Following that lead, the lower federal courts have tended to construe "agency action" broadly. Only if the federal agency has no discretion to control the action in a way that might change its impacts on a listed species is section 7 inapplicable. *Sierra Club v. Babbitt*, 65 F.3d 1502 (9th Cir. 1995).

Renewal of contracts for delivery of water from federal projects is subject

to section 7. *Natural Resources Defense Council v. Houston*, 146 F.3d 1118 (9th Cir. 1998). Even absent contract renewal, where a federal agency operates or has authority to manage a dam or other water project, it must do so in accordance with the ESA, even if that means withholding contractually promised water. *Klamath Water Users Protective Ass'n v. Patterson*, 204 F.3d 1206 (9th Cir. 2000); *O'Neill v. U.S.*, 50 F.3d 677 (9th Cir. 1995). No court has yet directly considered whether section 7(a)(1) allows agencies to override their contractual obligations in situations where meeting those obligations would not cause jeopardy, but *Klamath Water Users* suggests that it might. Although consultation would appear to be required on operation of FERC-licensed dams, procedural quirks have blocked recent lawsuits seeking to compel such consultation. See *Southwest Center for Biological Diversity v. FERC*, 967 F. Supp. 1166 (D. Ariz. 1997); *American Rivers v. FERC*, 170 F.3d 896 (9th Cir. 1998).

In the Albuquerque dispute, one issue is the extent of federal control over water diverted to the Rio Grande through the San Juan - Chama project. The City has filed suit to immunize its project water from any requirement that water be left in the Rio Grande to protect the silvery minnow, claiming that the United States has no authority to withhold that water for ESA purposes. *City of Albuquerque v. United States*, CV-99-0985 RLP/DJS-ACE (D.N.M., filed Sept. 1, 1999). The Bureau of Reclamation seems to share the City's view. On the other hand, a coalition of environmental groups has challenged the Bureau of Reclamation's programmatic biological assessment for the middle Rio Grande on the grounds that it fails to recognize the extent of the agency's authority and obligations under the ESA. *Rio Grande Silvery Minnow v. Martinez*, CV-99-1020 JP (D. N.M., filed Nov. 15, 1999).

3. Section 7(a)(2) can also affect municipal wastewater discharges.

Like other point sources, wastewater treatment plants which discharge effluent to the waters of the United States must have National Pollutant Discharge Elimination System (NPDES) permits under the Clean Water Act. See 33 U.S.C. § 1311(a). Issuance of an NPDES permit by EPA itself is a federal action subject to section 7 consultation, although EPA has not always voluntarily engaged in such consultation. In New Mexico, for example, EPA recently settled a lawsuit with an agreement to consult with respect to NPDES permits that may affect endangered species, including the permit for Albuquerque's wastewater treatment plant.

Most states have been delegated authority to issue NPDES permits. See 33 U.S.C. § 1342(b). It is less clear how section 7 applies in the context of delegated permit programs. EPA and FWS now agree that approval by EPA of state water quality standards and delegation of NPDES authority to the states also require consultation. See Draft Memorandum of Agreement Between the Environmental Protection Agency, Fish and Wildlife Service, and National Marine Fisheries Service Regarding Enhanced Coordination Under the Clean Water Act and the Endangered Species Act, 64 Fed. Reg. 2742 (Jan. 15, 1999). The Draft Memorandum of Agreement provides that EPA will amend its Clean Water Act regulations to explicitly require that state water quality standards not jeopardize federally listed species. Id. at 2744. EPA itself will consult with FWS regarding the water quality criteria it issues to guide state water quality standard determinations, and will not require separate consultation on state standards identical, or more stringent than, the relevant criteria. Id. at 2745.

Some uncertainty remains as to how or whether section 7(a)(2) applies to

Clean Water Act NPDES permits issued by state agencies under delegated authority. The Fifth Circuit has held that EPA lacks the authority to compel state permitting agencies to consult with FWS before issuing NPDES permits. *American Forest and Paper Ass'n v. EPA*, 137 F.3d 291 (5th Cir. 1998). EPA disagrees with that decision, but believes it permits the approach taken in the draft Memorandum of Agreement. Under existing Clean Water Act regulations, the state agency must provide copies of draft permits to FWS as well as to EPA. 40 C.F.R. § 124.10(c)(1)(iv). EPA will use its full authority under the Clean Water Act to veto any permit that it determines, in coordination with FWS, is likely to jeopardize or adversely modify the critical habitat of a listed species. 64 Fed. Reg. at 2755-56. See 33 U.S.C. § 1342(d); 64 Fed. Reg. at 2746.

