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Beyond Anthropocentrism: Water Law and Environmental Management in the Yellowstone River Basin, USA

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ABSTRACT: Recent cross-fertilisation among the fields of critical legal geography, political ecology and environmental ethics has created opportunities to examine new legal designations for more-than-human entities such as rivers. In particular, theorisations of how more-than-human assemblages ontologically co-constitute the law challenge interpretations of legal structures as purely human creations and encourage scholars to examine manifestations of non-anthropocentrism, which is defined here as an ethical position that elevates non-humans' moral standing to that of humans. This article adopts an historical case study approach to examine an environmental conflict that occurred in the 1970s involving non-anthropocentrism and Montana water law. Specifically, this article draws from critical legal geography's understanding of the law and the environment as being co-constituted to argue that both elements of a non-anthropocentric environmental ethic and the influence of Yellowstone River as a more-than-human entity shaped Montana Fish and Game's position during the Yellowstone River Basin water reservation process. This article further argues that the combination of these influences affected legal interpretation of the 1973 Montana Water Use Act's 'minimum stream flow' text and helped reconstitute the Act to include non-anthropocentric elements.

KEYWORDS: Legal geography, political ecology, water governance, more-than-human geography, environmental ethics, Yellowstone River, USA

INTRODUCTION

The emergence of critical legal geographies focused on the environment provides an exciting theoretical and empirical space for scholars to examine ethical perspectives that extend beyond humans (Cantor and Emel, 2018). Recent scholarship on the 'rights of nature' has sought to better understand emerging legal mechanisms that recognise the ability of more-than-human entities to possess existence rights as well as legal personhood and standing in court (Braverman, 2018; Kinkaid, 2019; O'Donnell et al., 2020; Kohl and Walenta, 2023). Much of this work has centred on the legal rights of rivers and on the leading role that Indigenous peoples play in its development (O'Donnell and Talbot-Jones, 2018; Islam and O'Donnell, 2020; Immovilli et al., 2022). A dispute between Indigenous Māori tribes and the New Zealand government, for example, resulted in the 2017 legal recognition of the Whanganui River as having both personhood and standing. The river was recognised to have "its own legal identity" which included "the rights, duties, and liabilities of a legal person" (Pecharroman, 2018: 7). This legal framework incorporated the Māori recognition of rivers as having their own life force; it "not only forced settler laws to acknowledge the river as a legal person, but also ensured that their own values and language would guide future management of the river and future reform of water law" (O'Donnell et al., 2020: 415). In a similar vein, a 2017 lawsuit filed by the Colorado River Ecosystem against the State of Colorado and its Governor John Hickenlooper sought legal recognition of the Colorado River's "right to exist, flourish, regenerate, be restored, and naturally evolve", as well as legal recognition "of the River's standing to appear in court to defend them" (Miller, 2019: 356). Although the lawsuit was abandoned only a few months after its

filing, it remains suggestive of the potential for a radical shift across western water law. Recognition of legal personhood and standing for more-than-human entities such as rivers indeed suggests a potentially less anthropocentric (that is, human-centric) legal future.

Analysis of the rights of nature as a legal innovation commonly begins with Christopher Stone's (1972) law review article entitled, *Should Trees Have Standing? – Toward Legal Rights for Natural Objects* (see, for example, Pecharroman, 2018; O'Donnell et al., 2020). Although sharing commonalities with Indigenous ways of knowing and customary law, Stone's article is embedded within Western liberalism and the widespread federal and state legislative environmental reform of the 1960s and 1970s that provided an opportunity for ecologically informed ethical viewpoints transcending anthropocentrism to shape environmental protection across the United States (Nash, 1989; Braverman, 2018).[1] This article draws from legal geography, political ecology and environmental ethics to investigate a related but distinct legal development that occurred in Montana's portion of the Yellowstone River Basin during the 1970s (Figure 1). Relying on perspectives from both utilitarian conservation and ecological environmentalism, Montana Fish and Game[2] argued in favour of extending legal protection to the Yellowstone River and its ecosystem through the reservation of substantial instream flows. Key Fish and Game actors made both anthropocentric arguments (such as protection of existing water quality for human consumption, human recreation and protection of existing water rights) and non-anthropocentric arguments (protection of existing water quality for the environment and for the fish and wildlife habitat). I thus argue for an understanding of Montana Fish and Game's overall position as more-than-anthropocentric because it includes both anthropocentric and non-anthropocentric elements.

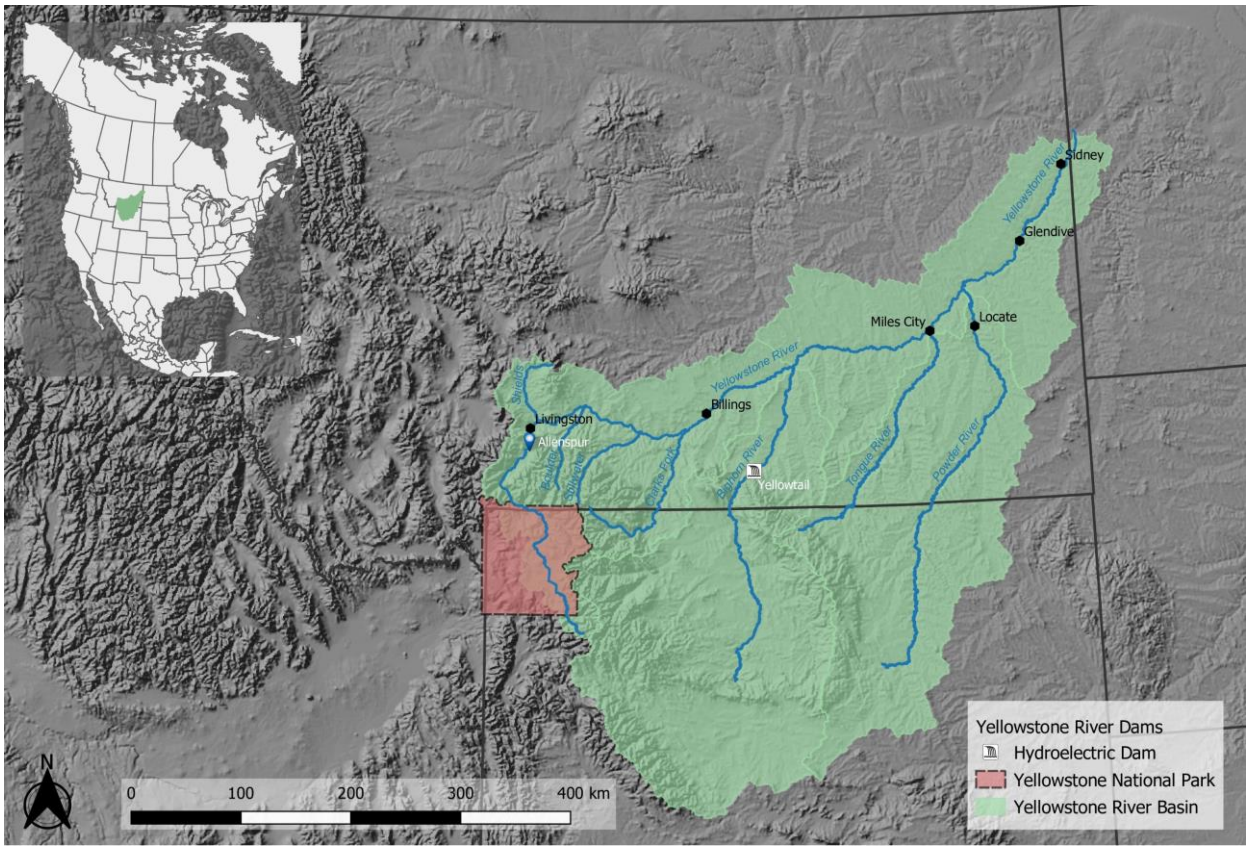
Although a new state constitution – ratified in 1972 – and subsequent amendments to Montana's water law – known as the 1973 Montana Water Use Act – widened the legal scope for environmental protection within the state, these reforms did not explicitly diverge from an historical legal paradigm grounded in anthropocentrism. Through a novel quasi-judicial process known as the Yellowstone River Basin water reservations, however, Montana Fish and Game successfully advocated for instream flow water rights using moral reasoning that transcended anthropocentrism. Relying primarily on legal documents associated with the Yellowstone River water reservation's case hearing process, I reconstruct how individuals within Montana Fish and Game leveraged this new and more pliable legal space to secure environmental protection for fish and wildlife through the use of an approach that included non-anthropocentrism. I thus argue that the instream flow water reservations granted for the Yellowstone River Basin became ontologically inseparable from the agency's more-than-anthropocentric ethical position. In other words, elements of a non-anthropocentric environmental ethic helped constitute Montana Fish and Game's legal right to instream flow reservations in certain portions of the Yellowstone River Basin. I also argue that the Yellowstone River as a more-than-human entity influenced Montana Fish and Game employees' more-than-anthropocentric ethical position and thereby helped co-constitute elements of Montana instream flow water law.

