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WATER BANKS IN WASHINGTON STATE: A TOOL FOR CLIMATE RESILIENCE

Jennifer J. Seely*

Abstract: Water banks—a tool for exchanging senior water rights and offsetting new ones—can address multiple problems in contemporary water law. In the era of climate change, water banks enable needed flexibility and resilience in water allocation. As growing cities require new water rights, water banks can repurpose old water for new uses. These advantages should lead the Washington State Legislature to incentivize water banks, but in the 2018 “Hirst fix” it embraced habitat restoration as a false equivalent for water. The Legislature is rightfully concerned about the speculation that some private water banks allow. But overall, water banks enable new and productive uses while maintaining water in streams. Moving forward, Washington should embrace water banks for each unique basin’s needs.

INTRODUCTION

Washington is a state built on water. Carved by ancient glaciers, Puget Sound is the largest estuary in the continental United States.¹ Salmon fan out into its tributaries when they return home each year, supporting Washington’s tribal and non-tribal fishing industries.² The Columbia and Snake Rivers spill over dams that powered the country through World War II.³ To this day, Washington gets more energy from hydroelectricity than any other state, at lower prices.⁴ The Columbia River and its

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1. *The Puget Sound Estuaries*, PUGET SOUND P’SHP, <https://www.psp.wa.gov/NEP-puget-sound-estuary.php> [https://perma.cc/A4MC-KCM4].

2. *See About Us*, NW. INDIAN FISHERIES COMM’N, <https://nwifc.org/about-us/> [https://perma.cc/2L3H-6FYP].

3. *Washington: Grand Coulee Dam*, NAT’L PARK SERV., <https://www.nps.gov/articles/washington-grand-coulee-dam.htm> [https://perma.cc/J3DK-P2K6]. Dams block important fish passage, and Pacific Northwest stakeholders are currently negotiating to potentially remove dams on the lower Snake River that have long blocked tribal treaty-protected fish passage. *See* Lynda V. Mapes, *GOP Congressman Pitches \$34 Billion Plan to Breach Lower Snake River Dams in New Vision for Northwest*, SEATTLE TIMES (Feb. 7, 2021, 11:58 AM), <https://www.seattletimes.com/seattle-news/environment/gop-congressman-pitches-34-billion-plan-to-breach-lower-snake-river-dams-in-new-vision-for-northwest/> [https://perma.cc/QB4Q-DUKZ].

4. *Washington: State Profile and Energy Estimates*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/state/?sid=WA> [https://perma.cc/R7M4-NRZ4].

tributaries nourish most apples grown in the United States, a multibillion-dollar crop,⁵ as well as wheat that feeds the world.⁶ And west of the Cascade Mountains, Seattle's star is still rising. The city added over 100,000 people during the last decade—the fastest population growth of any large U.S. city—all of whom need water to brush their teeth, flush the toilet, and cook.⁷

Water law's most basic purpose—and challenge—is to allocate this scarce and valued resource among competing users like salmon, cities, farms, and dams.⁸ As climate change makes less water available during periods of high demand, Washington water law requires more flexibility. This is key for increasing resilience—the water law system's “ability to absorb impacts and continue to function.”⁹ Water banks are an important tool for increasing flexibility and resilience in Washington water law because they enable two types of water right transfers: the transfer of an old right to a new use, and the use of an existing right to mitigate, or offset, a new right.¹⁰

This Comment begins by explaining the common law doctrines and administrative systems that create modern Washington water law. It touches on tribal reserved water rights, instream flow rules, and

5. *Apples in Washington State*, WASH. STATE UNIV. EXTENSION, https://extension.wsu.edu/chelandouglas/agriculture/treefruit/horticulture/apples_in_washington_state/ [https://perma.cc/WP6D-6EZ5] (citing 2010 statistics that Washington produces about 58% of the apples grown in the United States); *Growing Regions*, WASH. APPLE COMM'N, <https://bestapples.com/washington-orchards/regions/> [https://perma.cc/CF26-XGSV]; see also *About EPA's Work in the Columbia River Basin*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/columbiariver/about-epas-work-columbia-river-basin> [https://perma.cc/3TY2-Y6KC] (including a map of the Columbia River Basin, which encompasses eastern Washington apple orchards).

6. Dan Wheat, *Apples Still King of Washington Agriculture*, CAP. PRESS (Oct. 15, 2019), https://www.capitalpress.com/state/washington/apples-still-king-of-washington-agriculture/article_3da79862-eed2-11e9-baf7-e76b291d6c64.html [https://perma.cc/NSJ7-6DKD]; *Where We Farm*, WASH. WHEAT FOUND., <https://wawheat.org/where-we-farm> [https://perma.cc/ZQV9-C4XL]; see also U.S. ENV'T PROT. AGENCY, *supra* note 5 (showing the overlap of the Columbia River Basin with where wheat is grown in eastern Washington).

7. Gene Balk, *114,000 More People: Seattle Now Decade's Fastest-Growing Big City in All of U.S.*, SEATTLE TIMES (May 24, 2018, 9:24 AM), <https://www.seattletimes.com/seattle-news/data/114000-more-people-seattle-now-this-decades-fastest-growing-big-city-in-all-of-united-states/> [https://perma.cc/SK92-S9US]. During this time, the rate of per capita water use decreased thanks to an increase in water conservation practices and use of efficient facilities and appliances. ELISABETH T. FASSER, U.S. GEOLOGICAL SURV., *WATER USE IN WASHINGTON*, 2015, at 2 (2018), <https://pubs.usgs.gov/fs/2018/3058/fs20183058.pdf> [https://perma.cc/V5R3-JCEG].

8. A. DAN TARLOCK, JAMES N. CORBRIDGE, JR., DAVID H. GETCHES, REED D. BENSON & SARAH F. BATES, *WATER RESOURCE MANAGEMENT: A CASEBOOK IN LAW AND PUBLIC POLICY* 1 (7th ed. 2014).

9. Robin Kundis Craig, “Stationarity is Dead”—*Long Live Transformation: Five Principles for Climate Change Adaptation Law*, 34 HARV. ENV'T L. REV. 9, 22 (2010).

10. See *infra* section II.A.

adjudications before turning to the Trust Water Rights Program, which is the foundation for water banking in Washington. The Comment next explores recent developments in Washington water law that reduce the incentive to use water banks to mitigate impacts on streamflows. Finally, this Comment argues that the Washington State Legislature should embrace water banks to create flexibility, build resilience, and offset impacts of new water uses in the era of climate change.

I. WATER RIGHTS IN WASHINGTON STATE

Despite a perception of the Pacific Northwest as rainy and well-hydrated, many of Washington's waterways are "over-appropriated": more water is allocated to out-of-stream water rights than exists in those streams most years, sometimes leaving the streams dry.¹¹ Over-appropriation multiplied with climate change creates pressing water problems for Washington.¹² The good news is that water requires compromise. In the words of one author, "[w]ater problems are straightforward in one way: without water we die, and not centuries from now. When supplies are short, people have no choice but to find solutions, one way or another, in real time."¹³ When water challenges arise, their urgency and importance often draws the attention of policymakers.¹⁴

Western water law owes its origins to miners of the California Gold Rush¹⁵ who occupied tribal and federal land and needed water—and water law systems—for different purposes than the mill and factory owners on

11. TROUT UNLIMITED – WASH. WATER PROJECT, LANDOWNER'S GUIDE TO WASHINGTON WATER RIGHTS 32 (3d ed. 2019), <https://apps.wr.ecology.wa.gov/docs/WaterRights/wrwebpdf/landownerguide-2019.pdf> [<https://perma.cc/LZ64-4ZWS>]; Rachael Paschal Osborn & Michael Mayer, *When Water Isn't Wet: The Evolution of Water Right Mitigation in Washington State*, 10 SEATTLE J. TECH. ENV'T & INNOVATION L. 181, 183 (2020) (explaining that over-appropriation started with common law water rights that pre-date Washington's 1917 water code—the claims were not centrally recorded, and so it was "impossible to know how much water was legally claimed in any watershed").

12. CHARLES F. PITZ, WASH. STATE DEP'T OF ECOLOGY, PUB. NO. 16-03-006, PREDICTED IMPACTS OF CLIMATE CHANGE ON GROUNDWATER RESOURCES OF WASHINGTON STATE 37–38 (2016), <https://fortress.wa.gov/ecy/publications/documents/1603006.pdf> [<https://perma.cc/7KMN-SJX3>].

13. DAVID OWEN, WHERE THE WATER GOES: LIFE AND DEATH ALONG THE COLORADO RIVER 7 (2017).

14. See, e.g., Evan Bush, *Washington State Lawmakers Flood Olympia with Bills over Water Marketing, Transfers After Seattle Times Report*, SEATTLE TIMES (Feb. 14, 2020, 11:42 PM), <https://www.seattletimes.com/seattle-news/environment/state-lawmakers-flood-olympia-with-bills-over-water-marketing-after-seattle-times-report/> [<https://perma.cc/TV3K-XXJN>] (reporting on numerous proposed bills in response to public concerns about private water markets).

15. TARLOCK ET AL., *supra* note 8, at 121.

the East Coast.¹⁶ Like all states in the American West, Washington has layered a complex administrative permit system on top of its original common law doctrine.¹⁷ Since the 1970s, Washington has also protected “instream flows.”¹⁸ These are legally designated water rights for rivers, created by Department of Ecology rulemaking.¹⁹

As Washington’s population grows, in part from climate migration²⁰ and the state’s global economy,²¹ new development stresses Washington’s water system. Simultaneously, climate change continues to reduce snowpack—making streamflows heavier in the early summer and drier in the late summer—which complicates irrigation for Washington’s significant agricultural sector.²² All the while, salmon and other fish struggle for survival, despite being protected by the treaty rights of tribal nations.²³ This Part explores the legal backbone of Washington’s system in more detail, but these competing needs are the soul of the state’s water law.

A. *Prior Appropriation Doctrine*

Washington water law is based on the doctrine of “prior

16. *See, e.g.*, *Tyler v. Wilkinson*, 24 F. Cas. 472 (C.C.R.I. 1827) (No. 14,312) (resolving a dispute between upstream and downstream mill owners).

17. *See infra* section I.E.

18. WASH. REV. CODE §§ 90.03.247, .345 (2020).

19. *See, e.g.*, WASH. ADMIN. CODE § 173-503 (2021) (the instream flow rule for the Skagit River).

20. Abrahm Lustgarten, *How Climate Migration Will Reshape America: Millions Will Be Displaced. Where Will They Go?*, N.Y. TIMES MAG. (Sept. 15, 2020), <https://www.nytimes.com/interactive/2020/09/15/magazine/climate-crisis-migration-america.html> [<https://perma.cc/WT5A-XVV4>] (“The millions of people moving north will mostly head to the cities of the Northeast and Northwest, which will see their populations grow by roughly 10 percent, according to one model.”).

21. WASH. COUNCIL ON INT’L TRADE & TRADE DEV. ALL. OF GREATER SEATTLE, AN INTERNATIONAL COMPETITIVENESS STRATEGY FOR WASHINGTON STATE 1 (2017), https://wcit.org/wp-content/uploads/2017/01/InternationalCompetitivenessStrategyFinal_resized.pdf [<https://perma.cc/HUR6-PDDC>] (“International trade is a key driver of our state’s economy, cutting across nearly every industry sector. In fact, based on our research, at least 40% of all jobs in Washington can be tied to trade-related activity, making our state one of the most trade-engaged economies in the country.”).

22. *Climate Change: Observed Changes in the Climate*, UNIV. OF WASH.: CLIMATE IMPACTS GRP., <https://cig.uw.edu/learn/climate-change/> [<https://perma.cc/RCW4-2FKC>].

