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Truth or Consequences: Settling Water Disputes in the Face of Uncertainty

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TABLE OF CONTENTS

Nature's uncertainty ripples through the water rights system . . . .[1]

I. INTRODUCTION

Negotiations to resolve intergovernmental natural resource issues, like those concerning the water rights of the Nez Perce Tribe, occur in the face of both legal and scientific uncertainty. Legal uncertainty is necessary because it is the potential risk of a litigation loss that gives parties the political will to settle. As such, legal uncertainty is the room within which parties negotiate. It must be large

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1. David H. Getches, *Forward* to BONNIE G. COLBY ET AL., NEGOTIATING TRIBAL WATER RIGHTS: FULFILLING PROMISES IN THE ARID WEST, at xiii (2005).

enough to encompass political solutions acceptable to all sides, but small enough to cause those solutions to overlap.

Scientific uncertainty that is sufficiently narrow can serve the same purpose as legal uncertainty by providing room to negotiate. However, in many instances scientific uncertainty must be addressed during negotiation as an issue. This arises from the differing roles of law and science in resolving natural resource issues. Both lawyers and scientists speak of the process they engage in as a search for truth. However, consider the possibility that, at least in the natural resource setting, the legal process is a search for finality whereas the scientific process is a search for truth. Those turning to science to solve a resource problem may place higher values on the right answer than on an end to the dispute.[2] This divergence between law and science—one toward a final solution, one toward the right solution—may create barriers to achievement of a settlement if not addressed.

In 2005, the Nez Perce Tribe, State of Idaho, and United States entered an agreement settling the water right claims of the Tribe in Idaho.[3] Among the claims asserted by the Tribe were off-reservation instream flow rights stemming from the treaty right to fish at the "usual and accustomed places," and a historic reliance on salmon and steelhead. The claims encompassed much of the Snake River water basin, the primary surface water supply in southern and central Idaho. The United States Supreme Court has not been called upon to rule on whether treaty fishing rights translate to instream flow water rights. Thus, considerable legal uncertainty surrounded these claims. At the same time, arriving at a negotiated solution pitched the parties headlong into the decades-long scientific struggle to define the needs of anadromous[4] and resident fish in the Columbia River basin, which

2. By using the term "right answer," the author does not mean to imply that science provides either black and white answers or a single answer to a scientific question. Instead, the reference is to the fact that, in the author's observation, the role of science in natural resource disputes is a search for answer(s) to the underlying question—e.g. how much water is needed in a particular stream for a particular stage in the salmon lifecycle? In the face of uncertainty, the scientific search for answer(s) will continue. In contrast, law provides a process to reach a final answer to the question regardless of the degree of uncertainty involved, thereby putting an end to the dispute.

3. The Nez Perce Settlement among the State of Idaho, the United States, and the Nez Perce Tribe is reflected in the Mediator's Term Sheet of April 20, 2004 [hereinafter Term Sheet], *available at* http://www.idwr.idaho.gov/nezperce/pdf_files/complete-agreement.pdf. The settlement was ratified in the Snake River Water Rights Act of 2004, introduced in the 108th Congress as S. 2605, and passed as a rider on the omnibus appropriations bill. The Act also provides funding for many of the components agreed to in the Term Sheet.

4. Anadromous fish are "[f]ish that mature in seawater but migrate to fresh water to spawn." TOM ANNEAR ET AL., INSTREAM FLOWS FOR RIVERINE RESOURCE STEWARDSHIP 213 (rev. ed. 2004).

includes the listing of one resident trout, four steelhead and eight salmon populations on the endangered species list.[5]

The final settlement includes: state-held instream flow rights on 205 stream segments in the Salmon and Clearwater drainages; funding for habitat restoration; voluntary measures in a forest practice program (Idaho Forestry Program) that is supplemental to the Idaho Forest Practices Act to improve and protect riparian corridors on salmon spawning streams; flow augmentation from Reclamation projects on the Snake River in the amount identified as necessary by the U.S. Fish and Wildlife Service (FWS) and National Oceanic & Atmospheric Administration, Fisheries Service (NOAA Fisheries, formerly National Marine Fisheries Service or NMFS); and transfer of aspects of fish hatchery management to the Tribe.[6] Arriving at these solutions required scientific analysis on such questions as: the importance of various streams in the salmon life cycle; the level of flow needed for the stage in the salmon lifecycle relevant to that stream; affects on the salmon lifecycle of modifications to the riparian corridor and the amount of modification acceptable; and the amount of additional flow needed in the Snake River to prevent jeopardy to salmon—questions without black and white scientific answers.

This paper uses the treatment of off-reservation instream flow claims in the Nez Perce water negotiations as a case study for analysis of the role of legal and scientific uncertainty in natural resource dispute resolution. Part II looks at the legal and historical basis for the Nez Perce claims and the legal uncertainty faced by the affected parties in contemplating litigation of the claims. Part III describes the off-reservation portion of the Nez Perce settlement and analyzes some

5. Current listings of salmon species found in the Columbia Basin: Snake River Sockeye (endangered), Upper Willamette River Chinook (threatened), Lower Columbia River Chinook (threatened), Upper Columbia River spring-run Chinook (endangered), Snake River fall-run Chinook (threatened), Snake River spring/summer-run Chinook (threatened), Lower Columbia River Coho (threatened), Columbia River Chum (threatened). Final Listing Determinations for 16 ESUs of West Coast Salmon and Final 4(d) Protective Regulations for Threatened Salmonid ESUs, 70 Fed. Reg. 37160-01, 37193 tbl.2 (June 28, 2005). Note that four Evolutionary Significant Units (ESUs) of steelhead are also currently listed, Proposed Listing Determinations for 27 ESUs of West Coast Salmonids 69 Fed. Reg. 33102-01 (June 14, 2004), however, the listings are currently under review. NORTHWEST REGIONAL OFFICE, NOAA'S NAT'L MARINE FISHERIES SERVICE, STEELHEAD ENDANGERED SPECIES ACT LISTINGS, http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Alsea-Response/Steelhead-ESA-Listings.cfm (last visited April 6, 2006) [hereinafter Columbia Basin Endangered Species Listing].

6. *See generally* Term Sheet, *supra* note 3.

of the areas of scientific uncertainty. Part IV discusses potential options available to governmental parties seeking final resolution of complex natural resource disputes in the face of scientific uncertainty.

II. THE NEZ PERCE OFF-RESERVATION CLAIMS AND LEGAL UNCERTAINTY[7]

The main artery of the Pacific Northwest is the Columbia River and its tributaries. The basin's headwaters lie in Montana, Idaho, and Canada and the river enters the ocean along the boundary between Oregon and Washington. The pulse of the river is defined by the annual migrations of anadromous fish—for example, fish spawned in fresh water that migrate to the ocean as smolts and return as adults to their natal streams to repeat the cycle. Eight populations of salmon that make use of the waters of the Columbia basin at some time during their lifecycle are listed by NOAA Fisheries under the Endangered Species Act.[8] The annual run of Snake River Sockeye, known for the 900 mile journey up the Salmon River to the tributaries to Redfish Lake to spawn, has dwindled to a few hundred.[9]

The importance of Columbia basin fisheries to the Nez Perce Tribe is reflected in its oral tradition and ceremonies. Of greatest significance was the annual return of the chinook salmon.[10] The Nez

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7. The analysis of how legal uncertainty might have played a role in bringing the parties to the table is strictly that of the author. Due to the fact that, at the time of writing, final approval of the Nez Perce settlement is not yet accomplished, interviews of the parties for purposes of this paper focused on scientific uncertainty.

8. Columbia Basin Endangered Species Listing, *supra* note 5.

9. Final History Determinations for 16 ESUs of West Coast Salmon, 70 Fed. Reg. at 37179.

> The residual form of Redfish Lake sockeye, determined to be part of the ESU in 1993, is represented by a few hundred fish. Snake River sockeye historically were distributed in four lakes within the Stanley Basin, but the only remaining population resides in Redfish Lake. Only 16 naturally produced adults have returned to Redfish Lake since the Snake River sockeye ESU was listed as an endangered species in 1991. All 16 fish were taken into the Redfish Lake Captive Propagation Program, which was initiated as an emergency measure in 1991. The return of over 250 adults in 2000 was encouraging; however, subsequent returns from the captive program in 2001 and 2002 have been fewer than 30 fish.

Id.

Note that Idaho Department of Fish and Game data indicate that the numbers provided in the quote are incomplete. Their data indicate historic distribution in five lakes in the Stanley Basin, and return of 84 fish in the period from 2001–2005. Interview with Cindy Robertson, Biologist, Idaho Fish and Game, in Boise, Idaho (Jan. 19, 2006).

10. DAN LANDEEN & ALLEN PINKHAM, SALMON AND HIS PEOPLE: FISH AND FISHING IN NEZ PERCE CULTURE 1 (1999).

Perce gathered with other northwest tribes at Celilo Falls on the Columbia River to harvest the salmon supply that would carry them through winter.[11] Salmon provided the primary protein source, but its importance to the Tribe did not end with food supply. "Salmon" plays a major role in Nez Perce mythology.[12] The lifecycles of Columbia Basin fisheries were used by the Nez Perce to mark time.[13]

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11. *Id.* at 65–88. S*ee also* United States v. Washington, 384 F. Supp. 312, 350 (W.D. Wash. 1974), *aff'd*, 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976).

> These fish were vital to the [northwest] Indian diet, played an important role in their religious life, and constituted a major element of their trade and economy. Throughout most of the area salmon was a staple food and steelhead were also taken, both providing essential proteins, fats, vitamins, and minerals in the native diet.

Id.

12. DONALD M. HINES, *The Maiden and Salmon, in* TALES OF THE NEZ PERCE 146, 147–48 (1999).

> And now Salmon came up the river after making a phenomenal recovery to life. "I go now to have revenge." He came up the river. He would swim along for awhile; then, he would go ashore to walk along, up the valley. While he was thus walking, he saw a lodge with smoke wafting from it. "Let me just go in." He entered noiselessly ["xu-l"]. There sat an old man spinning; it was Spider. Salmon said to him, "Why are you spinning, old man?"
>
> "Oh, just to sew my clothes," he replied. But Salmon knew well enough what he was doing, that he was making a fishnet. The old man had told him this, because from the very beginning he had identified him, by smell, as Salmon.
>
> Salmon went outside and said to all the salmon, "You will swarm past here, all of you salmon. You will come to the old man; you will thus take pity on him."

Id. at 147–48.

13. LANDEEN & PINKHAM, *supra* note 10. The following excerpt illustrates the marking of time by the Nez Perce:

> 8. Then came **Hesu'al** (*Ha-soo-ahl*), the time when the *hesu* (eels) move to the upper tributaries. (*Hesu* was a favored fish in the Nez Perce diet).
>
> 9. Next came **Q̓oyxt'sal** (*Khoy-tsahl*), the season of the run of the blue back salmon (*k'ohyl-ehkts*) in the upper tributaries.
>
> . . . .
>
> 11. Then came **Nat'soxliwal** (*Nah-t'sohkh-le-wahl*), the time when the *nat'sox* (chinook salmon) return to the upper rivers, ready to journey to the spawning streams.

The spiritual, cultural and subsistence reliance of the Nez Perce and other northwest tribes on Columbia Basin fisheries led to the inclusion of what has been interpreted to be highly significant language in a series of treaties negotiated by Isaac I. Stevens, then Governor of Washington Territory,[14] with various northwest tribes in 1855.[15] Among the rights secured by the Nez Perce in the 1855 Treaty was the right to continue to use their former fishing grounds on lands outside the newly designated seven million acre reservation. Article III of the treaty reserves: "[t]he exclusive right of taking fish in all the streams where running through or bordering said reservation is further secured to said Indians; as also the right of taking fish at all usual and accustomed places in common with citizens of the Territory . . . ."[16]

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12. August was **Wawama'ayqll'al** (*wa-wam-aye-k'ahl*), the time when the chinook salmon reach the canyon streams and fisherman move to the upper rivers.

13. September was **Piq'uunm'ayq'al** (*Pe-khoon-mai-kahl*), the season when the fall salmon run upstream and when the fingerlings journey down river.

Id. at 56.

14. *See, e.g.*, ALVIN M. JOSEPHY, JR., THE NEZ PERCE INDIANS AND THE OPENING OF THE NORTHWEST 292–332 (Mariner Books 1997) (1965). Although accounts differ on the extent of pressure applied to the tribes to enter the treaties presented by Stevens, no question exists concerning his goals. *See, e.g., id.* at 292–93.

> Isaac I. Stevens, an impatient, politically ambitious military man who arrived in the Northwest wearing three official hats simultaneously. . . . [He] applied successfully for the governorship of the newly created Washington Territory, which carried with it the position of Superintendent of Indian Affairs for the territory. . . . [H]e also won the role of leader of the most northerly of four Pacific Railroad Survey groups being dispatched by the War Department . . . .
>
> Still a young man of 35, . . . Stevens saw all three of his jobs complementing each other toward a single grand end. As a governor who would build up the population and prosperity of his territory, he was intent on winning Congressional approval for a railroad that would terminate at Puget Sound. That meant not only finding a northern route through the mountains, cheaper and more practicable for a railroad than any route farther south, but also ensuring its safety from Indians.

Id.

15. Treaty between the United States of America and the Nez Perce Indians art. III, June 11, 1855, 12 Stat. 957. During 1854 and 1855, Stevens negotiated eleven treaties with northwest tribes. *United States v. Washington*, 384 F. Supp. at 330. For accounts of the gathering of the northwest Tribes on Mill Creek in the Walla Walla Valley and the negotiations with Governor Stevens, *see, e.g.*, JOSEPHY, *supra* note 14, at 292–332.

16. Treaty between the United States of America and the Nez Perce Indians, *supra* note 15, 12 Stat. at 958. *See also United States v. Washington*, 384 F. Supp. at 355.

