Conflict to Compact: Federal Reserved Water Rights, Instream Flows, and Native Fish Conservation on National Forests in Montana

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INTRODUCTION

Montana has a long history of protecting and managing its fisheries for ecological values, sustenance, and sport. The Montana Constitution and statutes require the state and its people to protect water resources for the conservation of fish, wildlife, and natural systems, yet many fish populations are limited by dewatered streams caused by drought and overappropriation. A recent water compact between the State of Montana and the U.S. Department of Agriculture Forest Service (USFS) provided an opportunity for the federal government to assist Montanans in restoring their treasured native fisheries but USFS must take certain proactive steps to ensure that instream flows are protected as development pressures and persistent drought descend on the state. This compact illustrates Montana’s commitment to conserving aquatic resources and persistent tension with over-utilization of these resources promoted by western water law.

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1. Montana’s first territorial fishing regulation restricting fishing to rod or pole and prohibiting the use of explosives, poisons, or nets predated statehood by 25 years. An Act in Relation to Trout Fishing, 407 Pub. L. of the Territory of Mont. (1865).

2. Montana’s cultural affinity for its natural resources pervades the law: “The state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations...the legislature shall provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources.” Mont. Const. art. IX, § 1. “The water resources of the state must be protected and conserved to assure adequate supplies for public recreational purposes and for the conservation of wildlife and aquatic life.” Mont. Code Ann. § 85-1-101(5) (2005). “The opportunity to harvest wild fish and wild game animals is a heritage that shall forever be preserved to the individual citizens of the state.” Mont. Const. art. IX, § 7.
During the development of the American West, little regard was given to the effects of water appropriations on fisheries or aquatic habitats. Historically, the prior appropriation doctrine recognized only consumptive uses of surface waters as beneficial, resulting in over-allocation of surface water and leaving miles of streams across the West depleted, destroying fish and aquatic life.\(^3\) Dry streams disrupted migrations of native fishes and degraded habitats favoring non-native, invasive fish species. In Montana, dewatered streams and migration barriers were prominent factors in the decline of native Arctic grayling, cutthroat trout, and bull trout.\(^4\)

A key strategy to restore native trout includes protection and restoration of stream flows necessary for each stage of their life cycles, especially protecting adequate stream flows in headwater refugia. The USFS administers lands encompassing headwaters of most western watersheds including a substantial proportion of remaining habitats for native trout in Montana.\(^5\) Unfortunately, USFS attempts to secure instream flows throughout the western United States have been litigious, contentious and largely unsuccessful.\(^6\)

After a century of litigation over water allocation, the USFS finally attained standing to protect instream flows in a water compact with the State of Montana (the Compact).\(^7\) The Compact resolves uncertainties surrounding federal water rights and provides a mechanism through which the USFS can preserve stream flows to benefit fish and wildlife. The Compact recognizes federal reserved rights, grants actual instream flow and administrative water rights, and allows USFS to reserve instream flows on additional streams.\(^8\) However, benefits of the Compact may be overwhelmed by

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\(^5\) Rangewide status reviews of Yellowstone and westslope cutthroat trout were completed by Montana Fish, Wildlife, and Parks in conjunction with the USFS. Bradley B. Shepard, Bruce E. May & Wendy Urie, Status of Westslope Cutthroat Trout (Oncorhynchus clarki lewisi) in the United States: 2002, Executive Summary (Montana Fish, Wildlife and Parks and U.S. Forest Service 2002); Bruce E. May, Shannon E. Albecke, & Travis Horton, Range-Wide Status Assessment for Yellowstone Cutthroat Trout (Oncorhynchus clarki bouvieri): 2006, Executive Summary (Montana Fish, Wildlife & Parks and U.S. Forest Service 2006).


\(^8\) Id.
growing demands for water coupled with dwindling water supplies due to
global warming mandating more proactive engagement by USFS in water
allocation issues to protect native salmonid fishes.

This article explores the history of federal reserved water rights and of
USFS failed attempts to secure instream flows in western states while con-
trasting those outcomes with provisions in the Compact. Part I briefly re-
views the origin, and evolution of the Winters doctrine of federal reserved
water rights and explores the USFS role in development of the doctrine.
Part II describes obstacles confronting USFS attempts to exercise federal
reserved water rights throughout the West and illustrates the reluctance of
the courts to recognize federal rights. Part III describes the Compact and
the steps negotiated to overcome historic obstacles to federal reserved water
rights. Finally, Part IV argues that certain weaknesses in the Compact may
render it inadequate to protect native trout in the face of global climate
change and advocates rulemaking to rectify weaknesses of the Compact.

I. THE WINTERS DOCTRINE AND FEDERAL RESERVED WATER RIGHTS

The doctrine of federal reserved water rights fundamentally clashed with
the emerging prior appropriation doctrine commonly utilized in developing
western states because the federal rights were unquantified and ill-defined.9
The prior appropriation doctrine, commonly defined as “first in time, first
in right,” allocated surface waters through a local water rights hierarchy:
the senior diverter (the first to appropriate water) took the first share fol-
lowed by junior appropriators ensuring the maximum amount of water was
diverted regardless of any detrimental impacts on aquatic life.10 This sec-
tion chronicles the development of federal reserved water rights and the
early clash with state oversight of water allocation, foreshadowing the diffi-
culties that would repeatedly frustrate USFS attempts to secure instream
flows for fisheries and aquatic habitat.