23. *United States v. Washington*, 384 F. Supp. 312 (W.D. Wash. 1974), *aff’d*, 520 F.2d 676 (9th Cir. 1975).

appropriation.”²⁴ Under this doctrine, the first in time is the first in right.²⁵ This means that senior water right holders have priority over junior rights.²⁶ In times of shortage, junior right holders may not be able to withdraw the full amount of their right, or they may be cut off entirely.²⁷ With important exceptions, these rules apply to both groundwater and surface water.²⁸ Every water right has a particular point of diversion (where the water is withdrawn from the stream) and place of use.²⁹

A water right is a “usufructuary” right, which means it is a right to put water to beneficial use.³⁰ It is not a right to possess or waste water.³¹ While water is subject to appropriation for a beneficial use, it is legally owned by the public.³² Legally beneficial uses include domestic, industrial, agricultural, and fish and wildlife purposes, among others.³³ A water right holder must exercise diligence in developing their right. Under the doctrine of “reasonable efficiency,” a court may shrink a water user’s right if their use is inefficient and wasteful.³⁴

If a water right holder does not put their right to beneficial use for five successive years, they permanently lose the right to the unused water

24. *Dep’t of Ecology v. Campbell & Gwinn, L.L.C.*, 146 Wash. 2d 1, 7, 43 P.3d 4, 8 (2002). Washington also recognizes some riparian rights that were vested prior to the 1917 water code, but these are limited. *See Dep’t of Ecology v. Abbott*, 103 Wash. 2d 686, 697, 694 P.2d 1071, 1077 (1985).

25. *Irwin v. Phillips*, 5 Cal. 140, 142–43 (1855); WASH. REV. CODE § 90.03.010 (2020).

26. *Irwin*, 5 Cal. at 142–43.

27. For example, many junior users had to go without water during Washington’s 2015 drought. BARBARA ANDERSON, CHRIS ANDERSON, DAVE CHRISTENSEN, REBECCA INMAN & JEFF MARTI, WASH. STATE DEP’T OF ECOLOGY, PUB. NO. 16-11-001, 2015 DROUGHT RESPONSE: SUMMARY REPORT ii (2016), <https://apps.ecology.wa.gov/publications/documents/1611001.pdf> [<https://perma.cc/9MNK-B7KC>].

28. WASH. REV. CODE § 90.03.010 (“Subject to existing rights all waters within the state belong to the public . . . and, as between appropriations, the first in time shall be the first in right.”).

29. TROUT UNLIMITED, *supra* note 11, at 8–9.

30. ANTHONY DAN TARLOCK & JASON ANTHONY ROBISON, LAW OF WATER RIGHTS AND RESOURCES § 3:10 (2020) (“[T]he special characteristics of water have led courts to adopt the Roman and civil law classifications of water and to define all water rights—riparian and appropriative—in terms of the right to use rather than ownership of the corpus of the water.”); *see also* *People v. Shirokow*, 605 P.2d 859, 864 (Cal. 1980) (both riparian and prior appropriation water rights are usufructuary).

31. *See Dep’t of Ecology v. Grimes*, 121 Wash. 2d 459, 471, 852 P.2d 1044, 1051 (1993).

32. WASH. REV. CODE § 90.03.010 (“Subject to existing rights all waters within the state belong to the public . . .”).

33. *Id.* § 90.54.020(1) (“Uses of water for domestic, stock watering, industrial, commercial, agricultural, irrigation, hydroelectric power production, mining, fish and wildlife maintenance and enhancement, recreational, and thermal power production purposes, and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state, are declared to be beneficial.”).

34. *Grimes*, 121 Wash. 2d at 471–73, 852 P.2d at 1051–52.

through statutory forfeiture.³⁵ The Legislature, however, has added twenty-one exemptions to this rule, ranging from military service to bad weather to municipal water supply.³⁶ In addition to statutory forfeiture, a water right holder can also lose their right under common law if they demonstrate an intent to abandon it.³⁷ These fundamental aspects of prior appropriation, intended to prevent speculation, are commonly labeled “use it or lose it.”³⁸

Prior appropriation was created by miners in the California Gold Rush, who made their own unwritten code “before any state or federal court or legislature spoke. As might be expected, the rules for water looked a lot like the rules for minerals,” including the rules of priority and due diligence.³⁹ Beginning in 1848, the miners used water for hydraulic mining—first for gold panning, and later for gravity-fed hoses that blasted away whole hillsides in minutes to expose pieces of gold.⁴⁰ Hydraulic mining in the arid West meant water was most useful away from streams; likewise true for irrigation systems sprouting up in the vain hope that “rain follows the plow.”⁴¹ The miners also did not own the land on which they worked; it was land owned by tribes and the United States.⁴² All of these factors—dry and arid climate, lack of ownership, and the desire to use water away from the watercourse—led Western legislatures and courts to adopt the miners’ rule of prior appropriation for water allocation.⁴³

By 1855, five years after statehood, the California State Supreme Court held that “the rule of time is the rule of right; and the first taker is to be

35. WASH. REV. CODE §§ 90.14.160, .170, .180.

36. *Id.* § 90.14.140.

37. *Okanogan Wilderness League, Inc. v. Town of Twisp*, 133 Wash. 2d 769, 781, 947 P.2d 732, 738 (1997).

38. Steven E. Clyde, *Forfeiture, Abandonment, and Adverse Possession, in 4 WATERS AND WATER RIGHTS* (Amy K. Kelley ed., 3d ed. 2021). Beyond the doctrine, “use it or lose it” can also be understood as a “mentality that has always driven western water developers to extract as much water as possible as quickly as possible lest it be appropriated by someone else.” CHARLES F. WILKINSON, *CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST* 223 (1992).

39. WILKINSON, *supra* note 38, at 232; *see also* Nat’l Audubon Soc’y v. Superior Ct., 658 P.2d 709, 712 (Cal. 1983) (“[T]he appropriative water rights system which since the days of the gold rush has dominated California water law . . .”).

40. WILKINSON, *supra* note 38, at 231.

41. A popular theory in the late nineteenth century posited that “rain follow[ed] the plow,” meaning that the climate would become more amenable to farming as colonizers planted crops. This, of course, did not turn out to be true. Todd Arrington, *James A. Garfield and “Rain Follows the Plow,”* NAT’L PARK SERV. (Sept. 4, 2020), <https://www.nps.gov/articles/000/james-a-garfield-and-rain-follows-the-plow.htm> [https://perma.cc/486G-45GJ].

42. TARLOCK ET AL., *supra* note 8, at 121; WILKINSON, *supra* note 38, at 186.

43. TARLOCK ET AL., *supra* note 8, at 121.

protected in his entry and possession.”⁴⁴ This was an intentional move away from eastern U.S. water allocation systems, which stem from the traditional European doctrine of “riparian rights.”⁴⁵ Under riparian water law, rights to use water are held by landowners adjacent to a watercourse.⁴⁶ Each landowner is subject to a rule of reasonable use, and when disputes arise, courts equitably analyze water uses in relation to each other.⁴⁷ Washington still has some riparian water rights⁴⁸ because when the Legislature codified prior appropriation in 1917, it included a savings clause for preexisting rights.⁴⁹ In a system where all of these rights are organized by priority—from senior to junior—tribal reserved water rights are generally the most senior in any basin they are found.⁵⁰

B. Tribal Reserved Water Rights in Washington State

In the United States, American Indian tribes hold water rights impliedly reserved in treaties.⁵¹ These include rights to consumptive water use, as well as rights to flowing water in streams to support fish.⁵² Tribes are sovereign governmental entities;⁵³ they have the power to make their own laws and be ruled by them.⁵⁴ Courts have decided that Congress has plenary power over tribes and can unilaterally alter treaties.⁵⁵ But given the United States’ treaty obligations as a colonizer, the federal government has a trust responsibility to tribes and tribal resources.⁵⁶

44. *Irwin v. Phillips*, 5 Cal. 140, 141 (1855) (“[T]his policy may be stated . . . to be the right of individual appropriation, subject to such rules and limitations as may be necessary to give effect to two leading principles: First, The most productive working of the mines. Second, The interest, convenience, and profit of the greatest number.”).

45. *TARLOCK ET AL.*, *supra* note 8, at 47.

46. *Tyler v. Wilkinson*, 24 F. Cas. 472, 474 (C.C.R.I. 1827) (No. 14,312).

47. *See, e.g., Harris v. Brooks*, 283 S.W.2d 129, 133–34 (Ark. 1955) (adopting the reasonable use theory).

48. *TROUT UNLIMITED*, *supra* note 11, at 42.

49. *See* Act of Mar. 14, 1917, ch. 117, § 1, 1917 Wash. Sess. Laws 447 (codified as amended in various sections of WASH. REV. CODE § 90.03 (2020)).

50. *See infra* section I.B.

51. *See* Robert T. Anderson, *Indigenous Rights to Water & Environmental Protection*, 53 HARV. C.R.-C.L. L. REV. 337, 347 (2018); Rachael Paschal Osborn, *Native American Winters Doctrine and Stevens Treaty Water Rights: Recognition, Quantification, Management*, 2 AM. INDIAN L.J. 76, 78 (2013).

52. Anderson, *supra* note 51, at 347–51.

53. *Worcester v. Georgia*, 31 U.S. 515, 556 (1832).

54. *Williams v. Lee*, 358 U.S. 217, 220 (1959) (“Essentially, absent governing Acts of Congress, the question [of the validity of exercises of state jurisdiction] has always been whether the state action infringed on the right of reservation Indians to make their own laws and be ruled by them.”).

55. *Lone Wolf v. Hitchcock*, 187 U.S. 553, 567–68 (1903).

56. *Cobell v. Norton*, 240 F.3d 1081, 1086 (D.C. Cir. 2001).

Tribes are subject to certain federal laws, but are generally not subject to state laws unless explicitly authorized by Congress.⁵⁷

Treaties are reservations of rights that tribes hold as sovereigns and maintain to the present day; they are not grants of rights from federal or state governments.⁵⁸ Rather, treaties are grants of rights *from* tribes *to* the United States.⁵⁹ Because of this, tribes are free to make use of traditional resources so long as those rights have not been expressly ceded by the tribe or limited by Congress.⁶⁰ Conflicting rights grounded in state law cannot impede tribal use of treaty reserved rights.⁶¹

Winters v. United States,⁶² a Supreme Court decision from 1908, serves as the foundation for any tribal reserved right that requires water. The Court ruled that tribes have water rights reserved for the “necessary . . . purposes” of their reservations.⁶³ The purposes of tribal reservations can include both water for consumptive use, like domestic and agricultural purposes, as well as water for instream flows to enable fish survival.⁶⁴ Reserved rights for both consumptive uses and instream flows are found in treaties⁶⁵ and other agreements with the federal government.⁶⁶

In the 1850s, before Washington became a state, territorial governor Isaac Stevens negotiated a series of treaties with Pacific Northwest

57. See *Rice v. Olson*, 324 U.S. 786, 789–90 (1945); *Johnson v. M’Intosh*, 21 U.S. 543, 574, 593 (1823) (incorporating the Doctrine of Discovery into federal Indian law, which gave European sovereigns and their successor nations the exclusive right to purchase Indian land); see also ROBERT A. WILLIAMS, JR., *THE AMERICAN INDIAN IN WESTERN LEGAL THOUGHT: THE DISCOURSES OF CONQUEST* 316–17 (1990) (“*Johnson’s* acceptance of the Doctrine of Discovery into United States law preserved the legacy of 1,000 years of European racism and colonialism directed against non-Western peoples.”).

58. *United States v. Winans*, 198 U.S. 371, 381 (1905) (“In other words, the treaty was not a grant of rights to the Indians, but a grant of right[s] from them,—a reservation of those not granted.”).

59. *Id.*

60. *Id.* at 381.

61. *Id.* at 382–83.

62. 207 U.S. 564 (1908).

63. *Id.* at 567.

64. *United States v. Adair*, 723 F.2d 1394, 1410 (9th Cir. 1983).

65. See, e.g., Conditional Final Order as a Final Judgment Pursuant to CR 54(b) and RAP 2.2(d) and Pretrial Order Number 8 as Amended at 4, *Dep’t of Ecology v. Acquavella*, No. 77-2-01484-5 (Wash. Super. Ct. Sept. 12, 1996) [hereinafter *Acquavella Conditional Final Order*] (“The Yakama Indian Nation enjoys a federally reserved, Treaty-based right, to an undiminished instream flow for Status, Simcoe and Toppenish Creeks to support fish and other aquatic life. This water right carries a priority date of time immemorial.”).