Following the discovery of gold within the Reservation boundaries designated in 1855,[17] a new treaty was negotiated with the Nez Perce dramatically reducing the reservation to approximately 750,000 acres.[18] However, Article VIII retains the off-reservation rights of the Tribe reflected in the 1855 Treaty by stating:

> It is also understood that the aforesaid tribe do hereby renew their acknowledgements of dependence upon the government of the United States, their promises of friendship, and other pledges, as set forth in the eighth article of the treaty of June 11, 1855; and further, that all the provisions of said treaty which are not abrogated or specifically changed by any article herein contained, shall remain the same to all intents and purposes as formerly, - the same obligations resting upon the United States, the same privileges continued to the Indians outside of the reservation . . . .[19] .....

"[T]he right of taking fish at all usual and accustomed places"[20] has taken on considerable significance in the salmon story of the Columbia Basin. As early as 1905, the U.S. Supreme Court interpreted this language to include a right of access across private land adjoining a former fishing ground if necessary to allow tribal members to exercise the right.[21] In doing so, the Court made clear that the right "in

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> At the treaty negotiations, a primary concern of the Indians whose way of life was so heavily dependent upon harvesting anadromous fish, was that they have freedom to move about to gather food, particularly salmon, (which both Indians and non-Indians meant to include steelhead), at their usual and accustomed fishing places.

Id. (citations omitted). It should be noted that *United States v. Washington* did not involve the Nez Perce Tribe, but interpreted treaties negotiated by Governor Stevens with other tribes containing the same language reserving off-reservation fishing rights.

17. PHILLIP J. RASSIER, IDAHO DEP'T OF WATER RESOURCES, INDIAN WATER RIGHTS: A STUDY OF THE HISTORICAL AND LEGAL FACTORS AFFECTING THE WATER RIGHTS OF THE INDIANS OF THE STATE OF IDAHO 61 (1978).

18. Treaty between the United States of America and the Nez Perce Tribe of Indians art. VIII, June 9, 1863, 14 Stat. 647.

19. *Id.*

20. Treaty between the United States of America and the Nez Perce Indians, *supra* note 15, 12 Stat. at 958.

21. United States v. Winans, 198 U.S. 371, 381–82 (1905).

common"[22] with other citizens did not reduce the right of the Indians to the same right as others.[23]

The language stating that the right is "in common with citizens of the Territory,"[24] was interpreted by Judge Boldt of the United States District Court of Washington to entitle treaty tribes to up to fifty percent of the harvestable fish that pass, or would pass absent harvest en route,[25] the usual and accustomed fishing places.[26] In 1855, when the Nez Perce treaty was negotiated, non-Indian fishing in the area was minor,[27] however, once canneries made large scale commercial fishing possible, [28] the need for allocation developed. In affirming the District Court, the Ninth Circuit interpreted the right of treaty tribes "in common with citizens of the Territory," as analogous to a co-tenancy stating:

> Cotenants stand in a fiduciary relationship one to the other. Each has the right to full enjoyment of the property, but must use it as a reasonable property owner. A cotenant is liable for waste if he destroys the property or abuses it so as to permanently impair its value. . . .
>
> By analogy, neither the treaty Indians nor the state on behalf of its citizens may permit the subject matter of these

22. Treaty between the United States of America and the Nez Perce Indians, *supra* note 15, 12 Stat. at 958.

23. *Winans*, 198 U.S. at 380. Referring to the lower court ruling denying the Indians any more right than they would have without a treaty, the Court stated "[t]his is certainly an impotent outcome to negotiations and a convention which seemed to promise more, and give the word of the nation for more." *Id.*

24. Treaty between the United States of America and the Nez Perce Indians, *supra* note 15, 12 Stat. at 958.

25. United States v. Washington, 384 F. Supp. 312, 343 (W.D. Wash. 1974), *aff'd*, 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1975).

26. *Id.* at 343. *See also* Washington v. Wash. State Commercial Passenger Fishing Vessel Ass'n, 443 U.S. 658, 685 (1979). Responding to litigation involving implementation of the Boldt Decision, the Court stated:

> We also agree with the Government that an equitable measure of the common right should initially divide the harvestable portion of each run that passes through a "usual and accustomed" place into approximately equal treaty and nontreaty shares, and should then reduce the treaty share if tribal needs may be satisfied by a lesser amount.

Id.

27. *United States v. Washington*, 384 F. Supp. at 352.

28. *Id. See also Wash. State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. at 668 ("Not until major economic developments in canning and processing occurred in the last few years of the 19th century did a significant non-Indian fishery develop.").

treaties to be destroyed.[29]

Thus, by the time of initiation of the Snake River Basin Adjudication in 1987,[30] the importance of the treaty language reserving the right to fish at the "usual and accustomed places," was well established. What had not been addressed was whether that reserved fishing right carried with it an implied reserved instream flow water right if necessary for fish habitat. Leaving aside for now the question of how much water that might be, the following paragraphs explore the legal uncertainties faced by the Nez Perce Tribe and the State of Idaho in contemplating litigation brevity of whether any water right for instream flow is implied by the treaty language. This is not intended to be an exhaustive exploration of the arguments on either side of the issue, but merely an illustration of some of the uncertainties faced.

Understanding the arguments in support of an instream flow right requires discussion of the nature of a reserved right. The Supreme Court has recognized that an implied reserved water right exists if water is necessary to fulfill the purpose of the reservation as set forth in the treaty or reserving documents.[31] The concept of reserved water rights has been applied to situations in which Congress reserves land for a particular non-Indian purpose,[32] thus clouding the source of the original doctrine when applied to treaty language. The concept of reserved rights, as articulated in *Winans*, the case addressing reserved fishing rights, encompasses those rights already held at the time of the treaty and retained by the treaty language and not necessarily related to a reservation of land. Thus, despite the fact that *Winans* concerns off-reservation rights, the *Winters* case, consid-

29. *United States v. Washington*, 520 F.2d at 685.

30. The Snake River Basin Adjudication (SRBA) was commenced on November 19, 1987 by the fifth judicial district, *In re* General Adjudication of Rights to the Use of Water from the Snake River Basin Water System, No. 39576, *available at* http://www.idwr.idaho.gov/water/srba/SRBA%20Court/commenc.pdf, pursuant to legislation, IDAHO CODE ANN. § 42-1406A (2003) (uncodified), enacted as part of a settlement between Idaho and the Idaho Power Company of a suit recognizing the right of Idaho Power to seek upstream enforcement against rights junior to its hydropower rights at Swan Falls. Idaho Power Co. v. State, 104 Idaho 575, 661 P.2d 741 (1983). For a history of the SRBA see the Idaho Department of Water Resources website at http://www.idwr.idaho.gov/water/srba/history.htm.

31. Winters v. United States, 207 U.S. 564, 577 (1908).

32. *See, e.g.*, United States v. New Mexico, 438 U.S. 696 (1978); Cappaert v. United States, 426 U.S. 128 (1976); Arizona v. California, 373 U.S. 546 (1963).

ered the origin of the *Winters* Doctrine of reserved water rights,[33] relied on *Winans* for the principle that the government has the power to reserve rights in entering a treaty.[34]

In addition, the Supreme Court has held that reserved water rights are not limited to diversion and application to a use, but may include water in its natural course.[35] Recognition of the right does not require that a threat or possibility of a future threat to availability of water for the purpose of the reservation existed at the time the treaty was negotiated. In fact, lack of a threat at the time of treaty negotiation and complete failure to foresee the extent of western population growth and the advance in technology for water use underlies most contemporary conflicts involving Indian reserved water rights. Only in the second half of the twentieth century, long after the treaty negotiation era and in the face of substantial development of western water resources, did states, water users, tribes, and the United States recognize the need to define reserved rights.[36] Similarly, the Supreme Court has recognized that a threat to the abundant salmon fishery

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33. *See Winters*, 207 U.S. 564.

34. *Id*. at 577 (stating "[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." (citing United States v. Winans, 198 U.S. 371 (1905))).

35. *See e.g*., *Cappaert*, 426 U.S. at 136–38 (recognizing the right of the United States to an injunction against groundwater pumping with an adverse impact on a pool reserved in a National Monument); *United States v. New Mexico*, 438 U.S. at 707 (recognizing the possibility of instream flow rights for national forests if necessary "to conserve the water flows, and to furnish a continuous supply of timber for the people.") (citations omitted). *See also* United States v. Adair, 723 F.2d 1394, 1410–1411 (9th Cir. 1984).

> [D]iversion of water is not required to support the fish and game that the Klamath Tribe take in exercise of their treaty rights. Thus the right to water reserved to further the Tribe's hunting and fishing purposes is unusual in that it is basically non-consumptive. The holder of such a right is not entitled to withdraw water from the stream for agricultural, industrial, or other consumptive uses (absent independent consumptive rights). Rather, the entitlement consists of the right to prevent other appropriators from depleting the streams waters below a protected level in any area where the non-consumptive right applies.

Id. (citations omitted).

36. The doctrine of reserved water rights was first articulated by the U.S. Supreme Court in 1908, *see Winters*, 207 U.S. 564, and reservation water rights were raised in several federal cases afterwards. *See, e.g.,* United States v. Walker River Irrigation Dist., 11 F. Supp. 158 (D. Nev. 1935), *rev'd*, 104 F.2d 334 (1939); *see also* United States v. Truckee-Carson Irrigation Dist., 649 F.2d 1286, 1289 (9th Cir. 1981), *rev'd*, *Nevada v. United States*, 463 U.S. 110 (1983). However, it was not until 1963 that the United States began to actively assert Indian reserved water rights, Arizona v. California, 373 U.S. 546 (1963), and not until the 1970s and 80s that states began to actively seek quantification of reserved water rights. *See, e.g.,* COLBY ET AL., *supra* note 1, at xxiii tbl.I.1 (2005) (listing the twenty-one Indian water settlements all falling between 1978 and the present).

was not contemplated in 1855 when Steven's treaties were negotiated.[37]

Finally, Indian reserved water rights are recognized against the backdrop of Supreme Court rulings concerning the interpretation of treaty rights in the manner that tribes would have understood them during the treaty negotiation.[38] These principles or "canons" of treaty construction arise out of both the assumed superior bargaining power of the federal government,[39] and the fact that treaties were written in English and often less than adequate interpretation was available requiring translation through several different tribal languages.[40] Judge Boldt noted the following in his opinion concerning the right of treaty tribes to a share of the harvest:

> Governor Stevens and his associates were well aware of the "sense" in which the Indians were likely to view assurances regarding their fishing rights. During the negotiations, the vital importance of the fish to the Indians was repeatedly em-

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37. Washington v. Wash. State Commercial Passenger Fishing Vessel Ass'n, 443 U.S. 658, 669 (1979).

> In sum, it is fair to conclude that when the treaties were negotiated, neither party realized or intended that their agreement would determine whether, and if so how, a resource that had always been thought inexhaustible would be allocated between the native Indians and the incoming settlers when it later became scarce.

Id.

38. *Winters*, 207 U.S. at 576; *see also Wash. State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. at 675–677.

> It has held that the United States, as the party with the presumptively superior negotiating skills and superior knowledge of the language in which the treaty is recorded, has a responsibility to avoid taking advantage of the other side. "[T]he treaty must therefore be construed, not according to the technical meaning of its words to learned lawyers, but in the sense in which they would naturally be understood by the Indians." [Jones v. Meehan, 175 U.S. 1, 11 (1899)]. This rule, in fact, has thrice been explicitly relied on by the Court in broadly interpreting these very treaties in the Indians' favor. [Tulee v. Washington, 315 U.S. 681 (1942); Seufert Bros. Co. v. United States, 249 U.S. 194 (1919); United States v. Winans 198 U.S. 371 (1905)].

Id.

39. *Winters*, 207 U.S. at 576; *see also Wash. State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. at 675–77.

40. *See* JOSEPHY, *supra* note 14, at 318 (describing the council in which the 1855 treaty was negotiated, "[a]s the white men spoke, Craig and the other interpreters translated each sentence to Indian criers, who announced it in loud voices to the assemblage.").

> phasized by both sides, and the Governor's promises that the treaties would protect that source of food and commerce were crucial in obtaining the Indians' assent. It is absolutely clear, as Governor Stevens himself said, that neither he nor the Indians intended that the latter "should be excluded from their ancient fisheries," and it is accordingly inconceivable that either party deliberately agreed to authorize future settlers to crowd the Indians out of any meaningful use of their accustomed places to fish. That each individual Indian would share an "equal opportunity" with thousands of newly arrived individual settlers is totally foreign to the spirit of the negotiations. Such a "right," along with the $207,500 paid the Indians, would hardly have been sufficient to compensate them for the millions of acres they ceded to the Territory.[41]

Applying this approach to instream flow, it would seem that modern advances in hydrology and understanding of the needs of anadromous fish would not be necessary for a court to take judicial notice that a dry stream will not support fish. It is difficult to conceive that skilled tribal fishermen in 1855 would not understand this principle. It is difficult to conceive that tribal negotiators in 1855 would contemplate, in bargaining for the right to continue to fish at their usual and accustomed places, that the promise could be circumvented by an upstream diversion of the entire flow of water. Thus, it seems plausible that at some point in the dewatering of spawning streams a right to protect habitat would be recognized, but what that point might be is even more uncertain than its existence.

Turning now to the arguments against recognition of off-reservation instream flow rights requires understanding that parties contemplating litigation versus settlement will not only analyze precedent, but forum by considering the direction of the courts in which the matter will lie. Turning first to precedent—as noted above, it is lacking. The Nez Perce claims would force courts into new territory. Unlike the implied reserved water rights recognized in the cases cited above, the Nez Perce claims extend to locations off the reservation. The use of the terms "in common with the citizens of the Territory" to reserve the fishing rights recognizes that there will be competition for the resource. The exclusivity generally associated with a property right is therefore expressly absent. Because anadromous fish ignore jurisdictional boundaries in the annual migration to spawn, their distribution in the Columbia basin is widespread. Thus, the scope and far reaching implications of the habitat needs for anadro-

41. *Wash. State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. at 676–77 (citation somitted).

mous fish would require a court to advance the doctrine of reserved water rights into territory that overlaps the jurisdictions of other sovereigns.