4. When there is a federal action, the action agency must formally consult with FWS if the action may affect a listed species or its critical habitat. Consultation culminates in issuance of a biological opinion by FWS as to whether the action is likely to jeopardize the continued existence of a species or adversely modify critical habitat.

An action causes jeopardy if, on the basis of the best available scientific information, it “reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 C.F.R. § 402.02. Destruction or adverse modification of critical habitat has been defined as “a direct or indirect alteration that appreciably diminishes the value” of the habitat for survival and recovery. 50 C.F.R. § 402.02.

FWS believes that the “adverse modification” prong of section 7(a)(2)

adds little to the “jeopardy” prong. “For almost all species, the adverse modification and jeopardy standards are the same . . .” Notice of Intent to Clarify the Role of Habitat in Endangered Species Conservation, 64 Fed. Reg. 31871 (June 14, 1999). Clearly not everyone agrees that critical habitat designation is redundant. Critical habitat determination remains a flashpoint for controversy. The Service did not designate critical habitat for the Rio Grande silvery minnow, for example, until it was compelled to do so by litigation. When it did designate critical habitat, its decision was quickly challenged, by the state and irrigators on one side, and environmental groups on the other.

In determining whether jeopardy or adverse modification of critical habitat is likely to result from an agency action, FWS must consider the direct and indirect effects of the proposed action, together with the effects of other interrelated and interdependent actions. See 50 C.F.R. § 402.02 (defining “effects of the action” that must be considered). Indirect effects “are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.” *Id.* In evaluating an application to construct a dam in federal waters, for example, the Corps of Engineers must consider not only the on-site effects of the dam on water quality, but also downstream reductions in flow caused by increases consumption facilitated by the project. *Riverside Irrigation Dist. v. Andrews*, 758 F.2d 508 (10th Cir. 1985). The effects of any population growth induced by the action on listed species must also be considered. *Florida Key Deer v. Stickney*, 864 F. Supp. 1222 (S.D. Fla. 1994); *National Wildlife Fed’n v. Coleman*, 529 F.2d 1064 (5th Cir. 1976).

When it issues a “jeopardy” opinion, concluding that the action is likely to cause jeopardy or adverse modification of critical habitat, FWS must offer

reasonable and prudent alternatives, if any, that it believes would avoid jeopardy or adverse modification. 16 U.S.C. § 1536; 50 C.F.R. 402.02.

The production of biological opinions by the Services is a difficult and controversial process, necessarily resting on somewhat uncertain science and forecasts of future events. A recent analysis by Professor Michael Blumm and a co-author details both the broad scope and limitations of biological opinions in the context of Pacific salmon. See Blumm and Corbin, 74 Wash. L. Rev. 519 (1999).

B. Section 9, applicable to all actions, regardless of whether they have a federal nexus, imposes a series of prohibitions. Of most relevance to municipal water issues is the prohibition on “take” of endangered animals, but restrictions on injury to plants may also be of concern.

1. Section 9 prohibits the “take,” broadly defined, of endangered animals. “Take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to do any of those. 16 U.S.C. § 1532(19). “Harass” is defined by regulation as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns including, but not limited to, breeding, feeding, or sheltering. 50 C.F.R. § 17.3. “Harm” includes significant habitat modification or degradation that actually kills or injures listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Id.

The Supreme Court upheld the regulatory definition of “harm” against a facial challenge in *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687 (1995). In a concurring opinion, Justice

O'Connor emphasized her understanding that "the regulation's application is limited by ordinary principles of proximate causation, which introduce notions of foreseeability." Id. at 709. In two footnotes Justice Stevens, writing for the majority, agreed. See id. at 697 n.9, 700 n.13. Sweet Home's discussion of proximate cause and foreseeability have not had much impact on subsequent cases. The 11th Cir. has suggested that this aspect of Sweet Home is merely dicta. Loggerhead Turtle v. County Council of Volusia County, 148 F.3d 1231, 1251 n.23 (11th Cir. 1998). No reported opinion has so far rejected a claim under section 9 for lack of proximate cause or foreseeability.