66. See, e.g., *Colville Confederated Tribes v. Walton*, 647 F.2d 42, 49 (9th Cir. 1981) (holding that the Confederated Tribes of the Colville Reservation retained jurisdiction over No Name Creek, which is fully within the boundaries of the Tribes’ reservation, through executive order).

tribes.⁶⁷ The tribes ceded ancestral homelands to the United States but reserved certain rights, including the rights of taking fish from streams on their inland reservations as well as off-reservation at their customary fishing sites.⁶⁸ For the latter right, one phrase was used in multiple treaties: “The right of taking fish at usual and accustomed grounds and stations is further secured to said Indians, in common with all citizens of the United States.”⁶⁹ To support fish life, this language creates the basis for implied instream flow rights both on and off tribal reservations, with priority dates of “time immemorial.”⁷⁰

Because they are based in intergovernmental agreements ratified by Congress or signed by executive order, tribal reserved water rights are federal law in an otherwise state-law system of water management. These rights are not self-enforcing and generally do not mesh with state systems of priority without being quantified in court or through a settlement agreement.⁷¹

In the McCarran Amendment,⁷² passed in 1952, Congress granted states the authority to adjudicate federal reserved water rights by waiving U.S. sovereign immunity for general stream adjudications in state courts.⁷³ In these enormous lawsuits, state courts quantify federal reserved water rights and, in prior appropriation states, assign reserved rights a priority date within the “first in time, first in right” system.⁷⁴ The Supreme Court later interpreted the McCarran Amendment to waive federal sovereign immunity for tribal water rights held in trust by the United States.⁷⁵

67. WILKINSON, *supra* note 38, at 186–87.

68. *Id.*

69. *See, e.g.*, Treaty of Point No Point art. 4, Jan. 26, 1855, 12 Stat. 933. Note, however, that some of the biggest tribes in Washington do not have instream flow rights to protect off-reservation usual and accustomed fishing places, for example Colville, Chehalis, Cowlitz, Snoqualmie, and Samish. Telephone Interview with Tom Schlosser, Principal Att’y, Morisset, Schlosser, Jozwiak, & Somerville (Feb. 23, 2020).

70. *See, e.g.*, Acquavella Conditional Final Order, *supra* note 65, at 4 (acknowledging such a right held by the Confederated Tribes and Bands of the Yakama Nation).

71. 1 COHEN’S HANDBOOK OF FEDERAL INDIAN LAW § 19.05(1) (2019) [hereinafter COHEN’S].

72. McCarran Amendment, Pub. L. No. 82-495, § 208, 66 Stat. 560 (1952) (codified as amended at 43 U.S.C. § 666). A rider on a federal appropriations bill, the McCarran Amendment waived U.S. sovereign immunity for adjudicating federal reserved water rights in state courts. *Id.*

73. *Id.*

74. *See, e.g.*, Final Decree at 2–6, Dep’t of Ecology v. Acquavella, No. 77-2-01484-5 (Wash. Super. Ct. May 9, 2019) (quantifying the Yakama Nation’s reserved water rights as part of the *Acquavella* adjudication).

75. *Colo. River Water Conservation Dist. v. United States*, 424 U.S. 800, 809–13 (1976). In response to arguments that the McCarran Amendment did not waive tribal sovereign immunity, the

Though rulings vary, tribal reserved water rights based on a reservation of land generally have a priority date of whenever the reservation was established.⁷⁶ Tribal reserved water rights based on a hunting or fishing right, like in the Pacific Northwest Stevens Treaties (1854–1855),⁷⁷ generally have a priority date of time immemorial.⁷⁸ Both usually mean first priority: the tribal reserved water rights are the most senior rights in the basin.⁷⁹ Therefore, issuing new water rights without mitigation (through water banks or otherwise) runs the risk of harming senior tribal reserved rights that have not been quantified, including those for instream flows to protect fish.

C. *Legal Protection for Instream Flows*

In addition to tribal reserved water rights, some watersheds are also protected by instream flow rules.⁸⁰ These are an important modern corollary to the prior appropriation doctrine. As originally created, prior appropriation only recognized a water right if water was diverted outside of the stream.⁸¹ Driven by the environmental movement, in the early 1970s many states throughout the American West created new legal doctrines and administrative systems that value water in streams.

In 1971, Washington's legislature passed the Water Resources Act,⁸² which added water flowing in streams as a legally beneficial use.⁸³ The

Court later clarified that “although the McCarran Amendment did not waive the sovereign immunity of Indians as *parties* to state comprehensive water adjudications, it did (as we made quite clear in *Colorado River*) waive sovereign immunity with regard to the Indian *rights* at issue in those proceedings.” *Arizona v. San Carlos Apache Tribe*, 463 U.S. 545, 566 n.17 (1983) (emphasis in original).

76. COHEN'S, *supra* note 71, § 19.01(1).

77. WILKINSON, *supra* note 38, at 187.

78. *See* COHEN'S, *supra* note 71, § 19.01(1).

79. *Id.*

80. Washington state law uses the terms “instream flow[s],” “minimum flow[s],” and “base flow[s]” interchangeably. WASH. REV. CODE § 90.92.020(6) (2020) (defining “instream flow” as a “minimum flow” under Washington's Water Code or a “base flow” that has been set by rule under Washington's Minimum Flows and Levels Act).

81. *See, e.g., State ex rel. Reynolds v. Miranda*, 493 P.2d 409, 411 (N.M. 1972) (holding that human-made diversion, together with intent to apply water to beneficial use and actual application of the water to beneficial use, is necessary to claim a water right by appropriation in New Mexico for agricultural purposes).

82. Water Resources Act of 1971, ch. 225, 1971 Wash. Sess. Laws 1020 (codified as amended in various sections of WASH. REV. CODE § 90.54).

83. WASH. REV. CODE § 90.54.020(1) (“Uses of water for . . . fish and wildlife maintenance and enhancement, recreational, and thermal power production purposes, and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state, are declared to be beneficial.”).

law also created a system for the Washington State Department of Ecology (Ecology) to promulgate instream flow rules, which are essentially water rights for the stream itself.⁸⁴ The Legislature directed Ecology to “consider the achievement of wild salmonid⁸⁵ production as its primary goal.”⁸⁶ In the fifty years since the Water Resources Act was passed, Ecology has set instream flow rules for fewer than half of Washington’s sixty-two watersheds.⁸⁷

In terms of priority, instream flow rules promulgated by Ecology are water rights like any other.⁸⁸ Water rights that are junior to an instream flow rule may not impair it, just as they may not impair other senior water rights.⁸⁹ Conversely, a water right established prior to the instream flow rule may be fully pumped, without regard to stream impacts.⁹⁰ In most Washington basins, the majority of water rights are senior to the instream flow rule.⁹¹ Of about 220,000 water rights in Washington, the majority have priority dates that predate the first instream flow rule in 1976.⁹² Because of these relative priority dates, instream flow rules are not always effective at protecting streamflows in Washington.⁹³

84. *Id.*; *id.* § 90.22.010 (“[E]cology may establish minimum water flows or levels for streams, lakes or other public waters for the purposes of protecting fish, game, birds or other wildlife resources, or recreational or aesthetic values of said public waters.”).

85. On the Pacific coast, the Salmonidae family includes Chinook, Chum, Coho, Sockeye, and Pink salmon, as well as steelhead trout. *Pacific Salmon and Steelhead*, NAT’L OCEANIC & ATMOSPHERIC ADMIN.: FISHERIES, <https://www.fisheries.noaa.gov/species/pacific-salmon-and-steelhead> [https://perma.cc/L9JD-PJZ7]. Of these five, all but Pink salmon are listed under the Endangered Species Act. *Id.* Most salmonids are anadromous, which means they are born in freshwater, migrate to the ocean in adulthood, and return to freshwater to spawn and die. *What Does Anadromous Mean?*, NAT’L OCEANIC & ATMOSPHERIC ADMIN.: FISHERIES, <https://www.fisheries.noaa.gov/node/8071> [https://perma.cc/AM98-CU57].

86. WASH. REV. CODE § 90.22.060.

87. Rachael Paschal Osborn, *From Loon Lake to Chuckanut Creek: The Rise and Fall of Environmental Values in Washington’s Water Resources Act*, 11 WASH. J. ENV’T L. & POL’Y 115, 133 (2021).

88. WASH. REV. CODE § 90.03.345.

89. *Swinomish Indian Tribal Cmty. v. Dep’t of Ecology*, 178 Wash. 2d 571, 602, 311 P.3d 6, 21 (2013).

90. Preventing a senior user from making full beneficial use of their water right can be a Fifth Amendment taking requiring just compensation under the U.S. Constitution. *See Casitas Mun. Water Dist. v. United States*, 543 F.3d 1276, 1282 (Fed. Cir. 2008); *cf.* Jacqueline Carlton, Note, *Drought by Fifth Amendment: Debunking Water Rights as Real Property Comments*, 31 BYU J. PUB. L. 409, 435 (2017) (arguing that a water right should not be considered a “vested property interest” that can trigger the need for just compensation, since it is a usufructuary right and subject to the public trust doctrine).

91. Osborn, *supra* note 87, at 129–30.

92. *Id.*

93. *See* Haylee J. Hurst, Note, *Changing Course: Revisiting Instream Flow Rulemaking in*

D. *Water Right Adjudications*

Water rights are relational. Particularly for junior right holders, the water they can use is shaped as much by the status and quantity of senior rights as by the physical availability of water. Ecology staff study the extent and validity of a water right before its use or point of diversion can be changed and, in practical terms, this administrative determination is often conclusive.⁹⁴ But in legal terms, Ecology's decision is merely "tentative" because only a court can make a *final* determination of extent and validity.⁹⁵

Under the state water code, superior courts possess the authority to adjudicate and enforce water rights.⁹⁶ "General stream adjudications" are large lawsuits in which every water right holder in a given hydrological system is a necessary party.⁹⁷ They often proceed with an appointed special master or commissioner and determine whether a water right is valid, how much water it can use, and the water right's priority during times of shortage.⁹⁸ General stream adjudications bring certainty to a water right. The definition and clarity of an adjudicated water right is important when selling it or when using it to mitigate a new water right, both of which can be accomplished through water banks.

As of May 2019, Washington courts have completed eighty-three stream adjudications since the adoption of the surface water code in 1917.⁹⁹ Most took place in central and eastern Washington in the 1920s, and all but one adjudicated between thirty and sixty water rights.¹⁰⁰ Washington's single largest stream adjudication by far was the

Washington State Following Swinomish v. Ecology, 90 WASH. L. REV. 1901, 1940–41 (2015) (explaining the difficulties surrounding instream flow rulemaking in Washington and suggesting a "best available science" standard, as well as expansion of the Trust Water Rights Program for water banking).

94. *See, e.g.*, TROUT UNLIMITED, *supra* note 11, at 28 (describing Ecology's decision on a county conservancy board's approval or disapproval of a water right change application as "final").

95. *Rettkowski v. Dep't of Ecology*, 122 Wash. 2d 219, 225–28, 858 P.2d 232, 235–37 (1993).

96. WASH. REV. CODE § 90.03.245 (2020) (clarifying that rights subject to general stream adjudication proceedings "include all rights to the use of water, including all diversionary and instream water rights, and include rights to the use of water claimed by the United States"); *id.* § 90.03.120 (setting forth the procedure for beginning such a determination of water rights).

97. TARLOCK ET AL., *supra* note 8, at 168–70.

98. *Id.*; *Water Right Adjudications*, WASH. STATE DEP'T OF ECOLOGY, <https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-rights/Adjudications> [<https://perma.cc/W7JW-3RFT>].

99. WASH. STATE DEP'T OF ECOLOGY, PUB. NO. 19-11-073, COMPLETED ADJUDICATIONS IN WASHINGTON 1–2 (2019), <https://fortress.wa.gov/ecy/publications/documents/1911073.pdf> [<https://perma.cc/583R-F75T>].