Upon opening of the papers of Justice Thurgood Marshall, parties learned that prior to her recusal from a case involving the water rights associated with the Wind River Reservation due to the conflict created by a family ranch with water claims in the Gila River adjudication,[42] Justice O'Connor had written a majority opinion that would have altered the long standing measure for agricultural reserved water rights.[43] In a departure from traditional canons of treaty construction and out of deference to states on matters concerning water, Justice O'Connor would have required "sensitivity" to private development and reduced the quantity of water awarded a tribe for agricultural purposes if the projects proposed lacked a "reasonable likelihood" of being built.[44] This ruling involved water rights on a reservation. It takes little imagination to conclude that placement of the controversy in an off-reservation context that implicates the primary surface water supply for most of a state would have garnered additional votes favoring "sensitivity" to private rights. Furthermore, the Nez Perce claims were filed in the face of signals indicating a narrowing in United States Supreme Court interpretation of tribal rights in general.[45]

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42. *See* Wyoming v. United States, 492 U.S. 406 (1989) (affirming a Wyoming Supreme Court ruling on the standard for quantification of reserved water rights in a 4–4 opinion).

43. On opening of the papers of Justice Marshall, it was discovered that prior to her recusal due to a family ranch with water right claims on the Gila River, Justice O'Connor wrote a second draft opinion to Wyoming v. United States. Justice Sandra Day O'Connor, United States Supreme Court, Second Draft Opinion of the Court: Wyoming v. United States, No. 88–309 (June 1989) (unpublished document, on file with the Library of Congress, Manuscript Division, Papers of Justice Thurgood Marshall, Box 478). A recent law review article included Justice O'Connor's Second Draft Opinion as an appendix. Andrew C. Mergen & Sylvia F. Liu, *A Misplaced Sensitivity: The Draft Opinions in* Wyoming v. United States, 68 U. COLO. L. REV. 683, 725–40 (1997).

44. O'Connor, *supra* note 43, at 17-18.

45. DAVID H. GETCHES ET AL., FEDERAL INDIAN LAW 253 (4th ed. 1998) (noting that "[t]he Supreme Court has begun to hand down decisions that appear to turn away from the trend of decisions that were generally supportive of Indian rights and sovereignty." This note also cited a few decision indicating this trend: Duro v. Reina, 495 U.S. 676 (1990) (holding that tribal jurisdiction does not extend to crimes of non-member Indians on the reservation); Brendale v. Confederated Tribes and Bands of Yakima Indian Nation, 492 U.S. 408 (1989) (upholding county land use zoning on non-Indian land within a reservation); Lyng v. Northwest Indian Cemetery Protective Ass'n, 485 U.S. 439 (1988) (re-

Possibly more important than the trend in Supreme Court rulings, the Nez Perce faced an initial unfavorable ruling in state court. By initiating a general stream adjudication on the entire Snake River Basin in 1987, the state obtained jurisdiction to adjudicate the tribal claims.[46]

> In March of 1993, the United States . . . and the Nez Perce Indian Tribe submitted [instream flow] water rights claims [for fish habitat and channel maintenance] in the Snake River Basin Adjudication (SRBA) [which were subsequently amended to include the remaining] 1113 [instream flows] . . . located within the Salmon, Clearwater, Weiser, Payette, and Snake River drainage.[47]

In 1999, Judge Wood of the SRBA court ruled against the Nez Perce instream flow claims stating that "the parties to the 1855 Nez Perce Treaty did not intend to reserve an instream flow water right because neither party to the Treaty contemplated a problem would arise in the future pertaining to fish habitat,"[48] and also relying on the fact that the United States Supreme Court, when ruling on the right of Steven's treaty tribes to an allocation of the harvestable fish, did not consider the treaty language to guarantee the size of the salmon run.[49] Both the legal reasoning and the outcome of this decision were heavily criticized by legal scholars,[50] thus, an appeal to the

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fusing to prohibit logging and road construction on national forest land used for religious purposes by several tribes).

46. In 1952, as a rider on the Department of Justice Appropriations Act, Congress passed the McCarran Amendment allowing the United States to be joined in a state adjudication of water rights. 66 Stat 560 §§ 208(a)-(c) (1952) (codified as 43 U.S.C. § 666(a) (2000)). The United States Supreme Court subsequently concluded that the McCarran waiver extends to suits to adjudicate reserved water rights. United States v. Dist. Court in and for Eagle County, Colo., 401 U.S. 520 (1971). The Court has further concluded that, although jurisdiction to adjudicate reserved water rights is not exclusive in state court, the policy of McCarran—to avoid piecemeal adjudication—counsels in favor of dismissal of federal litigation in deference to a state adjudication in progress. Colo. River Water Conservation Dist. v. United States, 424 U.S. 800 (1976). The Court's interpretation of the waiver of immunity under McCarran extends specifically to a general adjudication involving "'all of the rights of various owners on a given stream.'" Dugan v. Rank, 372 U.S. 609 (1963) (quoting S. REP. NO. 82-755, at 9 (1951)).

47. *In re* SRBA, No. 39576, Consolidated Subcase 03-10022 at 13 (Idaho 5th Dist. Ct., Twin Falls County, Nov. 10, 1999).

48. *Id.* at 33.

49. *Id.*

50. Michael C. Blumm et al., *Judicial Termination of Treaty Water Rights: The Snake River Case*, 36 IDAHO L. REV. 449 (2000).

> In 1983, in a decision that sanctioned state court determination of the existence, nature, and scope of Indian reserved water rights under the McCarran Amendment, Justice Brennan expressed optimism that the state courts

Idaho Supreme Court was anticipated.[51] Although that appeal was filed,[52] the decision to litigate or settle is rarely as simple as the legal reasoning employed. The Tribe had three additional factors to consider.

First, in ruling that the Tribe had no off-reservation water rights, Judge Wood felt compelled to define "off-reservation," not only as the term would have been applied at the time of the original Steven's treaty, but today as well.[53] He did so due to his reasoning that a reserved water right can only be associated with reserved land. This reasoning, which flies in the face of the grounding of the *Winters* Doctrine of reserved water rights in *Winans*, recognized reservation of off-reservation reserved fishing rights.[54] In doing so, he ruled that the Reservation was diminished by the Agreement of 1893 relating to the sale of surplus land. [55] The question of whether an act opening surplus land remaining after allotment to non-Indian homestead results in diminishment of a reservation had recently been decided unfavorably to another tribe.[56] Imposing the same outcome on the Nez Perce

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> would deal fairly with Indian water right claims. Justice Brennan noted that "our decision in no way changes the substantive law by which Indian rights in state water adjudications must be judged. State courts, as much as federal courts, have a solemn obligation to follow federal law." The SRBA court's decision casts doubt on Justice Brennan's optimism about the justice that tribal water rights would receive in state courts.

Id. at 474 (citation omitted).

51. *E.g., id.* at 474 ("The Idaho Supreme Court has the opportunity to prevent that era [one in which tribes lose their resources in state courts] from beginning in Idaho by correcting the errors in the SRBA court's misguided opinion.").

52. *In re* SRBA , No. 39576, subcase No. 03-10022 (Idaho June 27, 2005), *available at* http://www.isc.idaho.gov/opinions/srbaord2.pdf (granting remand of the appeal concerning the off-reservation instream flow claims to the district court for review of the settlement) [hereinafter *In re* SRBA Case No. 39576].

53. The court's theory seems to be that reserved water rights can only be associated with reserved land. Assuming, even though this principle has never been held by the United States Supreme Court, this theory holds up, and the court does not explain why a right preserved when the reserved land it is on is ceded somehow goes away. The point being that even under the court's theory, it required a major stretch to arrive at the decision that the issue of diminishment must be addressed.

54. *See* Treaty between the United States of America and the Nez Perce Indians, *supra* note 15.

55. *In re* SRBA Case No. 39576, *supra* note 52, at 46 (interpreting the Act of Aug. 15, 1894 which ratified the 1893 agreement, 28 Stat. 286).

56. South Dakota v. Yankton Sioux Tribe, 522 U.S. 329 (1998).

Reservation would have substantially diminished its size,[57] thus by his approach, Judge Wood raised the stakes for the Tribe.[58]

Second, an appeal from the SRBA court went to the Idaho Supreme Court, the makeup of which was thought to have been influenced by a water decision unfavorable to private water rights. In 1999, the Idaho Supreme Court, Justice Silak writing for a 3-2 majority, issued an opinion recognizing reserved water rights for certain wilderness areas including the Frank Church River of No Return Wilderness Area.[59] In addition to being the largest wilderness area in the lower forty-eight states, the Frank Church contains a section of the Salmon River that is downstream from substantial agricultural water use.[60] Some of that water use had been developed after establishment of the wilderness area, thus recognition of a water right that would encompass instream flow in its "natural" state, would require elimination of these rights.[61] Public outcry followed.[62] Coincidentally, Silak was up for re-election. Daniel T. (now Justice) Eisman, brother-in-law of SRBA Judge Wood, ran on a campaign focusing on both water and issues critical to the Christian right.[63] Whether or not water was the deciding factor is a matter of speculation, nonetheless Justice Silak lost her bid for re-election. Prior to the expiration of her term, the Idaho Supreme Court granted rehearing on the wilderness water

57. The original 1855 reservation covered approximately 7 million acres. Treaty between the United States of America and the Nez Perce Indians, *supra* note 15, 12 Stat. 957. The 1863 treaty reduced the reservation to approximately 750,000 acres. Treaty between the United States of America and the Nez Perce Tribe of Indians, *supra* note 18, 14 Stat. 647. The 1893 Agreement agreed to the opening of unallotted lands within the 1863 reservation. Agreement with the Nez Perce Indians in Idaho, Aug. 15, 1894, 28 Stat. 326.

58. The Supreme Court has ruled that cession of land by a tribe does not necessarily extinguish rights associated with hunting and fishing. Minnesota v. Mille Lacs Band of Chippewa Indians, 526 U.S. 172 (1999). *See also* Blumm, *supra* note 50, at 457. Thus, on appeal a higher court may have eliminated this issue. Nevertheless, it would have been a substantial risk for the Nez Perce to take.

59. *In re* SRBA, Case No. 39576, 1999 WL 778325 (Idaho 5th Dist. Ct., Twin Falls County, Oct. 1, 1999), *rev'd on reh'g*, Potlatch Corp. v. United States, 134 Idaho 916, 12 P.3d 1260 (2000). The Silak opinion is available in the case history of Potlatch on Westlaw.

60. Rocky Barker, *Court Ruling Could Siphon Idahoans' Water Rights*, IDAHO STATESMAN, Oct. 10, 1999, at 1A, 5A.

61. *Id*. at 1A ("If an Idaho Supreme Court decision holds, Karl Dreher [Director of Idaho's Department of Water Resources] may be forced to order thousands of central Idahoans to turn off their water for good.").

62. *Id. See also* Michael Blumm, *Reversing the* Winters *Doctrine?: Denying Water Rights for Idaho Wilderness and its Implications,* 73 U. COLO. L. REV. 173, 188 n.70 (2002) (citing Dirk Kempthorne [Governor of Idaho], *Water Ruling Deserves Second Look*, IDAHO STATESMAN, Oct. 21, 1999, at 6B).

63. Blumm, *supra* note 62, at 188 n.73 (citing John D. Echeverria, *Changing the Rules By Changing the Players: The Environmental Issue in State Judicial Elections,* 9 N.Y.U. ENVTL. L.J. 217, 247–55 (2001)).

rights. Chief Justice Trout switched sides and in another 3-2 opinion, written by Justice Schroeder, the Court denied the existence of wilderness reserved water rights.[64] In the meantime, on August 30, 2000, Justice Wood was removed from the SRBA court by the Idaho Supreme Court due to his relation to the new Justice Eisman.[65] Judge Burdick, appointed in Wood's place to the SRBA in 2001, became Justice Burdick in 2003 replacing retiring Justice Walters (the other dissenting vote in the wilderness water case).[66] Although elected after the Nez Perce decision to seek settlement, it is interesting to note that Justice Jim Jones also raised water as a major issue during his campaign.[67] This history in which careers may have been made and broken on philosophy concerning who may develop or control water, has little bearing on an analysis of the law concerning Nez Perce water rights. The point in including it in a discussion of the role of legal uncertainty in settlement of water rights is to illustrate that analyzing the degree of uncertainty is no simple matter. It may include more than a mere analysis of the law, but the likelihood that, given the uncertainty, issues will be decided in a party's favor.[68]

Third, not only would an unfavorable ruling go to the core of rights considered central to the Tribe's spiritual and cultural existence, but, would set precedent for the interpretation of the usual and accustomed language in every other Steven's treaty.

Finally, the fact that the points discussed concerning what the Idaho and United States Supreme Courts might do are purely speculative would not have been lost on the State of Idaho. Although the State may have felt a strong likelihood of success, the scope of an un-

64. *Potlatch Corp*., 134 Idaho 916, 12 P.3d 1260.

65. The SRBA Millennium Year, IDWR Chronology (2000) *available at* http://www.idwr.idaho.gov/water/srba/Conference%202000/SRBA%20Chronology%20year2000.pdf. Justice Wood was first given the opportunity to resign, but refused. *Id.*

66. Potlach Corp. v. United States, 134 Idaho 916, 939–40, 12 P.3d 1260, 1283–84 (2000).

67. *Idaho Supreme Court Hopeful Expects Courts to Play Role in Water Dispute,* U.S. WATER NEWS ONLINE, June 2004, http://www.uswaternews.com/archives/arcrights/4idahsupr6.html.

68. The author, although critical of the ruling by Judge Wood, does not mean to imply that the Idaho Supreme Court would not apply a principled analysis given the opportunity to review the case, but expresses concern over how it would approach the case is highly likely to play a role in the decision to enter negotiations.

favorable court ruling would have been unacceptable.[69] The Nez Perce claims, if recognized, would have given the Tribe the senior right on much of the surface water supply in the rapidly growing southern half of the state, thus giving the Tribe a major role in the future growth and development of Idaho.