The Sweet Home opinion's emphasis on the fact that habitat modification does not constitute take unless it actually kills or injures a member of the listed species seems to have had more impact. Although expert testimony concerning the impacts of an action on the species can still be sufficient to prove harm without the production of a particular body or injured animal, courts may be looking a bit more skeptically at expert opinions. See, e.g., Defenders of Wildlife v. Bernal, 204 F.3d 920 (9th Cir. 2000) (holding that plaintiffs had not proven that proposed construction of school would harm or harass pygmy owls); Arizona Cattle Growers Ass'n v. U.S. Fish and Wildlife Serv., 63 F. Supp. 2d 1034 (D. Ariz. 1998) (holding that FWS acted arbitrarily and capriciously in issuing incidental take statement including measures to restrict grazing near streams because there was no evidence that listed species were even present on allotments in question, much less that they would be killed or injured by grazing). Although some commentators suggested immediately after Sweet Home that the opinion prohibited injunctions prior to actual harm, the Ninth Circuit has since held that a reasonably certain threat of imminent harm to a listed species is sufficient to support the issuance of an injunction. Marbled Murrelet v.

Babbitt, 83 F.3d 1060 (9th Cir. 1996).

Knowing violations of the prohibition on take are punishable by civil penalties of up to \$25,000 per violation and criminal penalties of up to \$50,000 per violation and imprisonment for up to one year. 16 U.S.C. § 1540(a), (b). In addition, citizen suits are available to enjoin any violation. 16 U.S.C. § 1540(g). Prevailing plaintiffs can recover their attorney fees. Id.

2. Plants receive less protection than animals under section 9. The take prohibition does not extend to plants. Section 9 does make it unlawful to: remove or maliciously damage or destroy endangered plants from areas under federal jurisdiction; maliciously damage or destroy them on federal lands; or remove, cut, dig up, damage or destroy them on other lands in knowing violation of state law or in the course of any violation of state trespass law. Water withdrawals and pollution, even if they harm plants, are unlikely to violate any of these strictures, unless state law requires that water required by a listed plant be left in the ground or in a stream.
3. Municipal water uses may cause the take of listed species in a number of different ways.

The most obvious is by withdrawals of ground or surface water that reduce streamflows below levels required by listed species. In 1993, a district court held that lowering of spring flows from San Marcos and Comal Springs by excessive pumping from the Edwards Aquifer constituted take of the fountain darter. Nonetheless, when spring flows again decreased in 1996, FWS declared that it would not take enforcement action against pumpers. The Sierra Club filed a citizen suit, and obtained an order

putting in place an emergency water withdrawal reduction plan, although that order was subsequently vacated by the Fifth Circuit on the grounds that the district court should have abstained in favor of a state administrative process. The complex Edwards litigation is summarized in Todd H. Votteler, *The Little Fish that Roared: The Endangered Species Act, State Groundwater Law, and Private Property Rights Collide Over the Texas Edwards Aquifer*, 28 *Envtl. L.* 845 (1998).

FWS has identified groundwater pumping and surface water diversions as potential threats to many other listed species in the west, including species that are not strictly aquatic. See, e.g., Designation of Critical Habitat for the Cactus Ferruginous Pygmy-owl, 64 *Fed. Reg.* 37419, 37425 (July 12, 1999) (identifying groundwater pumping as an activity that could adversely modify critical habitat or jeopardize the continued existence of the species); Final Determination of Critical Habitat for the Southwestern Willow Flycatcher, 62 *Fed. Reg.* 39129 (July 22, 1997).

Even if minimum streamflows remain, the act of diverting water may itself cause a take. See *U.S. v. Glenn-Colusa Irrigation District*, 788 *F. Supp.* 1126 (E.D. Cal. 1992) (holding that irrigators whose pumping operations battered listed fish against fish screens had committed a take of the fish). Dams or other structures that prevent access to spawning grounds can also take listed fish.

Perhaps of greatest concern to local governments are several cases holding that state and local governments may be liable under the ESA if they permit others to engage in actions that take listed species. See *Strahan v. Coxe*, 127 *F.3d* 155 (1st Cir. 1997); *Loggerhead Turtle v. County Council of Volusia County*, 148 *F.3d* 1231 (11 Cir. 1998); *U.S. v. Town of*

Plymouth, 6 F. Supp. 2d 81 (D. Mass. 1998). A recent district court decision places some limits on this sort of “regulatory take” liability. In *Loggerhead Turtle v. County Council of Volusia*, No. 6:95-CV-587-ORL-22B (M.D. Fla. 2000), 2000 WL 433482, the county was held not to have taken listed turtles through its beach lighting ordinance. The ordinance followed a state model ordinance, the county had sought the advice of federal officials in drafting it, there was no contention that the county had failed to enforce its ordinance, and the recovery plans for the turtles suggested that federal lighting standards would be adopted where local regulations proved inadequate. As the court viewed the allegations, “Plaintiffs wish to hold the County liable for takings because its beach residents are not turning off their lights in compliance with the ordinance.” Nonetheless, a regulatory body that specifically authorizes actions that take listed species risks liability.