State predominance over water allocation in the West evolved out of fed-
eral deference to the customs of early pioneers and gold miners that entitled
the first appropriator in time to exercise the first right to use the waters.11
The federal government stood by while patentees of the public domain allo-
cated water among themselves under the prior appropriation scheme.12
Congressional Acts of 1866 and 1870 obligated the federal government to
recognize private rights including all grants subject to the prior appropria-
tion doctrine.13 The Desert Land Act of 1877 declared that rights to water

10. Id.
11. Id.
12. Id.
13. Act of July 26, 1866, ch. 235, 14 Stat. 251; Act of July 9, 1870, ch. 235, 16 Stat. 217; Ranquist,
supra n. 9, at 644.
on public domain lands of 12 western states were subject to prior appropriations and that all surplus water was available for appropriation, subject to prior rights.14 Until the concept of federal reserved water rights was announced in Winters v. U.S.,15 citizens of the West had the luxury of ignoring the federal sovereign’s authority to use water for its own purposes.16

The Winters doctrine emerged from the banks of the Milk River in north central Montana. On May 1, 1888, the United States established a reservation for the Gros Ventre and Assiniboine tribes (Tribes) with the Milk River defining its northern border.17 Within a year, the Tribes began developing a headquarters and reclaiming land for agriculture. By July of 1889, the Tribes and federal agents were diverting 10,000 miner’s inches of Milk River water to irrigate 30,000 acres.18 As the Tribes’ developed its appropriations, homesteaders were building a series of diversion dams upstream of the Tribes’ diversions to irrigate their newly acquired homesteads, duly noticed their appropriation to the county clerk, and in 1900 left little water to meet the Tribes’ needs.19

The erstwhile irrigators made a miscalculation that would echo across the West, pitting federal reserved water rights against the prior appropriation doctrine. Rather than acknowledging the Tribe’s prior appropriation, the irrigators argued that the Tribes and the United States had relinquished any rights to Milk River water when Montana was admitted to the Union.20 In Winters v. United States, the U.S. Supreme Court held that in establishing the reservation the United States had impliedly reserved water rights necessary to meet the purposes of the reservation - now known as the Winters doctrine.21 This historic decision directly confronted the state-focused prior appropriation doctrine under development throughout the West.22

Since the Winters doctrine was announced, federal reserved water rights generated tension between federal agencies and western states. An early indication of developing tensions was Henry Winter’s contention that he and his co-defendants had no notice of the Tribes’ prior appropriation, notice being key to establishing a prior appropriation.23 Tensions arising from lack of notice compounded when the strict water allocation process of the prior appropriation doctrine collided with unquantified implied water reser-

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16. Ranquist, supra n. 9, at 644.
18. Id.
19. Id. at 568.
20. Id. at 577.
21. Id.
22. Ranquist, supra n. 9, at 643-646.
23. Winters, 207 U.S. at 569.
vations under the Winters doctrine. Furthermore, implied reservations of water were immune to abandonment claims and were perceived to leave water unallocated, thus wasting water and interfering with state allocation decisions.

The uncertainty inherent in federal reserved water rights spilled over, disrupting water allocation and enforcement of federal reserved water rights on USFS lands throughout the west. The USFS administers vast acreages throughout the western United States, where more than half of all surface waters originate in headwater streams on USFS lands. Four major obstacles confounded USFS attempts to formalize reserved water rights in the West:

- States were reluctant to recognize non-diversionary in-stream water rights as beneficial uses because instream rights confounded the prior appropriation system;
- Acute resistance arose against protection of instream flows to benefit fish and wildlife to the detriment of mining and agriculture;
- State water allocation processes were poorly suited to allow USFS applications for water rights for anything but traditional diversionary administrative purposes; and
- States argued that USFS had better means of protecting instream flows through their own administrative processes and special use permitting.

Each of these obstacles consistently reemerged in proceedings across the West as USFS attempted to exercise its federal reserved water rights. While the Winters doctrine provided a tool by which USFS could seek to secure its reserved water rights to benefit fisheries and aquatic life, western states defied USFS attempts to secure instream flows. The next section describes the process by which courts defined the scope of federal reserved water rights and USFS efforts to expand the scope of the Winters doctrine to encompass instream flows for fish and wildlife and describes resistance by western states against USFS efforts.

25. *Id.* at 1091.
27. Amos, *supra* n. 6, at 1243-1244.
29. Amos, *supra* n. 6, at 1244.
II. FEDERAL RESERVED WATER RIGHTS AND THE U.S. FOREST SERVICE

As early as the mid-1970's, the USFS endeavored to enforce federal reserved water rights to protect instream flows for fish and wildlife. Initially USFS gained traction with early judicial interpretations of Winters federal reserved water rights for protecting aquatic life, courts progressively restricted the application of reserved water rights on USFS lands into an impossibly narrow, nearly insurmountable standard. This section traces the evolution of federal reserved water rights jurisprudence from landmark U.S. Supreme Court decisions to proceedings in water courts in two western states, Colorado and Nevada, that repeatedly frustrated USFS attempts to exert reserved water rights to benefit fish and wildlife.