An additional aspect of the events leading to the choice to settle is important to note. When representatives of governmental entities take a seat at the negotiation table, it is not merely the risks of litigation that guide their walk-away point, but the political acceptability of potential settlement solutions to their constituents. Even if a solution appears consistent with precedent, it must be imposed by a court if voluntary acceptance will result in loss of the next election by the representatives negotiating.[70] Thus, prior to the SRBA court ruling, the uncertainty in litigation outcome was probably too broad to allow a negotiated solution. Regardless of the obvious need of fish for water, no Governor could relinquish control of a major portion of the water in the state and remain in office. Similarly, regardless of the perceived hostility of the state forum, no tribal council could turnover to a state the protection of a resource so key to the identity of the tribe without clear indications that to do otherwise would mean no protection at all. Of equal importance, no tribal council could risk confirmation of a ruling on diminishment of the boundaries of its reservation. Thus, despite the criticism of its ruling on water rights, by reaching the issue of diminishment, the SRBA court ruling may have played a significant role in bringing the parties to the table.

The analysis of the role of legal uncertainty in moving the parties to settle does not end with the Nez Perce claims. An additional area played an even larger role in moving the state to settle–for example, the potential legal exposure of both the State and private water users and timber harvesters under the Endangered Species Act (ESA).[71] To understand why timber harvesters in the upper reaches of the Salmon and Clearwater drainages would be affected requires both an understanding of certain aspects of the ESA and of the impacts of timber harvest. The impacts will be discussed in the section analyzing the use of science in the settlement. The following paragraphs discuss the law.

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69. Barker, *supra* note 60, at 1A, 5A (noting the public outcry to recognition of in-stream flow rights with a 1980 priority date in a smaller area than the senior claims of the Nez Perce).

70. This is not to say that there is no role for leadership and efforts to educate constituents on the legal reality, but merely a recognition that this rarely happens.

71. Interview with Steve Moore, Attorney, Native Am. Rights Fund, representing the Nez Perce Tribe, in Moscow, Idaho (Sept. 14, 2005). Interview with Clive Strong, Div. Chief, Natural Res. Div., Idaho Office of Attorney Gen., in Boise, Idaho (July 6, 2005).

How listing of Pacific salmon under the ESA translates to protection of habitat in the upper reaches of the Salmon and Clearwater Rivers requires not only an understanding of migration, but an understanding of the level on which listing occurs and the relationship between listing and habitat protection. The ESA allows listing at divisions below the species level by defining species to include "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."[72] Unfortunately, the term "distinct population segment" has no biological meaning, leaving it to the implementing agencies to sort out the level of protection.

In 1991, NOAA Fisheries (then called National Marine Fisheries Service or NMFS) issued its final rule interpreting the ESA term "distinct population segment" (DPS) for application to Pacific salmon.[73] NOAA Fisheries equated DPS with an "Evolutionary Significant Unit" (ESU), then established two criteria that must be satisfied for a particular stock of pacific salmon to be considered an ESU: "(1) It must be substantially reproductively isolated from other conspecific population units; and (2) It must represent an important component in the evolutionary legacy of the species."[74]

Because timing and location of the spawning run determines the breeding pool, this definition allows listing on the basis of the time of year and drainage of the run. Eight populations of salmon in the Columbia Basin are listed under the ESA.[75] In addition, bull trout, a resident fish, is listed.[76] Listing translates to habitat protection under the ESA in two ways. First, the listing agency is required to designate "critical habitat"[77] that is "essential to the conservation of the species."[78] Because separate runs of salmon identified with specific water basins are listed, habitat on each basin must be designated. Second,

72. Endangered Species Act, 16 U.S.C. § 1532(16) (2000) (emphasis added).

73. Policy on Applying the Definition of Species under the Endangered Species Act to Pacific Salmon, 56 Fed. Reg. 58,612 (Nov. 20, 1991).

74. *Id.* at 58,618 (stating the policy on applying the definition of species under the endangered species act to Pacific salmon).

75. Endangered and Threatened Species: Final Listing Determinations for 16 ESUs of West Coast Salmon, and Final 4(d) Protective Regulations for Threatened Salmonoid ESUs, 70 Fed. Reg. 37,160, 37,193 (June 28, 2005).

76. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Klamath River and Columbia River Distinct Population Segments of Bull Trout, 63 Fed. Reg. 31,647 (June 10, 1998).

77. 16 U.S.C. § 1533(b)(2).

78. *Id.* § 1532(b)(5)(A)(i).

the ESA prohibits "take" of endangered species by private actions.[79] Interpretation of "take" to include modification of habitat has been upheld by the United States Supreme Court.[80] Again, protection at the population level rather than the species level means that the habitat relied on by each run, not just the broad area relied on by the species as a whole, must be protected. Thus, tradeoffs among river basins cannot be made.

The ESA provides two avenues for private parties to receive upfront approval of activities that will cause take which is incidental to the project.[81] First, through approval of a Habitat Conservation Plan, which may include measures to mitigate impacts on species, the FWS or NOAA Fisheries may approve a certain level of "incidental take" despite the prohibition under Section 9 of the ESA.[82] Second, through approval of a state program under Section 6 of the ESA, certain activities may be approved that will result in incidental take.[83] The Section 6 approach is followed in the Nez Perce settlement. The problem faced by landowners contemplating activities in areas of known endangered species habitat is that the amount of incidental take authorized will be finite.[84] In the case of anadromous fish, the Snake River Flow Component of the Nez Perce Settlement provides for incidental take protection for water users from Reclamation projects on the upper Snake River through flow augmentation.[85] Timber harvesters in the Salmon and Clearwater drainages could not lose the opportunity to obtain a piece of the incidental take pie.[86]

How do ESA issues influence a state's position in a tribal water settlement?—by targeting the same resources: water and fish. A common frustration expressed by private landowners and water users is that the artificial legal separation of water allocation,[87] water quality,[88] and aquatic species protection,[89] provides considerable uncer-

79. *Id.* § 1538(a)(1)(B).

80. Babbitt v. Sweet Home Chapter of Cmtys. for a Great Or., 515 U.S. 687 (1995).

81. 16 U.S.C. § 1539(a).

82. *Id.*

83. *Id.* § 1535.

84. Interview with Patrick Seymour, Endangered Species Program Manager, Idaho Dep't of Lands, & Richard "Tiny" Furman, Strategic Issues & Program Dev. Specialist, Idaho Dep't of Lands, in Moscow, Idaho (Aug. 18, 2005).

85. Term Sheet, *supra* note 3, at § III.A.

86. Interview with Patrick Seymour & Richard "Tiny" Furman, *supra* note 84.

87. *See, e.g.,* IDAHO CODE ANN. § 42 (2003).

88. Water quality standards are generally set under the federal Clean Water Act (CWA), 33 U.S.C. §§ 1251–1387 (2000). Although the CWA allows states to establish their own water quality standards, *id.* § 1313, states generally set up a process entirely separate from their water allocation process. For example., under Idaho law, the Department of

tainty because resolution in one area at best may not address the others and at worst may conflict with solutions in other areas.[90] Settlement provides an avenue for solving multiple legal issues affecting the same resource with a common solution. Water users quickly saw this opportunity and urged the state to seek a common solution.[91] Timber industry representatives, seeing the possibility that all incidental take would be allocated to water users, soon joined.[92]

In the face of the narrowing of uncertainty (or options) that followed the SRBA court ruling, the enormous consequences associated with an unfavorable outcome to either side, and potential liability under the ESA, the stage was set for productive settlement negotiations.

III. THE NEZ PERCE SETTLEMENT AND SCIENTIFIC UNCERTAINTY

The Nez Perce Mediator's Term Sheet divides the settlement into the following components:[93] (1) the Nez Perce Tribal Component;[94] (2) the Salmon/Clearwater Component;[95] and (3) the Snake River Flow Component.[96] All three components have elements related to anadromous fish. For example, the Nez Perce Tribal Component includes an agreement to delegate management of Kooskia National Fish Hatchery to the tribe and enter a cooperative agreement on co-management of Dworshak National Fish Hatchery.[97] The Snake River Flow Component includes an agreement to seek funding for purchase of Reclamation water to augment flow in the river for listed species.[98]

Environmental Quality implements the CWA, IDAHO CODE ANN. §§ 39-101 to 39-130 (2005), and the Department of Water Resources handles water allocation, *id*. § 42-204.

89. The federal Endangered Species Act, 16 U.S.C. §§ 1531–1544, is implemented by NOAA Fisheries in the Department of Commerce for ocean and anadromous species, and Fish and Wildlife Service in the Department of Interior for terrestrial and freshwater species. *Id*. § 1532(15).

90. The author is a mediator and former negotiator in water disputes and over the past 15 years has personally experienced hearing the desire to solve multiple legal issues addressing water with one solution.

91. Interview with Clive Strong, *supra* note 71.

92. Interview with Patrick Seymour & Richard "Tiny" Furman, *supra* note 84.

93. *See* Term Sheet, *supra* note 3.

94. *Id*. § I.

95. *Id*. § II.

96. *Id*. § III.

97. *Id*. § I.E.

98. *Id*. § III.C.

However, this paper will leave discussion of components number one and three to other papers in this volume and focus on the Salmon/Clearwater Component to illustrate the difficulties and opportunities parties face when seeking settlement in areas of scientific uncertainty.

The Salmon/Clearwater Component of the Nez Perce settlement includes two key elements: (1) instream flows to be held by the Idaho Water Resources Board (IWRB)[99] on 205 streams designated by the Tribe;[100] and (2) a habitat management and restoration initiative made up of an instream flow program on streams identified by the State as desirable for incidental take protection under the ESA,[101] a voluntary forest practices program aimed at protecting riparian habitat and reducing sediment loading from timber harvest on state and private land,[102] and a habitat improvement program.[103] The following paragraphs will describe these two elements of the settlement, identify some of the scientific uncertainty the parties faced in arriving at the solution, and describe how the parties handled the uncertainty.

A. Instream Flow Program

The 205 streams designated for protection of instream flow by the Tribe are listed in Appendix One to the Term Sheet. Although the IWRB holds the instream flow water right, the level of protection for each stream was negotiated among the Tribe, State, and United States, relying on a mixture of science, politics and pragmatism to reach agreement. An instream flow water right is the right to a certain amount of water remaining in the stream. Unlike a diversionary right, which contemplates action on the part of the water right holder to make use of the water, an instream flow right requires only that the water right holder take action against other water users to protect the instream flow right. Thus, the issue of who holds the instream flow right is not an issue of who has the right to enjoy the stream or to fish for salmon (for example, the Nez Perce settlement does nothing to change the right of tribal member to fish at the usual

99. Under Idaho law, the IWRB is the sole entity that can hold an instream flow right. IDAHO CODE ANN. §§ 42-1501 to -1506. The Board is established by IDAHO CODE ANN. § 42-1732, which states that the Board is composed of "eight (8) appointed members [of] qualified electors of the state, no more than four (4) of whom shall be members of the same political party. . . . All appointments shall be made by the governor with the advice and consent of the senate." *Id*.

100. Term Sheet, *supra* note 3, § II.A.

101. *Id*. § II.B.1.

102. *Id*. § II.B.2.

103. *Id*. § II.B.3.

and accustomed places). Instead, it determines who has the right to enforce the instream flow right against other water users.

In the selection of the 205 streams, science played a role along with the oral history of the Tribe.[104] Consultants for the Tribe sought to identify both streams that currently provide habitat, or have the potential to provide habitat during the life cycle of salmon, and streams identified as having provided important habitat, fishing locations, and ceremonial sites during the history of the Tribe.[105] Understanding the scientific issues that inform the decision on stream selection requires a brief background on salmon species in the Columbia Basin and their life histories.

Anadromous species in the Columbia Basin include the following: chinook (Oncorhynchus tshawytscha), coho (Oncorhynchus kisutch); sockeye (Oncorhynchus nerka), and steelhead (Oncorhynchus mykiss).[106] In general, salmon and steelhead spend their adulthood in the ocean and return to the natal stream to spawn, forming nests in gravel beds referred to as redds.[107] However, there is considerable variability in this process. For example, chinook salmon are long distance swimmers, some returning to the far reaches of the Columbia Basin to spawn.[108] They may return from the ocean anywhere from two to eight years later, migrating in either spring, summer, or fall runs.[109] Coho rarely make it as far up the basin as Idaho,[110] but

104. Telephone Interview with Jean Baldrige, Biologist Entrix Inc. and consultant for the Nez Perce Tribe (October 3, 2005). *See also* LANDEEN & PINKHAM, *supra* note 10, at ix.

> One of the limitations of western science is its inability to recognize the traditional environmental knowledge that American Indians have been passing down to each other in their oral histories for millennia. As this book demonstrates, the oral tradition is still very much alive among the Nez Perce people. Western scientists, however, are unable to recognize this traditional environmental wisdom because it also contains spiritual and cultural aspects fundamental to the religious beliefs of many Native Americans, and these beliefs and values are simply impossible to quantify using the scientific method.

Id.

105. The author is not an expert on the cultural and spiritual history of the Tribe and will not describe or comment on that aspect of the Settlement.

106. Columbia River Inter-Tribal Fish Commission, Wy-Kan-Ush-Mi Wa-Kish-Wit: *Salmon Species of the Columbia Basin*, http://www.critfc.org/text/salmon.html [hereinafter *Spirit of the Salmon*] (last visited April 6, 2006).