Professor J.B. Ruhl reports that FWS, presumably relying on these decisions, persuaded a water development agency in the Austin, Texas area “to condition user access to a new water supply line on construction standards designed . . . to avoid harm to an aquatic salamander species” on the theory that the water line would spur local growth, which could impair water quality through runoff, harming the species. J.B. Ruhl, *Ecosystem Management, the ESA, and the Seven Degrees of Relevance*, *Natural Resources & Environment*, Winter 2000, at 156, 161. Even more striking, the Edwards Aquifer litigation resulted in the creation of a new state administrative agency, the Edwards Aquifer Authority, and withdrawal of the aquifer from the capture rule historically applied by Texas to groundwater. *See* Voteller, 28 *Envtl. L.* 845.

4. There are three major avenues for exemption from section 9 liability, each

of which has been invoked in connection with water conflicts.

The first applies only to species listed as threatened rather than endangered. Section 4(d) of the ESA directs the Services to adopt such regulations as necessary and advisable for the conservation of threatened species, up to the full application of section 9. 16 U.S.C. § 1533(d). Section 4(d) rules can permit actions that would otherwise violate section 9, provided those actions are not inconsistent with conservation of the species, that is with their progress toward recovery. NMFS has recently proposed section 4(d) rules that would exempt diverters who install and properly maintain approved fish screens from potential liability under section 9 for harm to a number of threatened west coast salmonids. Proposed Rule Governing Take of Threatened Snake River, Central California Coast, South/Central California Coast, Lower Columbia River, Central Valley California, Middle Columbia River, and Upper Willamette River Evolutionarily Significant Units (ESUs of West Coast Steelhead), 64 Fed. Reg. 73479, 73490 (Dec. 30, 1999); Proposed Rule Governing Take of Seven Threatened Evolutionarily Significant Units (ESUs) of West Coast Salmonids, 65 Fed. Reg. 170, 180-81 (Jan. 3, 2000).

The second exemption from section 9 liability applies when consultation under section 7 has resulted in a “no-jeopardy” biological opinion. The Services include with each “no jeopardy” opinion an incidental take statement specifying the extent of taking expected from the action and with reasonable and prudent measures, consistent with the basic design of the action, to reduce the impact of that taking. 16 U.S.C. § 1536(b)(4); 50 C.F.R. 402.14(h). Acts in compliance with the terms and conditions of an incidental take statement do not violate section 9. 16 U.S.C. § 1536(o)(2). Although the incidental take statement is issued to the consulting federal

agency, it protects anyone whose actions are within its scope against liability under section 9. See Ramsey v. Kantor, 96 F.3d 434 (9th Cir. 1996). But only take within the scope contemplated by the incidental take statement is protected. Take that exceeds expected levels, such as the massive entrainment of Delta smelt in the pumps last June, is supposed to trigger reinitiation of consultation, and may well violate section 9.

Finally, where there is no federal nexus, actions that would otherwise violate section 9 can be authorized by an incidental take permit issued under section 10. Permits may be issued for takings incidental to otherwise lawful activity. 16 U.S.C. § 1539(a). The applicant for an incidental take permit must submit a habitat conservation plan (HCP) specifying the impact of the taking; the steps the applicant will take to minimize those impacts, and the funding available for those steps; alternative actions that were considered, and the reasons for rejecting them; and such other measures as the agency may require. 16 U.S.C. § 1539(a)(2)(A). The permit shall be issued if the Service finds that: the taking is incidental to some other lawful activity; the impacts of the taking will be minimized and mitigated to the maximum extent practicable; adequate funding will be provided; and the taking will not appreciably reduce the likelihood of survival and recovery in the wild (i.e. the taking will not be likely to jeopardize the continued existence of the species). 16 U.S.C. § 1539(a)(2)(B). HCPs can include species that are not yet listed, providing authorization to take them should they later be added to the protected list.

Incidental take permits may run for as long as FWS determines is appropriate under the circumstances. Terms as long as 50 or 100 years are not unusual. During that term, the "No Surprises" policy protects the

permit holder from increased mitigation obligations or restrictions due to unforeseen circumstances. See 50 C.F.R. §§ 17.22(b)(5), 17.32(b)(5). If an approved HCP proves insufficient to protect the species, the government, rather than the permittee, bears the costs of providing the additional protection necessary.