100. *Id.*

*Department of Ecology v. Acquavella*¹⁰¹ adjudication in the Yakima River Basin.¹⁰² Filed by Ecology in 1977 and completed in May 2019, it adjudicated about 2,300 surface water rights.¹⁰³ The adjudication brought together claims from Yakima, Kittitas, Klickitat, and Benton counties, as well as the reserved water rights of the Confederated Tribes and Bands of the Yakama Nation.¹⁰⁴

As of this writing, Ecology is deciding where to file the next Washington general stream adjudications. Under consideration are the Nooksack Basin west of the Cascade Mountains and the Lake Roosevelt Basin east of the mountains.¹⁰⁵ Importantly, a Nooksack Basin adjudication would address the reserved water rights of the Lummi Nation and Nooksack Indian Tribe, and a Lake Roosevelt adjudication would address the reserved rights of the Spokane Tribe of Indians and the Confederated Tribes of the Colville Reservation.¹⁰⁶ Overall, the vast majority of water rights in Washington remain unadjudicated. Instead, most water rights are tentatively determined outside of court through Ecology's administrative processes.

E. Water Right Permits

Today, water law is administrative law. Ecology administers water rights using a permitting process that has existed for surface water since 1917¹⁰⁷ and for groundwater since 1945.¹⁰⁸ With some important exceptions like those for domestic wells,¹⁰⁹ permits are the exclusive method for acquiring water rights in Washington State.¹¹⁰ Ecology "shall"

101. No. 77-2-01484-5 (Wash. Super. Ct. 1977).

102. Joye Redfield-Wilder, *After 40 Years, Acquavella Adjudication Is Coming to Close*, WASH. STATE DEP'T OF ECOLOGY (Apr. 1, 2019), <http://ecologywa.blogspot.com/2019/04/after-40-years-acquavella-adjudication.html> [<https://perma.cc/5DFW-LY2H>].

103. *Id.*

104. *Id.*

105. *Water Right Adjudications*, *supra* note 98.

106. ROBIN MCPHERSON & ADJUDICATION STAFF, PUB. NO. 20-11-084, WATER RESOURCES ADJUDICATION ASSESSMENT LEGISLATIVE REPORT: WATERSHEDS PROPOSED FOR URGENT ADJUDICATION AND FUTURE ASSESSMENT 6 (2020).

107. Act of Mar. 14, 1917, ch. 117, 1917 Wash. Sess. Laws 447 (codified as amended in various sections of WASH. REV. CODE § 90.03 (2020)).

108. Act of Mar. 19, 1945, ch. 263, 1945 Wash. Sess. Laws 926 (codified as amended in various sections of WASH. REV. CODE § 90.44).

109. WASH. REV. CODE § 90.44.050; *see infra* Part III.

110. WASH. REV. CODE § 90.03.250 ("Any person, municipal corporation, firm, irrigation district, association, corporation or water users' association hereafter desiring to appropriate water for a beneficial use shall make an application to the department for a permit to make such appropriation . . .").

issue a permit to appropriate surface water if it finds that (1) water is physically available, (2) the permit is for a “beneficial use,” (3) the use will not impair an existing water right, and (4) the use is not “detrimental to the public welfare.”¹¹¹ On its website, Ecology warns that water “is an increasingly limited resource in Washington.”¹¹² Permits are difficult to acquire, so Ecology recommends meeting with regional staff before applying for a water right.¹¹³

Before a right holder may change their water use, the proposed change must be assessed by Ecology. The agency investigates whether the new proposed use will change the amount of water consumed¹¹⁴ and whether it will impair senior water rights, including instream flows.¹¹⁵ Even a senior right holder needs Ecology’s permission before changing their water use, so that Ecology can verify that the right is still valid and that other water rights will not be injured by the change.¹¹⁶ Under prior appropriation, water right holders may not enlarge their historic uses.¹¹⁷ Ecology’s administrative process applies to every water right change, including those involving water banks and water markets.¹¹⁸

II. WATER BANKS AND WASHINGTON’S TRUST WATER RIGHTS PROGRAM

Water banks are “a tool to facilitate the voluntary exchange of water

111. *Id.* § 90.03.290(3).

112. *Water Right Permits*, WASH. STATE DEP’T OF ECOLOGY, <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Water-right-permits> [<https://perma.cc/MC23-65LD>].

113. *Id.*

114. Water is consumed if it does not return to the watershed from which it was withdrawn. Municipal water use is often not fully consumptive, because water treatment plants return wastewater to the watershed. Agricultural use is also not always fully consumptive, because irrigation systems are not perfectly efficient and result in runoff that returns to the watershed. *See* TROUT UNLIMITED, *supra* note 11, at 14.

115. WASH. REV. CODE § 90.03.380(1). Tribal reserved water rights are generally senior to new rights, but are unrecognized under state law unless quantified in court or enforced by tribes. Osborn, *supra* note 87, at 130.

116. TROUT UNLIMITED, *supra* note 11, at 28.

117. *See, e.g., Green v. Chaffee Ditch Co.*, 371 P.2d 775 (Colo. 1962) (limiting a water user’s transfer to the quantity of their actual historic use, and not allowing them to transfer water that existed only on paper).

118. *See Changes to Existing Water Rights*, WASH. STATE DEP’T OF ECOLOGY, <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Water-right-permits/Changes-to-existing-water-rights> [<https://perma.cc/5LMY-BXH7>].

rights,”¹¹⁹ either temporarily or permanently.¹²⁰ They exist in many forms across the American West, managed by private, nonprofit, tribal,¹²¹ and various other governmental entities.¹²² Water banks and the water markets they create allow “existing, often inefficient, uses to be transferred to new uses.”¹²³ For example, a water market could create an incentive for an agricultural producer to become more efficient and sell or lease part of their right to a municipality, rather than stick to the “use it or lose it” mentality.¹²⁴ Environmental groups also use water markets to purchase senior rights and permanently donate them to state instream flow programs.¹²⁵ This kind of flexibility is essential in the age of climate change. In Washington, it is enabled by the Trust Water Rights Program.¹²⁶

A. *Washington’s Trust Water Rights Program*

Washington has limited water available for new water rights.¹²⁷ Rather than vainly seek a new permit, new water users can buy a senior right, or use a package of senior rights to mitigate the impacts of a new right.¹²⁸ The Washington State Legislature authorized this flexibility in 1991 by creating the Trust Water Rights Program, administered by Ecology.¹²⁹

119. *Water Banks*, WASH. STATE DEP’T OF ECOLOGY, <https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-rights/Trust-water-rights/Water-banks> [<https://perma.cc/UCT5-RQNK>].

120. *Trust Water Rights Program*, WASH. STATE DEP’T OF ECOLOGY, <https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-rights/Trust-water-rights> [<https://perma.cc/3MNA-M3CJ>].

121. See, e.g., Justin Nyberg, Note, *The Promise of Indian Water Leasing: An Examination of One Tribe’s Success at Brokering Its Surplus Water Rights*, 55 NAT. RES. J. 181, 194 (2015) (discussing the Jicarilla Apache Nation’s water rights settlement that includes the right to “lease its surplus water to off-reservation parties, subject to approval by the Secretary of Interior, and subject to federal and state law, interstate compacts, and international law”). To protect its interests, the Nation generally enters relatively short leases, and includes price adjustment clauses in leases longer than one year. *Id.* at 197–98.

122. See *infra* section II.C.; W. GOVERNORS’ ASS’N, WATER TRANSFERS IN THE WEST: PROJECTS, TRENDS, AND LEADING PRACTICES IN VOLUNTARY WATER TRADING 28 (2012), https://westgov.org/images/editor/Water_transfers_in_the_West_December_2012.pdf [<https://perma.cc/9ZEU-TJKU>].

123. WILKINSON, *supra* note 38, at 285.

124. W. GOVERNORS’ ASS’N, *supra* note 122, at ix, 10, 36; cf. WILKINSON, *supra* note 38, at 223.

125. WILKINSON, *supra* note 38, at 286.

126. See *infra* section II.A.

127. *Water Banks*, *supra* note 119.

128. *Id.*

129. Water Resource Management, ch. 347, 1991 Wash. Sess. Laws 1956 (codified as amended at WASH. REV. CODE § 90.42.080 (2020)); *Trust Water Rights Program*, *supra* note 120. This program

When a water right is registered in trust with Ecology, it is exempt from forfeiture and retains its original priority date.¹³⁰ In other words, the normal “use it or lose it” rule of prior appropriation does not apply, and the water can be left in the stream while the right is registered in trust. This makes the trust program a place to safeguard a water right—temporarily or permanently—while transforming the water use. Thus, the program acts like a traditional trust by separating the legal management of the asset from the beneficial interest of the water use.

An express purpose of the Trust Water Rights Program is to enable water banks.¹³¹ To establish a water bank, a water right holder or broker negotiates with Ecology.¹³² If Ecology agrees that the banker’s proposal is feasible and supports the public interest, the parties will create a unique water banking agreement that establishes how the bank can serve buyers and sellers.¹³³

Water banks and the trust program enable two different methods of changing a water right’s use. First, the trust program can function as a place to temporarily “park” the right while the right holder negotiates a sale (with or without a change in use).¹³⁴ Second, the program can serve as a permanent place to “bank” the right.¹³⁵ The water can be kept in the stream to increase instream flows, or, more commonly, it can serve as mitigation for one or more new water rights.¹³⁶ Establishing a new water right by using an old senior right as mitigation is often more straightforward than going through the administrative process to change the use of an existing right.¹³⁷ For every water right being put to a new

followed a pilot project in the Yakima Basin. Act of May 14, 1989, ch. 429, 1989 Wash. Sess. Laws 2351.

130. WASH. REV. CODE § 90.14.140(2)(h).

131. See WASH. REV. CODE § 90.42.005(2)(d). In its statutory policy statement, the Washington State Legislature explains that water banks, as a function of the Trust Water Rights Program:

can provide an effective means to facilitate the voluntary transfer of water rights . . . to preserve water rights and provide water for presently unmet and future needs; and to achieve a variety of water resource management objectives throughout the state, including drought response, improving streamflows on a voluntary basis, providing water mitigation, or reserving water supply for future uses.

Id.

132. *Water Banks*, *supra* note 119.

133. *Id.*

134. *Trust Water Rights Program*, *supra* note 120.

135. *Id.*

136. *Id.*

137. See generally WASH. STATE DEP’T OF ECOLOGY, PUB. NO. 98-1802-WR, CHANGING OR TRANSFERRING AN EXISTING WATER RIGHT 1–4 (2008), <https://fortress.wa.gov/ecy/publications/documents/981802wr.pdf> [<https://perma.cc/4KUC-BDH7>] (describing the complexities of the change process); see also *Water Right Permits*, *supra* note 112 (“If you are seeking a change

use, including those in water banks, Ecology administers the change process to ensure there is no harm to senior water rights or to the public interest.¹³⁸

Thus, the trust program can act as a vault to temporarily store a water right as it makes its way from seller to buyer, or the trust can permanently hold a water right as an instream flow or to mitigate a new consumptive water use.¹³⁹ Overall, water banks in Washington depend on the Trust Water Rights Program to reallocate water from those who have it to those who do not.¹⁴⁰

B. *In-Kind and Out-of-Kind Mitigation*

As discussed above, because of limited water availability, most new water rights in Washington must be mitigated to offset their impacts to the stream and to other water rights.¹⁴¹ When all available water in a stream is appropriated, as is the case in multiple basins in Washington, any new water right must not generate a net loss for the stream because of prior appropriation.¹⁴² Water mitigation protects all senior water rights, including those used to preserve instream flows.¹⁴³ Such water-for-water mitigation is called “in-kind” mitigation.¹⁴⁴

Recently, Ecology has also employed “out-of-kind” mitigation—compensating for new water uses with habitat restoration and similar projects rather than with water itself.¹⁴⁵ Ecology has used out-of-kind mitigation for wetland and shoreline impacts,¹⁴⁶ but it is new to water rights because out-of-kind mitigation can impair senior water rights, so it is traditionally unlawful under the prior appropriation doctrine.¹⁴⁷

For in-kind mitigation, the trust program makes it possible to use a senior water right to offset the creation of a new right.¹⁴⁸ The old water right can be registered in the trust program and used beneficially as water

to an existing water right, we recommend a pre-application consultation with our regional staff. Changes to water rights can be very complicated.”).