A. USFS Federally Reserved Water Rights in Federal Court

After laying nascent for several decades, the courts revived the Winters Doctrine but quickly narrowed it scope. The U.S. Supreme Court affirmed the Winters doctrine and clarified its scope in Arizona v California. In Arizona, the states of Arizona, California, Nevada, New Mexico, and Utah were battling over allocation of the Colorado River when the United States intervened to reserve its claims for water rights on several Indian reservations and wildlife refuges. The Court not only affirmed implied water reservations on Indian reservations but held that implied water rights were reserved when lands were set aside for wildlife refuges, recreation areas and national forests.

The U.S. Supreme Court addressed the breadth of the implied reservation doctrine again in Cappaert v. U.S. In Cappaert, the United States filed suit to enjoin groundwater pumping that was eliminating habitat for Devil's Hole pupfish, for which the Devil's Hole National Monument had been established. The Court held that the Monument had been reserved to protect pupfish and therefore the government had impliedly-reserved the water necessary to sustain the fish when the Monument was created. However, the Court extended recognition of the implied reservation of water only to the minimum amount necessary to fulfill the purposes of the reservation. These decisions appeared to empower USFS to assert reserved water rights as instream flows but subsequent events restricted the application of those rights.

33. Id. at 551.
34. Id. at 588, 595.
36. Cappaert, 426 U.S. at 133-134.
37. Id. at 137.
38. Id.
Two events significantly stifled the utility of federally reserved water rights for fisheries on USFS lands following *Cappaert*. First, Congress passed the McCarren Amendment, which subjected the United States federal claims for water to the authority of state water adjudications. In *U.S. v. District Court in and for the County of Eagle*, the Court held that the scope of the McCarren Amendment encompassed all water rights claimed by the United States including implied reservations. Subjecting federal agencies to state water adjudication provided the states with certainty in water adjudications, but subjected USFS water rights to intense scrutiny in state courts skeptical of federal water rights.

The second blow to federal reserved rights on national forests arose in New Mexico, when USFS applied for instream flows in the Rio Mimbres and its tributaries on the Gila National Forest to benefit fish, wildlife, and recreation. In *Mimbres Valley Irrigation Co. v. Solopek*, the New Mexico Supreme Court affirmed a state water court refusal to recognize the rights for fish, wildlife, and recreation, claiming that the purposes of the forest reservation did not include those uses. In *United States v. New Mexico*, known as the *Mimbres* decision, the U.S. Supreme Court affirmed the New Mexico decision, holding that the USFS implied reservation of water under The Organic Act of 1897 could not be used to obtain instream flows to protect recreation, fish, and wildlife unless the enabling legislation that created the federal reservation explicitly stated those purposes. The Organic Administration Act of 1897, the original legislation enabling federal forest reservations, mandated that “no National Forest shall be established except to improve and protect the forest within the boundaries of or for the purpose of securing favorable conditions of water flows and timber.” The Organic Act, the U.S. Supreme Court interpreted this provision to mean that the forest reserves essentially had only two purposes, to protect water flows and generate timber. Thus, the Court handed down a new standard for determining validity of federal reserved water rights claims: “a careful examination of the asserted water rights and specific purposes for which the reservation was made.”

While *Mimbres* narrowed the scope of federal reserved rights on national forests to protect favorable conditions of water flows and timber, other tools became available to USFS to secure instream flows for fish and wildlife.

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40. 401 U.S. 520, 523-524 (1971).
42. *Id.*
44. *Mimbres*, 438 U.S. at 718.
47. *Id.* at 700.
While acknowledging the importance of federal reserved water rights in its water policy, the USFS recognized other options including: obtaining water rights under state law where implied reservation doctrine does not apply; purchasing essential water rights otherwise unavailable; and using water efficiently, and in water-scarce areas, frugally.\textsuperscript{48}

In addition to these tools, another administrative means arose for protecting instream flows. The Federal Land Policy and Management Act of 1976 (FLPMA) authorized the Secretary of Agriculture to "grant, issue, or renew rights-of-way over, under or through such lands for reservoirs...of other facilities and systems for the impoundment, storage, transportation or distribution of water."\textsuperscript{49} Practically, this meant that no water could be diverted from streams on forest lands or be transported across national forests unless USFS issued a special use permit. In issuing a special use permit, USFS could impose conditions on the permit requiring permitees to bypass a minimum flow past their diversion.\textsuperscript{50} An additional measure of protection for streamflows was implied in FLPMA Section 505, which requires USFS to minimize damage to scenic values and fish and wildlife habitat.\textsuperscript{51}

Although FLPMA administrative authority gave USFS a means of protecting instream flows for fish and wildlife, USFS continued to pursue federally-reserved water rights to protect flows from development upstream of USFS boundaries: as a strong and effective notice to water users of federal intention to protect instream water rights; as a means to minimize consumption of agency resources required to process special use permit applications and renewals;\textsuperscript{52} and, as a hedge against political influences pressuring USFS to minimize conditions on special use permits.\textsuperscript{53} After Mimbres, USFS continued to pursue instream flows for fisheries although courts narrowly interpreted purposes for minimum flows.\textsuperscript{54} USFS claims for instream water rights for fish, wildlife, and recreation were eventually transformed into claims for flows necessary to maintain functional stream channels under the guise of favorable conditions of flow.\textsuperscript{55}

In spite of judicial reluctance to recognize instream flows for fish and aquatic life and availability of alternatives tools to protect instream flows, the USFS continued to doggedly pursue federal reserved water rights.