107. *Id.*

108. *Id.*

109. *Id*. Even within the various runs there are complexities. For example, early-fall chinook are recognized in the Clearwater drainage and have a life history similar to

are thought to have been present historically.[111] Sockeye young spend their first year in a freshwater lake; thus the adult must reach the gravel beds of a lake's tributaries to spawn.[112] Unlike the other species, steelhead do not always die after spawning, but can repeat the trip if they survive the long migration.[113] However, repeat spawning occurs infrequently within Idaho populations.[114] Migration of "smolts" back to the ocean may occur within several weeks or up to two years after hatching.[115]

Although a remarkable life history, the length of the salmon migration exposes the species to numerous threats and numerous jurisdictions. Chief among the threats identified are: blockage of migratory routes and slowing of water flow by hydropower dams, habitat destruction, competition with hatchery fish, and over harvesting.[116] Historic estimates put combined salmon runs at five to eleven million in the portion of the basin above Bonneville Dam.[117] Today those runs have declined to half a million, with only 20% of these being wild fish (as opposed to hatchery bred).[118] The many factors affecting salmon decline rendered the question of how much habitat is enough difficult for scientists advising the parties to answer. The Tribe chose to err on the side of caution by selecting downstream points for measurement of the instream flow, and thus protecting all of the area upstream while providing ease of management.[119] Information from the Idaho Department of Fish and Game on fish distribution was used to iden-

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mid-Columbia summer chinook but not to Snake River summer chinook. ECOVISTA, NORTHWEST POWER & CONSERVATION COUNCIL, CLEARWATER SUBBASIN ASSESSMENT 289 (2003), available at http://www.nwcouncil.org/fw/subbasinplanning/clearwater/plan/assessment.pdf. [hereinafter CLEARWATER SUBBASIN ASSESSMENT]. The Northwest Power and Conservation Council was established by the Pacific Northwest Electric Power Planning and Conservation Act of 1980, Pub. L. 96-501 (1980), with representatives from each of the states in the Columbia Basin, to develop a regional energy plan and fish and wildlife plan for the Columbia Basin.

110. *See Spirit of the Salmon*, *supra* note 106.

111. CLEARWATER SUBBASIN ASSESSMENT, *supra* note 109, at 313.

112. *Spirit of the Salmon*, *supra* note 106; CLEARWATER SUBBASIN ASSESSMENT *supra* note 109, at 280. Sockeye historically returned to the Stanley Basin in the upper Salmon in numbers estimated between 20,000 and 40,000. Today, only Redfish Lake supports the occasional sockeye. *Id.* at 2-81 & 2-82.

113. *Spirit of the Salmon*, *supra* note, at 106.

114. Interview with Cindy Robertson, *supra* note 9.

115. Mary H. Ruckelhaus et al., *The Pacific Salmon Wars: What Science Brings to the Challenge of Recovering Species*, 33 ANN. REV. ECOLOGY SYSTEMATICS 665, 667.

116. *Id.*

117. I COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION, WY-KAN-USH-MI WA-KISH-WIT SPIRIT OF THE SALMON: THE COLUMBIA RIVER ANADROMOUS FISH RESTORATION PLAN OF THE NEZ PERCE, UMATILLA, WARM SPRINGS, AND YAKIMA TRIBES (1996), *available at* http://www.critfc.org/oldsite/text/TRP_intro.htm#Executive%20Summary.

118. *Id.*

119. Telephone interview with Jean Baldridge, *supra* note 104.

tify streams followed by review by the United States FWS and NOAA Fisheries.[120] By following this process, and eliminating areas of historical importance to either the Tribe or salmon on tributaries now cutoff from migration by dams, the Tribe felt the 200 streams selected provided a fairly exhaustive identification of potential salmon habitat.[121]

Review of the 205 proposed segments by the Idaho Department of Fish and Game relied heavily on the subbasin plans of the Northwest Power and Conservation Council and personal knowledge of the Department of fisheries staff.[122] Information available on the correlation between salmon lifestage and stream reach was generally qualitative and not uniform throughout the Salmon and Clearwater basins.[123] In the face of inadequate data, the Idaho Department of Fish and Game faced the need to base decisions on professional judgment.[124] Only through the combined effort of Idaho Department of Fish and Game scientists and the pragmatic land classification approach developed by the negotiators for the state and described below was final resolution possible.[125]

The second major issue the parties faced is how much instream flow is necessary for salmon habitat. The parties chose a mixture of science and political pragmatism to resolve this problem. First, the pragmatic aspect: participation in and finalization of settlement is voluntary. Approval of a settlement of tribal water rights generally results in federal legislation and frequently results in state legislation.[126] Thus, at every turn the parties must consider the potential for political opposition and the need for political support. In recognition of this, the parties classified the streams by land status and potential

120. *Id.*
121. *Id.*
122. Interview with Cindy Robertson, *supra* note 9. Subbasin plans are available on the Northwest Power and Conservation Council's website at http://www.nwcouncil.org/fw/subbasinplanning/Default.htm.
123. Interview with Cindy Robertson, *supra* note 9.
124. *Id.*
125. *Id.*; Interview with Clive Strong, *supra* note 71.
126. *See, e.g.,* Act of July 28, 1978, Pub. L. No. 95-328, 92 Stat. 409 (1978); Fort Hall Indian Water Rights Act of 1990, Pub. L. No. 101-602, 104 Stat. 3059 (1990); Chippewa Cree Tribe of the Rocky Boy's Reservation Indian Reserved Water Rights Settlement and Water Supply Enhancement Act of 1999, H.R. 795, 106th Cong. (1999); Northern Cheyenne–Montana Compact Ratified, MONT. CODE ANN. § 85-20-301 (2005); Chippewa Cree Tribe–Montana Compact, MONT. CODE ANN. § 85-20-601 (2005).

for conflict, giving greater protection to streams with low potential for future development and current conflict.

The first step was to separate out streams with a high level of development that already pose problems for salmon habitat.[127] These streams are referred to in the settlement as B List streams.[128] A different process applies to B List streams in which local stakeholders must be invited to participate in establishing instream flows. In addition, measures may be taken to restore currently degraded habitat and stream flow through habitat restoration and acquisitions of water under state law.[129]

The second step was to take the remaining A List streams and divide them by land classification.[130] The more private land located within a drainage basin, the greater the potential for conflict.[131] Conversely, on drainages with predominantly federal land, little potential for conflict exits. With decreasing potential for conflict, the parties chose to err on the side of caution by providing a high level of habitat protection. This approach of providing greater protection on some streams is actually made possible by the migratory nature of salmon. Not every location of potential habitat must be optimized year-round. Drawing the line on just how much habitat must be available at any given time is not an exact science and probably was governed more by political pragmatism.

Land classification categories in the settlement are as follows: (1) drainages with predominantly state and private land status; (2) drainages with predominantly federal, non-wilderness land status; (3) drainages with predominantly federal wilderness or wild and scenic river status; (4) special area streams with high value for fish habitat or cultural/spiritual value for the Nez Perce.[132] The level of instream flow protection increases from number one to number four with decreasing potential for conflict, and in the case of category number four, high level of importance to fish or the Tribe.

With a general scheme for classification in place, the third step was to set instream flows. Four questions must be answered to accomplish this step. The first three require data collection and scientific input; the fourth requires a political solution.

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127. Telephone Interview with Jean Baldrige, *supra* note 104.

128. Term Sheet, *supra* note 3, §§ II.A.1–2, app. I. B List includes heavily developed streams such as the Little Salmon River, Lemhi River, Pahsimeroi River and Lapwai Creek. *Id*. at app. I, I-10.

129. *Id*. § II.A.2, app I, I-1. State law currently allows establishment of a water bank by the Idaho Water Resources Board. IDAHO CODE ANN. § 42-1761 (2003).

130. Interview with Clive Strong, *supra* note 71; Interview with Cindy Robertson, *supra* note 9.

131. Interview with Clive Strong, *supra* note 71.

132. Term Sheet, *supra* note 3, app. I, I-1 to 2.

Question 1: What would the flow be in the designated A List streams under natural conditions? The Salmon and Clearwater drainages lie in an area of high snow pack, high spring runoff, and low water flow in late summer and fall. This seasonal variability along with climate variability from year-to-year would render evaluation of in-stream flow difficult on a gaged stream.[133] Many of the 200 streams designated for protection are not gaged.[134] As a result stream flow must be estimated.

At the request of the United States Bureau of Indian Affairs and on behalf of the Nez Perce Tribe, the USGS had developed a methodology by 1998 for analyzing the hydrologic characteristics of streams in Central Idaho to allow grouping of the many streams in classifications that would reflect hydrologic characteristics.[135] The USGS also developed a methodology for estimating stream flows that are exceeded twenty percent, fifty percent, and eighty percent of the time[136]

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133. U.S. GEOLOGICAL SURVEY & NAT'L WEATHER SERV., STREAM GAGING AND FLOOD FORECASTING, http://water.usgs.gov/wid/FS_209-95/mason-weiger.html#HDR2.

> As part of its mission, the USGS provides practical information about the Nation's rivers and streams that is useful for mitigation of hazards associated with floods and droughts and defines the hydrologic and hydraulic characteristics needed for the design and operation of engineering projects, such as dams and levees. The primary source of this information is the USGS streamflow-gaging station network.
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> . . . .
>
> The two most fundamental items of hydrologic information about a river are stage, which is water depth above some arbitrary datum, commonly measured in feet, and flow or discharge, which is the total volume of water that flows past a point on the river for some period of time, usually measured in cubic feet per second or gallons per minute. These two key factors are measured at a location on the river called a stream-gaging station.

Id.

134. Telephone Interview with Jean Baldrige, *supra* note 104; Interview with Cindy Robertson, *supra* note 9.

135. *See generally* STEPHEN W. LIPSCOMB, U.S DEP'T OF INTERIOR, U.S. GEOLOGICAL SURV. PROF. PAPER 1604, HYDROLOGIC CLASSIFICATION AND ESTIMATION OF BASIN AND HYDROLOGIC CHARACTERISTICS OF SUBBASINS IN CENTRAL IDAHO (1998). The United States and the Tribe began collecting data for litigation in 1988 and the study by the USFS would have been at the request of the United States representatives working on this effort. Telephone Interview with Jean Baldrige, *supra* note 104.

136. These are referred to as the twenty percent, fifty percent, and eighty percent exceedence numbers. Flow exceedence is the proportion or percent of time that a flow is equaled or exceeded over the period of time in question, thus, the lower the exceedence number the less time the flow exceeds this amount and the higher the flow referred to.

each month for subbasins in the same area.[137] Absence of data renders this approach uncertain with increasing estimated error at low flow (eighty percent exceedence levels).[138] The parties addressed this uncertainty by allowing subsequent change in decreed instream flows if actual flow data become available.[139]

Question 2: What is the existing depletion on the streams in question? Whereas the Tribe took the lead in identifying streams with existing or potential fish habitat, the State took the lead in determining the current level of depletion from state-authorized water use.[140] Two areas of uncertainty complicate this process. First, the state-authorized water use at issue is currently part of the Snake River Basin Adjudication and final decrees cataloging the rights are not available.[141] Second, water rights are recorded in terms of diversion amounts, and for irrigation, acreage applied to.[142] With the largest use in the basin—irrigation—substantial water returns to the stream. The percent of diversion that comes back as return flow is a function of irrigation efficiency, crop type, and conveyance facilities. In the absence of parcel-by-parcel information, only generalized estimates can be made.[143] The following process was used by the consultant for the state, David Shaw, to arrive at estimates of monthly depletions for the primary use in the basin—for example, irrigation.

The starting point to estimate depletion is an accurate listing of water rights. In the initial stages of the mediation, Mr. Shaw relied on SRBA claim filings as the base.[144] However, the Idaho statutes on adjudication provide for review of claims and filing of a report with the district court by the Idaho Department of Water Resources.[145] Due to the size of the SRBA, reports are done by subbasin.[146] As reports became available, Mr. Shaw compared them with his estimates

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L.C. KJELSTROM, U.S. DEP'T OF THE INTERIOR, WATER RESOURCES INVESTIGATIONS REP. 94-4120, METHODS FOR ESTIMATING SELECTED FLOW DURATION AND FLOOD-FREQUENCY CHARACTERISTICS AT UNGAGED SITES IN CENTRAL IDAHO 1 (1998), *available at* http://id.water.usgs.gov/PDF/wri944120/flowdur.pdf.

137. *Id*.

138. *Id*. at 10.

139. Term Sheet, *supra* note 3, app. I-1 n.4.

140. Interview with David Shaw, Engineer, ERO Resources, and Consultant to the State, in Boise, Idaho (July 6, 2005).

141. *Id*.; Judge Melanson, SRBA Judge, Lecture to the author's Water Law class at the University of Idaho College of Law (October 5, 2005).

142. IDAHO CODE ANN. § 42-1409 (2003).

143. Interview with David Shaw, *supra* note 140.

144. *Id*.

145. IDAHO CODE ANN. § 42-1411 (2003).

146. For the status of subbasin report preparation as of Nov. 15, 2005, see the Idaho Department of Water Resources website at http://www.idwr.idaho.gov/water/srba/Reports_Issues_Presentations/Court102.pdf.

and found the difference between the two to be less than ten percent.[147] Step two in the process required the elimination of duplicate claims, a forty acre by forty-acre repetitive process.[148] Next, to translate this estimated list of water rights into depletion amounts, Mr. Shaw took what appears to be a precautionary approach from the viewpoint of instream flow. Crop requirements vary with crop type and are high for alfalfa and pasture, thus, Shaw used the greater of these.[149] Crop requirements are then translated into depletions by estimating efficiencies.[150]

This approach of basing monthly depletions on crop use, thus, accounting for return flow, is appropriate if an overall water budget is the goal. However, concern was expressed that the approach did not account for dewatering in the stream reach immediately downstream from a point of diversion that is not replenished by return flow.[151] To address this issue, net monthly crop requirements (for example, diversions less return flow) were doubled to estimate stream impact.[152] This doubling should illustrate the level of uncertainty in the analysis. Claimed diversion rates were used as the estimated depletions for other uses, that is, commercial, municipal, industrial, diversion to storage.[153]

Question 3: How much of the natural flow is needed to provide fish habitat? As if the scientific uncertainty of calculating the flow in ungaged streams was not enough, the needs of salmon and the variability they can tolerate takes uncertainty to a new level. The biologists advising the parties used a computer model to evaluate potential habitat at various discharge levels on representative streams.[154] The model used, Physical Habitat Simulation (PHABSIM), was developed by the United States Fish and Wildlife Service for streams in Washington to quantify suitable versus unsuitable hydraulic habitat at-

147. Interview with David Shaw, *supra* note 140.

148. *Id.*

149. *Id.* Additional sources relied on by Shaw to determine the total irrigation depletions included a study done by Reclamation on flow augmentation in which estimates of various augmentation plans on water rights were done. BUREAU OF RECLAMATION, U.S. DEP'T. OF THE INTERIOR, SNAKE RIVER FLOW AUGMENTATION IMPACT ANALYSIS APPENDIX (1999), http://www.usbr.gov/pn/programs/maf/pdf/1maf.pdf.