138. WASH. STATE DEP’T OF ECOLOGY, *supra* note 137.

139. *Trust Water Rights Program*, *supra* note 120.

140. *Id.*

141. *See* Osborn & Mayer, *supra* note 11, at 181.

142. *See supra* section I.C.

143. *See supra* section I.C.

144. *See* Osborn & Mayer, *supra* note 11, at 181.

145. *Id.* at 181–82.

146. *Id.* at 222.

147. *See Foster v. Dep’t of Ecology*, 184 Wash. 2d 465, 471, 362 P.3d 959, 961 (2015).

148. *See Trust Water Rights Program*, *supra* note 120.

in a stream,¹⁴⁹ while a new water right takes the same amount for a new use, at a net zero cost to the stream.¹⁵⁰ From in-kind mitigation to water right exchanges and streamflow remediation, multifaceted uses of the trust program are essential to the flexibility of water law in Washington State.¹⁵¹ In their various forms, water banks are nearly always used to effect these transfers and sales.¹⁵²

C. *Water Bank Structures*

The Trust Water Rights Program enables the creation of private, nonprofit, and public water banks.¹⁵³ Each type of bank has its own strengths and weaknesses. All require the trust program so that water rights can be temporarily “parked” while a transfer is negotiated, or so that water rights can be permanently registered in the trust program to mitigate for new rights or contribute to instream flows.¹⁵⁴ Using the trust program enables these water rights to avoid relinquishment.¹⁵⁵ But just like every other new use or transfer, every change in a water right still requires approval from Ecology.¹⁵⁶ The particularity of each water right to a certain place and time is part of why each water bank is unique. Unlike money in banks, water rights are not perfectly fungible and often require new infrastructure to transform. As a result, water banks can vary greatly between basins and contexts.

Private water banks are formed, operated, and managed to generate profit,¹⁵⁷ which is both an advantage and a disadvantage. Unlike public and NGO-run water banks, market forces set pricing.¹⁵⁸ Private water banks are generally the quickest to establish and can be set up in six months to one year with private investment funds.¹⁵⁹ They can convey the mitigation benefits of senior water rights quickly and effectively, but do

149. *Id.*

150. *See* Osborn & Mayer, *supra* note 11, at 192.

151. *See supra* section II.A.

152. *See supra* section II.A.

153. *See Trust Water Rights Program, supra* note 120.

154. *See id.*

155. WASH. REV. CODE § 90.14.140(2)(h) (2020).

156. *Id.* § 90.03.290(3).

157. *See* Memorandum from Dan Haller, Carl Einberger & Jason McCormick, Aspect Consulting, to Mike Hermanson & Rob Lindsay, Spokane Cnty. Utilities, Legal, Regul., & Pol’y Framework for Water Banking in Wash. 19 (Sept. 30, 2014) [hereinafter Aspect Consulting Memorandum], <https://www.spokanecounty.org/DocumentCenter/View/4387/Legal-Regulatory-and-Policy-Framework-for-Water-Banking-in-Washington-PDF> [https://perma.cc/42UE-H872].

158. *Id.* at 20.

159. *Id.*

so for the highest prices and transaction costs of the three types of water banks.¹⁶⁰ As of 2014, for private water banks in Washington, the average cost of water per acre-foot was \$54,345 with a minimum of \$27,000 and a maximum of \$131,200.¹⁶¹

Public water banks can be run by state, county, city, or tribal governments.¹⁶² These go by many names, but all use the trust program to convert senior water rights to new uses through transfer or mitigation.¹⁶³ Public entities can use public processes to set guidelines for pricing, unit volume, and service areas, as well as target users to manage market activity.¹⁶⁴ Prices on water rights from public water banks are generally the most favorable to consumers of any type of water bank.¹⁶⁵ In 2014, their average price for water per acre-foot was \$1,290, with a range from \$35 to \$3,600.¹⁶⁶ Public water banks' greatest limits come from administrative costs.¹⁶⁷

NGO-run water banks are subject to the same timing constraints as public water banks, generally taking one to three years to establish.¹⁶⁸ Also like public water banks, they can set parameters on pricing, unit volume, and service area with public processes that contribute to the integrity and reputation of the bank.¹⁶⁹ NGO-run water banks generally have mid-range prices, higher than government-run water banks but lower than private water banks.¹⁷⁰ As of 2014, their average price for water per acre-foot was \$7,350, with a range from \$3,600 to \$11,100. All of the above—private, public, and nonprofit water banks—are affected by recent changes in Washington water law that reduce the incentive to use water banks for in-kind water mitigation.

III. RECENT DEVELOPMENTS IN WASHINGTON WATER LAW: *FOSTER, HIRST, AND ESSB 6091*

Recent developments in Washington water law have shifted the ground under water banks. Despite their usefulness and flexibility, the state

160. *See id.* at 21.

161. *Id.* at 21.

162. *See supra* notes 121–122.

163. Aspect Consulting Memorandum, *supra* note 157, at 17.

164. *Id.* at 18.

165. *Id.*

166. *Id.* at 21.

167. *See id.* at 18.

168. *See id.* at 18–19.

169. *Id.* at 19.

170. *Id.*

legislature has edged away from water banks and overruled the Washington State Supreme Court in a way that is likely to impair instream flows and senior water rights, including tribal reserved water rights.¹⁷¹ This will harm the state's long-term water security and stream health.

The legal changes center on permit-exempt wells—in Washington, a well that withdraws 5,000 gallons of water per day or less is exempt from groundwater permit requirements.¹⁷² A property developer may not use the exemption to withdraw more than 5,000 gallons per day from multiple wells.¹⁷³ Permit-exempt wells are subject to water law and the rule of priority, but effectively are never curtailed.¹⁷⁴

To understand these issues, one hydrological concept is required: groundwater and surface water are connected.¹⁷⁵ This is called “hydraulic continuity.”¹⁷⁶ Groundwater, straightforwardly, is water that saturates the ground.¹⁷⁷ Depending on topography, underground pressure, and the permeability of the substrate, groundwater flows into surface water and contributes to streamflows.¹⁷⁸ Conversely, surface water leaves streams through the bottom of streambeds and contributes to groundwater.¹⁷⁹ When a well is drilled, it can pull the level of groundwater down as it extracts water, reducing streamflow in surface water.¹⁸⁰ This means that groundwater wells can impair senior water rights in surface water.¹⁸¹ Many permit-exempt wells in one basin can have cumulative effects. In some parts of Washington State, more groundwater is being withdrawn than can be recharged in human lifetimes.¹⁸²

171. See *infra* section III.C.

172. WASH. REV. CODE § 90.44.050 (2020).

173. Dep't of Ecology v. Campbell & Gwinn, L.L.C., 146 Wash. 2d 1, 10, 43 P.3d 4, 12 (2002) (citing WASH. REV. CODE § 90.44.050 (2001)).

174. See Osborn & Mayer, *supra* note 11, at 184–85.

175. See E.C. PIELOU, FRESH WATER 18–19 (1998).

176. WASH. ADMIN. CODE § 173-157-040 (2021) (“‘Hydraulic continuity’ means the existence of some degree of interconnection between two or more sources of water, either surface water and groundwater or two groundwater sources.”).

177. PIELOU, *supra* note 175, at 5.

178. See *id.* at 11, 18.

179. *Id.*

180. See Reed D. Benson, *Alive but Irrelevant: The Prior Appropriation Doctrine in Today's Western Water Law*, 83 U. COLO. L. REV. 675, 700–01 (2012).

181. See *Kittitas Cnty. v. E. Wash. Growth Mgmt. Hearings Bd.*, 172 Wash. 2d 144, 175, 256 P.3d 1193, 1208 (2011) (holding that county approval of side-by-side subdivisions supplied by exempt wells violates the Growth Management Act, in part because the county failed to protect the quality and quantity of the state's groundwater resources).

182. See *Aquifer Storage, Recovery, & Recharge*, WASH. STATE DEP'T OF ECOLOGY, <https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-recovery-solutions/Aquifer-storage-recovery-recharge> [<https://perma.cc/W2GS-3SAD>].

A. Foster and Hirst

The state legislature's reaction to the Washington State Supreme Court's decisions in *Foster v. Washington State Department of Ecology*¹⁸³ and *Whatcom County v. Hirst*¹⁸⁴ will shape groundwater availability and instream flows for generations to come. Classic prior appropriation doctrine does not allow de minimis impairment of a senior water right.¹⁸⁵ In *Foster* and *Hirst*, the Washington State Supreme Court affirmed that junior water rights, including permit-exempt wells, are still subject to this rule.¹⁸⁶

First, the 2015 *Foster* decision reinforced the rule that instream flow rules are senior water rights and cannot be impaired unless a narrow statutory exception is met.¹⁸⁷ The suit challenged a municipal water right permit that Ecology approved for the City of Yelm based on a complex mitigation plan.¹⁸⁸ The plan included in-kind (water-for-water) mitigation: retiring existing water rights and reintroducing reclaimed water back into the stream to offset new water uses.¹⁸⁹ It also included out-of-kind mitigation: stream and habitat restoration projects like acquiring historical farmland and constructing a streamside wall.¹⁹⁰ The parties did not dispute that the mitigation plan would allow impairment of instream flows during "shoulder seasons," the weeks in April and October not covered by retiring irrigation water rights.¹⁹¹ In other words, the out-of-kind mitigation would not fully compensate for the impacts of new water uses.

The *Foster* Court held that the permit was invalid because the proposed municipal water right would impair senior instream flows and did not fit into the narrow "overriding considerations of the public interest" statutory exception.¹⁹² As a water right, instream flow rules cannot be impaired by junior water rights.¹⁹³ The Court also held that out-of-kind mitigation strategies like habitat improvements cannot be used to address impairment

183. 184 Wash. 2d 465, 362 P.3d 959 (2015).

184. 186 Wash. 2d 648, 381 P.3d 1 (2016).

185. *Foster*, 184 Wash. 2d at 471, 362 P.3d at 961.

186. *Id.* at 475, 362 P.3d at 961; *Hirst*, 186 Wash. 2d at 684, 381 P.3d at 16–17.

187. *Foster*, 184 Wash. 2d at 475, 362 P.3d at 961.

188. *Id.* at 468–69, 362 P.3d at 960.

189. *Id.* at 469, 362 P.3d at 960.

190. *Id.*

191. *Id.* at 469–70, 362 P.3d at 960.

192. *Id.* at 472–75, 362 P.3d at 961–63.

193. *Id.* at 472, 362 P.3d at 961 (citing *Postema v. Pollution Control Hearings Bd.*, 142 Wash. 2d 68, 82, 11 P.3d 726, 736 (2000)).

of senior instream flows.¹⁹⁴ This decision made it difficult for water banks to transfer water rights from agricultural to urban water uses, because it is difficult to find a valid year-round water right that provides perfect mitigation.

Next, the 2016 *Hirst* decision held that counties are responsible for determining legal water availability before granting building permits.¹⁹⁵ State law requires counties to ensure an adequate water supply before approving a building permit.¹⁹⁶ Washington's Growth Management Act,¹⁹⁷ originally passed in 1990, requires that counties of certain densities engage in comprehensive planning for growth and development.¹⁹⁸ The law directs counties to protect "surface water and groundwater resources"¹⁹⁹ and "the quality and quantity of groundwater used for public water supplies,"²⁰⁰ but does not define how to do so. The state building code also requires counties to ensure an adequate water supply before approving a building permit.²⁰¹

The *Hirst* suit challenged Whatcom County's comprehensive plan, which relied on Ecology's water regulations for that region.²⁰² The Washington State Supreme Court held that the county could not rely on Ecology's regulations to ensure water availability and instead, must make its own determinations of physical and legal water availability.²⁰³ In line with *Foster* and other precedents, the Court reiterated that prior appropriation does not allow de minimis impairment of senior rights, including instream flow rules, even by permit-exempt wells.²⁰⁴

B. Legislative Response to *Hirst*: ESSB 6091

In response to the *Hirst* decision, some counties severely restricted building permits for developments that would rely on permit-exempt

194. *Id.* at 476–77, 362 P.3d at 963 (“[W]e reject the argument that ecological improvements can ‘mitigate’ the injury when a junior water right holder impairs a senior water right.”).