\begin{itemize}
\item \textsuperscript{49} 16 U.S.C. § 1761(a)(1) (2007).
\item \textsuperscript{50} Id.
\item \textsuperscript{51} Gillilan & Brown, \textit{supra n. 30}, at 206-208.
\item \textsuperscript{52} Id. at 208-212.
\item \textsuperscript{53} For example, Colorado municipalities brought congressional pressure to bear on the Secretary of Agriculture to forbid instream flow conditions from being placed on the special use permits that may have hindered their ability to fully appropriate their water rights. \textit{Id}
\item \textsuperscript{54} \textit{Id.}
\end{itemize}
However, USFS efforts to secure reserved instream flow rights were repeatedly frustrated in state water adjudications, as illustrated in the following Colorado and Nevada cases that stand in contrast to the Compact in negotiation in Montana.

B. Western State Resistance to Federal Reserved Rights

Federal reserved water rights proved to be a futile means of securing instream flows to protect fish and wildlife habitat on USFS lands throughout the West. The State of Colorado was the forefront of resistance to USFS assertions of federally reserved water rights. The Colorado Water Right Determination and Administration Act of 1969 fundamentally transformed Colorado’s water allocation system and initiated statewide adjudication of its surface waters.\textsuperscript{56} The Act divided the state water court into seven divisions to adjudicate water rights throughout the state and USFS intervened in each division.\textsuperscript{57} In 1982, USFS aspirations for instream reserved water rights in Colorado Water Divisions 4, 5, and 6 met their demise when judges refused to acknowledge instream flow as legitimate purposes for reserved rights.\textsuperscript{58} In \textit{U.S. v. City and County of Denver}, USFS claimed instream rights to protect recreational, scenic and wildlife values in streams under the authority of the Multiple-Use Sustained-Yield Act of 1960 (MUYSA).\textsuperscript{59} The Colorado Supreme Court undertook the \textit{Mimbres} analysis of a “careful examination of the asserted water rights and specific purposes for which the reservation was reserved.”\textsuperscript{60} The Court held that MUYSA did not amend the Organic Act’s limited purposes for reserved forest lands and did not expand USFS authority to reserve instream flows to protect recreational, scenic, or wildlife. Furthermore, the Court ruled that USFS failed to prove that instream flow rights would achieve the purposes of the reservation.\textsuperscript{61} However, the Court affirmed the water court’s decision to grant USFS appropriative water rights for administrative sites, road maintenance and fire suppression which fit snugly in the prior appropriation scheme.\textsuperscript{62}

While \textit{Denver I} was being litigated, another battle over federal reserved water rights was underway in Nevada, where USFS asserted instream flows rights for streams on the Toiyabe National Forest during adjudication of the

\textsuperscript{57} \textit{U.S. v. City and County of Denver}, 656 P.3d 1, 10 (Colo. 1982) [hereinafter \textit{Denver I}].
\textsuperscript{58} Colorado Water Division 4 encompasses the Gunnison, Uncompahgre, and San Miguel river basins; Division 5 includes the mainstem Colorado River and the White River; and Division 6 includes the Yampa, Green and North Platte River basins. § 37-92-201 C.R.S. (2008); Colorado Judicial Branch, Colorado Water Districts, Water Courts, http://www.courts.state.co.us/supct/supctwaterctindex.htm (accessed July 7, 2008).
\textsuperscript{60} \textit{Mimbres}, 438 U.S. at 700.
\textsuperscript{61} \textit{Denver I}, 656 P.2d at 22-23.
\textsuperscript{62} \textit{Id.} at 15.
Carson River basin. In *U.S. v. Alpine Land and Reservoir Co.*, the U.S. Court of Appeals for the Ninth Circuit affirmed a lower court ruling that rejected claims for instream reserved rights on the Toiyabe National Forest. The lower court held that evidence did not support the USFS claim that flows were the minimum necessary for timber production or watershed protection. Furthermore, the court held that all of the water of the Carson River had been appropriated and existing senior appropriators would preclude any new diversions within forest boundaries anyway.

While *Denver I* and *Alpine Lands* were being settled, the USFS was also defending claims for instream flows in streams throughout the Pike and San Isabel National Forests in Colorado Water Division 2. The Division 2 Water Court granted summary judgment against USFS claims, interpreting *Denver I* to have held that USFS was not entitled to reserve instream flows on national forests and therefore was collaterally estopped from any further claims of instream reserved rights in Colorado.

In *U.S. v. Jesse*, the Colorado Supreme Court overturned the Division 2 Water Court’s interpretation of *Denver I*. The Colorado Supreme Court clarified that their *Denver I* holding meant that the USFS was not entitled to instream flows in that particular case because it failed to claim reserved rights for the stated purposes of the of the reservation - to secure favorable conditions of water flows and reliable timber supply. In reversing the summary judgment, the Court acknowledged testimony by Hilton Silvey, a USFS hydrologist who testified that advances in the field of fluvial geomorphology demonstrated that recurring flood flows are necessary to maintain stream channels in a condition that promotes favorable conditions of return flow. In assessing this claim, the Court delved deeply into the legislative intent expressed in the chain of congressional enabling acts establishing the USFS, finding that the maintaining instream flows was clearly within the intent of Congress in establishing forest reserves. Furthermore, the Court expressly overturned the water court’s reliance on dictum (that minimum flows on national forests are not to be recognized) and set forth very narrow guidelines by which the USFS instream claims should be analyzed.