150. Interview with David Shaw, *supra* note 140.

151. *Id.*

152. *Id.*

153. *Id.*

154. Interview with Cindy Robertson, *supra* note 9.

tributes and calculate an index of the relative amount of suitable habitat for a particular species and particular life stage as a function of discharge.[155] A key assumption is that hydraulic habitat is important to the distribution of fish.[156] Not only is this assumption supported by considerable research,[157] but it underlies the point already agreed to by the parties that instream flow is a component of the health of fish. Using this method to evaluate relative availability of habitat at different levels of discharge, the parties agreed to the following flows that weigh toward greater availability of habitat as potential for conflict with water use decreases: (1) drainages with predominantly state and private land status: "50% exceedence level of the estimated unimpaired flow";[158] (2) drainages with predominantly federal, non-wilderness land status: "40% exceedence level of the estimated unimpaired flow";[159] (3) drainages with predominantly federal wilderness or wild and scenic river status: "30% exceedence level of the estimated unimpaired flow";[160] (4) special Area streams with high value for fish habitat or cultural/spiritual value for the Nez Perce: determined in an area-by-area basis.[161]

Expressing instream flow in terms of exceedence alone would be difficult to implement due to the need to predict flows over time. Probably more importantly in the context of negotiations, it would not meet the state's desire to protect existing use and provide for some future development. Thus, in each category of land classification, the instream flow is subordinated to existing use, future domestic, commercial, municipal, and industrial use (DCMI), and an amount of future non-DCMI use that decreases from twenty five percent of the

155. ANNEAR ET AL., *supra* note 4, at 148. It is important to note that whether a particular hydraulic habitat is suitable for salmon is an input, not an output of the model. With input on what suitable hydraulic habitat must look like, channel morphology, and discharge, the model simply provides output on the proportional availability of suitable habitat. *Id.* at 149.

156. *Id.* at 148.

157. *Id.* at 148 ("Consequently, species are assumed (supported by considerable research) to exhibit preference-avoidance behavior for depth, velocity, and the reach characteristics of cover and substrate. Users thus assume that areas of suitable and unsuitable habitat within the wetted stream channel may change significantly with discharge."). Note that hydraulic characteristics are not the sole factor in determining the presence of suitable habitat, the settlement addresses other factors such as sediment loading and the presence of large woody debris in the Habitat Management and Restoration Initiative discussed below.

158. Term Sheet, *supra* note 3, app. I, at I-1. Exceedence level is the proportion or percent of time that a flow is equaled or exceeded over the period of time in question, thus the lower the exceedence number the less time the flow exceeds this amount and the higher the flow referred to. KJELSTROM, *supra* note 136, at 1.

159. Term Sheet, *supra* note 3, app. I, at I-2.

160. *Id.*

161. *Id.*

lowest estimated median monthly natural flow in classification number one to five percent in classification number three.[162] The absolute subordination to DCMI is a pragmatic choice. DCMI use is small relative to irrigation with even lower actual depletion due to high return flow,[163] yet it serves far more people. The relatively low potential impact compared to the interest of the state in providing for potential future growth made the subordination agreement possible.[164]

The subordination approach to solving the prediction and enforcement problem associated with instream flow has been used elsewhere.[165] Rather than leading to the difficult task of measuring flows and attempting to predict whether sufficient precipitation will occur over the remainder of the year to meet exceedence levels, and if not, how much use to curtail, the subordination approach caps development at a particular level leaving the remaining flow to the stream. Enforcement is then limited to prevention of illegal use.

Question 4: Are the flow estimates and the depletion levels consistent with the calculated fish needs? The final step in the process of setting instream flows was to compare the calculated needs from PHABSIM with the flows expected using the land classification and subordination approach.[166] Although, in general, this provided acceptable results, the primary concerns remain at low flow.[167] An ecologically functioning river will reflect the variability of a natural flow regime.[168] On streams that lack impoundments, delivery of high spring runoff will be more a function of precipitation than administrative protection of instream flows. Thus, it is the low flow that will

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162. *Id.* app. I, at I-1 to I-2.

163. Interview with David Shaw, *supra* note 140.

164. Interview with Clive Strong, *supra* note 71.

165. *See, e.g.*, David Amman, et al., *Negotiation of the Montana-National Park Service Compact*, 5 RIVERS 35, 39 (1995) (describing the United States National Park Service - Montana Compact, ratified, MONT. CODE ANN. § 85-20-401 (2005)).

166. Interview with Cindy Robertson, *supra* note 9.

167. Interview with Clive Strong, *supra* note 71.

168. ANNEAR ET AL., *supra* note 4, at xxvi.

> The natural flow paradigm (preservation of the natural flow variability and ecological function of river systems) is axiomatic to ecological integrity of river systems. Managers establishing instream flows must recognize the importance of inter- and intra-annual flow variability in riverine systems because different flow levels enable critical ecological processes that cannot occur otherwise.

Id.

be disproportionately affected by diversions and is of greatest concern. Recognizing the need to avoid having streams fall below certain minimum flows, the parties agreed that the goal in allocation of future use was to avoid use impact on flow that would drop the stream to less than the eighty percent exceedence value predicted under unimpaired conditions.[169]

B. Habitat Management and Restoration Initiative

One of the primary motivating forces for the State to seek settlement, as discussed above, was the opportunity recognized by private water users and timber interests to resolve some of the ESA issues associated with anadromous and resident fish in the Snake River Basin.[170] The habitat management and restoration initiative consists of programs for instream flow, forest practices, and habitat restoration for the benefit of listed species.[171] For purposes of analyzing the role of science and uncertainty, this paper will briefly describe the instream flow and habitat restoration programs, then focus on the forest practices program. These programs will be implemented through development of state cooperative agreements under Section 6 of the ESA.[172] Thus, a brief background on Section agreements will be provided first.

Section 6 of the ESA provides for development of cooperative agreements between either FWS or NOAA Fisheries and a state to allow the state to establish its own "program for the conservation of endangered species and threatened species."[173] The prohibition on take in Section 9 of the ESA does not apply to the activities affecting species that are subject to a cooperative agreement within a state.[174] Interestingly, although Section 6 agreements arguably must be strong enough under the ESA to limit take (at least for endangered species),[175] the standard provided in the Term Sheet is to meet the requirements of Section 7(a)(2) of the ESA[176] requires no jeopardy.[177]

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169. Term Sheet, *supra* note 3, app. I, at I-3.

170. Interview with Clive Strong, *supra* note 71.

171. Term Sheet, *supra* note 3, § II.B.

172. *Id*. Section 6 of the ESA can be found at 16 U.S.C. § 1535 (2000).

173. 16 U.S.C.A. § 1535(c)(1).

174. *Id*. at § 1535(g)(2)(A). *But see* Swan View Coal. Inc. v. Turner, 824 F. Supp. 923, 938 (D. Mont. 1992) (holding that 16 U.S.C. § 1535(f) requires that state prohibitions be at least as stringent as federal for endangered species, and where they are not, the federal prohibition on "take" under Section 9 applies).

175. § 1535(g)(2)(A).

176. § 1536(a)(2).

177. The difference between "take" and "jeopardy" may be small in the case of a species with population low enough to require listing, but the term "take" refers to actions affecting any member of the listed species, 16 U.S.C.A. § 1532(12) (2000); whereas "jeop-

State management under Section 6 has been an underutilized avenue for species recovery, but the role of states is increasing.[178]

The instream flow program allows the state to identify streams on which incidental take coverage is sought as part of a Section 6 agreement.[179] The state must determine existing and anticipated water depletions and develop means to address flow limited streams in cooperation with local communities.[180] Any instream flows provided under this program are separate from the rights established on streams identified by the Nez Perce and do not require consultation with the Nez Perce Tribe for modification.[181]

The habitat restoration program will be developed by the State pursuant to a Section 6 agreement to provide incentives for measures by private parties such as: barrier removal; reduction in diversion structures; screening on diversion structures; and riparian habitat restoration.[182] Unlike the Idaho Forestry Program (IFP) described below, which addresses both past and potential future harm, the habitat improvement program is designed solely to remedy past harm. Funding to implement the Section 6 agreements, including the habitat improvement program, will be sought through a combination of state and federal contributions.[183]

Understanding the measures agreed to in the Idaho Forestry Program[184] requires a brief background on the impacts of timber harvest on salmon habitat. A report prepared by the Columbia River Inter-Tribal Fish Commission provides the following information on the requirements for healthy fish habitat:

> Watersheds tributary to the mainstem Columbia and Snake rivers are the primary nursery and rearing areas. Juvenile

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ardy" is prohibited in the context of the continued existence of the listed species as a whole. 16 U.S.C.A. § 1536(a)(2).

178. Frank W. Davis, et al., *Renewing the Conservation Commitment*, *in* 1 THE ENDANGERED SPECIES ACT AT THIRTY 296 (Dale D. Goble et al. eds., 2006).

179. Term Sheet, *supra* note 3, § II.B.1.

180. *Id.* § II.B.1.a.

181. *Id.* § II.D.

182. *Id.* § II.B.3.

183. *Id.* § II.C. Authorization for the $38 million agreed to in the Term Sheet, with 1/3 going to the Nez Perce Tribe Salmon and Clearwater River Basins Habitat Account and 2/3 to the Idaho Salmon and Clearwater River Basins Habitat Account, was provided in the federal ratification of the settlement. Snake River Water Rights Act of 2004, S. 2605, 108th Cong. § 9(d) (2004).

184. Term Sheet, *supra* note 3, II.B.2.

> fish production is a function of the quantity and quality of available habitat. Factors that contribute to high-quality salmon habitat include: well-oxygenated cold water; spawning and rearing areas with low levels of surface fine sediments in the stream bed; abundant amounts of large woody debris in the channel; frequent large pools greater than 1 meter in depth; off-channel aquatic habitats fed by groundwater; stable stream beds; banks that overhang stream margins; and natural levels and types of riparian vegetation occupying the floodplain area.
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> Deep pools in streams supplied by cool groundwater shelter returning adults until they are ready to spawn. Clean, stable gravel beds with continuous subsurface flow protect developing eggs through the winter months. As juveniles hatch, emerge from the gravel, and grow, they use a succession of habitat types, but prefer areas with both protective cover and access to a reliable food supply. Intact adjacent wetlands and subsurface aquifers cool and maintain flows during hot summer periods of reduced rainfall. Undisturbed floodplains with numerous side channels expand the amount of available rearing area and provide shelter during cold winter months.[185]

Management agencies refer to the 4-C's of native salmon conservation: cold water for spawning and rearing; clean gravel beds for spawning and egg incubation; complex habitat for cover and food supply; and connected habitat for migration.[186]

Removal of riparian vegetation through timber harvest may increase sediment loading, decrease over-hanging shelter, and shade, the availability of large woody debris, and correspondingly increase stream temperature.[187] Reduction in large woody debris decreases

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185. *Spirit of the Salmon*, *supra* note 106, http://www.critfc.org/oldsite/text/contents.htm (to access quoted material click on "Biological Perspective").

186. U.S. FISH AND WILDLIFE SERVICE, FINDINGS AND RECOMMENDATIONS ON ISSUANCE OF AN INCIDENTAL TAKE PERMIT (TE034609-0) TO PLUM CREEK TIMBER COMPANY FOR THEIR NATIVE FISH HABITAT CONSERVATION PLAN FOR STATES OF MONTANA, IDAHO, AND WASHINGTON 3 (National Marine Fisheries Service, U.S. Fish and Wildlife Service, Environmental Impact Statement and Native Fish Habitat Conservation Plan: Proposed Permit for Taking of Federally Protected Native Fish Species on Plum Creek Timber Company Lands CD-ROM, 2000) (follow "U.S. Fish and Wildlife Service and National Marine Fisheries Service Documents, including Incidental take Permits, Findings, Opinions, and Record of Decision," then follow "FWS Finding") [hereinafter Environmental Impact Statement and Native Fish Habitat Conservation Plan].

187. NATIONAL MARINE FISHERIES SERVICE & U.S. FISH AND WILDLIFE SERVICE, BIOLOGICAL/CONFERENCE OPINION: PLUM CREEK TIMBER COMPANY NATIVE FISH HABITAT

habitat complexity.[188] Roads built for timber harvest may increase sediment loading and present barriers to fish passage at stream crossings.[189] The measures adopted to reduce these impacts and the uncertainty involved in arriving at the measures are described in the following paragraphs.

For ease of implementation, the Idaho Forestry Program (IFP) builds on the existing Idaho Forest Practices Act (IFPA).[190] Unlike the regulatory IFPA, the IFP is a voluntary program. Timber harvesters must enroll in the program to receive incidental take protection. State forestland in the effected area is roughly twenty-five percent of the non-federal forestland.[191] To obtain agreement on the IFP with the uncertainty inherent in voluntary participation was made possible by the State's upfront agreement to enroll.[192]

The IFP divides streams into three categories: (1) Class I streams contain fish habitat or potential fish habitat.[193] The existing IFPA covers only streams known to actually contain fish, thus excluding potential habitat.[194] (2) Class II streams are headwaters that do not contain fish habitat, but that influence water quality, quantity and ecological function of Class I streams.[195] (3) Class IIa streams are a subset of Class II "streams that contribute surface stream flow directly into a Class I stream."[196]

Measures required for participation in the IFP are designed to enhance protection of the riparian corridor, reduce sediment and pre-

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CONSERVATION PLAN 142 *in* Environmental Impact Statement and Native Fish Habitat Conservation Plan, *supra* note 186 (follow "U.S. Fish and Wildlife Service and National Marine Fisheries Service Documents, including Incidental take Permits, Findings, Opinions, and Record of Decision," then follow "Biological and Conference Opinion").