The second section of this article begins with a literature review of the cross-fertilisation between critical legal geography and political ecology. That section also provides a brief overview of the rights of nature, environmental ethics and the instream flow implications of Montana's 1973 Water Use Act. The third section traces the origin and evolution of the prior appropriation system in order to place the legal protection of instream flows in its proper historical context. It also briefly discusses the anthropocentric roots of Montana's first legislation protecting instream flows in 1969 and its inseparable relationship to the Blue Ribbon classification system. The fourth section focuses on the Yellowstone River Basin water

[1] Indigenous ways of knowing are directly embedded within 1960s and 1970s ecological environmentalism, although the degree of influence that Indigenous ontologies had on the development of American environmentalism is unclear and deserves more scholarly attention. For further reading, see Nash (1989), especially pages 117-119.

[2] Throughout the paper, I use 'Montana Fish and Game' to refer to both the Montana Department of Fish and Game (a state agency) and the five-member Montana Fish and Game Commission (the governor-appointed board that oversees the Department).

Figure 1. Yellowstone River Basin.



Source: Jackson Rose.

reservations. The case study is broken into six parts in order to chronologically follow the major steps in the quasi-judicial legal process. The article concludes with a discussion of its main arguments and theoretical contributions.

LITERATURE REVIEW

Legal geography is an interdisciplinary field of study that examines the relationship between law and spatiality and is predicated on scholars' conception of them as being co-constituted (Braverman et al., 2014); law and space, in other words, cannot be separated and must thus be studied together. The spatial dimensions of law are manifold; however, the recent emergence of more-than-human scholarship as a way to revise the human-nature divide within legal frameworks offers an exciting new way for legal geography to account for non-human agency (Delaney, 2017; Deckha, 2021). Ojalammi and Blomley (2015) question whether the law is exclusively a human phenomenon. Adopting a post-structural framework, they believe that, "relations between humans and nonhumans (…) may be generative of legal territory, rather than simply produced through it" (ibid: 53). Furthering this line of thinking, Braverman (2018: 128) argues that more-than-human legal approaches can, "highlight how both animality and humanness are deeply embedded in the construction of law and, reciprocally, how law is acutely relevant for constituting the animal". In other words, more-than-human entities such as rivers and fish can have political agency through their influence on the constitution of law.

The recent cross-fertilisation between legal geography and political ecology opens additional pathways for analysing power imbalances associated with environmental conflict (Andrews and

McCarthy, 2014; Cantor and Emel, 2018; Cantor et al., 2020). Cantor (2016: 51) notes that, "[t]he study of water has been a primary area of bridging between legal studies and human-environment geography". This confluence allows for scholars to more rigorously examine, for example, water adjudication (Perramond, 2019), territoriality of water governance (Jepson, 2012), legal ambiguities of desalination (Campero and Harris, 2019), human right to water (Wilder et al., 2020), and political agency of fish in dam removal decision-making (Druschke et al., 2017). Cantor and Emel (2018: 1) view this intellectual space as a place to imagine, "alternatives to entrenched systems of capitalist and anthropocentric water governance". One such alternative includes an "Earth-centric" legal paradigm – a type of non-anthropocentric position – in which "the rights of humans do not clash with the rights of nature because they have the same objective: to live in harmony" (Pecharroman, 2018: 10).

An Earth-centric approach helps to better acknowledge the political agency of the more-than-human world and also to create legal pluralism in which Indigenous ways of knowing can transform the ontology of 'nature' within the Western legal tradition (Pecharroman, 2018; O'Donnell, 2020). Rights of nature is a term with multiple meanings and an increasingly complex intellectual history. With respect to its conceptual development within Western liberalism, Stone (1972) is often credited as having originated the position that non-human nature should have legal standing (Nash, 1989; Rawson and Mansfield, 2018).[3] This position and the subsequent legal debates helped develop a wider body of legal scholarship known as 'Earth jurisprudence' and/or 'wild law' (see, for example, Cullinan 2011; O'Donnell et al., 2020). Stone's legal concept became practice in the mid-1990s with the founding of the Community Environmental Legal Defense Fund, which has established municipal codes for the environment that are grounded in legal standing and has even played a role in the recent application of this legal approach on the international stage (Kohl and Walenta, 2023). This emerging international legal reality is a confluence of Western liberalism with Indigenous ontologies and customary law (Pecharroman, 2018; O'Donnell et al., 2020).

Within Western liberalism, the antecedents to an Earth-centric approach emerged in earnest during the 1960s and 1970s. Couched as an alternative to environmental protection for human benefit, non-anthropocentrism shunned utilitarian approaches to resource conservation in favour of an environmentalist approach that acknowledged the intrinsic value of nature and thus its 'right to exist' independent of its utility to humans (Nash, 1989). Acknowledging the intrinsic value of more-than-human entities often meant extending them moral status. As Palmer et al. (2014: 423) explain, adherents of anthropocentrism, "maintain either that only human beings have moral status or that human beings are much more morally significant than other livings things". They contrast this position to that of non-anthropocentrism which, "maintains that at least some nonhuman beings or things, which may include animals, living organisms, ecosystems, populations, and species, have interests that should be taken into consideration in our moral decision making" (ibid). Adherents of non-anthropocentrism also typically "[eschew] the claim that human interests should always be considered more important than the interests of other things" (ibid). Deeply grounded in holistic thinking that emerged from the science of ecology, environmentalists operating in the late 1960s and 1970s greatly influenced the American legal context within which environmental protection could occur (Nash, 1989). Passage of federal legislation such as the National Environmental Policy Act (1969) and the Endangered Species Act (1973) created a new legal framework that was more conducive to more-than-anthropocentric understandings.