Although the bulk of the incidental take permits issued to date have dealt with terrestrial species, water agencies and others have recently begun to seek them for aquatic species. The Edwards Aquifer Authority, for example, is in the process of developing one. Large-scale HCPs are also in process for the Bay-Delta and lower Colorado River. Many smaller scale HCPs are also in various stages of preparation and review.

IV. Early Lessons from an Ongoing Experiment

We are still at the beginning of the era of conflicts between endangered species and the growing urban population of the west. Nonetheless, we can draw several tentative conclusions based on the experience to date:

- A. The sharpest conflicts are likely to be over water quantity, and the changes in quality that come with reductions in the amount of water, rather than pollution. Loss of water is a more important threat to aquatic species than urban (as opposed to agricultural) runoff. Conveniently, losses of water are also more easily addressed by the ESA. The effects of runoff are difficult to trace to any particular source. But it should be relatively easy to prove harm as a result of large municipal diversions, and those diversions often have a federal nexus sufficient to invoke section 7.
- B. Far more than in the case of terrestrial species, section 7 and section 10 are

intertwined with respect to aquatic species. Water projects, large and small, often combine federal and non-federal elements. In the Delta, for example, the parallel state and federal water projects both operate pumps that may kill listed species. Tacoma's proposal to update its municipal water system includes both modifications to its existing diversion facilities and addition of storage capacity to a Corps of Engineers reservoir.

In this context, the section 7 consultation process needs to work in concert with the section 10 incidental permit process. Combining the two may be awkward, because their standards are somewhat different. The biggest difference is in the degree of certainty they provide. Section 10 permits typically include "no surprises" clauses that assure the permittee that the action can continue without additional mitigation even if the species declines. Section 7 provides no such certainty. So long as federal action remains, changed circumstances can require reinitiation of consultation, and may produce a jeopardy conclusion.

In partial compensation for this complication, large water projects seem particularly suited for regional, ecosystem-wide processes to resolve ESA issues. See Mary Christina Wood, *Reclaiming the Natural Rivers: The Endangered Species Act as Applied to Endangered River Ecosystems*, 40 *Ariz. L. Rev.* 197 (1998). Complicated as these systems are, an administrative system is already in place, the relevant parties are known, and the distribution of water is typically controlled by one or a small number of entities. Ecosystem-scale processes currently underway in California's Bay-Delta, the upper and lower Colorado River basins, and the Columbia River system may provide a practical opportunity to work out the interface between section 7 and section 10.

- C. The conflicts are not simply between urban uses of water and the needs of aquatic species. In reality, they are between aquatic species and all human uses. Species

declines and additional listings will exacerbate existing tensions between urban and agricultural water uses. The ESA is agnostic about whether agriculture or urban uses bear the burden of supporting wildlife. State and local governments will be able to choose whether to limit urban growth to leave water for agricultural use, or to facilitate water transfers from agriculture to support urban growth.

Even within the urban use category, state and local governments face choices about how to distribute water. A fixed amount of water can support more people if landscape irrigation is restricted, by regulatory means or incentives. The ESA is already encouraging adoption of municipal conservation measures.

- D. Land use and water use are inextricably, albeit somewhat loosely, linked. Still, in most western states there is little integration of water planning into the local land use decisions that control the speed and direction of population growth. Dan Tarlock and Sarah Van de Wetering have recently described in detail the ways that law and tradition in the west discourage the integration of land and water planning, as well as how that historic separation may be eroding. See A. Dan Tarlock and Sarah B. Van de Wetering, Growth Management and Western Water Law: From Urban Oases to Archipelagos, 5 Hastings West-Northwest J. Envtl. L. & Pol'y 163 (1999).

The ESA could, at least in theory, provide a nudge in the direction of coordinated land and water planning. Local governments that approve growth that will consume water might risk liability for any take that results. The connection is somewhat indirect, complicated by the possibilities of water conservation measures, acquisition of water from other sources, such as agricultural transfers, and perhaps by reluctance of courts to require land use agencies to push the limits of their authority. Certainly federal regulators are unlikely to pursue such claims.

Probably the impetus for change will have to come from the states and local governments themselves. The possibility, even if remote, of section 9 liability may encourage risk averse local officials to pressure states for the authority or even requirement to factor water supplies into planning. Furthermore, states may see changes in their regulatory regimes as preferable to surrendering control of water resources to state regulators or the courts, as Texas did when it enacted the Edwards Aquifer Act. The ESA, even if it does not directly reorient state water and land use law, may provide a political push toward that change.