195. *Whatcom Cnty. v. Hirst*, 186 Wash. 2d 648, 685–86, 381 P.3d 1, 17 (2016).

196. WASH. REV. CODE § 19.27.097(1) (2020); WASH. REV. CODE § 58.17.110 (2020).

197. WASH. REV. CODE §§ 36.70A.010–.904 (2020).

198. *Id.* § 36.70A.040.

199. *Id.* § 36.70A.070(5)(c)(iv).

200. *Id.* § 36.70A.070(1); *see also* *Kittitas Cnty. v. E. Wash. Growth Mgmt. Hearings Bd.*, 172 Wash. 2d 144, 178–79, 256 P.3d 1193, 1209 (2011) (explaining that counties must regulate to ensure land use is not inconsistent with available water resources).

201. WASH. REV. CODE § 19.27.097(1); WASH. REV. CODE § 58.17.110.

202. *Whatcom Cnty. v. Hirst*, 186 Wash. 2d 648, 661–62, 381 P.3d 1, 5–6 (2016).

203. *Id.* at 672–73, 381 P.3d at 10–11.

204. *Id.* at 685, 381 P.3d at 17.

wells.²⁰⁵ Counties and developers protested the high costs of determining physical and legal groundwater availability—hydrogeological consulting can be quite expensive.²⁰⁶ Without a source for drinking water, some rural landowners were saddled with plummeting land values.²⁰⁷ State senate political pressure to legislatively overturn the decision delayed the state's 2017 capital budget for six months as legislators disagreed on what to do.²⁰⁸ In January 2018, legislators found a compromise with Engrossed Substitute Senate Bill (ESSB) 6091,²⁰⁹ which some call the “*Hirst* fix.”²¹⁰

ESSB 6091 superseded aspects of *Foster* and *Hirst*²¹¹ and functions in part to reduce incentives for water banking. The law authorizes existing domestic use permit-exempt wells to infringe upon senior instream flow rules in some basins.²¹² The authorized impairment applies only to instream flows, because permitting infringement of private senior water rights could constitute an unconstitutional taking.²¹³ Likewise, the Legislature cannot legally authorize impairment of senior tribal reserved water rights. But in practice, many such rights are unquantified and so their degree of impairment remains unknown.²¹⁴ The bill also funded streamflow restoration planning for watersheds with instream flow rules that do not specifically address permit-exempt wells,²¹⁵ which functions

205. Mai Hoang, *Reporter's Notebook: Wondering About the Hirst Decision, the State Supreme Court Water Use Case That Became a Key Political Tactic in Olympia? Read This Primer*, YAKIMA HERALD (Feb. 25, 2018), https://www.yakimaherald.com/news/business/local/reporters-notebook-wondering-about-the-hirst-decision-the-state-supreme-court-water-use-case-that/article_66d34acc-73a2-11e7-bce3-57a90ed13393.html [<https://perma.cc/MD9R-HVHH>]; Emily Hamann, *After a Year in Limbo, Rural Landowners Have Hope After the State Hirst Decision Fix*, BELLINGHAM BUS. J. (Mar. 7, 2018, 2:00 AM), <https://bjtoday.com/blog/after-a-year-in-limbo-rural-landowners-have-hope-after-the-state-hirst-decision-fix/35734/> [<https://perma.cc/MNJ8-V5CK>].

206. *Hirst Decision*, WASH. STATE DEP'T OF ECOLOGY, <https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-rights/Case-law/Hirst-decision> [<https://perma.cc/H6MS-7338>].

207. Hamann, *supra* note 205.

208. Osborn & Mayer, *supra* note 11, at 208.

209. Engrossed Substitute S.B. 6091, 65th Leg., Reg. Sess. (Wash. 2018) (codified as amended at WASH. REV. CODE § 90.94.010–.900 (2020)).

210. Jill Dvorkin, *Legislature Addresses Whatcom County v. Hirst*, MUN. RSCH. & SERVS. CTR. (Jan. 24, 2018), <http://mrsc.org/getdoc/f4d5189a-5f8f-414f-837e-4076d78bdba6/Legislature-Addresses-Hirst-v-Whatcom-County.aspx> [<https://perma.cc/MEG4-FSXW>].

211. Wash. Engrossed Substitute S.B. 6091, at 2–3.

212. *Id.* at 3.

213. *See Casitas Mun. Water Dist. v. United States*, 543 F.3d 1276, 1282 (Fed. Cir. 2008); Carlton, *supra* note 90.

214. Robert T. Anderson, *Indian Water Rights and the Federal Trust Responsibility*, 46 NAT. RES. J. 399, 401 (2006).

215. Wash. Engrossed Substitute S.B. 6091, at 23 (“The legislature intends to appropriate three hundred million dollars for projects to achieve the goals of this act until June 30, 2033. The department

as out-of-kind mitigation.

By authorizing domestic permit-exempt wells to infringe on rule-based instream flows, the Legislature removed the incentive to engage in water banking that occurs when a junior well withdraws water that would impair the instream flow. Impairment of instream flows by domestic permit-exempt wells is now legally permissible in many basins. An increasing number and density of such wells in Washington means streamflows will continue to be captured and reduced by groundwater withdrawals. ESSB 6091 means that Washington water law now values instream flows—and the salmon they protect—much less.²¹⁶ However, permit-exempt wells for business, commercial gardening, and stock-watering were not impacted by ESSB 6091,²¹⁷ so those water users still have a need for in-kind mitigation. Overall, ESSB 6091 means that domestic well users need not engage in water banking, because even when their water use has a physical impact on senior instream flows, it no longer has a legal one.

C. *Water Banks and Permit-Exempt Wells in the Yakima River Basin*

The Yakima Basin represents the direction the Legislature should have moved to address the interlocking pressures of permit-exempt wells, hydraulic continuity, instream flows, and tribal reserved water rights. Because of over-appropriation, the *Acquavella* adjudication,²¹⁸ a petition to close Kittitas County to new groundwater appropriations,²¹⁹ and litigation, the Yakima Basin's water users were forced to find new compromises and strategies to mitigate water use. Water banks are an essential part of their ongoing solution. Following the *Hirst* decision, a Yakima-based water engineer predicted that water banks would become

of ecology is directed to implement a program to restore and enhance stream flows by fulfilling obligations under this act to develop and implement plans to restore stream flows to levels necessary to support robust, healthy, and sustainable salmon populations.”)

216. Osborn, *supra* note 87, at 117.

217. See WASH. REV. CODE § 90.44.050 (2020).

218. See *supra* section I.D.

219. Melissa Bates & Jan Sharar, Aqua Permanente, Petition to Department of Ecology to Adopt RCW 90.54.050 Setting Aside or Withdrawing Ground Waters of Kittitas County (Sept. 10, 2007) (on file with author) (requesting that a moratorium rule be imposed on new permit-exempt groundwater wells in Kittitas County until sufficient information is known about their potential effects on senior water rights and instream flows); Letter from Rachael Paschal Osborn, Exec. Dir., Ctr. for Env't L. & Pol'y, to Ken Slattery, Water Res. Program Dir., Wash. State Dep't of Ecology (Oct. 8, 2007) (on file with author) (supporting and joining Aqua Permanente's petition); Letter from Jay J. Manning, Dir., Wash. State Dep't of Ecology, to Melissa L. Bates et al. (Nov. 9, 2007) (on file with author) (declining Aqua Permanente's request for rulemaking and describing an alternative agreement between Kittitas County and Washington State to address the concerns raised in the original petition).

common statewide as precise mitigation for permit-exempt wells.²²⁰ But instead, the Legislature exempted many permit-exempt wells from needing to mitigate for their impacts on streams.²²¹ The Legislature should have followed the Yakima Basin's example and moved to incentivize in-kind mitigation with water banks statewide.

The Yakima River flows east from the Cascade Mountains, gathering tributaries before joining the Columbia River.²²² The river has long been over-appropriated, and surface water has been closed to new appropriations since May 10, 1905.²²³ In the early 1990s, scientists began to understand how the river is hydraulically continuous with groundwater in the underlying basalt aquifer.²²⁴ Legally, this indicated that the groundwater was likely allocated to existing water rights.²²⁵ Despite this, Ecology issued several hundred new water rights for agriculture in 1993.²²⁶ The Yakama Nation appealed these permits, and the resulting litigation ended in a settlement with Ecology and the U.S. Bureau of Reclamation to fund a comprehensive hydraulic continuity study.²²⁷ The study revealed that most of the groundwater in the basin is connected to the Yakima River.²²⁸ Starting in July 2009, Ecology promulgated a series of emergency groundwater rules in Upper Kittitas County requiring all new permit-exempt groundwater users to mitigate their water use.²²⁹ As a result of the studies and settlements, new water rights *and* new permit-exempt wells must demonstrate that they have sufficient in-kind

220. Kate Prengaman, *Water Banking: Ruling Means You Could Need to Buy Rights to Drill a Well*, YAKIMA HERALD (Dec. 21, 2016), https://www.yakimaherald.com/news/business/regional/water-banking-ruling-means-you-could-need-to-buy-rights/article_6e324a48-a481-11e6-93dc-7ba4bb84345f.html [<https://perma.cc/8DSQ-JQE2>] (quoting Dan Haller, a principal engineer with Aspect Consulting, as saying of *Hirst*: "It's really going to make Kittitas County happen statewide The court is saying that you have to examine really small impacts to creeks from even (permit)-exempt wells. . . . It's going to put a great emphasis on water banking").

221. Engrossed Substitute S.B. 6091, 65th Leg., Reg. Sess. (Wash. 2018) (codified as amended at WASH. REV. CODE § 90.94.010-.900 (2020)).

222. *Yakima River Basin Integrated Plan*, WASH. STATE DEP'T OF ECOLOGY, <https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-supply-projects-EW/Yakima-River-Basin-projects/Yakima-integrated-plan> [<https://perma.cc/ZQG2-CCPM>].

223. Aspect Consulting Memorandum, *supra* note 157, at 19.

224. Osborn, *supra* note 87, at 143.

225. *Id.*

226. *Id.*

227. *Id.*

228. *Id.* at 144; J.J. VACCARO, U.S. DEP'T OF THE INTERIOR & U.S. GEOLOGICAL SURV., RIVER-AQUIFER EXCHANGES IN THE YAKIMA RIVER BASIN, WASHINGTON, SCIENTIFIC INVESTIGATIONS REPORT 2011-5026, at 1 (2011), <https://pubs.usgs.gov/sir/2011/5026/pdf/sir20115026.pdf> [<https://perma.cc/RM9Z-5YG3>].

229. VACCARO, *supra* note 228, at 22.

mitigation to be “water budget neutral.”²³⁰

Because of the new regulatory requirements, private water banks formed to fill the new demand from individual rural landowners who needed to mitigate permit-exempt wells for domestic purposes.²³¹ Suncadia, a resort in the upper part of the watershed, was the first into the market with high visibility and a strong marketing campaign.²³² In the 2010s, Kittitas County created its own public water bank to lower market prices with downward price pressure.²³³ As communities and water managers look toward the next decades, water banking is an important part of the plan.²³⁴

Admittedly, Yakima Basin rights are more amenable to exchange on a water market because of the enormous *Acquavella* adjudication that gave the rights more certainty.²³⁵ As the largest adjudicated basin in Washington,²³⁶ the contours of each Yakima Basin water right and relationships between them are more certain than in other parts of the state.²³⁷ But Yakima’s water banking solutions are possible even in unadjudicated basins like the Dungeness Basin on the Olympic Peninsula, where a nonprofit-run water bank sells packaged mitigation credits to offset surface water impacts from permit-exempt wells.²³⁸ The same is true of the Walla Walla River Basin in southeastern Washington, where the Walla Walla Watershed Management Partnership operates a water bank.²³⁹ Like in the Yakima Basin, the Dungeness and Walla Walla Basins have hydraulic continuity between ground and surface water.²⁴⁰

Today, the Yakima Basin is not included in the streamflow planning

230. Osborn, *supra* note 87, at 145.

231. Aspect Consulting Memorandum, *supra* note 157, at 19.

232. *Id.* at 21.