McEvoy et al. (2018) argue that despite the influence of the environmental movement on federal law, anthropocentric approaches still predominate in Montana's water law and drought planning; they contend that these anthropocentric approaches fail to account for a diverse range of more-than-human water needs. Drawing from a rich set of drought planning documents for the Upper Missouri River Basin, they find that these plans rely on the same anthropocentric ethos that drives instream flow legal protection, that is, utilitarian benefit. They specifically find a predilection in water law and drought

[3] For an historical perspective see Nash (1989), particularly pages 128-131.

planning for the protection of more-than-human entities that offer instrumental value to humans through recreation opportunities. The health of the sport fishery, for example, serves as the dominant ecological concern within the drought plans. The authors argue that this bias towards the recreational utility of rivers for sport fishing is deeply ingrained in instream flow legislation throughout Montana and much of the western United States.

McEvoy et al. (ibid) also argue that the 1973 Montana Water Use Act is fundamentally anthropocentric, as evidenced by its focus on utilitarian water management. Although there is little doubt that the 1973 legislation is a product of a human-centric legal system, the Water Use Act did establish a legal process for designating instream flow reservations in Montana's four major river basins (including the Yellowstone) that, in practice, proved amenable to Montana Fish and Game's more-than-anthropocentric approach to river protection. In other words, the legal geography related to instream flow protection in Montana, although anthropocentric in legislative origin, was flexible enough to incorporate certain non-anthropocentric ethical approaches during its adoption process. In this way, an historical conflict over water in the Yellowstone River Basin enabled the constitution of instream flow legal protection that better accounted for the rights of more-than-human entities.

WESTERN WATER LAW AND MANAGEMENT

The emergence of Montana Fish and Game's more-than-anthropocentric approach to water management in the western United States cannot be fully understood without an historical appreciation for the origins and evolutions of the prior appropriation doctrine. As the United States' settler-colonial project entered California and other parts of the western US in the mid-1800s, miners and irrigators flocked to secure claims on minerals, land and water. Because mining claims often existed far from a water channel, miners diverted water from streams in order to process ore. They also developed a priority system for determining the legitimacy of a water claim; this was based on the idea of "first in time, first in right" (Wilkinson, 1992: 232-233) and did not attach any legal weight to the connection between riparian land ownership and water rights. The riparian doctrine of the eastern United States inherently favoured keeping water in the river channel and required landowners bordering streams to share water; in the western US, by contrast, prior appropriation facilitated competition and conflict among water users and provided little protection for instream flows (Wilkinson, 1992). In fact, along with the importance of priority date and diversion, the concepts of abandonment and beneficial use formed the core of the prior appropriation doctrine. Abandonment meant that a water rights holder needed to use the full amount of his/her appropriation or risk losing legal claim to the resource. It became synonymous with the phrase 'use it or lose it'. The concept of beneficial use, in the context of the extractive societies of the US West, meant that only anthropocentric consumptive uses such as mining, agricultural, municipal, or industrial qualified as worthy of legal water rights. Together, these four major principles – priority, diversion, beneficial use, and abandonment – coalesced into the prior appropriation doctrine that came to govern "nearly all water usage in the West" (Wilkinson, 1992: 235).

Because of the US West's extractive settler-colonial history and variable precipitation regime, the riparian system, which better protected instream uses of water, did not take hold in an arid region reliant on off-stream water use for economic development (Gillilan and Brown, 1997). Thus, as the prior appropriation system became more widespread and developed, the amount of water left in streams diminished. As Wilkinson (1992: 234) wrote, traditionally under the prior appropriation doctrine "in-stream uses could not qualify as appropriations. They were not diversions. Nor did using water – a stream, a lake, or a waterfall – to protect wildlife, to swim in or boat on, or to enjoy for its beauty make for a beneficial use. Instream uses were doubly disqualified". Although legal recognition and protection of instream flows under riparian doctrine should not be conflated with a non-anthropocentric ethical perspective, this eastern US approach to water management did offer a kind of water quantity protection to river systems that was not found in the western part of the country.

As the volume of consumptive use increased across the region, water became scarcer and the need to more efficiently capture and store spring run-off in large reservoirs behind dams became a significant focus of water management (Hays, 1959; Wilkinson, 1992). Federal agencies such as the Bureau of Reclamation and the Army Corps of Engineers collectively helped direct, finance and construct enormous water projects (Worster, 1985; Reisner, 1986; Schneiders, 2003). This attitude towards river management encountered some resistance, especially within the political boundaries of national parks, but virtually all of the region's river basins experienced construction of large dams and reservoirs (Wilkinson, 1992; Harvey, 1994; Righter, 2005). During the postwar era, however, increased interest in wilderness recreation opportunities helped stimulate support for protecting the few remaining stretches of relatively undeveloped and undammed rivers (Gillilan and Brown, 1997; Palmer, 2004). An example of this is the wild and scenic rivers movement which was founded in the late 1950s. It focused on achieving federal protection for wild and free-flowing stretches of river and had a dual purpose of countering dam building and limiting the amount of recreational development (Tarlock and Tippy, 1970). With its passage into law in 1968, the Wild and Scenic Rivers Act became the most significant federal mechanism for protecting certain stretches of river from development and depletion. The Act was indicative of a changing legislative framework that provided environmental advocates with a new set of legal mechanisms allowing for a more proactive approach to riparian protection.

The wild and scenic rivers movement had deep roots in Montana;[4] it was, however, another type of river classification scheme that provided the conceptual foundation for the state's first legislative action protecting instream flows for environmental reasons. In 1955, the Montana Stream Rating Committee was formed. It comprised fisheries experts from Montana State College, the Bureau of Sport Fisheries and Wildlife, and the Montana Department of Fish and Game. Its mandate was to create a method for classifying Montana's rivers and streams according to their recreational fishing value. Federal fisheries biologist Joe Halterman served as the driving force behind the classification scheme and viewed it as a key tool for helping to protect Montana's best fishing streams (Holton, 1984). As Halterman (1958: 1) wrote, "There is little prospect for improving fishery's position in comprehensive planning until we (…) inventory and classify our waters from the standpoint of recreational fishing". Halterman and other members of the committee recognised the challenges of creating "a satisfactory method for measuring the total social and economic worth of a recreational fishery" because "unlike other water uses, [it] does not lend itself to material measurement". In 1959, however, they published the Montana Stream Fishery Classification Map (Halterman, 1960: 1).