While the *Jesse* decision left open the possibility of securing instream flows on national forests, the Court set forth an intensely narrow analysis.

63. *U.S. v. Alpine Land and Reservoir, Co.*, 697 F.2d 851 (9th Cir. 1983).
64. Id. at 859.
68. Id.
69. Id. at 502.
70. Id. at 498.
71. Id. at 500-502.
72. Id. at 503.
The Court stated, "if after full consideration of the legislative history and factual circumstances the water court determines that the purpose of the forest reserves will be entirely defeated unless the United States is allowed to maintain minimum instream flows over forest lands, the United States should be granted reserved water rights." While acknowledging that instream flows might actually meet the purposes of the reservation, the "entirely defeated" standard established an apparently insurmountable burden of proof in future proceedings.

In the spirit of the Jesse "entirely defeated" standard, the USFS plunged into Colorado Water Division 3 adjudications claiming instream flows for channel maintenance on streams throughout the Rio Grande and Gunnison National Forests. The USFS empaneled an impressive array of expert witnesses backed by volumes of hydrological data supporting USFS claims that annual spring floods, or flushing flows, were necessary to maintain stream channels for favorable conditions of flows. Without annual flushing flows, USFS claimed, the purposes of the reservation would be entirely defeated because streams would become degraded.

After over a year at trial, highly technical testimony from forty-nine expert witnesses, fifteen hundred exhibits on fifteen thousand pages of court reporter transcripts, Judge Berhrman of Colorado Division 3 Water Court held that the USFS, "failed to show that the reserved rights claimed are necessary to preserve the timber or secure favorable water flows ... and failed to establish the minimum amount of water needed to ensure that the purposes of the reservation ... will not be entirely defeated." However, Judge Behrman agreed that the USFS established the need for water rights to suppress fires and for administrative purposes (e.g., tree farms and patrol cabins) and granted water rights for those purposes.

Essentially, this line of cases illustrates that USFS was able overcome only two primary obstacles to asserting reserved rights: it established discrete water rights at administrative sites and courts acknowledged its FLPMA administrative controls over water appropriations on the national forest lands through special use permits. State reluctance to recognize non-diversionary rights and to recognize fish and wildlife as beneficial uses hindered USFS ability to protect instream flows on forestlands. In Judge Behrman's court, the Jesse "entirely defeated" standard became an insurmountable burden of proof, well beyond a reasonable doubt. The standard

73. Id. (emphasis added).
76. Id.
77. Id. (unpublished record of decision Case No. 81CW183 at 18-20).
78. Id.
was so strict that even the nation’s top hydrologists producing reams of technical data could not convince the court that protecting minimal instream flows was necessary to preserve favorable conditions of flow. In doing so, the Colorado courts dealt a death blow to forest instream flows, entirely defeating the purpose of federal reserved water rights by refusing to recognize substantial technical evidence that instream flows were necessary to fulfill the purposes of the USFS reservations. This chain of cases from Mimbres to Jesse and Division 3 were effective in sending a message to the USFS that instream flows were not to be obtained through state adjudication proceedings. In contrast to the protracted litigation that engaged the USFS in Colorado and Nevada, the Compact under development between USFS and Montana diverged in both the process of exerting federally reserved water rights and the success in obtaining instream flows. The next section describes the development of the Compact and briefly summarizes its provisions.

III. THE MONTANA COMPACT

Concurrently with USFS battles to obtain instream flows in other western states, USFS entered negotiations with the State of Montana to resolve federal reserved water rights claims on national forests in Montana. This section describes the purposes and key provisions of the Compact and demonstrates progress toward protecting instream flows for fish and wildlife on forest lands in Montana. While significant protections for instream flows were forged in the compact, this section also describes certain limitations in the Compact that may render it inadequate to protect remnant populations of native trout in the future.

Rather than litigate federal reserved water rights, the 46th Legislature of the State of Montana created the Reserved Water Rights Compact Commission (Commission) in 1979 to facilitate statewide water adjudication by resolving reserved water right claims by Indian tribes and the federal government. In forming the Commission, the legislature acknowledged uncertainties inherent in federal reserved rights and the tension created between tribes, the federal government, and states when the McCarren Amendment subjected federal water rights to state adjudication. Furthermore, the legislature clearly understood the nature of expensive, prolonged litigation over federal reserved water rights underway across the West.

The Commission and USFS entered into negotiations over reserved water rights on national forest lands in Montana in 1992. After fifteen years of negotiations, the Compact was ratified in 2007 by the 60th Legislature of

the State of Montana. During a hearing on the Compact in the House Natural Resources Committee, the Commission Chair recited the objectives of the compact: avoiding expensive and protracted litigation over federal reserved water rights; facilitating statewide adjudication of water rights; providing certainty to senior water rights holders throughout the state, and allowing USFS to protect resource values.

The final Compact was introduced to the 60th Legislature as Senate Bill 248, signed into law on April 17, 2007, and codified at Section 85-20-1401 of the Montana Code Annotated. In his testimony before the House Natural Resources Committee, the Commission Chair proclaimed the Commission's intent for Montana to step beyond the constraints of Mimbres and Jesse and allow USFS to protect its domain by securing instream flows. The Recitals to the Compact made clear the desire of the legislature and USFS to conserve fisheries stating, "the United States believes that the natural flows needed for favorable conditions of flow, for fisheries, and for other resource management goals and obligations on National Forest System Lands can be achieved ... through the use of state law as provided in this Compact."