233. *Id.* at 20.

234. *Yakima River Basin Integrated Plan*, *supra* note 222.

235. *See supra* section I.D.

236. Although the *Acquavella* adjudication in the Yakima Basin was the largest in Washington’s history, it adjudicated surface water rights and not groundwater, meaning the basin was not fully adjudicated. WASH. STATE DEP’T OF ECOLOGY, *supra* note 99, at 2.

237. *Id.*

238. *Dungeness Water Exchange*, WASH. WATER TR., <https://www.washingtonwatertrust.org/dungeness-water-exchange> [<https://perma.cc/GU83-CGSV>]; *see also* WASH. ADMIN. CODE § 173-518-070(3)(a)(i) (2021) (setting forth in rule that new groundwater appropriations in the Dungeness “may be mitigated through the purchase of credits available through the Dungeness water exchange”).

239. Osborn & Mayer, *supra* note 11, at 195.

240. *Id.* at 195 (Walla Walla); PAC. GROUNDWATER GRP., 2008 DUNGENESS GROUNDWATER FLOW MODEL DESIGN, CONSTRUCTION, CALIBRATION AND RESULTS 1 (2009), <https://apps.ecology.wa.gov/publications/documents/1203282.pdf> [<https://perma.cc/7WWN-7KMT>].

required of some counties by ESSB 6091²⁴¹ because its three counties had already addressed the need for mitigating permit-exempt wells.²⁴² In many other Washington State watersheds, the pressure to mitigate the impacts of permit-exempt wells has partially dissipated after ESSB 6091, and with it the incentive to create water banks.²⁴³ But it is not too late for the Legislature to carefully embrace water banks as a tool for climate resilience and in-kind mitigation to protect instream flows, tribal reserved water rights, and new water users. The Yakima, Dungeness, and Walla Walla Basins demonstrate that water banks can enable new development while also protecting senior rights and streamflows.

IV. INFORMATION-DRIVEN WATER MARKETS ARE A TOOL FOR WATER MITIGATION AND CLIMATE RESILIENCE

In an era when Ecology can issue few new water right permits, the future of water law requires the flexibility to put existing rights to new uses. Washington State can no longer create new consumptive water rights for every new water need. Even in 1995, a leading scholar on Western water law wrote: “We are now in a much different time in the West—one in which the need is no longer for rules of appropriation but for rules of reallocation.”²⁴⁴ Water banks and the precise water accounting they enable are key to Washington’s future of water reallocation.

A. *Water Banks Are a Tool for Increasing Flexibility in the Era of Climate Change*

Every part of Washington’s water law system is stressed by climate change. Perhaps contrary to popular perception, Washington currently faces a water shortage.²⁴⁵ Ecology has always dealt with uncertainty from year to year, but climate change expands the “envelope of variability.”²⁴⁶ Hydrological systems are now uncertain in new and different ways

241. See Engrossed Substitute S.B. 6091, 65th Leg., Reg. Sess. § 101 (Wash. 2018) (codified as amended at WASH. REV. CODE § 90.94.010–900 (2020)).

242. Cf. Osborn, *supra* note 87, at 145.

243. See Osborn & Mayer, *supra* note 11, at 200–01.

244. Lawrence J. MacDonnell, *Water Banks: Untangling the Gordian Knot of Western Water*, in ROCKY MOUNTAIN MIN. L. FOUND., PROCEEDINGS OF THE ROCKY MOUNTAIN MINERAL LAW FORTY-FIRST ANNUAL INSTITUTE 22-1, 22-2 (1995).

245. WASH. REV. CODE § 90.42.005(2)(a) (“The legislature finds that . . . [t]he state of Washington is faced with a shortage of water with which to meet existing and future needs, particularly during the summer and fall months and in dry years when the demand is greatest.”).

246. P.C.D. Milly, Julio Betancourt, Malin Falkenmark, Robert M. Hirsch, Zbigniew W. Kundzewicz, Dennis P. Lettenmaier & Ronald J. Stouffer, *Stationarity Is Dead: Whither Water Management?*, 319 SCIENCE 573, 573 (2008).

because climate change is altering baseline ecosystem conditions.²⁴⁷

In the Pacific Northwest, “[a]verage winter precipitation is expected to increase over the long term, but year-to-year variability in precipitation is also projected to increase.”²⁴⁸ Average annual temperatures will increase 3.3°F to 9.7°F by 2070 to 2099, compared with the period of 1970 to 1999 as a baseline temperature average.²⁴⁹ This is a steep increase in a short amount of time. Climate change has already reduced annual spring snowpack in the Cascade Mountains by 23% from 1930 to 2007.²⁵⁰ Temperature increases will cause glacial and snowpack melt, sea level rise, more severe storms, increased wildfires, and increased diseases and pests.²⁵¹ Warmer temperatures will also cause more precipitation to fall as rain instead of snow during cold months,²⁵² meaning more water will flow into streams earlier in the spring and less in the late summer, affecting irrigation seasons.²⁵³

Moreover, salmon need cold, flowing water to survive.²⁵⁴ When rivers run low, their temperatures increase and create environments where fish diseases can fester and spread.²⁵⁵ Lower stream levels and increased water

247. Craig, *supra* note 9, at 15.

248. Charles Luce, Christine May, Joe Casola, Michael Chang, Jennifer Cuhaciyon, Meghan Dalton, Scott Lowe, Gary Morishima, Philip Mote, Alexander (Sascha) Petersen, Gabrielle Roesch-McNally & Emily York, *Chapter 24: Northwest*, in 2 IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES: FOURTH NATIONAL CLIMATE ASSESSMENT 1036, 1042 (D.R. Reidmiller et al. eds., 2018).

249. Philip Mote, Amy K. Snover, Susan Capalbo, Sanford D. Eigenbrode, Patty Glick, Jeremy Littell, Richard Raymondi & Spencer Reeder, *Chapter 21: Northwest*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT 487, 489 (J. M. Melillo et al. eds., 2014).

250. Mark T. Stoelinga, Mark D. Albright & Clifford F. Mass, *A New Look at Snowpack Trends in the Cascade Mountains*, 23 J. CLIMATE 2473 (2010).

251. WASH. STATE DEP’T OF ECOLOGY, PUB. NO. 12-01-004, PREPARING FOR A CHANGING CLIMATE: WASHINGTON STATE’S INTEGRATED CLIMATE RESPONSE STRATEGY 37 (2012), <https://apps.ecology.wa.gov/publications/documents/1201004.pdf> [<https://perma.cc/FT8D-J562>].

252. Luce et al., *supra* note 248, at 1054.

253. See *Climate Change: Observed Changes in the Climate*, *supra* note 22; Julie A. Vano, Michael J. Scott, Nathalie Voisin, Claudio O. Stöckle, Alan F. Hamlet, Kristian E.B. Mickelson, Marketa McGuire Elsner & Dennis P. Lettenmaier, *Climate Change Impacts on Water Management and Irrigated Agriculture in the Yakima River Basin, Washington, USA*, 102 CLIMATIC CHANGE 287, 299, 307 (2010).

254. See, e.g., Anna V. Smith, *How the Yurok Tribe Is Reclaiming the Klamath River*, HIGH COUNTRY NEWS (June 11, 2018), <https://www.hcn.org/issues/50.10/tribal-affairs-how-the-yurok-tribe-is-reclaiming-the-klamath-river> [<https://perma.cc/E42Z-3835>] (describing how in 2002, an estimated 34,000 salmon died in the Klamath River because “the federal government had capitulated to public pressure from farmers and ranchers in the Klamath Basin and diverted water from the river to irrigate fields . . . resulting [in] low flows [that] created a marine environment where fatal diseases could fester”).

255. *Id.*

temperatures have already led to enormous salmon die-offs in the Columbia River, especially during the 2015 drought when hundreds of thousands of sockeye salmon died.²⁵⁶ Such droughts also require curtailment of many junior water rights.²⁵⁷ Given climate projections, water right curtailments appear likely to increase in the not-so-distant future.

Climate change requires resilience and adaptation in Washington's water law system. In an environmental context, resilience "reflects a system's ability to absorb impacts and continue to function, while adaptive capacity refers to a system's ability to change to adjust to new conditions."²⁵⁸ Water banks can do both as the state adapts to seasonal gluts and shortages in water availability.

B. Water Banks Are a Tool for In-Kind Mitigation of New Water Uses

By using old water rights as mitigation for new uses, water banks enable transparent water accounting with in-kind mitigation. But with ESSB 6091, the Legislature embraced out-of-kind mitigation instead.²⁵⁹ The law funds a habitat mitigation planning process and allows domestic permit-exempt wells to infringe on senior instream flows without water-for-water mitigation.²⁶⁰ This is not an effective long-term strategy because it will result in further impairment of senior water rights, including tribal reserved water rights and instream flows.²⁶¹

Out-of-kind mitigation can harm healthy fisheries, water quality, and recreational uses.²⁶² Replacing water with not-water has proven politically necessary, but will not result in long-term water security in the era of climate change. Growth in permit-exempt wells will continue without clear accounting of their effect on instream flows or other senior rights. Salmon and other aquatic life that require certain minimum stream flows to survive are the losers in these compromises. Out-of-kind mitigation is insufficient to protect Washington's streams as climate change continues, and the Legislature should amplify its support for in-kind mitigation through water banks.

256. ANDERSON ET AL., *supra* note 27, at iii; Luce et al., *supra* note 248, at 1067.

257. ANDERSON ET AL., *supra* note 27, at 11.

258. Craig, *supra* note 9, at 22.

259. See Engrossed Substitute S.B. 6091, 65th Leg., Reg. Sess. § 101 (Wash. 2018) (codified as amended at WASH. REV. CODE § 90.94.010–900 (2020)).

260. *See id.*

261. Osborn & Mayer, *supra* note 11, at 235.

262. *Id.*

C. *Ecology and the Washington State Legislature Should Encourage Information-Driven Water Markets, Guided by the Public Interest*

To encourage water banking, the Washington State Legislature should expand the statutory framework to create more certainty, and fund Ecology to collect water data and enforce the rights of senior water users. The Legislature should be guided by the remembrance that water is held by the people as a public resource.

As of this writing, Ecology is engaged in an Advisory Group process on Water Trust, Banking, and Transfers to gather information for its own policymaking as well as for legislative proposals.²⁶³ Its draft findings and recommendations include a wide variety of creative proposals,²⁶⁴ some more widely embraced than others.²⁶⁵ Public comments on the process commend Ecology for its efforts to get all sectors to the table.²⁶⁶ As it moves forward, Ecology can recommend ways to improve public process beyond the advisory group.

As Ecology further develops water banking, the Legislature directs it to “seek input from agricultural organizations, federal agencies, tribal governments, local governments, watershed groups, conservation groups, and developers.”²⁶⁷ This is a productive directive, but local, state, federal, and particularly tribal governments should have a procedure for consulting on the creation of individual water banks. In keeping with these conversations, the Legislature should give Ecology express statutory authority to develop regulatory criteria for evaluating and rejecting water bank applications based on the public interest.

Ecology should also continue to make market information more public. Access to information is key to any well-functioning market, particularly one so technical and geographically varied. The agency is required to maintain water bank information on its website, including the amount charged for mitigation, fees and costs, the priority date of the water rights in the bank, the nature of the ownership interest in the mitigation sold, whether mitigation is recorded on the title, and more.²⁶⁸ Currently, it

263. See CARRIE SESSIONS & DAVE CHRISTENSEN, WASH. STATE DEP’T OF ECOLOGY, PUB. NO. 20-11-091, WATER TRUST, BANKING, AND TRANSFERS IN WASHINGTON STATE: FINDINGS AND RECOMMENDATIONS INFORMED BY ECOLOGY’S ADVISORY GROUP ON WATER TRUST, BANKING, AND TRANSFERS (2020), <https://fortress.wa.gov/ecy/publications/documents/2011091.pdf> [<https://perma.cc/XS5F-VM58>].