The stream rating committee created a classification scheme that assigned a ranking to all of Montana's freshwater streams. The ranking was based on a largely utilitarian and human-centric approach to classifying and protecting the most valuable recreational sport fisheries in Montana. It placed each stream into one of five classes on the basis of the utilitarian values of availability (to anglers), aesthetics (for anglers), use (by anglers), and productivity (as a recreational fishery) (Halterman, 1958). The authors used the colour blue for Class 1 streams because blue represented the traditional colour of first-place ribbons at county fairs (Holton, 1984). Initially, only 410 miles (660 kilometres) were categorised as Class 1 (streams of national and state-wide value); however, this instrumentalist 'Blue Ribbon' classification system soon became almost synonymous with the most famous and desirable locations for trout fishing in Montana. It came to be well-known as, "a designation of excellence familiar to fishermen, conservationists, chambers of commerce, and developers" (ibid: 3).

Although it quickly became a popular way to promote Montana's recreational fisheries, the Blue Ribbon classification system did not provide any sort of legal protection for the environment (Decker-Hess, 1990). Its influence on the legal designation of instream flow protection, however, would prove significant. In 1969, the Montana legislature passed Chapter 345, Laws of 1969 (89-801 R.C.M. 1947). This

[4] Montana's John and Frank Craighead are credited with starting the wild and scenic rivers movement; they did so in response to federal plans to build a dam on the Flathead River (Palmer, 2004).

legislation – more commonly known as Murphy Rights – enabled Montana Fish and Game, "to appropriate unappropriated waters on twelve streams designated by State law and in amounts necessary to maintain instream flows for the preservation of fish and wildlife habitat" (Sweetman, 1980). Notably, Murphy Rights focused exclusively on protecting streams that provided valuable trout habitats, including seven streams that were officially designated as Blue Ribbon (Montana Fish and Game Commission, 1976). Between December 1970 and January 1971, in accordance with the legislation, Montana Fish and Game regional fisheries managers filed notices of instream flow appropriation for the 12 designated rivers, including the upper Yellowstone (Posewitz, 1975). The Murphy Rights legislation provided only a limited anthropocentric framework for instream flow protection, however it foreshadowed later changes to Montana water law that would expand the definition of beneficial use and would further legitimise the concept of instream flows within the prior appropriation doctrine.

CASE STUDY: THE YELLOWSTONE RIVER BASIN WATER RESERVATIONS

In 1973, the Montana legislature established a new legal framework for reserving surface water for both consumptive and non-consumptive uses. The Yellowstone River Basin still had a large amount of unappropriated surface water and faced dewatering threats from the energy industry. This new mechanism thus provided an important opportunity for agricultural, municipal, and environmental interests to secure future access to water. With respect to instream flows, the water reservation process provided a rare opportunity for basin-wide protection. Historically, instream flow water rights were almost always limited to small geographical areas and offered piecemeal protection. The reservation process in Montana, however, provided a mechanism for large-scale protection of instream flows. The Yellowstone River Basin water reservation process lasted in earnest from July 1973 to December 1978. It created a legal space for Montana Fish and Game to use more-than-anthropocentric ethical reasoning to help gain widespread environmental protection for instream flow values.

The environmental conflict

The Yellowstone River Basin is rich in coal and coal-based fossil fuels, especially the basins of its tributaries the Tongue and Powder Rivers. Beginning in the late 1960s, coal extraction through large-scale surface strip mining methods rapidly increased within Montana's portion of the Yellowstone Basin (Malone et al., 1991). Coal extraction in the state increased from 364,509 tons in 1967 to 22,087,188 tons in 1975, with most of this increase occurring in the Yellowstone region (Montana Department of Natural Resources and Conservation, 1976: 97-98). When it became clear that visions for large-scale energy extraction and production existed, grassroots resistance sprung up across the basin. In October 1972, ranchers in the Bull Mountains formed the Northern Plains Resource Council to oppose large-scale industrial strip mining, which they perceived as threatening to their livelihood (Toole, 1976). In the upper Yellowstone, Park County residents formed the Allenspur Committee to Save the Upper Yellowstone, which sought to prevent the proposed damming of the Yellowstone's mainstem (Anderson, 1974). Local resistance was motivated by the release of the 1971 *North Central Power Study* and the Bureau of Reclamation's 1972 *Appraisal Report* on *Montana-Wyoming Aqueducts*. These reports created widespread concern across Montana that private and public utilities – with the assistance of the federal government – sought to turn the Yellowstone River Basin into an export-oriented industrial wasteland (Toole, 1976; Malone et al., 1991). The studies proposed to build 42 mine-mouth coal-fired power plants across the Northern Great Plains, including 21 in Montana; these would require an estimated 2.6 million acre-feet (Maf) of Yellowstone River Basin water annually. This potential development provoked both grassroots resistance and a rush by the energy industry to secure permit applications for water rights (Posewitz, 1985; Malone et al., 1991).

At the state level, Montana Fish and Game initially became concerned with the Bureau of Reclamation's proposal to build a 380 foot (116 metre) dam at Allenspur (Posewitz, 1985).[5] If built, the dam would impound approximately 1.5 Maf of water and destroy more than 30 miles (48 km) of Blue Ribbon trout habitat (Anderson, 1974). It would also remove the status of 'free-flowing river' from a major portion of the upper Yellowstone River. Montana Fish and Game thus worked cooperatively with the Allenspur Committee to Save the Upper Yellowstone and with other supporting organisations to gain environmental protection under the 1968 Wild and Scenic Rivers Act (Anderson, 1974; Posewitz, 1985). Although legal protection under the Act failed to materialise because of landowners' unwillingness to cede power to the federal government, the newly created state-level water reservation process gave fish and wildlife advocates another mechanism for proactively protecting the Yellowstone River from mainstem impoundment (Posewitz, 1985). Montana Fish and Game would ultimately use the water reservation process strategically as a way to gain (indirect) legal protection against large-scale impoundment of the river's mainstem water. They would also use it to secure instream flow protection across the entire Yellowstone River Basin (not just for its widely renowned trout fisheries) and in that way would protect the existing quality of the aquatic and terrestrial ecological habitat.

The legal framework

In the early 1970s, Montana drafted and ratified a progressive new state constitution which stated that, "[t]he state and each person shall maintain a clean and healthful environment in Montana for present and future generations" (Mt. Const. art. IX, § 1). The constitution also mandated the legislature to create a centralised water rights system for the entire state. In response, the legislature quickly passed the Water Use Act of 1973, which established Montana's new water management framework (Posewitz, 1985). This framework attempted to standardise the administration of surface water through the creation of a permit system; it also provided a new mechanism for reserving unappropriated waters for designated future use through water reservations. With respect to environmental protection, the 1973 Montana Water Use Act extended the beneficial use of water to include fish and wildlife as well as recreation; it also created a reservation system in which,

> [t]he state or any political subdivision or agency thereof or the United States or any agency thereof may apply to the board [of Natural Resources and Conservation] to reserve waters for existing or future beneficial uses or to maintain a minimum flow, level, or quality of water throughout the year or at such periods or for such length of time as the board designates (Montana Code Annotated 2019, 85-2-316 (1)).

This framework provided an important avenue for protecting riparian environmental values through the reservation of minimum stream flows. In this way, Montana Fish and Game became eligible to apply for instream flow water reservations that were aimed at protecting the beneficial uses of both recreation and fish and wildlife.