The Compact resolved many of the issues hindering earlier USFS efforts to secure water reservations. Consistent with earlier adjudications, the Compact recognized discrete administrative uses and FLPMA administrative authority to restrict water use within national forests. However, the Compact also explicitly recognized certain reserved water rights, created new instream water rights, and established a process by which the USFS could secure future water reservations. In exchange, the USFS submitted to the State's adjudicatory authority and relinquished any claims under the implied reserved rights doctrine. The Compact expressly recognized federal reserved water rights on 66 streams for discrete appropriative uses (e.g. at administrative sites, or tree farms) and dispersed administrative uses, such as emergency fire suppression and road maintenance, awarding priority dates ranging from 1897 to 1907. Furthermore, Article II of the Compact recognized a reserved water right for the entire flow of the South Fork of the Flathead Wild and Scenic River to its terminus at Hungry Horse Reservoir.

84. National forest lands occupy 50 of 85 basins statewide and final decrees in 43 basins were stalled pending ratification of the Compact. Until final decrees are issued in each basin, water rights holders cannot be assured of the priority, quantity or season of use of their respective rights. Adjudication was suspended by statute until Compacts were resolved. Mont. Code Ann. § 85-2-217 (2007).
86. Id.
Article III of the Compact established administrative procedures for changes or expansions of discrete uses, and enforcement of USFS water rights. In Article IV, the USFS relinquished any further claims for reserved rights on forest lands, but reserved the right to change diversionary rights to instream flow. In consideration, the State agreed as a condition precedent to amend water statutes to recognize USFS administrative authority to restrict water appropriations on USFS lands through FLPMA special use permitting authority. This provision creates mandatory "sequencing", meaning any water right applicant proposing activity on, within, or across national forest lands must first secure a special use permit from the USFS prior to applying for a water right from the state. The Montana Department of Natural Resources and Conservation (DNRC) shall not accept an application for a water permit that has not met that requirement.

Article V of the Compact establishes instream water rights on 78 streams on national forest lands statewide for the beneficial uses of fish and wildlife. Unfortunately, the priority date for these instream rights was the effective date of the Compact, April 17, 2007 rather than the date of the original reservations. The reason the number of streams was so limited, according to the USFS Regional Forester, was because only those streams had sufficient hydrological data to quantify the right, leaving hundreds of stream miles unquantified for lack of staff and resources.

Article VI establishes a process for USFS to set aside further instream flow reservations. The Compact authorizes USFS to use the state water reservation process for any purpose, even if not considered beneficial use under statute and even in basins closed to new appropriations. In addition, the Compact authorizes an expedited application process for instream flow reservations when the purpose of the reservation is to maintain minimum flows for fisheries. This process considers a completed application from USFS conclusive evidence of purpose, need, and amount if minimum flows are quantified using the Wetted Perimeter Method (WETP). Article I (15) defines WETP as:

an instream flow methodology for fisheries flow based on habitat for food production in the shallow, fast-moving water of a stream. The wetted perimeter is the distance across the bottom and sides of a stream channel, measured at a riffle area that is in contact with the water. A graph of the

94. Id.
wetted perimeter versus discharge generally yields two inflection points. The upper inflection point of the graph is the level above which large increases in discharge result in a small increase of the wetted perimeter. The lower inflection point of the graph is the level below which small decreases in discharge result in large decreases of the wetted perimeter.  

The WETP method is designed to identify and protect base flows—the minimum flows sufficient to maintain pool volume and invertebrate production in riffles, the steep, shallow zones between pools where most production occurs. If USFS follows the WETP method, the DNRC shall issue an instream flow reservation to the USFS unless objectors demonstrate to a preponderance of evidence that WETP analysis was inaccurate, the stream does not support a population of fish, or the reservation would interfere with a feasible public interest project actually planned for completion within 10 years of the application.

The major inadequacy of the Compact is that base flows are not sufficient to “maintain favorable conditions of flow” or protect the fish species listed in the Compact from further appropriations. However, the Compact allows USFS to petition for rulemaking under Montana Administrative Procedures Act to authorize an alternative method of calculating instream flows. Rulemaking is conditioned upon the proposed method being applied to streams with existing populations of native salmonid fishes or any other species listed under the Endangered Species Act. Furthermore, the proposed method must be accepted in the scientific community and the method must be based on actual field data collected on stream.

While the Compact has made significant strides in allowing USFS to engage in water conservation to benefit fisheries within national forests, it fell short by neglecting the critical role that annual high flows during spring runoff (flushing flows) play in protecting and enhancing fisheries habitats. The next section provides scientific justification for flushing flows and argues that USFS should engage in rulemaking to select an alternative method to WETP that adequately quantifies flushing flows to maintain stream habitats and protect native fish populations.


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IV. A CASE FOR FLUSHING FLOWS

Through the Compact, the USFS achieved a significant accomplishment toward its goal of protecting instream flows on USFS lands in contrast to results in other western states. However, the Compact did not adopt means of preserving the annual pulse of spring runoff that maintains stream channels known as flushing flows. A primary intent behind the Compact was the protection of native trout and grayling, but WETP is inadequate to protect and enhance stream habitats on national forests because it does not account for annual flushing flows. This section elaborates on inadequacies in the Compact, reviews scientific literature emphasizing the need for flushing flows, and discusses the likelihood that global climate change will increase the urgency for USFS to engage in water reservations to secure flushing flows in a warming climate in order to forestall extinction of native salmonids.