188. *Id.*

189. *Id.*

190. IDAHO CODE ANN. §§ 38-1301 to -1313 (2003). In agreeing to the IFP, the State and landowners did not concede that the IFPA is insufficient for ESA compliance. Interview with Clive Strong, *supra* note 71.

191. Interview with Patrick Seymour & Richard "Tiny" Furman, *supra* note 84.

192. *Id.*; Interview with Clive Strong, *supra* note 71.

193. Term Sheet, *supra* note 3, § II.B.2.a.ii. ("Class I streams are those that contain habitat which is used by fish at any life stage at any time of the year including potential habitat likely to be used by fish which could be recovered by restoration or management . . . .").

194. Idaho Administrative Procedure Act § 20.02.01.010, Rule 58.a. (2005), *available at* http://adm.idaho.gov/adminrules/rules/idapa20/0201.pdf.

195. Term Sheet, *supra* note, 3 § II.B.2.a.iii.

196. *Id.* § II.B.2.b.iii. Class IIa streams are not defined in the IFPA, thus the classification only applies to enrollees in the IFP.

clude human-caused obstructions to fish passage. Two key elements are: (1) set-back and buffer zones adjacent to classified streams;[197] and (2) road management including fish-friendly road crossings.[198]

The scientific data on the relationship between set-backs and buffer zones in a riparian corridor in terrain and climate similar to the Salmon and Clearwater drainages and fish survival and recruitment is limited. As noted above, vegetation in the riparian corridor reduces erosion and provides shade, keeping stream temperature down and providing cover. Large trees in the riparian zone are the source of recruitment of the large woody debris (LWD), discussed above as being important to habitat complexity. On these basic concepts, scientists can agree.[199] But it is in defining just how many trees to leave to recruit sufficient LWD and how large an area of protected vegetation must be left to produce sufficient shade and reduce sediment loading that science falls short.

Studies done on LWD in the western Cascades were considered by the State to be inapplicable to the drier and less dense forests of the inland northwest.[200] One model for the inland northwest that had already met the scrutiny of the United States FWS and NOAA Fisheries was available—the Native Fish Habitat Conservation Plan developed for Plum Creek Timber Co. lands in Montana, Idaho and Washington, finalized in 2000.

For example, the Nez Perce settlement requires, in the absence of agreement to the contrary, a buffer zone of fifty feet to each side of a twenty-five foot "no harvest" zone, within which eighty-eight trees per acre of greater than eight inches in diameter along Class I streams.[201] The requirement to leave eighty-eight trees of greater than eight inches in diameter per acre is directly from the NFHCP.[202]

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197. *Id.* § II.B.2.b, app. II.

198. *Id.* § II.B.2.c.

199. Interview with Patrick Seymour & Richard "Tiny" Furman, *supra* note 84.

200. *Id.*

201. Term Sheet, supra note 3, § II.B.2.b.ii.(b)(ii).

202. NATIONAL MARINE FISHERIES SERVICE & U.S. FISH AND WILDLIFE SERVICE, NATIVE FISH HABITAT CONSERVATION PLAN *at* page 3-14 *in* Environmental Impact Statement and Native Fish Habitat Conservation Plan, *supra* note 186 (follow "Native Fish Habitat Conservation Plan," then follow "3 Riparian Management Commitments").

> Where did 88 trees per acre come from, anyway? The limited harvest rule specifies the retention of 88 trees per acre, a number that will be cropping up in other riparian prescriptions as well. This number is derived from the Montana SMZ rule, which specifies that 10 trees be retained in 100 lineal feet of SMZ 50 feet wide, which is approximately 88 trees per acre. A per-acre approach works well for variable width limited harvest zones. When 88 trees per acre is used as a minimum retention level, Plum Creek calculates that 105 trees per acre are retained on average.

Due to the complex interaction of multiple variables and lack of data, it is not possible to quantify the relation between protective measures in the riparian zone and results in terms of habitat (or even more tenuous–salmon recruitment) at a level sought by negotiators to satisfy the legal goal of finality. However, unlike the portion of the settlement addressing water rights, the portions addressing ESA issues were considered to have greater room for flexibility.[203] Section 6

> It is important to understand that for trees that are large enough, 88 trees per acre is a fully stocked stand of timber. When small trees occupy a site at a very dense stocking, they can stagnate and nearly stop growing without dying (see discussion of "Forest Health and Tree Densities"). "Relative density" is a forestry measure that indicates the level of stocking on a site in relation to tree size. Using this measure, a stand of 16-inch-diameter trees at 100 trees per acre occupies the site to the same degree as a stand of 9-inch-diameter trees at 250 trees per acre. The time span required to develop riparian stands with large trees in the absence of fire or harvest can be very long.
>
> Even after a stand has been harvested to 88 trees per acre, its density is high enough that regeneration is generally unable to become established in the shade of the residual trees because the site is fully occupied. Without regeneration, Plum Creek would not be able to easily grow replacement trees. Therefore, most of the 88 trees per acre would likely eventually mature and fall over—perhaps into the stream where they can directly contribute to improved fish habitat. Though the limited harvest rule is represented as a management opportunity, adaptive management may reveal that it actually advances riparian development in terms of recruiting quality large woody debris and is a conservation opportunity as well.

Id.

203. *See, e.g.,* United States Fish and Wildlife Service and National Marine Fisheries Service, Habitat Conservation Plan (No Surprises) Final Rule, *reprinted in* Rufus C. Young, Jr., 1999 Update: The Endangered Species Act: Impacts on Land Use, SE 11 ALI-ABA 421, 456–57, Attachment I.

> Q. Isn't science always a surprise, especially with species that are rare. Isn't it dangerous to lock into a long-term plan with a non-Federal landowner on a species you might know little to nothing about?
>
> A. If there are significant biological data gaps associated with a species covered by an HCP's operating conservation program, adaptive management becomes an integral component of the HCP. Incorporating adaptive management provisions into the HCP becomes important to the planning process and the long-term interest of affected species when HCPs cover species with biological data gaps. In the HCP program, adaptive management is used to examine alternative strategies for meeting measurable biological goals and objectives through research and/or monitoring, and then, if necessary, to adjust future conservation management actions according to what is learned. Through adaptive management, the biological objectives of an operating con-

cooperative agreements can be written to include measures for modification. In addition, the Term Sheet contemplates only a thirty year life to the incidental take protection under the agreements.[204] Even with this sunset date, the Native Fish Habitat Conservation Plan might not have proven to be a sufficient scientific basis to the management agencies who must approve the Section 6 cooperative agreements on which the IFP is predicated to support a program covering the core of the upper Columbia basin, had the parties not agreed to introduce the possibility and a mechanism for change in the form of adaptive management.[205]

Adaptive management includes monitoring to detect the effects of a particular action on identified goals and a process for change in management if the need is indicated by monitoring.[206] To formulate the adaptive management program for the settlement, the parties relied on the Native Fish Habitat Conservation Plan (NFHCP).[207] The monitoring agreement goes to the heart of the identified uncertainties—for example, the effectiveness of the set-back and buffer zones in generating LWD recruitment and the relation of LWD to fish habitat,[208] the effect of these same measures on stream temperature,[209]

> servation program are defined using techniques such as models of the ecological system that includes its components, interactions, and natural fluctuations. If existing data makes it difficult to predict exactly what conservation and mitigation measures are needed to achieve a biological objective, then an adaptive management approach will be used in the HCP. The primary reason for using adaptive management in HCPs is to allow for changes in the operating conservation program, which may be necessary to reach the biological objectives of the HCP.
>
> *Id.*

204. Term Sheet, *supra* note 3, § II.D.1. Note, that although a thirty-year life would be considered a relatively short time span in the context of a water right, it is a considerable time for certainty under the ESA. Interview with Clive Strong, *supra* note 71.

205. Term Sheet, *supra* note 3, § II.B.2.f. Adaptive management is "based on trial, monitoring, and feedback. Rather than developing a fixed goal and an inflexible plan to achieve the goal, adaptive management recognizes the imperfect knowledge of interdependencies existing within and among natural and social systems, which requires plans to be modified as technical knowledge improves . . . ." W. WATER POLICY REVIEW ADVISORY COMM'N, WATER IN THE WEST: CHALLENGE FOR THE NEXT CENTURY, *at* 3–28 (June 1998) (citation omitted), *available at* http://hdl/handle.net/1928/364 (follow Chapter 3, Part 2 link). The Commission was appointed by the President pursuant to the Western Water Policy Review Act of 1992, Pub. L. No. 102-575, 106 Stat. 4600 (1992), to review the federal role in allocation and use of water in the West. Note that studies, done specific to the Salmon and Clearwater drainages since the agreement have narrowed, and continue to narrow this range of uncertainty. Interview with Clive Strong, *supra* note 71.

206. Janet C. Neuman, *Adaptive Management: How Water Law Needs to Change*, 31 ENVTL. L. REP. 11432, 11432 (Dec. 2001).

207. Term Sheet, *supra* note 3, § II.B.2.f.

208. *Id.* § II.B.2.f.i(a).

and the evaluation of sediment input and the effectiveness of road measures.[210] The settlement requires adoption of a plan that will include trigger points for evaluation and possible modification of measures.[211] Finally, the plan also contemplates the development of site specific measures in the event of a major change caused by such as forest fire, flood, and landslides.[212]

IV. ALTERNATIVE APPROACHES TO ADDRESS SCIENTIFIC UNCERTAINTY IN ACHIEVING WATER SETTLEMENTS

Approaches to reaching settlement in the face of scientific uncertainty can be divided into process elements and substantive elements. The process of gathering and evaluating the amount of data required for the types of decisions made in the Nez Perce settlement is complicated by the fact that it arises in the context of settlement. Parties will be justifiably reluctant to share any information generated in anticipation of litigation. Thus, at first glance, the necessary legal posture and the scientific search for truth appear to be at odds if the best information is unavailable. However, this may be only an apparent conflict if it is considered that settlement seeks not to answer legal questions, but to accommodate competing interests. Admittedly, the best available information will also assist in reaching the latter goal, but the questions asked may be different. For example, different information will be gathered and different scientific analysis applied if the question is as follows: how much water must remain in the stream to support habitat for a healthy fish population versus whether or not existing water use can be accommodated with conditions necessary for a healthy fish population? The first question results in quantities of flow that might be asserted in court. The second question allows tradeoffs among streams with limited and high use potential. It is important in settlement to set aside the litigation perspective and for the parties to define the questions in terms of the interests they seek to fulfill.

Once questions are defined, the parties have several options in choosing the process for seeking answers. The fact that the response

209. *Id.* § II.B.2.f.i(b).

210. *Id.* § II.B.2.f.i(c).

211. *Id.* § II.B.2.f.iii. Studies done since the adoption of the agreement have gone beyond mere monitoring to include modeling, thus allowing prediction of impacts before they occur. Interview with Clive Strong, *supra* note 71.

212. Term Sheet, *supra* note 3, § II.B.2.f.ii.

to most questions asked in the context of a water negotiation will include some degree of uncertainty discourages an approach in which each party gathers information independently. The result may be a battle over science rather than an informed negotiation.

The approach used in the Nez Perce negotiations is one proven way to proceed. The parties formed joint technical teams with members representing each party.[213] The technical teams worked together to gather and review information. The risks in this approach include the following: (1) removing the actual negotiation from political (for example, accountable) representatives to the technical level,[214] and (2) paralyzing negotiations due to the reluctance of scientists to respond in the face of limited data.[215] The parties to the Nez Perce settlement handled these issues through an iterative process of allowing technical team work to proceed, then bringing the technical team into meetings with negotiators to provide direction in the face of uncertainty. One representative for the Tribe, Jean Baldrige, participated as both a technical team member and a negotiator and is credited with bridging the gap between the pragmatism of negotiations and the search for truth of science.[216]

Alternatively, parties may jointly hire an independent consultant (or consultants if multiple disciplines must be covered). Although this approach may be more efficient, it requires additional financial resources. Governmental entities with in-house staff may more readily reallocate staff time than contract for services. Additionally, in the long run, governmental entities will be well served by building institutional memory within the agencies that will implement the agreement.[217] The Nez Perce settlement, like many settlements, requires not only actions to implement, but additional negotiated documents.[218] The greater the continuity in participants once implementation is turned over to agencies, the greater the likelihood of success.

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213. Interview with Clive Strong, *supra* note 71. Interview with Cindy Robertson, *supra* note 9. Telephone Interview with Jean Baldrige, *supra* note 104. Interview with Patrick Seymour & Richard "Tiny" Furman, *supra* note 84.

214. Observed by the author while participating in water negotiations.

215. Interview with Clive Strong, *supra* note 71. Interview with Cindy Robertson, *supra* note 9.

216. Interview with Clive Strong, *supra* note 71. Interview with Cindy Robertson, *supra* note 9.

217. For example, the IFP requires development of a field manual for implementation. Patrick Seymour, who participated as a technical team member during the later stages of negotiation, is now in the position charged with developing the manual. Interview with Patrick Seymour & Richard "Tiny" Furman, *supra* note 84.

218. Term Sheet, *supra* note 3, § II.B.2.g.iv.(a) (requiring development of a field manual by Idaho Dept. of Land to implement the IFP); *id*. § II.D (requiring submission of Section 6 cooperative agreements by Idaho to FWS and NOAA Fisheries). *See also* Truckee-Carson-Pyramid Lake Water Rights Settlement Act of 1990, Pub. L. No. 101-618,

In addition to the process issues, scientific uncertainty must be addressed as a substantive issue. The following paragraphs will discuss four possible approaches to use when negotiating natural resource disputes in the face of uncertainty.