The energy industry's interest in using the Yellowstone River Basin sparked widespread concern across Montana. Moving to regulate this development, the Montana legislature passed legislation which sought to protect Montana's environment through careful regulation and planning of the energy industry (Malone et al., 1991). With respect to water, the 1973 Water Use Act and the 1974 Yellowstone Moratorium Act proved crucial. The 1974 Yellowstone Moratorium temporarily suspended existing industrial applications that included diversions greater than 20 cubic feet per second (cfs) (.57 cubic metres per second, or m^3/s) or storage greater than 14,000 acre-feet (Montana Fish and Game Commission, 1976: 270-271). This allowed for the water reservation process to occur in the Yellowstone

[5] It is worth noting that plans to dam the Yellowstone River at Allenspur had existed since at least 1902. Environmental advocates were thus searching for more permanent protection from a large hydroelectric impoundment on the upper Yellowstone. For further reading on Allenspur, see Anderson (1974); for more on the upper Yellowstone more generally, see Lovin (2002), Yochim (2003), and Schneiders (2003).

River Basin before the Montana Department of Natural Resources and Conservation (DNRC) made a decision on pending industrial water rights permits. Because industrial energy interests threatened to deplete water supplies, policymakers and the state legislature wanted to make sure that municipalities, agriculturalists and environmental interests had the first chance to reserve unappropriated water (Sweetman, 1980).

The application process

The Montana DNRC's application deadline of 1 November 1976 gave potential applicants more than two years to put together the required material. This allowed Montana Fish and Game additional time to collect scientific evidence supporting its reservation request. For the seven-member Montana Board of Natural Resources and Conservation to grant a water reservation, all applicants were required to successfully establish: 1) the purpose of the reservation; 2) the need for the reservation; 3) the amount of water necessary for the purpose of the reservation; and 4) [proof] that the reservation is in the public interest (Montana Code Annotated 2019, 85-2-316(4a)). In total, the DNRC received water reservation applications from 30 state and federal entities (Sweetman, 1980).

The 1973 Water Use Act also instructed the DNRC to adopt rules "to determine whether or not an application is correct and complete" (Montana Code Annotated 2019, 85-2-316-3(a)). The Department of Natural Resources and Conservation thus decided that instream flow reservation applicants needed to be "based on state-of-the-art evaluations of water" that "demonstrate how the requested level or minimum flow was determined, and why that level of flow is necessary" (Montana Administrative Code 36 – 2.14R(1) – s1430(2e)).[6] The DNRC's determination to require "state-of-the-art evaluations of water" meant that scientists' methodological choices would be a very important part of the application. Following these guidelines, Montana Fish and Game put together a scientifically complex instream water reservation application that included a request for 8,206,723 acre-feet annually at Sidney, Montana (MT). It also included one 24-hour bank-full (that is, dominant discharge) flow at 52,000 cfs (1472 m^3/s) between June 8 and June 30 and a total of 80 stream and stream reach reservation requests (Montana Fish and Game Commission, 1976; Boris and Krutilla, 1980).

To calculate these amounts, Montana Fish and Game relied largely on scientific evidence it collected in the course of the many studies it conducted along the river from 1972 to 1976; it also used a variety of instream flow methodologies. Fish and Game biologists conducted field-based scientific studies on the Yellowstone's aquatic and terrestrial ecology, geomorphology and hydrology in order to gain the necessary information for conducting analysis on the quantity of stream flow needed to sustain the river's environmental functions (Posewitz, 1985). Despite this aggressive approach to the rapid collection of baseline data for the Yellowstone River system, scientists in the field struggled to deal with the sheer size and force of the river as well as the incessant movement of water, sediment, fish, birds and mammals (Hinz, 1977; Peterman, 1978). As legal geographers Ojalammi and Blomley (2015: 52-53) suggest, "Plants, animals, winds and water behave in unpredictable ways, according to their own logics, complicating human geographies". Liter Spence, Montana Fish and Game's Water Resources Supervisor, described the Yellowstone River's constraining effects on the creation of standardised processes related to instream flow science by saying that, "The standard is whenever you can make a reliable measurement. It's very difficult to make a reliable measurement during a flood, for instance, or even a high flow, because you physically cannot collect the proper data" (Montana Board of Natural Resources and Conservation, 1977b: 98). He went on to state that, "in any kind of field situation, you have to make your measurements at the most appropriate time (…) that is usually during the low water period when you can physically enter the stream channel and make those measurements" (ibid: 96).

[6] These rules are part of a memo sent from J. E. Acord (Chief, Resources and Planning Bureau of the DNRC) on 1 March 1976 (Acord, 1976).

The mobility and variability of river water thus challenged the boundaries of scientific studies. It affected scientists' ability to conduct their research and made it challenging to quantify minimum streamflow needs, even when using scientifically accepted methods (Fiege, 2005; Haggerty and Travis, 2006; Wilson, 2010). In this way, the Yellowstone River and its various more-than-human actors resembled "an uncooperative commodity" and gained political agency through their influence on the water reservation process (Bakker, 2004).

Because of the complexity of rivers, no single method existed for calculating instream flow requirements. Most established approaches to quantifying instream flows in fact relied fundamentally on field-based data collection and individual expertise (Gillilan and Brown, 1997). Montana Fish and Game's methods for determining the amount for each of its requested flows thus relied heavily on both fieldwork and the scientific expertise of its employees. For its application, agency scientists used methods such as the Bureau of Reclamation's computerised Water Surface Profile, dominant discharge, various types of physical, chemical and biological indicator data, flow duration hydrographs and – most controversially – the Blue Ribbon concept (Montana Fish and Game Commission, 1976).[7]

Originally developed as an anthropocentric stream classification scheme to help protect valuable sport fisheries, Montana Fish and Game adapted the Blue Ribbon classification system into a novel instream flow methodology. Interestingly, Fish and Game's use of the 'Blue Ribbon concept' to determine minimum instream flow levels actually took on more-than-anthropocentric qualities. It justified the agency's reservation request for almost all the unallocated water in the upper Yellowstone and its tributaries and did so in a way that critiqued the quantification of streamflow itself as a potential cause of environmental degradation. As the agency stated in its application,

> Thus in view of the importance of this famous river, it was felt the establishment of streamflow "numbers" as flow recommendations during the low water months, would be the first step in degrading this high quality fishery. Fish populations exist there now due to a wide range of flow conditions. Assigning flow "numbers" to this part of the river would eventually place limitations on the fishery which do not exist today, and ultimately alter the existing status of those aquatic resources. Thus we elected to request the "instantaneous streamflow, subject to existing, lawfully appropriated water rights in the stream reach" to protect the fishery resources. (…). Additionally, we cannot separate the tributary streams from the main river in this portion of the basin, since they influence water quantity, water quality and are biologically connected in many cases. Thus "the instantaneous streamflow (…)" was also requested for these streams (Montana Fish and Game Commission, 1976: 292-293).

Although Montana Fish and Game was still mainly concerned about the upper Yellowstone because of its value as a recreational fisheries resource, its adaption of the original Blue Ribbon classification system into an instream flow methodology cannot be fully separated from the agency's emerging more-than-anthropocentric ethic.