The Compact allows USFS to reserve flows “at the upper inflection point of the Wetted Perimeter Methodology ... when the purpose of the reservation is for an existing population of bull trout, westslope cutthroat trout, Yellowstone cutthroat trout, Columbia River redband trout, Arctic grayling, or any other fish species listed in the future under the Endangered Species Act of 1973, 16 U.S.C. §1531, et seq.” Unfortunately, the WETP method assumes that minimum summer flows are adequate to protect fish habitats in pools and riffles through summer and winter months. The method is not designed to quantify flows necessary for “flushing the annual accumulation of bottom sediments and maintaining the existing channel morphology.” The WETP method estimates a minimum flow level only sufficient to protect pool-dwelling species and does not protect habitat features like riffles, backwaters, and runs required by other aquatic species in other seasons. Low flow quantification methods like WETP allow chronic low flow conditions that reduce trout abundance, alter the composition of the fish community, and impair aquatic food supplies suppressing fish growth rates.

Each of the species named in the Compact at Article VI.B.1(a) are salmonids, or members of the trout family Salmonidae, which evolved in naturally-fluctuating stream conditions, adapting to seasonal fluctuations in

108. Leathe & Nelson, supra n. 91.
109. Id.
110. Luther P. Aadland, Stream Habitat Types: Their Fish Assemblages and Relationship to Flow, 13 N. Am. J. of Fisheries Mgt. 790 (1993).
111. J. M. Elliot, Periodic Habitat Loss Alters the Competitive Coexistence between Brown Trout and Bullheads in a Small Stream over 34 Years, 75 J. of Animal Ecology 54 (2006) (reporting that low flows diminished food supplies and caused brown trout growth and abundance to decline).
Maintaining healthy salmonid populations requires flow standards that restore natural flow fluctuations and channel processes. Salmonids depend on habitat quality and quantity characterized by a dynamic equilibrium between stream flows, the quantum of sediments eroded and transported at different flow levels, and the stream’s shape or channel morphology. A stream reshapes and maintains its channel during flood stages that generally recur every 1.18 to 3.26 years. This flood stage or flushing flow is a stream’s bankfull (or effective) discharge, the flow necessary to mobilize sediments, clean spawning gravels and refresh riffles, pools, and gravel bars. Without flushing flows, fine sediments accumulate in gravels, impair spawning success, suppress aquatic invertebrate production, limit growth, and deplete trout populations by limiting reproduction.

In addition to cleaning gravels and carving aquatic habitats, annual flood flows are critical to fish migrations, riparian vegetation, and recharging groundwater tables. High flows cue native bull trout, westslope and Yellowstone cutthroat trout spawning migrations to access spawning streams, even streams that run dry by late summer. Annual flooding and occasional inundation of floodplains build soils that drive productivity of river-floodplain systems and maintain healthy riparian vegetation. Presence of dense riparian (or streamside) vegetation is strongly correlated with fish habitat quality and trout abundance.

113. Id.
116. Id.
wood forests, evolved to establish seedlings on freshly deposited gravel bars and cannot take root without annual floods. Annual flushing flows recharge groundwater aquifers that provide midsummer flow relief, buffer temperature fluctuations, and supply groundwater upwelling zones vital for bull trout spawning habitat.

Annual flood flows are necessary to maintain favorable conditions of flow and habitat conditions for salmonid fishes. Because USFS lands in Montana support substantial habitat for salmonids, rulemaking provisions in the Compact should be implemented to protect high spring floods in streams on forest lands that will maintain healthy aquatic habitats and facilitate fish migrations. While provisions of the Compact may forestall extensive water development on national forest lands in Montana, protecting a full range of flows to maintain aquatic habitats may require additional measures, especially if water demands increase with accelerated development pressures and declining supplies in the face of global climate change.

A. Climate Change and Rising Water Demands

Global climate change is a looming threat to water supplies and aquatic species reliant on stream flows because it will increase demand while decreasing water availability. While the Montana Compact provides a mechanism for USFS to protect minimum base flows and specifically designates fisheries as a legitimate purpose for USFS reservations, base flows alone are unlikely to adequately maintain aquatic habitats. Furthermore, scientific evidence concludes that flushing flows are necessary to protect and maintain salmonid habitats. This section raises the specter of increased development of water on national forests in the face of potentially dwindling water supplies due to global climate change and suggests that USFS should take a proactive stance and implement rulemaking to protect spring high flows and fisheries resources on forest lands.