264. *Id.*

265. See *id.* app. D (setting forth public comments from Washington water lawyers, environmental nonprofits, and tribes).

266. See *id.* app. D at 6, 8, 47.

267. WASH. REV. CODE § 90.42.130 (2020).

268. *Id.* § 90.42.170.

tracks this information on a Microsoft Excel spreadsheet linked on its website.²⁶⁹ This is an excellent start, but such crucial market information can be disseminated more accessibly with a searchable web application linked to every page related to water banks. Private entities are already doing similar things on their own.²⁷⁰ For example, Western Water Market strives to connect sellers and buyers with technical and legal professionals in their locales for water transfers and mitigation.²⁷¹

The Washington State Legislature should encourage water metering—measuring how much water a well is withdrawing.²⁷² Beyond the statutory framework, much uncertainty remains in how much water is pumped from permit-exempt wells because many are not required to quantify their water consumption. The same is true for many irrigation districts and federal water project users. This data is essential to plan effectively for Washington’s more water-scarce future. Some permit-exempt well users are understandably skittish about metering their water use because they fear that doing so would increase the chances of curtailment or taxation. This fear is valid, but moving towards a more water-scare future without comprehensive data on actual state water use is even more frightening. Short of mandating well meters and causing an outcry, the Legislature should consider a program to finance the cost of water meters on existing wells. Kittitas County sets an example by requiring new domestic well users to meter their mitigated water usage and pay an annual fee to support the program.²⁷³ Other Washington counties should consider following Kittitas County’s example.

Water metering and price information contribute to a well-informed market and increase certainty about how an exchange or mitigation credit will work.²⁷⁴ Likewise, general stream adjudications also increase

269. *Tracking Water Banks*, WASH. STATE DEP’T OF ECOLOGY, <https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-rights/Trust-water-rights/Water-banks/Tracking-water-banks> [<https://perma.cc/B4C4-TKSC>].

270. *See, e.g.*, W. WATER MKT., <https://westernwatermarket.com/> [<https://perma.cc/8NYC-LNCD>] (providing a platform on which individuals can search listings and view the market for places to buy, sell, and lease water).

271. *See id.*

272. *See, e.g.*, WASH. ADMIN. CODE § 173-518-060 (2021) (“All future new surface and groundwater appropriations, other than rainwater collection, shall measure withdrawals.”).

273. KITTITAS COUNTY, WASH., CODE § 13.40.030 (2021) (“All new uses of groundwater for domestic purposes in Kittitas County (within the Yakima River Basin) using wells as their potable water source will be required to meter their mitigated water usage and pay an annual fee associated with the administration of a metering and monitoring program.”).

274. Gary D. Libecap, *Institutional Path Dependence in Climate Adaptation: Coman’s “Some Unsettled Problems of Irrigation”*, 101 AM. ECON. REV. 64, 65 (2011) (“Markets . . . rely upon well-defined property rights.”).

certainty about the quantity of a water right.²⁷⁵ As discussed above, over-appropriation in the Yakima Basin (and the *Acquavella* adjudication) created the circumstances for the greatest concentration of water banks in the state.²⁷⁶ When the extent, validity, and priority of a right is court-approved, title is effectively clear. The right can be exchanged or used for mitigation knowing its legal and physical impact on a stream, which protects instream flows and tribal reserved water rights.²⁷⁷ As such, the Legislature and Ecology should continue to fund general stream adjudications to amplify certainty in these usufructuary rights.

D. Speculation in Water Rights Can Be Managed with Limits on Time in Trust and Public Transparency

Speculation is the act of acquiring a resource for the purpose of subsequent use or resale, in hopes of profiting from future price fluctuations.²⁷⁸ The traditional prior appropriation doctrine was created in part to avoid speculation; nineteenth-century colonizers wanted water put to use and not bound up in legal agreements for someone else's financial gain.²⁷⁹

Today, after so much growth and change in water values and uses, the same strong aversion to speculation lives on.²⁸⁰ In October of 2019, *The Seattle Times* published two exposés: *Wall Street Spends Millions to Buy Up Washington State Water*²⁸¹ and *Wall Street Seeks a Valuable Resource from Washington State's Aging Farmers: Their Water*.²⁸² These articles profiled Crown Columbia Water Resources Company and its goal of purchasing large water rights from Washington farmers to sell in mitigation packages for new uses.²⁸³ Local residents were concerned that water rights sold away from smaller, rural communities would be gone

275. See *supra* section I.D.

276. See *supra* section I.D.

277. See *supra* section I.D.

278. See *Speculation*, BLACK'S LAW DICTIONARY (8th ed. 2004).

279. See Janet C. Neuman, *Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use*, 28 LEWIS & CLARK ENV'T L. REV. 919, 962–63 (1998).

280. See Sandra Zellmer, *The Anti-Speculation Doctrine and Its Implications for Collaborative Water Management*, 8 NEV. L.J. 994, 999 (2008).

281. Evan Bush, *Wall Street Spends Millions to Buy Up Washington State Water*, SEATTLE TIMES (Nov. 1, 2019, 6:48 PM), <https://www.seattletimes.com/seattle-news/environment/wall-street-spends-millions-to-buy-up-washington-state-water/> [<https://perma.cc/88TP-25ER>].

282. Evan Bush, *Wall Street Seeks a Valuable Resource from Washington State's Aging Farmers: Their Water*, SEATTLE TIMES (Nov. 1, 2019, 6:47 PM), <https://www.seattletimes.com/seattle-news/environment/wall-street-seeks-a-valuable-resource-from-washington-states-aging-farmers-their-water/> [<https://perma.cc/N59A-R8U8>].

283. See *id.*; Bush, *supra* note 281.

forever “due to agricultural economics and tenets of the water code that make it hard to transfer water upstream.”²⁸⁴ More broadly, observers were concerned about speculation and private consolidation of rights to a public resource.²⁸⁵

Considering how it costs nothing to keep a water right but climate change will continue to increase water scarcity, water is undervalued.²⁸⁶ Observing this, at least one investor has put money in water indirectly, through food grown in water-rich regions and sold in water-poor ones.²⁸⁷ Some environmentalists believe in increasing water markets and prices to incentivize conservation by treating water as the scarce resource that it is.²⁸⁸ Speculators bank on this increase. In Australia, an underregulated water market led to investors without ties to the land.²⁸⁹ Like in the American West, water is scarce, and in periods of shortage, Australian traders would “essentially cheer on the drought.”²⁹⁰ In the United States, since water law is state law, states are the ones who cannot be asleep at the wheel as these trends progress. In Washington, Ecology has been studying private water banks²⁹¹ and will need to continue to do so as these pressures mount—and the Legislature will need to fund their studies. Ecology’s challenge will be to regulate Wall Street-backed speculation while preserving the flexibility of public and NGO water banks, which are essential for adapting to climate change.

When handling speculation, transparency for meaningful decision-making is key. In Washington and elsewhere around the West, the type of water market that raises concerns “is that which involves placing the assets—the resource itself—in the hands of profit-driven firms, thereby interfering with the ability of residents and local governments to manage their own supplies, as decision-making becomes less transparent and opportunities for meaningful participation become less available.”²⁹²

284. Bush, *supra* note 281.

285. *Id.*

286. Ben Ryder Howe, *Wall Street Eyes Billions in the Colorado’s Water*, N.Y. TIMES (Jan. 3, 2021), <https://www.nytimes.com/2021/01/03/business/colorado-river-water-rights.html> [<https://perma.cc/S7NV-JZF8>].

287. Jessica Pressler, *Michael Burry, Real-Life Market Genius From The Big Short, Thinks Another Financial Crisis Is Looming*, N.Y. MAG.: INTELLIGENCER (Dec. 28, 2015), <https://nymag.com/intelligencer/2015/12/big-short-genius-says-another-crisis-is-coming.html?gtm=top> [<https://perma.cc/WGC9-JJ6P>] (discussing an investment strategy of Michael Burry, who was one of the investors to predict the 2008 market crash from subprime mortgage-backed securities).

288. Howe, *supra* note 286.

289. *Id.*

290. *Id.*

291. See SESSIONS & CHRISTENSEN, *supra* note 263.

292. Zellmer, *supra* note 280, at 999.

Water banks in Washington that are run by public entities and NGOs are often best at this kind of transparency,²⁹³ and private water banks should be subject to public process.

The most extreme alternative—creating generalized, state-wide restrictions on water banking—would curtail one of Washington’s greatest tools to shepherd Washington water law into the era of more dramatic climate change. The root of these concerns still rests in the ability to store water rights in the trust program, exempt from “use it or lose it.”²⁹⁴ But trust water rights are not the only ones with a special exemption from relinquishment. The statute enumerates a laundry list of twenty exemptions for everyone from military veterans to certain types of irrigators.²⁹⁵ By suspending “use it or lose it,” water banks counter the oldest anti-conservation incentive in Western water law.

Some legislators grasp water law’s complexity. Washington State Senator Jesse Salomon (D-Shoreline) explained to the *Seattle Times*: “There are legitimate concerns about unintended consequences. Each time you turn a dial, it has three or four different effects.”²⁹⁶ The reaction to Crown Columbia Water Resources Company is a case in point. In creating the Trust Water Rights Program, the Legislature wanted to incentivize efficient water use and create a program to fulfill unmet and future needs.²⁹⁷ They did not intend rural communities to fear de-watering by out-of-state investors.²⁹⁸

In addition to increasing opportunities for public process and allowing water right transfers back upstream, perhaps the best way to lessen water speculation in Washington would be to limit the amount of time that a water right can be stored in the Trust Water Rights Program. When donated as a permanent instream flow, of course, a water right should remain in trust forever. The same is true when a water right is registered in trust to serve as mitigation for a new water use. But when a water right

293. Aspect Consulting Memorandum, *supra* note 157, at 18–19; *see also Our Story*, WASH. WATER TR., <https://www.washingtonwatertrust.org/our-story/> [<https://perma.cc/Z9JD-72BH>] (explaining the nonprofit’s origins and goals as a water bank); *Water Resources Management*, KITTITAS CNTY., <https://www.co.kittitas.wa.us/public-works/water-bank/default.aspx> [<https://perma.cc/5W95-6Z56>] (publicly sharing available mitigation packages and how they were developed); *cf.* BOURNE WATER BANK, LLC, <https://www.bournewaterbank.com/> [<https://perma.cc/FJ9F-A7GH>] (explaining the private water bank’s available mitigation packages and advertising that they are backed by “reliable senior pre-1905 water rights that are suitable for much of the developable county”).

294. *See supra* section I.A.

295. WASH. REV. CODE § 90.14.140 (2020).

296. Bush, *supra* note 14.

297. Act of May 21, 1991, ch. 347, 1991 Wash. Sess. Laws 1957.

298. *See id.*

is registered in trust for decades in advance of a sale, the system allows speculation at a cost to water users in that watershed who need to project physical and legal water availability. Limiting the duration that water can be stored in the trust program would ameliorate these risks of speculation.

For both the Legislature and Ecology, the focus should remain on the public interest. In the past, removing water from the stream to put it to beneficial use was the highest public interest. Today, both instream and out-of-stream uses are of paramount importance. Rooted in a vision of the public interest, policymakers can move toward a future of managing speculation.

CONCLUSION

Like the water it strives to responsibly manage, Washington's water law system has been in constant flux for the last century. Prior appropriation, instream flows, and the Trust Water Rights Program each rose to meet their moment as cultural values around water changed over time. Today, water banks provide an essential tool for the reallocation of water rights. The Washington State Legislature and the Department of Ecology should embrace water banks as a tool for exchanging water rights and using senior rights to mitigate new uses. Water banks formed explicitly for the public interest, by local governments and nonprofits, are particularly apt for getting water where it is needed, without speculation, and at reasonable prices. As climate change transforms Washington's hydrologic system, water banks are essential for creating a more flexible and resilient legal framework for water management.