Montana Fish and Game's water reservation application audaciously requested more than 93% of the existing average annual amount that reached Sidney. Unsurprisingly, its water reservation application became the most hotly contested (and legally objected to) part of the water reservation process (Posewitz, 1985). This became widely evident during the summer of 1977 when cross-examination of Montana Fish and Game witnesses dominated the contested case hearing proceedings. It was also during this quasi-judicial hearing process that Montana Fish and Game's more-than-anthropocentric position towards the Yellowstone River Basin became more fully embedded within the water reservation process.

[7] Interestingly, the agency drew on Don Tennant's 'Montana Method' for its initial 1974 application but did not use it as a justification for its revised 1976 application.

The contested case hearing

Once the Montana Department of Natural Resources and Conservation received the water reservation applications, the Water Use Act charged it and the Montana Board of Natural Resources and Conservation with a variety of tasks related to the facilitation and completion of the reservation process. They needed to provide proper notice of the applications, allow objections to be filed against applications, and hold hearings for the presentation of arguments against requested reservation amounts (Sweetman, 1980). The Board appointed attorney James Driscoll as hearing examiner, and the contested case hearing occurred first at Eastern Montana College's Library Auditorium in Billings, MT and later at the senate legislative chambers in Helena, MT. It was during this contested case hearing process that Montana Fish and Game articulated its more-than-anthropocentric ethical arguments.

The contested case hearings for Montana Fish and Game witnesses involved both submitted written testimonies and intensive cross-examination. Montana-based attorneys Urban Roth and Henry Loble, respectively, represented Utah International, Inc. (a subsidiary of General Electric) and Intake Water Company (a subsidiary of Tenneco). They provided a formidable challenge to the credibility of the agency's witnesses. Jim Posewitz served as Montana Fish and Game's lead witness. Having previously submitted his written testimony to the hearing examiner, on 17 and 18 August 1977 Posewitz defended the logic and evidence presented in support of Montana Fish and Game's water reservation application. As a charismatic and passionate conservationist in charge of Montana Fish and Game's Environment and Information Division, Posewitz served as the leading force behind both the agency's application for water reservations in the Yellowstone River Basin and its deeper quest to prevent a large impoundment of the upper Yellowstone in order to preserve the river's free-flowing quality (Peterman, 1979). As Posewitz (1977) noted in his written testimony, the majority of scientific studies Montana Fish and Game conducted for its water reservation application focused on the lower portion of the Yellowstone River Basin, which had previously received very little scientific attention. Fish and Game used a compilation of public and private external grants to gather evidence supporting its case for reserving large flows of Yellowstone River water; these included grants from Utah International, Intake Water, Old West Regional Commission, and the United States Geological Survey.

Because of Posewitz's emphasis on the water reservation application's role in diminishing the future need for a mainstem impoundment on the Yellowstone, a significant portion of his cross-examination featured a discussion related to the positives and negatives associated with dam building. Utah International's Urban Roth questioned Posewitz about the potential economic benefits of the increased recreational use that would follow from dam and reservoir construction. In this exchange during the contested case hearing proceedings, Posewitz gave the first indication of Montana Fish and Game's more-than-anthropocentric position towards fish and wildlife management:

> But the core – the heart of the preservation of a natural river system is for fish and wildlife habitat. And granted, we also have the recreation responsibility. We view – at least I view and in the functions that I serve the Department in, the preservation of habitat as being clearly dominant over providing recreation places (Montana Board of Natural Resources and Conservation, 1977a: 22-23).

After this initial exchange, Roth quickly moved to position the Bighorn River's Yellowtail Dam as unequivocally a positive benefit for recreational sport fishing. Although Posewitz did admit that the Yellowtail Dam improved the Bighorn's trout fishery, he again downplayed the value of recreational fishing to Montana Fish and Game's water reservation application. Responding to Roth's line of questioning on the Yellowtail Dam's benefit to trout fishing, he stated that,

> except in our review of the river, we looked not only at the effect on the aquatic habitat but also the riparian habitat type, and while trout certainly did prosper, we found that some other features, such as the islands, the habitat preferred by Canada geese which we have submitted some testimony, did deteriorate – was lost (ibid: 23-24).

Posewitz thus illustrated some of the negative downstream effects of the Bureau of Reclamation's Yellowtail Dam on river channel geomorphology; he also outlined some of its detrimental ecological effects.

Hoping to have Montana Fish and Game show a narrow preference to recreational sport fishing instead of its more holistic approach to protecting all fish and wildlife, Urban Roth next questioned Posewitz about Montana's famous Blue Ribbon classification system. He asked Posewitz to rank his and the agency's preference for streams within the basin. In a very telling response, Posewitz refused to unequivocally endorse the Blue Ribbon system, which in its adapted form served as the methodological justification for the agency's reservation request for the upper Yellowstone Basin. Instead, Posewitz responded:

> The blue ribbon concept was developed – oriented on trout, salmonid and essentially – or in an abbreviated fashion what that designation said is "This area or this stream is of national significance to the trout fisherman" (…) and I think I'd have to be honest to say that most people related to us would probably give that some higher value, maybe over all other resources that we're responsible for. But I do think there is (…) a changing responsibility of our Department to protect fishery resource, not solely for the, you know, the quality that a certain group would assign to [it]. In other words, we feel a responsibility towards species in that lower river just as strongly as we feel a responsibility towards the cutthroat trout in the Yellowstone. And granted, that's easier to sell and I wouldn't debate that for an instant (Montana Board of Natural Resources and Conservation, 1977a: 26-27).

This passage illustrates the ethical approach taken by Jim Posewitz and Montana Fish and Game in their water reservation request. It should be noted, however, that when the Montana legislature passed the Nongame and Endangered Species Conservation Act in 1973, it became "state policy to perpetuate nongame as well as game species" (Holton, 1980). The more-than-anthropocentric position of Montana Fish and Game's water reservation application was made even clearer in the context of the Powder River. As an important tributary of the lower Yellowstone River, the Powder River in northern Wyoming and southeastern Montana runs roughly south to north through some of the world's largest coal reserves. Coming from a region characterised by rich resources such as coal as well as by variable rainfall and general aridity, Powder River water was extremely sought after and important for energy development. In fact, both Utah International, Inc. and Intake Water Co. (two major objectors to Montana Fish and Game's water reservation application) had significant interests related to surface water development for coal energy production on the Powder River. Cross-examination of Montana Fish and Game witnesses thus included a substantial focus on the Powder River's water quality as well as on its value (or lack thereof) for fish, wildlife and recreation.

With respect to Montana Fish and Game's more-than-anthropocentric position, the cross-examinations of both Jim Posewitz and Bruce Rehwinkel were the most important. When under cross-examination by Urban Roth, Posewitz defended the river's existing fish and wildlife. Although he acknowledged that the Powder River had a very high salinity content, he rebutted Roth's characterisation of the Powder as "inhospitable" to fish. As Posewitz replied,

> I wouldn't go that far. I think we have to make a distinction here and this is in my opinion, over a stream like the Powder River which we're talking about that has (…) through modern geologic times [carried] those constituents, and we have documented (…) the fact that that stream is being used by a certain segment of the fish population in the Yellowstone River (Montana Board of Natural Resources and Conservation, 1977a: 37).