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127. Beechie & Bolton, supra n. 112.
Among the greatest threats to survival of Montana’s native salmonids is declining water quality and water quantity due to persistent drought.128 Salmonids are cold-water species, relying on cold, clear water year-round.129 Water temperatures affect growth, reproduction and survival of salmonids and their ability to compete for resources.130 The range of habitats suitable for salmonids is circumscribed by lower elevations and southern latitudes with persistent warm water temperatures. Where mid-summer water temperatures exceed salmonids’ physiological limits, stress or mortality is likely to occur and populations are unlikely to persist.131 Climatic warming is likely to become a prominent factor limiting salmonid abundance through decreased stream flows and increased water temperatures.132 Climatic warming is likely to reduce winter snowpack and the frequency and intensity of flooding, which in turn decreases habitat complexity.133 Changes in stream flows and water temperatures will have a profound effect on biodiversity, especially for native salmonids.134 An average annual increase in water temperature of 1 degree centigrade is predicted to reduce suitable salmonid habitat by 17 percent.135 A doubling of atmospheric carbon dioxide is projected to cause increases of 3 degrees centigrade resulting in a 50 percent loss of salmonid habitats in the Rocky Mountain West.136

Because of its focus on consumptive uses and tendency toward overallocation of surface waters, western water law is ill equipped to equitably allocate dwindling water supplies among agriculture users, municipalities, and for aquatic life.137 As water supplies dwindle due to diminished snowpack, early runoff, and decreases summer precipitation, competition for water will intensify and agriculture and fisheries are likely to suffer most.138 Professor Tarlock predicts that the bias of western water law toward consumptive uses coupled with powerful market forces will transition water use from agriculture to municipalities and environmental values of stream flows are unlikely to successfully compete.139

129. Id.
130. Id.
131. Id. at 100.
132. Hauer et al., supra n. 125.
133. Id. at 970.
134. Id. at 913.
135. Rahel, supra n. 128, at 102.
136. Id.
138. Id.
Even in mountainous Western Montana, water allocation issues are prominent in rapidly developing areas. The City of Bozeman, Montana predicts its municipal water supplies will be exceeded within 7 to 12 years at current population growth rates. Recognizing diminishing water supplies, the Montana Legislature closed 5 major river basins to new appropriations, authorized administrative closures in 11 highly-appropriated basins, initiated 8 basin closures through compacts, and closed 14 areas to groundwater appropriations. However, exceptions to basin closures allow appropriations of high spring flows creating the potential for depletion of channel rejuvenating flood flows.

As competition for water intensifies, it is likely that industry, resort developments and municipalities throughout the West will reach higher into headwaters in attempts to satisfy their needs. Resort developments in Southwestern Montana have already begun diverting spring flood flows from headwater streams supporting westslope cutthroat trout. Unless the USFS proactively seeks additional instream flow reservations to protect flushing flows through rulemaking, the goals of the Compact to protect native salmonids may be overcome by development interests coupled with dwindling water supplies due to global climate change. USFS should petition DNRC for rulemaking that adopts a method that protects a minimum flushing flow as well as late summer base flows. By establishing instream flow reservations on headwater streams occupied by native trout, USFS could protect native salmonid populations into the future while quantifying flood flows available for appropriations.

CONCLUSION

Until Henry Winter and his neighbors diverted the Milk River and challenged the Gros Ventre and Assiniboine Tribes’ water rights, the doctrine of...
prior appropriation held sway throughout the West.\textsuperscript{147} Ironically, if Winter and his neighbors had respected the prior appropriation of the Tribes, federal reserved water rights may have taken a different course. The \textit{Winters} doctrine set in motion a century of antagonism between state authority to allocate water and the United States’ sovereign authority to retain water for use on federal reservations. Western states like Colorado frustrated USFS attempts to secure instream flow rights, where courts refused USFS claims for instream flows by applying a standard so narrow that even the nation’s top hydrologists could not overcome it with reams of technical data.\textsuperscript{148} Generally, the USFS was left only with water rights for administrative uses and their FLPMA authority to condition special use permits to protect streams.\textsuperscript{149}

Federal reserved water rights returned full circle to Montana where the \textit{Winters} doctrine arose. The Montana Legislature recognized that expensive and prolonged litigation over federal reserved water rights was counterproductive and established the Reserved Water Rights Compact Commission.\textsuperscript{150} The Compact overcame a history of resistance to reserved water rights and recognized reserved water rights for administrative uses and granted instream water rights for fish and wildlife and authorized a process by which USFS could secure instream water reservations in the future.\textsuperscript{151}

While the Compact resolved many dilemmas inherent in federal reserved water rights, it fell short of one objective by relying on the WETP Method, a base flow quantification method, to protect aquatic habitats. Streams require annual flushing flows to transport sediments and to recarve channels for efficient transport of flows.\textsuperscript{152} In the face of diminishing water supplies, increasing demand for water, and global climate change, base flows are not likely adequate to preserve stream flows sufficient to ensure the long term survival of Montana’s native salmonids.\textsuperscript{153} Fortunately, the Compact provides a rulemaking process enabling the USFS to petition for other methods of quantifying minimum instream flows.\textsuperscript{154} To ensure the long term survival of Montana’s native salmonids, the USFS must proactively undertake a rulemaking process that secures flushing flows - the favorable conditions of flows that have proven so elusive across the West.

\textsuperscript{148} Gordon, supra n. 75.
\textsuperscript{149} Id.
\textsuperscript{150} Reserved Water Rights Compact Commission.
\textsuperscript{151} Mont. Code Ann. § 85-7-1401 (2007).
\textsuperscript{152} Beechie & Bolton, supra n. 112.
\textsuperscript{153} For a discussion of likely impacts to Montana’s western watersheds and trout populations, see generally Christine Brick, Brianna Randall & Deborah Oberbillig, \textit{Low Flows Hot Trout: Climate Change in the Clark Fork Watershed}, Clark Fork Coalition, Missoula, Montana (2008).