The most touted method currently held up in regulatory situations for handling uncertainty is adaptive management. As noted above, adaptive management is "based on trial, monitoring, and feedback. Rather than developing a fixed goal and an inflexible plan to achieve the goal, adaptive management recognizes the imperfect knowledge of interdependencies existing within and among natural and social systems, which requires plans to be modified as technical knowledge improves."[219] The key elements of this approach are to identify goals that correspond to the objectives of the settling parties, monitor to measure whether the goals are achieved and to help in the analysis of why or why not, and a mechanism to alter the initial negotiated solution to better achieve the goals.[220] This approach addresses scientific uncertainty by allowing the solution to adjust as new scientific information is obtained.

The Nez Perce settlement provides for adaptive management under the IFP.[221] The monitoring established under the IFP serves as a useful illustration of appropriate targeting of variables. The set-back zones and size and number of trees to be left in the buffer zones were designed to produce a specific amount of large woody debris.[222] Monitoring will determine if that goal is achieved.[223] Because activity in the riparian zone is the primary human factor in whether there is sufficient large woody debris, the results of the monitoring will lead directly to any necessary changes in set-back and buffer zones.[224] In contrast, the monitoring in the NFHCP focuses on biological results.[225] Admittedly, the ultimate goals of both the IFP and the

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Title II, 104 Stat. 3289 (1990), *reprinted in* CALIFORNIA DEPARTMENT OF WATER RESOURCES, TRUCKEE RIVER ATLAS app. 1 (1991) (requiring development of a Truckee River Operating Agreement for coordinated operation of the reservoirs in the basin).

219. W. WATER POLICY REVIEW ADVISORY COMM'N, *supra* note 205.

220. *See id*.

221. Term Sheet, *supra* note 3, § II.B.2.f.

222. Interview with Patrick Seymour & Richard "Tiny" Furman, *supra* note 84. *See also* ENVIRONMENTAL IMPACT STATEMENT AND NATIVE FISH HABITAT CONSERVATION PLAN, *supra* note 186.

223. Term Sheet, *supra* note 3, § II.B.2.f.i.

224. Interview with Patrick Seymour & Richard "Tiny" Furman, *supra* note 84.

225. *See* U.S. FISH AND WILDLIFE SERVICE, FINDINGS AND RECOMMENDATIONS ON ISSUANCE OF AN INCIDENTAL TAKE PERMIT (TE034609-0) TO PLUM CREEK TIMBER

NFHCP are to increase fish population. However, by the time anadromous fish reach the Salmon/Clearwater drainages, they have swum the gauntlet of ocean harvest, hydropower dams, and hatchery fish competition. Designing a monitoring program to isolate the impacts on population from amount of LWD from these other factors would be highly tenuous.

The advantage of adaptive management is that it allows resource management to move forward in the face of uncertainty. The disadvantage is that it does not fit the "norm" of a water rights settlement in which finality, rather than an ongoing management program, is sought. Remember that the IFP portion of the Nez Perce settlement arises in the context of ESA issues, not the water allocation portion of the agreement. To satisfy the desire for finality in the water rights portion of the agreement, the 205 streams selected by the Tribe are cast in stone.[226] Although the initial instream flow amounts set relative to exceedence flows and subordination may be altered by the State after consultation with the Tribe, the settlement does not provide for monitoring of achievement of objectives or criteria for change.

This reluctance on the part of parties to consider adaptive management or some other flexible institutional program to handle uncertainty in water allocation bears some analysis. It may be that the settling parties reject this approach simply because western courts have always cataloged water rights with a location and an amount, and not because it is the best possible way to allocate the resource.

The human and natural variables that determine the supply of and demand for water are highly complex, and change will occur over time. Examples of water settlements that have encountered difficulty due to failure to take this inevitability into account include the Ak-Chin and Animas La Plata settlements. The Ak-Chin settlement authorized in 1978 went back to Congress twice:[227] first, in 1984 due to water supply problems,[228] and second, in 1992 to allow water market-

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COMPANY FOR THEIR NATIVE FISH HABITAT CONSERVATION PLAN FOR STATES OF MONTANA, IDAHO, AND WASHINGTON, *supra* note 186, at 3.

226. Interview with Clive Strong, *supra* note 71. Interview with Cindy Robertson, *supra* note 9. Telephone Interview with Jean Baldrige, *supra* note 104.

227. Settlement of Ak-Chin Water Rights Claims, Pub. L. No. 95-328, 92 Stat. 409 (1978). The original Ak-Chin settlement identified a quantity of water, but merely directed a study by the Department of the Interior to identify the source from federal lands. *Id*. § 2(a), 2(b)(1).

228. Ak-Chin Water Use Amendments Act of 1984, Pub. L. No. 98-530, 98 Stat. 2698 (1984). The 1984 amendments became necessary when it was clear that the water supply contemplated by the settlement was insufficient. *See id*. § 1. The amount was reduced and the source identified as the Central Arizona Project bringing water from the Colorado River. *Id.*

ing.[229] Animas LaPlata, Animas LaPlata light, and Animas LaPlata ultralight were modified again and again due to endangered species issues.[230] Each of these reflects the need for modification due to water or human changes. A solution that assumes no change in these variables may not withstand the test of time. This is not to say that finality in terms of the litigation that has brought the parties to the table in the form of dismissal with prejudice is not desirable to all parties, but accomplishing that need not preclude a settlement that can adapt to change.

An example of the use of adaptive management to settle a water rights dispute is in the United States National Park Service–Montana Compact concerning Yellowstone National Park.[231] The United States claimed reserved water rights sufficient to protect the hydrothermal system that supports the famous geysers and other thermal features of the park.[232] Legislative history strongly supported the position that protection of the thermal areas was a primary purpose for establishment of Yellowstone.[233] Thus, the parties agreed that a reserved water right might exist for this purpose.[234] Yet to collect sufficient information on the hydrothermal system in order to understand its extent and interaction with groundwater in Montana outside the Park would require the type of intrusive drilling into the system that es-

229. Federal Indian Statutes: Technical Amendments, Pub. L. No. 102-497, § 10, 106 Stat. 3255 (1992). The 1992 amendment allowed the tribe to lease its water for up to 100 years within certain specified groundwater management areas. *Id.* § 10(b); COLBY ET AL., *supra* note 1, at 114. State requirements that developers prove a 100 year water supply for new development spurred local support for the amendment. COLBY ET AL., *supra* note 1, at 114–15. Ten thousand acre-feet were quickly leased to the Del Webb Corporation for a planned community. *Id.*

230. Colorado Ute Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973. *See also* Scott McElroy, *Colorado Ute Water Rights Settlement*, *in* COLBY ET AL., *supra* note 1, at 138–44. The initial Colorado Ute settlement called for reservoir construction known as Animas LaPlata that would serve both Indian and non-Indian needs. Endangered species issues and environmental opposition led to two attempts to scale back on the project by eliminating much of the non-Indian component. These attempts were referred to among those in the Indian water rights community as "Animas LaPlata Light" and "Animas La Plata Ultralight."

231. United State National Park Service-Montana Compact Ratified, MONT. CODE ANN. § 85-20-401 (2005).

232. Amman et al., *supra* note 165, at 35, 41–44.

233. CONG. GLOBE, 42d Cong., 2d Sess. 159 (1871). *Id*. at 520 (1872). *See also* Amman et al., *supra* note 165, at 35, 47.

234. Amman et al., *supra* note 165, at 35, 42.

tablishment of the Park sought to avoid.[235] Instead of attempting quantification in the face of extremely limited data, the parties established a groundwater management zone in Montana adjacent to the Park in which monitoring occurs and regulations may be adjusted based on new information.[236] Similar to an instream flow right, a water right for a hydrothermal system to avoid impact on thermal features is a right to prevent impact by others, not a right to develop and use the water. Establishment of an institutional structure within which that right to protect is exercised and the necessary data collected can be viewed as simply a variation on that right. Thus, at least in the case of institutional rights, adaptive management is arguably consistent with the type of right the parties seek to recognize.

However, the decision of the parties to the Nez Perce settlement to avoid introducing too much flexibility may also relate to the loss of momentum and leverage with both agencies and funding sources that a major tribal water settlement carries. If monitoring were to show that painful changes are warranted, the parties may no longer have the opportunity to rally political support behind those changes. In the end, it may be a simple pragmatic choice by the parties in recognition that never again on this issue will they have as much political capital to spend.

The second and third possible approaches in the face of uncertainty are two sides of the same coin: the precautionary approach and the wait-and-see approach. The precautionary approach is used with increasing frequency in international agreements and manifests anything from a general statement[237] to very specific measures to implement the concept.[238]

In its most general form, the precautionary approach requires decision makers to look before they leap. The disadvantage of this approach in water basins with growing populations is that there may be

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235. *Id.*

236. MONT. CODE ANN. § 85-20-401, art. IV. (2005)

237. *See, e.g.*, UNITED NATIONS ENVIRONMENT PROGRAMME, RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT, Principle 15 (1992), *available at* http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=78&ArticleID=1163 ("Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.").

238. *See, e.g.*, Conference on Straddling Fish and Highly Migratory Fish Stocks, July 24–Aug. 4, 1995, *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, U.N. Doc. A/CONF.164/37 (Sept. 8, 1995), *available at* www.un.org/depts/los/convention_agreements/texts/fish_stocks_agreement/ CONF164_37.htm (requiring the establishment of trigger point for imposition actions). *See also* MONT. CODE ANN. § 85-20-401, art. IV. (2005).

economic impacts from over-restricting water use.[239] In addition, application of this approach to setting instream flow rights to protect salmon habitat is difficult in the context of a system already highly developed and a fish resource already in decline. It appears that we have already leapt. However, on the finer scale of local Salmon/Clearwater fish habitat, the parties did employ this approach in certain instances. For example, the Tribe chose downstream locations as defining points for instream flow to provide the greatest coverage possible.[240]

In contrast to the precautionary approach which errs on the side of environmental protection in the face of uncertainty, the wait-and-see approach errs on the side of protection of the economic uses of water. This approach would require monitoring for decline in identified objectives (that is, salmon population and large woody debris recruitment), and implementation of measures if problems arise. This approach may be politically expedient if high value water uses are involved.

However, the author does not recommend the wait-and-see approach in the context of water settlements for three reasons. First, measurable environmental impacts generally lag behind the development of whatever is causing them. Thus, by the time problems are identified, it may be too late. Second, as discussed above, a certain momentum develops around a water settlement which makes difficult decisions and change possible where it might not be in any other context. Postponing difficult decisions may render them impossible to implement down the road. Third, failure to plan ahead and to take all uses of water, including environmental uses, into account is what has placed the western United States in its current dilemma in which it faces tradeoffs between species and economic use. Far less environmental harm or economic dislocation will occur if decisions on instream flow needs are made before development occurs. In the case of the A List streams, Idaho and the Nez Perce acted early enough to provide certainty for the water development and aquatic habitat future of the drainages. In the case of the B List streams—those already developed to the point of habitat impact—a much more costly and painful local process will take place.

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239. Since the political clout generally lies with those making economic use of water, the author has yet to see an example of this in any water negotiation, but it is certain to be raised in the future.

240. Telephone Interview with Jean Baldrige, *supra* note 104.

The fourth and final approach is to provide a shorter time period for the life of a water settlement. Similar to adaptive management, this approach would require monitoring and institutional mechanisms to periodically revisit solutions. Unlike adaptive management, which generally only accounts for changes in measurable physical factors, revisiting solutions acknowledges the inevitable social changes that will also occur. The advantage of finality is in providing certainty for economic development of water. However, that certainty occurs at the risk of making poor decisions in the face of uncertainty and unnecessarily constraining the choices of future generations. In the Nez Perce settlement, the period of certainty provided by the measures designed to address ESA issues is thirty years.[241] This is a long time in the context of ESA regulation, yet one that recognizes the uncertainty in knowledge concerning what it takes to recover a species and what is possible given factors outside the control of a settlement. That same sort of approach applied to a water settlement acknowledges that a similar level of uncertainty exists in the allocation context. A generation is a healthy length of time to cast in stone the water development and aquatic habitat future of the rapidly growing and changing west.

The disadvantage of applying the short-term timeframe approach to a tribal water settlement is that century it could open the door to declining rights over time, similar to the legacy of the 19th century treaties. To avoid this, limitations on the types of changes, criteria for change, and a process to assure protection of tribal rights would be necessary.

Finally, regardless of the approach chosen, it is important that all parties bear some of the risk that the assumptions made during the course of negotiation are wrong. By distributing the consequences of a failed assumption among the parties, each will retain incentive to respond to the changed circumstances.

V. CONCLUSION

Settlement of natural resource issues such as the Nez Perce claims to off-reservation instream flow rights occur at the interface between law and science. The law provides a process for non-violent resolution of disputes. By invoking the legal process, the parties to a dispute may end up with a better understanding of the physical resource they seek to allocate, but this is not the goal or a necessary consequence of the process. Resolution is the goal of the legal process—for example, an end to the dispute to provide the certainty nec-

241. Term Sheet, *supra* note 3, § II.D.1.

essary to allow the parties to proceed with their economic endeavors. In contrast, the scientific process seeks to understand the resource and to provide appropriate solutions to its allocation. The settlement process must take this difference between law and science into account. Settlements must incorporate institutional and administrative mechanisms to adapt to change without re-opening litigation. Distribution of risks that the predictions are wrong must be equally distributed to maintain the political will to adapt.

This need for a means and a will to adapt is inherent in the very resource we seek to allocate and in our demand of it. Water supply varies. An "average" water year does not exist in nature. It is merely a convenient reference point for the wide variation in supply. Human values and, thus, demand on water are no more constant than the supply and equally difficult to predict. Even more difficult to ascertain are the needs of other species. Final dismissal of claims so that people can get on with their economic pursuits is essential, but not at the cost of a solution that leaves the future generations with unanticipated results. Water is too essential to life on earth to settle for less.