While under cross-examination from Intake Water Co.'s hired attorney Henry Loble, Posewitz made this point even more clearly:

> I'm trying to think of some way to communicate to the record the fact that because the Powder is perhaps low in total aquatic production, that doesn't mean it's insignificant to us or that we don't care about the resource that struggles on down there (ibid: 59).

Posewitz's refusal to dismiss the Powder River despite its characterisation as "an ugly duckling" illustrated an ethical position towards environmental protection that transcended simplistic human-centric calculation (ibid).

More than any other Montana Fish and Game witness, it was Bruce Rehwinkel that bore the brunt of Urban Roth and Henry Loble's efforts to marginalise the environmental value of the Powder River. Rehwinkel was Montana Fish and Game's lead scientist for the Powder River Aquatic Ecology Project, which was funded largely by Utah International. As such, it was he who faced the heaviest scrutiny when defending Fish and Game's application for an annual reservation of 198,350 acre-feet of instream flow. Both Roth and Loble repeatedly attempted to make Bruce Rehwinkel admit that the Powder River had little environmental value. During Henry Loble's recross-examination, for example, he put the question directly to Rehwinkel, "The Powder River in Montana is poor in fisheries, is it not, compared to other Montana streams, even the other tributaries of the Yellowstone" (Montana Board of Natural Resources and Conservation, 1977c: 70)?

Rehwinkel responded that, "I can't make the assessment of whether it's poor or it's good or it's bad. I can say that there is possibly less diversity, there is less abundance. But it is different; I'm not going to say that it's better or worse" (ibid: 70).

When Loble again pushed Rehwinkel to compare the productivity of the Tongue River's fishery with that of the Powder, Rehwinkel responded that,

> There again you're asking for a value judgement. It does have a better, say, water quality and resident game fish populations, and if that's the only thing that you're interested in – my job is to defend and understand the resource that exists, not to compare it with some other stream (ibid: 73).

During the contested case study hearing, both Rehwinkel and Posewitz sought to move beyond the anthropocentric and utilitarian logic associated with the 1959 Montana stream classification system.

The limitations of the Blue Ribbon stream classification system as a comparative way to determine instream flow reservations came to the fore again, however, during Urban Roth's questioning of Rehwinkel. When Roth once again framed the Powder as a river with a very poor recreational fishery, Rehwinkel replied that the agency was not attempting to claim that the Powder's fishery was equivalent to that of the Madison River. After Roth confirmed that he was, "not trying to create an inference that this is really a blue ribbon stream in disguise", Rehwinkel replied that, "[i]t's starting to look like a black and blue ribbon stream to me" (ibid: 35). Rehwinkel's line generated a moment of laughter during the tense hearing process. It also became a widely remembered moment for Montana Fish and Game witnesses (Posewitz, 1985), though evidence suggests that Jim Posewitz had actually brainstormed the line the previous night while prepping Rehwinkel for the interview (Rehwinkel, 2017). Regardless of whether or not it was Posewitz who had developed the 'black and blue ribbon' response, Bruce Rehwinkel's defence of the Powder River's aquatic resources was indicative of Montana Fish and Game's attempt to move beyond the limits of the Blue Ribbon classification system's original anthropocentric rationale.

Final arguments

The cross-examination portion of the contested case hearing finished on 30 September 1977. After nearly two months of legal testimony and questioning, the hearings had produced 36 volumes of transcripts (about 4700 pages). The next part of the process involved having each applicant and objector put together their respective proposed findings of fact and conclusions of law. Much to the consternation of Fish and Game, however, the Department of Natural Resources and Conservation tossed a wrench into

this process when it provided its own instream flow recommendation without having submitted an instream flow reservation request (Montana Department of Fish and Game, 1978). The DNRC felt animosity towards Fish and Game for its perceived uncompromising 'all or nothing' attitude and for its objection to the DNRC's introduction of the *Instream Flow Methodology report* as an exhibit during the contested case hearing (Doney, 1978). The DNRC thus created an internal "compromise group (…) to develop a set of findings and a proposed order for the Board of Natural Resources" that did not include representation from Fish and Game (Posewitz, 1978).

This group ultimately decided to interpret the 1973 Water Use Act's language regarding the protection of minimum streamflow through the lens of 'survival flow'. As the DNRC's proposed opinion states, "The minimum-flow instream reservations have been ordered adopted in amounts that will maintain instream flows at levels sufficient to allow survival of at least minimum levels of the aquatic resource" (Montana Department of Natural Resources and Conservation, 1978: 8-9). The DNRC based its 'survival flow' interpretation on the concept of historical minimum monthly flows; in other words, the DNRC generally recommended to the Board that it should only grant Fish and Game the average of the lowest flows historically recorded for each month. To put this into perspective, Fish and Game requested that approximately 8.2 Maf annually be reserved instream at Sidney, MT, while the DNRC recommended an annual instream flow reservation equal to approximately 3.4 Maf.

During final arguments held at the senate chambers in Helena on 18 August 1978, Montana Fish and Game directly contested the DNRC's argument that the Board should adopt a survival interpretation of the Water Use Act's minimum instream flow language. As Fish and Game's legal counsel F. Woodside Wright stated,

> It has been suggested by the Department of Natural Resources and Conservation in its Proposed Findings of Fact and Conclusions of Law that you allocate to the river a survival flow. That is a proposal that seeks the worst possible condition of the river to be the goal of the water allocation process. It is somehow rationalized that because the river survived these flows in one extreme year, it can accept them as an average or permanent condition. This concept, if adopted by economic planners, would select the [G]reat [D]epression as our economic goal since somehow our economic system survived it (Montana Board of Natural Resources and Conservation, 1978a: 299-300).

Fish and Game thus grounded its application in a more-than-anthropocentric approach to environmental protection that eschewed the DNRC's anthropocentric survival flow logic. It used an approach that favoured a more liberal reading of the minimum flow language included in the Water Use Act. As F. Woodside Wright also stated during his final argument,

> The Water Use Act instructs that water be allocated with the least possible degradation to the natural aquatic ecosystems. (…) It would appear the Department of Natural Resources and Conservation is saying "survive". The Department of Fish and Game reservation is asking that the fish and wildlife be allowed to "thrive" and not merely "survive" (ibid: 301).

The Montana Board of Natural Resources and Conservation was thus confronted with two very different interpretations of the Water Use Act's use of 'minimum' to describe instream flow reservations.

There is no question that Fish and Game grounded its more-than-anthropocentric position in the emerging environmentalist ethos that favoured more holistic ecological thinking as well as an expanded moral consideration for non-humans. It is also essential to understand, however, that critiques of its scientific approach, such as the DNRC's characterisation of the 'Blue Ribbon concept' as 'not an instream-flow methodology', fail to account for the challenges that mobile and variable river water posed to the quantification of instream flows (Montana Department of Natural Resources and Conservation, 1978: 170). Instream flow science is not grounded solely in mathematical models nor does it take place in a self-contained scientific laboratory. It fundamentally requires its practitioners to go into the field, deal with environmental constraints, and gather imperfect measurements. In the course of such fieldwork,

the river system manifested political agency in the form of a constraining effect on quantification. The river as a more-than-human entity also influenced the affect and the embodied experiences of the scientists who actively engaged with it (Lorimer, 2015; Singh, 2018).

The following passage helps articulate the deep emotional connection of certain Montana Fish and Game scientists with the Yellowstone River:

> Although it was not a predetermined objective of the Department, it should have surprised no one that the sum total of preserving [an] existing resource approached protecting something similar to the average discharge of the river. We would have liked to come before you asking for less, and then both of our burdens would have been lighter. The problem was if we had stood before you compromised, then who would have spoken for the rivers and the streams of the Yellowstone Basin? In this process, we sought to represent Montana's wild communities who otherwise have no voice in the proceedings. Were we to have observed utter silence in these chambers or in Billings, there would be no sound from the river. It could not be heard unless the Department stands up for and speaks for it and the resources which depend upon it. It is the voice of the Department of Fish and Game that has to speak for the fish and wildlife that depend on this river (Montana Board of Natural Resources and Conservation, 1978a: 298-299).

This language illustrates Montana Fish and Game's interest in preserving the Yellowstone Basin's rivers. Providing a 'voice' for streams such as the Powder River (a stream that Montana Fish and Game could easily have ignored) highlighted the agency's willingness to move beyond the confines of anthropocentric-based environmental protection and towards a more holistic framework that sought to secure instream flows in order to protect all parts of a river system independent of their value to humans.

The Board's decision

After the final arguments concluded, the seven-member Montana Board of Natural Resources and Conservation met several times to determine how it would allocate water reservation amounts for streams within the Yellowstone River Basin. Although the Board took a decidedly anthropocentric approach to determining the final water reservation amounts, it was, "inclined to grant, in each case, the largest reservation that could be justified by the application" (Clark, 1979: 30). The Board ultimately awarded instream flow water reservations that generally represented a middle ground between Fish and Game's request for thrive flows and DNRC's recommendation of survival flows. While the actual instream reservations were site specific and almost always varied on at least a monthly basis (in accordance with seasonal fluctuations), several key points help to paint the overall picture. First, the Board generally granted less-than-optimal flows for the lower river basin, however these reservations were almost always considerably higher than the DNRC's suggested survival flows. For the mainstem of the Yellowstone River at Sidney, for example, the Board awarded Fish and Game approximately a 5.5 Maf annual instream reservation. Although this was substantially less than the 8.2 Maf it had requested, the amount awarded was considerably more than the DNRC's 3.4 Maf recommendation. The Board also awarded 95,201 acre-feet annually to Fish and Game for the Powder River at Locate, which amounted to roughly half of the Fish and Game's request (198,387 acre-feet); however, it was also nearly three times greater than the amount recommended by the DNRC (32,170 acre-feet). Second, the Board generally granted Fish and Game's thrive flows for the middle Yellowstone; for example, the instream flow reservation for the Yellowstone at Billings and for the Bighorn River included almost all of Fish and Game's requested amount and also fully granted its request for a 24-hour dominant discharge of 68,430 acre-feet at Billings. Finally, the upper Yellowstone received a mixed reservation decision. During the non-irrigation months (October to April), the mainstem and its tributaries received a high level of instream flow protection; however, during the irrigation months (May to September), the basin received much lower protection. In fact, for the mainstem of the Yellowstone at Livingston, the Board awarded less during the irrigation season than the DNRC's recommended survival flows (Montana Fish and Game Commission, 1976; Montana

Department of Natural Resources and Conservation, 1978; Montana Board of Natural Resources and Conservation, 1978b; Clark, 1979; Boris and Krutilla, 1980).

As evidence from the entire water reservation process suggests, a major debate existed over the interpretation of the 1973 Water Use Act's use of 'minimum' as the legal justification for reserving instream flows. Although it is tempting to interpret minimum as the least amount possible (that is, survival flow), Gillilan and Brown (1997: 129) argue that minimum instream flow legislation is often a function of political compromise and that it largely reflects, "the limited acceptance of these programs at the time statutes were passed rather than some desire to ensure that water is not used in quantities beyond those necessary to achieve a chosen level of benefit". The 'minimum' language in the Montana Water Use Act, in other words, does not necessarily preclude a higher level of instream flow protection. As Gillilan and Brown go on to say, "In practice, widespread confusion about the meanings of the terms used to describe flow levels has meant that flows have been protected at a variety of levels, notwithstanding the terms used in statutes and policies" (ibid). The Yellowstone River water reservation process supports their interpretation. In reality, the Board used 'adequate' to define minimum stream flows. As Board member and spokesperson Wilson F. Clark (1979: 30) stated, "The whole idea of instream reservations is quite new. The board fully agreed with the legitimacy and necessity of assuring that adequate water remains in the streams to maintain fish, wildlife, water quality, and recreational values". Fish and Game's arguments for a thrive flow interpretation of minimum instream flow thus had traction within the legal process.

CONCLUSION

This article takes a more-than-human approach to examining the relationship between water law and the Yellowstone River. Drawing from recent cross-fertilisation between critical legal geography and political ecology, it contributes to emerging understandings of water law as both a relational entity in the process of becoming and as a co-constitution of the human and non-human (Ojalammi and Blomley, 2015; Cantor, 2016; Cantor and Emel, 2018; Braverman, 2018). Relying on these theoretical understandings and using the Yellowstone River Basin water reservations as an historical case study, I argue that the 1973 Montana Water Use Act, although founded through the anthropocentric logic of utilitarian conservation (McEvoy et al., 2018), in practice created a pliable enough legal space to accommodate Montana Fish and Game's ethical approach to water management, which included both anthropocentric and non-anthropocentric elements. The Act's use of 'minimum' in relation to instream flow protection allowed for interpretational flexibility. Montana Fish and Game took advantage of this pliability to help reconstitute the law through its more-than-anthropocentric argument for instream flow protection, which itself was influenced through the political agency of the Yellowstone River (see, for example, Braun and Whatmore, 2010; Bergmann et al., 2020).

Drawing from primary and secondary sources associated with the quasi-judicial Yellowstone River Basin water reservations proceedings, I document Montana Fish and Game's more-than-anthropocentric ethical arguments for protecting fish and wildlife through instream flow reservations. Evidence suggests that it was during the two-month-long contested case hearing proceedings in August and September 1977 that Montana Fish and Game most clearly articulated its defence of the Yellowstone ecosystem's non-recreational value. During final arguments in August 1978, after the hearings ended, Montana Fish and Game again displayed its more-than-anthropocentric ethical approach. It argued in favour of a more flexible interpretation of minimum streamflow that would better protect the Yellowstone River Basin's ecosystem for both recreational and non-recreational fish and wildlife values. This article provides a valuable historical example of the influence of a non-anthropocentric ethical position on legal developments within Western liberalism, one that is both related to and separate from the rights of nature (Nash, 1989; O'Donnell et al., 2020). It thus contributes to a growing understanding of the law as a co-constitutive process with both human and non-human components (Braverman et al., 2014).

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